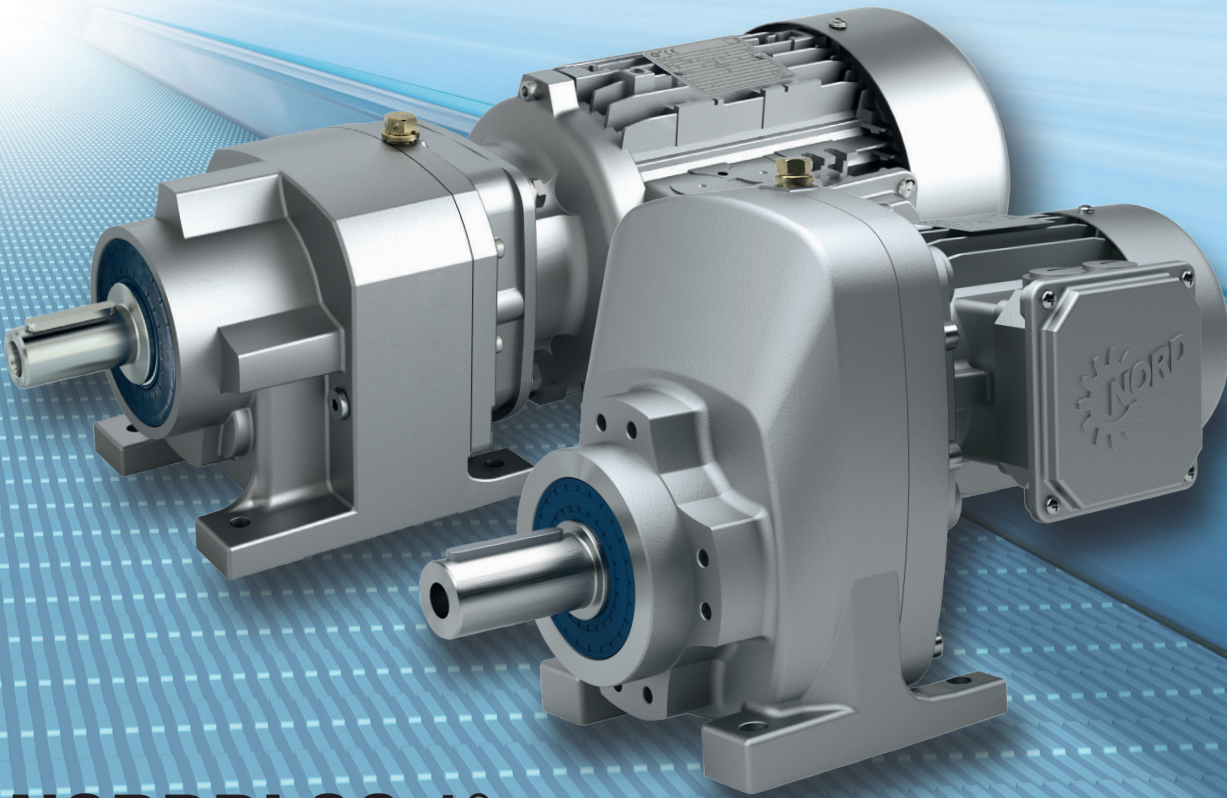


Intelligent Drivesystems, Worldwide Services



NORDBLOC.1[®]

Helical In-Line Gear Units & Speed Reducers

Compact High Performance
SK 071.1 - SK 973.1 Helical In-Line Gear Units

PRODUCT OVERVIEW
G1013 - 60 Hz



Spanning the globe To serve you

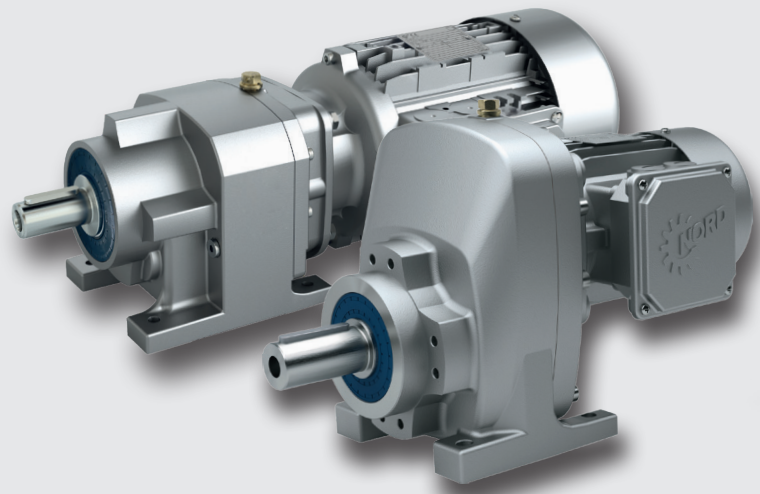
Since 1965, NORD has become well established in the power transmission industry and grown to global proportions on the strength of product performance, superior customer service, and intelligent drive solutions. NORD is constantly improving and expanding its products to meet a never-ending variety of industrial challenges.

NORD designs and manufactures drive systems engineered for adaptability. NORD's innovative drive solutions are specified and utilized for a range of applications in nearly every industry throughout the world.

NORD Drivesystems' product portfolio is extensive and continuously evolving in order to meet the needs of today's fast-changing markets. NORD's range of drive equipment includes: helical in-line, helical shaft-mount, helical-bevel, helical-worm and worm gear units with torques from 90 lb-in to 2,200,000 lb-in, readily available AC motors and from 1/6 HP to 250 HP, variable frequency drives up to 250 HP, and mechanical variable speed drives.

But NORD does far more than manufacture the world's finest drive components. We provide our customers with optimum drive configurations for their specific purposes, providing each and every one with truly complete and efficient systems at a price/quality ratio unmatched in today's competitive markets.

NORD makes its wide product range easily available through a global network that includes representation in over 60 countries. By providing all of our customers with prompt delivery, and expert support services, we are firmly committed to exceeding customer expectations and being responsive to the ideas and specifications of every customer, anywhere in the world.



NORDBLOC.1® Helical In-Line Gear Units

NORDBLOC.1® helical in-line gear units offer a high-performance cost effective drive solution adaptable to a wide variety of industries – from safely processing of food, pumping and mixing applications, to high performance conveying in distribution centers, baggage handling, parcel facilities and more. Torsionally-rigid UNICASE™ main gear housings are optimized for strength using finite element technology. Modular design and flexible mounting options provide customer adaptability. Mounting options include foot-mount, flange-mount and foot-flange mount units. Input options include integral motors or brake motors, motorized reducers, NEMA or IEC input adapters, or solid input shafts. All NORDBLOC.1® gear units come standard with high capacity output bearings.

The NORDBLOC.1® single-stage gear units are ideal for high speed applications such as pumping, mixing, and conveying applications. As a standard upgrade these gear units can be supplied with a high-strength alloy steel output shaft and twin-tapered roller bearings designed to handle aggressive shaft and bearing load conditions. The single-stage gear units feature 5 sizes ranging in output torque from 69 to 2505 lb-in and gear ratios from 1.07:1 to 13.10:1. In addition, mounting options include NEMA standard output shaft and mounting flange.

NORDBLOC.1® gear units up to size SK771.1 feature high-strength corrosion resistant aluminum gear housing. Paint and protective coatings are optional. For sanitary applications these gear units can be supplied with NORD's proprietary NSD TupH surface conversion, and stainless steel shafting and assembly hardware. NSD TupH provides a cost-effective alternative to stainless-steel gear units that are often specified in the food and beverage industry where caustic and corrosive sterilization chemicals are utilized.

Features and Benefits

- Robust UNICASE® housing
- Case-hardened, high-quality gearing
- Modular design with flexible mounting options
- High capacity output bearings
- AUTOVENT™ pressure regulation keeps contaminants out
- High performance inverter/vector duty motors & brakemotors
- Protective features and options for severe environments



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UNICASE™ SPEED REDUCERS



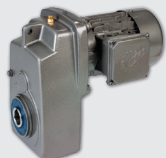
HELICAL IN-LINE

- Foot or Flange Mount
- Torque up to 205,000 lb-in
- Gear ratios – 1.82:1 to over 300,000:1



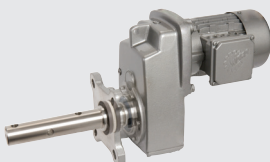
NORDBLOC®.1 HELICAL IN-LINE

- Foot or Flange Mount
- Torque up to 26,550 lb-in
- Gear ratios – 1.88:1 to over 370:1



PARALLEL HELICAL CLINCHER™

- Shaft, Flange or Foot Mount
- Torque up to 797,000 lb-in
- Gear ratios – 4.26:1 to over 300,000:1



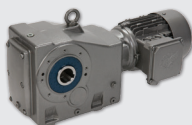
SCP SCREW CONVEYOR PACKAGE

- Shaft, or Flange Mount
- Torque up to 53,100 lb-in
- Gear ratios – 4.32:1 to over 1500:1



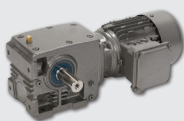
RIGHT ANGLE HELICAL-BEVEL 2-STAGE

- Foot, Flange or Shaft Mount
- Torque up to 5,840 lb-in
- Gear ratios – 4.1:1 to 70:1



RIGHT ANGLE HELICAL-BEVEL

- Foot, Flange or Shaft Mount
- Torque up to 283,000 lb-in
- Gear ratios – 8.04:1 to over 300,000:1



RIGHT ANGLE HELICAL-WORM

- Foot, Flange or Shaft Mount
- Torque up to 27,585 lb-in
- Gear ratios – 4.40:1 to over 300,000:1

HIGH PERFORMANCE MOTORS & BRAKEMOTORS



INVERTER/VECTOR DUTY

- Standard or Energy Efficient
- Integral, NEMA or Metric IEC
- 1/6 to 250 hp

UNICASE™ SPEED REDUCERS



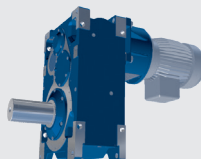
MINICASE™ RIGHT ANGLE WORM

- Foot, Flange or Shaft Mount
- Torque up to 3,540 lb-in
- Gear ratios – 5:1 to 500:1



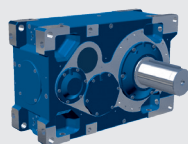
FLEXBLOC™ WORM

- Modular bolt-on options
- Torque up to 4,683 lb-in
- Gear ratios – 5:1 to 3,000:1



MAXXDRIVE™ LARGE INDUSTRIAL GEAR UNITS PARALLEL HELICAL

- Modular bolt-on options
- Torque up to 2,027,000 lb-in
- Gear ratios – 5:1 to 1,600:1



MAXXDRIVE™ LARGE INDUSTRIAL GEAR UNITS HELICAL-BEVEL

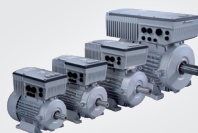
- Modular bolt-on options
- Torque up to 2,027,000 lb-in
- Gear ratios – 5:1 to 1,600:1

NORDAC AC VECTOR DRIVES



SK180E FAMILY

- Distributed, simple speed control
- 380-480V, 3-phase to 3.0 hp
- 200-240V, 3-phase to 1.5 hp
- 200-240V, 1-phase to 1.5 hp
- 100-120V, 1-phase to 0.75 hp



SK200E FAMILY

- Distributed, high performance
- 380-480V, 3-phase to 30 hp
- 200-240V, 3-phase to 15 hp
- 200-240V, 1-phase to 1.5 hp
- 100-120V, 1-phase to 1 hp



SK500E FAMILY

- Compact, cabinet mount, high performance
- 380-480V, 3-phase, to 125 hp
- 200-240V, 3-phase, to 25 hp
- 200-240V, 1-phase, to 3 hp
- 100-120V, 1-phase, to 1.5 hp



Global Vision, Local Support

NORD makes its wide product range easily available through a global network that includes representation in over 60 countries. By providing all of our customers with prompt delivery, and expert support services, we are firmly committed to exceeding customer expectations and being responsive to the ideas and specifications of every customer, anywhere in the world.



Company Overview

Since 1965, NORD has become well established in the power transmission industry and grown to global proportions on the strength of product performance, superior customer service, and intelligent drive solutions.

NORD designs and manufactures drivesystems engineered for adaptability. NORD's improving, expanded and innovative drive solutions are specified and utilized for a range of applications in nearly every industry throughout the world.

NORD Drivesystems' product portfolio is extensive and continuously evolving in order to meet the needs of today's fast-changing markets. NORD's range of drive equipment includes: helical in-line, helical shaft-mount, helical-bevel, helical-worm and worm gear units with torques from 90 lb-in to 2,200,000 lb-in, readily available AC motors from 1/6 HP to 250 HP, variable frequency drives up to 250 HP, & mechanical variable speed drives.

NORD does far more than manufacture the world's finest drive components. We provide our customers with optimum drive configurations for their specific purposes, providing each and every one with truly complete and efficient systems at a price/quality ratio unmatched in today's competitive markets.

Short, On-Time Delivery

As a NORD customer, you can rest assured that your order will be delivered on time. Because NORD has both decentralized assembly and manufacturing operations and a linked global network, we offer our customers:

- Fast, reliable delivery
- Greater product versatility
- Shorter lead times
- Timely shipping
- Global Availability



Global Availability

NORD makes its wide product range easily available through a global network that includes representation in over 60 countries. Providing all customers with prompt delivery, and expert support services, we are firmly committed to exceeding customer expectations and being totally responsive to the ideas and specifications of every customer, anywhere in the world.

Increased North American Presence

NORD covers North America with over 30 district offices and over 500 distributor branches. NORD operates a manufacturing and assembly facility in Waunakee, WI, Charlotte, NC, Corona, CA, Brampton, ON, and Monterrey, Mexico, resulting in an ever-increasing capacity in the United States and Canada and giving our customers the shortest lead times in the industry.



Manufacturing

NORD Gear continually invests in the latest research, manufacturing and automation technology. This ensures our ability to provide you with the utmost quality at an affordable price. Not only do we invest in our North American facilities, we invest in our factories throughout the world. We continually try to improve our practices to provide our customers with the most superior product available.

Quality

Quality is assured at NORD assembly and manufacturing facilities, based on ISO 9000 standards — from careful inspection of incoming materials to closely monitored machining operations including gear cutting, turning, hardening & grinding as well as finishing and assembly.

Worldwide Standards

NORD products are designed and manufactured based on the latest North American and global standards.

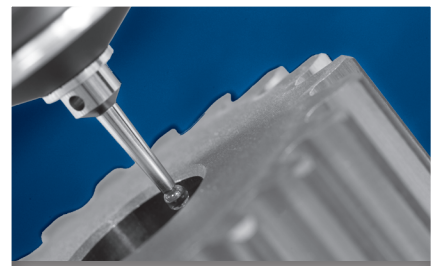


Energy Efficiency

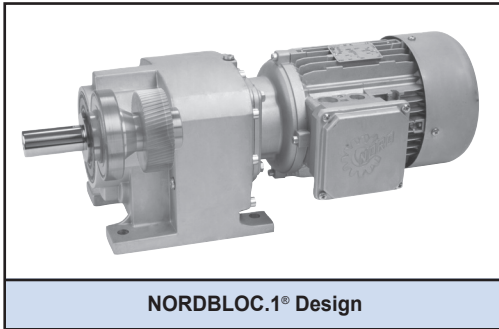
Lowering your operating costs is one of our greatest goals! NORD research and development focuses on energy efficiency, with gearboxes, motors, and frequency inverters designed for lower energy consumption. Our fully diverse line of in-line or right-angle units and motors has been developed to suit your needs.

NORD 911

Trouble? Just call 715-NORD-911 (in Canada, 905-796-3606). Emergency service is available 24 hours a day, 7 days a week. We'll answer your call, ship the parts, or build a unit and have it shipped directly to you to provide what you need, when you need it.



NORDBLOC.1® Key Features



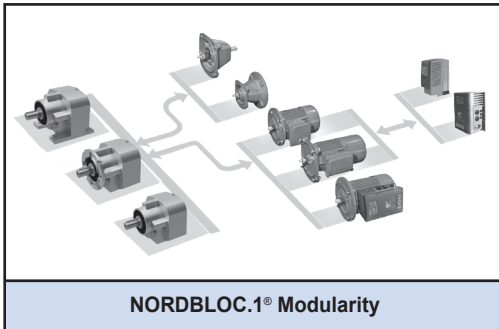
NORDBLOC.1® Design

NORDBLOC.1® Design

The NORDBLOC® gear units have two different designs for different torque ranges. For the lower torque range NORD has introduced a new NORDBLOC®.1 series with design points specifically tailored to their torque range. One key design point for the NORDBLOC®.1 units is the use of a corrosion resistant aluminum alloy housing material on case sizes up to the 672.1.

Available NORDBLOC® .1 Units

Single Stage	2-Stage	3-Stage
SK 071.1	SK 072.1	-
SK 171.1	SK 172.1	-
SK 371.1	SK 372.1	SK 373.1
SK 571.1	SK 572.1	SK 573.1
-	SK 672.1	SK 673.1
SK 771.1	SK 772.1	SK 773.1
-	SK 872.1	SK 873.1
-	SK 972.1	SK 973.1



NORDBLOC.1® Modularity

The NORDBLOC® size 772.1 and larger units also have key features optimized for their torque ranges, including class 35 grey cast iron housing as opposed to an aluminum alloy housing.

Product Range:	
Sizes:	5 (1 stage) / 8 (2-3 stage)
Power Range:	0.16 - 50 hp
Gear Efficiency:	• Up to 98% (1-stage) • Up to 97% (2-stage) • Up to 95.5% (3-stage)
Torque Range:	53 - 29,207 lb-in
Ratio Range:	1.07:1 - 456.77:1

Modular Design

NORD's modular design philosophy provides you with a competitive edge by allowing you to configure drive systems to exactly fit your applications.

Mounted by foot, flange or a combination of both, featuring solid shafts with either metric or inch extensions – gives you complete freedom to specify a drive solution that's perfect for you.

Benefits

- More output speeds
- More mounting arrangements/Greater flexibility
- Fewer gear stages [Lower cost]
- Metric and inch products

The NORDBLOC®.1 unit may also be provided with a number of different input components including:

- Integral motor (garmotor)
- NEMA C-face motor adapter
- IEC B5 & B14 motor adapter
- Solid input shaft
- Adaptable to NORD smooth surface motors
- Optionally available with NSD Tuph
- Custom motor adapter (servo, hydraulic motors, and more)

NORD engineers stand ready to assist you with your custom applications. Most standard drives can be modified to your purposes, and custom designs can be developed for special applications.

UNICASE[®] Housing

All NORDBLOC[®].1 gear units feature UNICASE[®] main gear housings. The heavy-duty, UNICASE[®] gear housing is a one-piece design featuring internal reinforcements to optimize strength and rigidity. All bearings and seal sets are contained within the casting, eliminating splits or bolt-on carriers that can weaken the housing and allow oil leakage. Bores and mounting faces are machined in a single set-up to meticulous standards, resulting in extremely precise tolerances to ensure accurate positioning of gear teeth, bearings and seals, quiet operation, and longer life for all components.

Benefits

- Eliminates bearing and seal covers
- Reduces leaks
- Precise shaft and gear alignment
- Quiet operation
- Extended gear and bearing life

Bearing Design

All NORDBLOC[®].1 gear units come standard with high capacity output bearings. In addition, all 2 and 3 stage gear units feature a staggered bearing topology. This allows NORD to utilize a much larger output bearing than the typical competitor's gear units and provides a space to allow for larger internal shaft diameters and increased internal bearing spans. Combined with NORD's high strength gear housing, the staggered bearing topology provides superior load carrying capabilities as compared to the typical competitor's gear unit.

Option (VL)

The VL Option can be specified on most NORDBLOC.1 gear units as a standard upgrade to increase the gear unit's ability to handle externally applied shaft forces. The gearmotor ratings tables provide the allowable radial and axial load force ratings for standard gear units and those gear units specified with the VL Option.

Gear Unit Types SK071.1 to SK 771.1 (1 Stage)

The VL option replaces high capacity ball bearings with twin tapered roller bearings, providing the ability to handle very high radial or axial load forces. In addition the output shaft is replaced with a higher strength alloy steel.

Gear Unit Types SK 372.1 to SK673.1 (2 & 3 Stage)

The VL option includes oversized, high capacity ball bearings with the NORD staggered bearing topology. In addition the output shaft is replaced with a higher strength alloy steel.

Gear Unit Types SK 772.1 to SK673.1 (2 & 3 Stage)

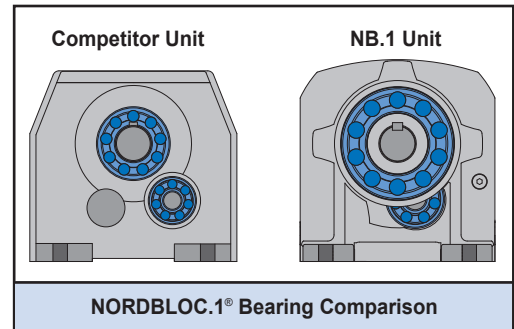
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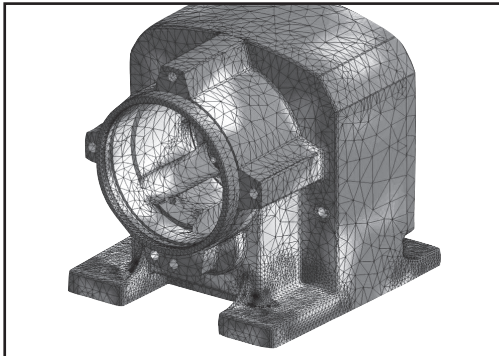
Aluminum Alloy Housing

The NORDBLOC .1[®] makes use of the many beneficial material properties of an optimized aluminum alloy for the gear housing on gear units up to size 771.1. The aluminum alloy housing provides an extremely high strength to weight ratio. The housing material is also inherently corrosion resistant and does not need a paint coating. Finally, the aluminum alloy housing is a much better heat conductor than cast iron, which will decrease the gear units operating temperature; this benefits the internal components and will yield longer service life.

Benefits

- Paint free
- Light weight
- Corrosion resistant
- Better thermal conductivity (lower temperature)
- Longer service life





NORDBLOC.1® - FEM Testing

Cast Iron Housing

The larger NORDBLOC®.1 units (SK772.1 - SK 973.1) utilize a cast iron gear housing. NORD uses a Class 35 material paired with FEM design optimization analysis to produce a strong and durable gear housing.

Rigid Housing Design (FEM)

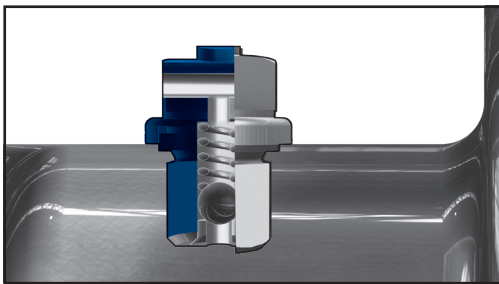
NORD's NORDBLOC.1® design used state-of-the-art Finite Element Modeling as a key design tool. This allowed optimal structural design to maximize the strength and rigidity of the gear box components.

Smooth Solid Gear Housing Surface

One goal of the new NORDBLOC®.1 units was to provide a smooth surface to prevent liquids from pooling or solid material build-up on the units. This is an advantage in applications where cleanliness is important. Also, the gear units are designed to not have any assembly covers. This increases the product strength and also provides a smoother surface. No rubberized bore plugs are used which provides a smoother, more uniform surface, greater strength and increased sealing integrity.

Benefits

- Easy cleaning
- No assembly covers
- Smooth surface
- No bore plug caps



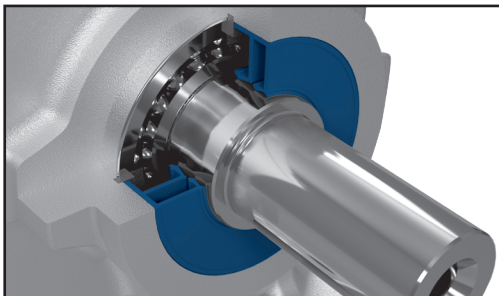
The Standard AUTOVENT™

AUTOVENT™

The AUTOVENT™ helps prevent bearing and gear damage by behaving like a check valve to block the entry of foreign material and prevent lubrication contamination from dust particles, moisture and air-borne process chemicals. The breather opens at approximately 0.3-0.9 psi during operation and closes tightly as the gearbox cools. This option is perfect for humid conditions and wash-down environments, helping to maintain proper oil cleanliness, while reducing foaming and oxidation.

Benefits

- Cleaner gearbox oil
- Extended lubrication life
- Longer-lasting seals, gears, and bearings



QUADRILIP™ Sealing

Quadrilip™ Sealing

The QUADRILIP™ system has four components for sealing lubricant inside, and contaminants outside, the speed reducer. The system includes a double lip seal, single lip seal and grease pack barrier (grease lip). Furthermore, the shaft seal area is used to eliminate lead marks, ensure a proper seal and to keep foreign material from entering the gear unit.

Benefits

- Superior protection against leaks
- Improved contaminant protection
- Long seal life
- Reduced maintenance requirements & costs
- Improved speed reducer life

High-Quality Gearing (Infinite Life Design)

NORD continually invests in state-of-the-art gear production equipment and in gear research. This allows us to produce exceptional high quality gears.

Benefits

- Designed up to AGMA CLASS 13
- High-speed gears are ground; low speed gears are skive hobbed
- Infinite design life
- 275% momentary overload capacity
- Case-hardened steel
- Low maintenance
- 58 Rc minimum hardness:
- Low noise

Large Ratio Per Gear Stage

NORD gear cutting technology allows for the production of gear sets with a higher maximum ratio per stage than many other speed reducer manufacturers. NORD commonly produces gear sets with a maximum ratio of between 9:1 and 10:1 per stage. This allows for double reduction gear units with a maximum ratio between 80:1 and 100:1. Most speed reducer manufacturer's can only produce single-stage reduction of between 5:1 and 6:1. This means a two-stage reducer with a maximum reduction of about 25:1 to 35:1. NORD can often provide a two-stage reducer when most companies must provide three-stage units. The same situation applies to three, four and higher gear stages. This allows NORD to provide superior value and performance in many conditions.

Benefits

- Better value
- Higher efficiency
- Quieter operation
- Lower weight
- Longer life

Factory Oil Filled

All NORDBLOC[®] units are filled at the factory with the proper quantity and type of lubrication. Oil fill before shipping prevents damage from dry start-ups

Benefits

- No need for filling onsite
- Ensures proper oil grade and fill level

Compact Coupled NEMA C-Face Motor Adaptor

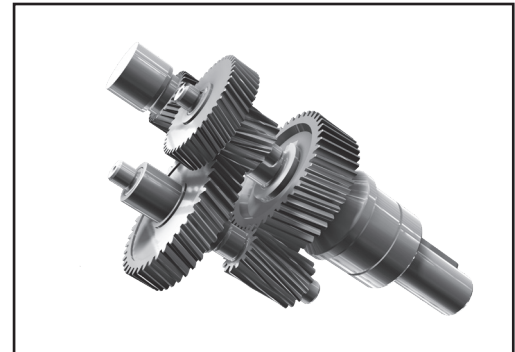
NORD's unique NEMA C-face motor adaptor provides the user with a high performance motor attachment system in a compact space. Historically, to have a compact C-face motor mounting the only choice was a low performance quill design with its distinct disadvantages including excessive bearing loading, rapid seal wear and metal-to-metal fretting corrosion. The fretting corrosion inherent with a quill design made the removal of a motor almost impossible. Also in the past, the use of a superior coupling system meant increased cost and a much longer motor bell. NORD's compact NEMA C-face adaptor uses a high strength motor coupling and provides the space advantages of a quill but without the severe drawbacks.

Benefits

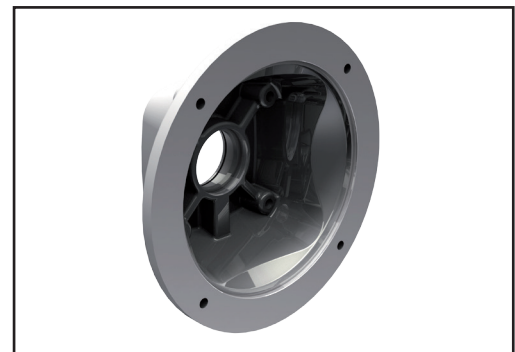
- Compact space saving design
- Easy mounting
- Easy motor removal
- Motor coupling
- Low bearing loading (long bearing life)
- Lower weight

NORD High-Performance Motors & Options

NORD motors are designed to run cool for producing longer service life. Low rotor inertia and high starting torque allow peak performance in the most difficult applications for inverter and vector duty per NEMA MG 1-2006 Section 31.4.4.2 voltage spikes. Our motors are internationally accepted, conforming to North American NEMA MG 1 and international IEC electrical specifications. High performance options include brakes, encoders, and forced cooling fans.



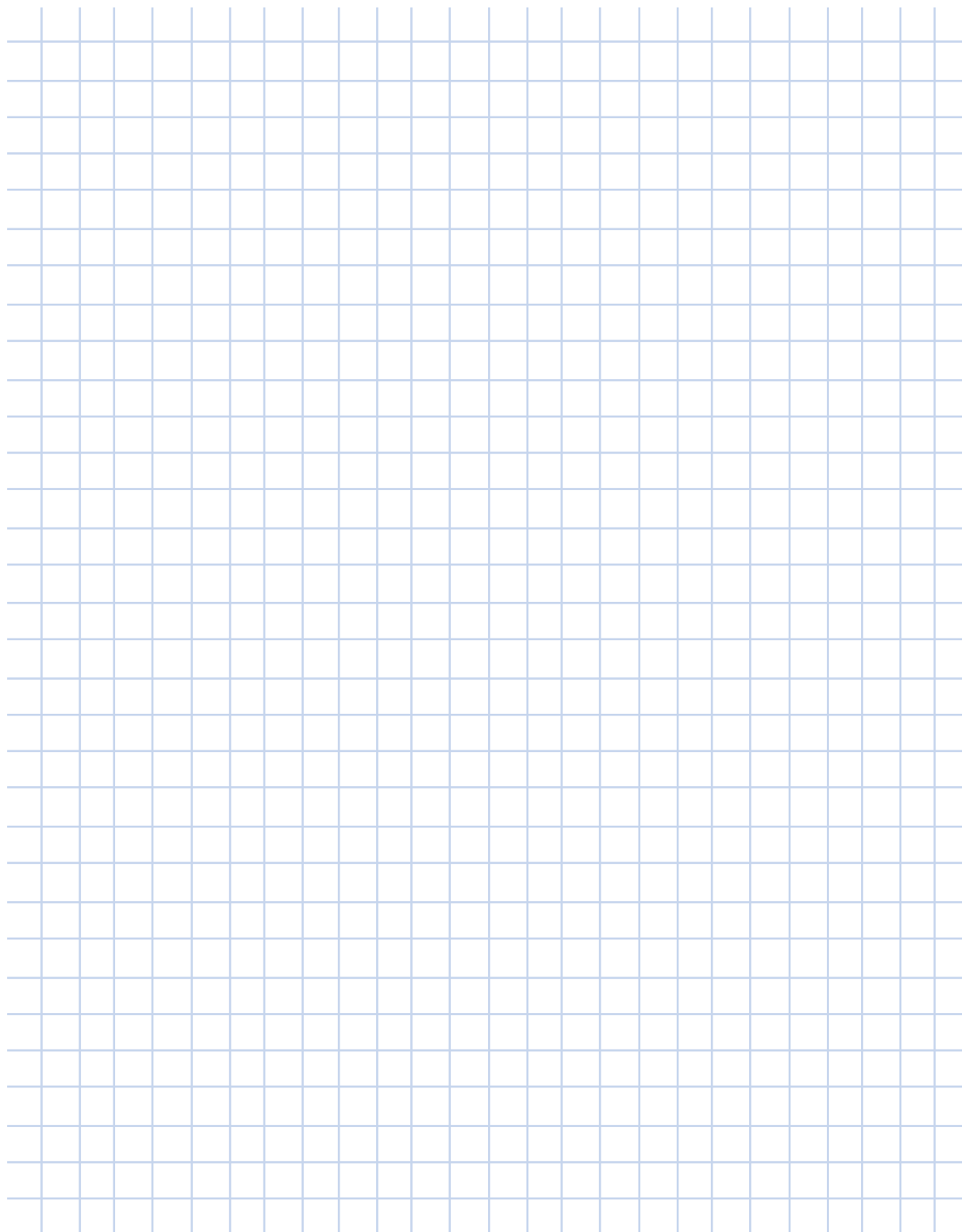
NORDBLOC.1 Gearing



Compact Coupled NEMA C-Face Motor Adaptor

Notes

Intro

A large grid of blue lines for taking notes, consisting of 20 columns and 30 rows.

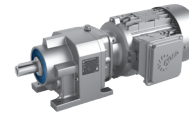


DRIVESYSTEMS

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NORDBLOC.1® Ordering Guide



Engineering

Gear Unit	Shaft/Mounting	Reducer Options	Input/Motor	Motor Options
SK ①	②	③	-	④

see page 210

<p>①</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Gear Unit</th> </tr> <tr> <th>1-Stage</th> <th>2-Stage</th> <th>3-Stage</th> </tr> </thead> <tbody> <tr><td>071.1</td><td>072.1</td><td>-</td></tr> <tr><td>171.1</td><td>172.1</td><td>-</td></tr> <tr><td>371.1</td><td>372.1</td><td>373.1</td></tr> <tr><td>571.1</td><td>572.1</td><td>573.1</td></tr> <tr><td>-</td><td>672.1</td><td>673.1</td></tr> <tr><td>771.1</td><td>772.1</td><td>773.1</td></tr> <tr><td>-</td><td>872.1</td><td>873.1</td></tr> <tr><td>-</td><td>972.1</td><td>973.1</td></tr> </tbody> </table>	Gear Unit			1-Stage	2-Stage	3-Stage	071.1	072.1	-	171.1	172.1	-	371.1	372.1	373.1	571.1	572.1	573.1	-	672.1	673.1	771.1	772.1	773.1	-	872.1	873.1	-	972.1	973.1	<p>②</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Shaft/Mounting</th> </tr> </thead> <tbody> <tr> <td style="width: 50%;"> - Footed 16 F - B5 Flange 17 • B5 Flange Diameter <input style="width: 100%;" type="text"/> </td> <td style="width: 50%;"> Z - B14 Flange 17 XZ - Foot/B14 Flange 17 XF - Foot/B5 Flange 17 • XF Flange Diameter <input style="width: 100%;" type="text"/> </td> </tr> </tbody> </table> <p>③</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Reducer Options</th> </tr> </thead> <tbody> <tr> <td style="width: 50%;"> <input type="checkbox"/> VL - Heavy Duty Output Bearings 18 <input type="checkbox"/> PR - Flange Pilot Removal 17 <input type="checkbox"/> FKM - Fluoro Rubber Seals 18 <input type="checkbox"/> SWV - Special Solid Shaft 18 <input type="checkbox"/> SM5 - Stainless Steel Output Shaft 18 </td> <td style="width: 50%;"> <input type="checkbox"/> OSG - Oil Sight Glass 19 <input type="checkbox"/> OA - Oil Expansion Chamber 25 <input type="checkbox"/> LL - Long Term Storage 19 <input type="checkbox"/> MDP - Magnetic Drain Plug 19 <input type="checkbox"/> ADP - Additional Drain Plug 19 </td> </tr> </tbody> </table>	Shaft/Mounting		- Footed 16 F - B5 Flange 17 • B5 Flange Diameter <input style="width: 100%;" type="text"/>	Z - B14 Flange 17 XZ - Foot/B14 Flange 17 XF - Foot/B5 Flange 17 • XF Flange Diameter <input style="width: 100%;" type="text"/>	Reducer Options		<input type="checkbox"/> VL - Heavy Duty Output Bearings 18 <input type="checkbox"/> PR - Flange Pilot Removal 17 <input type="checkbox"/> FKM - Fluoro Rubber Seals 18 <input type="checkbox"/> SWV - Special Solid Shaft 18 <input type="checkbox"/> SM5 - Stainless Steel Output Shaft 18	<input type="checkbox"/> OSG - Oil Sight Glass 19 <input type="checkbox"/> OA - Oil Expansion Chamber 25 <input type="checkbox"/> LL - Long Term Storage 19 <input type="checkbox"/> MDP - Magnetic Drain Plug 19 <input type="checkbox"/> ADP - Additional Drain Plug 19
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④										
	Input Shaft	NEMA Adapter	IEC	Integral Motors	Integral Premium Efficient Motors		Integral Intermittent Duty (60 min) Motors			
	W	N56C N140TC N180TC N210TC N250TC N280TC N320TC	IEC 63 IEC 71 IEC 80 IEC 90 IEC 100 IEC 112 IEC 132 IEC 160 IEC 180 IEC 200	63S/4 - 0.16hp 63L/4 - 0.25hp 71S/4 - 0.33hp 71L/4 - 0.50hp 80S/4 - 0.75hp	80LP/4 - 1hp 90SP/4 - 1.5hp 90LP/4 - 2hp 100LP/4 - 3hp 112MP/4 - 5hp 132SP/4 - 7.5hp 132MP/4 - 10hp	160MP/4 - 15hp 160LP/4 - 20hp 180MP/4 - 25hp 180LP/4 - 30hp 225RP/4 - 40hp 225SP/4 - 50hp	80L/4 - 1hp 90S/4 - 1.5hp 90L/4 - 2hp 100L/4 - 3hp 100LA/4 - 5hp 112M/4 - 5.4hp 132S/4 - 7.5hp 132M/4 - 10hp	160M/4 - 15hp 160L/4 - 20hp 180MX/4 - 25hp 180LX/4 - 30hp 200LX/4 - 40hp	Other Speeds Available	Other Speeds Available

Product Specifications

<p>Ratio</p> <input style="width: 100%;" type="text"/> :1 see pages 77 - 120 — OR — <p>Output Speed</p> <input style="width: 100%;" type="text"/> rpm see pages 123 - 136	<p>Mounting Position 22</p> <p> <input type="radio"/> M1 <input type="radio"/> M2 <input type="radio"/> M3 <input type="radio"/> M4 <input type="radio"/> M5 <input type="radio"/> M6 <input type="radio"/> Special _____ </p>		<p>Paint 66</p> <p> <input type="radio"/> No Paint (Standard) <input type="radio"/> Stainless Steel Paint <input type="radio"/> NSD+ (gray) <input type="radio"/> NSD+W (white) <input type="radio"/> NSD-X3 (gray) <input type="radio"/> NSD-X3W (white) <input type="radio"/> Special _____ </p>	<p>Lubricant 26</p> <p> <input type="radio"/> Standard <input type="radio"/> Synthetic <input type="radio"/> Food Grade <input type="radio"/> Other _____ </p>
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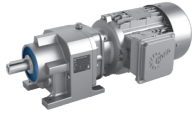
Shaft Diameter

Gearmotor Only Details

<p>Voltage & Frequency</p> <p> <input type="radio"/> 230/460V-60Hz <input type="radio"/> 575V-60Hz <input type="radio"/> 208V-60Hz <input type="radio"/> 400V-50Hz <input type="radio"/> 115/230V-60Hz, 1 ph. <input type="radio"/> Other _____ </p>	<p>Terminal Box Pos. 22</p> <p> <input type="radio"/> TB1 <input type="radio"/> TB2 <input type="radio"/> TB3 <input type="radio"/> TB4 </p>		<p>Conduit Entry Loc. 22</p> <p> <input type="radio"/> CE I * <input type="radio"/> CE II <input type="radio"/> CE III * <input type="radio"/> CE IV </p> <p>* Brakemotor</p>	
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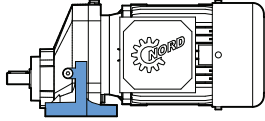
Mtg. Pos. M1 Shown

Mtg. Pos. M1 Shown

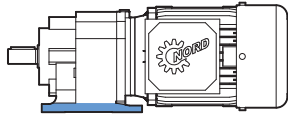


Examples of Available NORDBLOC.1® Units with Solid Shaft Design

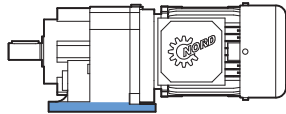
SK 071.1 - 71 S/4
NORDBLOC.1®
Single Stage



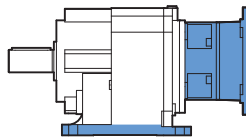
SK 172.1 - 71 S/4
NORDBLOC.1®
Two Stage



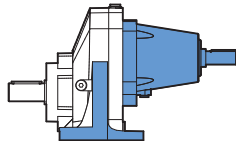
SK 373.1 - 71 S/4
NORDBLOC.1®
Three Stage



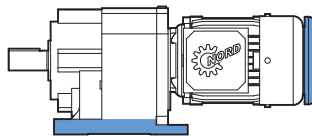
SK 572.1 - 140TC
NORDBLOC.1®
Two & Three Stage



SK 572.1 - W-Input
NORDBLOC.1®
2 Stage with
Solid input shaft

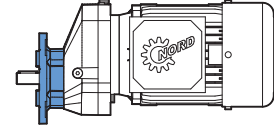


SK 672.1 - 80 S/4 RD
NORDBLOC.1®
Two Stage with
Electric motor and
Drip Cover

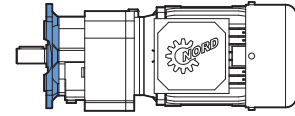


Examples of Available NORDBLOC.1® Units with Hollow Shaft Design

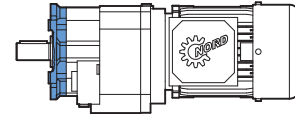
SK 071.1F - 71 S/4
NORDBLOC.1®
with B5 Flange
Single Stage



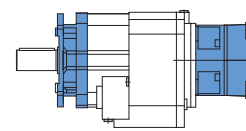
SK 172.1F - 90 S/4
NORDBLOC.1®
with B5 Flange
Two Stage



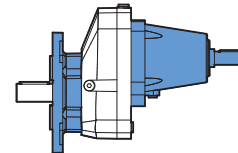
SK 373.1F - 71 S/4
NORDBLOC.1®
with B5 Flange
Three Stage



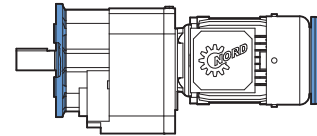
SK 572.1F - 140TC
NORDBLOC.1®
with B5 Flange
Two & Three Stage

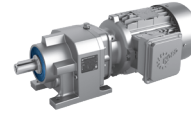


SK 572.1F - W-Input
NORDBLOC.1®
with B5 Flange
Two Stage with
Solid input shaft



SK 672.1F - 80 S/4 RD
NORDBLOC.1®
With B5 Flange
Two Stage with
Electric motor and
Drip Cover





Gearbox Selection

A number of factors are considered when selecting a gear unit, including gearbox rating, service factor, speed and speed variation, horsepower, thermal capacity, ratio, physical size, ambient conditions and cost. Below are some guideline steps to help aid in the gear unit selection.

Selection steps

1. Determine the speed and/or gear ratio
2. Determine the required power or torque
3. Determine Service Factor
4. Select the basic gearbox type and input
5. Determine the required mounting position
6. Select options
7. Checks – overhung load, thrust load, NEMA motor weight, thermal considerations, and other application considerations

1. Determine the speed and/or gear ratio

The first step in selecting a gear unit is determining the final output speed or speeds you need. This speed is normally described in revolutions per minute (rpm). This output speed or speeds is determined by the input speed to the gear unit divided by its gear ratio. Their relationship is described by the following formulas.

$$i \text{ (gear ratio)} = \frac{\text{Input speed [rpm]}}{\text{Output speed [rpm]}}$$

$$\text{Output speed [rpm]} = \frac{\text{Input speed [rpm]}}{i \text{ (gear ratio)}}$$

To specify a gear unit, you can identify either gear ratio needed or the output speed (rpm) if the input speed is known.

2. Power and Torque

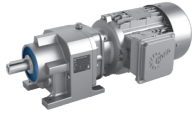
The second step for selecting a gear unit is the required power or torque needed to power the load. Torque in this catalog is normally expressed in pound-inches [lb-in].

$$\text{Power [hp]} = \frac{\text{Torque [lb-in]} \times \text{speed [rpm]}}{63025}$$

$$\text{Torque [lb-in]} = \frac{\text{Power [hp]} \times 63025}{\text{speed [rpm]}}$$

For a proper selection, please ensure that the motor or other prime mover can produce enough torque or power and that the gear unit has adequate torque or power capacity. You must also consider if the power or torque is specified at the input or output of the gear unit. The Helical-worm gear units have lower efficiency than in-line or bevel gear units, therefore helical-worm products efficiency may need to be considered in the selection.

To specify a gear unit you can identify your selection with either torque or power.



3. Service Factor or Service Class

In addition to power or torque, service factor must also be considered. A service factor is essentially the ratio of extra capacity in a gear unit compared to the power or torque that is needed to run that application. The goal of selecting a gear unit with extra capacity (service factor) is to provide adequate service life in operation.

One reason to apply a larger service factor is if a unit operates more hours per day. If a unit runs 24 hours per day it should normally have a higher service factor than a unit that runs 8 hours per day if you expect the same calendar life.

A second reason for applying a larger service factor is to cope with a more difficult application. Even if it takes the same power and speed to operate a rock crusher as it does a fan, the rock crusher needs a stronger gearbox (higher service factor) to give the same operating life as the gear unit powering the fan.

The following are four possible methods of service factor specification.

a. Customer or User Specification

Many customers will have their own service factor guidelines or specifications.

b. AGMA Service Factoring

American Gear Manufacturers Association (AGMA) publishes lists of recommended service factors for different applications. These service factor recommendations have been determined from the experience of many gear manufactures and are in AGMA standard 6010. See page 51 for additional detail.

c. AGMA Service Classes

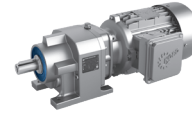
American Gear Manufactures Association (AGMA) has another method for selecting gear units service factors. AGMA standard 6009 lists many applications by a service class (I, II, III) with class I being the simplest applications and class III being the hardest. These application service classes are associated with a range of service factors by the following table.

AGMA Service Class	Service Factor
I	1.00 to 1.39
II	1.40 to 1.99
III	2.00 and above

In the gearmotors selection table each unit is also classified by an AGMA service class. See page 47 for additional detail.

d. NORD Mass Acceleration Service Factoring

NORD often uses a calculation based system to properly assign a service factor. This system considers hours of operation per day, the severity of the application and the number of times the equipment is cycled. See page 45 for additional detail.



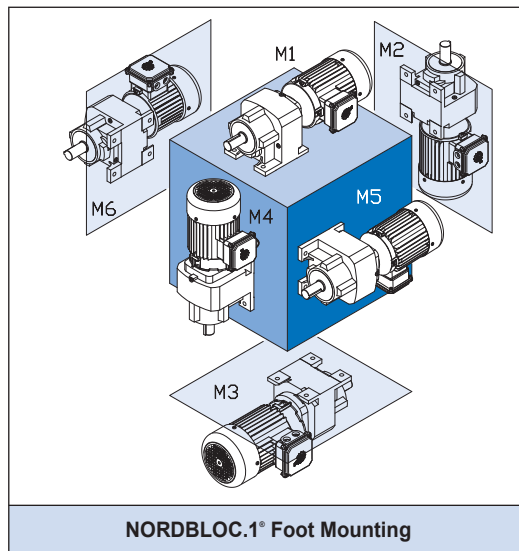
4. Gearbox Input

NORD's modular design allows for a number of different inputs to be added to our reducers including:

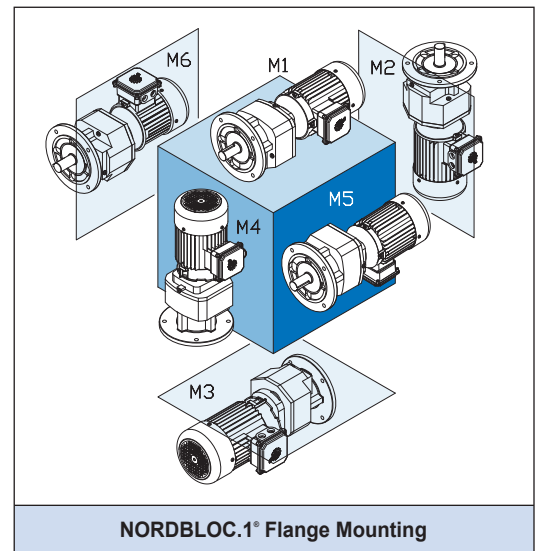
- Integral motor
- NEMA-C and IEC motor adapter
- Solid input shaft
- Servo motor adapter
- Scoop mount
- Motor mount platform

5. Mounting Position

The gearbox mounting position is an important and often overlooked specification. The mounting position determines how much oil the gear reducer requires, in addition to determining the position of the oil drain, oil fill and vent on the gear drive. NORD offers six basic mounting positions. If your application requires a variation from the six basic mounting positions, please contact NORD.



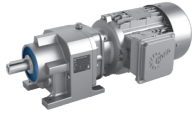
NORDBLOC.1° Foot Mounting



NORDBLOC.1° Flange Mounting

6. Options

NORD offers a number of mechanical, protective, and paint & lubrication options for our gear reducers & motors. Please see page 60 for gear unit options & refer to page 210 for motor options.



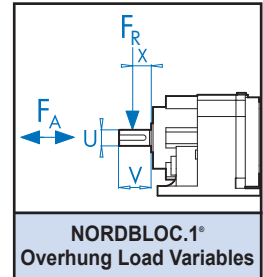
7. Checks

a. Overhung Load

An overhung or radial load exists when a force is applied at right-angles to a shaft beyond the shaft's outermost bearing. Pulleys, sheaves and sprockets will cause an overhung load when used as a power take-off. The amount of overhung load will vary, depending on the type of power take-off used and where it is located on the shaft.

Overhung load [FR] can be found in the gearmotor rating tables and input shaft overhung load ratings [FR1] can be found on pages 37 - 44. Overhung load capacities should not exceed the values in the table to ensure long bearing life. Overhung load capacities are to be applied at the midpoint of the shaft extension and without thrust loads.

To calculate overhung load see page 37.



b. Thrust Loads (Axial)

Loads that are directed towards or away from the gearbox along the axis of the shaft are called thrust or axial loads. Output shaft thrust capacity [FA] can be found in the gearmotor rating tables. Input shaft capacity [FA1] can be found on page 42. Thrust load capacities should not exceed the values listed in the tables to ensure long bearing life. Thrust load capacities are listed for pure axial loads with no overhung load. Contact NORD for combination loads or a more exact examination of the application.

c. C-face Motor Weight Limits

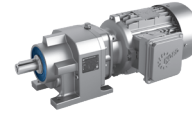
When mounting a motor to a NORD motor adapter it is important to consider the motor's weight. The following are tables that includes the maximum motor weight the NEMA or IEC adapters can support. If the motor exceeds the listed weight it must be externally supported. When a C-face mounted motor is externally supported care must be taken to ensure that the support system does not impose additional pre-loads on the motor adapter.

NEMA Motor Weight Limit

Motor FRAME	56C	143TC	145TC	182TC	184TC	210TC	250TC	280TC
Max Motor Weight [lb]	66	88	110	130	175	220	440	550

IEC Motor Weight Limit

Motor FRAME	63	71	80	90	100	112	132	160	180	200
Max Motor Weight [lb]	55	66	88	110	130	175	220	440	550	770



General Warnings & Cautions

Applications with risk of personal injury should be reviewed together with NORD. Examples include hoists, lifts or other applications where people may be at risk.

Vertical Reducer Mounting Positions

Gear units and gear motors may be mounted in positions with vertical shafts. For these mounting positions, the gear units are filled with increased amounts of lubricant. In some instances they may also be equipped with specially sealed, grease lubricated bearings. Gear units with vertical shafts have increased oil-splashing-losses resulting in a higher temperature rise during operation.

Consult NORD for determination of the thermal power capacity if the gear reducer is mounted as follows:

- In the reducer in upright or standing mounting position (M2 or M4).
- Right-angle reducer with vertical-down or vertical-up output-shaft mounting position (M5 or M6).

Page 22 displays the mounting positions.

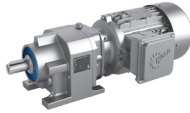
Vertical Motor or Vertical Input Shaft

Gear reducers mounted in M4 position or with the motor or input shaft vertical-up are designed with a higher oil level in order to assure the lubrication of the first stage gearing. These operating conditions result in increased oil churning or splashing losses and additional heating inside the gear unit.

For these applications it is critical to consider whether or not an Oil Expansion Chamber (OA) is required. Please consult page 64.

Ventilation

Gear units (except for SK0182NB, SK0282NB and SK 1382NB) typically include a vent to compensate for the difference in air pressure between the interior of the gear unit and its environment. The standard open vent and optional pressure vent are sealed for delivery with a transportation plug that must be removed prior to the reducer's activation.



NEMA and IEC Adapters

NEMA/IEC adapters have an additional shaft coupling and additional bearing seats compared to integral motors. This means that there are higher no-load losses with NEMA or IEC adapters. We recommend mounting the motor directly, since it offers technical and cost advantages.

NEMA and IEC adapters used in hoist, lifts and other applications with danger of personal injury should be reviewed together with NORD.

NEMA C-Face Adapter Capacity

The NEMA adapters are designed to handle the torques produced by the standard NEMA power assignment at 4 pole (1800 rpm) motor speeds. If a larger motor power is used than the power below NORD should be consulted. Also if a NEMA adapter is being used for other than an AC induction motor NORD should be consulted.

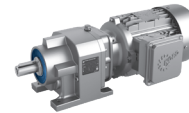
Adapter	Max Power [hp]	Adapter	Max Power [hp]
56C	1	210TC	10
140TC	2	250TC	20
180TC	5	280TC	30

Overload Conditions

Loads that exceed the gearbox ratings are considered overloads. An overload may either be momentary or periodic in duration, as well as quasi-steady or vibratory in nature. The load magnitude and the number of stress cycles need to be considered and analysis is required to prevent low-cycle fatigue or yield stress failure.

Refer the following load conditions to the factory:

- The peak momentary or starting load exceeds 200% percent of gear unit's rated capacity.
- Frequent load reversals occur and develop high peak torques during the changes in load direction.
- Heavy repetitive shock loads may occur.
- When high-energy loads must be absorbed and high peak torques develop, such as when stalling conditions occur.



Oversized Prime Movers

High torque motors or oversized prime movers are sometimes needed to overcome high energy loads. Recommended operating service factors do not cover instances where oversized prime movers are required. These applications should be reviewed by the factory.

Variable Speed or Multi-Speed Applications

Gear reducer ratings in this catalog are based upon single speed operation of the gear unit. When selecting gear drives for multi-speed or variable speed applications, determine the speed at which the greatest torque is developed and make the initial selection of the gear drive on that basis.

The following information is essential in order for NORD to verify adequate oil distribution, thermal capacity and whether or not there is any need for an oil distribution system or special cooling options:

- Indicate the operating speed requirements and gear ratio.
- Provide the minimum and maximum speeds along with the speed duration cycles.

NORD Gear specifies different oil levels for various gear reducer sizes, speeds, ratios and mounting positions; If one intends to operate an existing gear drive at a different speed from those shown on the nameplate, the full application and nameplate information must be reviewed by the factory.

Brake Equipped Applications

When a brake is either supplied between the motor and the prime mover or included with a motor, the gear drive must be selected by either the brake's rating or the highest equivalent input power, whichever is greater. If the brake rating is higher than 200% of the rated gear unit capacity or if the brake is located on the output shaft of the gear drive, the application should be reviewed by the factory.



Protection against
Moisture

Wet or Damp Outdoor Installation

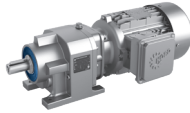
Special seals and anti-corrosion measures are required for installation outdoors, in wet or damp environments or in tropical climates.

Exposure to Solar Heating

If a drive is exposed to radiant or solar heating, while operating in the sun at ambient temperatures of 104°F (40°C) or higher, then special protection measures are recommended. This protection can consist of a canopy over the gear drive or reflective paint on the gear drive. If neither is possible, a heat exchanger or other cooling device may be required.



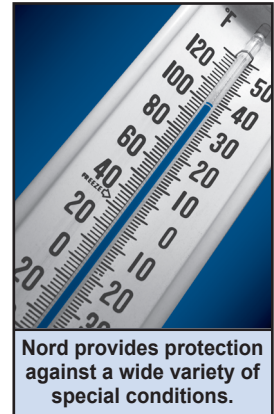
Protection against
Solar Heating



Special Conditions

Consideration must be taken during unit selection when special environmental or extraordinary conditions are present during transportation, storage or operation. Please consult NORD for assistance. Special conditions may include (but are not limited to):

- Exposure to aggressive corrosive materials (contaminated air, gasses, acids, bases, salts, etc.).
- Exposure to very high relative humidity (installed outside, in damp rooms, or used in tropical environments).
- Direct contact between the motor and liquid.
- Material build-up on the gear unit or motor (dirt, dust, sand, etc.).
- High atmospheric pressure.
- Radiation exposure.
- Extreme high or low temperatures or large temperature fluctuations.
- High vibration, rapid accelerations or decelerations, shock or impact.
- Other abnormal conditions



Special Applications

Severe operating conditions typically apply for gear drive applications such as agitators, mixers, ventilators, fans, and cooling towers.

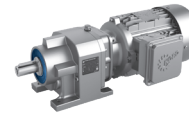
Often these applications may involve one or more of the following operating conditions:

- 24-hour continuous operation at or near full-load motor power or full-load torque.
- A large inertia or moving mass at the reducer output with a small gear ratio generating very high load conditions at the reducer's input.
- Vibrations may be common, such as those found when an external drive chain or belt is used.
- A direct gear drive connection to a mixer or fan shaft that produces high oscillating and bending movements as well as high load forces to the reducers drive shaft and internal bearings.
- Vertical reducer configuration is needed & special reducer options are often necessary.
- Outdoor installation (i.e. humidity and aggressive media, as well as sudden changes in temperature with the possibility of condensation).
- A high degree of environmental protection is required (special sealing, biodegradable oil, special maintenance and servicing needs, low noise, etc.).

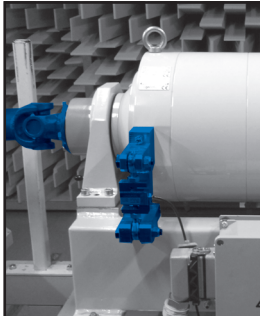
NORD has experience with many unique applications and has developed a package of design options in order to meet these requirements. Please consult NORD when selecting a gear unit for special applications.

Storage Before Installation

The gear units and motors should be stored in a dry area before they are to be installed. Special measures are required for longer storage. Please request long term storage instructions from NORD Gear or from the NORD web site.



Gear Reducer Ratings



A torque dynamometer set up for operation in our test facility

The permissible continuous power limit of gear reducers is limited by both the mechanical rating and the thermal rating. The mechanical rating depends upon the material strength of the gear reducer's gears, bearings, housing, shafts, etc. The mechanical input power limit to the reducer is also a function of the mechanical power rating divided by the relevant reducer service factor.

The thermal rating or thermal limit depends upon the amount heat generated within the reducer and is influenced by a variety of factors including:

- Churning or splashing losses in the lubricant which depend upon reducer type, ratio, input style, mounting position or oil fill-level, and the circumferential travel velocities of the gear wheels.
- The actual speed and load conditions. These factors determine load-dependent losses in the gears and frictional losses in the gears, bearings and seal areas.
- Ambient Conditions:
 - Ambient Temperature.
 - Amount of free air circulation around the drive.
 - Possible near-by heat sources.
 - Heat dissipation or the ability of the reducer to transfer heat through the housing, shafts, and the mating sub-structure or mounting surface.

Observing the Reducer's Thermal Limit

When to Contact NORD

Through computer program analysis NORD can evaluate application conditions and the impact they have on a reducer's thermal capacity.

When applying helical in-line, Clincher™ shaft mount, & helical-bevel gear units of case sizes 6 & larger (SK62, SK6282 and SK9072.1 and larger), consult NORD if any two or more of the following conditions apply:

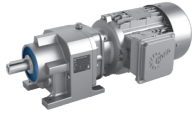
- Gear ratio, $i_{total} \leq 24:1$ or $\leq 48:1$ for helical-bevel units
- Input power, $P_1 \geq 60$ hp (45 kw)
- Input speed, $n_1 > 1800$
- Vertical positioning (mounting position M2 or M4)
- Input configuration: NEMA C-face, IEC, servo adapter or solid-shaft input (Type-W)
- Elevated ambient temperature $\geq 86^\circ$ F (30° C)

Advise NORD of any special application considerations:

- Confined space or limited air circulation
- Exposure to other near-by radiant heat sources
- Dirty or dusty environments
- High altitude operation $> 3,280$ ft (1000 m) a.s.l.



Special considerations may be taken for operation in extreme thermal environments



Dangers of Reducer Overheating

The following problems may result when a reducer’s thermal capacity or maximum oil sump temperatures are exceeded:

- Lubrication oxidation, breakdown & deterioration.
- A decrease in lubrication viscosity & film thickness.
- Loss of critical bearing and gear clearances required for proper lubrication.
- Increased contact pressures & increased operating temps. in the critical load zones of the gearing and bearings.
- An increased possibility for metal-to-metal contact and premature component wear.
- A significant reduction in the lubricant’s ability to prevent scuffing, pitting, and in extreme cases galling or welding.

Maximum Oil Sump Temperature Limit

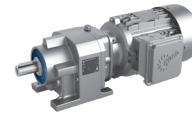
To prevent reducer overheating, the reducer’s maximum oil sump temperature limit must not be exceeded for prolonged periods of operation (up to 3 hours continuous operation, depending upon reducer size).

Oil Type	Maximum Oil Temperature Limit	
	NORD	AGMA 9005-D94
Mineral	80-85 °C (176-185 °F)	95 °C (203 °F)
Synthetic	105 °C (220 ° F)	107 ° C (225 ° F)

Measures to Expand the Application Range

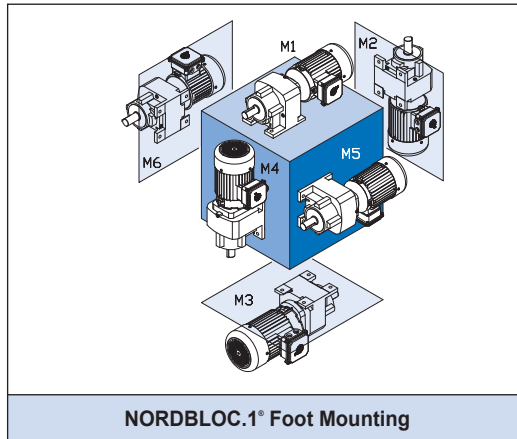
There are a variety of measures that may be taken in order to protect against thermal overload and expand the application range of the gear reducer. Common examples include the following:

- Recommending a change in lubrication viscosity and/or a specific synthetic lubricant type.
- Applying high-temperature seals.
- Increasing air flow around the gear unit.
- Protecting the reducer from high heat sources.
- Considering an integral motor instead of the bolt-on input assembly covers. In many cases the motor fan will substantially increase air-flow around the gear unit.
- Add an Oil Expansion/Overflow Chamber (Option “OA”)

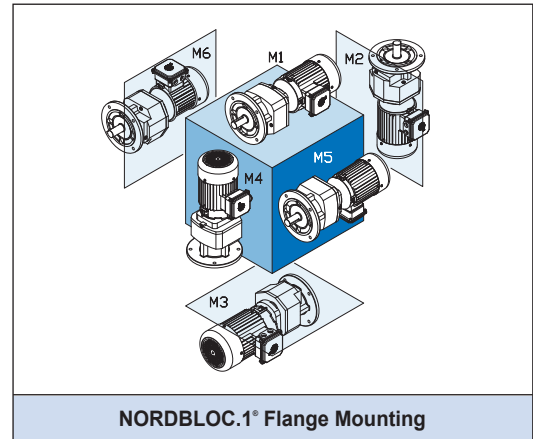


Mounting Positions

The reducer mounting position determines the approximate oil fill level and the appropriate vent location. In some cases mounting position may dictate possible variation in final reducer assembly. If considering any mounting positions that are not shown as catalog-standard options, it is critical that the customer consult with NORD prior to ordering.



NORDBLOC.1® Foot Mounting



NORDBLOC.1® Flange Mounting

Mounting Configuration

NORD provides gearmotors, speed reducers and motors that can be configured very flexibly to suit customer needs. When ordering it is beneficial that the drive be specified exactly the way you want it delivered.

Mounting Positions

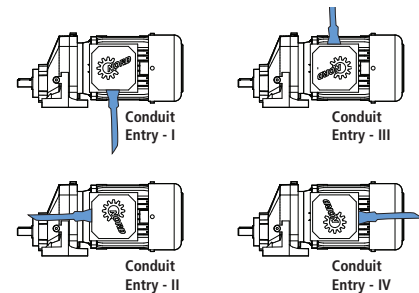
Basic mounting

- M1
 M2
 M3
 M4
 M5
 M6

Terminal box location

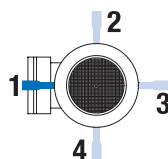
- Terminal Box Pos. 1
 Terminal Box Pos. 3
 Terminal Box Pos. 2
 Terminal Box Pos. 4

Conduit entry location

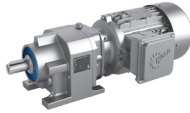


- Conduit Entry - I*
 Conduit Entry - III*
 Conduit Entry - II
 Conduit Entry - IV

Brake motor with hand release lever



- Hand Release Lever Pos. 1*
 Hand Release Lever Pos. 3
 Hand Release Lever Pos. 2
 Hand Release Lever Pos. 4
 * Standard position



ATEX Definitions

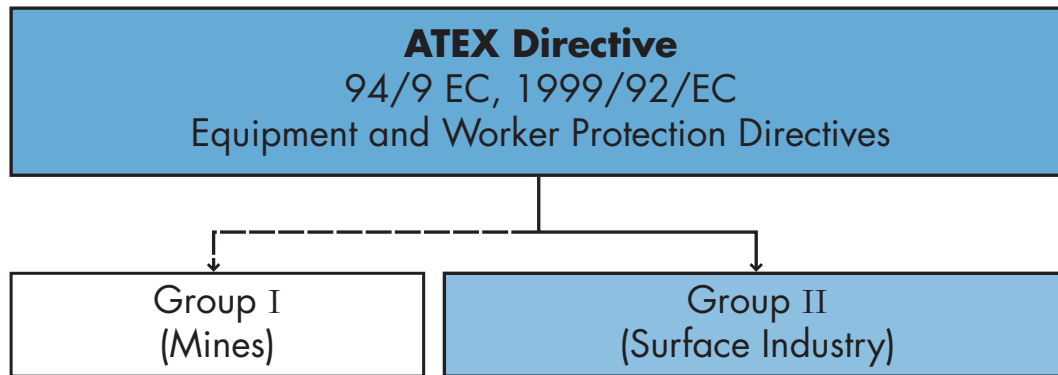
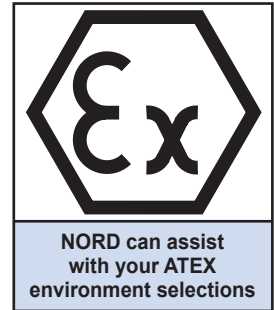
Group

The ATEX directive distinguishes between two equipments groups. Group I applies to equipment intended for use in mines and Group II applies to all other areas or the surface industry. NORD offers drives for Group II.

Category

The equipment category distinguishes the level of equipment protection needed and if the protection is for gas-air or dust-air mixtures. ATEX distinguishes three category levels; 1, 2 and 3 based upon the duration of exposure to a potentially explosive atmosphere with category 1 being the most dangerous.

Following the category number is a letter G for gas or D for dust. If dust-air hazards are present, the dust must be classified as electrically conductive or electrically non-conductive. NORD offers drives for categories 2G, 2D, 3G and 3D for both conductive and non-conductive dust areas.

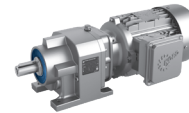


Zones

ATEX guideline 1999/92/EC requires plant operators and approved authorities to classify places at the workplace where explosive atmospheres may occur into hazardous or non-hazardous areas. Hazardous areas are further divided into zones. Atmospheres with gas-air mixtures are divided into zones 0, 1, and 2 with zone 0 being the most hazardous. Atmospheres with dust-air mixtures are divided into zones 20, 21, and 22 with zone 20 being the most hazardous.

The relationship between workplace Zones and equipment Categories is defined in the table below.

Zone (workplace)	Category (equipment)	Atmospheric Hazard	Definition	Exposure (hrs/year)	Does NORD offer drives?
0	1G	Gas	Explosive atmosphere is present continuously or frequently due to malfunctions.	> 1000	No
20	1D	Dust			
1	2G	Gas	Explosive atmosphere is present occasionally or due to anticipated malfunctions.	10 - 1000	Yes
21	2D	Dust			
2	3G	Gas	Explosive atmosphere is unlikely to occur in normal operation & if it occurs, it will be for a short period of time.	< 10	Yes
22	3D	Dust			



Production Type

Following the equipment category in the explosion protection declaration is the lower case letters that indicate the exact protection type of the equipment. Depending on the zone and equipment category different solutions are possible.

Motors:	
Flameproof enclosure	d
Increased safety	e
Non-sparking	n

Gear Units:	
Constructional safety	c
Liquid immersion	k

Flameproof Enclosure “EEx d”

Flameproof motors are designed with stronger walls and specific ignition gaps to prevent internal explosions from transmitting to the surrounding atmosphere. Flameproof motors are frequently used for inverter operations, brakes, encoders and when a very high degree of safety is required. Specifically flameproof motors:

- Have housings that can withstand internal explosion pressures
- Have ignition gaps designed to dissipate the pressure arising from an internal explosion
- Are designed so that generated hot gases are significantly cooled by the time they escape the motor body so they do not potentially ignite the potentially explosive environment

Increased Safety “EEx e”

Increased safety motors are designed with higher quality insulation and larger clearances between rotating parts. This prevents sparking as well as high surface and internal temperatures even during motor malfunction. Increased safety motors are less expensive than flameproof motors, but use special windings that generally result in lower performance than flameproof motors.

Non-Sparking “EEx n”

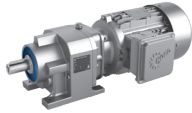
Non-sparking motors resemble increased safety “e” motors, but do not achieve the same protection level. They do however have the same power output of flameproof motors and can be used in conjunction with approved inverters.

Constructional Safety “EEx c”

Construction safety for gear units takes into account measures including ignition protection from hot surface temperatures, sparks, moving parts and adiabatic compression even under expected gear unit failures. NORD provides gear units with constructional safety protection.

Liquid Immersion “EEx k”

Liquid immersion protection type “k” ensures partial or complete submersion in a protective fluid or constant wetting of a potentially combustible surface.



ATEX Temperature Specification

In a dust-air mixture surface temperature is a critical thermal factor, therefore the maximum surface temperature is declared based upon the dust type that is present. The goal is to keep surface temperatures below the smoldering and ignition temperature of a dust-air mixture. NORD displays a maximum surface temperature on the reducer nameplate, typically 125°C.

Gas-air mixtures are grouped into temperature classes. The following table shows the maximum surface temperature and temperature ignition ranges and the for each temperature class.

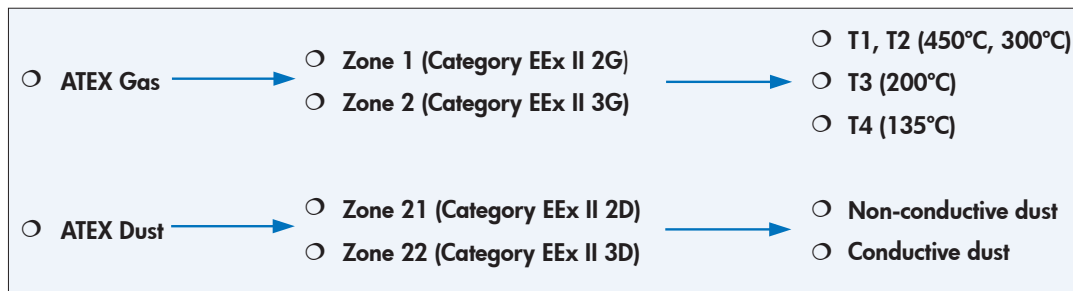
Temperature Class	Maximum Surface Temp. °C	Ignition Temperature °C
T1	450	> 450
T2	300	300 ... 450
T3	200	200 ... 300
T4	135	135 ... 200
T5*	100	100 ... 135
T6*	85	85 ... 100

* Not satisfied with AC gear drives

ATEX unit Selection

Since the selection of gear units for hazardous locations requiring ATEX certification can be somewhat confusing, NORD has simplified the process.

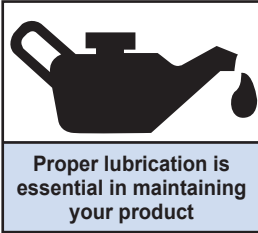
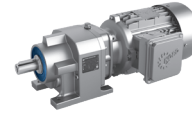
1. Select a gear unit based upon power, speed and service factor
2. Contact NORD to request the ATEX inquiry form. The form is also available at nord.com.
3. Fill in the ATEX inquiry form
 - Select the hazard, Gas or Dust
 - Select the zone
 - Select the temperature class (for gas) or select electrically conductive or non-conductive for dust hazards



4. Return the completed ATEX inquiry form found online at
5. NORD engineers will review your selection to ensure it conforms to ATEX guidelines
6. If you selection is approved, customer service will quote the unit. If not, NORD engineers will make additional recommendations.

ATEX Documentation

ATEX applications require more documentation than gear drive equipment used in non-hazardous locations. Each ATEX certified NORD gear drive undergoes verification to ensure it will safely operate within the limits of the ATEX specification. NORD stores and supply this document to the customer upon request. In addition, ATEX specific operation & maintenance instructions are included with each equipment delivery in the language of the equipment builder and end user.



The Importance of Proper Lubrication

Proper gearbox lubrication is essential in order to reduce friction and component wear, and protect against corrosion and rust. Gear lubricants reduce heat and wear by inserting a load-sharing “protective fluid film” between mating parts and preventing direct metal to metal contact. Properly selected lubricants will operate under various film conditions, improve heat transfer, optimize reducer efficiency, absorb shock loads, reduce noise, inhibit foaming, and separate water readily.

Design Considerations

Along with many other factors, the gear designer must consider the type of gearing (helical, bevel, worm, etc.), the gear load and speed conditions, and the expected operating oil temperatures. These factors help determine a generally suitable oil category, a desired additive package, preferred base-oil type, and oil viscosity.

It is important that the consumer be aware of these many design factors before making any changes in the critical areas (oil category, base-oil type, viscosity, etc.) One should consult their preferred lubrication supplier or NORD Gear when questions arise.

Gear Oil Types, Categorized by Base Oil

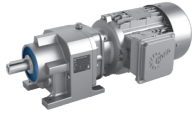
Mineral Oil with an EP Additive (DIN 51517, Type CLP)

High performance mineral gear oils are carefully engineered and manufactured to improve aging characteristics, minimize friction, offer good wear protection, provide corrosion and oxidation resistance, minimize foam, and separate water. Mineral gear oils are classified as API Group I or II oils, depending upon viscosity.

The standard NORD mineral gear oil has an extreme pressure (EP) additive ISO Viscosity Grade EP220 (AGMA 5 EP) and is generally acceptable for helical and helical-bevel gear units. Good quality mineral oil should have the ability to operate at moderate sump temperatures (up to 80-85 °C) without losing viscosity or thickness. A minimum viscosity index (VI) of 93 or higher is suggested. The oil must also have good film strength to handle shock loads, high torque, and start-up conditions. A minimum FZG Scuffing Load Stage 12 is desirable.

Advantages:

- Most economical of all the gear oil types.
- Offers good compatibility with shaft seals, gaskets, paint finishes, etc.
- Offers good corrosion and oxidation protection.
- Effectively reduces internal friction and wear.



Synthetic Oils

Synthetic gear oils are suggested when mineral gear oils have reached their performance limit or when they no longer meet certain application requirements. NORD may recommend synthetic oil for any one of the following conditions:

- Severe duty applications or when gears are exposed to frequent starts and stops, high-load or shock.
- For applications in low or high temperature service.
- To extend oil service interval requirements.
- To eliminate the necessity for seasonal oil changes.
- To extend service life of factory-sealed or maintenance-free gear units.
- To take advantage of performance benefits: shear resistance, low traction coefficient, reduced internal friction, improved lubricity, reduced operating temperatures, improved gear efficiency, etc.

Advantages:

Compared to mineral oils, synthetic oils provide several performance advantages including:

- Ability to operate at higher temperatures without losing viscosity or thickness, due to a much improved viscosity index.
- Improved low-temperature stability due to a lower pour point
- Increased oil change intervals due to superior oxidative and wear resistance
- Lower tendency to form residues and increased resistance to foaming.
- Other benefits may include: very good shear resistance, low traction coefficient, reduced internal friction, improved lubricity, reduced operating temperatures, improved gear efficiency, and extended component life and wear protection.

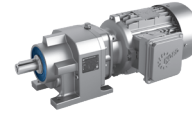
When application conditions warrant the use of synthetic oil, NORD may suggest a particular type of synthetic oil, depending upon the gear unit type and the application.

Synthetic Hydrocarbon/Polyalphaolefin Oil (DIN 51517, Type CLP-HC)

Synthetic Hydrocarbons (SHC) or Polyalphaolefin (PAO) synthetic base oils offer good miscibility with mineral base oils and are very readily available. SHC/PAO oils are classified as API Group IV oils. They can be formulated with or without anti-wear (AW) or extreme pressure (EP) additives. They can also be formulated for acceptance in food-grade applications.

Advantages:

- Higher viscosity index and therefore greater high-temperature stability than mineral oil.
- Better low-temperature stability and lower pour point than mineral type gear oils
- High surface tension and lower tendency to foam compared to mineral oil, and water-soluble polyglycol gear oils.
- Compatible (miscible) with mineral oil.
- Better water separability demulsibility than PG oils.



Polyalkylene Glycol or Polyglycol Synthetic Oil (DIN 51517, Type CLP-PG)

Polyalkylene glycol or polyglycol (PAG or PG) synthetic gear oils are made readily available through many lubrication suppliers. PG oils are classified as API Group V gear oils. They can also be formulated for acceptance in food-grade applications.

PG gear oils possess extremely low traction coefficients and a viscosity index higher than any of the other synthetics (often greater than 220 VI), resulting in excellent heat resistant, shear stability, and natural anti-wear properties.

Typical PG gear oils are formulated with a 1:1 or higher ratio of ethylene oxide to propylene oxide (50:50 or 60:40 is common); this makes PG gear oils water soluble, providing them with very good corrosion resistance even when water is present in concentrations that are higher than what is normally allowed.

Advantages:

- PG oils offer the highest viscosity index of any other synthetic resulting in excellent heat resistant, shear stability, and superior natural anti-wear properties without requiring EP-additives.
- PG gears oils minimize internal friction and often result in improved gear efficiency.
- PG oils have significantly higher film strength than mineral and SHC/PAO oils and out perform these oils at higher operating oil temperatures (approaching 80°C or higher).



CAUTION



Polyglycol (PG) oils are not miscible with other oil types and should never be mixed with mineral oil, hydrosynthesized synthetic or PAO synthetic oils.

Food-Grade Lubricants

Food-grade lubricants should be manufactured in compliance with FDA 212 CFR 178.3570 and should either satisfy the former 1998 USDA Guidelines as an H1 lubricant or currently qualify as a NSF-H1 lubricant. Please consult with lubrication manufacture for more information or visit www.nsf.org

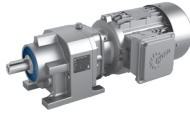
H1 food grade oil can only contain additives which appear on the FDA “approved list” for food safe compounds. H1 oils are generally absent of common zinc-based AW additives, and sulfur-phosphorus based, EP chemistries, commonly found in many industrial gear oils. Food manufactures control risk and liability by following detailed guidelines outlined by the HACCP (Hazard Analysis and Critical Control Point) program, which includes food-grade H1 lubricants. Food grade H1 lubricants may be formulated as highly refined mineral oils (white oils), SHC/PAO synthetic oils or PG synthetic oils.

The highly refined nature of good-quality food-grade white-oils provides good long-term oxidative stability and in most cases adequate lubrication under high-load (boundary) conditions. So long as food-grade white oils meet the minimum anti-wear requirements of the normally specified non-food grade oil, they are often acceptable. Both food-grade white oils and PAO’s have an inherent “purity” and absence of polar compounds, making them better than the average mineral oil or even PG oil in terms of demulsibility (water seperability).

Advantages:

Compared to food-grade white-oils, food-grade synthetic PAO or PG oils typically provide:

- Better wear and oxidation resistance.
- Improved high-temperature characteristics.
- Better cold-temperature behavior.



The Importance of Oil Viscosity

Viscosity or the oil's resistance to shear under load, is often considered the single most important property of any gear oil.

NORD Gear Designers have selected the most appropriate ISO viscosity grade of oil, for each type or class of gear reducer. Gear oil viscosity is selected by assuming typical ambient conditions, at rated speed and load conditions.

Important Considerations:

- The correct viscosity selection helps provide proper lubrication and assures that a minimum film thick-ness is maintained between interacting surfaces.
- The degree to which viscosity changes with temperature or the viscosity index, varies from oil to oil, and depends upon the type of lubricant and additive agents used.
- Selecting too low of a viscosity can result in mixed-boundary (partial metal-to metal contact) or boundary lubrication (full metal-to-metal contact) conditions, increasing internal friction heat build-up and wear.
- Selecting too high of a viscosity results in increased churning and squeezing losses in the load zone and excessive heat (especially when peripheral gear speeds are high); Ultimately, this causes the oil temperature to rise and the viscosity to go down, decreasing the effectiveness of the lubricant.

Considering an Oil Viscosity Change

There are three primary reasons to consider a lubrication viscosity change as follows:

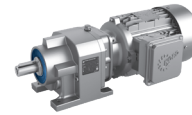
1. Low temperature gear oils should be selected so that the pour point is at least 9°F (5°C) lower than the expected minimum ambient temperature. In extreme cases, consider a lower ISO Viscosity rating and test the critical performance of the gear box under cold start-up.
2. High temperature applications may require an increase in the lubricants viscosity to assure proper lubrication conditions in the critical load zones of the gear unit. NORD also recommends switching to synthetic oil if oil sump temperatures exceed 176-185 °F (80-85 °C).
3. In cases of extreme load conditions, gear pairs and antifriction bearings may be more susceptible to scuffing wear. In these operating conditions, it may be beneficial to consider an increased lubrication viscosity and/or lubrication with improved antiwear additive packages.

NORD recommends that the user consult with their primary lubrication supplier when considering changes in oil viscosity.

Maximum Oil Sump Temperature Limit

To prevent reducer overheating, the reducer's maximum oil sump temperature limit must not be exceeded for prolonged periods of operation (up to 3 hours continuous operation, depending upon reducer size).

Oil Type	Maximum Oil Temperature Limit	
	NORD	AGMA 9005-D94
Mineral	80-85 °C (176-185 °F)	95 °C (203 °F)
Synthetic	105 °C (220 ° F)	107 ° C (225 ° F)



Lubrication Types

Proper gearbox lubrication is essential in order to reduce friction, heat, and component wear. Lubricants reduce heat and wear by inserting a protective “fluid boundary” between mating parts and preventing direct metal to metal contact. Lubricants also help prevent corrosion and oxidation, minimize foam, improve heat transfer, optimize reducer efficiency, absorb shock loads and reduce noise.

Mounting position not only determines the proper fill-level but may also have some effect on final reducer assembly. If considering any mounting positions that are not shown as catalog-standard options, it is critical that the customer consult with NORD prior to ordering. Unless otherwise specified, NORD supplies most all gear units (*) factory-filled with the standard lubrication type and the appropriate amount of lubricating oil.

Standard Oil Lubricants

ISO Viscosity	Oil Type	Ambient Temperature Range	Manufacturer Brand/Type	Notes
VG220	MIN-EP	0 to 40°C (32 to 104°F)	Mobilgear 600XP220	⬇️Ⓚ
	PAO-EP	-35 to 60°C (-31 to 140°F)	Mobil SHC Gear 220	⬇️Ⓛ
	FG	-5 to 40°C (23 to 104°F)	Fuchs FM220	⬇️

Optional Oil Lubricants

ISO Viscosity	Oil Type	Ambient Temperature Range	Manufacturer Brand/Type	Notes
VG460	PAO-EP	-35 to 80°C (-31 to 176°F)	Mobil SHC Gear 460	-
	FG-PAO	-35 to 80°C (-31 to 176°F)	Mobil SHC Cibus 460	-
VG220	FG-PAO	-35 to 60°C (-31 to 140°F)	Mobil SHC Cibus 220	⬇️
VG150	PAO-EP	-35 to 25°C (-31 to 77°F)	Mobil SHC Gear 150	-

Grease Options (applied to greased bearings and seal cavities)

NLGI Grade	Grease Thickener	Grease Base Oil	Ambient Temperature Range	Manufacturer Brand/Type	Notes
NLGI 2	Li-Complex	MIN	-30 to 60°C (-22 to 140°F)	Mobil Grease XHP222	⬇️Ⓚ
	Li-Complex	PAO	-40 to 80°C (-40 to 176°F)	Mobil / Mobilith SHC 220	⬇️Ⓛ
	Polyurea	FG-PAO	-30 to 80°C (-22 to 176°F)	Mobil SHC Polyrex 222	⬇️

⬇️ Stocked Lubricants

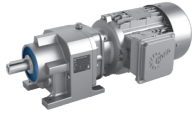
- Ⓚ Standard product on serviceable gear units
- Ⓛ Standard product on maintenance free gear units
- ⬇️ Standard product on gear units ordered with food-grade or synthetic polyalphaolefin oils.

Oil Formulation Codes

MIN-EP	Mineral Oil with EP Additive
PAO	Synthetic Polyalphaolefin Oil
PAO-EP	Synthetic Polyalphaolefin Oil with EP Additive
FG	Food-Grade Oil
FG-PAO	Food-Grade, Synthetic Polyalphaolefin Oil

⚠️ IMPORTANT NOTES ⚠️

- Food grade lubricants must be in compliance with FDA 212 CFR 178.3570 and qualify as a NSF-H1 lubricant. Please consult with lubrication manufacture for more information.
- When making a lubrication change, check with the lubrication supplier to assure compatibility & to obtain recommended cleaning or flushing procedures.
- Do not mix different oils with different additive packages or different base oil formulation types. Polyglycol (PG) oils are not miscible with other oil types and should never be mixed with mineral oil, or Polyalphaolefin (PAO) oil.
- Please Consult NORD if considering cold-temperature oils below an ISO Viscosity VG100 or lower.

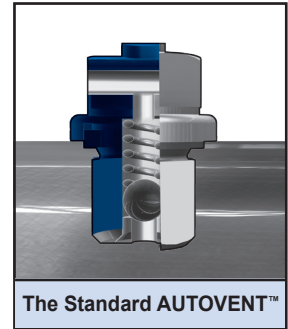


Ventilation

Most gear reducers are equipped with a vent which helps compensate for air pressure differences between the inner space of the gear unit and the atmosphere.

The spring-pressure vent (AUTOVENT™) is commonly supplied and factory-installed. Normally open vents may also be supplied as an option; normally-open vents are closed upon delivery in order to prevent oil leakage during transport. When normally open vents are supplied, the sealing plugs must be removed prior to commissioning the reducer.

Prior to reducer start-up, it is important to check the maintenance manual to verify that the vent is properly located with respect to mounting position.



Mounting Position

The reducer mounting position determines the approximate oil fill-level and the appropriate vent location. In some cases mounting position may dictate possible variation in final reducer assembly.

Specific NORDBLOC®.1 gear units mounted in the M4 position require an oil expansion chamber (option OA). More information about this option may be found on page 64.

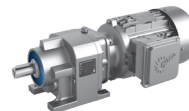
If considering any mounting positions that are not shown as catalog-standard options, it is critical that the customer consult with NORD prior to ordering.

Oil Fill Quantities

Oil fill quantities shown in the catalog or maintenance instructions are approximate amounts. The actual oil volume varies depending upon the gear ratio. Prior to commissioning the reducer, the oil-fill level should be checked using the reducer's oil-level plug. It may be necessary to drain excess oil or add additional oil.

Oil Expansion Chamber

NORD strongly recommends the use of an oil expansion chamber when the motor is mounted vertical-up, when the reducer mounting position is M4 or when it meets the criteria displayed in the options section on page 64



Lubrication Replacement

If the gear unit is filled with mineral oil, the lubricant should be replaced at least after every 10,000 operating hours or after every two years. If the gear unit is filled with synthetic oil, the lubricant should be replaced at least after every 20,000 operating hours or after every four years.

Often gear reducers are exposed to extreme ambient conditions, hostile environments, wet conditions, or dirty and dusty operating areas. Especially in these situations, it is important to change the reducer lubricant more often than what is suggested as a typical guideline.

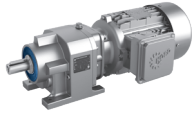
The Importance of Routine Oil Analysis

Routine oil analysis, sound lubrication practices, and good tracking of oil performance trends as related to specific equipment, will help establish proper lubrication maintenance and change-out intervals.

To maximize equipment reliability, NORD Gear generally recommends a condition-based lubrication maintenance program. One may take exceptions to this general recommendation on sealed-for-life or maintenance-free gear units or smaller and less costly gear units. In these instances, the replacement cost of the gear unit is often small compared to the costs associated with this type of oil analysis program.

NORD suggests replacing the gear oil if oil analysis indicates any of the following:

- Viscosity has changed by approximately 10% or more.
- Debris particles (silicon, dust, dirt or sand) exceed 25 ppm.
- Iron content exceeds 150-200 ppm.
- Water content is greater than 0.05% (500 ppm).
- Acid number tests indicate a significant level of oxidative break-down of the oil and a critical reduction in performance.



NORDBLOC.1[®] Helical In-Line footed lubrication

Unless otherwise noted below, the following NORD Gear reducers are shipped from the factory with a pre-determined oil fill level in accordance to the specified reducer size and mounting position. For additional information, please refer to the “Oil Plug & Vent Locations” documentation for your gear unit.

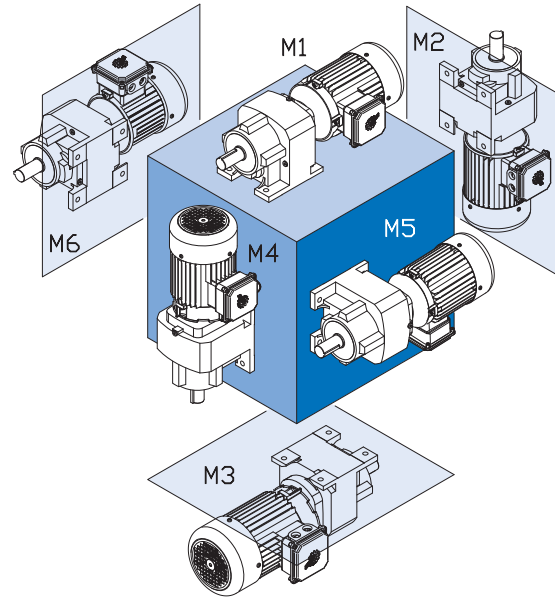


IMPORTANT NOTE



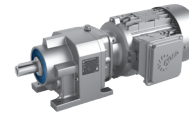
Actual oil volume can vary slightly depending upon the gear case size, mounting and ratio. Prior to commissioning the reducer, check the oil-fill level using the reducer’s oil level plug and drain or add additional oil as needed.

For mounting orientations other than shown please consult NORD Gear. Reducer modifications may be required.



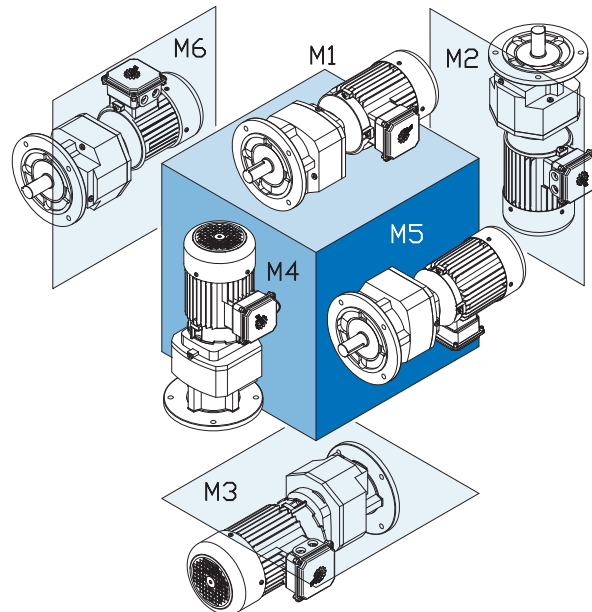
Type	M1		M2		M3		M4		M5		M6	
	Quarts	Liters	Quarts	Liters	Quarts	Liters	Quarts	Liters	Quarts	Liters	Quarts	Liters
SK 071.1	0.19	0.18	0.42	0.40	0.40	0.38	0.42	0.40	0.32	0.30	0.32	0.30
SK 072.1	0.17	0.16	0.34	0.32	0.22	0.21	0.24	0.23	0.19	0.18	0.21	0.20
SK 171.1	0.23	0.22	0.42	0.40	0.38	0.36	0.42	0.40	0.35	0.33	0.35	0.33
SK 172.1	0.29	0.27	0.62	0.59	0.44	0.42	0.48	0.45	0.34	0.32	0.41	0.39
SK 371.1	0.37	0.35	0.61	0.58	0.58	0.55	0.61	0.58	0.52	0.49	0.52	0.49
SK 372.1	0.48	0.45	1.10	1.05	0.79	0.75	1.10	1.00	0.63	0.60	0.69	0.65
SK 373.1	0.48	0.45	1.10	1.05	0.79	0.75	1.10	1.00	0.63	0.60	0.69	0.65
SK 571.1	0.51	0.48	0.91	0.86	0.85	0.80	0.97	0.92	0.72	0.68	0.72	0.68
SK 572.1	0.79	0.75	2.00	1.90	1.60	1.50	2.10	2.00	1.20	1.10	1.20	1.15
SK 573.1	0.79	0.75	2.00	1.90	1.60	1.50	2.10	2.00	1.20	1.10	1.20	1.15
SK 672.1	1.20	1.10	2.70	2.60	2.30	2.15	2.90	2.70	1.60	1.55	1.70	1.65
SK 673.1	1.20	1.10	2.70	2.60	2.30	2.15	2.90	2.70	1.60	1.55	1.70	1.65
SK 771.1	0.95	0.90	1.60	1.50	1.30	1.20	1.80	1.70	1.20	1.16	1.20	1.16
SK 772.1	1.40	1.30	4.00	3.80	2.50	2.40	3.40	3.20	1.70	1.60	2.60	2.50
SK 772.1 VL	2.10	2.00	4.00	3.80	2.50	2.40	3.40	3.20	1.70	1.60	2.60	2.50
SK 773.1	2.40	2.30	4.00	3.80	3.50	3.30	3.40	3.20	2.50	2.40	3.30	3.10
SK 773.1 VL	2.40	2.30	4.00	3.80	3.50	3.30	3.40	3.20	2.50	2.40	3.30	3.10
SK 872.1	3.10	2.90	8.20	7.80	4.90	4.60	6.80	6.40	2.60	2.50	4.20	4.00
SK 872.1 VL	5.30	5.00	8.20	7.80	4.90	4.60	6.80	6.40	2.60	2.50	4.20	4.00
SK 873.1	4.40	4.20	8.20	7.80	6.20	5.90	6.80	6.40	4.30	4.10	6.20	5.90
SK 873.1 VL	4.40	4.20	8.20	7.80	6.20	5.90	6.80	6.40	4.30	4.10	6.20	5.90
SK 972.1	4.80	4.50	13.00	12.00	7.90	7.50	12.00	11.50	4.40	4.20	7.90	7.50
SK 972.1 VL	9.00	8.50	13.00	12.00	7.90	7.50	12.00	11.50	4.40	4.20	7.90	7.50
SK 973.1	7.90	7.50	13.00	12.00	11.00	10.50	12.00	11.50	7.90	7.50	11.00	10.50
SK 973.1 VL	7.90	7.50	13.00	12.00	11.00	10.50	12.00	11.50	7.90	7.50	11.00	10.50

NORDBLOC.1® Flanged Oil Fill Quantities



NORDBLOC.1® Helical In-Line flanged lubrication

Unless otherwise noted below, the following NORD Gear reducers are shipped from the factory with a pre-determined oil fill level in accordance to the specified reducer size and mounting position. For additional information, please refer to the “Oil Plug & Vent Locations” documentation for your gear unit.



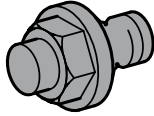
IMPORTANT NOTE



Actual oil volume can vary slightly depending upon the gear case size, mounting and ratio. Prior to commissioning the reducer, check the oil-fill level using the reducer’s oil level plug and drain or add additional oil as needed.

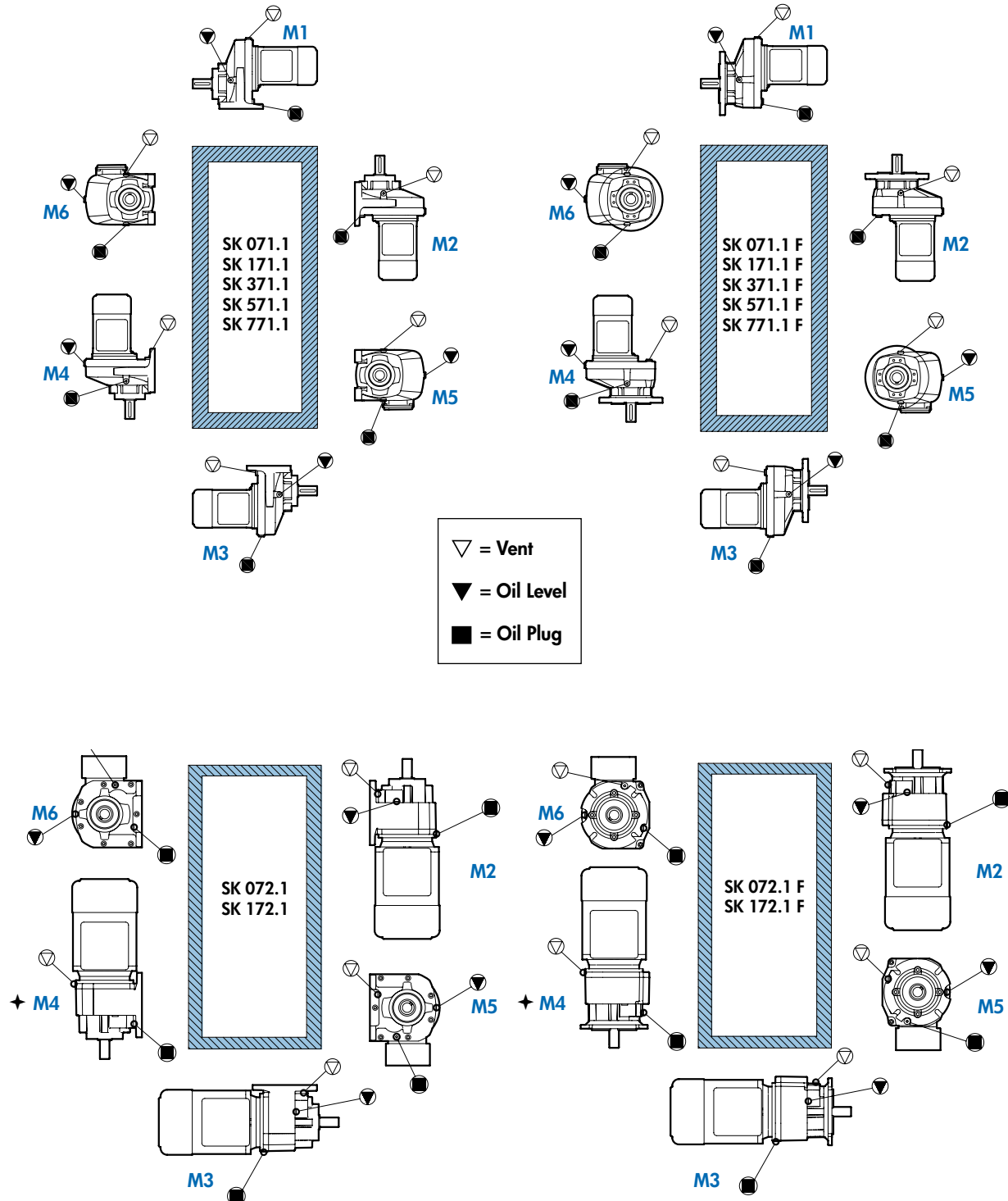
For mounting orientations other than shown please consult NORD Gear. Reducer modifications may be required.

Type	M1		M2		M3		M4		M5		M6	
	Quarts	Liters	Quarts	Liters	Quarts	Liters	Quarts	Liters	Quarts	Liters	Quarts	Liters
SK 071.1 F	0.19	0.18	0.42	0.40	0.40	0.38	0.42	0.40	0.32	0.30	0.32	0.30
SK 072.1 F	0.17	0.16	0.34	0.32	0.22	0.21	0.24	0.23	0.19	0.18	0.21	0.20
SK 171.1 F	0.23	0.22	0.42	0.40	0.38	0.36	0.42	0.40	0.35	0.33	0.35	0.33
SK 172.1 F	0.29	0.27	0.62	0.59	0.44	0.42	0.48	0.45	0.34	0.32	0.41	0.39
SK 371.1 F	0.37	0.35	0.61	0.58	0.58	0.55	0.61	0.58	0.52	0.49	0.52	0.49
SK 372.1 F	0.48	0.45	1.10	1.05	0.79	0.75	1.10	1.00	0.63	0.60	0.69	0.65
SK 373.1 F	0.48	0.45	1.10	1.05	0.79	0.75	1.10	1.00	0.63	0.60	0.69	0.65
SK 571.1 F	0.51	0.48	0.91	0.86	0.85	0.80	0.97	0.92	0.72	0.68	0.72	0.68
SK 572.1 F	0.79	0.75	2.00	1.90	1.60	1.50	2.10	2.00	1.20	1.10	1.20	1.15
SK 573.1 F	0.79	0.75	2.00	1.90	1.60	1.50	2.10	2.00	1.20	1.10	1.20	1.15
SK 672.1 F	1.20	1.10	2.70	2.60	2.30	2.15	2.90	2.70	1.60	1.55	1.70	1.65
SK 673.1 F	1.20	1.10	2.70	2.60	2.30	2.15	2.90	2.70	1.60	1.55	1.70	1.65
SK 771.1 F	0.95	0.90	1.60	1.50	1.30	1.20	1.80	1.70	1.20	1.16	1.20	1.16
SK 772.1 F	1.40	1.30	4.00	3.80	2.50	2.40	3.50	3.30	1.80	1.70	2.50	2.40
SK 772.1 VL F	2.10	2.00	4.00	3.80	2.50	2.40	3.50	3.30	1.80	1.70	2.50	2.40
SK 773.1 F	2.10	2.00	3.70	3.50	3.40	3.20	3.10	2.90	2.40	2.30	3.20	3.00
SK 773.1 VL F	2.10	2.00	3.70	3.50	3.40	3.20	3.10	2.90	2.40	2.30	3.20	3.00
SK 872.1 F	3.40	3.20	7.90	7.50	5.40	5.10	7.10	6.70	2.70	2.60	4.50	4.30
SK 872.1 VL F	5.30	5.00	7.90	7.50	5.40	5.10	7.10	6.70	2.70	2.60	4.50	4.30
SK 873.1 F	4.30	4.10	8.00	7.60	7.30	6.90	7.00	6.60	5.30	5.00	7.00	6.60
SK 873.1 VL F	4.30	4.10	8.00	7.60	7.30	6.90	7.00	6.60	5.30	5.00	7.00	6.60
SK 972.1 F	4.80	4.50	13.00	12.50	8.50	8.00	13.00	12.50	4.80	4.50	8.10	7.70
SK 972.1 VL F	9.00	8.50	13.00	12.50	8.50	8.00	13.00	12.50	4.80	4.50	8.10	7.70
SK 973.1 F	7.80	7.40	13.00	12.20	12.00	11.10	12.00	11.60	8.50	8.00	12.00	10.90
SK 973.1 VL F	7.80	7.40	13.00	12.20	12.00	11.10	12.00	11.60	8.50	8.00	12.00	10.90

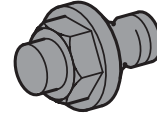


Oil plug connections

Prior to commissioning the reducer, check the oil-fill level using the reducer's oil-level plug and drain or add additional oil as needed. The correct oil level should be located at the lower edge of the oil level hole. **For mounting orientations other than shown please consult NORD Gear. New plug locations may be required.**



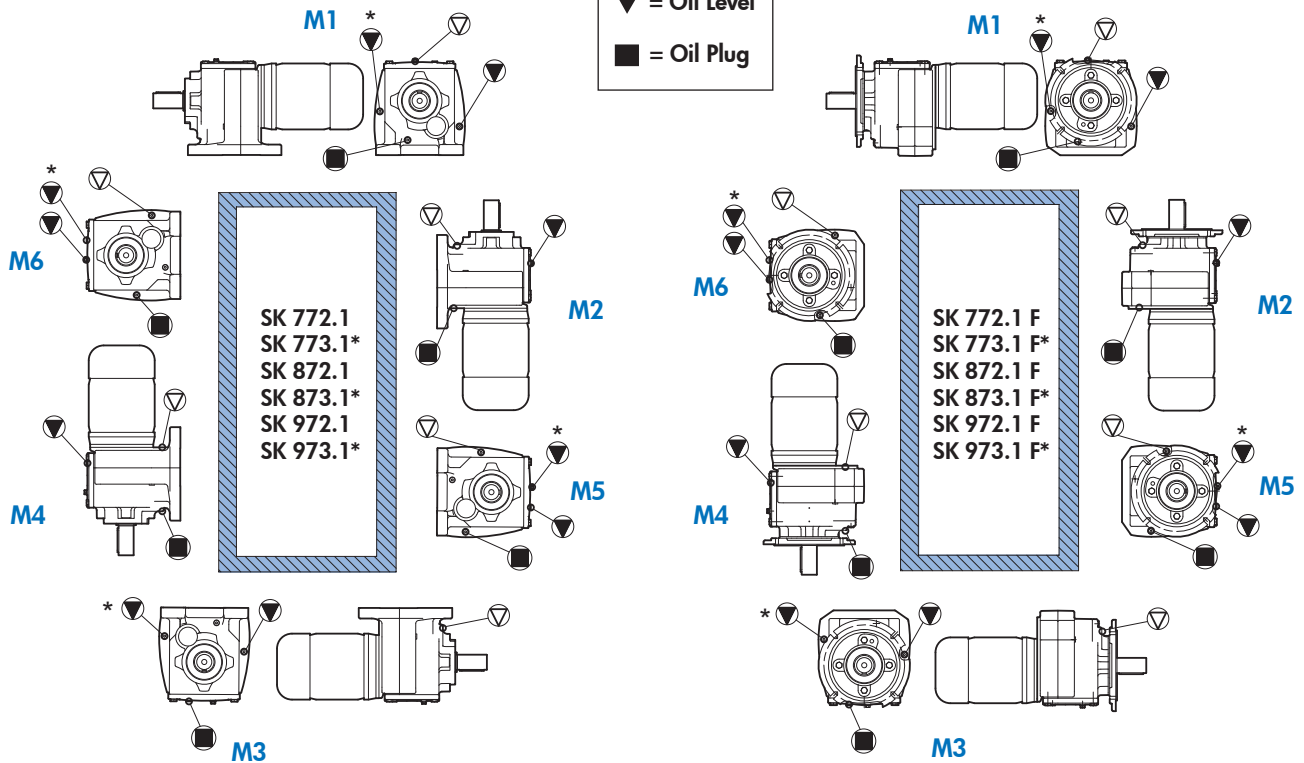
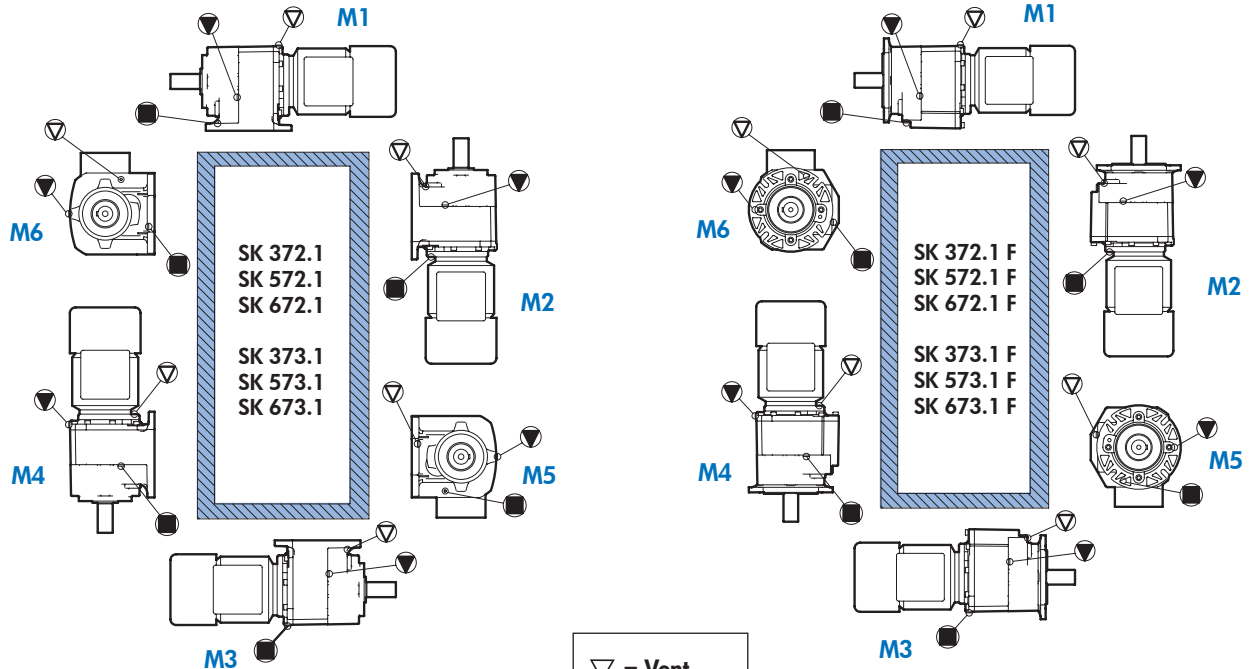
NORDBLOC.1® Oil Plug & Vent Locations

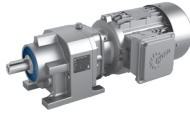


Oil plug connections

Prior to commissioning the reducer, check the oil-fill level using the reducer's oil-level plug and drain or add additional oil as needed. The correct oil level should be located at the lower edge of the oil level hole. **For mounting orientations other than shown please consult NORD Gear. New plug locations may be required.**

Engineering





Radial Overhung Load (OHL)

Any radial force or side force applied to the reducer shaft is a source of OHL and should be examined during the reducer selection process. An overhung load is radial a force that pulls (or pushes) against the reducer's output (or input) shaft.

OHL is produced by one or more of the following conditions:

- Transferring power at a right angle to the reducer's shaft, through an externally mounted power transmission device, such as a belt pulley, chain sprocket, or gear.
- By tensioning of the external belt or chain, which is required to keep belts from slipping, or to assure proper chain wrap around sprockets.
- The hanging weight of a pulley, sprocket or gear, mounted on the reducer shaft.

F_{OHL} = Applied overhung load condition at output shaft [lb]

OHL Rating – General Conditions

The catalog OHL ratings are based upon the following:

- The applied OHL is at the midpoint of the shaft.
- The worst-case direction of shaft rotation.
- There are no axial or thrust load conditions applied to the reducer shaft.

The above conditions apply whether or not one is evaluating the output shaft or input shaft OHL conditions.

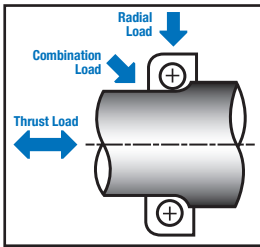
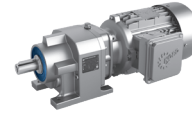
Output Shaft OHL Rating

The maximum permissible output shaft OHL rating is found in the gearmotor selection tables. Output shaft OHL ratings apply to integral gearmotors, C-face reducers, and reducers with solid input shaft.

This is done by identify the power of the gear unit's driving motor or prime mover, and then using the selection tables to match the output shaft OHL rating with the selected gear unit type, power, ratio and output speed condition.

F_R = Output shaft OHL rating, at shaft center [lb]

Radial Overhung (OHL) & Axial Thrust Loads



Axial Load or Thrust Load

Loads that are directed towards or away from the gearbox, along the axis of the shaft, are considered to be axial loads and are more commonly called thrust loads. Thrust loads can result from the following conditions:

- There is a hanging weight connected to the reducer shaft. This is common in mixer applications.
- While operating the equipment, a net axial force is directed towards or away from the reducer, along the shaft axis. This is common in many screw conveyor or mixer applications.

F_{THRUST} = Applied axial thrust load condition at output [lb]

Thrust Rating – General Conditions

The published thrust ratings are based upon the following:

- The thrust capacity shown represents the worst case, and is independent of direction.
- Application loads can not exceed the values shown in the tables.
- There is no applied overhung load on the shaft.

Output Shaft and Input Shaft Thrust Rating

The output shaft thrust capacity can be found in the gearmotor selection tables, adjacent to the OHL ratings.

F_A = Output shaft thrust rating [lb]

F_{AVL} = Output shaft thrust rating with radial (VL) bearing upgrade [lb]



IMPORTANT NOTE

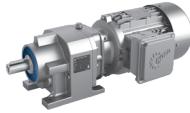


To validate the gear unit selection, assuming negligible OHL, the applied thrust condition must be less than the shaft thrust rating.

Combined OHL and Thrust Load Conditions

Published values for both overhung load and thrust capacity are based upon the presence of a single condition and assume the other condition is absent from the application. In many applications, it is feasible to have both overhung load and thrust at the same time.

Please contact NORD for more exact examination of the application, when both OHL and thrust conditions exist at the same time.

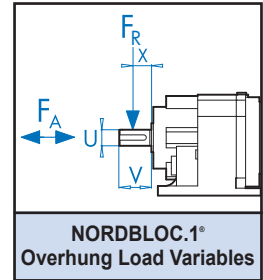


1. Calculate the applied OHL at the designated shaft

The most common radial OHL forces are created by transferring power at a right angle to the reducer's shaft, through an externally mounted power transmission device, such as a belt pulley, chain sprocket, or spur gear.

Included in the overhung load formula is an additional factor that is called the power transmission component factor (f_z). The (f_z) factor accounts for the extra radial force caused by proper tensioning of belts or chains or the additional forces created by the action of meshing gears.

The following equations are used to calculate the OHL forces generated by a belt pulley, chain sprocket, or spur gear and they also account for the extra radial force caused by proper tensioning of the transmission component. These equations treat the hanging weight of the transmission component as being negligible.



Variable definitions

- F_{OHL} = Calculated shaft overhung load at output
- T_2 = Load Torque [lb-in]
- n_2 = Shaft speed [rpm]
- P_1 = Load power at input
- h = Gear reducer efficiency [%] ❶
- d_{OHL} = Pitch diameter of power transmission component [in]
- f_z = Power transmission component factor

❶ Gear reducer efficiency can generally be ignored unless considering compounded gear units.

Output shaft equations

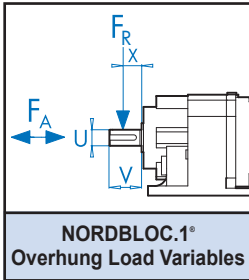
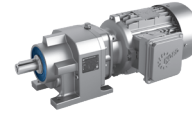
$$F_{OHL} = \frac{2 \times T_2}{d_{OHL}} \times f_z \text{ (common equation)}$$

$$F_{OHL} = \frac{2 \times P_1 \times 63025 \times \eta}{n_2 \times d_{OHL} \times 100} \times f_z \text{ (alternate equation)}$$

f_z factor table

Transmission Component	Factor f_z	Notes
Gear	1.00	17 teeth or less
Gear	1.15	18 teeth or more
Chain Sprocket	1.40	13 teeth or less
Chain Sprocket	1.20	13 to 20 teeth
Chain Sprocket	1.00	20 teeth or more
Timing Belt Pulley	1.50	-
V-Belt Pulley	1.70	-
Flat Belt Pulley	2.50	-

Radial Overhung (OHL) & Axial Thrust Loads



2. Determine the permissible shaft OHL rating

Output shaft OHL rating

Whether considering an integral gearmotor, C-face reducer, or reducer with solid input shaft, the maximum permissible output shaft OHL rating is found in the gearmotor selection tables. Establish the output shaft OHL rating as follows:

- ❶ First, identify the power of the gear unit's driving motor or prime mover.
- ❷ Then, use the gearmotor selection tables to identify the output shaft OHL rating, by selecting the appropriate gear unit type, power, ratio and output speed condition.
- ❸ Identify the output shaft OHL rating from the gearmotor selection tables.

F_R = Output shaft OHL rating, at shaft center [lb]

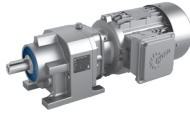
F_{RVL} = Output shaft OHL rating with radial (VL) bearing upgrade [lb]

- ❹ Check the OHL rating correction factor table if considering one of the gear units shown in the table, then multiply the value from step ❸ by the appropriate factor. The new value is the output shaft OHL rating.

	WARNING	
The unit types shown in the table below require that the published overhung load rating (F_R or F_{RVL}) to be reduced by applying a multiplier as shown.		

Output Shaft OHL Rating Correction Factor

Unit Type	Shaft Ø x L	B5 Flange Ø	OHL Correction Factor
SK372.1F/SK373.1F	1.000 x 1.97 [25] x [50]	4.72 [120]	0.7
SK572.1/SK573.1	1.250 x 2.36 [30] x [60]	None (Foot Mounted)	0.7
SK572.1F/SK573.1F	1.250 x 2.36 [30] x [60]	5.51 or 6.30 [140] or [160]	0.5
SK572.1F/SK573.1F	1.250 x 2.36 [30] x [60]	7.87 or 9.84 [200] or [250]	0.7
SK572.1F/SK573.1F	1.375 x 2.76 [35] x [70]	5.51 or 6.30 [140] or [160]	0.7

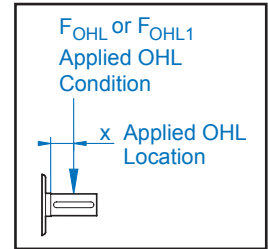


3. OHL rating correction – applied load is not at the shaft center or midpoint.

If the OHL force is not applied at the midpoint of the shaft, an overhung load rating correction must be applied to the catalog listed OHL rating. This OHL load correction is evaluated in two steps.

Formula I. Verify the bearing OHL capacity (Formula I).

Formula II. Verify the shaft OHL capacity (Formula II).



Overhung Load Variables

- F_R = Output shaft OHL Rating, at shaft center [lb]
- F_{RVL} = Output shaft OHL Rating, at shaft center with radial (VL) bearing upgrade [lb]
- F_{RX} = Standard Bearing Capacity Rating, with OHL applied at output shaft location "x" [lb]
- F_{RXVL} = Radial (VL) Bearing Capacity Rating, with OHL applied at the output shaft location "x" [lb]
- F_{RXW} = Output shaft OHL Rating, at applied load location "x" with standard bearings [lb]
- F_{RXWVL} = Output shaft OHL Rating, at shaft location "x" with radial (VL) bearing upgrade [lb]
- x = applied OHL location with respect to shaft shoulder [in]

Refer to Calculation Table Below

- z = Factor from table [lb-in]
- y = Internal Geometry Factor from table [in]
- f = Internal Geometry Factor from table [in]
- c = Internal Geometry Factor from table [lb-in]
- c_{VL} = Internal Geometry Factor from table [lb-in]

Make certain to apply the proper table values for the shaft that is being evaluated.

Formula I – Verifying Bearing Capacity

1. Output shaft (Standard bearings)

$$F_{OHL} = \frac{2 \times T_2}{d_{OHL}} \times f_z$$

2. Output shaft (VL bearings)

$$F_{OHL} = \frac{2 \times T_2}{d_{OHL}} \times f_z$$

Formula II – Calculating shaft OHL capacity

1. Output shaft (Standard bearings)

$$F_{OHL} = \frac{2 \times T_2}{d_{OHL}} \times f_z$$

2. Output shaft (VL bearings)

$$F_{OHL} = \frac{2 \times T_2}{d_{OHL}} \times f_z$$

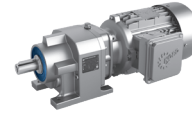


IMPORTANT NOTE



Calculations should always be made in accordance with Formula I (bearing capacity) and Formula II (shaft capacity). The corrected OHL rating (for loads not at the shaft midpoint) will always be the lower of the two limiting values based upon direct application of Formula I or Formula II.

Overhung Load Calculation Tables

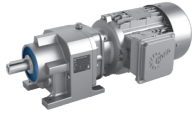


Calculation Table for OHL at Output Shaft for 2 & 3 Stage NORDBLOC.1® Units

Gearbox Type	y	z	c	c	f	U	V	T _{2max}
	[in]	[in]	Standard Bearings [lb-in]	VL Bearings [lb-in]	[in]	[in]	[in]	[lb-in]
SK 072.1	2.62	3.41	708	-	0	0.750	01.57	487
SK 172.1	3.27	4.06	617	-	0	0.750	1.57	814
SK 372.1	3.43	4.41	885	1416	0	1.000	1.97	1770
SK 373.1			797	1328	0			1947
SK 572.1	4.33	5.71	2301	3452	0	1.250 or	2.36 or	3805
SK 573.1			2213	3452	0	1.375	2.76	3982
SK 672.1	4.82	6.18	1682	3009	0	1.375	2.75	5398
SK 673.1			3098	2921	0			5664
SK 772.1	3.85	5.43	3186	7434	0	1.625	3.15	7257
SK 773.1	4.09	5.67	3097	5310	0	1.625	3.15	7655
SK 872.1	4.74	6.71	8850	18673	0	2.125	3.94	13806
SK 873.1	5.91	7.87	5487	8230	0	2.125	3.94	14868
SK 972.1	5.47	7.84	13894	26550	0	2.375	4.72	24780
SK 973.1	6.42	8.78	9381	14160	0	2.375	4.72	28320

Calculation Table for OHL at Output Shaft for Single Stage NORDBLOC.1® Units

Gearbox Type	y	z	c	f	d	l
	[in]	[in]	[lb-in]	[in]	[in]	[in]
SK071.1	0.98	3.02	604	0.74	0.50	1.25
SK071.1 VL	1.00	3.01	388	0.00	0.50	1.25
SK171.1	0.96	3.52	1015	0.67	0.75	1.57
SK171.1 VL	1.09	3.4	860	0.00	0.75	1.57
SK371.1	1.04	4.23	1575	0.71	1.00	1.97
SK371.1 VL	1.24	4.09	2897	0.82	1.00	1.97
SK571.1	1.14	4.6	1853	0.00	1.25	2.36
SK571.1 VL	1.31	4.39	2390	0.00	1.25	2.36
SK771.1	1.33	6.11	4105	0.96	1.63	3.15
SK771.1 VL	1.51	5.88	6747	1.31	1.63	3.15



4. Compare the applied OHL to the OHL rating

To validate the unit selection (assuming negligible thrust loading), the applied OHL condition must be less than the rated OHL capacity (from step 3) as shown below.

Output Shaft (standard bearings)

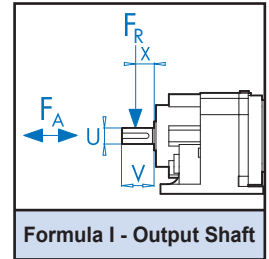
$$F_{OHL} < F_R \quad (\text{OHL at shaft center})$$

$$F_{OHL} < F_{RX} \quad (\text{OHL not at shaft center})$$

Input Shaft

$$F_{OHL} < F_{R1} \quad (\text{OHL at shaft center})$$

$$F_{OHL} < F_{RX1} \quad (\text{OHL not at shaft center})$$



Output Shaft (VL bearings)

$$F_{OHL} < F_{RVL} \quad (\text{OHL at shaft center})$$

$$F_{OHL} < F_{RXVL} \quad (\text{OHL not at shaft center})$$

Output Shaft Comparisons

$$\frac{F_{OHL}}{F_{OHL}} < \frac{F_R}{F_R} \quad \text{or} \quad \frac{F_{OHL}}{F_{OHL}} < \frac{F_{RX}}{F_{RX}}$$

(From Step 3)

5. Evaluating Thrust Capacity

To validate the unit selection (assuming negligible thrust loading), the applied thrust condition must be less than the rated thrust capacity as shown below.

Output Shaft

$$F_{THRUST} < F_A$$

The output shaft thrust capacity (F_A) can be found in the gearmotor selection tables, adjacent to the OHL ratings. The input shaft thrust capacity (F_{A1}) can be found on page 42.

$$\frac{F_{THRUST}}{F_{THRUST}} < \frac{F_A}{F_A}$$

(Supplied by customer) (Gearmotor Selection)

$$\frac{F_{THRUST1}}{F_{THRUST1}} < \frac{F_{A1}}{F_{A1}}$$

(Supplied by customer) (Gearmotor Selection)

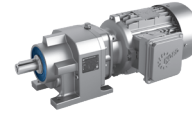


IMPORTANT NOTE



Please contact NORD for a more precise examination of the application when both OHL and thrust conditions exist at the same time.

Radial Overhung (OHL) & Axial Thrust Loads

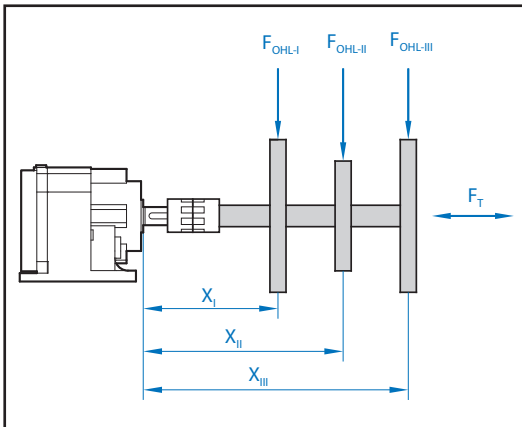


Computer Program Analysis

Computer Program Analysis Capabilities

NORD Engineering is able to calculate the bearing service life and check the shaft durability for a specific gear unit type and ratio, if provided with the following:

- Type** = Complete gearmotor or reducer model or type
- i** = Gear ratio
- P₁** = Load power at input [Hp]
- n₂** = Operating reducer output speed [rpm]
- F_{OHL}** = Applied shaft overhung load [lb]
- F_{THRUST}** = Applied thrust load condition [lb]
- DIR** = Applied thrust direction (towards or away) from gear unit.
- x** = applied OHL location with respect to the shaft shoulder [in]
- L10h** = Desired bearing service life L10h [hours]



Multiple Impeller Mixer Example

Multiple Impeller Mixer

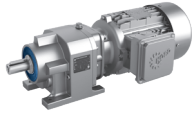
Multiple impeller mixers are good examples where a computer program analysis is encouraged.



IMPORTANT NOTE



In agitator or mixer applications, where multiple impellers are mounted to the same mixer shaft, please provide each individual radial load force (F_{OHL}) and location distance (x).



Mass Acceleration Service Factor

The mass acceleration factor (m_{af}) uses a ratio of the load inertia to motor inertia. This method of service factor calculation can be used for both gearmotors and speed reducers and is valid for helical and helical-bevel gear units. For helical-worm units additional factors will need to be taken into account including an ambient temperature factor and duty cycle factor.

Short-term and infrequent torque impulses significantly influence the load and selection of a gear unit. The gear unit service factor, f_B , takes this and other affects on the gear unit into account.

The mass acceleration factor, m_{af} , represents the relationship between external low-speed output side and high-speed input side masses. The mass acceleration factor significantly influences the level of torque impulses in the gear unit upon start-up and braking procedures, and upon vibration. The external mass moments of inertia also include the load, such as the material transported on conveyor belts. We ask you to consult with NORD if the $m_{af} > 10$, if there is a large play in transfer elements, vibration in the system, uncertainty regarding the load classification, or you are in doubt.

For applications with relatively high external mass moments of inertia, $m_{af} > 2$ (i.e. travel drives, slewing gears, rotary tables, gear drives, agitators, and surface aerators), we recommend braking torque that does not exceed 1.2 times the rated motor torque. If a higher breaking torque is to be used, this must be considered when selecting the gear unit.

1. Calculate mass acceleration factor:

$$m_{af} = \frac{J_{load}}{J_m} \times \left(\frac{1}{\text{reducer ratio}} \right)^2$$

J_{load} = External load inertia including all components of the system outside of the reducer
 J_m = Motor inertia. For NORD motors see pages 224 - 245

If $m_{af} \leq 0.25$ use curve A (uniform operation)

Light conveyor screws, fans, assembly lines, light conveyor belts, small agitators, elevators, cleaning machines, filling machines, inspection machines, belt conveyors.

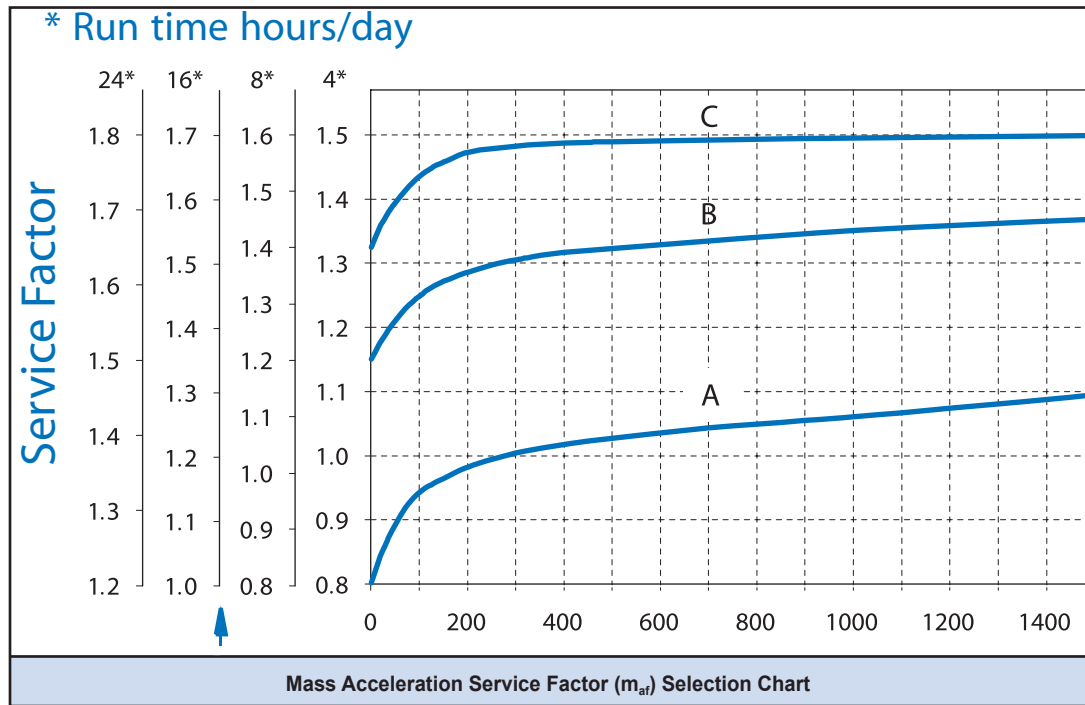
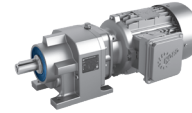
If $0.25 < m_{af} \leq 3.00$ use curve B (moderate shocks)

Coilers, feed-mechanism drivers for woodworking machines, dumbwaiters, balancing machines, thread cutting machines, medium-sized agitators and mixers, heavy conveyor belts, winches, sliding doors, manure scrapers, packing machines, concrete mixers, overhead crane traveling mechanisms, mills, bending machines, gear pumps.

If $3.01 \leq m_{af} \leq 10.00$ use curve C (heavy shocks)

Heavy mixers, shears, presses, centrifuges, rolling stands, heavy winches and lifts, grinding mills, stone crushers, bucket elevators, punching machines, hammer mills, eccentric presses, folding machines, roller tables, tumbling barrels, vibrators, shredders.

2. Determine the cycles/hour. A cycle is a start or hard stop, where a hard stop decelerates the motion of the system when a mechanical brake is activated.
3. Determine the run time in hours/day.
4. Using the chart; locate the cycles/hour on the horizontal axis and move vertically up to intersect curve A, B, or C based on the m_{af} . From the intersection point, move horizontally left to the service factor f_B based on the run time in hours/day.

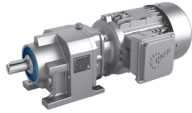


Selection Example:

A smooth running conveyor operates 24 hours/day with 500 cycles/hour.

The calculated $m_{af} = 0.16$, therefore use curve A for this type of application.

From the chart, find 500 cycles/hour and follow the axis vertically up until you intersect curve A. From the intersection point, move horizontally left to find the service factor $f_B = 1.4$ based on 24 hours/day operation. Consult the selection pages of the catalog to find a gearmotor with a service factor $f_B = 1.4$ or greater.



AGMA Service Class Selection for Gearmotors and Motorized Reducers

Before a gearmotor is selected, an application class number must be determined. Since application classification represents the normal relationship between gear design power rating and the maximum potential transmitted power, it is suggested that the application class number be applied to the nameplate rating of the electric motor. The application class numbers are I, II, and III. Their relationship to service factor is:

Class Numbers	f_B
I	1.0 - 1.39
II	1.4 - 1.99
III	≥ 2.0

Application class numbers may be selected from the table. Some operational characteristics that affect an application's classification are:

- **Starting conditions:** Starting conditions where peak loads exceed 200 percent of rated load, applications with frequent starts and stops and reversing applications require special analysis. Rated load is defined as the unit rating with an application class number of I (1.0 - 1.39 service factor).
- **Overloads:** Loads in excess of the rated load are considered overloads. Overload can be of momentary duration, periodic, quasi-steady state, or vibratory in nature. The magnitude and the number of stress cycles require special analysis to prevent low cycle fatigue or yield stress failure. Applications with high torque motors, motors for intermittent operation and applications where extreme repetitive shock occurs or where high-energy loads must be absorbed as when stalling require special consideration.
- **Brake equipped applications:** When a gear drive is equipped with a brake that is used to decelerate the motion of the system, select the drive based on the brake rating or the equivalent power, whichever is greater. If the brake is located on the output shaft of the gear drive, special analysis is required.
- **Reliability and life requirement:** Applications requiring a high degree of reliability or unusually long life should be given careful consideration by the user and NORD GEAR before assigning an application class number. High reliability and life should be addressed by using an increased safety factor agreed to between NORD and the purchaser.

Synchronous motors, certain types of high torque induction motors and generator drives require special analysis. Synchronous motors have high transient torque during starting and restarting after they trip out momentarily.

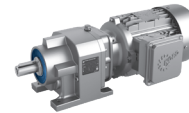
Induction motors of special high slip design can produce extremely high starting torque. High torque loads are produced when the motor trips out for a very short time and then the trip re-closes.

Generators have extremely high loads when they are out of phase with the main system and when there are across the line short circuits.

Adjustments to the gear drive selection may be necessary when one or more of the following conditions exist:

- Ambient conditions. Extremes of temperature and environment.
- Lubrication. Any lubricant not in accordance with NORD's recommendations.
- Misalignment and distortions due to inadequate foundations.
- Reversing applications.
- High-risk applications involving human safety.





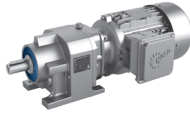
Service Class Tables

The service class tables provide a guide in the selection and application of gear drives designed and rated in accordance with AGMA Standard 6013-A06.

The service class tables have been developed from the experience of manufacturers and users of gear drives for use in common applications and has been found to be generally satisfactory for the listed industries when gears are applied using AGMA standards. It is recommended that the user and NORD Gear agree upon class numbers for special applications when variations from the table may be required.

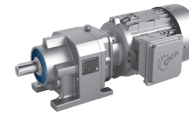
Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
AGITATORS (mixers)			
Pure Liquids	I	I	II
Liquids and Solids	I	II	II
Liquids – Variable Density	I	II	II
BLOWERS			
Centrifugal	I	I	II
Lobe	I	II	II
Vane	I	II	II
BREWING AND DISTILLING			
Bottling Machinery	I	I	II
Brew Kettles – Continuous Duty	II	II	II
Cookers – Continuous Duty	II	II	II
Mash Tubs – Continuous Duty	II	II	II
Scale Hopper – Frequent Starts	II	II	II
CAN FILLING MACHINES			
	I	I	II
CAR DUMPERS			
	II	III	III
CAR PULLERS			
	I	II	II
CLARIFIERS			
	I	I	II
CLASSIFIERS			
	I	II	II
CLAY WORKING MACHINERY			
Brick Press	II	III	III
Briquette Machine	II	III	III
Pug Mill	I	II	II
COMPACTORS			
	III	III	III
COMPRESSORS			
Centrifugal	I	I	II
Lobe	I	II	II
Reciprocating, Multi-Cylinder	II	II	III
Reciprocating, Single-Cylinder	III	III	III
CONVEYORS – GENERAL PURPOSE			
Includes Apron, Assemble, Belt, Bucket, Chain, Flight, Oven & Screw - Uniformly loaded or Fed	I	I	II
Heavy Duty – Not Uniformly Fed	I	II	II
Severe Duty – Reciprocating or Shaker	II	III	III
CRANES¹			
Main Hoist			
Medium Duty	II	II	II
Heavy Duty	III	III	III
Reversing	II	II	II
Skip Hoist	II	II	II
Trolley Drive	II	II	II
Bridge Drive	II	II	II
CRUSHER			
Stone or Ore	III	III	III

Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
DREDGES			
Cable Reels	II	II	II
Conveyors	II	II	II
Cutter Head Dives	III	III	III
Pumps	III	III	III
Screen Drives	III	III	III
Stackers	II	II	II
Winches	II	II	II
ELEVATORS			
Bucket	I	II	II
Centrifugal Discharge	I	I	II
Escalators	I	I	II
Freight	I	II	II
Gravity Discharge	I	I	II
EXTRUDERS			
General	II	II	II
Plastics			
Variable Speed Drive	III	III	III
Fixed Speed Drive	III	III	III
Rubber			
Continuous Screw Operation	III	III	III
Intermittent Screw Operation	III	III	III
FANS			
Centrifugal	I	I	II
Cooling Towers	III	III	III
Forced Draft	II	II	II
Induced Draft	II	II	II
Industrial & Mine	II	II	II
FEEDERS			
Apron	I	II	II
Belt	I	II	II
Disc	I	I	II
Reciprocating	II	III	III
Screw	I	II	II
FOOD INDUSTRY			
Cereal Cooker	I	I	II
Dough Mixer	II	II	II
Meat Grinders	II	II	II
Slicers	I	II	II
GENERATORS AND EXCITERS			
	II	II	II
HAMMER MILLS			
	III	III	III
HOISTS			
Heavy Duty	III	III	III
Medium Duty	II	II	II
Skip Hoist	II	II	II



Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
LAUNDRY TUMBLERS	II	II	II
LAUNDRY WASHERS	II	II	III
LUMBER INDUSTRY			
Barkers			
Spindle Feed	II	II	II
Main Drive	III	III	III
Conveyors			
Burner	II	II	II
Main or Heavy Duty	II	II	II
Main log	III	III	III
Re-saw, Merry-Go-Round	II	II	II
Slab	III	III	III
Transfer	II	II	II
Chains			
Floor	II	II	II
Green	II	II	III
Cut-Off Saws			
Chain	II	II	III
Drag	II	II	III
Debarking Drums	III	III	III
Feeds			
Edger	II	II	II
Gang	II	III	III
Trimmer	II	II	II
Long Deck	III	III	III
Log Hauls – Incline – Well Type	III	III	III
Log Turning Devices	III	III	III
Planer Feed	II	II	II
Planer Tilting Hoists	II	II	II
Rolls – live-off brg. – Roll Cases	III	III	III
Sorting Table	II	II	II
Tipple Hoist	II	II	II
Transfers			
Chain	II	II	III
Craneway	II	II	III
Tray Drives	II	II	II
Veneer Lathe Drives	II	II	II
METAL MILLS			
Draw Bench Carriage and Main Drive	II	II	II
Runout Table			
Non-reversing	II	II	II
Group Drives	II	II	II
Individual Drives	III	III	III
Reversing	III	III	III
Slab Pushers	II	II	II
Shears	III	III	III
Wire drawing	II	II	II
Wire Winding Machine	II	II	II
METAL STRIP PROCESSING MACHINERY			
Bridles	II	II	II
Coilers & Uncoilers	I	I	II
Edge Trimmers	I	II	II
Flatteners	II	II	II
Loopers (Accumulators)	I	I	I
Pinch Rolls	II	II	I
Scrap Choppers	II	II	II
Shears	III	III	III
Slitters	I	II	II

Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
MILLS, ROTARY TYPE			
Ball & Rod			
Spur Ring Gear	III	III	III
Helical Ring Gear	II	II	II
Direct Connected	III	III	III
Cement Kilns	II	II	II
Dryers & Coolers	II	II	II
PAPER MILLS²⁾			
Agitator (Mixer)	II	II	II
Agitator for Pure liquors	II	II	II
Barking Drums	III	III	III
Barkers – Mechanical	III	III	III
Beater	II	II	II
Breaker Stack	II	II	II
Calender ³⁾	II	II	II
Chipper	III	III	III
Chip Feeder	II	II	II
Coating Rolls	II	II	II
Conveyors			
Chip, Bark, Chemical	II	II	II
log (including Slab)	III	III	III
Couch Rolls	II	II	II
Cutter	III	III	III
Cylinder Molds	II	II	II
Dryers ³⁾			
Paper Machine	II	II	II
Conveyor Type	II	II	II
Embossor	II	II	II
Extruder	II	II	II
Fourdrinier Rolls (Includes lump Breaker, Dandy Roll, Wire Turning, and Return Rolls)	II	II	II
Jordan	II	II	II
Kiln Drive	II	II	II
Mt. Hope Roll	II	II	II
Paper Rolls	II	II	II
Platter	II	II	II
Presses – Felt & Suction	II	II	II
Pulper	III	III	III
Pumps – Vacuum	II	II	II
Reel (Surface Type)	II	II	II
Screens			
Chip	II	II	II
Rotary	II	II	II
Vibrating	III	III	III
Size Press	II	II	II
Supercalendar ⁴⁾	II	II	II
Thickener (AC Motor)	II	II	II
Thickener (DC Motor)	II	II	II
Washer (AC Motor)	II	II	II
Washer (DC Motor)	II	II	II
Wind and Unwind Stand	I	I	I
Winders (Surface Type)	II	II	II
Yankee Dryers ³⁾	II	II	II

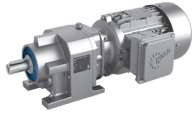


Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
PLASTICS INDUSTRY – PRIMARY PROCESSING			
Intensive Internal Mixers			
Batch Mixers	III	III	III
Continuous Mixers	II	II	II
Batch Drop Mill – 2 smooth rolls	II	II	II
Continuous Feed, Holding & Blend Mill Calendars	II	II	II
PLASTICS INDUSTRY – SECONDARY PROCESSING			
Blow Molders	II	II	II
Coating	II	II	II
Film	II	II	II
Pipe	II	II	II
Pre-Plasticizers	II	II	II
Rods	II	II	II
Sheet	II	II	II
Tubing	II	II	II
PULLERS – BARGE HAUL	II	II	II
PUMPS			
Centrifugal	I	I	II
Proportioning	II	II	II
Reciprocating			
Single Acting, 3 or more cylinders	II	II	II
Double Acting, 2 or more cylinders	II	II	II
Rotary			
Gear Type	I	I	II
Lobe	I	I	II
Vane	I	I	II
RUBBER INDUSTRY			
Intensive Internal Mixers			
Batch Mixers	III	III	III
Continuous Mixers	II	II	II
Mixing Mill			
2 smooth rolls	II	II	II
1 or 2 corrugated rolls	III	III	III
Batch Drop Mill – 2 smooth rolls	II	II	II
Cracker Warmer – 2 roll, 1 corrugated roll	III	III	III
Cracker – 2 corrugated rolls	III	III	III
Holding, Feed & Blend Mill – 2 rolls	II	II	II
Refiner – 2 rolls	II	II	II
Calendars	II	II	II
SAND MULLER	II	II	II
SEWAGE DISPOSAL EQUIPMENT			
Bar Screens	II	II	II
Chemical Feeders	II	II	II
Dewatering Screens	II	II	II
Scum Breakers	II	II	II
Slow or Rapid Mixers	II	II	II
Sludge Collectors	II	II	II
Thickener	II	II	II
Vacuum Filters	II	II	II

Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
SCREENS			
Air Washing	I	I	II
Rotary – Stone or Gravel	II	II	II
Traveling Water Intake I	I	I	I
SCREW CONVEYORS			
Uniformly loaded or Fed	I	I	II
Heavy Duty	I	II	II
SUGAR INDUSTRY			
Beet Slicer	III	III	III
Cane Knives	II	II	II
Crushers	II	II	II
Mills (low speed end)	III	III	III
TEXTILE INDUSTRY			
Batchers	II	II	II
Calendars	II	II	II
Cards	II	II	II
Dry Cans	II	II	II
Dyeing Machinery	II	II	II
Looms	II	II	II
Mangles	II	II	II
Nappers	II	II	II
Pads	II	II	II
Siashers	II	II	II
Soapers	II	II	II
Spinners	II	II	II
Tenter Frames	II	II	II
Washers	II	II	II
Winders	II	II	II

Notes to GEARMOTOR SERVICE FACTOR table:

- 1) Crane drives are to be selected based upon the gear tooth bending strength using the numeric service factors shown in the table or by analysis such as Miners' Rule. In all cases, the pitting resistance service factor shall be a minimum of 1.0. Contact NORD Gear for selection assistance.
- 2) Service factors for paper mill applications are applied to the nameplate rating of the electric drive motor at the motor rated based speed.
- 3) Anti-friction bearings only.
- 4) A Class Number of I may be applied at base speed of a supercalendar operating over a speed range of part-range constant horsepower and part-range constant torque where the constant horsepower speed range is greater than 1.5 to 1. A Class Number of II is applicable to supercalendars operating over the entire speed range at constant torque or where the constant horse-power speed range is less than 1.5 to 1.



AGMA Service Factor Selection for Speed Reducers

Before an enclosed speed reducer or increaser can be selected for any application, an equivalent unit power rating (service factor = 1.0) must be determined. This is done by multiplying the specified power by the service factor. Since the service factor represents the normal relationship between the gear unit rating and the required application power, it is suggested that the service factor be applied to the nameplate rating of the prime mover or driven machine rating, as applicable.

NORD Gear and the user must agree upon which power, prime mover rating or driven machine requirements, should dictate the selection of the gear drive. It is necessary that the gear drive selected have a rated unit capacity equal to or in excess of this "equivalent unit power rating".

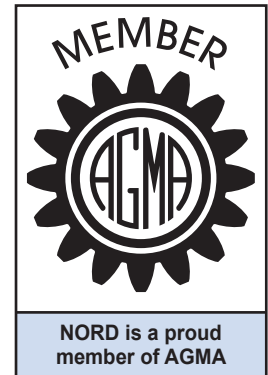
All service factors listed are 1.0 or greater. Service factors less than 1.0 can be used in some applications when specified by the user and agreed to by NORD Gear.

The service factor tables should be used with caution, since much higher values have occurred in some applications. Values as high as ten have been used. On some applications up to six times nominal torque can occur, such as: Turbine/Generator drives, Heavy Plate and Billet rolling mills.

It has been developed from the experience of manufacturers and users of gear drives for use in common applications. It is suggested that service factors for special applications be agreed upon by the user and NORD GEAR when variations of the values in the table may be required.

Service factors shown are for reducers driven by motors (electric or hydraulic) and turbines (steam or gas) according to AGMA 6013-A06. When the driver is a single cylinder or multi-cylinder engine, the service factors from the table must be modified for the appropriate type of prime mover.

As an example, if the application is a centrifugal blower, the service factor from the reducer service factor table is 1.25 for a motor or turbine. The service factor conversion table changes this value to 1.75 for a single cylinder engine and 1.50 for a multi-cylinder engine.



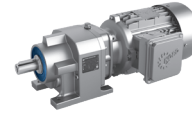
IMPORTANT NOTE



Any user of enclosed gear drives should make sure that the latest available information affecting the selection of a gear drive is used. When better load intensity data is available on the driving or driven equipment, this should be considered when a service factor is selected.

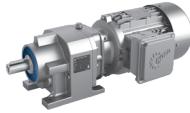
Service Factor Conversion Table for Engine Driven Applications

Electric Motor, Steam & Gas Turbines, Hydraulics	Single-Cylinder Engines	Multi-Cylinder Engines
1.00	1.50	1.25
1.25	1.75	1.50
1.50	2.0	1.75
1.75	2.25	2.00
2.00	2.50	2.25
2.25	2.75	2.50
2.50	3.00	2.75
2.75	3.25	3.00
3.00	3.50	3.25



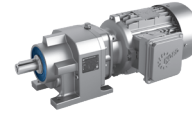
Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
AGITATORS (mixers)			
Pure Liquids	1.00	1.00	1.25
Liquids and Solids	1.00	1.25	1.50
Liquids – Variable Density	1.00	1.25	1.50
BLOWERS			
Centrifugal	1.00	1.25	1.50
Lobe	1.00	1.25	1.50
Vane	1.00	1.00	1.25
BREWING AND DISTILLING			
Bottling Machinery	1.00	1.00	1.25
Brew Kettles – Continuous Duty	1.00	1.00	1.25
Cookers – Continuous Duty	1.00	1.00	1.25
Mash Tubs – Continuous Duty	1.00	1.00	1.25
Scale Hopper – Frequent Starts	1.00	1.25	1.50
CAN FILLING MACHINES	1.00	1.00	1.25
CAR DUMPERS	1.25	1.50	1.75
CAR PULLERS	1.00	1.25	1.50
CLARIFIERS	1.00	1.00	1.25
CLASSIFIERS	1.00	1.25	1.50
CLAY WORKING MACHINERY			
Brick Press	1.25	1.50	1.75
Briquette Machine	1.25	1.50	1.75
Pug Mill	1.00	1.25	1.50
COMPACTORS	1.50	1.75	2.00
COMPRESSORS			
Centrifugal	1.00	1.00	1.25
Lobe	1.00	1.25	1.50
Reciprocating, Multi-Cylinder	1.00	1.25	1.50
Reciprocating, Single-Cylinder	1.25	1.50	1.75
CONVEYORS – GENERAL PURPOSE			
Uniformly loaded or fed	1.00	1.00	1.25
Not uniformly fed	1.00	1.25	1.50
Reciprocating or shaker	1.25	1.50	1.75
CRANES¹⁾			
Dry dock			
Main hoist	1.25	1.50	1.75
Auxilliary hoist	1.25	1.50	1.75
Boom hoist	1.25	1.50	1.75
Slewing drive	1.25	1.50	1.75
Traction drive	1.50	1.50	1.50
Industrial Duty			
Main hoist	1.00	1.25	1.50
CRUSHER			
Stone or ore	1.50	1.75	2.00

Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
DREDGES			
Cable reels	1.00	1.25	1.50
Conveyors	1.00	1.25	1.50
Cutter Head Dives	1.25	1.50	1.75
Pumps	1.00	1.25	1.50
Screen Drives	1.25	1.50	1.75
Stackers	1.00	1.25	1.50
Winches	1.00	1.25	1.50
ELEVATORS			
Bucket	1.00	1.25	1.50
Centrifugal Discharge	1.00	1.00	1.25
Gravity Discharge	1.00	1.00	1.25
EXTRUDERS			
General	1.25	1.25	1.25
Plastics			
Variable Speed Drive	1.50	1.50	1.50
Fixed Speed Drive	1.75	1.75	1.75
Rubber			
Continuous Screw Operation	1.50	1.50	1.50
Intermittent Screw Operation	1.75	1.75	1.75
FANS			
Centrifugal	1.00	1.00	1.25
Forced Draft	1.25	1.25	1.25
Induced Draft	1.00	1.25	1.50
Industrial & Mine	1.00	1.25	1.50
FEEDERS			
Apron	1.00	1.25	1.50
Belt	1.00	1.25	1.50
Disc	1.00	1.00	1.25
Reciprocating	1.25	1.50	1.75
Screw	1.00	1.25	1.50
FOOD INDUSTRY			
Cereal Cooker	1.00	1.00	1.25
Dough Mixer	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50
Slicers	1.00	1.25	1.50
GENERATORS AND EXCITERS	1.00	1.00	1.25
HAMMER MILLS	1.50	1.50	1.75
HOISTS			
Heavy Duty	1.25	1.50	1.75
Medium Duty	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50
LAUNDRY TUMBLERS	1.00	1.25	1.50
LAUNDRY WASHERS	1.25	1.25	1.50



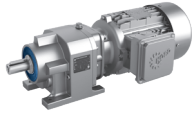
Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
LUMBER INDUSTRY			
Barkers	1.25	1.25	1.50
Spindle Feed	1.50	1.50	1.50
Main Drive	1.25	1.25	1.50
Conveyors			
Burner	1.25	1.25	1.50
Main or Heavy Duty	1.50	1.50	1.50
Main log	1.50	1.50	1.75
Re-saw, Merry-Go-Round	1.25	1.25	1.50
Slab	1.50	1.50	1.75
Transfer	1.25	1.25	1.50
Chains			
Floor	1.50	1.50	1.50
Green	1.50	1.50	1.50
Cut-Off Saws			
Chain	1.50	1.50	1.50
Drag	1.50	1.50	1.50
Debarking Drums	1.50	1.50	1.75
Feeds			
Edger	1.25	1.25	1.50
Gang	1.50	1.50	1.50
Trimmer	1.25	1.25	1.50
Long Deck	1.50	1.50	1.50
Log Hauls – Incline – Well Type	1.50	1.50	1.50
Log Turning Devices	1.50	1.50	1.50
Planer Feed	1.25	1.25	1.50
Planer Tilting Hoists	1.50	1.50	1.50
Rolls – live-off brg. – Roll Cases	1.50	1.50	1.50
Sorting Table	1.25	1.50	1.50
Tipple Hoist	1.25	1.25	1.50
Transfers			
Chain	1.50	1.50	1.50
Causeway	1.50	1.50	1.50
Tray Drives	1.25	1.25	1.50
METAL MILLS			
Draw Bench Carriage/Main Drive	1.00	1.25	1.50
Runout Table			
Non-reversing			
Group Drives	1.00	1.25	1.50
Individual Drives	1.50	1.50	1.75
Reversing	1.50	1.50	1.75
Slab Pushers	1.25	1.25	1.50
Shears	1.50	1.50	1.75
Wire drawing	1.00	1.25	1.50
Wire Winding Machine	1.00	1.25	1.50

Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
METAL STRIP PROCESSING MACHINERY			
Bridles	1.25	1.25	1.50
Coilers and uncoilers	1.00	1.00	1.25
Edge Trimmers	1.00	1.25	1.50
Flatteners	1.00	1.25	1.50
Loopers (accumulators)	1.00	1.00	1.00
Pinch rolls	1.00	1.25	1.50
Scrap choppers	1.00	1.25	1.50
Shears	1.50	1.50	1.75
Slitters	1.00	1.25	1.50
MILLS, ROTARY TYPE			
Ball & Rod			
Spur Ring Gear	1.50	1.50	1.75
Helical Ring Gear	1.50	1.50	1.50
Direct Connected	1.50	1.50	1.75
Cement Kilns	1.50	1.50	1.50
Dryers & Coolers	1.50	1.50	1.50
MIXERS CONCRETE	1.00	1.25	1.50
PAPER MILLS²⁾			
Agitator (Mixer)	1.50	1.50	1.50
Agitator for Pure liquors	1.25	1.25	1.25
Barking Drums	1.75	1.75	1.75
Barkers – Mechanical	1.75	1.75	1.75
Beater	1.50	1.50	1.50
Breaker Stack	1.25	1.25	1.25
Calender ³⁾	1.25	1.25	1.25
Chipper	1.75	1.75	1.75
Chip Feeder	1.50	1.50	1.50
Coating Rolls	1.25	1.25	1.25
Conveyors			
Chip, Bark, Chemical log (including Slab)	1.25	1.25	1.25
Couch Rolls	1.25	1.25	1.25
Cutter	1.75	1.75	1.75
Cylinder Molds	1.25	1.25	1.25
Dryers³⁾			
Paper Machine	1.25	1.25	1.25
Conveyor Type	1.25	1.25	1.25
Embosser	1.25	1.25	1.25
Extruder	1.50	1.50	1.50
Fourdrinier Rolls (Includes lump Breaker, Dandy Roll, Wire Turning and Return Rolls)	1.25	1.25	1.25
Jordan	1.25	1.25	1.25
Kiln Drive	1.50	1.50	1.50



Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
PAPER MILLS²⁾ (cont)			
Mt. Hope Roll	1.25	1.25	1.25
Paper Rolls	1.25	1.25	1.25
Presses – Felt & Suction	1.25	1.25	1.25
Pulper	1.50	1.50	1.75
Pumps – Vacuum	1.50	1.50	1.50
Reel (Surface Type)	1.25	1.25	1.50
Screens			
Chip	1.50	1.50	1.50
Rotary	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75
Size Press	1.25	1.25	1.25
Supercalendar ⁴⁾	1.25	1.25	1.25
Thickener (AC Motor)	1.50	1.50	1.50
Thickener (DC Motor)	1.25	1.25	1.25
Washer (AC Motor)	1.50	1.50	1.50
Washer (DC Motor)	1.25	1.25	1.25
Wind and Unwind Stand	1.00	1.00	1.00
Winders (Surface Type)	1.25	1.25	1.25
Yankee Dryers ²⁾	1.25	1.25	1.25
PLASTICS INDUSTRY – PRIMARY PROCESSING			
Intensive Internal Mixers			
Batch Mixers	1.75	1.75	1.75
Continuous Mixers	1.50	1.50	1.50
Batch Drop Mill – 2 smooth rolls			
Continuous Feed, Holding & Blend Mill	1.25	1.25	1.25
Calendars	1.50	1.50	1.50
PLASTICS INDUSTRY – SECONDARY PROCESSING			
Blow Molders	1.50	1.50	1.50
Coating	1.25	1.25	1.25
Film	1.25	1.25	1.25
Pipe	1.25	1.25	1.25
Pre-Plasticizers	1.50	1.50	1.50
Rods	1.25	1.25	1.25
Sheet	1.25	1.25	1.25
Tubing	1.25	1.25	1.50
PULLERS – BARGE HAUL	1.00	1.50	1.75

Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
PUMPS			
Centrifugal	1.00	1.00	1.25
Proportioning	1.00	1.25	1.50
Reciprocating			
Single Acting, 3 or more cylinders	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50
Rotary			
Gear Type	1.00	1.00	1.50
Lobe	1.00	1.00	1.25
Vane	1.00	1.00	1.25
RUBBER INDUSTRY			
Intensive Internal Mixers			
Batch Mixers	1.50	1.75	1.75
Continuous Mixers	1.25	1.50	1.50
Mixing Mill			
2 smooth rolls	1.50	1.50	1.50
1 or 2 corrugated rolls	1.75	1.75	1.75
Batch Drop Mill – 2 smooth rolls	1.50	1.50	1.50
Cracker Warmer – 2 roll, 1 corrugated roll	1.75	1.75	1.75
Cracker – 2 corrugated rolls	1.75	1.75	1.75
Holding, Feed & Blend Mill – 2 rolls	1.25	1.25	1.25
Refiner – 2 rolls	1.50	1.50	1.50
Calendars	1.50	1.50	1.50
SAND MILLER	1.00	1.25	1.50
SEWAGE DISPOSAL EQUIPMENT			
Bar Screens	1.00	1.00	1.25
Chemical Feeders	N/A	1.00	1.25
Dewatering Screens	1.00	1.25	1.50
Scum Breakers	1.00	1.25	1.50
Slow or Rapid Mixers	1.00	1.25	1.50
Sludge Collectors	1.00	1.00	1.25
Thickener	1.00	1.25	1.50
Vacuum Filters	1.00	1.25	1.50
SCREENS			
Air Washing	1.00	1.00	1.25
Rotary – Stone or Gravel	1.00	1.25	1.50
Traveling Water Intake I	1.00	1.00	1.25

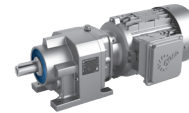


Application	Load Duration		
	Up to 3 hrs per day	3-10 hrs per day	Over 10 hrs per day
SCREW CONVEYORS			
Uniformly loaded or Fed	1.00	1.00	1.25
Heavy Duty	1.00	1.25	1.50
Severe Duty Reciprocating	1.50	1.75	2.00
SUGAR INDUSTRY			
Beet Slicer	1.50	1.50	1.75
Cane Knives	1.50	1.50	1.50
Crushers	1.50	1.50	1.50
Mills (low speed end)	1.50	1.50	1.50
TEXTILE INDUSTRY			
Batchers	1.00	1.25	1.50
Calendars	1.00	1.25	1.50
Cards	1.00	1.25	1.50
Dry Cans	1.00	1.25	1.50
Dyeing Machinery	1.00	1.25	1.50
Looms	1.00	1.25	1.50
Mangles	1.00	1.25	1.50
Nappers	1.00	1.25	1.50
Pads	1.00	1.25	1.50
Siashers	1.00	1.25	1.50
Soapers	1.00	1.25	1.50
Spinners	1.00	1.25	1.50
Tenter Frames	1.00	1.25	1.50
Washers	1.00	1.25	1.50
Winders	1.00	1.25	1.50

Notes to REDUCER SERVICE FACTOR table:

- 1) Crane drives are to be selected based upon the gear tooth bending strength using the numeric service factors shown in the table or by analysis such as Miners' Rule. In all cases, the pitting resistance service factor shall be a minimum of 1.0. Contact NORD Gear for selection assistance.
- 2) Service factors for paper mill applications are applied to the nameplate rating of the electric drive motor at the motor rated based speed.
- 3) Anti-friction bearings only.
- 4) A Class Number of I may be applied at base speed of a supercalendar operating over a speed range of part-range constant horsepower and part-range constant torque where the constant horsepower speed range is greater than 1.5 to 1. A Class Number of II is applicable to supercalendars operating over the entire speed range at constant torque or where the constant horse-power speed range is less than 1.5 to 1.

Formulas & Conversions



Metric ⇒ Inch

Multiply	By	To Obtain
Gram [g]	x 0.0353	= oz
Kilogram [kg]	x 2.205	= lb
Newton [N]	x 0.2248	= lb
Newton meter [Nm]	x 8.851	= lb-in
Newton meter [Nm]	x 0.7375	= lb-ft
Inertia [kgm ²]	x 23.75	= lb-ft ²
Kilowatt [kW]	x 1.341	= hp
Meter [m]	x 39.4	= in
Meter [m]	x 3.281	= ft
Meter [m]	x 1.094	= yd
Millimeter [mm]	x 0.0391	= in
Centimeter [cm]	x 0.394	= in
Cubic Centimeter [cm ³]	x 0.061	= in ³
Liter [l]	x 61.023	= in ³
Liter [l]	x 1.057	= qt
Liter [l]	x 0.2642	= gal

Inch ⇒ Metric

Multiply	By	To Obtain
Ounce [oz]	x 28.35	= g
Pound [lb]	x 0.454	= kg
Ounce [oz]	x 0.028	= kg
Pound [lb]	x 4.448	= N
Pound-Inch [lb-in]	x 0.113	= Nm
Pound Feet [lb-ft]	x 1.3558	= Nm
Pound Feet Squared [lb-ft ²]	x 0.0421	= kgm ²
Horsepower [hp]	x 0.746	= kW
Feet [ft]	x 0.3048	= kW
Yard [yd]	x 0.9144	= m
Inch [in]	x 25.4	= mm
Inch [in]	x 2.54	= cm
Inch [in]	x 0.0254	= m
Cubic Inch [in ³]	x 16.39	= cm ³
Cubic Inch [in ³]	x 0.016	= liters
Gallon [gal]	x 3.785	= liters

Temperature

°F	=	1.8 °C + 32
°C	=	0.5555 x (°F - 32)
°C	=	°K - 273.16

Linear Velocity

Miles per Hour [mph]	x 88	= ft/min [fpm]
Miles per Hour [mph]	x 1.4677	= ft/sec [fps]
Feet per Minute [fpm]	x 0.3048	= m/min
Feet per Minute [fpm]	x 0.00508	= m/sec
Meter per Minute [m/min]	x 3.2808	= ft/min [fpm]
Meter per Second [m/sec]	x 196.85	= ft/min [fpm]

Power

hp	=	$\frac{\text{Torque (lb-in)} \times \text{rpm}}{63025}$
hp	=	$\frac{\text{Torque (lb-ft)} \times \text{rpm}}{5252}$
hp _(Lift)	=	$\frac{\text{Wgt (lb)} \times \text{fpm}}{33000 \times \text{Efficiency}}$
hp _(Slide)	=	$\frac{\text{Wgt (lb)} \times \mu \times \text{fpm}}{33000 \times \text{Efficiency}}$

Torque

T _(lb-in)	=	$\frac{\text{hp} \times 63025}{\text{rpm}}$
T _(lb-ft)	=	$\frac{\text{hp} \times 5252}{\text{rpm}}$

Electric Motor 3-phase

$$\text{hp}_{(3\text{ph-motor})} = \frac{1.732 \times V \times I \times \text{PF} \times \text{Efficiency}}{746}$$

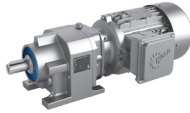
Linear & Rotational Speed

fpm	=	0.2618 x Dia _(in) x rpm
rpm	=	$\frac{\text{fpm} \times 3.820}{\text{Dia}_{(in)}}$

Metric M Threads

For metric "M" threads, it is customary to omit the thread pitch for coarse threads. For example, if a thread is called out as an M8 with no pitch shown, it is automatically a coarse pitch thread.

Coarse threads and pitch
M6 x 1
M8 x 1.25
M10 x 1.5
M12 x 1.75
M16 x 2
M20 x 2.5
M24 x 3



Solid Shaft Diameter Tolerance		[in]
> 0.375	≤ 1.750	+0.0000 / -0.0005
> 1.750	≤ 7.500	+0.0000 / -0.0010

All Keys and Keyways: Inch - ANSI B17

Solid Shaft Diameter Tolerance		[mm]
> 10	≤ 18	+0.012 / +0.001
> 18	≤ 30	+0.015 / +0.002
> 30	≤ 50	+0.018 / +0.002
> 50	≤ 80	+0.030 / +0.011
> 80	≤ 120	+0.035 / +0.013
> 120	≤ 180	+0.040 / +0.015
> 180	≤ 190	+0.046 / +0.017

All Keys and Keyways: Metric - DIN 6885, class m6

Solid Shaft Drill & Tap Shaft End - Threaded Holes		[in]
> ø 0.375	≤ ø 0.500	10-24 x 0.43
> ø 0.500	≤ ø 0.875	1/4-20 x 0.59
> ø 0.875	≤ ø 0.938	5/16-18 x 0.71
> ø 0.938	≤ ø 1.100	3/8-16 x 0.87
> ø 1.100	≤ ø 1.300	1/2-13 x 1.10
> ø 1.300	≤ ø 1.875	5/8-11 x 1.42
> ø 1.875	≤ ø 3.500	3/4-10 x 1.73

Solid Shaft Drill & Tap Shaft End - Threaded Holes		[mm]
> ø 10	≤ ø 13	M4 x 10
> ø 13	≤ ø 16	M5 x 12.5
> ø 16	≤ ø 21	M6 x 16
> ø 21	≤ ø 24	M8 x 19
> ø 24	≤ ø 30	M10 x 22
> ø 30	≤ ø 38	M12 x 28
> ø 38	≤ ø 50	M16 x 36
> ø 50	≤ ø 85	M20 x 42
> ø 85	≤ ø 130	M24 x 50

Flange Pilot (AK or AK1) Tolerance			[in]
Flange Pilot Diameter	Pilot Tolerance	Fit Class ❶	
> ø 1.969	≤ ø 3.150	+0.0005 / -0.0003	j6
> ø 3.150	≤ ø 4.724	+0.0005 / -0.0004	j6
> ø 4.724	≤ ø 7.087	+0.0006 / -0.0004	j6
> ø 7.087	≤ ø 9.055	+0.0006 / -0.0005	j6
> ø 9.055	≤ ø 9.843	+0.0000 / -0.0011	h6
> ø 9.843	≤ ø 12.402	+0.0000 / -0.0013	h6
> ø 12.402	≤ ø 15.748	+0.0000 / -0.0014	h6
> ø 15.748	≤ ø 19.685	+0.0000 / -0.0016	h6

❶ Inch Pilot Tolerances per ISO286-2

Flange Pilot (AK or AK1) Tolerance			[mm]
Flange Pilot Diameter	Pilot Tolerance	Fit Class ❶	
> ø 50	≤ ø 80	+0.012 / -0.007	j6
> ø 80	≤ ø 120	+0.013 / -0.009	j6
> ø 120	≤ ø 180	+0.014 / -0.011	j6
> ø 180	≤ ø 230	+0.016 / -0.013	j6
> ø 230	≤ ø 250	+0.000 / -0.029	h6
> ø 250	≤ ø 315	+0.000 / -0.032	h6
> ø 315	≤ ø 400	+0.000 / -0.036	h6
> ø 400	≤ ø 500	+0.000 / -0.040	h6

❶ Metric Pilot Tolerances per ISO286-2

Casting Surfaces may differ slightly (approximately 0.125 inches or 3.2mm) from the specified nominal dimensions as a result of the manufacturing process

Notes



Engineering

A large grid of blue lines on a white background, intended for taking notes.

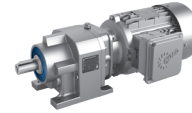


DRIVESYSTEMS

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NORDBLOC.1® Gearbox Options

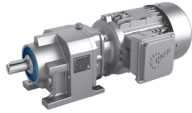
Option Code	Description	Page
none	Solid shaft, foot mount	61
ADP	Additional drain plug hole	65
DR	Autovent	65
F	B5 flange	61
FKM	(FKM) Fluoro-elastomer seals	63
FV	Filtered vent	65
LL	Long term storage	65
MDP	Magnetic drain plug	65
OA	Oil expansion chamber	64
OSG	Oil sight glass	65
OV	Open vent	65
PR	B5 flange pilot removal	61
SM	Stainless steel output shaft	62
SWV	Special solid shaft	62
VL	Heavy duty output bearings	63
XF	Foot mount with B5 flange	61
XZ	Foot mount with B14 flange	61
Z	B14 flange	61
none	NSD TupH	67
none	Special drain plugs	65
none	Paint coatings	66

Inputs

NORD's modular design allows for many different types of inputs to be added to gear reducers. All inputs are bolt on and include machined pilots to ensure simple and accurate assembly. NORD offers the following different input types:

- Integral motor
- NEMA C-Face motor adapter
- IEC B5 motor adapter
- Solid input shaft
- Custom mounting interface

For more information, see the input section pages - .



Mounting Options

NORD offers a number of different mounting arrangements with the CLINCHER™ gear units.

- Foot
- B5 flange (F)
- B14 flange (Z)
- Foot/Flange Mount (XZ or XF)

Foot Mounted

Foot or base mounting is the most common method of reducer mounting. The speed reducer is secured in place with bolts or studs to a mounting base. Most often the reducer has mounting feet with through holes.

B5 Flange (F)

A B5 flange provides a simple, large diameter mounting flange with clearance holes and a centering pilot to firmly secure the speed reducer to the application. The B5 flange utilizes standard metric dimensions and is available for all NORD reducers. Many reducers offer a number of B5 flange diameters.

B5 Flange Pilot Removal (PR)

B5 flanges have a centering pilot machined onto the flange. In cases where there is not a matching counter bore or when the flange must sit flush to the mounting surface then the centering pilot must be removed. This pilotless flange is used to firmly secure the speed reducer to the application.

In some cases the matching surface already has a centering pilot and the use of a female pilot (counter bored flange surface) is recommended. Counter rotating drives are an example where a female pilot is frequently used.

B14 Flange (Z)

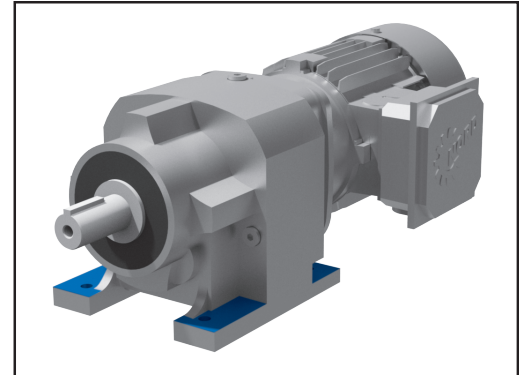
The NORD B14 flange consists of threaded holes and a centering pilot machined into the reducer housing. It is commonly used to secure the reducer to the application or machine base as well as to mount many bolt on components like a B5 flange, torque arm, or shaft cover. The B14 flange uses standard metric dimensions and allows a compact method of securing the reducer. This option is standard on all CLINCHER™ units

Foot Mounted with B5 Flange (XF)

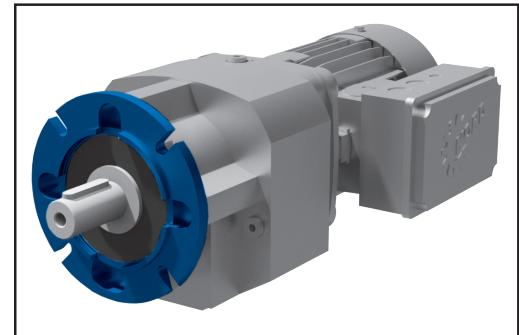
NORD can supply some foot mounted reducers with a B5 flange as well. These type XF reducers are designed to be foot and not flange mounted. The B5 flange is normally used to mount auxiliary equipment to the speed reducer. If the B5 flange is going to be used to mount the reducer, additional support will normally be required.

Foot mounted with B14 Face Flange (XZ)

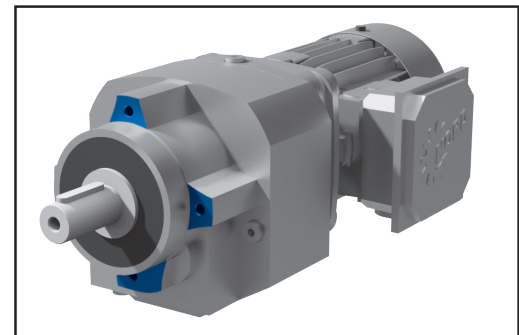
NORD can supply some foot mounted reducers with a B14 face flange as well. These type XZ reducers are designed to be foot and not flange mounted. The B14 face flange is normally used to mount auxiliary equipment to the speed reducer. If the B14 face flange is going to be used to mount the reducer, additional support will normally be required.



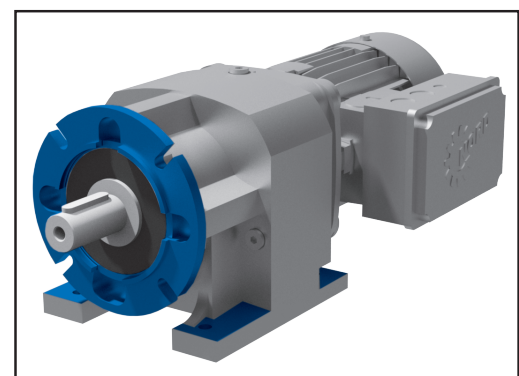
NORDBLOC.1° Foot Mounted Unit (X)



NORDBLOC.1° B5 Flange Unit (F)

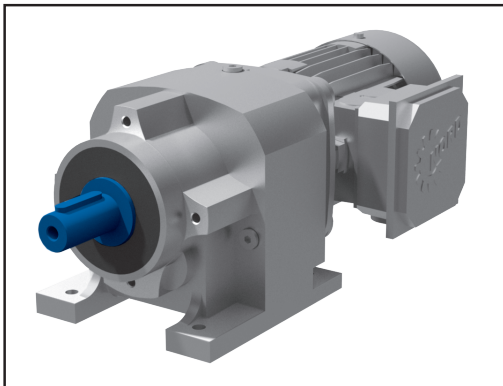
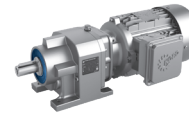


NORDBLOC.1° B14 Flange Unit (Z)



NORDBLOC.1° Foot Mounted with B5 (XF)

Options



NORDBLOC.1® Solid Shaft (V)

Shaft Options

NORD offers a number of different types of shafts, shaft options and shaft materials including:

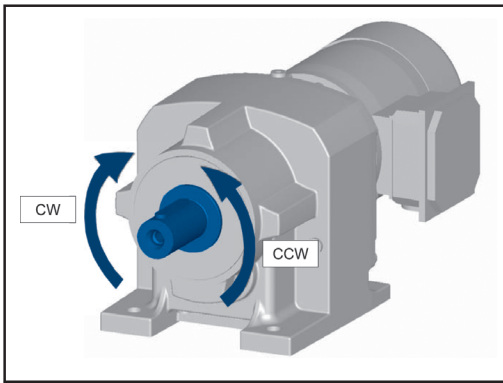
Solid Shaft

NORD's standard keyed solid shafts include a centered threaded hole. Shafts are available as inch or metric versions. The standard shaft material is 1045 or 4140 or equivalent.

Special Shafts & Shaft Materials

Stainless Steel Output Shaft (SM)

Output shafts made from stainless steel are available and are frequently used in food, pharmaceutical, and washdown applications. In some cases solid input shafts can also be provided in stainless.



NORDBLOC.1® Backstop Rotation Direction (RLS)

Special Solid Shaft (SWV)

Special solid shaft diameters and lengths can be provided for a nominal price adder. Special features are also available including keyless shafts, cross drilled shafts or special threaded taps. Different shaft materials are also available. NORD has in-house drafting design and machining departments so we can provide special requirements in short lead times. Specify your shaft requirements and NORD will verify the design feasibility.

Backstop (RLS)

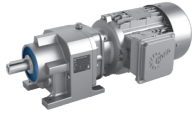
The anti-rotation backstop allows rotation in one direction. NORD's backstop is installed internally to the motor. The backstop is available on units with motor frame sizes of 80 through 200. The motor length would be equal to that of the a NORD brakemotor. The backstop lift-off is due to centrifugal force and occurs at a rotation speed of approximately 900 rpm.



The direction of rotation is required when ordering.

Specify the Allowable Output Shaft Rotation

- CW - Clockwise Rotation
- CCW - Counter-clockwise Rotation



Nitrile Rubber Oil Seals (NBR)

Nitrile rubber (NBR) or Buna-N shaft seals are standard issue with NORD gear units. NBR seals offer high tensile strength and good resistance to abrasion, tear, and compression set. They are designed to withstand most oils, lubricants, fuels, and animal oils and they provide resistance to many diluted acids and bases. They perform well in cold environments and in temperatures up to 125°F (250°C). NBR seals should not be used when exposed to concentrated acids, oxidizing agents, ozone, or chlorinated hydrocarbons.



Nitrile Rubber & Fluoro-elastomer Seals (NBR) (FKM)

Fluoro-elastomer Oil Seals (FKM)

As a standard option, NORD offers Fluoro-elastomer (FKM) shaft seals. FKM seals also offer good resistance to abrasion, tear, and compression set. FKM seals provide very good resistance to oils, fuels and mineral acids. Compared to NBR seals, FKM seals offer superior resistance to oxidation and aging, ozone, UV exposure, weather, fungus, and mold. FKM seals are also preferred when high temperature resistance is needed as they are designed to handle temperatures up to 390°F (200°C). FKM seals should be applied with extreme caution in cold temperature environments as they may become brittle. FKM seals may also accelerate wear on softer shaft steels including 300 series austenitic stainless steel alloys.

If your gearmotor or gear reducer application requires special sealing solutions please consult NORD.

Heavy Duty Output Bearings (VL)

The VL option can be specified on most NORDBLOC®.1 gear units as a standard upgrade to increase the gear unit's ability to handle externally applied shaft forces. The gearmotor ratings tables provide the allowable radial and axial load force ratings for standard gear units and those gear units specified with the VL option.

Gear Unit Types SK 071.1 to SK 771.1 (1-Stage)

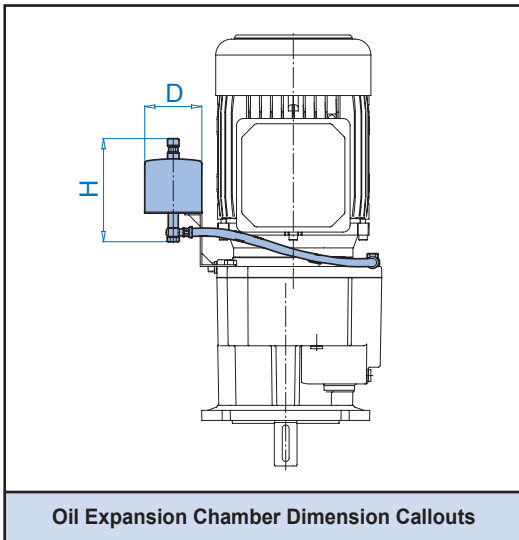
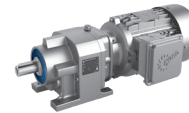
The VL option replaces high capacity ball bearings with twin tapered roller bearings, providing the ability to handle very high radial or axial load forces. In addition, the output shaft is replaced with a higher strength alloy steel.

Gear Unit Types SK 372.1 to SK 673.1 (2 & 3 Stage)

The VL option includes oversized, high capacity ball bearings with the NORD staggered bearing topology. In addition, the output shaft is replaced with a higher strength alloy steel.

Gear Unit Types SK 772.1 to SK 973.1 (2 & 3 Stage)

The VL option replaces high capacity ball bearings with twin tapered roller bearings, providing the ability to handle very high radial or axial load forces. In addition, the output shaft is replaced with a higher strength alloy steel.



Oil Expansion Chamber (OA)

Gear units with the motor or input shaft mounted vertically upright must be filled almost completely with oil in order to properly supply the 1st stage gearing with oil. Certain operating conditions and higher gear peripheral speeds can result in increased oil churning or splashing losses and heating of the air space located above the oil.

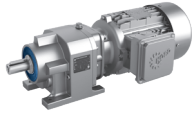
During operation, the oil expansion chamber provides a safe overflow area for the expanded oil-air mixture, thus eliminating excessive pressure build-up, minimizing the formation of foam, and preventing oil-loss through the breather, oil seals, gaskets, etc. As heat is released from the expanded air-oil mixture contained within the overflow chamber, gravity allows the oil to be returned to the primary gear sump supply, eliminating a critical loss in oil level. At rest, the gear unit is filled to its normal fill-level position and there should be no oil in the expansion chamber.

NORDBLOC.1 Gear Unit	Part Number	D [in]	H [in]	[lb]
SK 571.1 / SK 572.1 / SK 573.1 SK 672.1 / SK 673.1 SK 771.1 / SK 772.1 / SK 773.1 SK 872.1 / SK 873.1 SK 972.1 / SK 973.1	28390390	3.94	7.09	11.0

Application Considerations

Nord strongly recommends the use of an oil expansion chamber when the motor is mounted vertical-up, when the reducer mounting position is M4 and when it meets any of the criteria listed below. Any application required to operate above 1800 rpm synchronous motor speeds should also be reviewed to be certain that the reducer thermal limits are observed.

- NORDBLOC.1[®] gear unit sizes from SK 571.1 and larger, with ratios $i_{total} \leq 24:1$ or an output speed $n_2 \geq 75$ rpm.



AUTOVENT™ (DR)

The AUTOVENT™ prevents entry of foreign material, such as water, dust, corrosives, etcetera and is perfect for washdown and dusty environments. The AUTOVENT™ is a ball and spring check valve that opens at 3-4 psi during operation and closes tightly when the gearbox cools. The AUTOVENT™ is standard on all vented NORD reducers. Some of the benefits are cleaner gearbox oil, extended lubrication life and longer lasting seals, gears, and bearings.

Open Vent (OV)

An open vent can be optionally supplied on NORD reducers. The open vent allows for air pressure differences between the inner space of the reducer and the atmosphere. This open vent will be closed upon delivery to prevent oil leakage. Before the reducer is put in service the open vent should be activated by removing the sealing plug.

Filtered Vent (FV)

NORD offers a filtered vent, which allows gases to permeate, but does not allow dust and debris to pass through the vent.

Oil Sight Glass (OSG)

The oil sight glass provides a visible oil level indication on the reducer. The sight glass replaces the standard steel fill plug and consists of a sealed clear porthole centered in the middle of a brass plug. The sight glass allows for quick oil level and color inspection.

Magnetic Drain Plug (MDP)

Magnetic drain plugs attract and hold ferrous metal particles that may circulate inside the reducer's lubrication system. These potentially abrasive particles may cause excessive wear in the reducer if they remain circulating. An increase of collected material may be a warning sign of future problems.

Special Drain Plugs

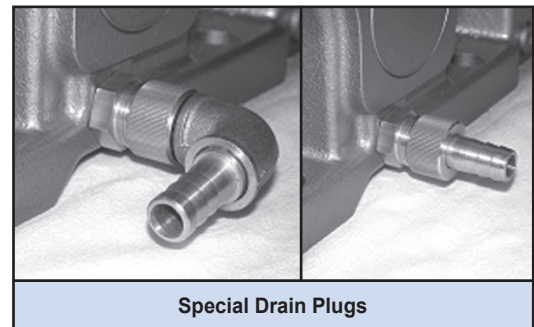
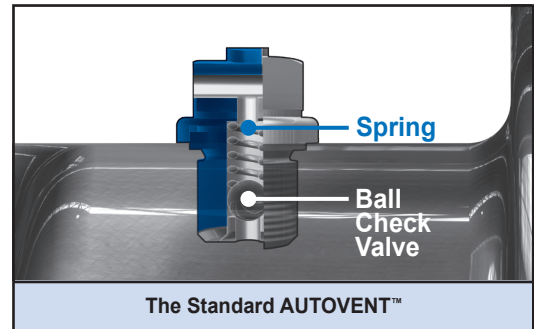
NORD can offer specialized oil drain plugs and solutions. Some of these solutions include spring loaded right-angle valves, straight valves, with or without covers as well as other fitting types.

Additional Drain Plug Hole (ADP)

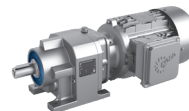
NORD can add an additional drain hole to the reducer housing for a small surcharge if required for special oil plumbing needs.

Long Term Storage (LL)

Speed reducers are frequently put in storage prior to installation for long periods of time and in some cases exposed to the elements. NORD's long term storage option protects the unit from moisture or corrosion by coating all unpainted surfaces with a dry, transparent, durable waxy film. Once installation is necessary this waxy film can be easily removed with a commercial de-greaser or petroleum solvent. If possible the store room should be vented and dry, with room temperatures between 23°F and 104 °F (-5 °C and 40 °C).



Options



Paint Coatings and Surface Protection

NORD's standard paint coating is a two component, aliphatic polyurethane finish containing 316 stainless steel material. This gray stainless steel paint has excellent appearance and outstanding physical properties. It is suitable for both indoor and outdoor applications.

Advantages of NORD's stainless steel two component polyurethane:

- Excellent adhesion to cast iron, aluminum, steel, and plastics
- Excellent corrosion resistance
- Excellent chemical resistance
- Excellent gloss and color retention
- Suitable for indoor and outdoor exposure
- Nonporous and excellent abrasion resistance
- Suitable for use in a USDA inspected facility



Nord Products on the Paint Line

Finish	Standard Colors	Coating	Use
Standard (stainless steel paint)	Stainless steel silver (Gray)	1 x Stainless steel (316) top coat (polyurethane)	Indoor or outdoor moderate environment
Alternate color	Black, Blue, Red, Orange	1 x Color top coat (polyurethane)	Indoor or outdoor protected

Paint free Gear Units (SK 071.1 - SK 771.1)

Gear units made from corrosion resistant aluminum alloy have a natural resistance to oxidization and corrosion. Therefore, paint coatings are not required and are optional.

Cast Iron Gear Units (SK 772.1 - SK 973.1)

The SK 771.1 - SK 973.1 gear units are made from class 35 gray cast iron and are typically painted with NORD's stainless steel paint.

A variety of coating options are available.



Improved corrosion protection for wet and outdoor environments starts by applying a primer undercoat over the primed cast-iron or base aluminum materials. The finish is then completed with our exceptional strength stainless steel polyurethane top coat.

NORD Severe Duty + (NSD+)	Stainless steel silver (Gray)	1 x Primer high solid alkyd system 1 x Stainless steel (316) top coat (polyurethane)	Indoor or outdoor moderate environment
NORD Severe Duty +W (NSD+W)	White	1 x Primer high solid alkyd system 1 x White top coat (polyurethane)	Indoor or outdoor moderate environment
Alternate color (NSD+)	Black, Blue, Red, Orange	1 x Primer high solid alkyd system 1 x Color top coat (polyurethane)	Indoor or outdoor moderate environment



For more demanding environments our multi-layer corrosion protection starts with a primer undercoat over the base material and then adding our stainless steel polyurethane coating and a high-gloss topcoat.

NORD Severe Duty Extreme (NSD-X3)	Stainless steel silver (Gray)	1 x Primer high solid alkyd system 1 x Stainless steel (316) (polyurethane) 1 x Clear top coat (polyurethane)	Indoor or outdoor more severe environment
NORD Severe Duty Extreme (NSD-X3W)	White	1 x Primer high solid alkyd system 1 x White (polyurethane) 1 x Clear top coat (polyurethane)	Indoor or outdoor more severe environment
Alternate color (NSD-X3)	Black, Blue, Red, Orange	1 x Primer high solid alkyd system 1 x Color (polyurethane) 1 x Clear top coat (polyurethane)	Indoor or outdoor more severe environment



NSD+ on Aluminum



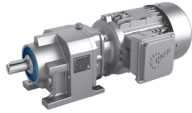
NSDX3 on Aluminum



NSD+ on Cast Iron



NSDX3 on Cast Iron



NSD Tuph

The NSD^{tuph} Sealed Surface Conversion System offers a cost effective weight saving alternative to stainless steel reducers. Through a revolutionary process, the aluminum alloy reducer housing and components are electrically catalyzed resulting in a molecular surface conversion. NSD^{tuph} is exceptionally chemical, corrosion and abrasion resistant. The converted surface becomes very scratch resistant as it becomes 6-7 times harder than the original aluminum alloy as a result of this process.

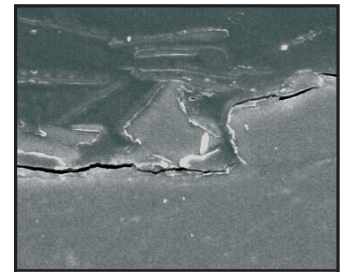
NSD^{tuph} is available on many NORD products. The NSD^{tuph} package includes stainless steel reducer assembly hardware. Options include stainless steel reducer shafting, smooth-bodied stainless steel motors, and food grade lubricants. NSD^{tuph} is the ideal package for harsh environments involving chemicals or wash-downs and other areas where sanitation and cleanliness are the highest priority.

Available NORDBLOC.1® Gear Units with NSD^{tuph} Conversion

NORDBLOC.1 Unit	Gear Stages	56C	N140TC	N180TC	N210TC
SK 071.1	1	X	X		
SK 072.1	2	X			
SK 171.1	1	X	X		
SK 172.1	2	X	X		
SK 371.1	1	X	X	X	
SK 372.1	2	X	X	X	
SK 373.1	3	X	X		
SK 571.1	1	X	X	X	X
SK 572.1	2	X	X	X	
SK 573.1	3	X	X	X	X
SK 672.1	2	X	X	X	X
SK 673.1	3	X	X	X	X
SK 771.1	1	X	X	X	X

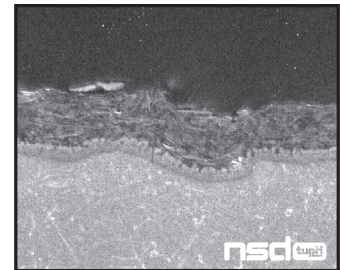
NSD Tuph System Package

- Standard Electrolytic processed reducer housing
- Standard Stainless Steel Hardware
- Standard C-Face Gasket included
- Housings surfaces are self draining
- Food Grade H1 Synthetic Lubrication (optional)
- Stainless Steel output shafting (optional)
- Stainless Steel C-Face Inverter Duty motor up to 10HP (optional)
- 3 Year Warranty when supplied with synthetic lube



Paint Aluminum Surface

Paint simply lies on top of the substrate and may even bridge across pores in the metal. Since paint does not form a permanent bond to the substrate, it can easily release at very low stress levels.



Sealer Aluminum Surface Surface Conversion

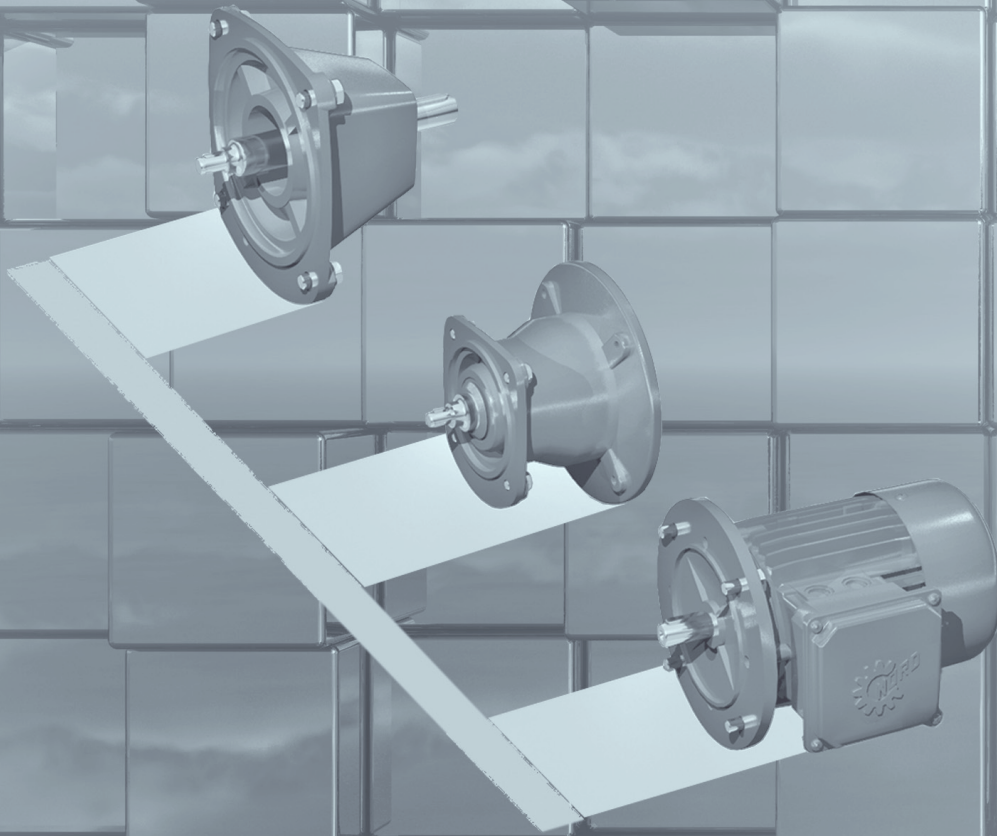
The NSD^{tuph} process includes a base layer that is permanently bonded to the substrate and provides a powerful foundation for adhesion of the surface sealant. This foundation provides excellent roughness, is 6-7x harder than the aluminum substrate and up to 1000x harder than paint.

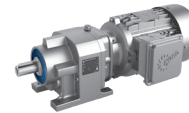


DRIVESYSTEMS

Inputs

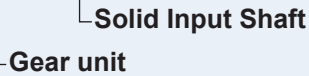
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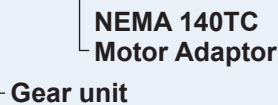
Example Nomenclature

SK 772.1 - W



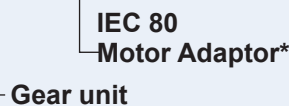
Gear unit with solid input shaft.

SK 772.1 -140TC



Gear unit to receive standard NEMA C-Face motor adaptor.

SK 772.1 - IEC80



Gear unit to receive standard metric IEC B5 flange mount motor adaptor.

Input

NORD's modular design allows for many different types of inputs to be added to gear reducers. All inputs are bolt on and include machined pilots to ensure simple and accurate assembly. NORD offers the following different input types:

- Integral motor
- Solid input shaft
- NEMA C-face motor adapter
- IEC motor adapter*
- Servo motor adapter
- Motor platform
- Scoop mount motor platform
- Custom mounting interface

* Consult the NORD M7000 motor catalog for a list of available NEMA C-Face or IEC flange mounted NORD motors

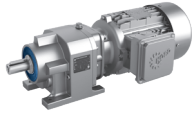
Nomenclature

After the letters, 'SK' Reducer sizes are indicated followed by the dash (-), then the input device such as:

- SK772.1 – 90L/4 (Integral motor)
- SK772.1 – W (Solid input shaft)
- SK772.1 – 140TC (NEMA C-face motor adaptor)
- SK772.1 – IEC80*

* Gear unit sizes SK 071.1 through 771.1 have a variety of possible IEC B5 or IEC B14 flange offerings. Sizes SK 772.1 and larger come with a variety of possible IEC B5 flange sizes

Solid Input Shaft	NEMA Motor Adapter	IEC Motor Adapter		Motor Standard Efficiency & 60 Minute Duty		Motor Premium Efficiency	
		IEC 63	IEC 112	63S/4 - 0.16hp	100LA/4 - 5hp	80LP/4 - 1hp	160MP/4 - 15hp
W	N56C	IEC 71	IEC 132	63L/4 - 0.25hp	132S/4 - 7.5hp	90SP/4 - 1.5hp	160LP/4 - 20hp
	N140 TC	IEC 80	IEC160	71S/4 - 0.33hp	132M/4 - 10hp	90LP/4 - 2hp	180MP/4 - 25hp
	N180TC	IEC 90	IEC 180	71L/4 - 0.50hp	160M/4 - 15hp	100LP/4 - 3hp	180LP/4 - 30hp
	N210TC	IEC 100	IEC 200	80S/4 - 0.75hp	160L/4 - 20hp	112MP/4 - 5hp	225RP/4 - 40hp
	N250TC			80L/4 - 1hp	180MX/4 - 25hp	132SP/4 - 7.5hp	225SP/4 - 50hp
	N280TC			90S/4 - 1.5hp	180LX/4 - 30hp	132MP/4 - 10hp	
				90L/4 - 2hp	200LX/4 - 40hp		
				100L/4 - 3hp			



Integral Motors

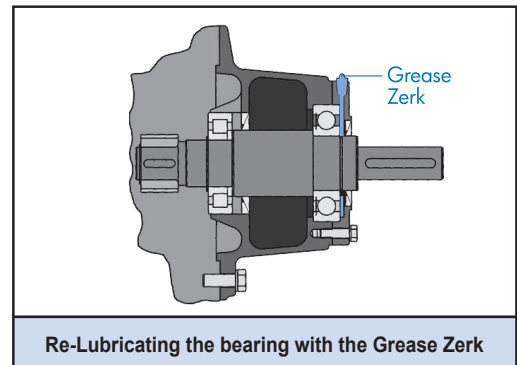
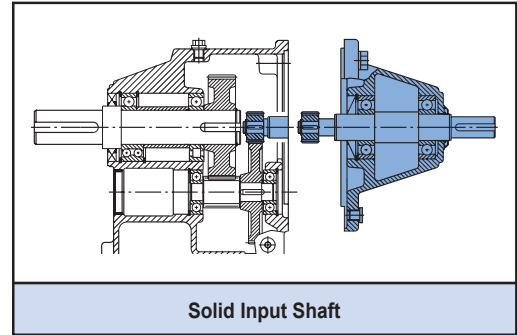
NORD provides integral motors that mount directly to the gearbox. Integral motor mounting eliminates the need for costly v-belts or sheaves and directly couples the motor to the reducer. This also results in a dimensionally compact one-piece package.

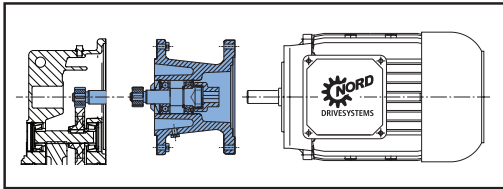
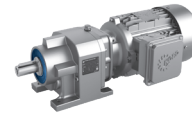
NORD high performance integral motors are available in many operational voltages, are inverter duty rated, and offer many valuable options including energy efficient motors and power off brakes. For more information on integral motors, see the motor section.

Solid Input Shaft

Designed to mount couplings, sheaves or sprockets, which transfer torque from the prime mover. The input shaft is made from ANSI 1045 or stronger material dimensioned with long keys according to ANSI B17 standards. Bearings are sized to handle overhung loads resulting from belt or sprocket inputs. Input shaft load ratings may be found on the table located on page 42. The maximum gearbox input power rating is indicated in the speed reducer performance tables on pages 123 - 136.

The bearings of solid input shaft type W of the larger gear units require re-lubrication at a regular interval. This is necessary for double-stage gearboxes sizes SK6282 and larger, and triple-stage gearboxes from size SK7382 and larger. For additional information please reference the appropriate user manuals located at nord.com/docs by entering your products serial number.

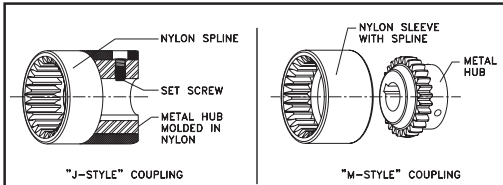




NEMA C-FACE / IEC Motor Adapter

NEMA C-Face Motor Adapter

NEMA C-face motor adapters allow for easy installation and removal of industry standard C-face motors. NEMA C-face motor adapters consist of a coupling and an adapter housing that connect the motor to the gear reducer. Gear units with NEMA C-face adapters are commonly used in applications that require specialized motors, for serviceability or quick replacement. NORD additionally offers NEMA C-face motors and brakemotors that may be installed to the motor adapter.

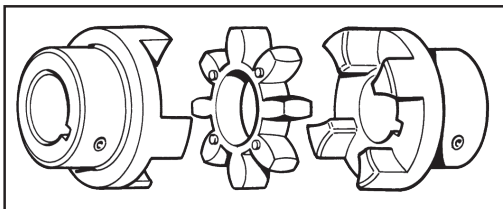


J & M Style Coupling Illustrations

The maximum input power of a gear unit with a NEMA C-face adapter is generally limited by the power rating of the standard NEMA C-face motor size. The power limits are indicated in the reducer ratings tables. In some cases the gearbox limit (T_{2max}) will be the limiting capacity. Both the NEMA adapter limit and the gearbox torque limit must be considered. If the speeds required exceed those included in the ratings tables please contact NORD. For additional information please reference the appropriate user manuals located at nord.com.

IEC Motor Adapter

IEC motor adapters allow for easy installation and removal of industry standard IEC motors according to DIN 42677. The IEC adapter is very similar to the NEMA C-face adapter in construction. The maximum input power is generally limited by the IEC motor size. For ratings and dimensions, please consult our metric catalogs.



Jaw Style Coupling Illustration

Motor Adapter Couplings

Couplings are made with tough abrasion resistant materials, which resist most chemicals and petroleum products. They are electrically isolated (prevent metal to metal contact) and require no lubrication or maintenance. Depending on the size of the C-face input, NORD will provide either a gear or jaw type coupling.

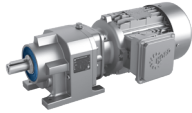
Gear Couplings

Gear couplings are used with NEMA 56C to NEMA 280TC or IEC 63 to IEC 180 adapters and provide a space saving design. C-face adapter input shafts have a machined male spline that connects with a molded nylon spline on the coupling. This specially designed nylon sleeve exhibits high torsional stiffness, resulting in minimum backlash and reduced internal frictional losses. The coupling design yields low inertia and uses blind assembly and slip together components for easy inspection without disassembly.

NORD incorporates two styles of gear couplings, the “J” and “M” styles. The “J” style is a one-piece coupling consisting of a nylon sleeve and metal hub that are fused together. The “M” style is a two-piece coupling consisting of a separate nylon sleeve and metal hub.

Jaw Couplings

Jaw couplings are used with NEMA 320TC or IEC 200 and larger adapters. The cast iron jaw type couplings have a urethane “spider” that provides smooth transmission of the motor torque and has excellent shock and vibration dampening characteristics. A set screw on the coupling prohibits axial movement along the motor shaft. Jaw couplings with low-backlash hubs and spider elements are provided with NORD servo adapters



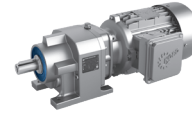
NEMA Motor Adapter Details

NEMA C-face Motor Frame	NEMA Adapter Nomenclature	4 pole Motor HP	Max Motor Weight [lb]	Coupling Description	Coupling Bore [inches]	Continuous Torque [in-lb]	Maximum Torque [in-lb]
56 C	- 56C	≤ 1.0	66	J14	0.625	44	88
56 C	- 56C	≤ 1.5	66	J24	0.875	106	212
143 TC	- 140TC	≤ 1.5	88				
145 TC	- 140TC	≤ 2	110				
145 TC	- 140TC	3	110	J28	1.125	398	1195
182 TC	- 180TC	3	130				
184 TC	- 180TC	5	175	M38	1.125	708	2214
182 TC	- 180TC	3	130		1.375		
184 TC	- 180TC	5	175				
213 TC	- 210TC	7.5	220				
215 TC	- 210TC	10	220	M42	1.625	885	2655
254 TC	- 250TC	15	440				
256 TC	- 250TC	20	440	M48	1.875	1239	3717
284 TC	- 280TC	25	550				
286 TC	- 280TC	30	550				

IEC Motor Adapter Details

IEC Motor B5 4 pole	IEC Adapter Nomenclature	HP / kW	Max Weight Limit [lb]	Coupling Description	Coupling Bore [mm]	Continuous Torque [Nm]	Maximum Torque [Nm]
63 S/4	- IEC 63	0.16 / 0.12	55	J14	11	5	10
63 L/4	- IEC 63	0.25 / 0.18	55		14		
71 S/4	- IEC 71	0.33 / 0.25	66				
71 L/4	- IEC 71	0.50 / 0.37	66	J24	19	12	24
80 S/4	- IEC 80	0.75 / 0.55	88		24		
80 L/4	- IEC 80	1.00 / 0.75	88				
90 S/4	- IEC 90	1.5 / 1.1	110				
90 L/4	- IEC 90	2.0 / 1.5	110	J28	28	45	135
100 L/4	- IEC 100	3.0 / 2.2	130				
100 L/40	- IEC 100	5.0 / 3.7	130	M38	38	80	240
112 M/4	- IEC 112	5.3 / 4.0	175				
132 S/4	- IEC 132	7.5 / 5.5	220	M42	42	100	300
132 M/4	- IEC 132	10 / 7.5	220				
160 M/4	- IEC 160	15 / 11	440	M48	48	140	420
160 L/4	- IEC 160	20 / 15	440				
180 M/4	- IEC 180	25 / 18.5	550	R65	55	625	1250
180 L/4	- IEC 180	30 / 22	550				
200 L/4	- IEC 200	40 / 30	770				

Custom Mounting Interface



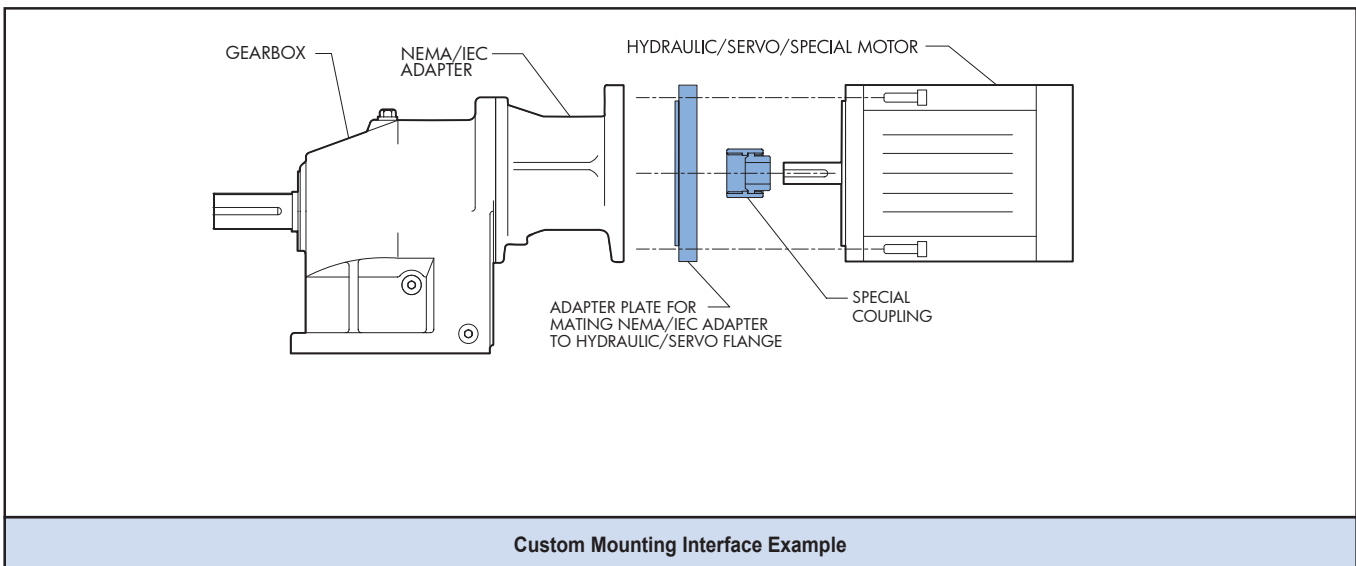
Custom Mounting Interface

NORD can provide custom input adapters typically consisting of a special adapter plate and special coupling to mount non-standard dimensioned motors or other devices.

When a custom input adapter is required, special attention needs to be given for each application to be sure the customer receives the performance that is necessary. The following information is required:

- Motor Dimensional Drawing
- Motor Weight
- Motor performance specifications, including torque, horsepower and operating speed ranges.

NORD engineers will review the performance requirements and make a unit selection based on given parameters.



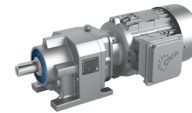


DRIVESYSTEMS

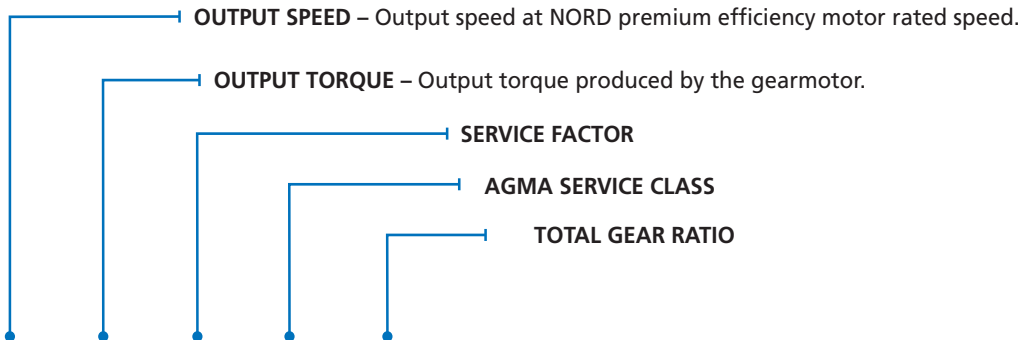
Gearmotor Ratings


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0.25 hp Ratings	80
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0.75 hp Ratings	89
1.0 hp Ratings	92
1.5 hp Ratings	96
2.0 hp Ratings	100
3.0 hp Ratings	104
5.0 hp Ratings	107
7.5 hp Ratings	110
10 hp Ratings	113
15 hp Ratings	115
20 hp Ratings	117
30 hp Ratings	119
40 hp Ratings	120
50 hp Ratings	120

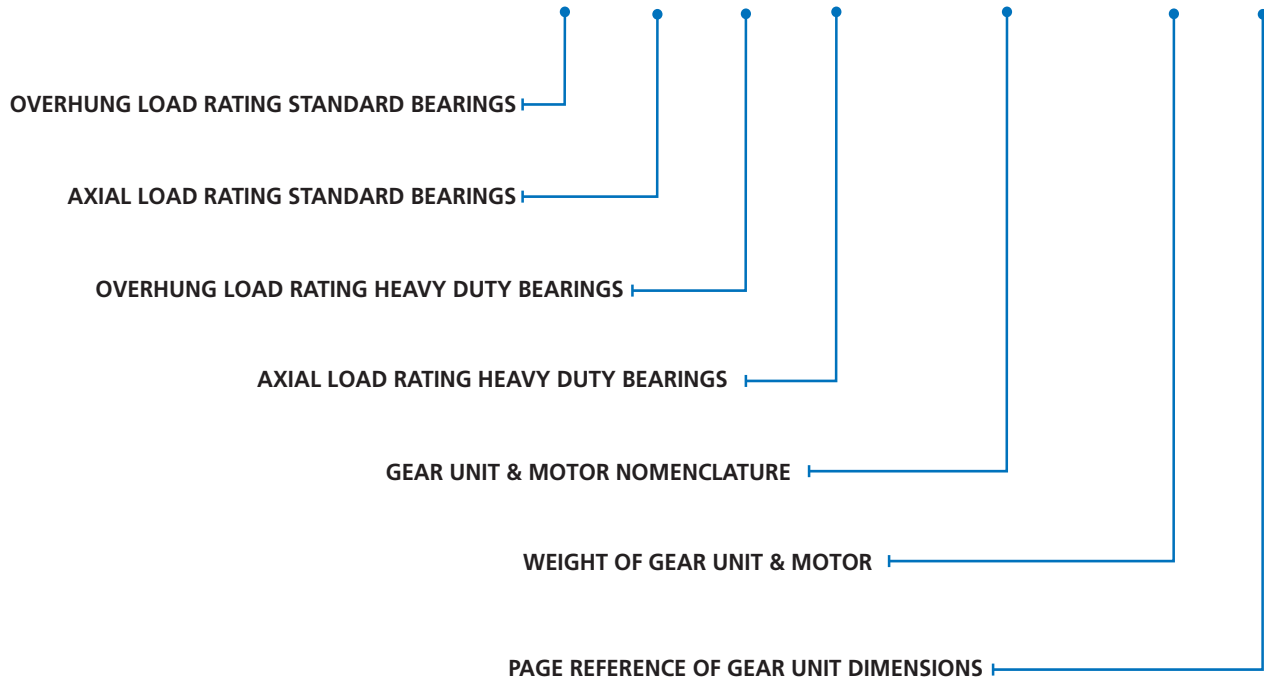
Ratings Tables Overview

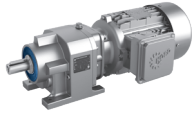



Explanation of Selection Tables



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN} OHL	F_{AN} Thrust	F_{RVL} OHL	F_{AVL} Thrust			
						[lb]	[lb]	[lb]	[lb]			
0.50	44	710	1.1	I	38.75	629	877	-	-	SK 172.1 - 71 L/4	23	146
	50	633	1.2	I	34.52	629	877	-	-			
	55	568	1.4	II	31.00	629	877	-	-			
	62	506	1.6	II	27.62	629	877	-	-			

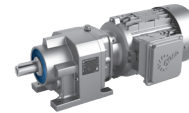





Motor Power	Output Speed	Output Torque	Service Factor	AGMA Class	Gear Ratio	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight	Dim. Page
P_n	n_2	T_2	f_B		i_{tot}	F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
[hp]	[rpm]	[lb-in]				OHL	Thrust	OHL	Thrust		[lb]	
0.16	155	65	0.8	*	11.00	403	562	674	1045	SK 071.1 - 63 S/4	13	138
	233	43	2.5	III	7.29	355	562	675	934			
	306	33	4.0	III	5.56	326	562	675	867			
	354	28	5.3	III	4.80	311	562	596	829			
	748	13	13.8	III	2.27	244	502	675	666			
	850	12	18.7	III	2.00	234	482	675	641			
	1426	7.1	31.3	III	1.19	197	374	650	551			
	1583	6.4	33.3	III	1.07	190	356	630	534			
0.16	27	377	1.2	I	63.56	562	658	-	-	SK 072.1 - 63 S/4	13	141
	31	326	1.4	II	55.00	562	658	-	-			
	35	291	1.4	II	49.00	562	658	-	-			
	40	250	1.8	II	42.10	562	658	-	-			
	47	216	2.2	III	36.43	562	658	-	-			
	52	193	2.5	III	32.45	562	658	-	-			
	61	165	2.9	III	27.78	562	658	-	-			
	69	147	3.3	III	24.75	562	658	-	-			
	77	132	3.7	III	22.22	562	658	-	-			
	80	127	3.8	III	21.38	562	658	-	-			
	89	114	4.3	III	19.20	562	658	-	-			
	98	103	4.7	III	17.35	562	658	-	-			
	108	94	5.2	III	15.77	562	658	-	-			
	118	85	5.3	III	14.40	562	658	-	-			
	129	78	5.3	III	13.20	562	658	-	-			
	147	69	6.5	III	11.56	562	658	-	-			
	170	59	8.2	III	10.00	562	658	-	-			
	191	53	9.2	III	8.91	553	658	-	-			
	213	47	10.3	III	8.00	535	658	-	-			
	235	43	11.3	III	7.23	518	658	-	-			
	259	39	12.0	III	6.57	502	658	-	-			
	285	35	13.8	III	5.96	488	658	-	-			
	309	33	14.9	III	5.50	474	658	-	-			
	320	32	15.5	III	5.31	470	658	-	-			
356	28	16.6	III	4.77	454	658	-	-				
394	26	17.3	III	4.31	439	658	-	-				
434	23	17.1	III	3.92	426	658	-	-				
475	21	20.0	III	3.58	414	658	-	-				
518	19	21.4	III	3.28	402	658	-	-				
576	18	23.2	III	2.95	389	658	-	-				
597	17	23.6	III	2.85	384	658	-	-				
663	15	23.8	III	2.57	371	649	-	-				
730	14	25.0	III	2.33	360	629	-	-				
811	12	25.6	III	2.10	348	608	-	-				

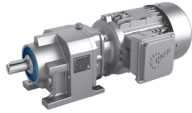
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)


0.16 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page				
						F_{RN}	F_{AN}	F_{RVL}	F_{AVL}							
						OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]							
0.16	121	83	0.8	*	14.00	698	877	1118	1854	SK 171.1 - 63 S/4	15	143				
	183	55	2.7	III	9.29	612	877	1119	1650							
	219	46	4.0	III	7.75	576	877	1119	1562							
	274	37	6.3	III	6.20	537	736	1031	1467							
	558	18	17.6	III	3.05	425	798	1119	1189							
	628	16	24.8	III	2.71	409	768	1119	1148							
	816	12	38.0	III	2.08	376	702	1119	1065							
	868	12	38.1	III	1.96	368	678	1119	1043							
	1473	6.8	49.1	III	1.15	309	525	1070	891							
	1583	6.4	50.0	III	1.07	301	509	1048	872							
	0.16	21	483	1.5	II	81.45	629	877	-				-	SK 172.1 - 63 S/4	17	146
		24	415	1.5	II	70.00	629	877	-				-			
27		370	1.5	II	62.36	629	877	-	-							
31		320	2.3	III	54.03	629	877	-	-							
37		275	2.7	III	46.43	629	877	-	-							
41		245	3.1	III	41.36	629	877	-	-							
44		230	3.3	III	38.75	629	877	-	-							
49		205	3.7	III	34.52	629	877	-	-							
55		184	4.4	III	31.00	629	877	-	-							
62		164	5.0	III	27.62	629	877	-	-							
69		147	5.5	III	24.80	629	877	-	-							
76		133	6.1	III	22.42	629	877	-	-							
83		121	6.2	III	20.37	629	877	-	-							
91		110	6.7	III	18.60	629	877	-	-							
108		93	8.0	III	15.76	629	877	-	-							
126		80	9.4	III	13.54	629	877	-	-							
141		72	10.8	III	12.06	629	877	-	-							
149		68	11.1	III	11.39	629	877	-	-							
157		64	11.8	III	10.83	629	877	-	-							
174		58	13.0	III	9.79	629	877	-	-							
195		52	15.1	III	8.72	629	877	-	-							
217		46	15.6	III	7.83	629	877	-	-							
240		42	17.3	III	7.08	629	877	-	-							
264		38	19.0	III	6.43	629	877	-	-							
295		34	19.9	III	5.77	629	877	-	-							
331		30	24.1	III	5.14	629	877	-	-							
368		27	23.3	III	4.62	629	877	-	-							
408		25	23.2	III	4.17	629	877	-	-							
448		22	23.2	III	3.79	629	877	-	-							
528		19	25.0	III	3.22	629	877	-	-							
582	17	25.6	III	2.92	629	877	-	-								
626	16	25.3	III	2.72	629	877	-	-								
683	15	25.8	III	2.49	629	877	-	-								
733	14	27.7	III	2.32	629	863	-	-								

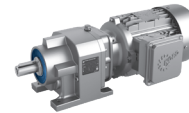
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)




Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
0.16	157	64	3.2	III	10.86	928	1259	1614	2336	SK 371.1 - 63 S/4	18	149
	186	54	4.7	III	9.12	876	1259	1615	2217			
	210	48	5.7	III	8.11	843	1259	1615	2143			
0.16	23	429	3.1	III	72.38	1306	2360	1798	2293	SK 372.1 - 63 S/4	23	152
	27	380	3.7	III	64.06	1309	2360	1798	2293			
	28	361	3.7	III	60.83	1310	2360	1798	2293			
	32	319	4.4	III	53.84	1311	2360	1798	2293			
0.16	4.9	2040	0.8	*	343.92	1034	2360	1620	2293	SK 373.1 - 63 S/4	25	152
	5.6	1798	1.0	I	303.08	1104	2360	1665	2293			
	6.3	1600	1.2	I	269.67	1152	2360	1697	2293			
	6.6	1522	1.2	I	256.50	1168	2360	1709	2293			
	7.4	1354	1.4	II	228.22	1201	2360	1731	2293			
	8.2	1234	1.4	II	207.98	1222	2360	1746	2293			
	8.7	1163	1.6	II	196.07	1233	2360	1753	2293			
	9.2	1098	1.7	II	185.05	1242	2360	1760	2293			
	10	984	1.9	II	165.94	1257	2360	1771	2293			
	12	860	2.2	III	145.00	1272	2360	1781	2293			
	13	776	2.3	III	130.87	1280	2360	1787	2293			
	14	715	2.5	III	120.54	1286	2360	1791	2293			
	17	605	2.9	III	102.01	1295	2360	1798	2293			
	19	543	3.4	III	91.48	1300	2360	1798	2293			
	21	490	3.8	III	82.57	1303	2360	1798	2293			
23	441	4.0	III	74.27	1306	2360	1798	2293				
26	384	4.6	III	64.70	1309	2360	1798	2293				
28	357	5.0	III	60.22	1310	2360	1798	2293				
0.16	4.2	2389	1.4	II	402.80	2187	3260	2473	3260	SK 573.1 - 63 S/4	41	158
	4.5	2232	1.6	II	376.20	2200	3260	2473	3260			
	5.4	1876	2.0	III	316.18	2225	3260	2473	3260			
	5.6	1797	2.2	III	302.91	2230	3260	2473	3260			
	6.3	1597	2.5	III	269.26	2242	3260	2473	3260			
	7.5	1342	3.0	III	226.30	2255	3260	2473	3260			
	8.5	1193	3.3	III	201.16	2261	3260	2473	3260			
	9.0	1121	3.6	III	188.91	2264	3260	2473	3260			
	11	942	4.2	III	158.78	2270	3260	2473	3260			
	12	837	4.8	III	141.13	2273	3260	2473	3260			
14	744	5.4	III	125.45	2276	3260	2473	3260				
16	637	6.0	III	107.42	2278	3260	2473	3260				
0.16	4.7	2150	2.6	III	362.43	2410	4496	3372	4496	SK 673.1 - 63 S/4	54	164
	5.1	1971	2.9	III	332.23	2423	4496	3372	4496			
	5.6	1807	3.1	III	304.61	2434	4496	3372	4496			
	6.1	1656	3.4	III	279.23	2443	4496	3372	4496			
	6.8	1472	3.8	III	248.20	2452	4496	3372	4496			

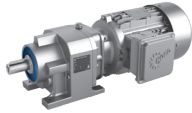
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)


0.25 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
						OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]			
0.25	231	68	1.6	II	7.29	348	562	674	916	SK 071.1 - 63 L/4	14	138
	302	52	2.5	III	5.56	321	562	674	854			
	350	45	3.3	III	4.80	306	562	595	817			
	739	21	8.7	III	2.27	241	494	675	657			
	840	19	11.8	III	2.00	231	474	675	634			
	1409	11	19.8	III	1.19	195	368	648	545			
	1564	10	21.1	III	1.07	189	350	628	528			
0.25	31	516	0.9	*	55.00	562	658	-	-	SK 072.1 - 63 L/4	15	141
	34	460	0.9	*	49.00	562	658	-	-			
	40	395	1.1	I	42.10	562	658	-	-			
	46	342	1.4	II	36.43	562	658	-	-			
	52	304	1.6	II	32.45	562	658	-	-			
	60	261	1.8	II	27.78	562	658	-	-			
	68	232	2.1	III	24.75	562	658	-	-			
	76	208	2.3	III	22.22	562	658	-	-			
	79	201	2.4	III	21.38	562	658	-	-			
	88	180	2.7	III	19.20	562	658	-	-			
	97	163	3.0	III	17.35	562	658	-	-			
	107	148	3.3	III	15.77	562	658	-	-			
	117	135	3.3	III	14.40	562	658	-	-			
	127	124	3.4	III	13.20	562	658	-	-			
	145	108	4.1	III	11.56	562	658	-	-			
	168	94	5.2	III	10.00	562	658	-	-			
	189	84	5.8	III	8.91	546	658	-	-			
	210	75	6.5	III	8.00	528	658	-	-			
	232	68	7.2	III	7.23	511	658	-	-			
	256	62	7.6	III	6.57	496	658	-	-			
	282	56	8.7	III	5.96	483	658	-	-			
	305	52	9.4	III	5.50	469	658	-	-			
	316	50	9.8	III	5.31	466	658	-	-			
	352	45	10.5	III	4.77	450	658	-	-			
	390	40	10.9	III	4.31	436	658	-	-			
	429	37	10.8	III	3.92	423	658	-	-			
	470	34	12.7	III	3.58	411	658	-	-			
512	31	13.5	III	3.28	400	658	-	-				
569	28	14.7	III	2.95	387	658	-	-				
590	27	14.9	III	2.85	382	658	-	-				
655	24	15.1	III	2.57	370	647	-	-				
722	22	15.8	III	2.33	358	626	-	-				
801	20	16.2	III	2.10	346	606	-	-				
0.25	181	87	1.7	II	9.29	605	877	1118	1630	SK 171.1 - 63 L/4	16	143
	217	73	2.6	III	7.75	570	877	1119	1544			
	271	58	4.0	III	6.20	532	736	1031	1453			
	552	29	11.2	III	3.05	422	786	1119	1179			
	620	25	15.7	III	2.71	406	757	1119	1139			
	806	20	24.0	III	2.08	373	690	1119	1058			
	858	18	24.1	III	1.96	365	666	1119	1036			
	1456	11	31.1	III	1.15	307	517	1067	886			
	1564	10	31.6	III	1.07	300	501	1045	867			

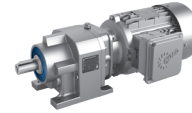
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)




Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
0.25	21	764	1.0	I	81.45	629	877	-	-	SK 172.1 - 63 L/4	18	146
	24	657	1.0	I	70.00	629	877	-	-			
	27	585	1.0	I	62.36	629	877	-	-			
	31	507	1.5	II	54.03	629	877	-	-			
	36	435	1.7	II	46.43	629	877	-	-			
	41	388	1.9	II	41.36	629	877	-	-			
	43	363	2.1	III	38.75	629	877	-	-			
	49	324	2.4	III	34.52	629	877	-	-			
	54	291	2.8	III	31.00	629	877	-	-			
	61	259	3.1	III	27.62	629	877	-	-			
	68	233	3.5	III	24.80	629	877	-	-			
	75	210	3.9	III	22.42	629	877	-	-			
	82	191	3.9	III	20.37	629	877	-	-			
	90	174	4.3	III	18.60	629	877	-	-			
	107	148	5.1	III	15.76	629	877	-	-			
	124	127	5.9	III	13.54	629	877	-	-			
	139	113	6.8	III	12.06	629	877	-	-			
	147	107	7.0	III	11.39	629	877	-	-			
	155	102	7.5	III	10.83	629	877	-	-			
	172	92	8.2	III	9.79	629	877	-	-			
	193	82	9.5	III	8.72	629	877	-	-			
	214	73	9.9	III	7.83	629	877	-	-			
	237	66	10.9	III	7.08	629	877	-	-			
	261	60	12.0	III	6.43	629	877	-	-			
291	54	12.6	III	5.77	629	877	-	-				
327	48	15.2	III	5.14	629	877	-	-				
364	43	14.7	III	4.62	629	877	-	-				
403	39	14.7	III	4.17	629	877	-	-				
443	36	14.7	III	3.79	629	877	-	-				
521	30	15.8	III	3.22	629	877	-	-				
576	27	16.2	III	2.92	629	877	-	-				
618	25	16.0	III	2.72	629	877	-	-				
675	23	16.3	III	2.49	629	877	-	-				
725	22	17.5	III	2.32	629	863	-	-				
0.25	155	102	2.0	III	10.86	920	1259	1614	2315	SK 371.1 - 63 L/4	19	149
	184	86	3.0	III	9.12	869	1259	1614	2197			
	207	76	3.6	III	8.11	837	1259	1614	2126			
0.25	23	679	2.0	III	72.38	1289	2360	1794	2293	SK 372.1 - 63 L/4	25	152
	26	601	2.4	III	64.06	1296	2360	1798	2293			
	28	571	2.3	III	60.83	1298	2360	1798	2293			
	31	505	2.8	III	53.84	1302	2360	1798	2293			
	39	406	3.7	III	43.26	1308	2360	1798	2293			
	44	358	4.5	III	38.12	1310	2360	1798	2293			

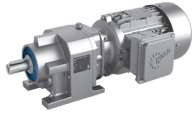
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)


0.25, 0.33 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
						OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]			
0.25	7.4	2140	0.9	*	228.22	1001	2360	1599	2293	SK 373.1 - 63 L/4	26	152
	8.1	1951	0.9	*	207.98	1061	2360	1638	2293			
	8.6	1839	1.0	I	196.07	1093	2360	1658	2293			
	9.1	1735	1.1	I	185.05	1120	2360	1676	2293			
	10	1556	1.2	I	165.94	1161	2360	1704	2293			
	12	1360	1.4	II	145.00	1200	2360	1731	2293			
	13	1227	1.4	II	130.87	1223	2360	1746	2293			
	14	1130	1.6	II	120.54	1238	2360	1757	2293			
	16	957	1.9	II	102.01	1261	2360	1773	2293			
	18	858	2.2	III	91.48	1272	2360	1781	2293			
	20	774	2.4	III	82.57	1281	2360	1787	2293			
	23	697	2.5	III	74.27	1288	2360	1793	2293			
	26	607	2.9	III	64.70	1295	2360	1798	2293			
	28	565	3.1	III	60.22	1298	2360	1798	2293			
31	506	3.7	III	54.00	1302	2360	1798	2293				
36	441	4.2	III	47.05	1306	2360	1798	2293				
40	398	4.4	III	42.46	1308	2360	1798	2293				
0.25	4.2	3778	0.9	*	402.80	1805	3260	2473	3260	SK 573.1 - 63 L/4	42	158
	4.5	3528	1.0	I	376.20	1873	3260	2473	3260			
	5.3	2965	1.3	I	316.18	2070	3260	2473	3260			
	5.5	2841	1.4	II	302.91	2112	3260	2473	3260			
	6.2	2525	1.6	II	269.26	2175	3260	2473	3260			
	7.4	2122	1.9	II	226.30	2208	3260	2473	3260			
	8.4	1887	2.1	III	201.16	2224	3260	2473	3260			
	8.9	1772	2.2	III	188.91	2232	3260	2473	3260			
	11	1489	2.7	III	158.78	2247	3260	2473	3260			
	12	1324	3.0	III	141.13	2255	3260	2473	3260			
	13	1177	3.4	III	125.45	2262	3260	2473	3260			
16	1007	3.8	III	107.42	2268	3260	2473	3260				
0.25	4.6	3399	1.7	II	362.43	2287	4496	3311	4496	SK 673.1 - 63 L/4	56	164
	5.1	3116	1.8	II	332.23	2320	4496	3334	4496			
	5.5	2857	2.0	III	304.61	2348	4496	3353	4496			
	6.0	2619	2.2	III	279.23	2371	4496	3370	4496			
	6.8	2328	2.4	III	248.20	2396	4496	3372	4496			
	7.7	2054	2.8	III	219.00	2417	4496	3372	4496			
	8.7	1821	3.1	III	194.11	2433	4496	3372	4496			
	9.2	1706	3.3	III	181.88	2440	4496	3372	4496			
	9.4	1669	3.4	III	177.94	2442	4496	3372	4496			
0.33	235	89	1.2	I	7.29	342	562	673	899	SK 071.1 - 71 S/4	17	138
	308	68	2.0	III	5.56	316	562	674	841			
	356	58	2.6	III	4.80	301	562	595	804			
	752	28	6.7	III	2.27	238	486	675	649			
	855	24	9.1	III	2.00	228	465	675	626			
	1434	15	15.3	III	1.19	193	361	645	539			
	1592	13	16.3	III	1.07	187	345	625	522			

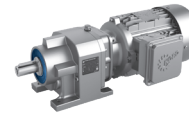
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)




Motor Power	Output Speed	Output Torque	Service Factor	AGMA Class	Gear Ratio	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight	Dim. Page
P_n	n_2	T_2	f_B		i_{tot}	F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
[hp]	[rpm]	[lb-in]				OHL	Thrust	OHL	Thrust		[lb]	
						[lb]	[lb]	[lb]	[lb]			
0.33	41	512	0.9	*	42.10	562	658	-	-	SK 072.1 - 71 S/4	17	141
	47	443	1.1	I	36.43	562	658	-	-			
	53	395	1.2	I	32.45	562	658	-	-			
	62	338	1.4	II	27.78	562	658	-	-			
	69	301	1.6	II	24.75	562	658	-	-			
	77	270	1.8	II	22.22	562	658	-	-			
	80	260	1.9	II	21.38	562	658	-	-			
	89	234	2.1	III	19.20	562	658	-	-			
	99	211	2.3	III	17.35	562	658	-	-			
	108	192	2.5	III	15.77	562	658	-	-			
	119	175	2.6	III	14.40	562	658	-	-			
	130	161	2.6	III	13.20	562	658	-	-			
	148	141	3.1	III	11.56	562	658	-	-			
	171	122	4.0	III	10.00	553	658	-	-			
	192	108	4.5	III	8.91	534	658	-	-			
	214	97	5.0	III	8.00	517	658	-	-			
	236	88	5.5	III	7.23	501	658	-	-			
	260	80	5.9	III	6.57	487	658	-	-			
	287	73	6.7	III	5.96	475	658	-	-			
	311	67	7.3	III	5.50	461	658	-	-			
	322	65	7.5	III	5.31	458	658	-	-			
	359	58	8.1	III	4.77	443	658	-	-			
	397	52	8.4	III	4.31	429	658	-	-			
	436	48	8.4	III	3.92	417	658	-	-			
478	44	9.8	III	3.58	405	658	-	-				
522	40	10.4	III	3.28	394	658	-	-				
579	36	11.3	III	2.95	381	658	-	-				
600	35	11.5	III	2.85	377	658	-	-				
666	31	11.6	III	2.57	365	639	-	-				
735	28	12.2	III	2.33	353	619	-	-				
815	26	12.5	III	2.10	342	599	-	-				
0.33	184	113	1.3	I	9.29	598	877	1118	1610	SK 171.1 - 71 S/4	19	143
	221	94	2.0	III	7.75	563	877	1118	1525			
	276	75	3.1	III	6.20	526	736	1031	1438			
	561	37	8.6	III	3.05	418	774	1119	1169			
	631	33	12.1	III	2.71	403	746	1119	1130			
	821	25	18.5	III	2.08	371	677	1119	1051			
	873	24	18.6	III	1.96	362	653	1119	1028			
	1482	14	24.0	III	1.15	305	509	1063	879			
	1592	13	24.4	III	1.07	298	493	1040	861			

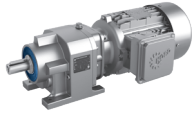
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)


0.33 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
						OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]			
0.33	32	657	1.1	I	54.03	629	877	-	-	SK 172.1 - 71 S/4	21	146
	37	565	1.3	I	46.43	629	877	-	-			
	41	503	1.5	II	41.36	629	877	-	-			
	44	471	1.6	II	38.75	629	877	-	-			
	50	420	1.8	II	34.52	629	877	-	-			
	55	377	2.2	III	31.00	629	877	-	-			
	62	336	2.4	III	27.62	629	877	-	-			
	69	302	2.7	III	24.80	629	877	-	-			
	76	273	3.0	III	22.42	629	877	-	-			
	84	248	3.0	III	20.37	629	877	-	-			
	92	226	3.3	III	18.60	629	877	-	-			
	109	192	3.9	III	15.76	629	877	-	-			
	126	165	4.6	III	13.54	629	877	-	-			
	142	147	5.2	III	12.06	629	877	-	-			
	150	139	5.4	III	11.39	629	877	-	-			
	158	132	5.8	III	10.83	629	877	-	-			
	175	119	6.3	III	9.79	629	877	-	-			
	196	106	7.3	III	8.72	629	877	-	-			
	218	95	7.6	III	7.83	629	877	-	-			
	242	86	8.4	III	7.08	629	877	-	-			
266	78	9.3	III	6.43	629	877	-	-				
296	70	9.7	III	5.77	629	877	-	-				
333	63	11.8	III	5.14	629	877	-	-				
371	56	11.4	III	4.62	629	877	-	-				
410	51	11.3	III	4.17	629	877	-	-				
451	46	11.3	III	3.79	629	877	-	-				
531	39	12.2	III	3.22	629	877	-	-				
586	35	12.5	III	2.92	629	877	-	-				
629	33	12.3	III	2.72	629	877	-	-				
687	30	12.6	III	2.49	629	877	-	-				
738	28	13.5	III	2.32	629	852	-	-				
0.33	158	132	1.5	II	10.86	912	1259	1614	2292	SK 371.1 - 71 S/4	22	149
	187	111	2.3	III	9.12	861	1259	1614	2176			
	211	99	2.8	III	8.11	830	1259	1614	2107			
	238	88	3.5	III	7.20	799	1228	1614	2036			
0.33	24	880	1.5	II	72.38	1270	2360	1780	2293	SK 372.1 - 71 S/4	27	152
	27	779	1.8	II	64.06	1280	2360	1787	2293			
	28	740	1.8	II	60.83	1284	2360	1790	2293			
	32	655	2.2	III	53.84	1291	2360	1795	2293			
	40	526	2.9	III	43.26	1301	2360	1798	2293			
	45	464	3.4	III	38.12	1305	2360	1798	2293			
	51	412	4.1	III	33.84	1307	2360	1798	2293			
	57	366	4.4	III	30.11	1309	2360	1798	2293			

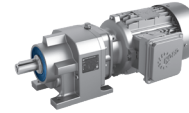
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)




Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
0.33	9.2	2251	0.8	*	185.05	962	2360	1575	2293	SK 373.1 - 71 S/4	28	152
	10	2018	0.9	*	165.94	1041	2360	1624	2293			
	12	1764	1.1	I	145.00	1113	2360	1671	2293			
	13	1592	1.1	I	130.87	1153	2360	1699	2293			
	14	1466	1.2	I	120.54	1180	2360	1717	2293			
	17	1241	1.4	II	102.01	1220	2360	1745	2293			
	19	1113	1.7	II	91.48	1240	2360	1759	2293			
	21	1004	1.9	II	82.57	1255	2360	1769	2293			
	23	903	2.0	III	74.27	1267	2360	1778	2293			
	26	787	2.2	III	64.70	1279	2360	1787	2293			
	28	732	2.4	III	60.22	1285	2360	1790	2293			
	32	657	2.8	III	54.00	1291	2360	1795	2293			
36	572	3.2	III	47.05	1298	2360	1798	2293				
0.33	180	116	4.0	III	9.50	1099	1720	2023	4123	SK 571.1 - 71 S/4	29	155
0.33	5.4	3846	1.0	I	316.18	1757	3260	2473	3260	SK 573.1 - 71 S/4	45	158
	5.6	3684	1.1	I	302.91	1816	3260	2473	3260			
	6.4	3275	1.2	I	269.26	1948	3260	2473	3260			
	7.6	2752	1.4	II	226.30	2129	3260	2473	3260			
	8.5	2447	1.6	II	201.16	2182	3260	2473	3260			
	9.1	2298	1.7	II	188.91	2194	3260	2473	3260			
	9.6	2172	1.8	II	178.56	2204	3260	2473	3260			
	11	1931	2.1	III	158.78	2221	3260	2473	3260			
	12	1717	2.3	III	141.13	2235	3260	2473	3260			
	14	1526	2.6	III	125.45	2246	3260	2473	3260			
	15	1354	2.9	III	111.36	2254	3260	2473	3260			
	16	1306	2.9	III	107.42	2256	3260	2473	3260			
	18	1149	3.5	III	94.50	2263	3260	2473	3260			
20	1036	3.8	III	85.18	2267	3260	2473	3260				
0.33	4.7	4408	1.3	I	362.43	2138	4496	3210	4496	SK 673.1 - 71 S/4	58	164
	5.1	4041	1.4	II	332.23	2198	4496	3250	4496			
	5.6	3705	1.5	II	304.61	2247	4496	3283	4496			
	6.1	3396	1.7	II	279.23	2287	4496	3311	4496			
	6.9	3019	1.9	II	248.20	2331	4496	3342	4496			
	7.8	2680	2.1	III	220.32	2366	4496	3366	4496			
	7.8	2664	2.1	III	219.00	2367	4496	3367	4496			
	8.8	2361	2.4	III	194.11	2394	4496	3372	4496			
	9.4	2212	2.6	III	181.88	2406	4496	3372	4496			
	9.6	2164	2.6	III	177.94	2409	4496	3372	4496			
	11	1964	2.9	III	161.45	2424	4496	3372	4496			
	12	1743	3.3	III	143.30	2438	4496	3372	4496			
0.33	131	159	3.9	III	13.10	1347	2023	2387	5125	SK 771.1 - 71 S/4	38	167

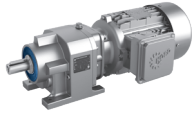
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)


0.33, 0.50 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
						OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]			
0.33	4.3	4810	1.6	II	395.46	2459	2698	3335	5620	SK 773.1 - 71 S/4	86	170
	5.0	4150	1.8	II	341.21	2609	2698	3417	5620			
	5.1	4071	1.9	II	334.70	2616	2698	3422	5620			
	5.6	3739	2.0	III	307.42	2698	2698	3466	5620			
	5.9	3512	2.1	III	288.78	2737	2698	3488	5620			
	6.4	3226	2.3	III	265.24	2805	2698	3525	5620			
	6.6	3165	2.4	III	260.18	2810	2698	3528	5620			
	7.0	2962	2.5	III	243.53	2859	2698	3555	5620			
	7.6	2730	2.8	III	224.49	2898	2698	3577	5620			
8.3	2507	3.1	III	206.11	2942	2698	3601	5620				
9.0	2303	3.3	III	189.31	2987	2698	3626	5620				
0.50	310	102	1.3	I	5.56	308	562	672	819	SK 071.1 - 71 L/4	19	138
	358	88	1.7	II	4.80	294	562	593	783			
	757	42	4.5	III	2.27	233	473	675	635			
	860	37	6.0	III	2.00	224	450	675	613			
	1443	22	10.1	III	1.19	191	352	642	530			
	1601	20	10.8	III	1.07	184	336	623	513			
0.50	62	509	0.9	*	27.78	562	658	-	-	SK 072.1 - 71 L/4	19	141
	70	453	1.1	I	24.75	562	658	-	-			
	77	407	1.2	I	22.22	562	658	-	-			
	80	392	1.2	I	21.38	562	658	-	-			
	90	352	1.4	II	19.20	562	658	-	-			
	99	318	1.5	II	17.35	562	658	-	-			
	109	289	1.7	II	15.77	562	658	-	-			
	119	264	1.7	II	14.40	562	658	-	-			
	130	242	1.7	II	13.20	561	658	-	-			
	149	212	2.1	III	11.56	554	658	-	-			
	172	183	2.7	III	10.00	532	658	-	-			
	193	163	3.0	III	8.91	515	658	-	-			
	215	147	3.3	III	8.00	500	658	-	-			
	238	132	3.7	III	7.23	485	658	-	-			
	262	120	3.9	III	6.57	472	658	-	-			
	289	109	4.5	III	5.96	462	658	-	-			
	313	101	4.8	III	5.50	448	658	-	-			
	324	97	5.0	III	5.31	447	658	-	-			
	361	87	5.4	III	4.77	432	658	-	-			
	399	79	5.6	III	4.31	419	658	-	-			
	439	72	5.5	III	3.92	407	658	-	-			
	481	66	6.5	III	3.58	396	658	-	-			
	525	60	6.9	III	3.28	386	658	-	-			
582	54	7.5	III	2.95	374	656	-	-				
604	52	7.6	III	2.85	370	648	-	-				
670	47	7.7	III	2.57	358	628	-	-				
739	43	8.1	III	2.33	347	608	-	-				
820	38	8.3	III	2.10	336	589	-	-				

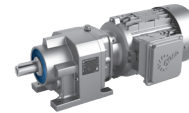
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)




Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
						OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]			
0.50	222	142	1.3	I	7.75	553	877	1117	1495	SK 171.1 - 71 L/4	21	143
	277	114	2.0	III	6.20	519	736	1031	1416			
	565	56	5.7	III	3.05	414	754	1119	1155			
	635	50	8.0	III	2.71	399	728	1119	1117			
	826	38	12.3	III	2.08	368	659	1119	1042			
	878	36	12.3	III	1.96	359	634	1119	1017			
	1491	21	15.9	III	1.15	303	497	1060	872			
1601	20	16.2	III	1.07	296	481	1038	853				
0.50	44	710	1.1	I	38.75	629	877	-	-	SK 172.1 - 71 L/4	23	146
	50	633	1.2	I	34.52	629	877	-	-			
	55	568	1.4	II	31.00	629	877	-	-			
	62	506	1.6	II	27.62	629	877	-	-			
	69	454	1.8	II	24.80	629	877	-	-			
	77	411	2.0	III	22.42	629	877	-	-			
	84	373	2.0	III	20.37	629	877	-	-			
	92	341	2.2	III	18.60	629	877	-	-			
	109	289	2.6	III	15.76	629	877	-	-			
	127	248	3.0	III	13.54	629	877	-	-			
	143	221	3.5	III	12.06	629	877	-	-			
	151	209	3.6	III	11.39	629	877	-	-			
	159	198	3.8	III	10.83	629	877	-	-			
	176	179	4.2	III	9.79	629	877	-	-			
	197	160	4.9	III	8.72	629	877	-	-			
	220	144	5.1	III	7.83	629	877	-	-			
	243	130	5.6	III	7.08	629	877	-	-			
	267	118	6.2	III	6.43	629	877	-	-			
	298	106	6.4	III	5.77	629	877	-	-			
	335	94	7.8	III	5.14	629	877	-	-			
373	85	7.5	III	4.62	629	877	-	-				
412	76	7.5	III	4.17	629	877	-	-				
454	69	7.5	III	3.79	629	877	-	-				
534	59	8.1	III	3.22	629	877	-	-				
589	53	8.3	III	2.92	629	877	-	-				
633	50	8.2	III	2.72	629	877	-	-				
691	46	8.3	III	2.49	629	869	-	-				
742	42	9.0	III	2.32	629	841	-	-				
0.50	158	199	1.0	I	10.86	901	1259	1614	2261	SK 371.1 - 71 L/4	24	149
	188	167	1.5	II	9.12	851	1259	1614	2146			
	212	149	1.8	II	8.11	821	1236	1614	2081			
	239	132	2.3	III	7.20	791	1194	1614	2013			
0.50	24	1326	1.0	I	72.38	1206	2360	1735	2293	SK 372.1 - 71 L/4	29	152
	27	1174	1.2	I	64.06	1231	2360	1752	2293			
	28	1115	1.2	I	60.83	1240	2360	1758	2293			
	32	986	1.4	II	53.84	1257	2360	1771	2293			
	40	793	1.9	II	43.26	1279	2360	1786	2293			
	45	698	2.3	III	38.12	1288	2360	1792	2293			
	51	620	2.7	III	33.84	1294	2360	1797	2293			
	57	552	2.9	III	30.11	1299	2360	1798	2293			

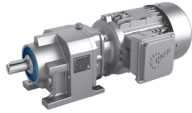
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)


0.50 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
						OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]			
0.50	14	2208	0.8	*	120.54	977	2360	1584	2293	SK 373.1 - 71 L/4	30	152
	17	1869	0.9	*	102.01	1085	2360	1653	2293			
	19	1676	1.1	I	91.48	1134	2360	1686	2293			
	21	1513	1.2	I	82.57	1170	2360	1710	2293			
	23	1361	1.3	I	74.27	1200	2360	1730	2293			
	27	1185	1.5	II	64.70	1229	2360	1751	2293			
	29	1103	1.6	II	60.22	1241	2360	1760	2293			
	32	989	1.9	II	54.00	1257	2360	1770	2293			
	37	862	2.2	III	47.05	1272	2360	1781	2293			
	41	778	2.3	III	42.46	1280	2360	1787	2293			
	46	682	2.6	III	37.23	1289	2360	1793	2293			
	52	608	2.9	III	33.20	1295	2360	1798	2293			
	58	545	3.4	III	29.77	1299	2360	1798	2293			
	66	475	3.9	III	25.94	1304	2360	1798	2293			
73	429	4.3	III	23.41	1306	2360	1798	2293				
0.50	181	174	2.6	III	9.50	1090	1720	2023	4099	SK 571.1 - 71 L/4	31	155
0.50	32	997	3.3	III	54.41	2268	3372	2473	3372	SK 572.1 - 71 L/4	46	158
	38	839	3.4	III	45.77	2273	3372	2473	3372			
0.50	6.4	4933	0.8	*	269.26	1306	3260	2473	3260	SK 573.1 - 71 L/4	47	158
	7.6	4146	1.0	I	226.30	1624	3260	2473	3260			
	8.6	3685	1.1	I	201.16	1799	3260	2473	3260			
	9.1	3461	1.2	I	188.91	1897	3260	2473	3260			
	9.6	3271	1.2	I	178.56	1949	3260	2473	3260			
	11	2909	1.4	II	158.78	2090	3260	2473	3260			
	12	2586	1.5	II	141.13	2170	3260	2473	3260			
	14	2298	1.7	II	125.45	2194	3260	2473	3260			
	15	2040	2.0	III	111.36	2214	3260	2473	3260			
	16	1968	1.9	II	107.42	2219	3260	2473	3260			
	18	1731	2.3	III	94.50	2234	3260	2473	3260			
	20	1561	2.6	III	85.18	2244	3260	2473	3260			
	22	1409	2.8	III	76.88	2251	3260	2473	3260			
	25	1239	3.2	III	67.64	2259	3260	2473	3260			
28	1117	3.6	III	60.97	2264	3260	2473	3260				
0.50	4.7	6640	0.9	*	362.43	1376	4496	2871	4496	SK 673.1 - 71 L/4	60	164
	5.2	6087	0.9	*	332.23	1758	4496	2972	4496			
	5.6	5581	1.0	I	304.61	1896	4496	3054	4496			
	6.2	5116	1.1	I	279.23	2002	4496	3121	4496			
	6.9	4547	1.2	I	248.20	2114	4496	3194	4496			
	7.8	4037	1.4	II	220.32	2199	4496	3251	4496			
	7.9	4012	1.4	II	219.00	2202	4496	3253	4496			
	8.9	3556	1.6	II	194.11	2267	4496	3297	4496			
	9.5	3332	1.7	II	181.88	2295	4496	3317	4496			
	9.7	3260	1.7	II	177.94	2304	4496	3323	4496			
	11	2958	1.9	II	161.45	2338	4496	3346	4496			
	12	2625	2.2	III	143.30	2371	4496	3369	4496			
	13	2392	2.4	III	130.55	2391	4496	3372	4496			
	15	2123	2.7	III	115.89	2412	4496	3372	4496			
	17	1896	3.0	III	103.48	2428	4496	3372	4496			
	18	1738	3.3	III	94.86	2438	4496	3372	4496			
21	1533	3.7	III	83.70	2449	4496	3372	4496				

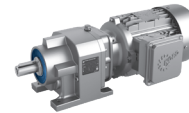
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)




Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
0.50	131	240	2.6	III	13.10	1338	2023	2387	5101	SK 771.1 - 71 L/4	40	167
0.50	4.3	7245	1.0	I	395.46	1835	2698	2996	5620	SK 773.1 - 71 L/4	88	170
	5.0	6251	1.2	I	341.21	2104	2698	3141	5620			
	5.1	6132	1.3	I	334.70	2120	2698	3151	5620			
	5.6	5632	1.3	I	307.42	2262	2698	3227	5620			
	6.0	5291	1.4	II	288.78	2332	2698	3266	5620			
	6.5	4860	1.5	II	265.24	2448	2698	3328	5620			
	6.6	4767	1.6	II	260.18	2457	2698	3335	5620			
	7.1	4462	1.7	II	243.53	2539	2698	3378	5620			
	7.7	4113	1.8	II	224.49	2607	2698	3417	5620			
	8.3	3776	2.0	III	206.11	2680	2698	3457	5620			
	9.1	3468	2.2	III	189.31	2755	2698	3497	5620			
	9.6	3271	2.3	III	178.53	2796	2698	3520	5620			
	11	2935	2.6	III	160.22	2857	2698	3554	5620			
11	2768	2.2	III	151.10	2890	2698	3573	5620				
12	2543	3.0	III	138.78	2941	2698	3600	5620				
0.75	356	133	1.1	I	4.80	283	562	590	751	SK 071.1 - 80 S/4	23	138
	462	102	1.7	II	3.70	263	534	672	707			
	752	63	3.0	III	2.27	227	454	674	615			
	855	55	4.0	III	2.00	218	428	674	594			
	1434	33	6.7	III	1.19	186	338	638	516			
	1592	30	7.2	III	1.07	180	322	618	500			
0.75	276	171	1.3	I	6.20	507	736	1030	1383	SK 171.1 - 80 S/4	25	143
	356	133	2.3	III	4.80	470	828	1117	1293			
	561	84	3.8	III	3.05	406	724	1118	1133			
	631	75	5.3	III	2.71	392	700	1119	1096			
	821	58	8.1	III	2.08	363	630	1119	1028			
	873	54	8.2	III	1.96	354	605	1119	1001			
	1482	32	10.5	III	1.15	299	478	1055	859			
	1592	30	10.7	III	1.07	292	464	1033	842			
0.75	62	763	1.1	I	27.62	629	877	-	-	SK 172.1 - 80 S/4	27	146
	69	686	1.2	I	24.80	629	877	-	-			
	76	620	1.3	I	22.42	629	877	-	-			
	84	563	1.3	I	20.37	629	877	-	-			
	92	514	1.4	II	18.60	629	877	-	-			
	109	436	1.7	II	15.76	629	877	-	-			
	126	374	2.0	III	13.54	629	877	-	-			
	142	333	2.3	III	12.06	629	877	-	-			
	150	315	2.4	III	11.39	629	877	-	-			
	158	299	2.5	III	10.83	629	877	-	-			
	175	271	2.8	III	9.79	629	877	-	-			
	196	241	3.2	III	8.72	629	877	-	-			
	218	217	3.4	III	7.83	629	877	-	-			
	242	196	3.7	III	7.08	629	877	-	-			
	266	178	4.1	III	6.43	629	877	-	-			
	296	159	4.3	III	5.77	629	877	-	-			
333	142	5.2	III	5.14	629	877	-	-				

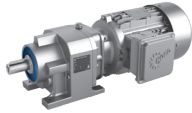
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)


0.75 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight  [lb]	Dim. Page
						F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
						OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]			
0.75	371	128	5.0	III	4.62	629	877	-	-	SK 172.1 - 80 S/4	27	146
	410	115	5.0	III	4.17	629	877	-	-			
	451	105	5.0	III	3.79	629	877	-	-			
	531	89	5.4	III	3.22	629	877	-	-			
	586	81	5.5	III	2.92	629	877	-	-			
	629	75	5.4	III	2.72	629	877	-	-			
	687	69	5.5	III	2.49	629	857	-	-			
	738	64	5.9	III	2.32	629	830	-	-			
0.75	187	252	1.0	I	9.12	835	1209	1614	2099	SK 371.1 - 80 S/4	28	149
	211	224	1.2	I	8.11	808	1179	1614	2041			
	238	199	1.6	II	7.20	779	1143	1614	1977			
	311	152	2.9	III	5.50	716	1062	1614	1835			
	389	122	4.6	III	4.40	668	997	1614	1725			
	552	86	8.1	III	3.10	597	901	1614	1563			
	627	75	9.7	III	2.73	573	866	1614	1507			
	696	68	10.8	III	2.46	555	840	1614	1463			
	855	55	12.8	III	2.00	519	764	1615	1378			
	977	48	13.5	III	1.75	497	716	1615	1325			
	1112	43	13.9	III	1.54	476	674	1573	1277			
	1324	36	14.6	III	1.29	450	623	1493	1213			
	1533	31	15.2	III	1.12	429	584	1429	1161			
0.75	32	1488	1.0	I	53.84	1175	2360	1714	2293	SK 372.1 - 80 S/4	33	152
	40	1196	1.3	I	43.26	1228	2360	1750	2293			
	45	1054	1.5	II	38.12	1248	2360	1764	2293			
	51	935	1.8	II	33.84	1263	2360	1775	2293			
	57	832	1.9	II	30.11	1275	2360	1783	2293			
	66	715	2.4	III	25.85	1286	2360	1791	2293			
	74	636	2.8	III	23.00	1293	2360	1796	2293			
	83	570	2.9	III	20.62	1298	2360	1798	2293			
	93	509	3.5	III	18.40	1302	2360	1792	2293			
	104	456	3.7	III	16.50	1305	2360	1732	2293			
	117	403	4.2	III	14.57	1289	2360	1669	2293			
	132	358	4.9	III	12.96	1254	2360	1609	2293			
	148	319	5.3	III	11.55	1229	2360	1553	2293			
0.75	21	2282	0.8	*	82.57	944	2360	1567	2293	SK 373.1 - 80 S/4	34	152
	23	2053	0.9	*	74.27	1030	2360	1617	2293			
	26	1789	1.0	I	64.70	1106	2360	1667	2293			
	28	1665	1.1	I	60.22	1137	2360	1687	2293			
	32	1493	1.2	I	54.00	1174	2360	1713	2293			
	36	1300	1.4	II	47.05	1210	2360	1738	2293			
	40	1174	1.5	II	42.46	1231	2360	1752	2293			
	46	1029	1.7	II	37.23	1252	2360	1767	2293			
	52	918	1.9	II	33.20	1265	2360	1777	2293			
	57	823	2.3	III	29.77	1276	2360	1784	2293			
	66	717	2.6	III	25.94	1286	2360	1791	2293			
	73	647	2.9	III	23.41	1292	2360	1796	2293			
	75	629	3.0	III	22.74	1293	2360	1797	2293			
	83	567	3.3	III	20.52	1298	2360	1798	2293			
92	515	3.3	III	18.63	1301	2360	1794	2293				

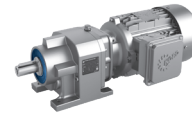
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power	Output Speed	Output Torque	Service Factor	AGMA Class	Gear Ratio	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight	Dim. Page
P_n	n_2	T_2	f_B		i_{tot}	F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
[hp]	[rpm]	[lb-in]				OHL	Thrust	OHL	Thrust		[lb]	
						[lb]	[lb]	[lb]	[lb]			
0.75	180	263	1.8	II	9.50	1075	1720	2023	4056	SK 571.1 - 80 S/4	34	155
	231	205	3.1	III	7.40	994	1720	2023	3777			
	285	166	4.8	III	6.00	931	1720	2023	3556			
	500	94	12.8	III	3.42	777	1564	2023	3019			
0.75	31	1504	2.2	III	54.41	2247	3372	2473	3372	SK 572.1 - 80 S/4	50	158
	37	1265	2.2	III	45.77	2258	3372	2473	3372			
	40	1172	2.8	III	42.38	2262	3372	2473	3372			
	48	986	3.3	III	35.65	2269	3372	2473	3372			
0.75	9.6	4936	0.8	*	178.56	1305	3260	2473	3260	SK 573.1 - 80 S/4	51	158
	11	4389	0.9	*	158.78	1549	3260	2473	3260			
	12	3901	1.0	I	141.13	1718	3260	2473	3260			
	13	3770	1.1	I	136.40	1767	3260	2473	3260			
	14	3468	1.1	I	125.45	1878	3260	2473	3260			
	15	3078	1.3	I	111.36	2017	3260	2473	3260			
	16	3016	1.3	I	109.12	2039	3260	2473	3260			
	16	2969	1.3	I	107.42	2069	3260	2473	3260			
	18	2612	1.5	II	94.50	2167	3260	2473	3260			
	20	2355	1.7	II	85.18	2190	3260	2473	3260			
	22	2125	1.9	II	76.88	2208	3260	2473	3260			
	25	1870	2.1	III	67.64	2225	3260	2473	3260			
	28	1685	2.4	III	60.97	2237	3260	2473	3260			
	34	1371	2.9	III	49.60	2253	3260	2473	3260			
	36	1325	3.0	III	47.95	2255	3260	2473	3260			
	39	1200	3.3	III	43.40	2261	3260	2473	3260			
41	1166	3.4	III	42.18	2262	3260	2473	3260				
45	1051	3.8	III	38.02	2266	3260	2473	3260				
0.75	30	1566	2.3	III	56.65	2448	4496	3372	4496	SK 672.1 - 80 S/4	62	164
	38	1231	3.2	III	44.55	2463	4496	3372	4496			
0.75	6.9	6861	0.8	*	248.20	1178	4496	2828	4496	SK 673.1 - 80 S/4	64	164
	7.8	6090	0.9	*	220.32	1756	4496	2971	4496			
	7.8	6054	0.9	*	219.00	1770	4496	2978	4496			
	8.8	5366	1.1	I	194.11	1947	4496	3086	4496			
	9.4	5028	1.1	I	181.88	2021	4496	3133	4496			
	9.6	4919	1.2	I	177.94	2043	4496	3147	4496			
	11	4463	1.3	I	161.45	2129	4496	3204	4496			
	12	4060	1.4	II	146.88	2195	4496	3248	4496			
	12	3961	1.4	II	143.30	2210	4496	3258	4496			
	13	3722	1.5	II	134.64	2245	4496	3282	4496			
	13	3609	1.6	II	130.55	2260	4496	3292	4496			
	14	3409	1.7	II	123.33	2286	4496	3310	4496			
	15	3203	1.8	II	115.89	2310	4496	3327	4496			
	17	2861	2.0	III	103.48	2348	4496	3353	4496			
	18	2622	2.2	III	94.86	2371	4496	3369	4496			
	20	2314	2.4	III	83.70	2398	4496	3372	4496			
	23	2036	2.8	III	73.64	2419	4496	3372	4496			
	26	1823	3.1	III	65.95	2433	4496	3372	4496			
	28	1671	3.4	III	60.45	2442	4496	3372	4496			
31	1524	3.7	III	55.12	2450	4496	3372	4496				

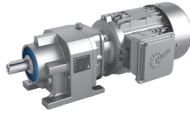
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



0.75 hp, 1.0 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						0.75	131 166 201 316 345	362 285 235 150 137	1.7 3.0 4.7 9.7 13.4			
0.75	5.0 5.1 5.6 5.9 6.4 6.6 7.0 7.6 8.3 9.0 9.6 11 11 12 15 15 18 18 21 22	9432 9252 8498 7983 7332 7192 6732 6205 5697 5233 4935 4429 4177 3836 3247 3094 2669 2588 2303 2190	0.8 0.8 0.9 0.9 1.0 1.1 1.1 1.2 1.4 1.4 1.5 1.7 1.5 2.0 2.4 2.4 2.8 2.9 3.3 3.5	* * * * I I I I II II II II III III III III III III III III	341.21 334.70 307.42 288.78 265.24 260.18 243.53 224.49 206.11 189.31 178.53 160.22 151.10 138.78 117.46 111.92 96.57 93.61 83.32 79.23	1155 1194 1462 1600 1810 1832 1977 2101 2232 2359 2430 2535 2592 2677 2793 2832 2917 2933 2856 2813	2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698 2698	2640 2661 2799 2873 2983 2996 3072 3141 3211 3280 3319 3377 3409 3454 3519 3540 3587 3595 3626 3635	5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620 5620	SK 773.1 - 80 S/4	92	170
1.0	360 468 643 761 865 1451 1611	175 135 98 83 73 43 39	0.9 1.3 2.1 2.2 3.0 5.1 5.4	* I III III III III III	4.80 3.70 2.69 2.27 2.00 1.19 1.07	272 255 234 221 213 183 177	543 512 471 433 407 325 310	584 669 592 673 673 634 615	721 683 634 595 577 502 487	SK 071.1 - 80 LP/4	27	138
1.0	279 360 500 568 639 830 883 1499 1611	226 175 126 111 99 76 71 42 39	1.0 1.7 3.2 2.9 4.0 6.2 6.2 8.0 8.1	I II III III III III III III III	6.20 4.80 3.46 3.05 2.71 2.08 1.96 1.15 1.07	497 462 419 400 386 360 350 296 290	736 790 728 695 672 605 579 461 447	1029 1116 1031 1118 1118 1119 1119 1053 1031	1352 1269 1163 1113 1079 1017 987 849 832	SK 171.1 - 80 LP/4	29	143

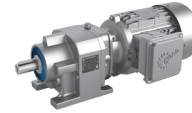
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power	Output Speed	Output Torque	Service Factor	AGMA Class	Gear Ratio	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight	Dim. Page
P_n	n_2	T_2	f_B		i_{tot}	F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
[hp]	[rpm]	[lb-in]				OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]		[lb]	
1.0	63	1006	0.8	*	27.62	629	877	-	-	SK 172.1 - 80 LP/4	32	146
	70	903	0.9	*	24.80	629	877	-	-			
	77	817	1.0	I	22.42	629	877	-	-			
	85	742	1.0	I	20.37	629	877	-	-			
	93	678	1.1	I	18.60	629	877	-	-			
	110	574	1.3	I	15.76	629	877	-	-			
	128	493	1.5	II	13.54	629	877	-	-			
	143	440	1.8	II	12.06	629	877	-	-			
	152	415	1.8	II	11.39	629	877	-	-			
	160	395	1.9	II	10.83	629	877	-	-			
	177	357	2.1	III	9.79	629	877	-	-			
	198	318	2.5	III	8.72	629	877	-	-			
	221	285	2.5	III	7.83	629	877	-	-			
	244	258	2.8	III	7.08	629	877	-	-			
	269	234	3.1	III	6.43	629	877	-	-			
	300	210	3.2	III	5.77	629	877	-	-			
	337	187	3.9	III	5.14	629	877	-	-			
	375	168	3.8	III	4.62	629	877	-	-			
	415	152	3.8	III	4.17	629	877	-	-			
	456	138	3.8	III	3.79	629	877	-	-			
537	117	4.1	III	3.22	629	877	-	-				
593	106	4.2	III	2.92	629	877	-	-				
637	99	4.1	III	2.72	629	875	-	-				
695	91	4.2	III	2.49	629	839	-	-				
746	84	4.5	III	2.32	629	813	-	-				
1.0	213	295	0.9	*	8.11	796	1126	1613	2006	SK 371.1 - 80 LP/4	32	149
	240	262	1.2	I	7.20	768	1095	1614	1945			
	315	200	2.2	III	5.50	708	1023	1614	1810			
	393	160	3.5	III	4.40	661	965	1614	1704			
	558	113	6.1	III	3.10	593	877	1614	1548			
	634	99	7.4	III	2.73	569	845	1614	1493			
	704	90	8.2	III	2.46	551	820	1614	1450			
	865	73	9.7	III	2.00	516	741	1614	1367			
	989	64	10.3	III	1.75	494	696	1614	1315			
	1125	56	10.6	III	1.54	474	657	1571	1267			
	1339	47	11.1	III	1.29	448	608	1492	1204			
	1551	41	11.5	III	1.12	427	571	1428	1154			
	1.0	40	1576	1.0	I	43.26	1157	2360	1701			
45		1389	1.1	I	38.12	1195	2360	1727	2293			
51		1233	1.4	II	33.84	1222	2360	1746	2293			
57		1097	1.5	II	30.11	1232	2360	1760	2293			
67		942	1.8	II	25.85	1252	2360	1775	2293			

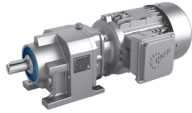
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



1.0 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						1.0	75 84 94 105 119 133 150 168 184 210 239	838 751 670 601 531 472 421 375 342 300 263	2.1 2.2 2.6 2.8 3.2 3.7 4.0 4.5 4.9 5.3 5.7			
1.0	29 32 37 41 46 52 58 67 74 76 84 93	2194 1967 1714 1547 1356 1209 1085 945 853 828 748 679	0.8 0.9 1.1 1.1 1.3 1.5 1.7 2.0 2.2 2.2 2.5 2.5	* * I I I II II III III III III III	60.22 54.00 47.05 42.46 37.23 33.20 29.77 25.94 23.41 22.74 20.52 18.63	982 1040 1107 1123 1163 1221 1218 1226 1214 1226 1210 1194	2360 2360 2360 2360 2360 2360 2360 2360 2360 2360 2360 2360	1587 1634 1679 1705 1731 1748 1761 1774 1782 1784 1789 1760	2293 2293 2293 2293 2293 2293 2293 2293 2293 2293 2293 2293	SK 373.1 - 80 LP/4	39	152
1.0	182 234 288 506 614	346 270 219 124 103	1.3 2.4 3.6 9.7 14.2	I III III III III	9.50 7.40 6.00 3.42 2.82	1063 985 923 773 726	1720 1720 1720 1552 1453	2023 2023 2023 2023 2023	4023 3751 3535 3007 2842	SK 571.1 - 80 LP/4	39	155
1.0	32 38 41 49 60 64	1982 1668 1544 1299 1053 984	1.7 1.7 2.1 2.5 3.2 3.6	II II III III III III	54.41 45.77 42.38 35.65 28.91 27.00	2218 2238 2245 2257 2266 2269	3372 3372 3372 3372 3372 3372	2473 2473 2473 2473 2473 2473	3372 3372 3372 3372 3372 3372	SK 572.1 - 80 LP/4	55	158
1.0	13 14 16 16 16 18 20 23 26 28 35 36	4969 4570 4057 3975 3913 3443 3103 2801 2464 2221 1807 1747	0.8 0.9 1.0 1.0 1.0 1.2 1.3 1.4 1.6 1.8 2.2 2.3	* * I I I I I II II II III III	136.40 125.45 111.36 109.12 107.42 94.50 85.18 76.88 67.64 60.97 49.60 47.95	1290 1456 1658 1689 1732 1904 2023 2113 2181 2200 2229 2233	3260 3260 3260 3260 3260 3260 3260 3260 3260 3260 3260 3260	2473 2473 2473 2473 2473 2473 2473 2473 2473 2473 2473 2473	3260 3260 3260 3260 3260 3260 3260 3260 3260 3260 3260 3260	SK 573.1 - 80 LP/4	56	158

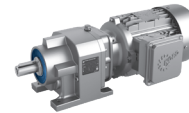
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
1.0	40	1581	2.5	III	43.40	2243	3260	2473	3260	SK 573.1 - 80 LP/4	56	158
	41	1537	2.6	III	42.18	2245	3260	2473	3260			
	45	1385	2.9	III	38.02	2253	3260	2473	3260			
	50	1268	3.1	III	34.80	2258	3260	2473	3260			
	56	1127	3.5	III	30.93	2264	3260	2473	3260			
	65	975	3.9	III	26.77	2269	3260	2473	3260			
1.0	31	2064	1.7	II	56.65	2417	4496	3372	4496	SK 672.1 - 80 LP/4	67	164
	39	1623	2.5	III	44.55	2444	4496	3372	4496			
	48	1302	3.7	III	35.75	2460	4496	3372	4496			
1.0	9.5	6626	0.9	*	181.88	1388	4496	2874	4496	SK 673.1 - 80 LP/4	69	164
	11	5882	1.0	I	161.45	1818	4496	3006	4496			
	12	5351	1.1	I	146.88	1950	4496	3088	4496			
	12	5220	1.1	I	143.30	1980	4496	3107	4496			
	13	4905	1.2	I	134.64	2046	4496	3149	4496			
	13	4756	1.2	I	130.55	2075	4496	3168	4496			
	14	4493	1.3	I	123.33	2124	4496	3200	4496			
	15	4222	1.3	I	115.89	2169	4496	3231	4496			
	17	3770	1.5	II	103.48	2238	4496	3277	4496			
	18	3456	1.6	II	94.86	2280	4496	3306	4496			
	21	3049	1.9	II	83.70	2328	4496	3339	4496			
	23	2683	2.1	III	73.64	2365	4496	3365	4496			
	26	2402	2.4	III	65.95	2390	4496	3372	4496			
	29	2202	2.6	III	60.45	2406	4496	3372	4496			
	31	2008	2.8	III	55.12	2420	4496	3372	4496			
35	1803	3.1	III	49.50	2434	4496	3372	4496				
39	1634	3.5	III	44.85	2444	4496	3372	4496				
1.0	132	477	1.3	I	13.10	1313	2023	2386	5028	SK 771.1 - 80 LP/4	49	167
	168	375	2.3	III	10.30	1218	2023	2386	4696			
	204	310	3.5	III	8.50	1147	2023	2386	4445			
	320	197	7.4	III	5.41	993	1879	2387	3899			
	349	181	10.2	III	4.96	966	1828	2387	3802			
	418	151	13.9	III	4.14	911	1725	2387	3606			
1.0	6.6	9479	0.8	*	260.18	1116	2698	2621	5620	SK 773.1 - 80 LP/4	96	170
	7.7	8178	0.9	*	224.49	1541	2698	2841	5620			
	9.1	6897	1.1	I	189.31	1932	2698	3048	5620			
	11	5837	1.3	I	160.22	2196	2698	3192	5620			
	12	5056	1.5	II	138.78	2401	2698	3303	5620			
	15	4279	1.8	II	117.46	2569	2698	3396	5620			
	15	4077	1.8	II	111.92	2625	2698	3426	5620			
	18	3518	2.1	III	96.57	2745	2698	3492	5620			
	18	3410	2.2	III	93.61	2767	2698	3504	5620			
	21	3035	2.5	III	83.32	2774	2698	3546	5620			
	22	2886	2.7	III	79.23	2733	2698	3560	5620			
	24	2619	2.9	III	71.89	2667	2698	3592	5620			
	25	2511	3.0	III	68.92	2637	2698	3604	5620			
	27	2311	3.3	III	63.42	2577	2698	3625	5559			

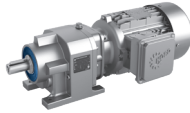
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



1.5 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
1.5	470	201	0.9	*	3.70	238	467	661	634	SK 071.1 - 90 SP/4	38	138
	646	146	1.4	II	2.69	221	436	588	595			
	1459	65	3.4	III	1.19	175	297	604	475			
	1620	58	3.6	III	1.07	169	284	586	461			
1.5	363	261	1.2	I	4.80	444	713	1111	1217	SK 171.1 - 90 SP/4	40	143
	503	188	2.1	III	3.46	405	667	1030	1122			
	835	113	4.1	III	2.08	351	554	1118	991			
	889	106	4.2	III	1.96	340	526	1118	956			
	1508	63	5.4	III	1.15	290	425	1045	826			
1.5	153	619	1.2	I	11.39	629	877	-	-	SK 172.1 - 90 SP/4	42	146
	178	532	1.4	II	9.79	629	877	-	-			
	199	474	1.6	II	8.72	629	877	-	-			
	222	426	1.7	II	7.83	629	877	-	-			
	246	385	1.9	II	7.08	629	877	-	-			
	270	350	2.1	III	6.43	629	877	-	-			
	302	313	2.2	III	5.77	629	877	-	-			
	339	279	2.6	III	5.14	629	877	-	-			
	377	251	2.5	III	4.62	629	877	-	-			
	417	227	2.5	III	4.17	629	877	-	-			
	459	206	2.5	III	3.79	629	877	-	-			
	540	175	2.7	III	3.22	629	877	-	-			
	596	159	2.8	III	2.92	629	869	-	-			
	640	148	2.8	III	2.72	629	843	-	-			
699	135	2.8	III	2.49	625	809	-	-				
751	126	3.0	III	2.32	613	785	-	-				
1.5	242	391	0.8	*	7.20	745	997	1612	1876	SK 371.1 - 90 SP/4	43	149
	316	299	1.5	II	5.50	690	944	1613	1755			
	395	239	2.3	III	4.40	646	899	1614	1657			
	561	168	4.1	III	3.10	581	827	1614	1512			
	638	148	5.0	III	2.73	559	798	1614	1461			
	708	134	5.5	III	2.46	542	762	1614	1420			
	870	109	6.5	III	2.00	508	694	1614	1341			
	994	95	6.9	III	1.75	487	654	1614	1291			
	1131	84	7.1	III	1.54	467	619	1562	1245			
	1347	70	7.4	III	1.29	442	575	1484	1184			
	1560	61	7.7	III	1.12	421	541	1421	1135			
1.5	51	1839	0.9	*	33.84	829	2360	1658	2293	SK 372.1 - 90 SP/4	49	152
	58	1636	1.0	I	30.11	864	2360	1692	2293			
	67	1404	1.2	I	25.85	941	2360	1725	2293			
	76	1250	1.4	II	23.00	956	2360	1744	2293			
	84	1121	1.5	II	20.62	963	2360	1756	2293			
	95	1000	1.8	II	18.40	996	2360	1705	2293			
	105	896	1.9	II	16.50	994	2360	1652	2293			
	119	792	2.1	III	14.57	1022	2360	1600	2293			

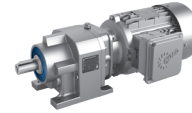
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power	Output Speed	Output Torque	Service Factor	AGMA Class	Gear Ratio	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight	Dim. Page
P_n	n_2	T_2	f_B		i_{tot}	F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
[hp]	[rpm]	[lb-in]				OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]		[lb]	
1.5	134	704	2.5	III	12.96	1011	2360	1546	2293	SK 372.1 - 90 SP/4	49	152
	151	628	2.7	III	11.55	1016	2360	1497	2293			
	169	559	3.0	III	10.28	1000	2360	1445	2293			
	185	511	3.3	III	9.40	998	2360	1409	2293			
	212	447	3.6	III	8.22	982	2360	1354	2293			
	241	393	3.8	III	7.23	964	2360	1302	2293			
	253	374	4.0	III	6.89	962	2348	1284	2293			
	264	358	4.0	III	6.58	960	2318	1267	2293			
	293	323	4.4	III	5.95	938	2246	1228	2246			
	332	285	5.0	III	5.24	912	2159	1180	2159			
373	253	4.9	III	4.66	887	2081	1138	2081				
416	227	5.1	III	4.18	864	2011	1099	2011				
1.5	47	2023	0.9	*	37.23	688	2360	1623	2293	SK 373.1 - 90 SP/4	50	152
	52	1804	1.0	I	33.20	815	2360	1664	2293			
	58	1617	1.1	I	29.77	846	2360	1695	2293			
	67	1409	1.3	I	25.94	902	2360	1724	2293			
	74	1272	1.5	II	23.41	915	2360	1741	2293			
	77	1236	1.5	II	22.74	941	2360	1745	2293			
	85	1115	1.7	II	20.52	948	2360	1750	2293			
	93	1012	1.7	II	18.63	950	2360	1702	2293			
1.5	183	516	0.9	*	9.50	1034	1720	2023	3946	SK 571.1 - 90 SP/4	50	155
	235	402	1.6	II	7.40	962	1720	2023	3688			
	290	326	2.4	III	6.00	904	1720	2023	3482			
	319	297	3.0	III	5.46	879	1720	2023	3392			
	509	186	6.5	III	3.42	761	1524	2023	2972			
	617	153	9.5	III	2.82	716	1420	2023	2812			
	696	136	10.8	III	2.50	690	1336	2023	2716			
	780	121	11.6	III	2.23	665	1264	2023	2628			
1.5	32	2956	1.1	I	54.41	2103	3372	2473	3372	SK 572.1 - 90 SP/4	65	158
	38	2487	1.1	I	45.77	2179	3372	2473	3372			
	41	2303	1.4	II	42.38	2194	3372	2473	3372			
	49	1937	1.7	II	35.65	2221	3372	2473	3372			
	56	1699	1.9	II	31.28	2236	3372	2473	3372			
	60	1571	2.1	III	28.91	2243	3372	2473	3372			
	64	1467	2.4	III	27.00	2249	3372	2473	3372			
	71	1335	2.9	III	24.58	2255	3372	2473	3372			
	80	1187	3.1	III	21.85	2227	3372	2473	3372			
	89	1063	3.3	III	19.57	2229	3372	2473	3372			
106	894	4.0	III	16.46	2152	3372	2473	3372				
1.5	20	4628	0.9	*	85.18	1454	3260	2473	3260	SK 573.1 - 90 SP/4	66	158
	23	4177	1.0	I	76.88	1612	3260	2473	3260			
	26	3675	1.1	I	67.64	1803	3260	2473	3260			
	29	3312	1.2	I	60.97	1934	3260	2473	3260			
	35	2695	1.5	II	49.60	2149	3260	2473	3260			
	36	2605	1.5	II	47.95	2168	3260	2473	3260			
	40	2358	1.7	II	43.40	2190	3260	2473	3260			

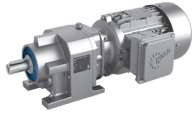
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



1.5 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
1.5	41	2292	1.7	II	42.18	2195	3260	2473	3260	SK 573.1 - 90 SP/4	66	158
	46	2066	1.9	II	38.02	2212	3260	2473	3260			
	50	1891	2.1	III	34.80	2224	3260	2473	3260			
	56	1681	2.3	III	30.93	2237	3260	2473	3260			
	65	1454	2.6	III	26.77	2249	3260	2473	3260			
	73	1293	2.9	III	23.79	2252	3260	2473	3260			
	82	1158	3.3	III	21.32	2206	3260	2473	3260			
	91	1044	3.6	III	19.22	2160	3260	2473	3260			
1.5	31	3078	1.2	I	56.65	2325	4496	3337	4496	SK 672.1 - 90 SP/4	77	164
	39	2420	1.6	II	44.55	2389	4496	3372	4496			
	49	1942	2.5	III	35.75	2425	4496	3372	4496			
	60	1580	3.1	III	29.08	2447	4496	3372	4496			
1.5	14	6701	0.8	*	123.33	1325	4496	2860	4496	SK 673.1 - 90 SP/4	80	164
	15	6296	0.9	*	115.89	1628	4496	2935	4496			
	17	5622	1.0	I	103.48	1885	4496	3047	4496			
	18	5154	1.1	I	94.86	1994	4496	3116	4496			
	21	4548	1.2	I	83.70	2114	4496	3194	4496			
	24	4001	1.4	II	73.64	2204	4496	3254	4496			
	26	3583	1.6	II	65.95	2263	4496	3295	4496			
	29	3284	1.7	II	60.45	2301	4496	3321	4496			
	32	2995	1.9	II	55.12	2334	4496	3343	4496			
	35	2689	2.1	III	49.50	2365	4496	3365	4496			
	39	2437	2.3	III	44.85	2387	4496	3372	4496			
	42	2257	2.5	III	41.54	2402	4496	3372	4496			
	47	2023	2.8	III	37.23	2419	4496	3372	4496			
	51	1854	2.9	III	34.12	2431	4496	3372	4496			
	56	1680	2.8	III	30.92	2441	4496	3372	4496			
	63	1500	3.1	III	27.61	2451	4496	3372	4496			
69	1368	3.2	III	25.19	2457	4496	3372	4496				
76	1240	3.2	III	22.82	2463	4496	3372	4496				
1.5	133	712	0.9	*	13.10	1287	2023	2384	4952	SK 771.1 - 90 SP/4	59	167
	169	560	1.5	II	10.30	1197	2023	2385	4634			
	205	462	2.4	III	8.50	1129	2023	2386	4393			
	226	418	3.1	III	7.69	1095	2023	2386	4270			
	322	294	4.9	III	5.41	981	1849	2387	3862			
	351	269	6.8	III	4.96	954	1800	2387	3768			
	421	225	9.3	III	4.14	901	1701	2387	3575			
	464	204	11.5	III	3.75	873	1618	2387	3475			
	514	184	12.4	III	3.38	845	1537	2387	3373			

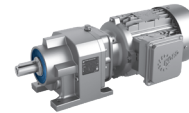
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
1.5	11	8705	0.9	*	160.22	1375	2698	2755	5620	SK 773.1 - 90 SP/4	107	170
	13	7540	1.0	I	138.78	1750	2698	2951	5620			
	15	6382	1.2	I	117.46	2055	2698	3116	5620			
	16	6081	1.2	I	111.92	2148	2698	3165	5620			
	18	5247	1.4	II	96.57	2356	2698	3278	5620			
	19	5086	1.5	II	93.61	2394	2698	3299	5620			
	21	4527	1.7	II	83.32	2524	2698	3370	5545			
	22	4305	1.8	II	79.23	2564	2698	3393	5478			
	24	3906	1.9	II	71.89	2538	2698	3446	5406			
	25	3745	2.0	III	68.92	2513	2698	3465	5364			
	27	3446	2.2	III	63.42	2463	2698	3500	5281			
	30	3132	2.4	III	57.64	2405	2698	3536	5182			
	34	2788	2.7	III	51.31	2335	2698	3574	5060			
	37	2587	3.0	III	47.61	2286	2698	3593	4968			
	40	2359	3.3	III	43.43	2232	2698	3617	4871			
45	2122	3.5	III	39.06	2173	2698	3644	4768				
1.5	5.5	17125	0.9	*	315.19	2960	4665	5082	6744	SK 873.1 - 90 SP/4	184	173
	6.1	15470	1.0	I	284.73	3272	4665	5270	6744			
	6.8	13997	1.1	I	257.61	3503	4665	5416	6744			
	7.5	12614	1.2	I	232.16	3687	4665	5537	6744			
	8.2	11461	1.3	I	210.95	3820	4665	5620	6744			
	9.1	10370	1.5	II	190.86	3931	4665	5620	6744			
	11	8988	1.7	II	165.42	4051	4665	5620	6744			
	12	8167	1.8	II	150.31	4113	4665	5620	6744			
	13	7389	2.0	III	135.99	4166	4665	5620	6744			
	14	6929	2.2	III	127.52	4194	4665	5620	6744			
	15	6296	2.4	III	115.88	4230	4665	5620	6744			
	17	5696	2.6	III	104.84	4261	4665	5620	6744			
	17	5489	2.7	III	101.02	4270	4665	5620	6744			
	19	4968	3.0	III	91.43	4293	4665	5620	6744			
	21	4514	3.3	III	83.08	4311	4665	5620	6744			
23	4036	3.7	III	74.29	4328	4665	5620	6744				
1.5	3.8	24818	1.2	I	456.77	5333	4946	6643	8992	SK 973.1 - 90 SP/4	270	176
	4.2	22533	1.3	I	414.73	5462	4946	6712	8992			
	4.8	19717	1.5	II	362.89	5620	4946	6795	8992			
	5.3	17683	1.7	II	325.47	5722	4946	6848	8992			
	5.9	16055	1.8	II	295.50	5795	4946	6887	8992			
	6.7	14049	2.1	III	258.57	5887	4946	6933	8992			
	7.4	12755	2.3	III	234.77	5938	4946	6960	8992			
	8.8	10730	2.7	III	197.50	6020	4946	7000	8992			
	9.7	9743	3.0	III	179.32	6053	4946	7017	8992			
	10	9431	2.8	III	173.58	6067	4946	7024	8992			
	11	8563	3.1	III	157.60	6095	4946	7038	8992			

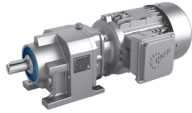
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



2.0 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
2.0	643	196	1.0	I	2.69	208	374	581	558	SK 071.1 - 90 LP/4	42	138
	1451	87	2.5	III	1.19	167	271	570	449			
	1611	78	2.7	III	1.07	162	260	554	436			
2.0	500	252	1.6	II	3.46	393	589	1029	1085	SK 171.1 - 90 LP/4	44	143
	830	152	3.1	III	2.08	344	507	1117	967			
	883	143	3.1	III	1.96	332	476	1117	927			
	1499	84	4.0	III	1.15	284	392	1040	805			
	1611	78	4.1	III	1.07	278	382	1018	790			
2.0	152	830	0.9	*	11.39	629	877	-	-	SK 172.1 - 90 LP/4	46	146
	177	713	1.1	I	9.79	629	877	-	-			
	198	636	1.2	I	8.72	629	877	-	-			
	221	571	1.3	I	7.83	629	877	-	-			
	244	516	1.4	II	7.08	629	877	-	-			
	269	469	1.5	II	6.43	629	877	-	-			
	300	420	1.6	II	5.77	629	877	-	-			
	337	374	2.0	III	5.14	629	877	-	-			
	375	336	1.9	II	4.62	629	877	-	-			
	415	304	1.9	II	4.17	629	877	-	-			
	456	276	1.9	II	3.79	629	877	-	-			
	537	235	2.0	III	3.22	629	877	-	-			
	593	213	2.1	III	2.92	629	839	-	-			
	637	198	2.1	III	2.72	628	816	-	-			
695	181	2.1	III	2.49	611	783	-	-				
746	169	2.3	III	2.32	599	762	-	-				
2.0	315	401	1.1	I	5.50	674	867	1612	1704	SK 371.1 - 90 LP/4	47	149
	393	321	1.7	II	4.40	633	834	1613	1615			
	558	226	3.1	III	3.10	572	778	1614	1481			
	634	199	3.7	III	2.73	551	737	1614	1432			
	704	179	4.1	III	2.46	534	709	1614	1395			
	865	146	4.9	III	2.00	501	651	1614	1319			
	989	128	5.1	III	1.75	481	616	1614	1271			
	1125	112	5.3	III	1.54	462	585	1559	1227			
	1339	94	5.5	III	1.29	437	546	1481	1168			
	1551	81	5.8	III	1.12	417	515	1418	1120			
2.0	67	1883	0.9	*	25.85	627	2360	1650	2293	SK 372.1 - 90 LP/4	52	152
	75	1676	1.1	I	23.00	671	2360	1686	2293			
	84	1503	1.1	I	20.62	703	2360	1700	2293			
	94	1341	1.3	I	18.40	768	2360	1656	2293			
	105	1202	1.4	II	16.50	785	2360	1608	2293			
	119	1062	1.6	II	14.57	846	2360	1563	2293			
	133	945	1.9	II	12.96	852	2360	1512	2293			
	150	842	2.0	III	11.55	876	2360	1468	2293			

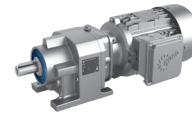
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
2.0	168	749	2.2	III	10.28	873	2360	1419	2293	SK 372.1 - 90 LP/4	52	152
	184	685	2.5	III	9.40	885	2360	1385	2293			
	210	599	2.7	III	8.22	884	2360	1333	2293			
	239	527	2.9	III	7.23	878	2344	1285	2293			
	251	502	3.0	III	6.89	881	2314	1268	2293			
	263	479	3.0	III	6.58	884	2287	1252	2287			
	291	433	3.3	III	5.95	868	2217	1214	2217			
	330	382	3.7	III	5.24	849	2134	1168	2134			
	371	340	3.6	III	4.66	831	2058	1126	2059			
	414	305	3.8	III	4.18	812	1990	1089	1990			
	458	275	3.9	III	3.78	794	1928	1055	1928			
	505	250	3.9	III	3.43	777	1861	1023	1861			
	554	228	3.9	III	3.12	760	1774	994	1775			
	605	208	3.8	III	2.86	744	1698	966	1698			
659	191	4.2	III	2.62	728	1629	940	1629				
2.0	58	2169	0.9	*	29.77	469	2360	1593	2293	SK 373.1 - 90 LP/4	53	152
	67	1890	1.0	I	25.94	573	2360	1649	2293			
	74	1706	1.1	I	23.41	613	2360	1681	2293			
	76	1657	1.1	I	22.74	654	2360	1689	2293			
	84	1495	1.2	I	20.52	683	2360	1693	2293			
	93	1357	1.2	I	18.63	705	2360	1650	2293			
2.0	234	539	1.2	I	7.40	943	1720	2023	3637	SK 571.1 - 90 LP/4	53	155
	288	437	1.8	II	6.00	888	1720	2023	3440			
	317	398	2.3	III	5.46	864	1720	2023	3353			
	506	249	4.9	III	3.42	752	1500	2023	2947			
	614	205	7.1	III	2.82	709	1395	2023	2790			
	692	182	8.0	III	2.50	683	1314	2023	2697			
	776	163	8.7	III	2.23	659	1245	2023	2610			
	1022	123	11.1	III	1.69	604	1098	2023	2411			
1323	95	12.0	III	1.31	557	982	2023	2236				
2.0	41	3088	1.1	I	42.38	2007	3372	2473	3372	SK 572.1 - 90 LP/4	69	158
	49	2598	1.3	I	35.65	2035	3372	2473	3372			
	55	2279	1.4	II	31.28	2078	3372	2473	3372			
	60	2106	1.6	II	28.91	2064	3372	2473	3372			
	64	1967	1.8	II	27.00	2036	3372	2473	3372			
	70	1791	2.1	III	24.58	2036	3372	2473	3372			
	79	1592	2.3	III	21.85	2009	3372	2473	3372			
	88	1426	2.5	III	19.57	2047	3372	2473	3372			
	105	1199	3.0	III	16.46	1998	3372	2473	3372			
	113	1120	3.4	III	15.38	1963	3372	2473	3372			
	127	996	3.6	III	13.67	1920	3372	2473	3372			
	136	924	4.1	III	12.68	1909	3372	2473	3372			
	154	820	4.4	III	11.25	1871	3372	2473	3372			
	172	731	4.8	III	10.04	1833	3372	2473	3372			

(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)

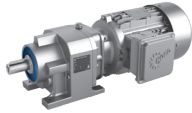
2.0 hp Gearmotors





Gearmotors

Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
2.0	26	4928	0.8	*	67.64	1308	3260	2473	3260	SK 573.1 - 90 LP/4	70	158
	28	4442	0.9	*	60.97	1507	3260	2473	3260			
	35	3614	1.1	I	49.60	1802	3260	2473	3260			
	36	3493	1.1	I	47.95	1826	3260	2473	3260			
	40	3162	1.3	I	43.40	1886	3260	2473	3260			
	41	3073	1.3	I	42.18	1900	3260	2473	3260			
	45	2770	1.4	II	38.02	1945	3260	2473	3260			
	50	2536	1.5	II	34.80	2003	3260	2473	3260			
	56	2254	1.7	II	30.93	1999	3260	2473	3260			
	65	1950	2.0	III	26.77	2036	3260	2473	3260			
	73	1734	2.2	III	23.79	2014	3260	2473	3260			
	81	1553	2.5	III	21.32	1988	3260	2473	3260			
90	1400	2.7	III	19.22	1960	3260	2473	3260				
99	1269	3.0	III	17.42	1929	3260	2473	3260				
2.0	39	3246	1.2	I	44.55	2306	4496	3324	4496	SK 672.1 - 90 LP/4	81	164
	48	2605	1.9	II	35.75	2372	4496	3370	4496			
	59	2119	2.3	III	29.08	2413	4496	3372	4496			
	84	1503	3.6	III	20.62	2451	4496	3372	4496			
2.0	18	6912	0.8	*	94.86	1127	4496	2817	4496	SK 673.1 - 90 LP/4	83	164
	21	6099	0.9	*	83.70	1751	4496	2970	4496			
	23	5365	1.1	I	73.64	1947	4496	3086	4496			
	26	4805	1.2	I	65.95	2066	4496	3162	4496			
	29	4404	1.3	I	60.45	2139	4496	3210	4496			
	31	4016	1.4	II	55.12	2202	4496	3253	4496			
	35	3607	1.6	II	49.50	2260	4496	3292	4496			
	39	3268	1.7	II	44.85	2303	4496	3322	4496			
	42	3027	1.9	II	41.54	2330	4496	3341	4496			
	46	2713	2.1	III	37.23	2362	4496	3363	4496			
	51	2486	2.1	III	34.12	2383	4496	3372	4496			
	56	2253	2.1	III	30.92	2402	4496	3372	4496			
	63	2011	2.3	III	27.61	2420	4496	3372	4496			
	69	1835	2.4	III	25.19	2432	4496	3372	4496			
76	1663	2.4	III	22.82	2442	4496	3372	4496				
2.0	168	750	1.1	I	10.30	1180	2023	2384	4587	SK 771.1 - 90 LP/4	63	167
	204	619	1.8	II	8.50	1115	2023	2385	4354			
	225	560	2.3	III	7.69	1082	2023	2385	4234			
	320	394	3.7	III	5.41	972	1825	2386	3837			
	349	361	5.1	III	4.96	947	1779	2386	3746			
	418	301	7.0	III	4.14	894	1681	2387	3556			
	461	273	8.6	III	3.75	867	1599	2387	3458			
	511	247	9.3	III	3.38	840	1520	2387	3358			

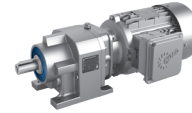
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
2.0	15	8155	0.9	*	111.92	1568	2698	2854	5314	SK 773.1 - 90 LP/4	111	170
	18	7036	1.1	I	96.57	1893	2698	3027	5264			
	18	6820	1.1	I	93.61	1953	2698	3059	5251			
	21	6071	1.2	I	83.32	2151	2698	3167	5192			
	22	5773	1.3	I	79.23	2213	2698	3201	5136			
	24	5238	1.4	II	71.89	2358	2698	3279	5102			
	25	5022	1.5	II	68.92	2396	2698	3307	5073			
	27	4621	1.6	II	63.42	2355	2698	3358	5014			
	30	4200	1.8	II	57.64	2308	2698	3411	4940			
	34	3738	2.0	III	51.31	2249	2698	3466	4846			
	36	3469	2.2	III	47.61	2205	2698	3493	4766			
	40	3164	2.4	III	43.43	2158	2698	3528	4687			
	44	2846	2.6	III	39.06	2108	2698	3567	4606			
	48	2606	2.8	III	35.77	2058	2698	3590	4513			
54	2320	3.1	III	31.83	1998	2698	3621	4405				
60	2086	3.5	III	28.63	1947	2698	3563	4316				
2.0	6.7	18770	0.8	*	257.61	2576	4665	4869	6744	SK 873.1 - 90 LP/4	188	173
	7.5	16915	0.9	*	232.16	3003	4665	5107	6744			
	8.2	15370	1.0	I	210.95	3289	4665	5280	6744			
	9.1	13906	1.1	I	190.86	3516	4665	5424	6744			
	10	12053	1.2	I	165.42	3754	4665	5582	6744			
	12	10952	1.4	II	150.31	3873	4665	5620	6744			
	13	9909	1.5	II	135.99	3973	4665	5620	6744			
	14	9292	1.6	II	127.52	4027	4665	5620	6744			
	15	8443	1.8	II	115.88	4093	4665	5620	6744			
	17	7639	2.0	III	104.84	4150	4665	5620	6744			
	17	7360	2.0	III	101.02	4168	4665	5620	6744			
	19	6662	2.3	III	91.43	4210	4665	5620	6744			
	21	6053	2.5	III	83.08	4243	4665	5620	6744			
	23	5413	2.8	III	74.29	4274	4665	5620	6744			
26	4918	3.1	III	67.50	4295	4665	5620	6744				
28	4450	3.4	III	61.07	4295	4665	5620	6744				
31	4033	3.7	III	55.35	4179	4665	5620	6744				
2.0	3.8	33281	0.9	*	456.77	4318	4946	6330	8992	SK 973.1 - 90 LP/4	274	176
	4.2	30218	1.0	I	414.73	4969	4946	6450	8992			
	4.8	26441	1.1	I	362.89	5232	4946	6588	8992			
	5.3	23714	1.2	I	325.47	5399	4946	6678	8992			
	5.9	21531	1.4	II	295.50	5518	4946	6742	8992			
	6.7	18840	1.6	II	258.57	5665	4946	6818	8992			
	7.4	17106	1.7	II	234.77	5745	4946	6861	8992			
	8.8	14390	2.0	III	197.50	5872	4946	6926	8992			
	9.6	13065	2.2	III	179.32	5925	4946	6953	8992			
	10	12647	2.1	III	173.58	5945	4946	6963	8992			
	11	11483	2.3	III	157.60	5988	4946	6985	8992			
	13	9651	3.0	III	132.45	6059	4946	7020	8992			
	14	8762	3.3	III	120.26	6088	4946	7034	8992			
	16	7667	3.7	III	105.23	6126	4946	7053	8992			

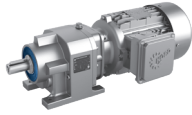
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



3.0 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						3.0	850 904 1534 1648	223 209 123 115	2.1 2.1 2.7 2.8			
3.0	720 885 1011 1151 1370 1587	263 214 187 164 138 119	2.8 3.3 3.5 3.6 3.8 3.9	III III III III III III	2.46 2.00 1.75 1.54 1.29 1.12	514 484 465 447 424 405	603 563 538 514 483 458	1614 1613 1558 1505 1435 1378	1333 1264 1221 1180 1125 1080	SK 371.1 - 100 LP/4	72	149
3.0	153 172 188 215 245 257 269 298 338 379 423 469 517 567 619 674	1234 1098 1004 879 772 736 703 635 560 498 447 403 366 334 305 280	1.4 1.5 1.7 1.8 1.9 2.0 2.0 2.2 2.5 2.5 2.6 2.6 2.7 2.7 2.6 2.8	II II II II II III III III III III III III III III III III	11.55 10.28 9.40 8.22 7.23 6.89 6.58 5.95 5.24 4.66 4.18 3.78 3.43 3.12 2.86 2.62	605 626 663 689 706 720 733 728 723 715 706 696 686 675 664 653	2360 2360 2360 2327 2250 2226 2203 2139 2062 1993 1929 1871 1787 1707 1636 1572	1396 1353 1326 1280 1237 1223 1210 1174 1131 1093 1058 1026 996 968 942 917	2293 2293 2293 2250 2226 2203 2139 2062 1993 1929 1871 1787 1707 1636 1572	SK 372.1 - 100 LP/4	77	152
3.0	324 404 518 628 708 793 1046 1354	583 468 365 301 267 238 181 140	1.5 2.4 3.3 4.9 5.5 5.9 7.6 8.2	II III III III III III III III	5.46 4.38 3.42 2.82 2.50 2.23 1.69 1.31	828 779 727 686 663 640 588 543	1632 1540 1439 1324 1252 1189 1054 946	2023 2023 2023 2023 2023 2023 2023 2023	3247 3067 2871 2722 2634 2551 2359 2191	SK 571.1 - 100 LP/4	78	155
3.0	57 72 81 90 108 115 130 140 157 176 198 217	3341 2625 2334 2090 1759 1642 1460 1355 1202 1072 953 871	1.0 1.4 1.6 1.7 2.0 2.3 2.5 2.8 3.0 3.3 3.4 3.7	I II II II III III III III III III III III	31.28 24.58 21.85 19.57 16.46 15.38 13.67 12.68 11.25 10.04 8.92 8.15	1505 1562 1578 1683 1684 1662 1645 1658 1648 1632 1600 1606	3372 3372 3372 3372 3372 3372 3372 3372 3372 3372 3372 3372	2473 2473 2473 2473 2473 2473 2473 2473 2473 2456 2369 2309	3372 3372 3372 3372 3372 3372 3372 3372 3372 3372 3372 3372	SK 572.1 - 100 LP/4	94	158

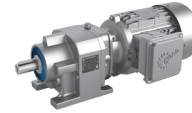
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
3.0	236	800	3.9	III	7.49	1592	3372	2252	3372	SK 572.1 - 100 LP/4	94	158
	281	673	4.2	III	6.30	1540	3372	2134	3372			
	301	629	4.2	III	5.88	1511	3372	2087	3372			
3.0	41	4636	0.9	*	43.40	1046	3260	2473	3260	SK 573.1 - 100 LP/4	95	158
	47	4062	1.0	I	38.02	1207	3260	2473	3260			
	51	3717	1.0	I	34.80	1339	3260	2473	3260			
	57	3304	1.2	I	30.93	1395	3260	2473	3260			
	66	2860	1.3	I	26.77	1522	3260	2473	3260			
	74	2542	1.5	II	23.79	1546	3260	2473	3260			
	83	2277	1.7	II	21.32	1559	3260	2473	3260			
	92	2053	1.9	II	19.22	1563	3260	2473	3260			
	102	1861	2.0	III	17.42	1560	3260	2473	3260			
3.0	61	3106	1.6	II	29.08	2322	4496	3335	4496	SK 672.1 - 100 LP/4	106	164
	67	2802	1.9	II	26.23	2354	4496	3357	4496			
	76	2501	2.2	III	23.41	2382	4496	3372	4496			
	86	2203	2.5	III	20.62	2406	4496	3372	4496			
	96	1967	2.7	III	18.41	2423	4496	3372	4496			
	103	1843	2.9	III	17.25	2431	4496	3372	4496			
	115	1640	3.3	III	15.35	2444	4496	3372	4496			
	129	1464	3.5	III	13.70	2453	4496	3350	4496			
3.0	32	5888	1.0	I	55.12	1816	4496	3005	4496	SK 673.1 - 100 LP/4	108	164
	36	5288	1.1	I	49.50	1965	4496	3097	4496			
	39	4791	1.2	I	44.85	2068	4496	3164	4496			
	43	4437	1.3	I	41.54	2133	4496	3207	4496			
	48	3977	1.4	II	37.23	2208	4496	3257	4496			
	52	3645	1.5	II	34.12	2255	4496	3289	4496			
	57	3303	1.4	II	30.92	2299	4496	3319	4496			
	64	2949	1.6	II	27.61	2339	4496	3347	4496			
	70	2691	1.6	II	25.19	2364	4496	3365	4496			
78	2438	1.6	II	22.82	2387	4496	3372	4496				
3.0	230	822	1.6	II	7.69	1047	1941	2384	4126	SK 771.1 - 100 LP/4	88	167
	284	666	2.3	III	6.23	985	1832	2385	3900			
	357	530	3.5	III	4.96	921	1719	2386	3667			
	428	442	4.7	III	4.14	872	1609	2386	3485			
	472	401	5.8	III	3.75	847	1535	2386	3392			
	523	362	6.3	III	3.38	821	1462	2386	3295			
	667	283	9.7	III	2.65	761	1309	2387	3076			
	822	230	10.7	III	2.15	713	1197	2387	2897			
3.0	66	2869	2.5	III	26.86	1821	2478	3316	4017	SK 772.1 - 100 LP/4	132	170
	73	2608	2.8	III	24.41	1778	2438	3250	3937			
	87	2170	3.3	III	20.31	1700	2381	3139	3803			
	96	1972	3.5	III	18.46	1657	2334	3072	3721			



(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)

3.0 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
3.0	21	8901	0.8	*	83.32	1333	2305	2732	4480	SK 773.1 - 100 LP/4	136	170
	22	8463	0.9	*	79.23	1452	2297	2795	4444			
	25	7679	1.0	I	71.89	1710	2415	2929	4483			
	26	7363	1.0	I	68.92	1802	2439	2978	4479			
	28	6775	1.1	I	63.42	1965	2480	3066	4464			
	31	6158	1.2	I	57.64	2099	2514	3154	4438			
	34	5481	1.4	II	51.31	2062	2541	3247	4395			
	37	5085	1.5	II	47.61	2028	2520	3293	4338			
	41	4639	1.7	II	43.43	1995	2527	3351	4294			
	45	4172	1.8	II	39.06	1963	2551	3414	4257			
	49	3821	1.9	II	35.77	1922	2518	3452	4185			
	56	3401	2.1	III	31.83	1876	2500	3394	4111			
	62	3059	2.4	III	28.63	1837	2495	3346	4054			
	70	2713	2.7	III	25.39	1787	2460	3274	3967			
73	2589	2.6	III	24.23	1763	2429	3235	3919				
82	2296	2.9	III	21.49	1713	2388	3161	3829				
3.0	41	4558	2.7	III	42.67	3737	4047	5620	6744	SK 872.1 - 100 LP/4	208	173
	46	4141	2.8	III	38.77	3637	4047	5620	6744			
	50	3747	2.8	III	35.08	3537	4047	5620	6744			
3.0	11	17670	0.9	*	165.42	2843	4665	5014	6744	SK 873.1 - 100 LP/4	213	173
	12	16056	0.9	*	150.31	3169	4665	5206	6744			
	13	14527	1.0	I	135.99	3424	4665	5365	6744			
	14	13622	1.1	I	127.52	3555	4665	5450	6744			
	15	12378	1.2	I	115.88	3716	4665	5556	6744			
	17	11199	1.3	I	104.84	3848	4665	5620	6744			
	18	10791	1.4	II	101.02	3890	4665	5620	6744			
	19	9767	1.5	II	91.43	3986	4665	5620	6744			
	21	8874	1.7	II	83.08	4060	4665	5620	6744			
	24	7935	1.9	II	74.29	4130	4665	5620	6744			
	26	7211	2.1	III	67.50	4177	4665	5620	6744			
	29	6524	2.3	III	61.07	4094	4665	5620	6744			
	32	5912	2.5	III	55.35	3994	4665	5620	6744			
	35	5376	2.8	III	50.32	3899	4665	5620	6744			
39	4864	3.1	III	45.53	3797	4665	5620	6744				
45	4239	3.5	III	39.68	3659	4665	5620	6744				
3.0	5.4	34767	0.8	*	325.47	3618	4946	6266	8992	SK 973.1 - 100 LP/4	299	176
	6.0	31567	0.9	*	295.50	4822	4946	6397	8992			
	6.8	27621	1.1	I	258.57	5155	4946	6547	8992			
	7.5	25078	1.2	I	234.77	5311	4946	6632	8992			
	9.0	21097	1.4	II	197.50	5547	4946	6756	8992			
	9.9	19155	1.5	II	179.32	5644	4946	6808	8992			
	10	18542	1.4	II	173.58	5680	4946	6826	8992			
	11	16836	1.6	II	157.60	5758	4946	6868	8992			

(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)

Motor Power	Output Speed	Output Torque	Service Factor	AGMA Class	Gear Ratio	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight	Dim. Page
P_n	n_2	T_2	f_B		i_{tot}	F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
[hp]	[rpm]	[lb-in]				OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]		[lb]	
3.0	13	14149	2.1	III	132.45	5883	4946	6931	8992	SK 973.1 - 100 LP/4	299	176
	15	12847	2.3	III	120.26	5934	4946	6958	8992			
	17	11241	2.5	III	105.23	6000	4946	6991	8992			
	19	10144	2.9	III	94.96	6041	4946	7011	8992			
	21	9210	3.2	III	86.22	6072	4946	7027	8992			
	23	8242	3.5	III	77.16	6107	4946	7044	8992			
	23	8059	3.6	III	75.44	6114	4946	7047	8992			
	26	7317	4.0	III	68.50	6136	4946	7058	8992			
5.0	714	441	1.7	II	2.46	407	418	1564	1226	SK 371.1 - 112 MP/4	88 72	149
	878	359	2.0	III	2.00	417	406	1494	1171			
	1003	314	2.1	III	1.75	420	397	1449	1135			
	1141	276	2.1	III	1.54	420	386	1405	1101			
	1359	232	2.3	III	1.29	404	370	1345	1054			
	1573	200	2.3	III	1.12	388	355	1295	1015			
	1573	200	2.3	III	1.12	388	355	1295	1015			
5.0	514	613	2.0	III	3.42	687	1288	2023	2758	SK 571.1 - 112 MP/4	95 78	155
	623	506	2.9	III	2.82	653	1206	2023	2624			
	702	449	3.3	III	2.50	632	1158	2023	2544			
	787	401	3.5	III	2.23	613	1106	2023	2469			
	1037	304	4.5	III	1.69	566	989	2023	2291			
	1342	235	4.9	III	1.31	525	893	2023	2133			
	1342	235	4.9	III	1.31	525	893	2023	2133			

(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



5.0 hp Gearmotors



Gearmotors

Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						5.0	90 107 114 128 138 156 175 197 215 234 279 298 336 375 415 458 537 600	3514 2956 2761 2454 2277 2020 1803 1602 1464 1345 1131 1057 939 841 759 688 587 525	1.0 1.2 1.4 1.5 1.7 1.8 2.0 2.0 2.2 2.3 2.5 2.5 2.5 2.6 2.7 2.8 2.9 2.9			
5.0	74 82 91 101	4273 3828 3451 3128	0.9 1.0 1.1 1.2	* I I I	23.79 21.32 19.22 17.42	601 694 766 822	3260 3260 3260 3260	2256 2306 2338 2357	3260 3260 3260 3260	SK 573.1 - 112 MP/4	111 95	158
5.0	85 95 102 114 128 140 154 169 190 203 207 228 260	3703 3306 3097 2757 2461 2256 2044 1861 1661 1556 1523 1380 1212	1.5 1.6 1.7 2.0 2.1 2.2 2.5 2.7 2.8 3.0 3.1 3.4 3.8	II II II III III III III III III III III III III	20.62 18.41 17.25 15.35 13.70 12.56 11.38 10.37 9.25 8.66 8.48 7.68 6.75	2247 2298 2323 2358 2385 2402 2418 2430 2442 2448 2450 2457 2464	4496 4496 4496 4496 4496 4496 4496 4496 4496 4496 4496 4496 4496	3283 3319 3335 3360 3258 3178 3086 3009 2908 2849 1834 2749 2646	4496 4496 4496 4496 4496 4496 4496 4496 4496 4496 4496 4496 4496	SK 672.1 - 112 MP/4	122 106	164
5.0	47 51 57 64 70 77	6686 6127 5551 4957 4523 4097	0.8 0.9 0.8 0.9 1.0 1.0	* * * * I I	37.23 34.12 30.92 27.61 25.19 22.82	1338 1734 1903 2035 2118 2189	4496 4496 4496 4496 4496 4496	2862 2965 3058 3142 3197 3244	4496 4496 4496 4496 4496 4496	SK 673.1 - 112 MP/4	125 108	164

(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)

Motor Power	Output Speed	Output Torque	Service Factor	AGMA Class	Gear Ratio	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight	Dim. Page
P_n	n_2	T_2	f_B		i_{tot}	F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
[hp]	[rpm]	[lb-in]				OHL	Thrust	OHL	Thrust		[lb]	
						[lb]	[lb]	[lb]	[lb]			
5.0	354	890	2.1	III	4.96	885	1625	2383	3561	SK 771.1 - 112 MP/4	104 88	167
	424	743	2.8	III	4.14	842	1510	2384	3394			
	468	673	3.5	III	3.75	819	1447	2385	3308			
	519	608	3.8	III	3.38	796	1383	2385	3219			
	661	477	5.8	III	2.65	741	1248	2386	3012			
	815	387	6.4	III	2.15	697	1146	2386	2844			
	1143	276	7.1	III	1.54	628	1001	2387	2583			
5.0	65	4823	1.5	II	26.86	1546	1947	2950	3572	SK 772.1 - 112 MP/4	149 132	170
	72	4383	1.7	II	24.41	1617	1949	2913	3529			
	86	3647	2.0	III	20.31	1568	1980	2863	3468			
	95	3315	2.1	III	18.46	1536	1966	2818	3414			
	105	2992	2.3	III	16.66	1505	1959	2776	3363			
	112	2806	2.4	III	15.62	1480	1935	2737	3315			
	122	2581	2.5	III	14.38	1459	1950	2717	3291			
5.0	34	9213	0.8	*	51.31	1230	1518	2678	3530	SK 773.1 - 112 MP/4	152 136	170
	37	8548	0.9	*	47.61	1288	1551	2781	3519			
	40	7798	1.0	I	43.43	1410	1644	2902	3548			
	45	7013	1.1	I	39.06	1573	1774	2972	3601			
	49	6422	1.1	I	35.77	1611	1792	2949	3573			
	55	5716	1.3	I	31.83	1655	1854	2944	3566			
	61	5141	1.4	II	28.63	1643	1927	2951	3574			
	69	4560	1.6	II	25.39	1615	1957	2924	3541			
	72	4351	1.5	II	24.23	1596	1939	2894	3505			
82	3859	1.7	II	21.49	1565	1954	2859	3463				
5.0	41	7661	1.6	II	42.67	3501	4047	5620	6744	SK 872.1 - 112 MP/4	225 208	173
	45	6961	1.7	II	38.77	3421	4047	5620	6744			
	50	6298	1.7	II	35.08	3342	4047	5620	6744			
	55	5746	2.5	III	32.00	3279	4047	5620	6744			
	60	5221	2.6	III	29.08	3198	4047	5620	6744			
5.0	17	18825	0.8	*	104.84	2562	4047	4861	6744	SK 873.1 - 112 MP/4	229 213	173
	17	18139	0.8	*	101.02	2734	4047	4954	6744			
	19	16417	0.9	*	91.43	3101	4047	5166	6744			
	21	14917	1.0	I	83.08	3363	4047	5327	6744			
	24	13339	1.1	I	74.29	3594	4047	5475	6744			
	26	12120	1.2	I	67.50	3746	4047	5576	6744			
	29	10966	1.4	II	61.07	3750	4047	5620	6744			
	32	9938	1.5	II	55.35	3683	4047	5620	6744			
	35	9036	1.7	II	50.32	3618	4047	5620	6744			
	39	8175	1.8	II	45.53	3542	4047	5620	6744			
	44	7125	2.1	III	39.68	3437	4047	5620	6744			
	49	6398	2.4	III	35.63	3356	4047	5620	6744			
	54	5789	2.6	III	32.24	3276	4047	5620	6744			
	58	5472	2.7	III	30.47	3233	4047	5620	6744			
	64	4951	2.9	III	27.57	3153	4047	5593	6744			
	68	4662	3.1	III	25.69	3107	4047	5508	6744			
75	4218	3.5	III	23.49	3027	4047	5366	6744				

(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)

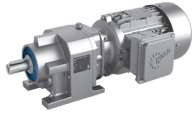
5.0, 7.5 hp Gearmotors





Gearmotors

Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						5.0	8.9 9.8 10 11 13 15 17 18 20 23 23 26 27 29 32 34 37 41	35462 32198 31168 28299 23783 21594 18895 17052 15482 13854 13547 12300 11848 10757 9994 9395 8546 7633	0.8 0.9 0.9 0.9 1.2 1.4 1.5 1.7 1.9 2.1 2.2 2.4 2.4 2.6 2.8 3.0 3.3 3.7			
7.5	708 793 1046 1354	668 596 452 349	2.2 2.4 3.0 3.3	III III III III	2.50 2.23 1.69 1.31	592 576 537 500	972 945 875 808	2023 2023 2023 2023	2424 2358 2199 2054	SK 571.1 - 132 SP/4	138	155
7.5	157 176 198 217 236 281 301 338 378 419 462 541 606	3004 2681 2383 2178 2000 1683 1572 1397 1251 1128 1023 873 781	1.2 1.3 1.4 1.5 1.5 1.7 1.7 1.7 1.8 1.8 1.9 1.9 1.9	I I II II II II II II II II II II II	11.25 10.04 8.92 8.15 7.49 6.30 5.88 5.23 4.69 4.22 3.83 3.27 2.92	674 763 812 920 973 1010 1002 1009 1010 1007 1001 987 971	3372 3372 3372 3372 3372 3372 3372 3372 3313 3180 3030 2813 2673	2052 2103 2113 2159 2116 2017 1976 1910 1850 1794 1742 1661 1605	3372 3372 3372 3372 3372 3372 3372 3372 3313 3180 3030 2813 2673	SK 572.1 - 132 SP/4	153	158
7.5	115 129 141 156 171 191	4100 3660 3355 3039 2768 2471	1.3 1.4 1.5 1.7 1.8 1.9	I II II II II II	15.35 13.70 12.56 11.38 10.37 9.25	2189 2253 2292 2329 2357 2384	4496 4496 4496 4496 4496 4496	3228 3131 3062 2979 2913 2821	4496 4496 4496 4496 4496 4496	SK 672.1 - 132 SP/4	165	164

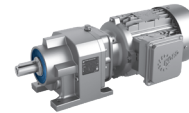
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
7.5	204	2314	2.0	III	8.66	2398	4496	2766	4496	SK 672.1 - 132 SP/4	165	164
	209	2265	2.1	III	8.48	2401	4496	2753	4496			
	230	2052	2.3	III	7.68	2417	4496	2675	4496			
	262	1803	2.6	III	6.75	2434	4496	2581	4496			
	289	1633	2.8	III	6.12	2444	4376	2506	4376			
	317	1492	2.9	III	5.59	2443	4270	2443	4270			
	350	1352	3.1	III	5.06	2372	4145	2372	4145			
	384	1231	3.2	III	4.61	2305	4030	2305	4030			
	419	1127	3.3	III	4.22	2243	3870	2243	3870			
	456	1036	3.4	III	3.88	2186	3710	2186	3710			
	495	956	3.3	III	3.58	2132	3567	2132	3567			
	535	884	3.4	III	3.31	2081	3438	2081	3438			
	576	820	3.5	III	3.07	2032	3320	2032	3320			
	620	762	3.5	III	2.86	1986	3212	1986	3212			
665	710	3.5	III	2.66	1942	3111	1942	3111				
7.5	472	1001	2.3	III	3.75	782	1331	2382	3193	SK 771.1 - 132 SP/4	147	167
	523	904	2.5	III	3.38	761	1279	2383	3112			
	667	709	3.9	III	2.65	713	1166	2384	2923			
	822	575	4.3	III	2.15	673	1078	2385	2767			
	1153	410	4.8	III	1.54	610	948	2386	2520			
1416	334	5.0	III	1.25	573	878	2386	2379				
7.5	87	5425	1.3	I	20.31	1314	1480	2514	3045	SK 772.1 - 132 SP/4	192	170
	96	4930	1.4	II	18.46	1357	1504	2496	3023			
	106	4450	1.5	II	16.66	1364	1542	2485	3010			
	113	4173	1.6	II	15.62	1347	1535	2458	2978			
	123	3839	1.7	II	14.38	1340	1594	2468	2989			
	135	3489	1.8	II	13.07	1316	1594	2436	2951			
	152	3116	2.0	III	11.67	1292	1616	2412	2922			
	160	2953	2.1	III	11.06	1272	1588	2376	2879			
	167	2832	2.1	III	10.60	1266	1606	2375	2877			
	177	2671	2.3	III	10.00	1245	1574	2335	2829			
	197	2397	2.4	III	8.97	1221	1584	2307	2795			
	218	2168	2.6	III	8.12	1192	1563	2263	2741			
	232	2038	2.7	III	7.63	1167	1521	2216	2685			
	267	1772	3.0	III	6.63	1145	1559	2224	2694			
286	1654	3.1	III	6.19	1114	1464	2137	2589				
329	1438	3.5	III	5.38	1088	1470	2129	2580				
7.5	56	8502	0.9	*	31.83	781	1056	2380	2884	SK 773.1 - 132 SP/4	195	170
	62	7646	0.9	*	28.63	986	1223	2453	2971			
	70	6781	1.1	I	25.39	1128	1332	2482	3007			
	73	6471	1.0	I	24.23	1134	1330	2464	2985			
	82	5739	1.2	I	21.49	1246	1413	2477	3000			

(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)

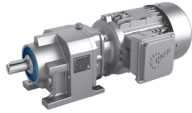
7.5 hp Gearmotors





Gearmotors

Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						7.5	41 46 50 55 61 63 70 77 95 104 117 128 142	11394 10354 9368 8546 7765 7478 6795 6147 4985 4530 4054 3683 3333	1.1 1.1 1.1 1.7 1.8 1.9 2.1 2.2 2.7 3.0 3.2 3.5 3.9			
7.5	26 29 32 35 39 45 50 55 58 64 68 75 83 92	18026 16310 14780 13439 12159 10597 9516 8610 8138 7363 6933 6273 5710 5166	0.8 0.9 1.0 1.1 1.2 1.4 1.6 1.7 1.8 2.0 2.1 2.3 2.5 2.7	* * I I I II II II II III III III III III	67.50 61.07 55.35 50.32 45.53 39.68 35.63 32.24 30.47 27.57 25.69 23.49 21.38 19.34	2761 3122 3286 3257 3214 3151 3099 3042 3013 2953 2919 2855 2798 2734	3941 4047 4142 4224 4261 4299 4316 4299 4297 4263 4249 4200 4159 4098	4969 5178 5341 5467 5573 5620 5620 5609 5539 5411 5336 5208 5091 4966	6744 6744 6744 6744 6744 6744 6744 6744 6744 6744 6744 6744 6744 6682	SK 873.1 - 132 SP/4	272	173
7.5	41 48 53 58 64	11419 9931 8909 8089 7386	2.2 2.6 2.9 3.1 3.1	III III III III III	42.76 37.19 33.36 30.29 27.66	5933 5856 5738 5620 5476	4946 4946 4946 4946 4946	6989 7016 7033 7045 7057	8992 8992 8992 8992 8992	SK 972.1 - 132 SP/4	354	176
7.5	13 15 17 19 21 23 23 26 27 30 32 34 37 42	35373 32116 28102 25361 23026 20605 20148 18293 17621 15999 14863 13972 12711 11353	0.8 0.9 1.0 1.2 1.3 1.4 1.4 1.6 1.6 1.8 1.9 2.0 2.2 2.5	* * I I I II II II II II II III III III III	132.45 120.26 105.23 94.96 86.22 77.16 75.44 68.50 65.98 59.91 55.66 52.32 47.60 42.51	3280 4723 5122 5300 5434 5573 5597 5688 5725 5797 5848 5887 5878 5844	4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946	6240 6375 6530 6625 6697 6770 6783 6831 6850 6888 6914 6934 6961 6988	8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992	SK 973.1 - 132 SP/4	358	176

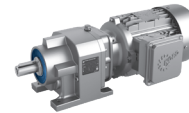
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
10	706	893	1.6	II	2.50	553	796	2023	2309	SK 571.1 - 132 MP/4	153	155
	791	797	1.8	II	2.23	540	784	2023	2252			
	1043	604	2.3	III	1.69	508	744	2023	2111			
	1350	467	2.4	III	1.31	476	688	2023	1978			
10	157	4017	0.9	*	11.25	130	3372	1508	3372	SK 572.1 - 132 MP/4	169	158
	176	3585	1.0	I	10.04	278	3372	1618	3372			
	198	3186	1.0	I	8.92	371	3372	1674	3372			
	216	2912	1.1	I	8.15	536	3372	1810	3372			
	236	2674	1.2	I	7.49	627	3372	1875	3372			
	280	2250	1.3	I	6.30	714	3372	1909	3372			
	300	2101	1.3	I	5.88	718	3372	1893	3372			
	337	1868	1.3	I	5.23	751	3315	1856	3315			
	377	1673	1.3	I	4.69	774	3216	1800	3216			
	418	1509	1.3	I	4.22	790	3065	1749	3065			
	461	1368	1.4	II	3.83	799	2927	1700	2927			
	540	1167	1.4	II	3.27	808	2726	1624	2726			
	604	1044	1.4	II	2.92	806	2595	1571	2595			
10	115	5483	1.0	I	15.35	1920	4496	3069	4496	SK 672.1 - 132 MP/4	181	164
	129	4894	1.0	I	13.70	2048	4496	3011	4496			
	140	4486	1.1	I	12.56	2125	4496	2952	4496			
	155	4064	1.2	I	11.38	2195	4496	2878	4496			
	170	3701	1.4	II	10.37	2247	4496	2824	4496			
	191	3304	1.4	II	9.25	2299	4496	2740	4496			
	204	3094	1.5	II	8.66	2323	4496	2690	4496			
	208	3028	1.5	II	8.48	2330	4496	2680	4496			
	230	2744	1.7	II	7.68	2359	4496	2608	4496			
	261	2410	1.9	II	6.75	2390	4391	2523	4391			
	289	2184	2.1	III	6.12	2408	4271	2453	4271			
	316	1995	2.2	III	5.59	2396	4175	2396	4175			
	349	1807	2.4	III	5.06	2328	4058	2328	4058			
	383	1646	2.4	III	4.61	2265	3946	2265	3946			
	418	1507	2.5	III	4.22	2206	3775	2206	3775			
	455	1385	2.6	III	3.88	2151	3624	2151	3624			
	493	1278	2.5	III	3.58	2099	3488	2099	3488			
	533	1182	2.5	III	3.31	2050	3365	2050	3365			
575	1097	2.6	III	3.07	2003	3253	2003	3253				
618	1020	2.6	III	2.86	1959	3149	1959	3149				
664	950	2.6	III	2.66	1916	3052	1916	3052				
10	471	1339	1.7	II	3.75	746	1171	2378	3084	SK 771.1 - 132 MP/4	163	167
	521	1209	1.9	II	3.38	729	1147	2380	3012			
	665	948	2.9	III	2.65	687	1082	2382	2840			
	819	769	3.2	III	2.15	651	1014	2384	2696			
	1149	548	3.6	III	1.54	593	899	2385	2463			
	1412	446	3.8	III	1.25	559	835	2386	2328			

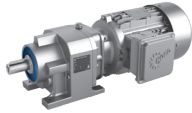
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



10 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
10	87	7253	1.0	I	20.31	728	961	2165	2623	SK 772.1 - 132 MP/4	207	170
	96	6592	1.0	I	18.46	817	1030	2175	2635			
	106	5950	1.1	I	16.66	927	1124	2195	2659			
	113	5579	1.2	I	15.62	950	1126	2181	2642			
	123	5133	1.2	I	14.38	1077	1239	2222	2692			
	135	4665	1.3	I	13.07	1123	1267	2209	2677			
	151	4166	1.5	II	11.67	1197	1328	2213	2681			
	160	3949	1.5	II	11.06	1180	1295	2182	2642			
	166	3786	1.6	II	10.60	1179	1337	2192	2655			
	176	3572	1.7	II	10.00	1160	1290	2156	2612			
	197	3205	1.8	II	8.97	1146	1327	2149	2603			
	217	2899	2.0	III	8.12	1123	1309	2117	2565			
	231	2724	2.0	III	7.63	1100	1248	2072	2510			
	266	2369	2.2	III	6.63	1091	1340	2119	2566			
	285	2211	2.3	III	6.19	1059	1242	2020	2447			
	328	1923	2.6	III	5.38	1044	1302	2044	2476			
	375	1682	2.9	III	4.71	1007	1239	1956	2370			
	400	1577	3.0	III	4.42	986	1192	1915	2320			
460	1371	3.4	III	3.84	965	1216	1913	2317				
491	1283	3.4	III	3.59	940	1147	1843	2233				
565	1116	3.8	III	3.12	916	1156	1829	2216				
10	70	9067	0.8	*	25.39	400	643	2040	2472	SK 773.1 - 132 MP/4	211	170
10	55	11427	1.2	I	32.00	2825	3703	5391	6744	SK 872.1 - 132 MP/4	283	173
	61	10383	1.3	I	29.08	2780	3705	5313	6672			
	63	9998	1.4	II	28.00	2775	3748	5307	6675			
	69	9085	1.6	II	25.44	2727	3733	5156	6585			
	77	8220	1.7	II	23.02	2681	3730	5044	6500			
	95	6666	2.0	III	18.67	2587	3731	4815	6334			
	104	6057	2.3	III	16.96	2532	3682	4703	6220			
	116	5420	2.4	III	15.18	2478	3659	4583	6116			
	128	4925	2.6	III	13.79	2421	3600	4474	5996			
	141	4456	2.9	III	12.48	2365	3547	4363	5879			
	157	4013	3.1	III	11.24	2312	3507	4253	5771			
	169	3726	3.3	III	10.44	2259	3420	4164	5647			
	191	3299	3.7	III	9.24	2198	3373	4041	5524			
199	3169	3.7	III	8.87	2162	3299	3989	5435				
10	35	17970	0.8	*	50.32	2774	3216	4976	6743	SK 873.1 - 132 MP/4	288	173
	39	16258	0.9	*	45.53	2890	3346	5184	6744			
	44	14169	1.1	I	39.68	2870	3502	5400	6744			
	50	12724	1.2	I	35.63	2847	3604	5424	6744			
	55	11512	1.3	I	32.24	2814	3652	5367	6716			
	58	10881	1.4	II	30.47	2798	3689	5342	6698			
	64	9845	1.5	II	27.57	2757	3710	5273	6632			
	68	9270	1.6	II	25.69	2735	3731	5179	6599			
	75	8388	1.7	II	23.49	2690	3730	5067	6517			
	83	7634	1.9	II	21.38	2648	3733	4963	6444			
	91	6907	2.1	III	19.34	2598	3711	4850	6346			

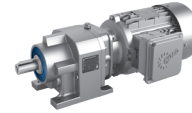
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						10	41 47 53 58 64 76 80 89 100	15268 13279 11912 10816 9876 8280 7851 7043 6304	1.7 1.9 2.2 2.3 2.3 2.5 3.2 3.5 3.9			
10	19 20 23 23 26 27 29 32 34 37 42 47 50 55 57 65 69 79	33910 30788 27552 26940 24460 23562 21393 19874 18683 16996 15180 13342 12566 11409 11059 9720 9108 8005	0.9 0.9 1.1 1.1 1.2 1.2 1.3 1.4 1.5 1.7 1.9 2.1 2.3 2.5 2.5 2.7 2.9 3.1	* * I I I I I II II II III III III III III III III III	94.96 86.22 77.16 75.44 68.50 65.98 59.91 55.66 52.32 47.60 42.51 37.36 35.19 31.95 30.97 27.22 25.51 22.42	3810 4019 4388 4438 4559 4692 4773 4863 4926 5002 5062 5096 5137 5096 5092 5057 5032 4969	4570 4711 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946 4946	6303 6427 6550 6571 6652 6682 6746 6789 6821 6864 6907 6947 6965 6987 6993 7018 7028 7047	8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992 8992	SK 973.1 - 132 MP/4	374	176
15	123 135 152 160 167 177 197 218 232 267 286 329 376 401 461 493 566	7678 6978 6231 5906 5663 5343 4793 4336 4075 3544 3307 2876 2516 2358 2051 1919 1669	0.8 0.9 1.0 1.0 1.1 1.1 1.2 1.3 1.3 1.5 1.6 1.8 2.0 2.0 2.3 2.3 2.6	* * I I I I I I I II II II III III III III III III	14.38 13.07 11.67 11.06 10.60 10.00 8.97 8.12 7.63 6.63 6.19 5.38 4.71 4.42 3.84 3.59 3.12	256 366 538 534 617 608 736 787 753 858 878 951 926 907 901 875 864	377 464 613 596 672 650 759 792 745 950 839 991 953 913 1002 925 987	1730 1756 1814 1790 1824 1796 1831 1824 1781 1905 1784 1871 1786 1747 1789 1705 1728	2096 2128 2197 2168 2209 2175 2218 2210 2158 2308 2162 2266 2163 2116 2167 2066 2094	SK 772.1 - 160 MP/4	276	170

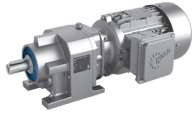
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



15 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						15	63 70 77 95 104 117 128 142 158 170 192 199 229 269 313 322 378 440 479 556	14955 13589 12295 9970 9059 8108 7367 6665 6002 5574 4935 4739 4127 3509 3021 2938 2498 2151 1974 1699	0.9 1.0 1.1 1.4 1.5 1.6 1.8 2.0 2.1 2.2 2.5 2.5 2.8 3.1 3.4 3.5 3.9 3.7 3.9 4.4			
15	55 58 64 68 75 83 92	17220 16276 14726 13866 12546 11419 10332	0.9 0.9 1.0 1.1 1.2 1.2 1.4	* * I I I I II	32.24 30.47 27.57 25.69 23.49 21.38 19.34	2044 2193 2365 2366 2355 2344 2321	2363 2475 2607 2696 2789 2881 2936	4537 4576 4601 4622 4599 4581 4539	5586 5634 5665 5692 5692 5695 5665	SK 873.1 - 160 MP/4	356	173
15	48 53 58 64 76 81 90 100 112 125 131 138 153 171	19862 17818 16177 14772 12385 11743 10534 9429 8459 7563 7242 6867 6161 5527	1.3 1.4 1.5 1.6 1.6 2.1 2.4 2.6 2.9 3.1 3.2 3.4 3.6 4.0	I II II II II III III III III III III III III III	37.19 33.36 30.29 27.66 23.19 21.99 19.72 17.65 15.84 14.16 13.56 12.86 11.54 10.35	3882 3925 3974 4002 4024 4238 4194 4234 4169 4136 4154 4078 4067 3940	4315 4316 4329 4327 4297 4486 4417 4430 4345 4292 4301 4219 4198 4097	6793 6845 6884 6915 6964 6983 7004 7025 7040 7055 7061 7065 7077 6958	8992 8992 8992 8933 8672 8755 8560 8431 8229 8052 8009 7881 7740 7537	SK 972.1 - 160 MP/4	438	176

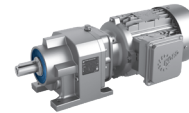
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power	Output Speed	Output Torque	Service Factor	AGMA Class	Gear Ratio	Standard Bearings		Heavy Duty Bearings (VL)		Model Type	Weight	Dim. Page
P_n	n_2	T_2	f_B		i_{tot}	F_{RN}	F_{AN}	F_{RVL}	F_{AVL}			
[hp]	[rpm]	[lb-in]				OHL [lb]	Thrust [lb]	OHL [lb]	Thrust [lb]		[lb]	
15	26	36587	0.8	*	68.50	2047	2881	6182	8992	SK 973.1 - 160 MP/4	442	176
	27	35242	0.8	*	65.98	2305	3102	6245	8992			
	30	31998	0.9	*	59.91	2575	3301	6380	8992			
	32	29727	1.0	I	55.66	2821	3494	6468	8992			
	34	27945	1.0	I	52.32	3006	3637	6534	8992			
	37	25421	1.1	I	47.60	3255	3826	6621	8992			
	42	22705	1.2	I	42.51	3501	4009	6707	8992			
	47	19956	1.4	II	37.36	3724	4167	6787	8992			
	50	18796	1.5	II	35.19	3861	4275	6819	8992			
	55	17066	1.7	II	31.95	3922	4298	6862	8992			
	57	16542	1.7	II	30.97	3953	4317	6875	8992			
	65	14539	1.8	II	27.22	4056	4374	6921	8949			
	69	13623	1.9	II	25.51	4094	4390	6941	8874			
79	11974	2.1	III	22.42	4143	4402	6975	8712				
20	167	7530	0.8	*	10.60	6	112	1458	1765	SK 772.1 - 160 LP/4	340	170
	177	7104	0.8	*	10.00	10	105	1438	1741			
	198	6373	0.9	*	8.97	208	269	1515	1835			
	219	5765	1.0	I	8.12	301	339	1533	1858			
	233	5418	1.0	I	7.63	271	301	1493	1808			
	268	4712	1.1	I	6.63	443	604	1693	2051			
	287	4397	1.2	I	6.19	487	474	1550	1877			
	330	3824	1.3	I	5.38	615	709	1699	2058			
	377	3346	1.5	II	4.71	746	687	1616	1958			
	402	3135	1.5	II	4.42	719	653	1579	1913			
	462	2726	1.7	II	3.84	793	803	1666	2018			
	494	2552	1.7	II	3.59	805	714	1569	1900			
	568	2219	1.9	II	3.12	812	826	1628	1972			
20	95	13256	1.0	I	18.67	2057	2239	4099	5047	SK 872.1 - 160 LP/4	416	173
	105	12045	1.1	I	16.96	2050	2294	4085	5034			
	117	10780	1.2	I	15.18	2050	2438	4086	5067			
	129	9795	1.3	I	13.79	2028	2452	4041	5030			
	142	8862	1.5	II	12.48	2008	2482	4002	5000			
	158	7981	1.6	II	11.24	1994	2551	3978	4992			
	170	7411	1.7	II	10.44	1952	2444	3892	4889			
	192	6561	1.9	II	9.24	1933	2511	3807	4871			
	200	6301	1.9	II	8.87	1895	2385	3782	4769			
	230	5487	2.1	III	7.73	1866	2427	3651	4728			
	270	4665	2.3	III	6.57	1801	2338	3510	4587			
	314	4017	2.5	III	5.66	1740	2250	3381	4450			
	323	3906	2.6	III	5.50	1747	2316	3371	4482			
	380	3321	2.9	III	4.68	1679	2215	3234	4329			
	441	2859	2.8	III	4.03	1616	2119	3110	4184			
480	2624	3.0	III	3.69	1590	2105	3048	4132				
558	2259	3.3	III	3.18	1527	2010	2928	3987				

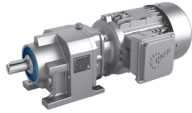
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



20, 25 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
20	81	15614	1.6	II	21.99	3462	3801	6900	8168	SK 972.1 - 160 LP/4	502	176
	90	14006	1.8	II	19.72	3481	3787	6934	8020			
	101	12537	2.0	III	17.65	3610	3879	6967	7959			
	112	11246	2.2	III	15.84	3596	3838	6991	7795			
	125	10056	2.3	III	14.16	3623	3838	7013	7663			
	131	9629	2.4	III	13.56	3675	3877	7021	7645			
	138	9130	2.5	III	12.86	3606	3801	6945	7522			
	154	8192	2.7	III	11.54	3667	3837	6859	7429			
	172	7349	3.0	III	10.35	3611	3764	6695	7251			
	189	6672	3.3	III	9.40	3568	3707	6556	7101			
	210	6004	3.5	III	8.45	3482	3553	6380	6910			
247	5108	3.9	III	7.19	3425	3398	6170	6682				
20	37	33800	0.8	*	47.60	1517	2288	6305	7993	SK 973.1 - 160 LP/4	506	176
	42	30188	0.9	*	42.51	1949	2635	6451	8112			
	48	26533	1.1	I	37.36	2359	2960	6583	8192			
	50	24991	1.1	I	35.19	2593	3154	6637	8267			
	56	22690	1.2	I	31.95	2754	3264	6707	8224			
	57	21994	1.2	I	30.97	2821	3315	6728	8223			
	65	19331	1.4	II	27.22	3060	3492	6804	8195			
	70	18113	1.5	II	25.51	3160	3564	6836	8167			
	79	15920	1.6	II	22.42	3323	3675	6890	8091			
25	117	13437	1.0	I	15.18	1631	1672	3694	4548	SK 872.1 - 180 MP/4	488	173
	129	12209	1.1	I	13.79	1751	1751	3697	4551			
	143	11047	1.2	I	12.48	1831	1848	3707	4565			
	158	9948	1.2	I	11.24	1837	1989	3717	4606			
	171	9238	1.3	I	10.44	1800	1909	3637	4512			
	193	8178	1.5	II	9.24	1801	2052	3642	4548			
	201	7855	1.5	II	8.87	1762	1925	3558	4438			
	230	6839	1.7	II	7.73	1753	2041	3544	4448			
	271	5815	1.9	II	6.57	1702	2008	3444	4341			
	315	5007	2.0	III	5.66	1652	1963	3305	4231			
	324	4869	2.1	III	5.50	1667	2053	3300	4283			
	381	4140	2.4	III	4.68	1608	1988	3172	4153			
	442	3564	2.2	III	4.03	1554	1922	3055	4028			
	482	3271	2.4	III	3.69	1534	1931	2998	3993			
560	2816	2.6	III	3.18	1477	1857	2884	3862				
25	81	19462	1.3	I	21.99	2691	3120	6804	7584	SK 972.1 - 180 MP/4	574	176
	90	17459	1.4	II	19.72	2772	3160	6854	7483			
	101	15627	1.6	II	17.65	2990	3331	6900	7488			
	112	14018	1.7	II	15.84	3026	3334	6797	7362			
	126	12535	1.9	II	14.16	3113	3386	6717	7276			
	131	12003	1.9	II	13.56	3198	3456	6723	7283			
	138	11381	2.0	III	12.86	3136	3385	6615	7166			
	154	10211	2.2	III	11.54	3261	3478	6574	7121			
	172	9160	2.4	III	10.35	3238	3383	6432	6967			
	189	8317	2.6	III	9.40	3224	3307	6314	6839			

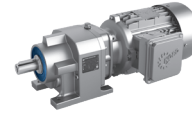
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)





Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
						25	211 247 266 288 339 390 477 535	7484 6367 5917 5463 4647 4036 3306 2946	2.8 3.1 3.4 3.4 3.8 4.4 4.9 5.1			
25	48 51 56 57 65 70 79	33073 31151 28283 27416 24096 22578 19844	0.9 0.9 1.0 1.0 1.1 1.2 1.2	* * I I I I I	37.36 35.19 31.95 30.97 27.22 25.51 22.42	1001 1332 1592 1695 2070 2232 2506	1677 2027 2236 2318 2616 2743 2952	6336 6416 6522 6553 6664 6711 6790	7168 7315 7347 7373 7445 7465 7473	SK 973.1 - 180 MP/4	579	176
30	117 129 143 158 171 193 201 230 271 315 324 381 442 482 560	16124 14651 13256 11937 11085 9814 9425 8207 6978 6008 5842 4967 4277 3925 3379	0.8 0.9 1.0 1.0 1.1 1.2 1.3 1.4 1.6 1.7 1.7 2.0 1.9 2.0 2.2	* * I I I I I II II II II III II III III III	15.18 13.79 12.48 11.24 10.44 9.24 8.87 7.73 6.57 5.66 5.50 4.68 4.03 3.69 3.18	916 1092 1289 1534 1503 1671 1630 1641 1605 1566 1587 1539 1492 1479 1429	986 1118 1270 1472 1413 1622 1494 1676 1693 1686 1799 1769 1730 1762 1709	3272 3308 3355 3429 3361 3424 3335 3356 3279 3199 3246 3112 3002 2951 2842	4028 4073 4131 4222 4138 4226 4110 4171 4097 4014 4085 3980 3873 3856 3740	SK 872.1 - 180 LP/4	488	173
30	81 90 101 112 126 131 138 154 172 189 211 247 266 288 339 390 477 535	23355 20951 18752 16822 15042 14403 13657 12254 10992 9980 8981 7640 7100 6555 5577 4843 3967 3535	1.1 1.2 1.3 1.4 1.6 1.6 1.7 1.8 2.0 2.2 2.3 2.6 2.8 2.8 3.2 3.7 4.1 4.3	I I I II II II II II III III III III III III III III III III	21.99 19.72 17.65 15.84 14.16 13.56 12.86 11.54 10.35 9.40 8.45 7.19 6.68 6.17 5.25 4.56 3.74 3.33	1917 2061 2369 2456 2603 2720 2667 2855 2865 2881 2837 2875 2945 2786 2786 2585 2840 2720 2682	2332 2415 2704 2725 2825 2940 2836 2997 2944 2911 2809 2786 2837 2633 2585 2606 2437 2378	6466 6416 6483 6402 6363 6392 6289 6292 6173 6076 5929 5785 5760 5567 5410 5318 5056 4931	7002 6948 7021 6933 6892 6924 6812 6815 6687 6581 6422 6266 6238 6029 5860 5760 5476 5341	SK 972.1 - 180 LP/4	574	176

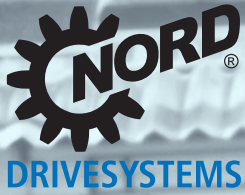
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)

30 hp, 40 hp, 50 hp Gearmotors



Motor Power P_n [hp]	Output Speed n_2 [rpm]	Output Torque T_2 [lb-in]	Service Factor f_B	AGMA Class	Gear Ratio i_{tot}	Standard Bearings		Heavy Duty Bearings (VL)		Model Type 	Weight  [lb]	Dim. Page
						F_{RN} OHL [lb]	F_{AN} Thrust [lb]	F_{RVL} OHL [lb]	F_{AVL} Thrust [lb]			
30	56	33940	0.8	*	31.95	425	919	5972	6470	SK 973.1 - 180 LP/4	579	176
	57	32899	0.8	*	30.97	563	1046	6021	6522			
	65	28915	0.9	*	27.22	1075	1515	6184	6699			
	70	27093	1.0	I	25.51	1300	1720	6245	6765			
	79	23813	1.0	I	22.42	1687	2068	6332	6857			
40	126	20000	1.2	I	14.16	1588	1721	5656	6125	SK 972.1 - 225 RP/4	927	176
	132	19151	1.2	I	13.56	1771	1896	5731	6206			
	139	18159	1.3	I	12.86	1732	1826	5638	6105			
	155	16292	1.4	II	11.54	2047	2113	5729	6204			
	172	14615	1.5	II	10.35	2123	2143	5655	6125			
	190	13270	1.7	II	9.40	2197	2181	5598	6063			
	211	11941	1.7	II	8.45	2195	2136	5479	5935			
	248	10159	2.0	III	7.19	2329	2220	5402	5851			
	267	9441	2.1	III	6.68	2458	2333	5418	5869			
	289	8716	2.1	III	6.17	2285	2126	5215	5648			
	340	7415	2.4	III	5.25	2359	2160	5110	5535			
	392	6439	2.7	III	4.56	2493	2264	5074	5496			
	478	5275	3.1	III	3.74	2416	2144	4842	5244			
536	4700	3.2	III	3.33	2411	2119	4740	5134				
50	126	25000	0.9	*	14.16	570	738	4949	5361	SK 972.1 - 225 SP/4	960	176
	132	23938	1.0	I	13.56	819	965	5070	5492			
	139	22698	1.0	I	12.86	795	916	4987	5402			
	155	20365	1.1	I	11.54	1237	1312	5167	5596			
	172	18269	1.2	I	10.35	1379	1409	5139	5565			
	190	16587	1.3	I	9.40	1513	1507	5123	5548			
	211	14926	1.4	II	8.45	1553	1508	5034	5451			
	248	12698	1.6	II	7.19	1782	1687	5023	5440			
	267	11801	1.7	II	6.68	1971	1856	5080	5502			
	289	10894	1.7	II	6.17	1783	1644	4866	5270			
	340	9268	1.9	II	5.25	1933	1752	4813	5213			
	392	8049	2.2	III	4.56	2146	1933	4833	5235			
	478	6594	2.4	III	3.74	2112	1859	4630	5015			
536	5875	2.6	III	3.33	2140	1868	4552	4930				

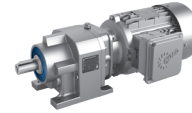
(AGMA Class I = f_B 1.0 - 1.39 II = f_B 1.4 - 1.99 III = f_B \geq 2.0 * = f_B < 1.0)



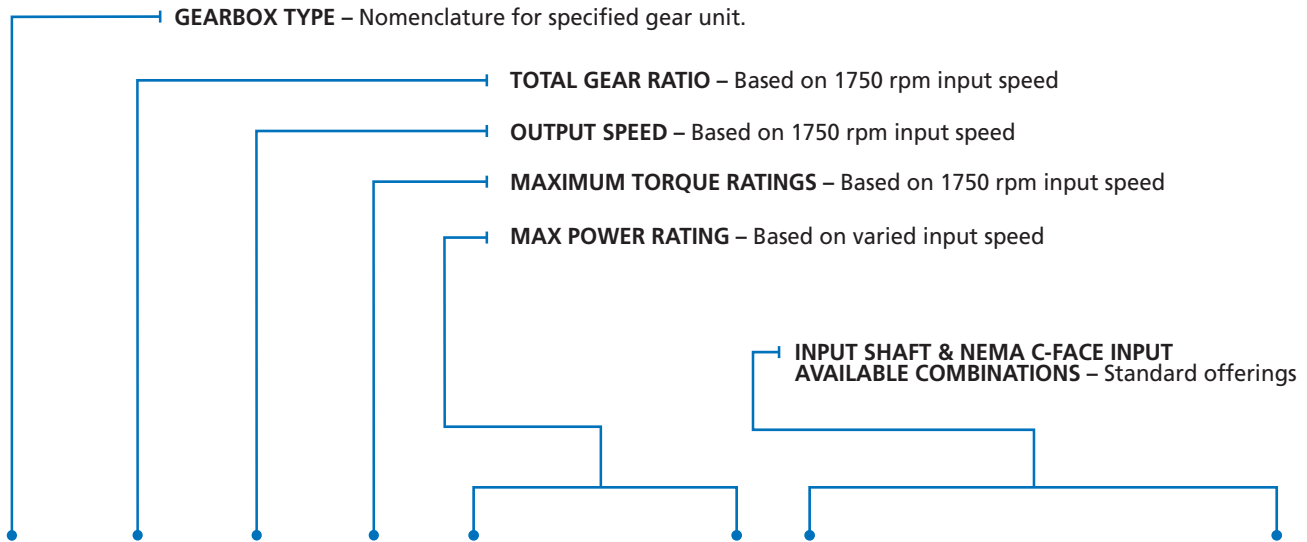
NEMA C-Face & Solid Input Shaft Ratings

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NEMA Ratings Tables Overview



Explanation of NEMA C-Face Combination Tables



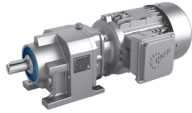
NEMA & W

Model Type	Gear Ratio i_{tot}	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 572.1	2.92	599.32	1505	10.00	7.50	5.00	3.00	X	X	X	X			
	3.27	535.17	1682	10.00	7.50	5.00	3.00	X	X	X	X			
	3.83	456.92	1947	10.00	7.50	5.00	3.00	X	X	X	X			
	4.22	414.69	2036	10.00	7.50	5.00	3.00	X	X	X	X			
	Based upon 1750 rpm Input Speed			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp
				Input Speed					C-face Adapter Maximum Input Power *					

INPUT SPEEDS = The speed in which the Max Power Rating is calculated

MAX INPUT POWER = Max input power that the C-Face adapter is able to handle

X = Available Combination




SK 071.1/SK 072.1 NEMA-C + W Ratings & Combinations

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations						
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC	
SK 071.1	1.07	1636	212	3.00	2.00	1.50	1.00	X	X	X					
	1.19	1471	221	3.00	2.00	1.50	1.00	X	X	X					
	2.00	875	221	3.00	2.00	1.50	1.00	X	X	X					
	2.27	771	186	2.28	1.50	1.14	0.75	X	X	X					
	2.69	651	204	2.11	1.38	1.05	0.70	X	X	X					
	3.70	473	177	1.33	0.87	0.66	0.44	X	X	X					
	4.80	365	150	0.87	0.57	0.43	0.29	X	X	X					
	5.56	315	133	0.66	0.44	0.33	0.22	X	X	X					
7.29	240	106	0.40	0.27	0.20	0.13	X	X	X						
11.00	159	53	0.13	0.09	0.07	0.04	X	X	X						
SK 072.1	2.10	833	319	1.00	0.75	0.50	0.33		X						
	2.33	751	345	1.00	0.75	0.50	0.33		X						
	2.57	681	363	1.00	0.75	0.50	0.33		X						
	2.85	614	398	1.00	0.75	0.50	0.33		X						
	2.95	593	398	1.00	0.75	0.50	0.33		X						
	3.28	534	416	1.00	0.75	0.50	0.33		X						
	3.58	489	425	1.00	0.75	0.50	0.33		X						
	3.92	446	398	1.00	0.75	0.50	0.33		X						
	4.31	406	443	1.00	0.75	0.50	0.33		X						
	4.77	367	469	1.00	0.75	0.50	0.33		X						
	5.31	330	487	1.00	0.75	0.50	0.33		X						
	5.50	318	487	1.00	0.75	0.50	0.33		X						
	5.96	294	487	1.00	0.75	0.50	0.33		X						
	6.57	266	469	1.00	0.75	0.50	0.33		X						
	7.23	242	487	1.00	0.75	0.50	0.33		X						
	8.00	219	487	1.00	0.75	0.50	0.33		X						
	8.91	196	487	1.00	0.75	0.50	0.33		X						
	10.00	175	487	1.00	0.75	0.50	0.33		X						
	11.56	151	443	1.00	0.75	0.50	0.33		X						
	13.20	133	416	1.00	0.75	0.50	0.33		X						
	14.40	122	451	1.00	0.75	0.50	0.33		X						
	15.77	111	487	1.00	0.75	0.50	0.33		X						
	17.35	101	487	1.00	0.75	0.50	0.33		X						
	19.20	91.1	487	0.70	0.46	0.35	0.23		X						
	21.38	81.9	487	0.63	0.42	0.32	0.21		X						
	22.22	78.8	487	0.61	0.40	0.30	0.20		X						
	24.75	70.7	487	0.55	0.36	0.27	0.18		X						
	27.78	63.0	478	0.48	0.31	0.24	0.16		X						
32.45	53.9	487	0.42	0.27	0.21	0.14		X							
36.43	48.0	478	0.36	0.24	0.18	0.12		X							
42.10	41.6	443	0.29	0.19	0.15	0.10		X							
49.00	35.7	407	0.23	0.15	0.12	0.08		X							
55.00	31.8	443	0.22	0.15	0.11	0.07		X							
63.56	27.5	443	0.19	0.13	0.10	0.06		X							
Based upon 1750 rpm				1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp	
Input Speed				Input Speed				C-face Adapter Maximum Input Power *							

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight 	W	56C	140TC
SK 071.1	11	10	10
SK 072.1	-	11	-

SK 171.1/SK 172.1 NEMA-C + W Ratings & Combinations



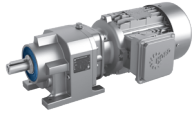
NEMA & W

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 171.1	1.07	1636	319	3.00	2.00	1.50	1.00	X	X	X				
	1.15	1522	336	3.00	2.00	1.50	1.00	X	X	X				
	1.96	893	443	3.00	2.00	1.50	1.00	X	X	X				
	2.08	841	469	3.00	2.00	1.50	1.00	X	X	X				
	2.71	646	398	3.00	2.00	1.50	1.00	X	X	X				
	3.05	574	319	2.90	1.91	1.45	0.96	X	X	X				
	3.46	506	398	3.19	2.10	1.60	1.06	X	X	X				
	4.80	365	301	1.74	1.14	0.87	0.58	X	X	X				
	6.20	282	230	1.03	0.68	0.52	0.34	X	X	X				
	7.75	226	186	0.67	0.44	0.33	0.22	X	X	X				
	9.29	188	150	0.45	0.29	0.22	0.15	X	X	X				
14.00	125	71	0.14	0.09	0.07	0.05	X	X	X					
SK 172.1	2.32	754	381	2.00	1.50	1.00	0.75	X	X	X				
	2.49	703	381	2.00	1.50	1.00	0.75	X	X	X				
	2.72	643	407	2.00	1.50	1.00	0.75	X	X	X				
	2.92	599	443	2.00	1.50	1.00	0.75	X	X	X				
	3.22	543	478	2.00	1.50	1.00	0.75	X	X	X				
	3.79	462	522	2.00	1.50	1.00	0.75	X	X	X				
	4.17	420	575	2.00	1.50	1.00	0.75	X	X	X				
	4.62	379	637	2.00	1.50	1.00	0.75	X	X	X				
	5.14	340	735	2.00	1.50	1.00	0.75	X	X	X				
	5.77	303	682	2.00	1.50	1.00	0.75	X	X	X				
	6.43	272	726	2.00	1.50	1.00	0.75	X	X	X				
	7.08	247	726	2.00	1.50	1.00	0.75	X	X	X				
	7.83	223	726	2.00	1.50	1.00	0.75	X	X	X				
	8.72	201	779	2.00	1.50	1.00	0.75	X	X	X				
	9.79	179	752	2.00	1.50	1.00	0.75	X	X	X				
	10.83	162	761	1.95	1.28	0.98	0.65	X	X	X				
	11.39	154	752	1.83	1.20	0.92	0.61	X	X	X				
	12.06	145	770	1.77	1.17	0.89	0.59	X	X	X				
	13.54	129	752	1.54	1.01	0.77	0.51	X	X	X				
	15.76	111	752	1.32	0.87	0.66	0.44	X	X	X				
	18.60	94.1	743	1.11	0.73	0.55	0.37	X	X	X				
	20.37	85.9	752	1.03	0.67	0.51	0.34	X	X	X				
	22.42	78.1	814	1.01	0.66	0.50	0.33	X	X	X				
	24.80	70.6	814	0.91	0.60	0.46	0.30	X	X	X				
	27.62	63.4	814	0.82	0.54	0.41	0.27	X	X	X				
	31.00	56.5	814	0.73	0.48	0.36	0.24	X	X	X				
34.52	50.7	761	0.61	0.40	0.31	0.20	X	X	X					
38.75	45.2	752	0.54	0.35	0.27	0.18	X	X	X					
41.36	42.3	752	0.50	0.33	0.25	0.17	X	X	X					
46.43	37.7	752	0.45	0.30	0.22	0.15	X	X	X					
54.03	32.4	752	0.39	0.25	0.19	0.13	X	X	X					
62.36	28.1	566	0.25	0.17	0.13	0.08	X	X	X					
70.00	25.0	637	0.25	0.17	0.13	0.08	X	X	X					
81.45	21.5	735	0.25	0.16	0.13	0.08	X	X	X					
Based upon 1750 rpm				1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp
Input Speed				Input Speed					C-face Adapter Maximum Input Power *					

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight $\frac{lb}{kg}$	W	56C	140TC
SK 171.1	11	11	18
SK 172.1	15	15	15



SK 371.1/SK 372.1 NEMA-C + W Ratings & Combinations

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 371.1	1.12	1563	469	7.50	5.00	3.00	2.00	X	X	X	X			
	1.29	1357	522	7.50	5.00	3.00	2.00	X	X	X	X			
	1.54	1136	593	7.50	5.00	3.00	2.00	X	X	X	X			
	1.75	1000	655	7.50	5.00	3.00	2.00	X	X	X	X			
	2.00	875	708	7.50	5.00	3.00	2.00	X	X	X	X			
	2.46	711	735	7.50	5.00	3.00	2.00	X	X	X	X			
	2.73	641	735	7.48	4.91	3.74	2.48	X	X	X	X			
	3.10	565	690	6.18	4.06	3.09	2.05	X	X	X	X			
	4.40	398	558	3.52	2.31	1.76	1.17	X	X	X	X			
	5.50	318	443	2.24	1.47	1.12	0.74	X	X	X				
	7.20	243	310	1.20	0.79	0.60	0.40	X	X	X				
	8.11	216	274	0.94	0.62	0.47	0.31	X	X	X				
9.12	192	257	0.78	0.51	0.39	0.26	X	X	X					
10.86	161	204	0.52	0.34	0.26	0.17	X	X	X					
SK 372.1	2.62	668	797	5.00	3.00	2.00	1.50	X	X	X	X			
	2.86	612	797	5.00	3.00	2.00	1.50	X	X	X	X			
	3.12	561	885	5.00	3.00	2.00	1.50	X	X	X	X			
	3.43	510	974	5.00	3.00	2.00	1.50	X	X	X	X			
	3.78	463	1062	5.00	3.00	2.00	1.50	X	X	X	X			
	4.18	419	1151	5.00	3.00	2.00	1.50	X	X	X	X			
	4.66	376	1239	5.00	3.00	2.00	1.50	X	X	X	X			
	5.24	334	1416	5.00	3.00	2.00	1.50	X	X	X	X			
	5.95	294	1416	5.00	3.00	2.00	1.50	X	X	X	X			
	6.58	266	1416	5.00	3.00	2.00	1.50	X	X	X	X			
	6.89	254	1505	5.00	3.00	2.00	1.50	X	X	X	X			
	7.23	242	1505	5.00	3.00	2.00	1.50	X	X	X	X			
	8.22	213	1593	5.00	3.00	2.00	1.50	X	X	X	X			
	9.40	186	1682	4.97	3.26	2.48	1.65	X	X	X	X			
	10.28	170	1682	4.54	2.99	2.27	1.51	X	X	X	X			
	11.55	152	1682	4.04	2.66	2.02	1.34	X	X	X	X			
	12.96	135	1770	3.79	2.49	1.90	1.26	X	X	X	X			
	14.57	120	1682	3.21	2.11	1.60	1.06	X	X	X	X			
	16.50	106	1682	2.83	1.86	1.42	0.94	X	X	X	X			
	18.40	95.1	1770	2.67	1.76	1.34	0.89	X	X	X	X			
	20.62	84.9	1682	2.26	1.49	1.13	0.75	X	X	X				
	23.00	76.1	1770	2.14	1.40	1.07	0.71	X	X	X				
	25.85	67.7	1682	1.81	1.19	0.90	0.60	X	X	X				
30.11	58.1	1593	1.47	0.97	0.73	0.49	X	X	X					
33.84	51.7	1682	1.38	0.91	0.69	0.46	X	X	X					
38.12	45.9	1593	1.16	0.76	0.58	0.38	X	X	X					
43.26	40.5	1505	0.97	0.63	0.48	0.32	X	X	X					
53.84	32.5	1416	0.73	0.48	0.37	0.24	X	X	X					
60.83	28.8	1328	0.61	0.40	0.30	0.20	X	X	X					
64.06	27.3	1416	0.61	0.40	0.31	0.20	X	X	X					
72.38	24.2	1328	0.51	0.33	0.25	0.17	X	X	X					
Based upon 1750 rpm				1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp
Input Speed				Input Speed					C-face Adapter Maximum Input Power *					

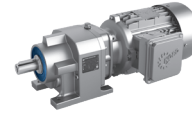
NEMA & W

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight $\frac{lb}{kg}$	W	56C	140TC	180TC
SK 371.1	19	18	18	19
SK 372.1	24	22	22	24

SK 373.1 NEMA-C + W Ratings & Combinations



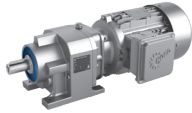
NEMA & W

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations						
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC	
SK 373.1	18.63	93.9	1682	2.00	1.50	1.00	0.75	X	X	X					
	20.52	85.3	1859	2.00	1.50	1.00	0.75	X	X	X					
	22.74	77.0	1859	2.00	1.50	1.00	0.75	X	X	X					
	23.41	74.8	1859	2.00	1.50	1.00	0.75	X	X	X					
	25.94	67.5	1859	1.99	1.31	0.99	0.66	X	X	X					
	29.77	58.8	1859	1.73	1.14	0.87	0.57	X	X	X					
	33.20	52.7	1770	1.48	0.97	0.74	0.49	X	X	X					
	37.23	47.0	1770	1.32	0.87	0.66	0.44	X	X	X					
	42.46	41.2	1770	1.16	0.76	0.58	0.38	X	X	X					
	47.05	37.2	1859	1.10	0.72	0.55	0.36	X	X	X					
	54.00	32.4	1859	0.96	0.63	0.48	0.32	X	X	X					
	60.22	29.1	1770	0.82	0.54	0.41	0.27	X	X	X					
	64.70	27.0	1770	0.76	0.50	0.38	0.25	X	X	X					
	74.27	23.6	1770	0.66	0.43	0.33	0.22	X	X	X					
	82.57	21.2	1859	0.63	0.41	0.31	0.21	X	X	X					
	91.48	19.1	1859	0.56	0.37	0.28	0.19	X	X	X					
	102.01	17.2	1770	0.48	0.32	0.24	0.16	X	X	X					
	120.54	14.5	1770	0.41	0.27	0.20	0.14	X	X	X					
	130.87	13.4	1770	0.38	0.25	0.19	0.12	X	X	X					
	145.00	12.1	1859	0.36	0.23	0.18	0.12	X	X	X					
	165.94	10.5	1859	0.31	0.20	0.16	0.10	X	X	X					
	185.05	9.5	1859	0.28	0.18	0.14	0.09	X	X	X					
	196.07	8.9	1859	0.26	0.17	0.13	0.09	X	X	X					
	207.98	8.4	1770	0.24	0.16	0.12	0.08	X	X	X					
228.22	7.7	1947	0.24	0.16	0.12	0.08	X	X	X						
256.50	6.8	1770	0.19	0.13	0.10	0.06	X	X	X						
269.67	6.5	1947	0.20	0.13	0.10	0.07	X	X	X						
303.08	5.8	1859	0.17	0.11	0.09	0.06	X	X	X						
343.92	5.1	1682	0.14	0.09	0.07	0.05	X	X	X						
Based upon 1750 rpm				1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp	
Input Speed				Input Speed					C-face Adapter Maximum Input Power *						

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight	W	56C	140TC
SK 373.1	26	24	24



SK 571.1/SK 572.1 NEMA-C + W Ratings & Combinations

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 571.1	1.31	1336	1142	7.50	5.00	3.00	2.00	X	X	X	X	X		
	1.69	1036	1372	7.50	5.00	3.00	2.00	X	X	X	X	X		
	2.23	785	1407	7.50	5.00	3.00	2.00	X	X	X	X	X		
	2.50	700	1460	7.50	5.00	3.00	2.00	X	X	X	X	X		
	2.82	621	1460	7.50	5.00	3.00	2.00	X	X	X	X	X		
	3.42	512	1213	7.50	5.00	3.00	2.00	X	X	X	X			
	4.38	400	1106	7.01	4.61	3.51	2.32	X	X	X	X			
	5.46	321	903	4.59	3.02	2.30	1.52	X	X	X	X			
	6.00	292	797	3.69	2.42	1.84	1.22	X	X	X				
	7.40	236	637	2.39	1.57	1.20	0.79	X	X	X				
9.50	184	460	1.34	0.88	0.67	0.45	X	X	X					
SK 572.1	2.92	599	1505	10.00	7.50	5.00	3.00	X	X	X	X			
	3.27	535	1682	10.00	7.50	5.00	3.00	X	X	X	X			
	3.83	457	1947	10.00	7.50	5.00	3.00	X	X	X	X			
	4.22	415	2036	10.00	7.50	5.00	3.00	X	X	X	X			
	4.69	373	2213	10.00	7.50	5.00	3.00	X	X	X	X			
	5.23	335	2390	10.00	7.50	5.00	3.00	X	X	X	X			
	5.88	298	2655	10.00	7.50	5.00	3.00	X	X	X	X			
	6.30	278	2832	10.00	7.50	5.00	3.00	X	X	X	X			
	7.49	234	3098	10.00	7.50	5.00	3.00	X	X	X	X			
	8.15	215	3186	10.00	7.50	5.00	3.00	X	X	X	X			
	8.92	196	3275	10.00	7.50	5.00	3.00	X	X	X	X			
	10.04	174	3540	9.79	6.43	4.90	3.24	X	X	X	X			
	11.25	156	3629	8.96	5.89	4.48	2.97	X	X	X	X			
	12.68	138	3806	8.33	5.48	4.17	2.76	X	X	X	X			
	13.67	128	3629	7.37	4.84	3.69	2.44	X	X	X	X			
	15.38	114	3806	6.87	4.52	3.44	2.28	X	X	X	X			
	16.46	106	3540	5.97	3.92	2.99	1.98	X	X	X	X			
	19.57	89.4	3540	5.02	3.30	2.51	1.66	X	X	X	X			
	21.85	80.1	3717	4.72	3.10	2.36	1.57	X	X	X	X			
	24.58	71.2	3806	4.30	2.83	2.15	1.42	X	X	X	X			
27.00	64.8	3540	3.64	2.39	1.82	1.21	X	X	X					
28.91	60.5	3363	3.23	2.12	1.61	1.07	X	X	X					
31.28	55.9	3275	2.91	1.91	1.45	0.96	X	X	X	X				
35.65	49.1	3275	2.55	1.68	1.28	0.85	X	X	X					
42.38	41.3	3275	2.15	1.41	1.07	0.71	X	X	X					
45.77	38.2	2832	1.72	1.13	0.86	0.57	X	X	X					
54.41	32.2	3275	1.67	1.10	0.84	0.55	X	X	X					
Based upon 1750 rpm			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp	
Input Speed			Input Speed				C-face Adapter Maximum Input Power *							

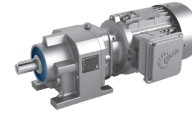
NEMA & W

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight \square	W	56C	140TC	180TC	210TC
SK 571.1	27	26	26	27	29
SK 572.1	40	40	40	42	-

SK 573.1 NEMA-C + W Ratings & Combinations



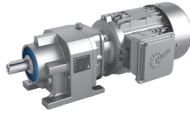
NEMA & W

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 573.1	17.42	100	3806	3.00	2.00	1.50	1.00	X	X	X	X			
	19.22	91.1	3806	3.00	2.00	1.50	1.00	X	X	X	X			
	21.32	82.1	3806	3.00	2.00	1.50	1.00	X	X	X	X			
	23.79	73.6	3806	3.00	2.00	1.50	1.00	X	X	X	X			
	26.77	65.4	3806	3.00	2.00	1.50	1.00	X	X	X	X			
	30.93	56.6	3894	3.00	2.00	1.50	1.00	X	X	X	X			
	34.80	50.3	3894	3.00	2.00	1.50	1.00	X	X	X	X			
	38.02	46.0	3983	2.91	1.91	1.45	0.96	X	X	X	X			
	42.18	41.5	3983	2.62	1.72	1.31	0.87	X	X	X	X			
	43.40	40.3	3983	2.55	1.67	1.27	0.84	X	X	X				
	47.95	36.5	3983	2.31	1.52	1.15	0.76	X	X	X	X			
	49.60	35.3	3983	2.23	1.47	1.11	0.74	X	X	X				
	55.80	31.4	3983	1.98	1.30	0.99	0.66	X	X	X				
	60.97	28.7	3983	1.81	1.19	0.91	0.60	X	X	X				
	67.64	25.9	3983	1.64	1.07	0.82	0.54	X	X	X	X			
	76.88	22.8	3983	1.44	0.95	0.72	0.48	X	X	X	X			
	85.18	20.5	3983	1.30	0.85	0.65	0.43	X	X	X				
	94.50	18.5	3983	1.17	0.77	0.59	0.39	X	X	X	X			
	107.42	16.3	3806	0.98	0.65	0.49	0.33	X	X	X	X			
	109.12	16.0	3983	1.01	0.67	0.51	0.34	X	X	X				
	111.36	15.7	3983	0.99	0.65	0.50	0.33	X	X	X				
	125.45	13.9	3983	0.88	0.58	0.44	0.29	X	X	X				
	136.40	12.8	3983	0.81	0.53	0.41	0.27	X	X	X				
	141.13	12.4	3983	0.78	0.51	0.39	0.26	X	X	X				
	158.78	11.0	3983	0.70	0.46	0.35	0.23	X	X	X				
	178.56	9.8	3983	0.62	0.41	0.31	0.21	X	X	X				
	188.91	9.3	3983	0.59	0.38	0.29	0.19	X	X	X				
	201.16	8.7	3983	0.55	0.36	0.27	0.18	X	X	X				
226.30	7.7	3983	0.49	0.32	0.24	0.16	X	X	X					
269.26	6.5	3983	0.41	0.27	0.21	0.14	X	X	X					
302.91	5.8	3894	0.36	0.23	0.18	0.12	X	X	X					
316.18	5.5	3717	0.33	0.21	0.16	0.11	X	X	X					
376.20	4.7	3629	0.27	0.18	0.13	0.09	X	X	X					
402.80	4.3	3275	0.23	0.15	0.11	0.07	X	X	X					
	Based upon 1750 rpm			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp
	Input Speed			Input Speed					C-face Adapter Maximum Input Power *					

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight $\frac{lb}{kg}$	W	56C	140TC	180TC
SK 573.1	42	42	42	44




SK 672.1 NEMA-C + W Ratings & Combinations

Model Type	Gear Ratio	Output Speed	Torque Capacity	Maximum input power [◇]				Input Shaft	NEMA C-Face* Available Combinations					
				i_{tot}	n_2 [rpm]	T_{2max} [lb-in]	[hp]		[hp]	[hp]	[hp]	W	56C	140TC
SK 672.1	2.66	658	2478	10.00	7.50	5.00	3.00	X	X	X	X	X		
	3.07	570	2832	10.00	7.50	5.00	3.00	X	X	X	X	X		
	3.31	529	3009	10.00	7.50	5.00	3.00	X	X	X	X	X		
	3.58	489	3186	10.00	7.50	5.00	3.00	X	X	X	X	X		
	3.88	451	3540	10.00	7.50	5.00	3.00	X	X	X	X	X		
	4.22	415	3717	10.00	7.50	5.00	3.00	X	X	X	X	X		
	4.61	380	3983	10.00	7.50	5.00	3.00	X	X	X	X	X		
	5.06	346	4248	10.00	7.50	5.00	3.00	X	X	X	X	X		
	5.59	313	4337	10.00	7.50	5.00	3.00	X	X	X	X	X		
	6.12	286	4514	10.00	7.50	5.00	3.00	X	X	X	X	X		
	6.75	259	4602	10.00	7.50	5.00	3.00	X	X	X	X	X		
	7.68	228	4691	10.00	7.50	5.00	3.00	X	X	X	X	X		
	8.48	206	4691	10.00	7.50	5.00	3.00	X	X	X	X	X		
	8.66	202	4691	10.00	7.50	5.00	3.00	X	X	X	X	X		
	9.25	189	4691	10.00	7.50	5.00	3.00	X	X	X	X	X		
	10.37	169	5045	10.00	7.50	5.00	3.00	X	X	X	X	X		
	11.38	154	5045	10.00	7.50	5.00	3.00	X	X	X	X	X		
	12.56	139	5045	10.00	7.50	5.00	3.00	X	X	X	X	X		
	13.70	128	5133	10.00	7.50	5.00	3.00	X	X	X	X	X		
	15.35	114	5399	9.77	6.42	4.88	3.24	X	X	X	X	X		
	17.25	101	5399	8.69	5.71	4.35	2.88	X	X	X	X	X		
	18.41	95.1	5399	8.14	5.35	4.07	2.70	X	X	X	X	X		
	20.62	84.9	5399	7.27	4.78	3.64	2.41	X	X	X	X	X		
23.41	74.8	5399	6.40	4.21	3.20	2.12	X			X	X			
26.23	66.7	5399	5.72	3.76	2.86	1.89	X				X	X		
29.08	60.2	4868	4.65	3.05	2.32	1.54	X	X	X	X				
32.58	53.7	5399	4.60	3.02	2.30	1.53	X	X	X	X				
35.75	49.0	4868	3.78	2.48	1.89	1.25	X	X	X					
44.55	39.3	3983	2.48	1.63	1.24	0.82	X	X	X					
56.65	30.9	3540	1.74	1.14	0.87	0.58	X	X	X					
Based upon 1750 rpm			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp	
Input Speed			Input Speed				C-face Adapter Maximum Input Power *							

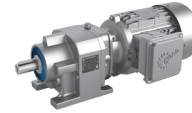
[◇] The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

NEMA & W

Weight 	W	56C	140TC	180TC	210TC
SK 672.1	53	51	51	53	57

SK 673.1 NEMA-C + W Ratings & Combinations



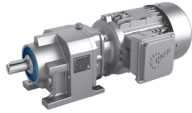
NEMA & W

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 673.1	22.82	76.7	3983	4.85	3.18	2.42	1.61	X	X	X	X			
	25.19	69.5	4425	4.88	3.21	2.44	1.62	X	X	X	X			
	27.61	63.4	4602	4.63	3.04	2.31	1.53	X	X	X	X			
	30.92	56.6	4691	4.21	2.77	2.11	1.40	X	X	X	X			
	34.12	51.3	5310	4.32	2.84	2.16	1.43	X	X	X	X			
	37.23	47.0	5664	4.22	2.78	2.11	1.40	X	X	X	X			
	41.54	42.1	5664	3.79	2.49	1.89	1.25	X	X	X	X			
	44.85	39.0	5664	3.51	2.30	1.75	1.16	X	X	X	X			
	49.50	35.4	5664	3.18	2.09	1.59	1.05	X	X	X	X			
	55.12	31.7	5664	2.85	1.87	1.43	0.95	X	X	X	X			
	60.45	28.9	5664	2.60	1.71	1.30	0.86	X	X	X				
	65.95	26.5	5664	2.38	1.57	1.19	0.79	X	X	X				
	73.64	23.8	5664	2.14	1.40	1.07	0.71	X	X	X				
	83.70	20.9	5664	1.88	1.23	0.94	0.62	X	X	X				
	94.86	18.4	5664	1.66	1.09	0.83	0.55	X	X	X				
	103.48	16.9	5664	1.52	1.00	0.76	0.50	X	X	X				
	115.89	15.1	5664	1.36	0.89	0.68	0.45	X	X	X				
	123.33	14.2	5664	1.28	0.84	0.64	0.42	X	X	X				
	130.55	13.4	5664	1.20	0.79	0.60	0.40	X	X	X				
	134.64	13.0	5664	1.17	0.77	0.58	0.39	X	X	X				
	143.30	12.2	5664	1.10	0.72	0.55	0.36	X	X	X				
	146.88	11.9	5664	1.07	0.70	0.54	0.35	X	X	X				
	161.45	10.8	5664	0.97	0.64	0.49	0.32	X	X	X				
	177.94	9.8	5664	0.88	0.58	0.44	0.29	X	X	X				
	181.88	9.6	5664	0.86	0.57	0.43	0.29	X	X	X				
	194.11	9.0	5664	0.81	0.53	0.41	0.27	X	X	X				
	219.00	8.0	5664	0.72	0.47	0.36	0.24	X	X	X				
	220.32	7.9	5664	0.71	0.47	0.36	0.24	X	X	X				
	248.20	7.1	5664	0.63	0.42	0.32	0.21	X	X	X				
	279.23	6.3	5664	0.56	0.37	0.28	0.19	X	X	X				
304.61	5.7	5664	0.52	0.34	0.26	0.17	X	X	X					
332.23	5.3	5664	0.47	0.31	0.24	0.16	X	X	X					
362.43	4.8	5664	0.43	0.29	0.22	0.14	X	X	X					
Based upon 1750 rpm				1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp
Input Speed				Input Speed					C-face Adapter Maximum Input Power *					

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight $\frac{lb}{kg}$	W	56C	140TC	180TC
SK 673.1	55	53	53	60




SK 771.1/772.1 NEMA-C + W Ratings & Combinations

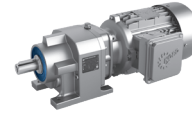
Model Type	Gear Ratio	Output Speed	Torque Capacity	Maximum input power [◇]				Input Shaft	NEMA C-Face* Available Combinations						
				i_{tot}	n_2 [rpm]	T_{2max} [lb-in]	[hp]		[hp]	[hp]	[hp]	W	56C	140TC	180TC
SK 771.1	1.25	1400	1682	10.00	7.50	5.00	3.00	X					X		
	1.54	1136	1956	10.00	7.50	5.00	3.00	X	X	X	X	X			
	2.15	814	2469	10.00	7.50	5.00	3.00	X	X	X	X	X			
	2.65	660	2753	10.00	7.50	5.00	3.00	X	X	X	X	X			
	3.38	518	2283	10.00	7.50	5.00	3.00	X	X	X	X	X			
	3.75	467	2337	10.00	7.50	5.00	3.00	X	X	X	X	X			
	4.14	423	2098	10.00	7.50	5.00	3.00	X	X	X	X	X			
	4.96	353	1841	10.00	7.50	5.00	3.00	X	X	X	X	X			
	5.41	323	1452	7.45	4.90	3.73	2.47	X	X	X	X	X			
	6.23	281	1522	6.78	4.46	3.39	2.25	X			X	X			
	7.69	228	1301	4.70	3.09	2.35	1.56	X	X	X	X				
	8.50	206	1097	3.58	2.35	1.79	1.19	X	X	X	X				
	10.30	170	850	2.29	1.51	1.15	0.76	X	X	X					
13.10	134	628	1.33	0.87	0.67	0.44	X	X	X						
SK 772.1	3.12	561	4293	20.00	15.00	10.00	7.50	X					X		
	3.59	487	4337	20.00	15.00	10.00	7.50	X					X		
	3.84	456	4691	20.00	15.00	10.00	7.50	X					X		
	4.42	396	4779	20.00	15.00	10.00	7.50	X					X		
	4.71	372	4956	20.00	15.00	10.00	7.50	X					X		
	5.38	325	5045	20.00	15.00	10.00	7.50	X	X	X	X	X			
	6.19	283	5133	20.00	15.00	10.00	7.50	X	X	X	X	X			
	6.63	264	5310	20.00	15.00	10.00	7.50	X	X	X	X	X			
	7.63	229	5487	19.97	13.12	9.98	6.62	X	X	X	X	X			
	8.12	216	5664	19.37	12.73	9.68	6.42	X	X	X	X	X			
	8.97	195	5841	18.08	11.88	9.04	5.99	X	X	X	X	X			
	10.00	175	6019	16.71	10.98	8.36	5.54	X	X	X	X	X			
	10.60	165	6019	15.77	10.36	7.88	5.23	X	X	X	X	X			
	11.06	158	6107	15.33	10.08	7.67	5.08	X	X	X	X	X			
	11.67	150	6107	14.53	9.55	7.27	4.82	X	X	X	X	X			
	13.07	134	6196	13.16	8.65	6.58	4.36	X	X	X	X	X			
	14.38	122	6373	12.31	8.09	6.15	4.08	X	X	X	X	X			
	15.62	112	6727	11.96	7.86	5.98	3.96	X	X	X	X	X			
16.66	105	6815	11.36	7.46	5.68	3.76	X	X	X	X	X				
18.46	94.8	6904	10.38	6.82	5.19	3.44	X	X	X	X	X				
20.31	86.2	7258	9.92	6.52	4.96	3.29	X	X	X	X	X				
24.41	71.7	7258	8.26	5.43	4.13	2.74	X	X	X	X					
26.86	65.2	7258	7.50	4.93	3.75	2.49	X	X	X	X					
Based upon 1750 rpm			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp		
Input Speed			Input Speed				C-face Adapter Maximum Input Power *								

◇ The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight 	W	56C	140TC	180TC	210TC
SK 771.1	38	37	38	38	40
SK 772.1	93	88	88	97	105

SK 773.1 NEMA-C + W Ratings & Combinations



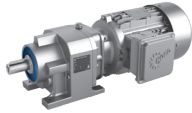
NEMA & W

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 773.1	21.49	81.4	6638	8.58	5.64	4.29	2.84	X	X	X	X	X		
	24.23	72.2	6727	7.71	5.07	3.85	2.55	X	X	X	X	X		
	25.39	68.9	7258	7.94	5.22	3.97	2.63	X	X	X	X	X		
	28.63	61.1	7258	7.04	4.63	3.52	2.33	X	X	X	X	X		
	31.38	55.8	7258	6.42	4.22	3.21	2.13	X	X	X	X	X		
	35.77	48.9	7258	5.63	3.70	2.82	1.87	X	X	X	X	X		
	39.06	44.8	7523	5.35	3.51	2.67	1.77	X	X	X	X	X		
	43.43	40.3	7700	4.92	3.24	2.46	1.63	X	X	X	X	X		
	47.61	36.8	7700	4.49	2.95	2.25	1.49	X	X	X	X	X		
	51.31	34.1	7523	4.07	2.68	2.04	1.35	X	X	X	X	X		
	57.64	30.4	7523	3.62	2.38	1.81	1.20	X	X	X	X			
	63.42	27.6	7523	3.29	2.16	1.65	1.09	X	X	X	X	X		
	68.92	25.4	7523	3.03	1.99	1.52	1.00	X	X	X	X			
	71.89	24.3	7523	2.91	1.91	1.45	0.96	X	X	X	X	X		
	79.23	22.1	7700	2.70	1.77	1.35	0.89	X	X	X	X			
	83.32	21.0	7523	2.51	1.65	1.25	0.83	X	X	X	X	X		
	93.61	18.7	7523	2.23	1.47	1.12	0.74	X	X	X	X			
	96.57	18.1	7523	2.16	1.42	1.08	0.72	X	X	X	X			
	111.92	15.6	7523	1.87	1.23	0.93	0.62	X	X	X	X			
	117.46	14.9	7700	1.82	1.20	0.91	0.60	X	X	X				
	138.78	12.6	7523	1.51	0.99	0.75	0.50	X	X	X				
	151.10	11.6	6196	1.14	0.75	0.57	0.38	X	X	X				
	160.22	10.9	7700	1.33	0.88	0.67	0.44	X	X	X				
	178.53	9.8	7523	1.17	0.77	0.59	0.39	X	X	X				
	189.31	9.2	7523	1.10	0.73	0.55	0.37	X	X	X				
	206.11	8.5	7700	1.04	0.68	0.52	0.34	X	X	X				
	224.49	7.8	7523	0.93	0.61	0.47	0.31	X	X	X				
	243.53	7.2	7523	0.86	0.56	0.43	0.28	X	X	X				
	260.18	6.7	7700	0.82	0.54	0.41	0.27	X	X	X				
	265.24	6.6	7523	0.79	0.52	0.39	0.26	X	X	X				
288.78	6.1	7523	0.72	0.48	0.36	0.24	X	X	X					
307.42	5.7	7523	0.68	0.45	0.34	0.23	X	X	X					
334.70	5.2	7700	0.64	0.42	0.32	0.21	X	X	X					
341.21	5.1	7523	0.61	0.40	0.31	0.20	X	X	X					
395.46	4.4	7523	0.53	0.35	0.26	0.18	X	X	X					
	Based upon 1750 rpm			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp
	Input Speed			Input Speed					C-face Adapter Maximum Input Power *					

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight $\frac{lb}{kg}$	W	56C	140TC	180TC	210TC
SK 773.1	97	93	93	101	101



SK 872.1 NEMA-C + W Ratings & Combinations

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations						
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC	
SK 872.1	3.18	550	7435	30.00	20.00	15.00	10.00	X						X	
	3.69	474	7789	30.00	20.00	15.00	10.00	X						X	
	4.03	434	7966	30.00	20.00	15.00	10.00	X			X	X	X		
	4.68	374	9736	30.00	20.00	15.00	10.00	X			X	X	X		
	5.50	318	10178	30.00	20.00	15.00	10.00	X			X	X	X		
	5.66	309	10178	30.00	20.00	15.00	10.00	X	X	X	X	X	X		
	6.57	266	10886	30.00	20.00	15.00	10.00	X	X	X	X	X	X		
	7.73	226	11506	30.00	20.00	15.00	10.00	X	X	X	X	X	X		
	8.87	197	11860	30.00	20.00	15.00	10.00	X	X	X	X	X	X		
	9.24	189	12214	30.00	20.00	15.00	10.00	X	X	X	X	X	X		
	10.44	168	12391	30.00	20.00	15.00	10.00	X	X	X	X	X	X		
	11.24	156	12391	30.00	20.00	15.00	10.00	X	X	X	X	X	X		
	12.48	140	13011	28.95	19.02	14.47	9.59	X	X	X	X	X	X		
	13.79	127	13011	26.20	17.22	13.10	8.68	X	X	X	X	X	X		
	15.18	115	13011	23.80	15.64	11.90	7.89	X	X	X	X	X	X		
	16.96	103	13630	22.31	14.66	11.16	7.40	X	X	X	X	X	X		
	18.67	93.7	13630	20.27	13.32	10.14	6.72	X	X	X	X	X	X		
	23.02	76.0	13807	16.65	10.94	8.33	5.52						X	X	
	25.44	68.8	14161	15.46	10.16	7.73	5.12						X	X	
	28.00	62.5	14161	14.04	9.23	7.02	4.65						X	X	
29.08	60.2	13807	13.18	8.66	6.59	4.37						X			
32.00	54.7	14161	12.29	8.07	6.14	4.07						X			
35.08	49.9	10621	8.41	5.52	4.20	2.79						X	X		
38.77	45.1	11506	8.24	5.42	4.12	2.73						X	X		
42.67	41.0	12391	8.06	5.30	4.03	2.67						X	X		
Based upon 1750 rpm				1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp	
Input Speed				Input Speed					C-face Adapter Maximum Input Power *						

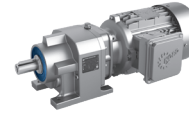
\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

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NEMA & W

Weight $\frac{lb}{kg}$	W	56C	140TC	180TC	210TC	250TC
SK 872.1	198	180	180	196	196	227

SK 873.1 NEMA-C + W Ratings & Combinations



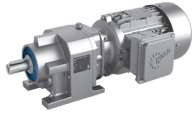
NEMA & W

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 873.1	19.34	90.5	14161	20.00	15.00	10.00	7.50	X				X	X	
	21.38	81.9	14161	18.39	12.09	9.20	6.10	X				X	X	
	23.49	74.5	14604	17.26	11.34	8.63	5.72	X	X	X	X	X	X	
	25.69	68.1	14604	15.78	10.37	7.89	5.23	X	X	X	X	X	X	
	27.57	63.5	14604	14.71	9.67	7.35	4.87	X	X	X	X	X	X	
	30.47	57.4	14869	13.55	8.90	6.77	4.49	X	X	X	X	X	X	
	32.24	54.3	15046	12.96	8.52	6.48	4.29	X	X	X	X	X	X	
	35.63	49.1	15046	11.73	7.71	5.86	3.89	X	X	X	X	X	X	
	39.68	44.1	15046	10.53	6.92	5.26	3.49	X	X	X	X	X	X	
	45.53	38.4	15046	9.18	6.03	4.59	3.04	X	X	X	X	X	X	
	50.32	34.8	15046	8.30	5.46	4.15	2.75	X	X	X	X	X	X	
	55.35	31.6	15046	7.55	4.96	3.77	2.50	X	X	X	X	X	X	
	61.07	28.7	15046	6.84	4.50	3.42	2.27	X	X	X	X	X	X	
	67.50	25.9	15046	6.19	4.07	3.09	2.05	X	X	X	X	X	X	
	74.29	23.6	15046	5.62	3.70	2.81	1.86	X	X	X	X	X	X	
	83.08	21.1	15046	5.03	3.30	2.51	1.67	X	X	X	X	X	X	
	91.43	19.1	15046	4.57	3.00	2.28	1.51	X	X	X	X	X	X	X
	101.02	17.3	15046	4.14	2.72	2.07	1.37	X	X	X	X	X	X	
	104.84	16.7	15046	3.98	2.62	1.99	1.32	X	X	X	X	X	X	
	115.88	15.1	15046	3.61	2.37	1.80	1.19	X	X	X	X	X	X	
	127.52	13.7	15046	3.28	2.15	1.64	1.09	X	X	X	X	X	X	
	135.99	12.9	15046	3.07	2.02	1.54	1.02	X	X	X	X	X	X	
	150.31	11.6	15046	2.78	1.83	1.39	0.92	X	X	X	X	X	X	
	165.42	10.6	15046	2.53	1.66	1.26	0.84	X	X	X	X	X	X	
	190.86	9.2	15046	2.19	1.44	1.09	0.73	X	X	X	X	X	X	
	210.95	8.3	15046	1.98	1.30	0.99	0.66	X	X	X	X	X	X	
	232.16	7.5	15046	1.80	1.18	0.90	0.60	X	X	X	X	X	X	
	257.61	6.8	15046	1.62	1.07	0.81	0.54	X	X	X	X	X	X	
284.73	6.1	15046	1.47	0.96	0.73	0.49	X	X	X	X	X	X		
315.19	5.6	15046	1.33	0.87	0.66	0.44	X	X	X	X	X	X		
348.37	5.0	15046	1.20	0.79	0.60	0.40	X	X	X	X	X	X		
383.39	4.6	15046	1.09	0.72	0.54	0.36	X	X	X	X	X	X		
399.60	4.4	15046	1.05	0.69	0.52	0.35	X	X	X	X	X	X		
439.77	4.0	15046	0.95	0.62	0.47	0.31	X	X	X	X	X	X		
	Based upon 1750 rpm			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp
	Input Speed			Input Speed					C-face Adapter Maximum Input Power *					

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight $\frac{lb}{kg}$	W	56C	140TC	180TC	210TC	250TC
SK 873.1	196	185	185	201	201	232




SK 972.1 NEMA-C + W Ratings & Combinations

Model Type	Gear Ratio	Output Speed	Torque Capacity	Maximum input power [◇]				Input Shaft	NEMA C-Face* Available Combinations						
				i_{tot}	n_2	T_{2max}	[hp]		[hp]	[hp]	[hp]	W	56C	140TC	180TC
		[rpm]	[lb-in]	[hp]	[hp]	[hp]	[hp]	W							
SK 972.1	3.33	526	15046	50.00	30.00	20.00	15.00	X							X
	3.74	468	16153	50.00	30.00	20.00	15.00	X							X
	4.56	384	17702	50.00	30.00	20.00	15.00	X						X	X
	5.25	333	17702	50.00	30.00	20.00	15.00	X			X	X		X	X
	6.17	284	18410	50.00	30.00	20.00	15.00	X				X	X	X	X
	6.68	262	19826	50.00	30.00	20.00	15.00	X				X	X	X	X
	7.19	243	19914	50.00	30.00	20.00	15.00	X			X	X	X	X	X
	8.45	207	20799	50.00	30.00	20.00	15.00	X				X	X	X	X
	9.40	186	21950	50.00	30.00	20.00	15.00	X			X	X	X	X	X
	10.35	169	21950	50.00	30.00	20.00	15.00	X			X	X	X	X	X
	11.54	152	22304	50.00	30.00	20.00	15.00	X			X	X	X	X	X
	12.86	136	23100	49.88	32.78	24.94	16.53	X	X	X	X	X	X	X	X
	13.56	129	23100	47.30	31.08	23.65	15.68	X				X	X	X	X
	14.16	124	23632	46.34	30.45	23.17	15.36	X	X	X		X	X	X	X
	15.84	110	24251	42.51	27.94	21.26	14.09	X				X	X	X	X
	17.65	99.2	24782	38.99	25.62	19.49	12.92	X				X	X	X	X
	19.72	88.7	24782	34.89	22.93	17.45	11.56	X				X	X	X	X
	21.99	79.6	24782	31.29	20.56	15.65	10.37	X				X	X	X	X
	23.19	75.5	20357	24.37	16.02	12.19	8.08	X				X	X		
	27.66	63.3	23012	23.10	15.18	11.55	7.66	X				X	X		
30.29	57.8	24782	22.72	14.93	11.36	7.53	X				X	X			
33.36	52.5	25667	21.36	14.04	10.68	7.08	X				X	X			
37.19	47.1	25667	19.16	12.59	9.58	6.35	X				X	X			
42.76	40.9	25667	16.67	10.95	8.33	5.52	X				X				
	Based upon 1750 rpm			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp	
	Input Speed			Input Speed					C-face Adapter Maximum Input Power *						

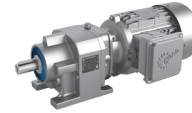
[◇] The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

NEMA & W

Weight 	W	56C	140TC	180TC	210TC	250TC	280TC
SK 972.1	278	267	267	283	283	314	336

SK 973.1 NEMA-C + W Ratings & Combinations



NEMA & W

Model Type	Gear Ratio	Output Speed n_2 [rpm]	Torque Capacity T_{2max} [lb-in]	Maximum input power \diamond				Input Shaft W	NEMA C-Face* Available Combinations					
				[hp]	[hp]	[hp]	[hp]		56C	140TC	180TC	210TC	250TC	280TC
SK 973.1	22.42	78.1	24782	30.00	20.00	15.00	10.00	X				X	X	X
	25.51	68.6	26552	28.90	18.99	14.45	9.58	X				X	X	X
	27.22	64.3	26552	27.09	17.80	13.54	8.98	X	X	X	X	X	X	X
	30.97	56.5	27437	24.60	16.17	12.30	8.15	X	X	X	X	X	X	X
	31.95	54.8	28322	24.61	16.17	12.31	8.16	X	X	X	X	X	X	X
	35.19	49.7	28322	22.35	14.69	11.17	7.41	X	X	X	X	X	X	X
	37.36	46.8	28322	21.05	13.83	10.52	6.98	X	X	X	X	X	X	X
	42.51	41.2	28322	18.50	12.16	9.25	6.13	X	X	X	X	X	X	X
	47.60	36.8	28322	16.52	10.86	8.26	5.48	X	X	X	X	X	X	X
	52.32	33.4	28322	15.03	9.88	7.52	4.98	X	X	X	X	X	X	
	55.66	31.4	28322	14.13	9.28	7.06	4.68	X	X	X	X	X	X	X
	59.91	29.2	28322	13.13	8.63	6.56	4.35	X	X	X	X	X	X	X
	65.98	26.5	28322	11.92	7.83	5.96	3.95	X	X	X	X	X	X	X
	68.50	25.5	29207	11.84	7.78	5.92	3.92	X	X	X	X	X	X	
	75.44	23.2	29207	10.75	7.06	5.37	3.56	X	X	X	X	X	X	
	77.16	22.7	29207	10.51	6.91	5.26	3.48	X	X	X	X	X	X	X
	86.22	20.3	29207	9.41	6.18	4.70	3.12	X	X	X	X	X	X	
	94.96	18.4	29207	8.54	5.61	4.27	2.83	X	X	X	X	X	X	
	105.23	16.6	28322	7.47	4.91	3.74	2.48	X	X	X	X	X		
	120.26	14.6	29207	6.74	4.43	3.37	2.24	X	X	X	X	X		
	132.45	13.2	29207	6.12	4.02	3.06	2.03	X	X	X	X	X		
	157.60	11.1	26552	4.68	3.07	2.34	1.55	X	X	X	X			
	173.58	10.1	26552	4.25	2.79	2.12	1.41	X	X	X	X			
179.32	9.8	29207	4.52	2.97	2.26	1.50	X	X	X	X				
197.50	8.9	29207	4.11	2.70	2.05	1.36	X	X	X	X				
234.77	7.5	29207	3.45	2.27	1.73	1.14	X	X	X	X				
258.57	6.8	29207	3.14	2.06	1.57	1.04	X	X	X	X				
295.50	5.9	29207	2.74	1.80	1.37	0.91	X	X	X	X				
325.47	5.4	29207	2.49	1.64	1.25	0.83	X	X	X	X				
362.89	4.8	29207	2.23	1.47	1.12	0.74	X	X	X					
414.73	4.2	29207	1.96	1.29	0.98	0.65	X	X	X					
456.77	3.8	29207	1.78	1.17	0.89	0.59	X	X	X					
	Based upon 1750 rpm			1750 rpm	1150 rpm	875 rpm	580 rpm	-	1 hp	2 hp	5 hp	10 hp	20 hp	30 hp
	Input Speed			Input Speed					C-face Adapter Maximum Input Power *					

\diamond The maximum input power limit shown is the largest motor power typically combined with the gear unit. These values shown are not the mechanical limit and often may be increased through discussion with our sales or engineering department.

* The NEMA C-face power limit must also be considered when selecting a reducer. The C-face Adapter's Maximum Input Power values are displayed under the Available combinations and based on a 1750 rpm motor.

Weight $\frac{lb}{kg}$	W	56C	140TC	180TC	210TC	250TC	280TC
SK 973.1	282	267	272	287	287	318	340

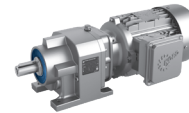


DRIVESYSTEMS

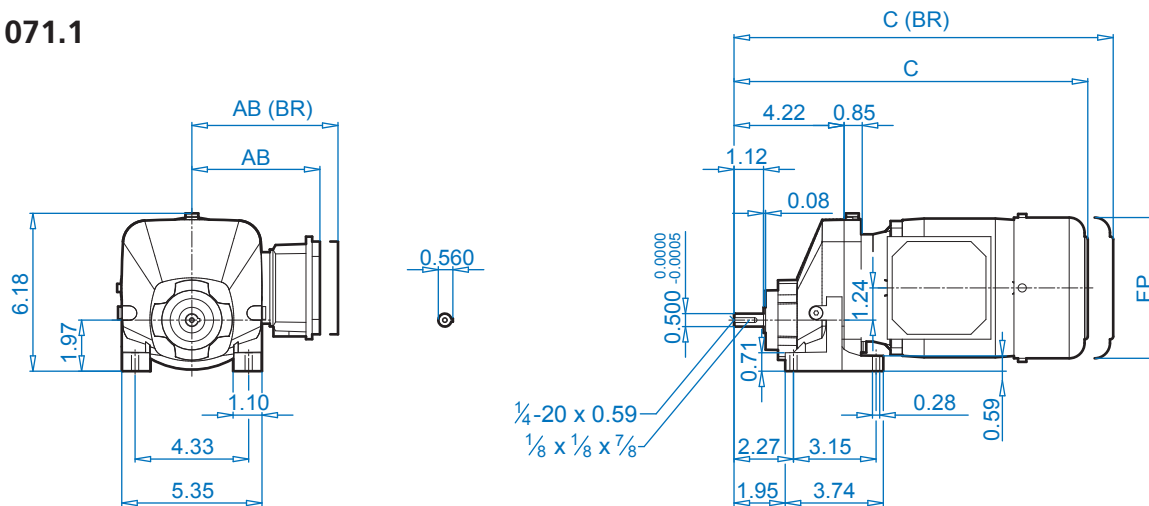
Dimensions

SK 071.1 Dimensions	138
SK 072.1 Dimensions	141
SK 171.1 Dimensions	143
SK 172.1 Dimensions	146
SK 371.1 Dimensions	149
SK 372.1/SK 373.1 Dimensions	152
SK 571.1 Dimensions	155
SK 572.1/SK 573.1 Dimensions	158
SK 672.1/SK 673.1 Dimensions	164
SK 771.1 Dimensions	167
SK 772.1/SK 773.1 Dimensions	170
SK 872.1/SK 873.1 Dimensions	173
SK 972.1/SK 973.1 Dimensions	176
Accessory Option Dimensions	179

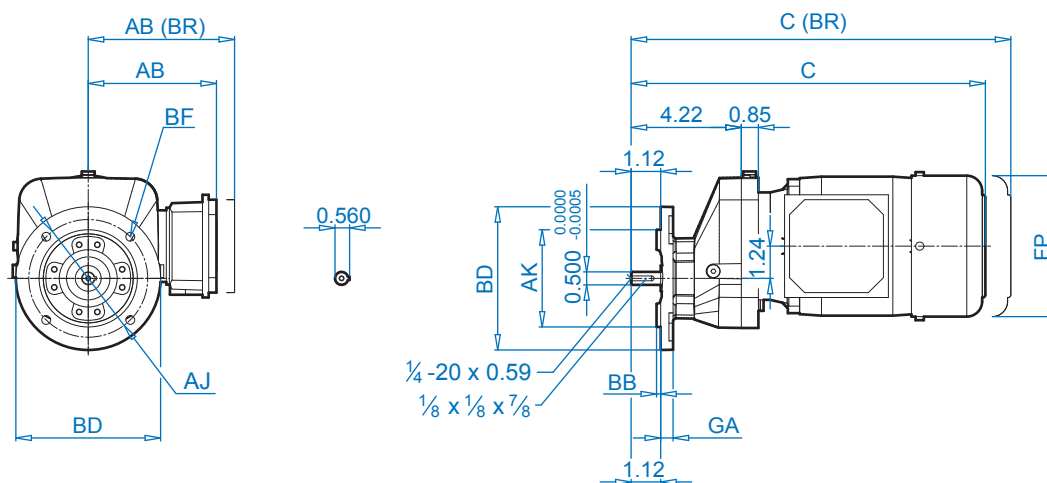
SK 071.1 + Motor SK 071.1F + Motor



SK 071.1



SK 071.1F



Dimensions

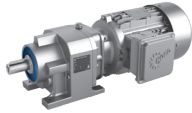
Mounting Flange

BD (mm)	AJ	AK		BB	BF	GA
4.72 (120)	3,937	3,150	+0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39

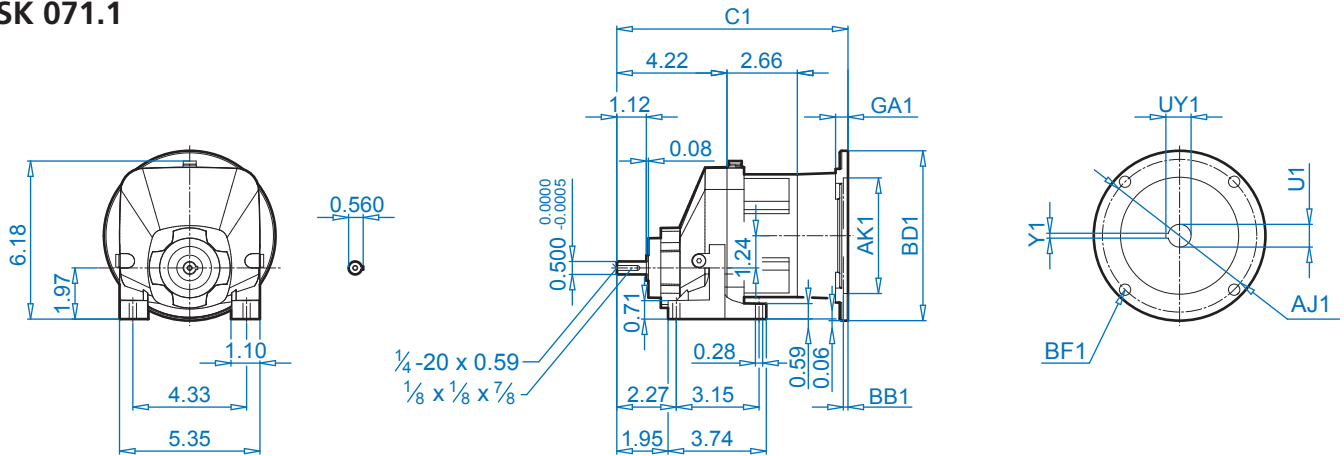
Motor Dimensions

Standard efficiency	63S/L	71S/L	80S/L	90S/L
Premium efficiency			80LP	90SP/LP
AB	4,51	4,86	5,59	5,79
AB (BR)	4,84	5,24	5,59	5,79
C	12,65	13,50	14,37	15,90
C (BR)	14,85	15,79	16,89	18,86
FP	5,09	5,72	6,43	7,19

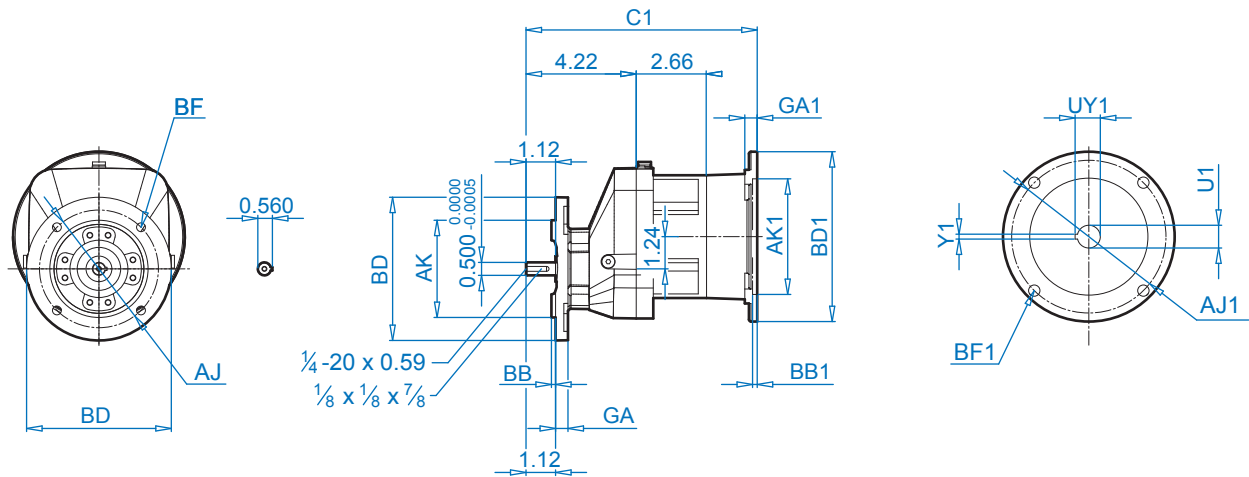
(BR) Denotes Brakemotor



SK 071.1



SK 071.1F



Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
4.72 (120)	3,937	3,150	+0.0005 -0.0003	0,12	0,26
5.51 (140)	4,528	3,740	+0.0005 -0.0004	0,12	0,31
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,39

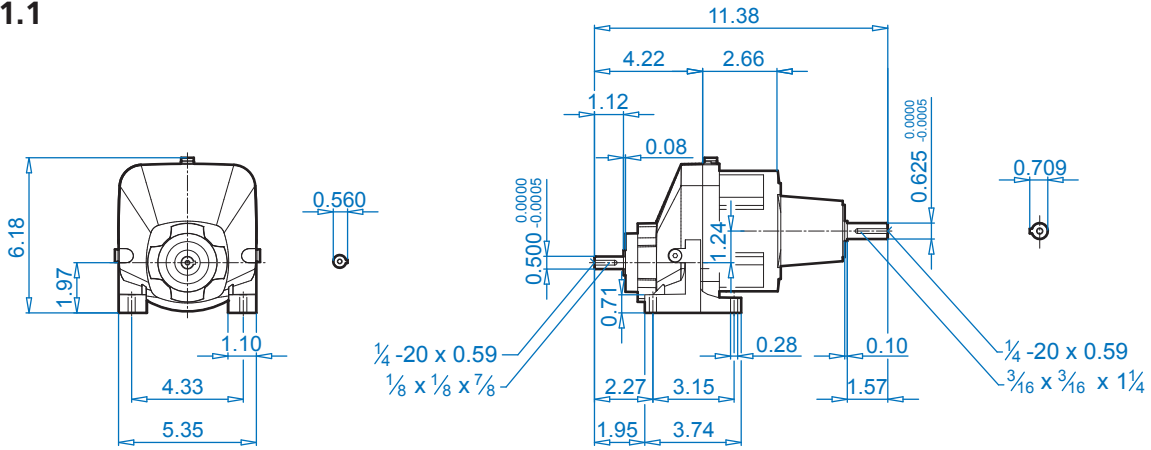
NEMA Dimensions

Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	8,33
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	8,80

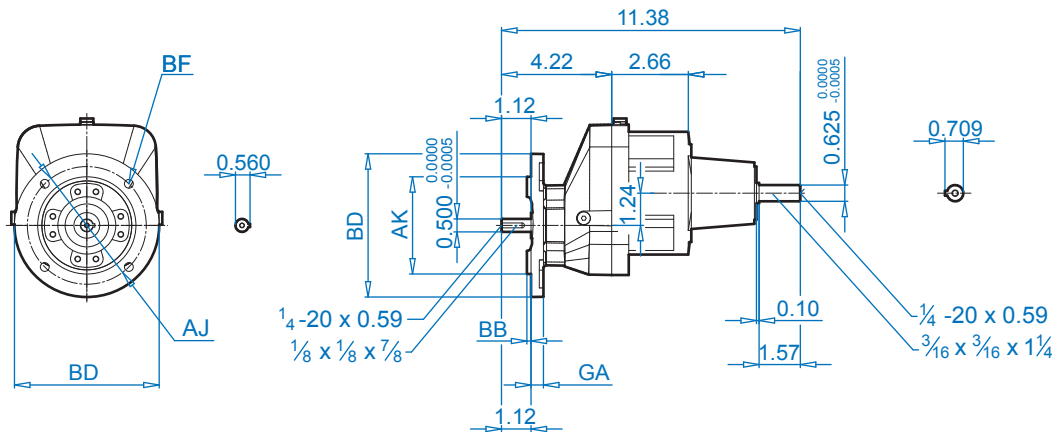
SK 071.1 + W SK 071.1F + W



SK 071.1

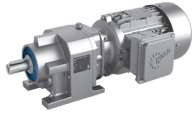


SK 071.1F

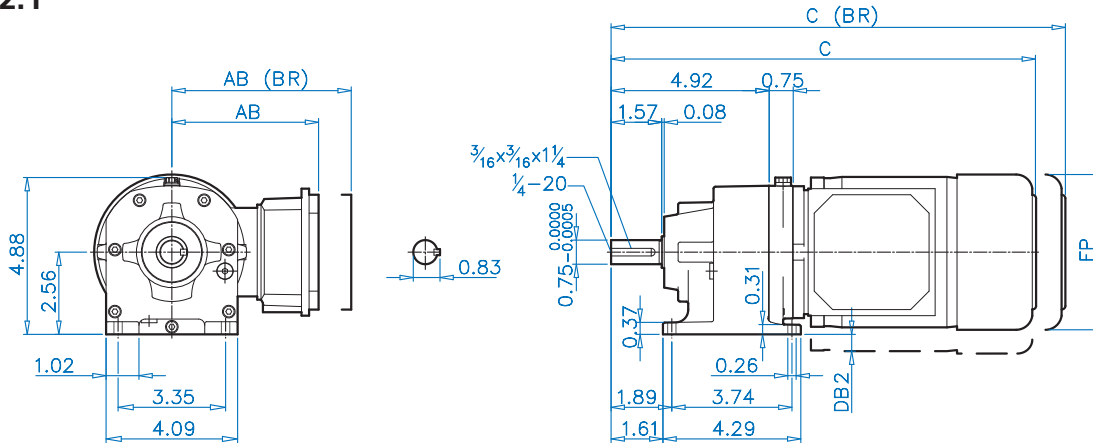


Mounting Flange

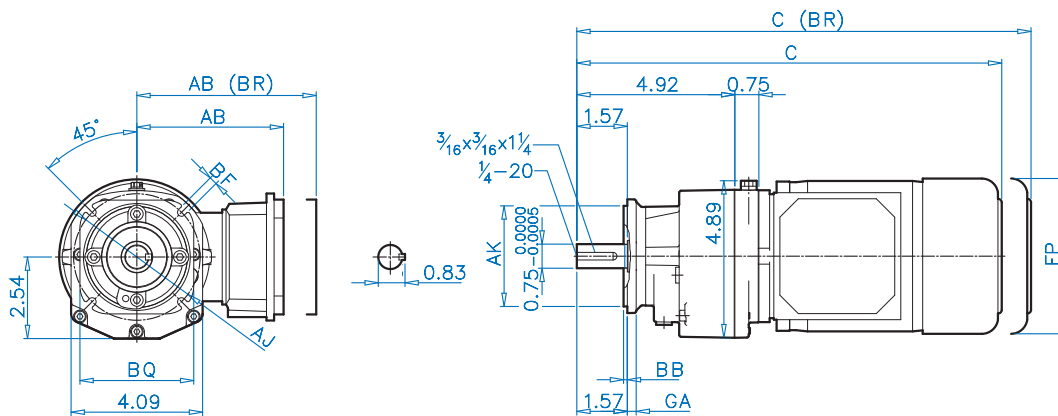
BD (mm)	AJ	AK	BB	BF	GA
4.72 (120)	3,937	3,150 +0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740 +0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39



SK 072.1



SK 072.1F



Mounting Flange

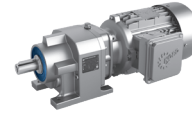
BD (mm)	BQ	AJ	AK		BB	BF	GA
4.72 (120)	3,54	3,937	3,150	+0.0005 -0.0003	0,12	0,26	0,28
5.51 (140)	4,33	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,35
6.30 (160)	4,92	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39

Motor Dimensions

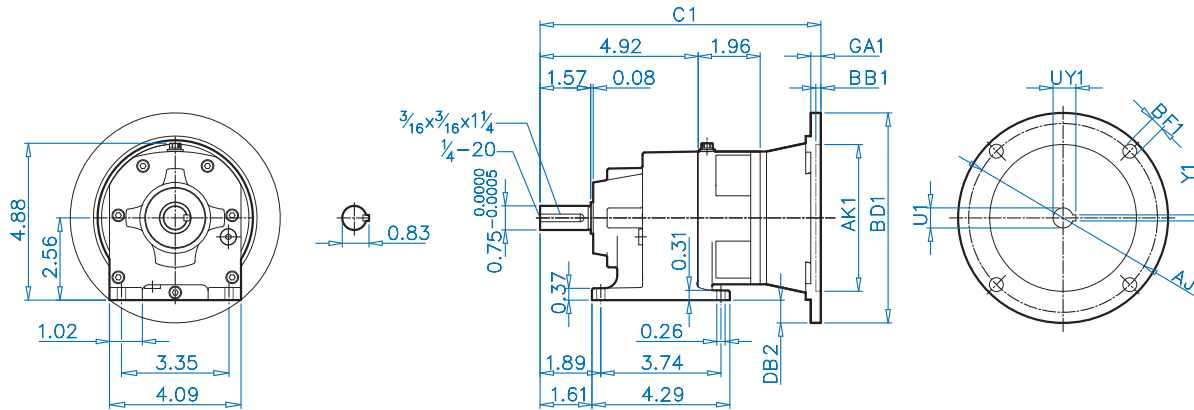
Standard efficiency	63S/L	71S/L
Premium efficiency		
AB	4,51	4,86
AB (BR)	4,84	5,24
C	13,24	14,11
C (BR)	15,44	16,39
FP	5,08	5,72
DB2	0,30	0,30

(BR) Denotes Brakemotor

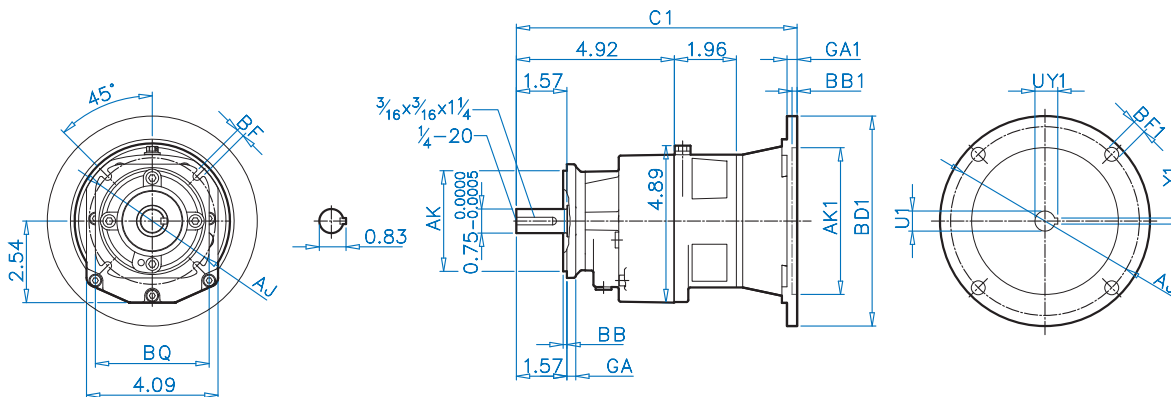
SK 072.1 + NEMA SK 072.1F + NEMA



SK 072.1



SK 072.1F



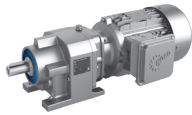
Dimensions

Mounting Flange

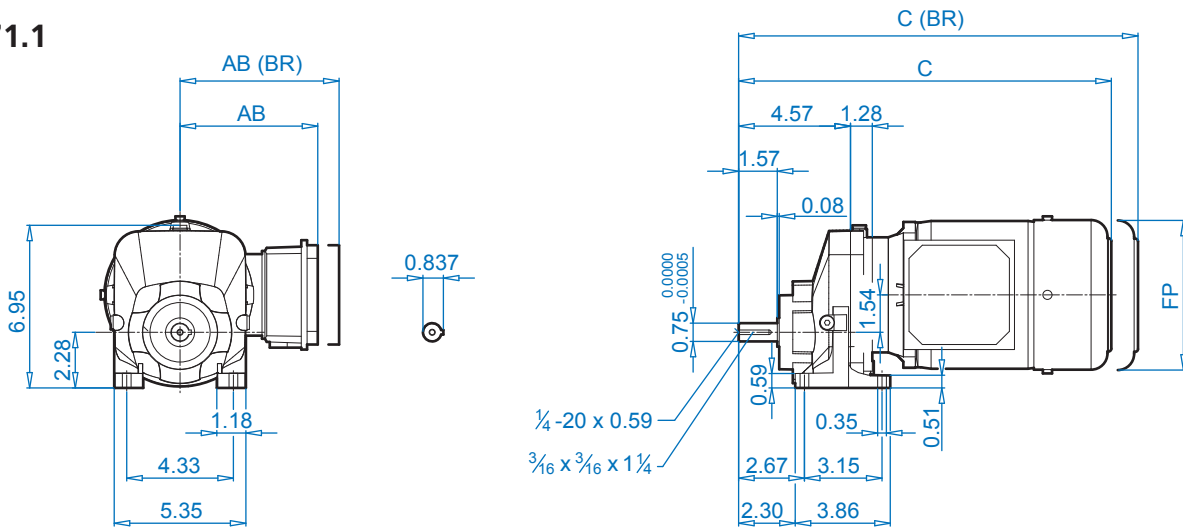
BD (mm)	BQ	AJ	AK	BB	BF	GA
4.72 (120)	3,54	3,937	3,150 +0.0005 -0.0003	0,12	0,26	0,28
5.51 (140)	4,33	4,528	3,740 +0.0005 -0.0004	0,12	0,35	0,35
6.30 (160)	4,92	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39

NEMA Dimensions

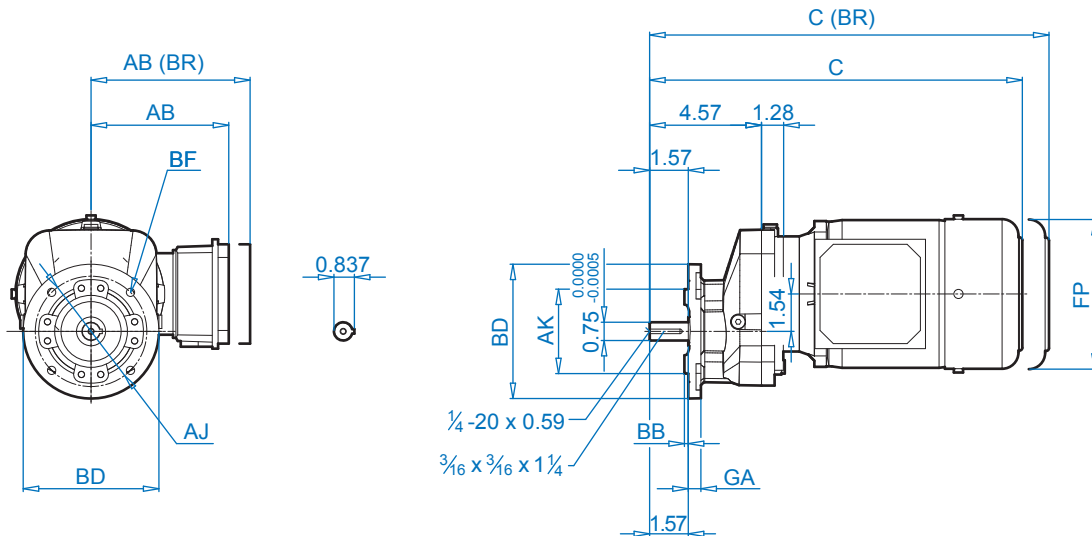
Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	8,46



SK 171.1



SK 171.1F



Mounting Flange

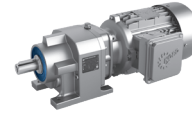
BD (mm)	AJ	AK	BB	BF	GA
4.72 (120)	3,937	3,150	+0.0005 -0.0003	0,12	0,26
5.51 (140)	4,528	3,740	+0.0005 -0.0004	0,12	0,31
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,39
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,47

Motor Dimensions

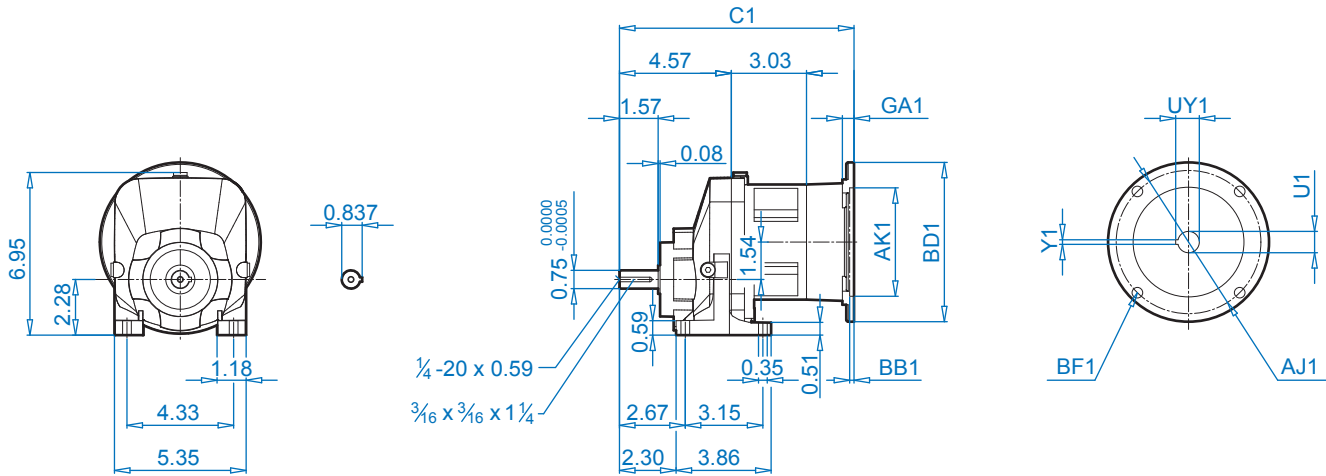
Standard efficiency	63S/L	71S/L	80S/L	90S/L	100L
Premium efficiency			80LP	90SP/LP	100LP
AB	4,51	4,86	5,59	5,79	6,65
AB (BR)	4,84	5,24	5,59	5,79	6,77
C	13,43	14,29	15,15	16,69	17,91
C (BR)	15,64	16,57	17,67	19,64	21,51
FP	5,09	5,72	6,43	7,19	7,90
DB2	-	-	-	-	0,15

(BR) Denotes Brakemotor

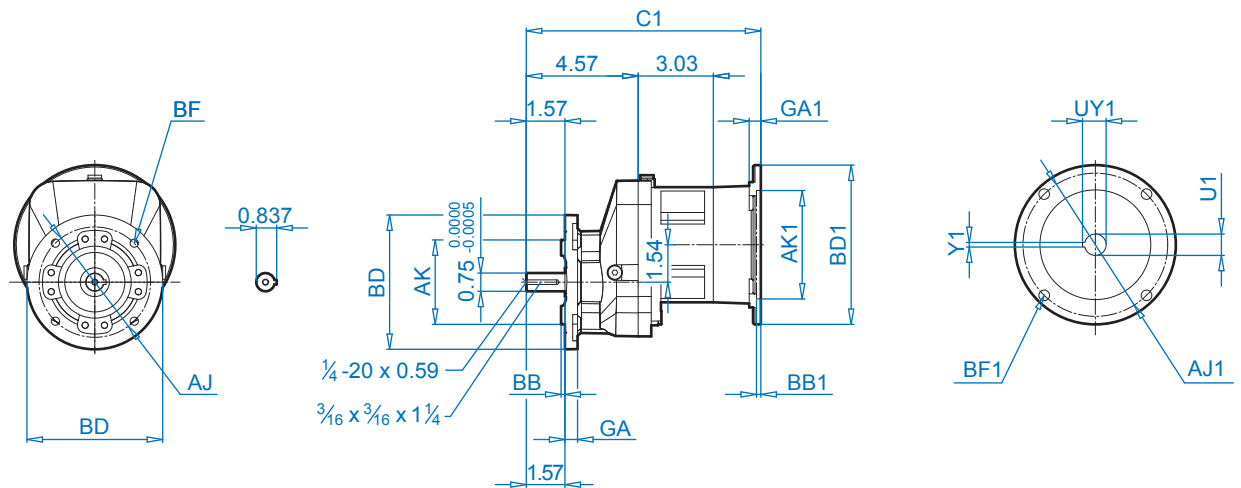
SK 171.1 + NEMA SK 171.1F + NEMA



SK 171.1



SK 171.1F



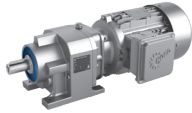
Dimensions

Mounting Flange

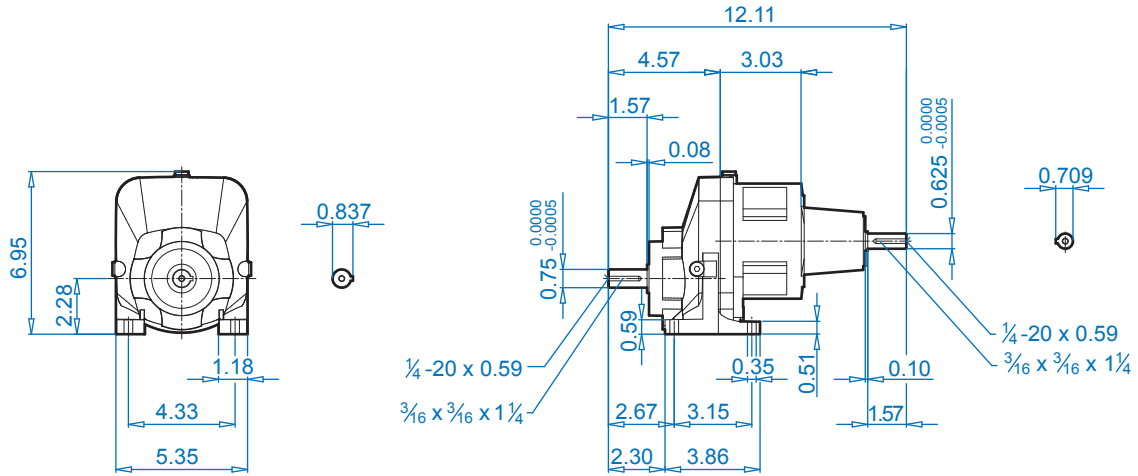
BD (mm)	AJ	AK	BB	BF	GA
4.72 (120)	3,937	3,150 +0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740 +0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118 +0.0006 -0.0004	0,14	0,43	0,47

NEMA Dimensions

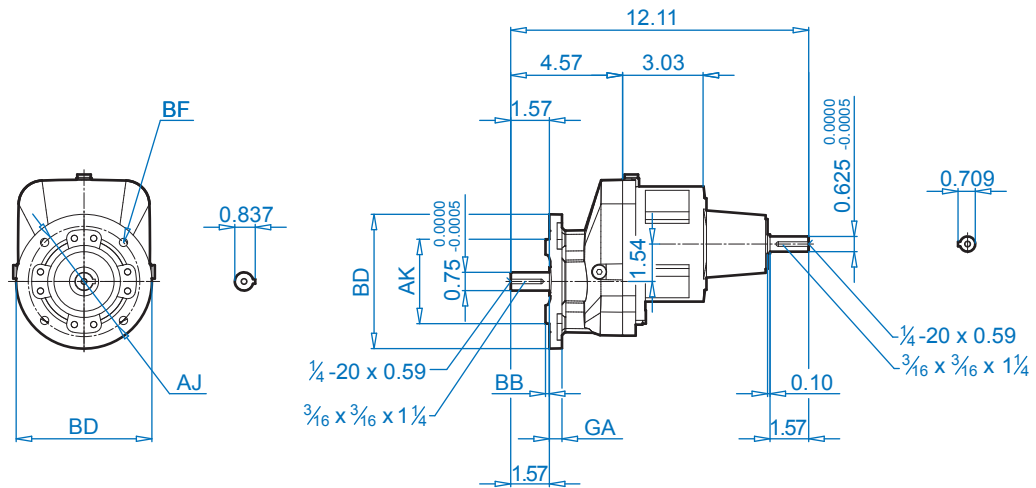
Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	9,06
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	9,53



SK 171.1



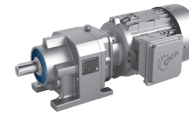
SK 171.1F



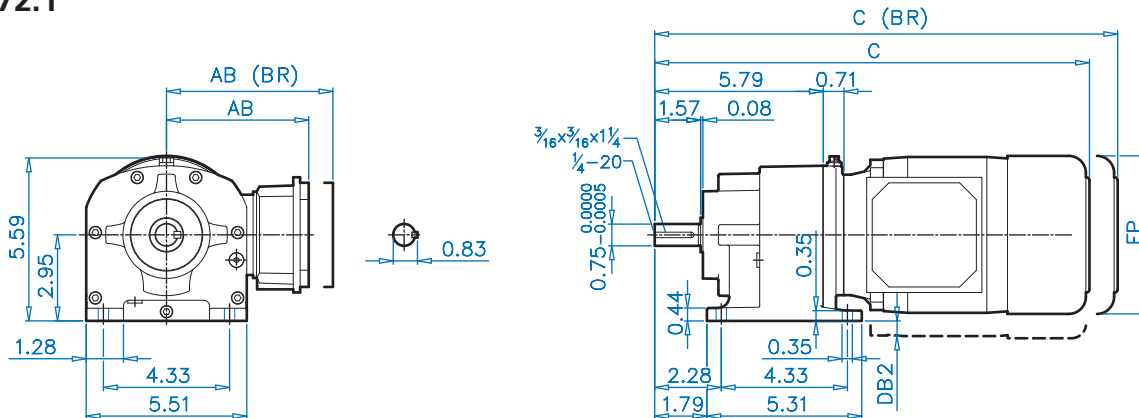
Mounting Flange

BD (mm)	AJ	AK		BB	BF	GA
4.72 (120)	3,937	3,150	+0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740	+0.0005 -0,0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118	+0.0006 -0,0004	0,14	0,43	0,47

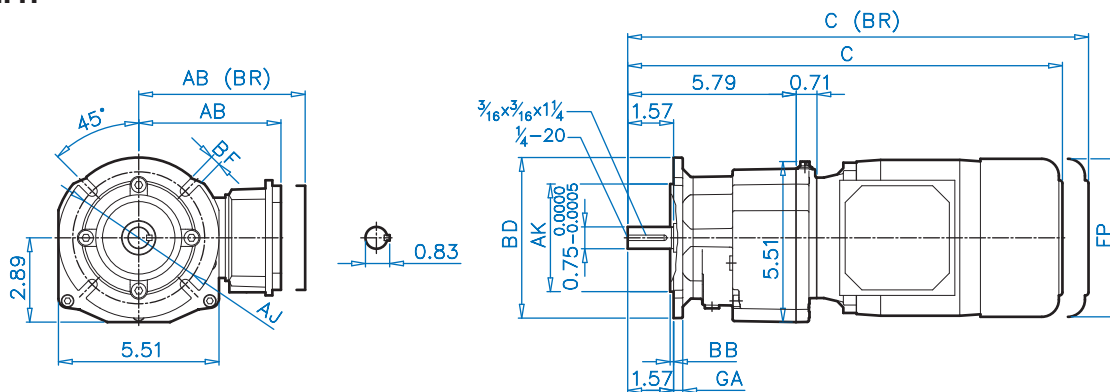
SK 172.1 + Motor SK 172.1F + Motor



SK 172.1



SK 172.1F



Dimensions

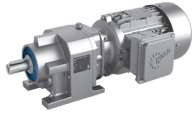
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
4.72 (120)	3,937	3,150 +0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740 +0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118 +0.0006 -0.0004	0,14	0,43	0,47

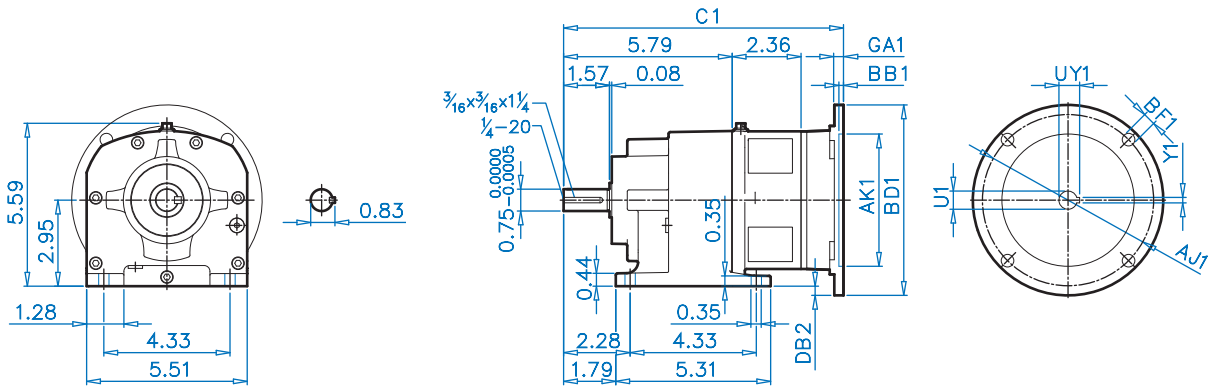
Motor Dimensions

Standard efficiency	63S/L	71S/L	80S/L	90S/L
Premium efficiency			80LP	90SP/LP
AB	4,51	4,86	5,59	5,79
AB (BR)	4,84	5,24	5,59	5,79
C	14,07	14,93	15,80	17,33
C (BR)	16,27	17,22	18,32	20,29
FP	5,08	5,72	6,43	7,19
DB2	-	-	0,30	0,65

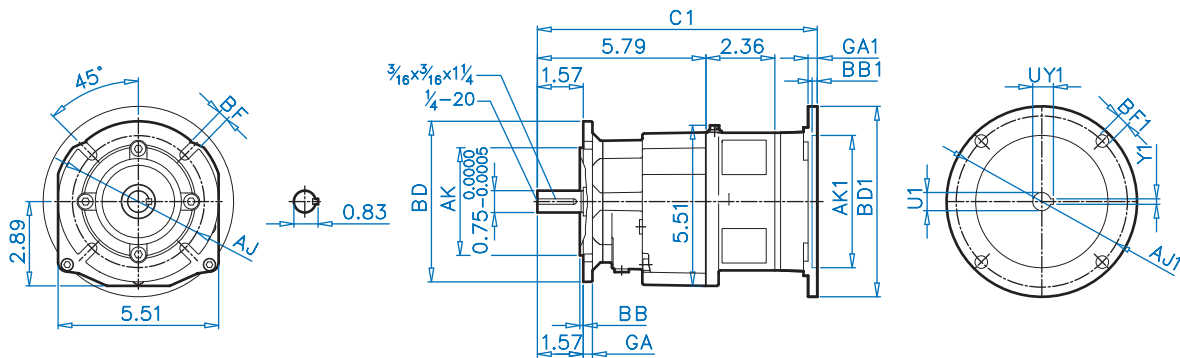
(BR) Denotes Brakemotor



SK 172.1



SK 172.1F



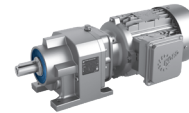
Mounting Flange

BD (mm)	AJ	AK		BB	BF	GA
4.72 (120)	3,937	3,150	+0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47

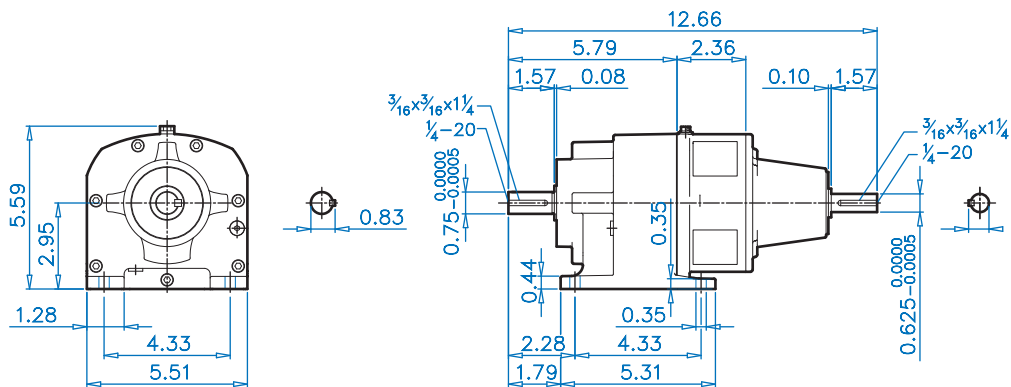
NEMA Dimensions

Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	9,06
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	9,53

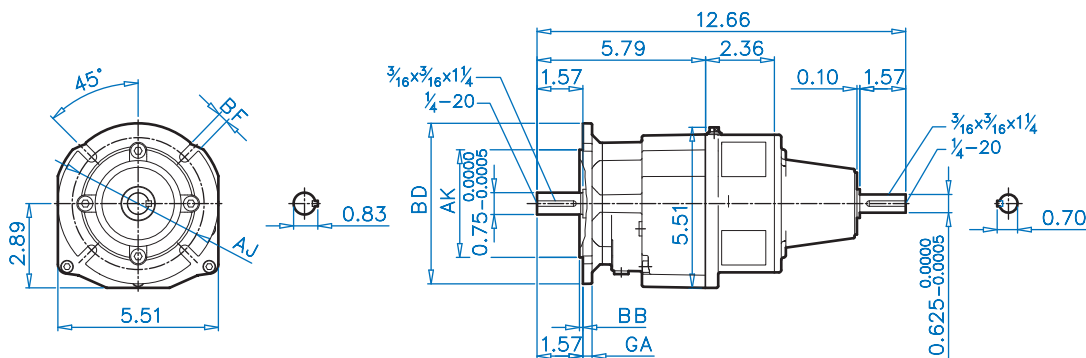
SK172.1 + W SK172.1F + W



SK 172.1



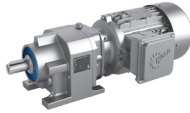
SK 172.1F



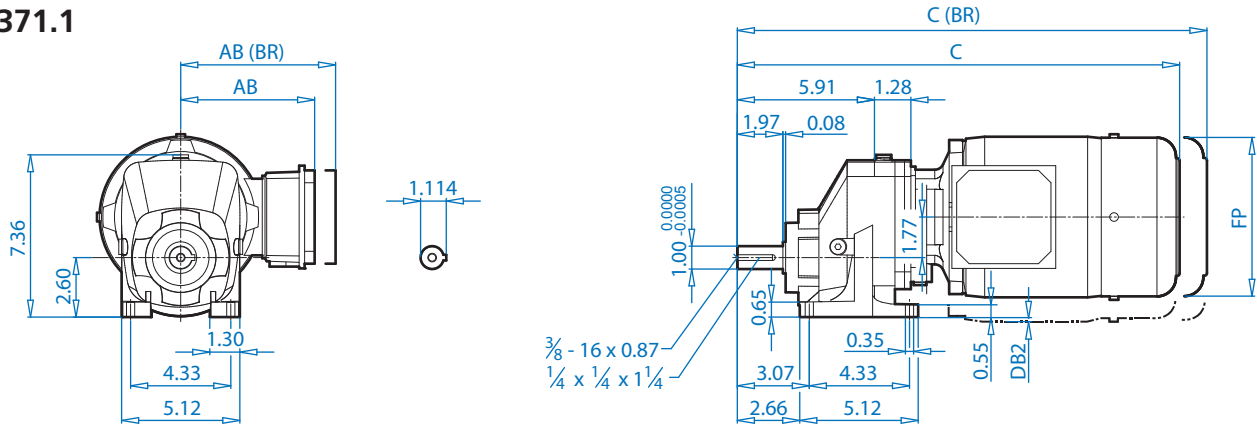
Dimensions

Mounting Flange

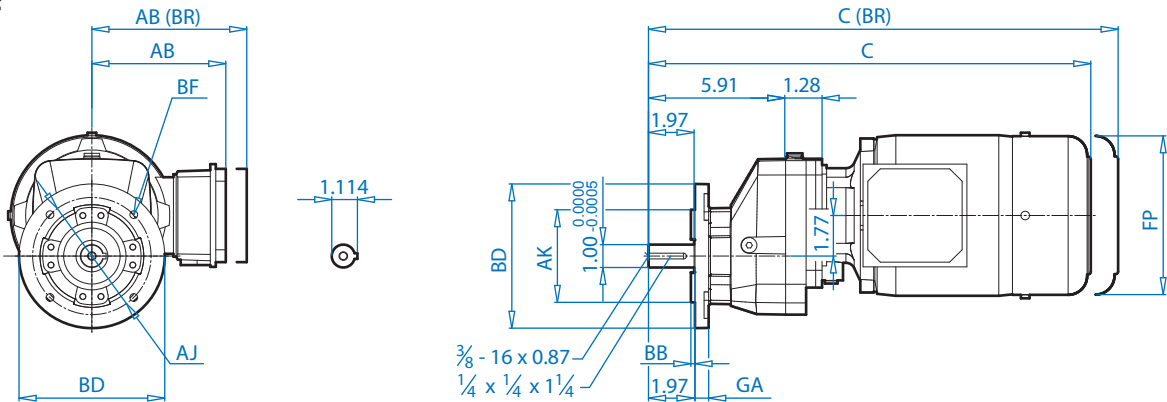
BD (mm)	AJ	AK		BB	BF	GA
4.72 (120)	3,937	3,150	+0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47



SK 371.1



SK 371.1F



Mounting Flange

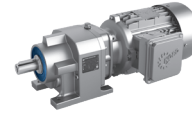
BD (mm)	AJ	AK	BB	BF	GA
4.72 (120)	3,937	3,150 +0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740 +0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118 +0.0006 -0.0004	0,14	0,43	0,47

Motor Dimensions

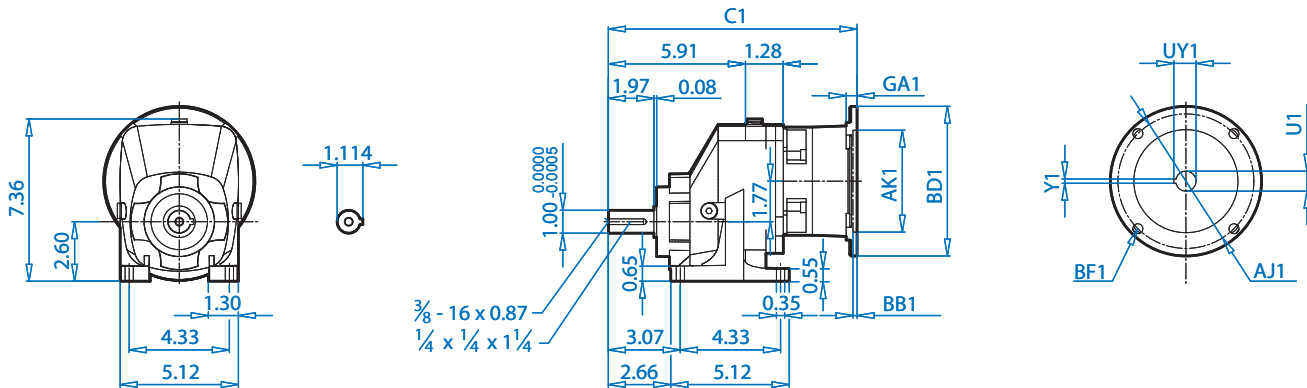
Standard efficiency	63S/L	71S/L	80S/L	90S/L	100L	112M	
Premium efficiency			80LP	90SP/LP	100LP		112MP
AB	4,51	4,86	5,59	5,79	6,65	7,05	7,05
AB (BR)	4,84	5,24	5,59	5,79	6,77	7,17	7,17
C	14,92	16,49	17,48	19,05	20,27	21,14	22,13
C (BR)	17,12	18,78	20,00	22,00	23,87	24,84	25,83
FP	5,08	5,72	6,43	7,19	7,90	8,87	8,87
DB2	-	-	-	-	-	0,06	0,06

(BR) Denotes Brakemotor

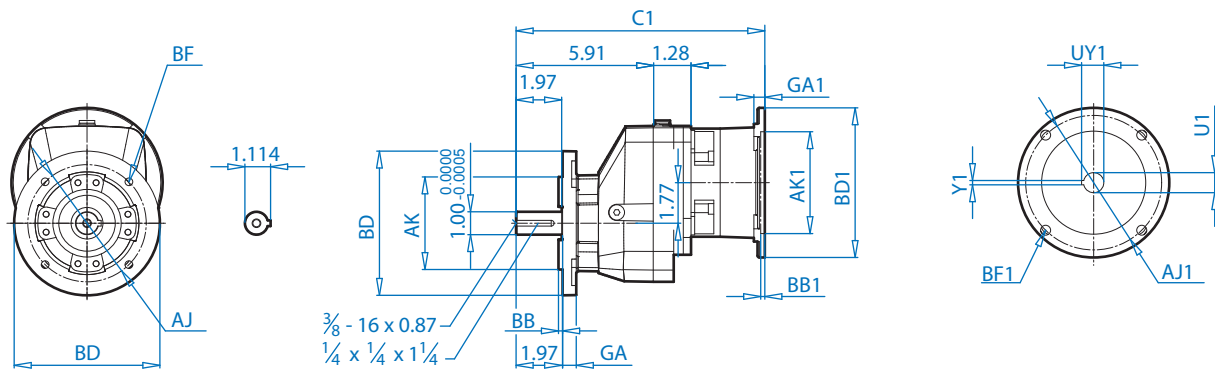
SK 371.1 + NEMA SK 371.1F + NEMA



SK 371.1



SK 371.1F



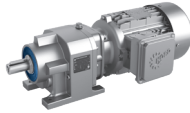
Dimensions

Mounting Flange

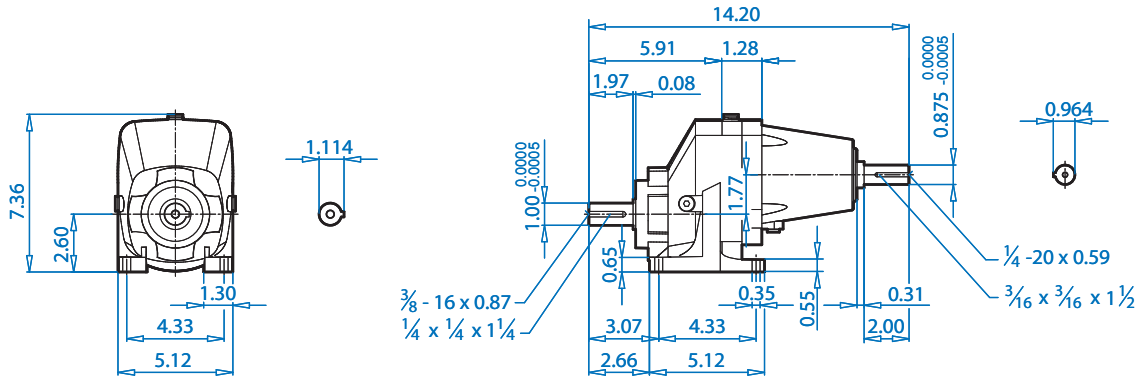
BD (mm)	AJ	AK		BB	BF	GA
4.72 (120)	3,937	3,150	+0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47

NEMA Dimensions

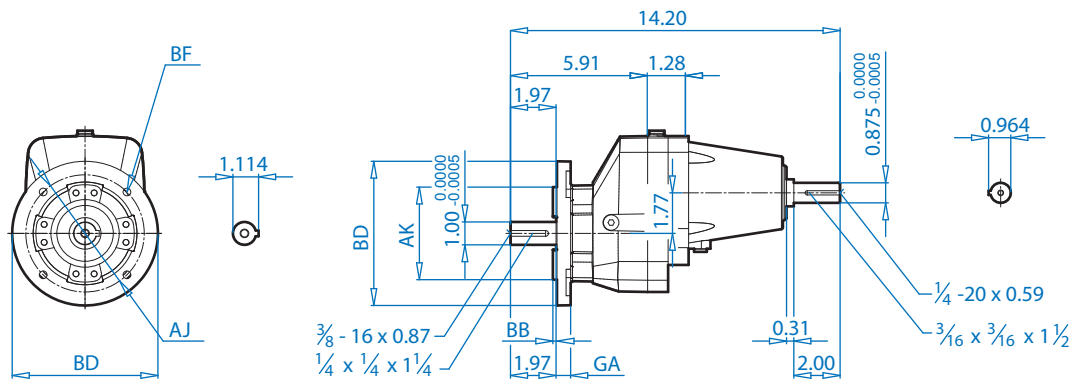
Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1	DB2
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	10,85	-
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	11,32	-
180TC	7,250	8,500	0,23	9,17	0,55	0,71	1,125	1,241	0,250	11,55	0,22



SK 371.1



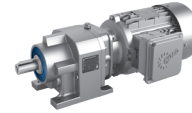
SK 371.1F



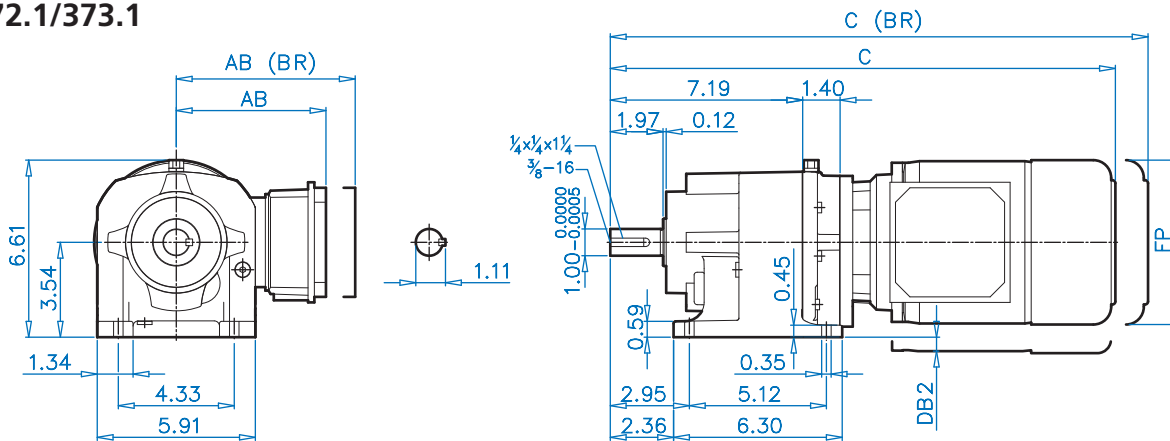
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
4.72 (120)	3,937	3,150 +0.0005 -0.0003	0,12	0,26	0,31
5.51 (140)	4,528	3,740 +0.0005 -0.0004	0,12	0,35	0,31
6.30 (160)	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118 +0.0006 -0.0004	0,14	0,43	0,47

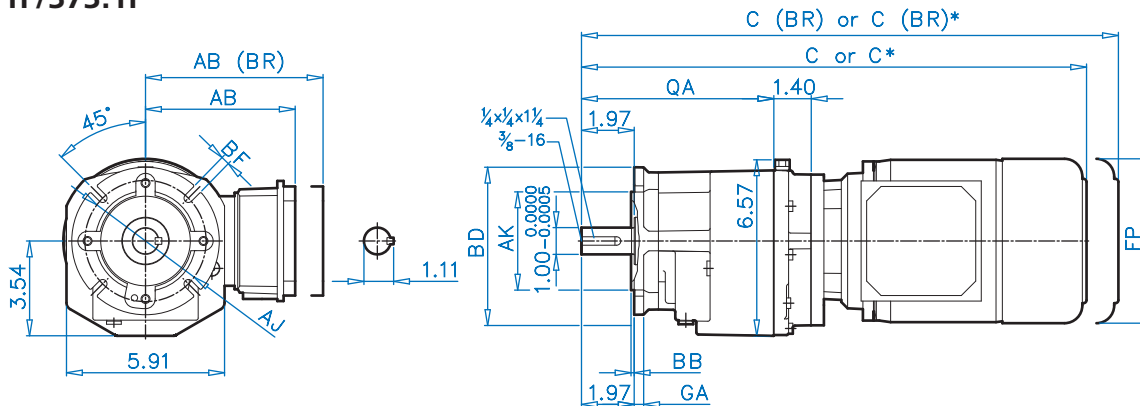
SK 372.1/373.1 + Motor SK 372.1F/373.1F + Motor



SK372.1/373.1



SK372.1F/373.1F



Mounting Flange

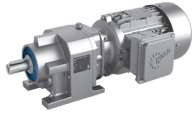
BD (mm)	AJ	AK	BB	BF	GA	QA*
4.72 (120)*	3,937	3,150 +0.0005 -0.0003	0,12	0,26	0,28	8,27
5.51 (140)	4,528	3,740 +0.0005 -0.0004	0,12	0,35	0,35	7,17
6.30 (160)	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39	7,17
7.87 (200)	6,496	5,118 +0.0006 -0.0004	0,14	0,43	0,47	7,17
9.84 (250)	8,465	7,087 +0.0006 -0.0004	0,16	0,53	0,59	7,17

Motor Dimensions

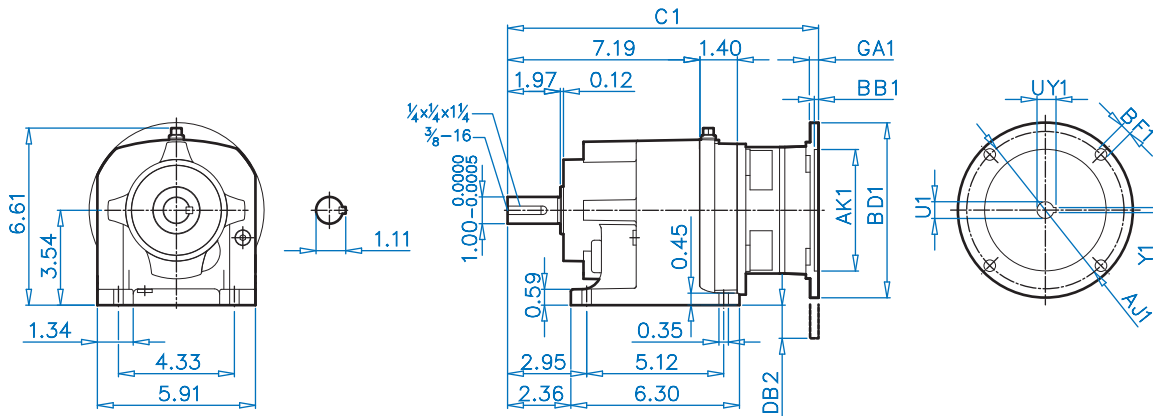
Standard efficiency	63S/L	71S/L	80S/L	90S/L	100L
Premium efficiency			80LP	90SP/LP	100LP
AB	4,51	4,86	5,59	5,79	6,65
AB (BR)	4,84	5,24	5,59	5,79	6,77
C	16,32	17,89	18,88	20,45	21,67
C (BR)	18,52	20,17	21,40	23,40	25,27
C*	17,42	18,99	19,98	21,55	22,77
C* (BR)	19,62	21,28	22,50	24,51	26,38
FP	5,08	5,72	6,43	7,19	7,90
DB2	-	-	-	0,06	0,42

* When using the 4.72 (120) flange, the C and QA dimensions become larger.

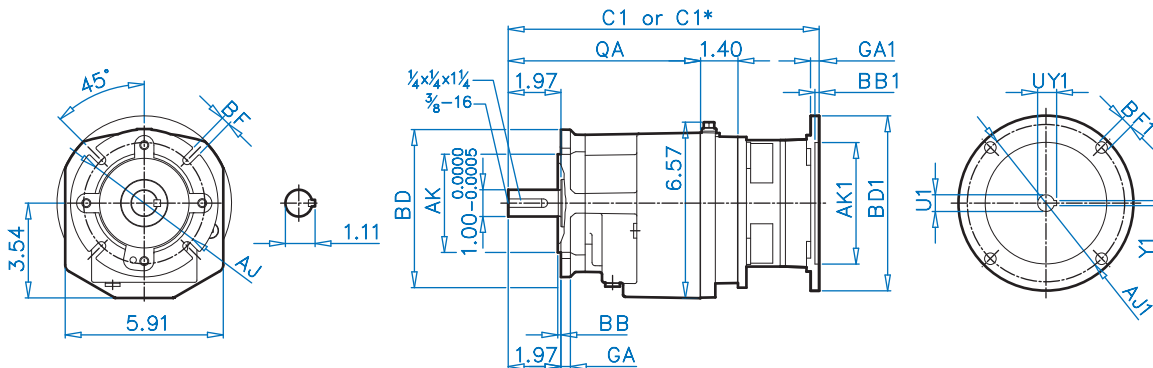
(BR) Denotes Brakemotor



SK 372.1/373.1



SK 372.1F/373.1F



Dimensions

Mounting Flange

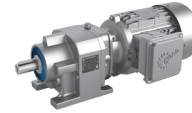
BD (mm)	AJ	AK	BB	BF	GA	QA*
4.72 (120)*	3,937	3,150	+0.0005 -0.0003	0,12	0,26	0,28
5.51 (140)	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,35
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,53	0,59

NEMA Dimensions

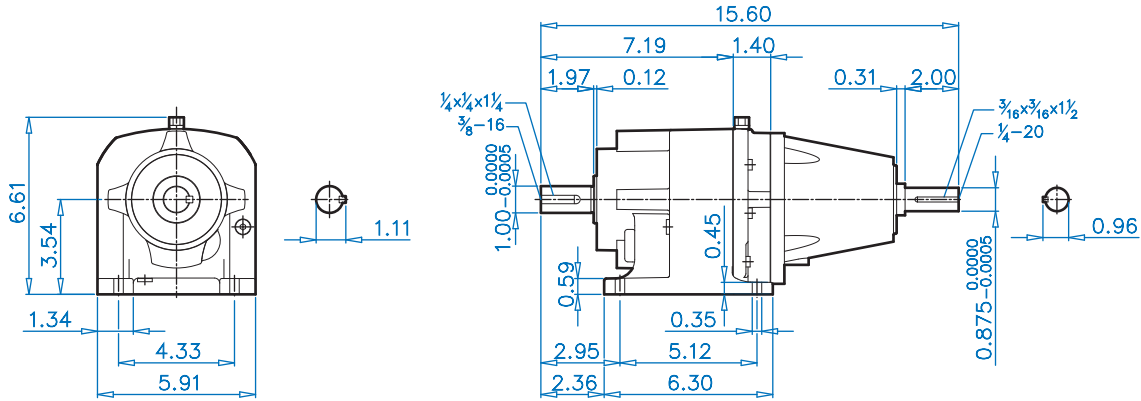
Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1	C1*	DB2
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	12,25	13,35	-
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	12,72	13,82	-
180TC	7,250	8,500	0,23	9,17	0,55	0,71	1,125	1,241	0,250	12,95	14,05	1,05

* When using the 4.72 (120) flange, the C1 and QA dimensions become larger.

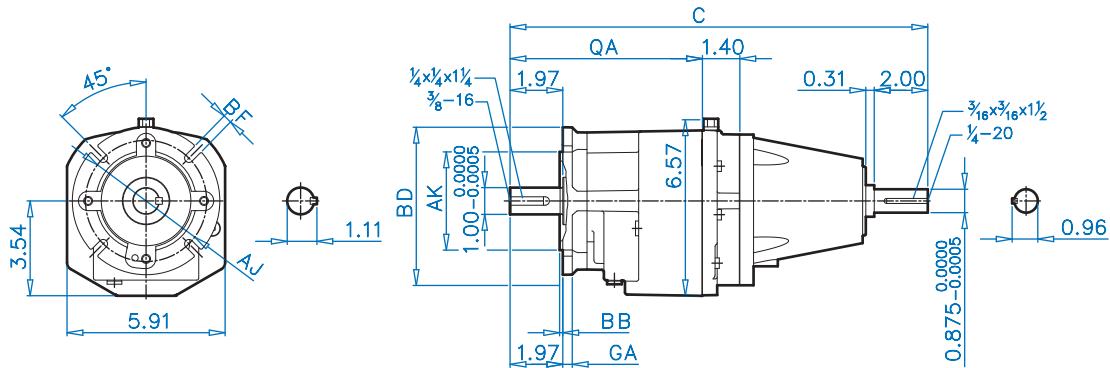
SK 372.1/373.1 + W SK 372.1F/373.1F + W



372.1/373.1



372.1F/373.1F

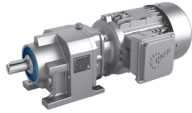


Dimensions

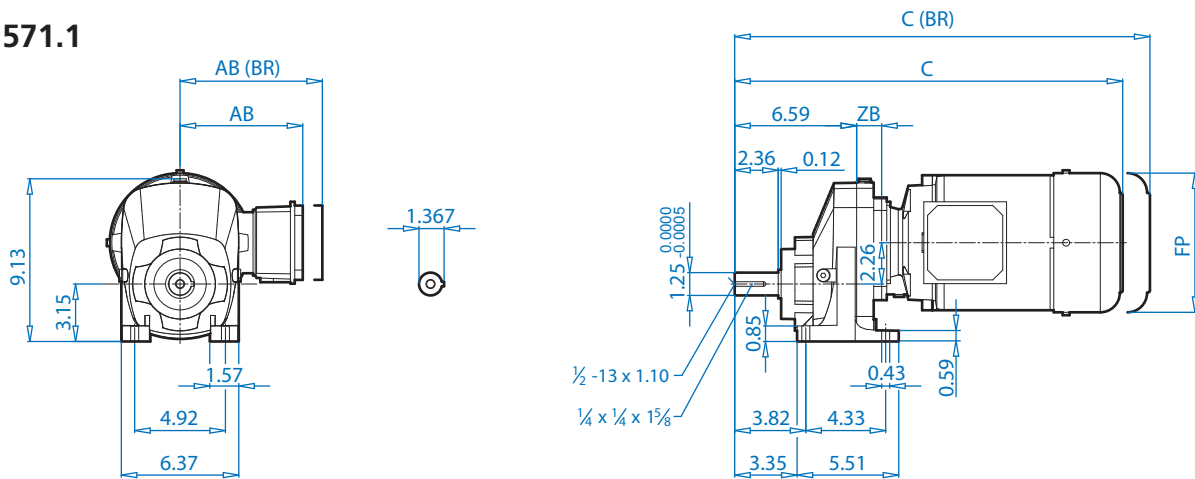
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA	QA*	C*
4.72 (120)*	3,937	3,150 +0.0005 -0.0003	0,12	0,26	0,28	8,27	16,70
5.51 (140)	4,528	3,740 +0.0005 -0.0004	0,12	0,35	0,35	7,17	15,59
6.30 (160)	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39	7,17	15,59
7.87 (200)	6,496	5,118 +0.0006 -0.0004	0,14	0,43	0,47	7,17	15,59
9.84 (250)	8,465	7,087 +0.0006 -0.0004	0,16	0,53	0,59	7,17	15,59

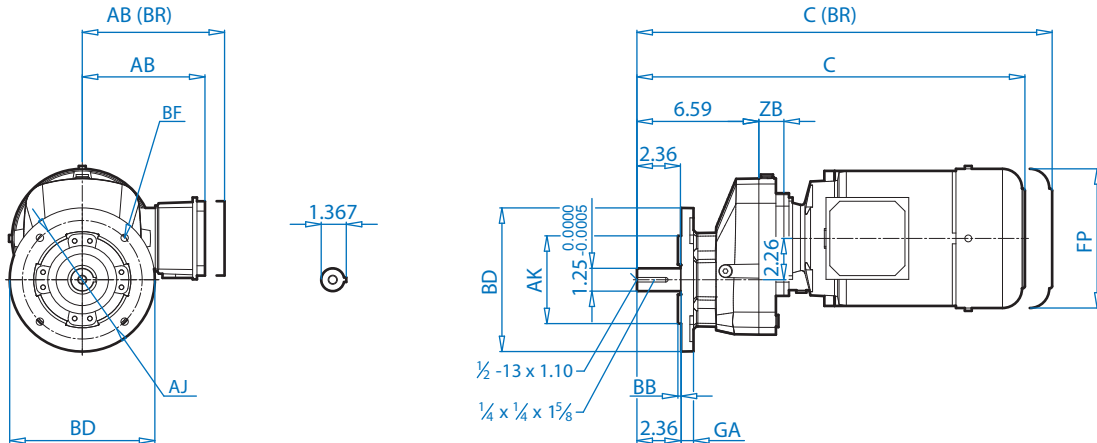
* When using the 4.72 (120) flange, the C and QA dimensions become larger.



SK 571.1



SK 571.1F



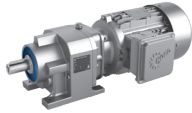
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,47
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,14	0,59

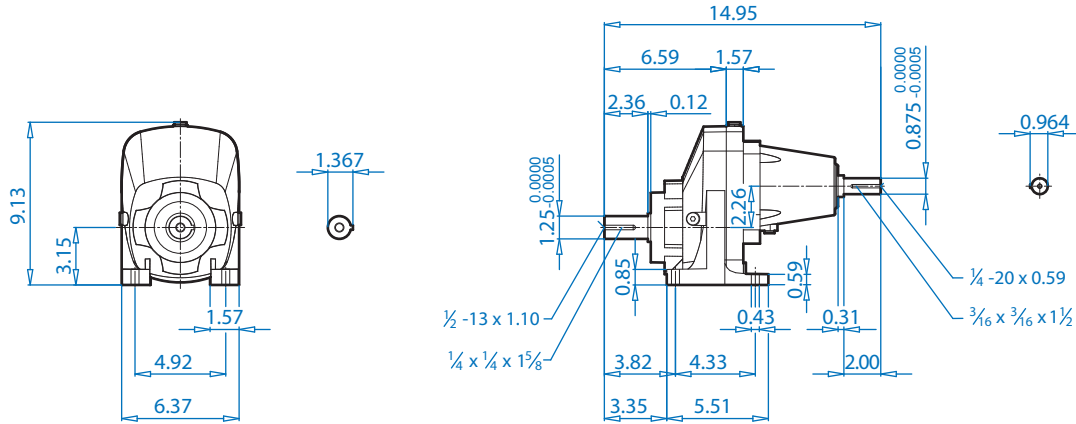
Motor Dimensions

Standard efficiency	71S/L	80S/L	90S/L	100L	112M	132S/M
Premium efficiency		80LP	90SP/LP	100LP		112MP
AB	4,86	5,59	5,79	6,65	7,05	8,03
AB (BR)	5,24	5,59	5,79	6,77	7,17	7,91
C	17,24	18,22	19,80	21,02	21,89	25,31
C (BR)	19,52	20,74	22,75	24,62	25,59	29,52
FP	5,72	6,43	7,19	7,90	8,87	10,45
ZB	1,34	1,34	1,34	1,34	1,34	1,57

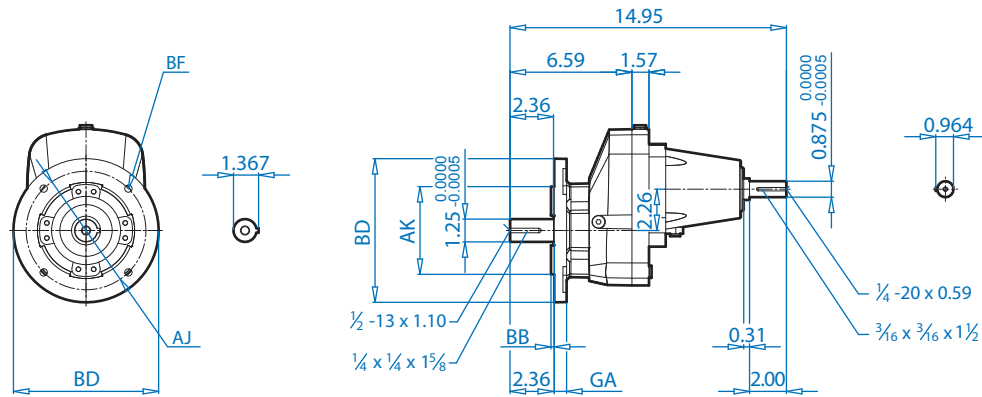
(BR) Denotes Brakemotor



SK 571.1



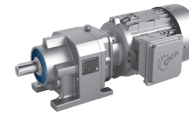
SK 571.1F



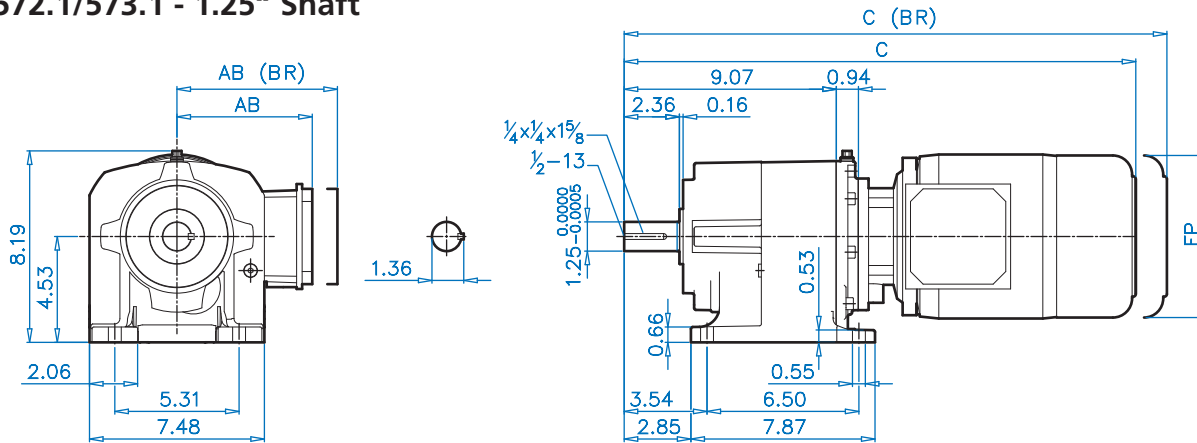
Mounting Flange

BD (mm)	AJ	AK		BB	BF	GA
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,14	0,53	0,59

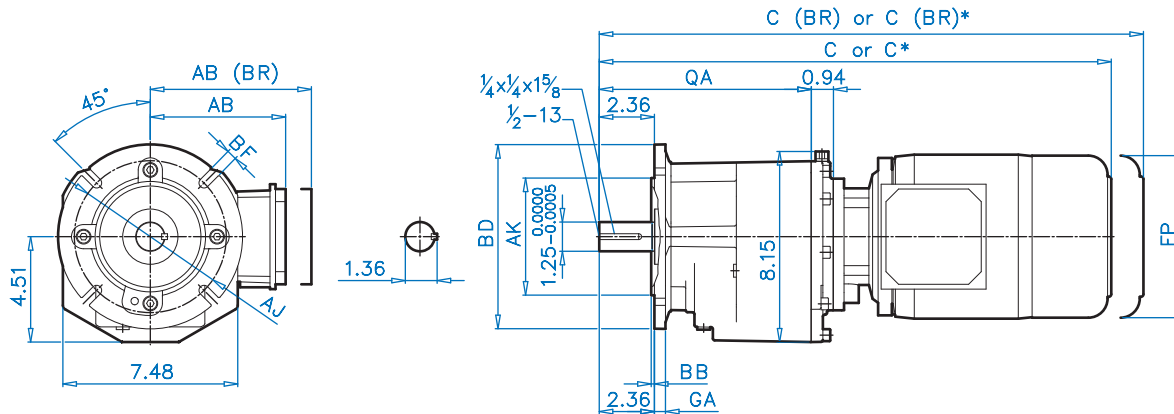
SK 572.1/573.1 + Motor SK 572.1F/573.1F + Motor



SK 572.1/573.1 - 1.25" Shaft



SK 572.1F/573.1F - 1.25" Shaft



Dimensions

Mounting Flange

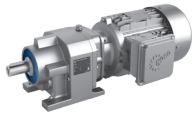
BD (mm)	AJ	AK	BB	BF	GA	QA
5.51 (140)*	4,528	3,740	+0.0005 -0.0004	0,12	0,35	10,37
6.30 (160)*	5,118	4,331	+0.0005 -0.0004	0,14	0,35	10,37
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	9,07
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,53	9,07
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	9,07

Motor Dimensions

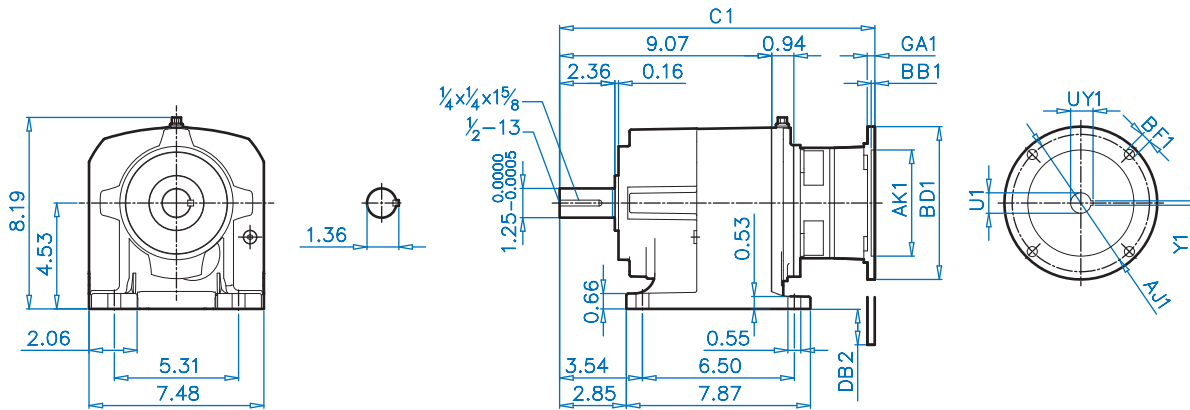
Standard efficiency	63S/L	71S/L	80S/L	90S/L	100L	112M	
Premium efficiency			80LP	90SP/LP	100LP		112MP
AB	4,51	4,86	5,59	5,79	6,65	7,05	7,05
AB (BR)	4,84	5,24	5,59	5,79	6,77	7,17	7,17
C	17,77	19,35	20,33	21,91	23,13	24,00	24,99
C (BR)	19,98	21,63	22,85	24,86	26,73	27,70	28,69
C*	19,07	20,65	21,63	23,20	24,43	25,30	26,29
C* (BR)	21,28	22,93	24,15	26,16	28,03	29,00	29,99
FP	5,08	5,72	6,43	7,19	7,90	8,87	8,87

* When using the 5.51 (140) flange or the 6.30 (160) flange, the C and QA dimensions become larger.

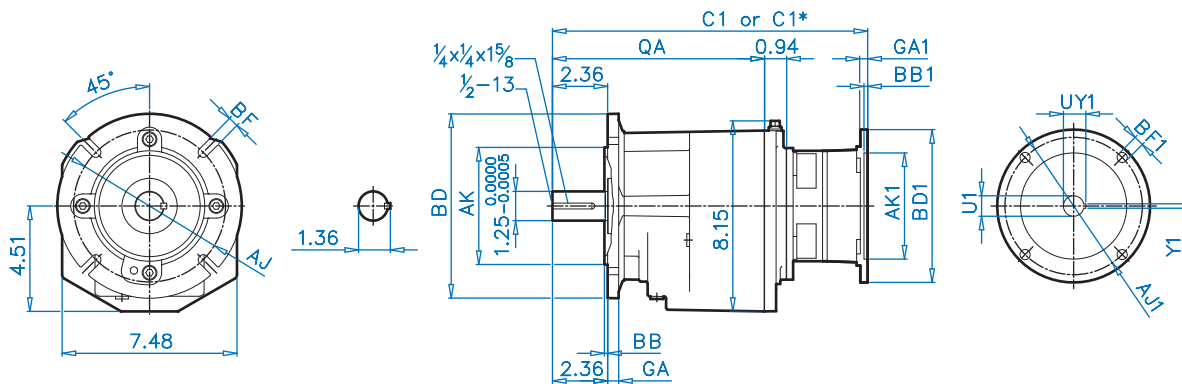
(BR) Denotes Brakemotor



SK 572.1/573.1 - 1.25" Shaft



SK 572.1F/573.1F - 1.25" Shaft



Dimensions

Mounting Flange

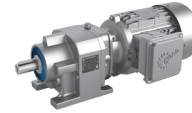
BD (mm)	AJ	AK		BB	BF	GA	QA
5.51 (140)*	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,35	10,37
6.30 (160)*	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39	10,37
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47	9,07
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,53	0,59	9,07
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	0,71	9,07

NEMA Dimensions

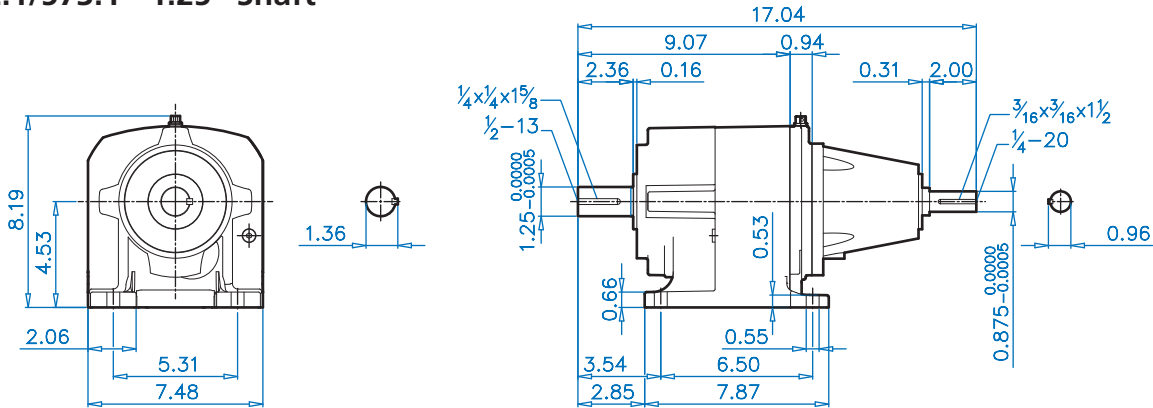
Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1	C1*	DB2
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	13,70	15,00	-
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	14,17	15,47	-
180TC	7,250	8,500	0,23	9,17	0,55	0,71	1,125	1,241	0,250	14,40	15,70	0,06

* When using the 5.51 (140) flange or the 6.30 (160) flange, the C1 and QA dimensions become larger.

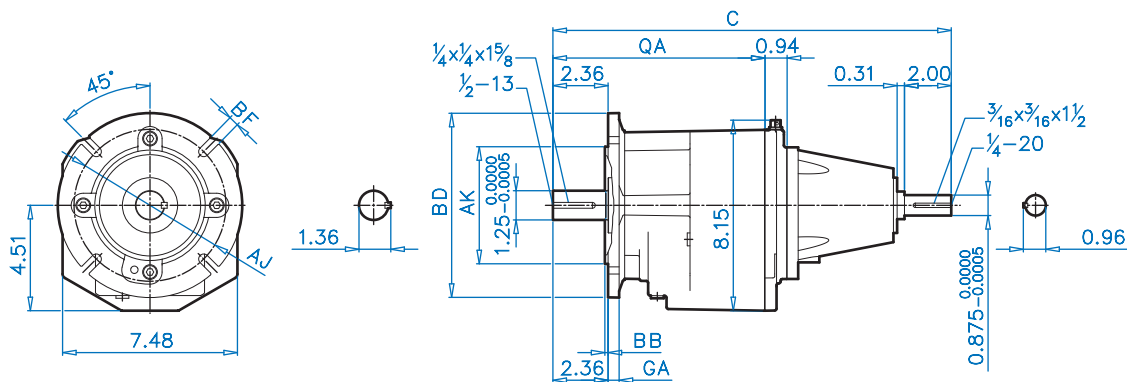
SK 572.1/573.1 + W SK 572.1F/573.1F + W



SK 572.1/573.1 - 1.25" Shaft



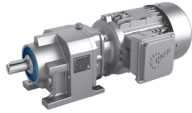
SK 572.1F/573.1F - 1.25" Shaft



Mounting Flange

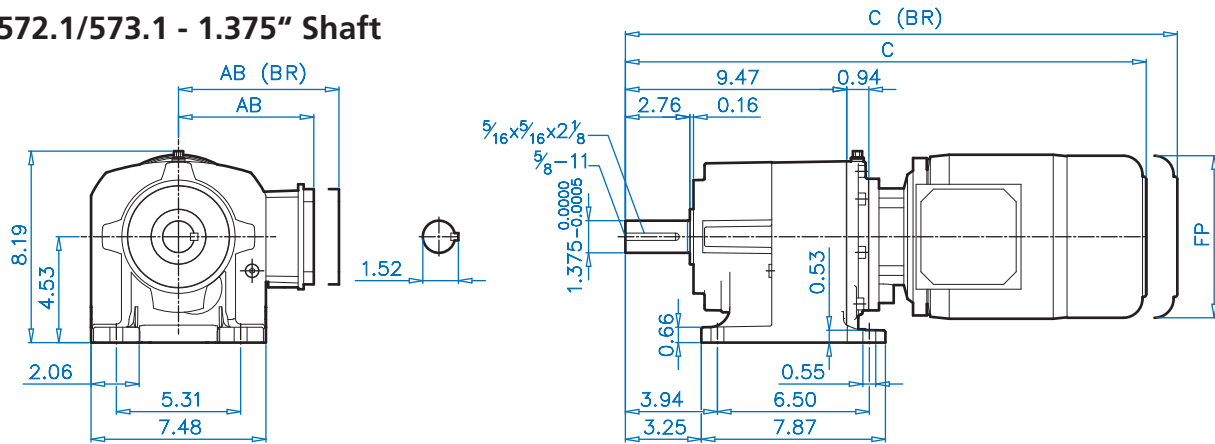
BD (mm)	AJ	AK		BB	BF	GA	QA	C
5.51 (140)*	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,35	10,37	18,33
6.30 (160)*	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39	10,37	18,33
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47	9,07	17,04
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,53	0,59	9,07	17,04
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	0,71	9,07	17,04

* When using the 5.51 (140) flange, the C and QA dimensions become larger.

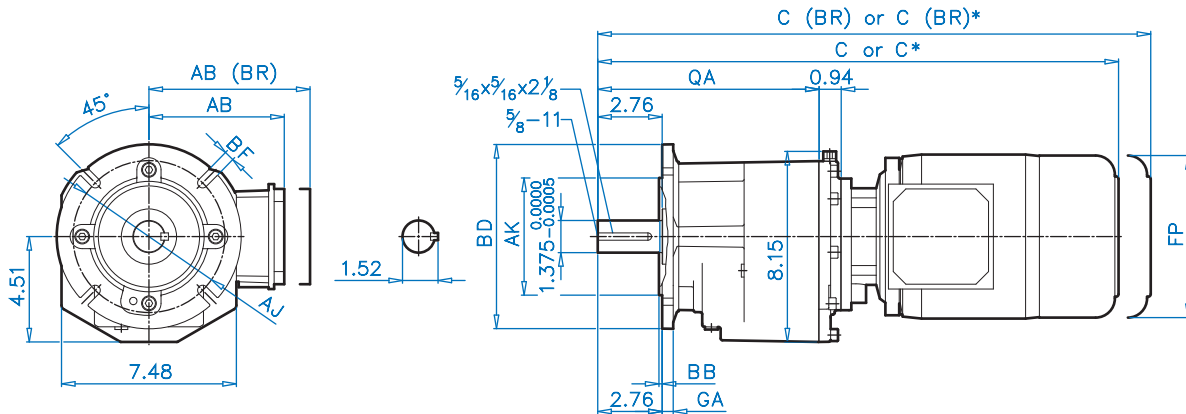


SK 572.1/573.1 + Motor SK 572.1F/573.1F + Motor

SK 572.1/573.1 - 1.375" Shaft



SK 572.1F/573.1F - 1.375" Shaft



Mounting Flange

BD (mm)	AJ	AK		BB	BF	GA	QA
5.51 (140)*	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,35	10,75
6.30 (160)*	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39	10,75
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47	9,45
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,53	0,59	9,45
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	0,71	9,45

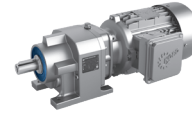
Motor Dimensions

	63S/L	71S/L	80S/L	90S/L	100L	112M	
Standard efficiency							
Premium efficiency			80LP	90SP/LP	100LP		112MP
AB	4,51	4,86	5,59	5,79	6,65	7,05	7,05
AB (BR)	4,84	5,24	5,59	5,79	6,77	7,17	7,17
C	18,17	19,75	20,73	22,31	23,53	24,40	25,39
C (BR)	20,38	22,03	23,25	25,26	27,13	28,10	29,09
C*	19,47	21,05	22,03	23,61	24,83	25,70	26,69
C* (BR)	21,68	23,33	24,55	26,56	28,43	29,40	30,39
FP	5,08	5,72	6,43	7,19	7,90	8,87	8,87

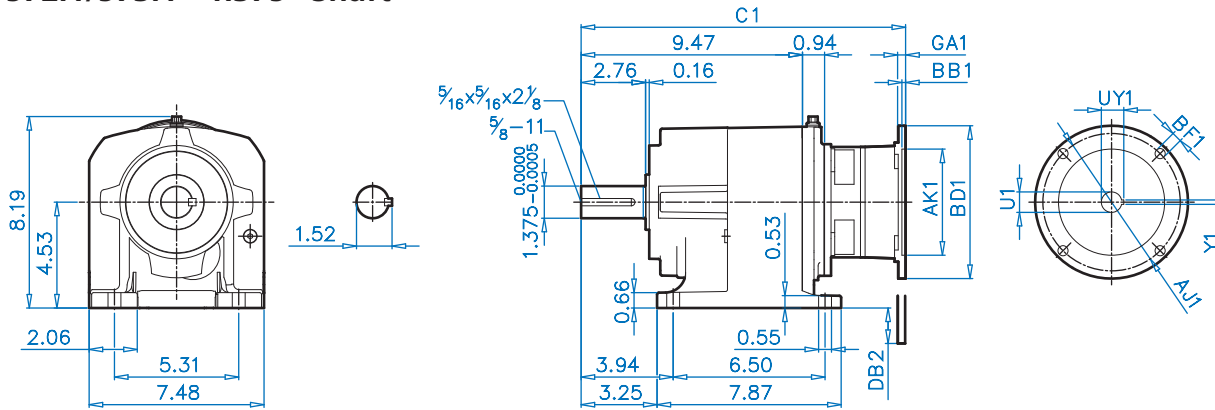
* When using the 5.51 (140) flange or the 6.30 (160) flange, the C and QA dimensions become larger.

(BR) Denotes Brakemotor

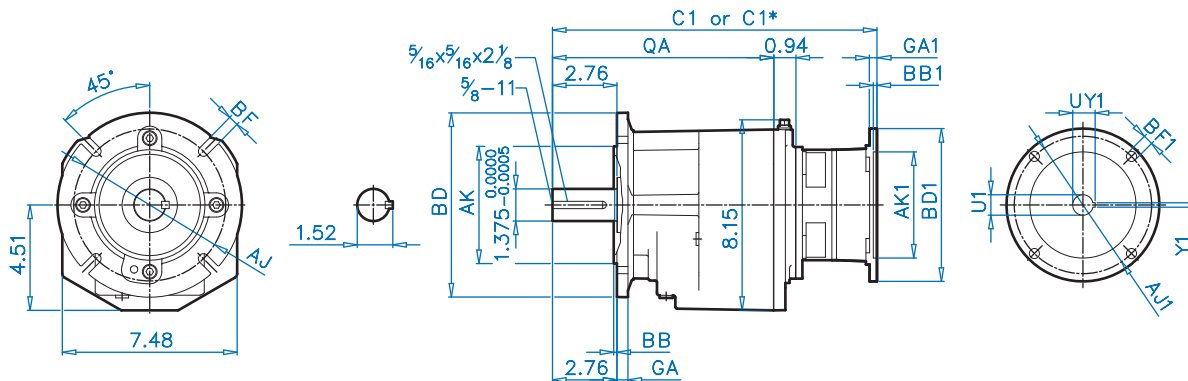
SK 572.1/573.1 + NEMA SK 572.1F/573.1F + NEMA



SK 572.1/573.1 - 1.375" Shaft



SK 572.1F/573.1F - 1.375" Shaft



Dimensions

Mounting Flange

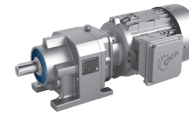
BD (mm)	AJ	AK		BB	BF	GA	QA
5.51 (140)*	4,528	3,740	+0.0005 -0.0004	0,12	0,35	0,35	10,75
6.30 (160)*	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39	10,75
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47	9,45
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,53	0,59	9,45
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	0,71	9,45

NEMA Dimensions

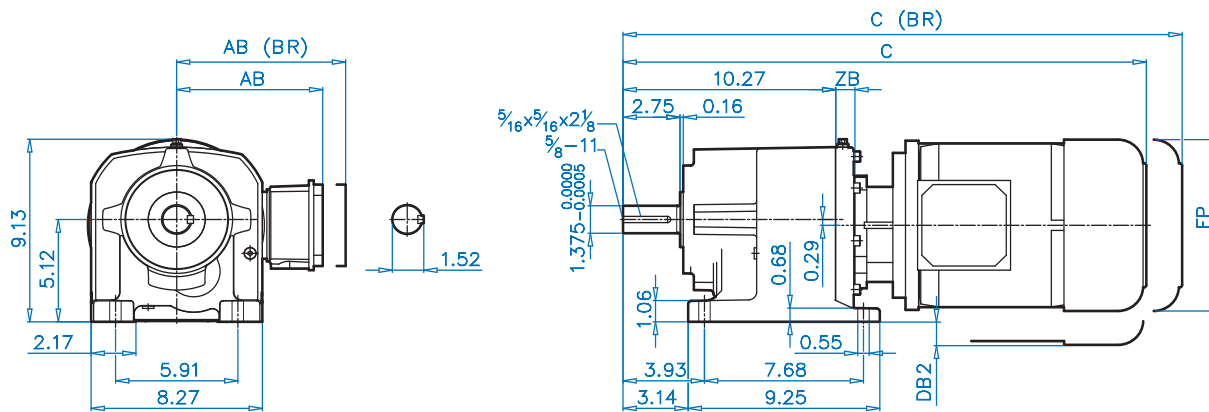
Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1	C1*	DB2
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	14,10	15,40	-
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	14,58	15,87	-
180TC	7,250	8,500	0,23	9,17	0,55	0,71	1,125	1,241	0,250	14,80	16,10	0,06

* When using the 5.51 (140) flange or the 6.30 (160) flange, the C1 and QA dimensions become larger.

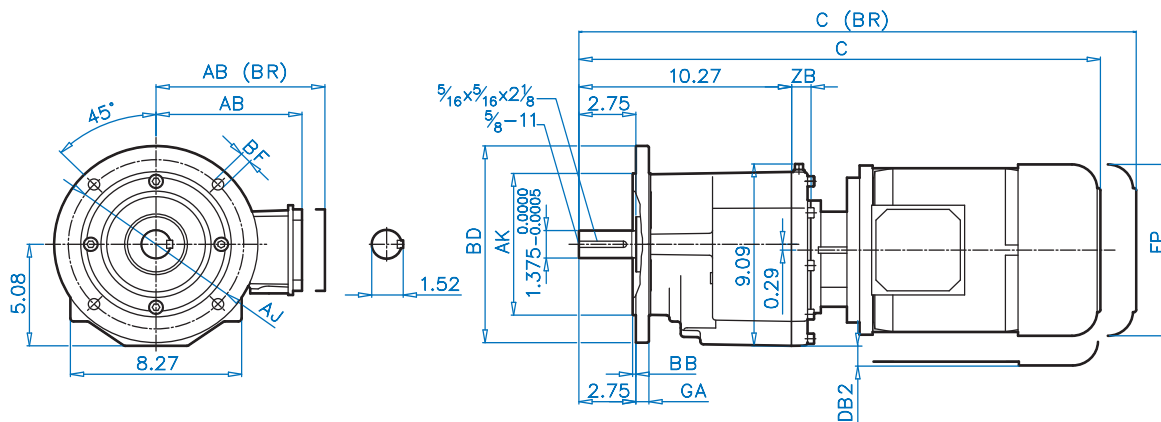
SK 672.1/673.1 + Motor SK 672.1F/673.1F + Motor



SK 672.1/673.1



SK 672.1F/673.1F



Dimensions

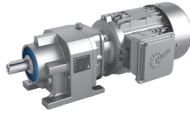
Mounting Flange

BD (mm)	AJ	AK		BB	BF	GA
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,55	0,63

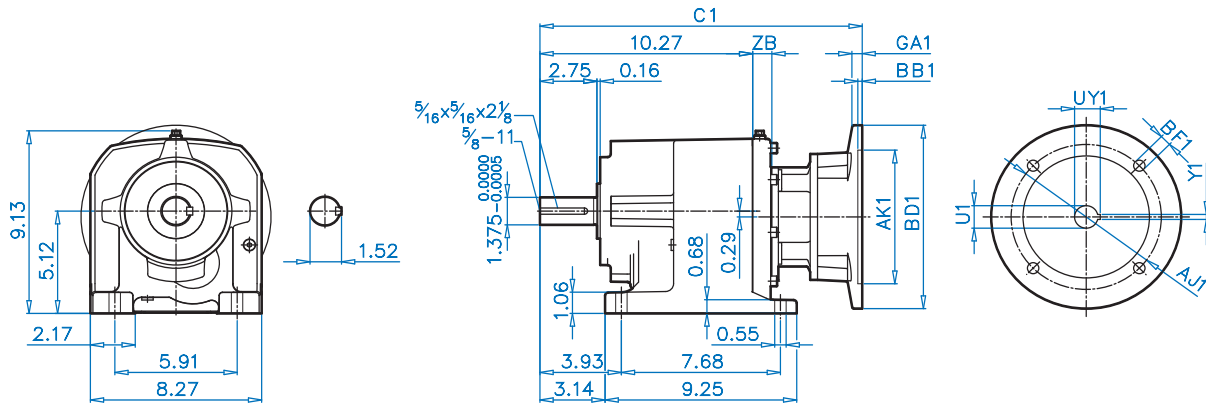
Motor Dimensions

Standard efficiency	63S/L	71S/L	80S/L	90S/L	100L	112M	132S/M	
Premium efficiency			80LP	90SP/LP	100LP		112MP	132SP/MP
AB	4,51	4,86	5,59	5,79	6,65	7,05	7,05	8,03
AB (BR)	4,84	5,24	5,59	5,79	6,77	7,17	7,17	7,91
C	18,93	20,50	21,49	23,06	24,28	25,15	26,14	28,57
C (BR)	21,13	22,79	24,01	26,01	27,88	28,85	29,84	32,79
FP	5,08	5,72	6,43	7,19	7,90	8,87	8,87	10,45
DB2	-	-	-	-	-	-	-	0,11
ZB	0,93	0,93	0,93	0,93	0,93	0,93	0,93	1,16

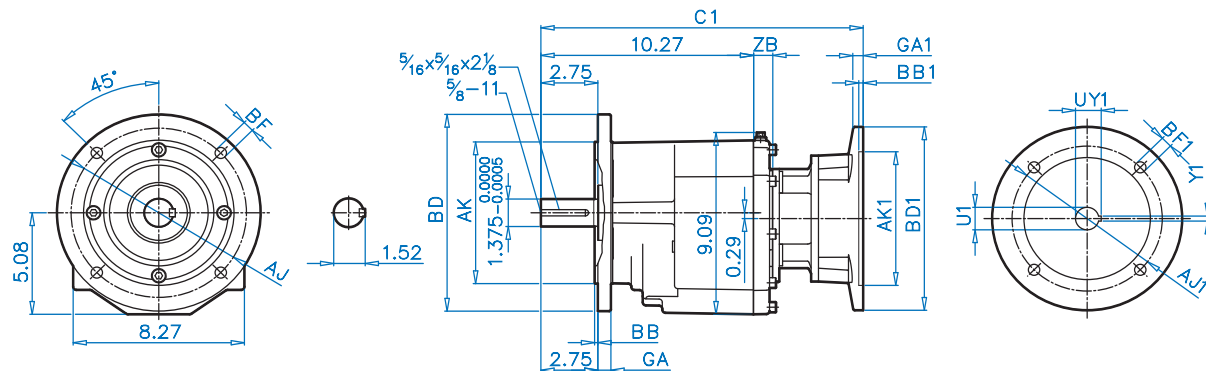
(BR) Denotes Brakemotor



SK 672.1/673.1



SK 672.1F/673.1F



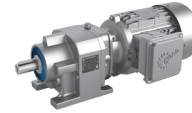
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
7.87 (200)	6,496	5,118	0,14	0,43	0,47
9.84 (250)	8,465	7,087	0,16	0,55	0,63

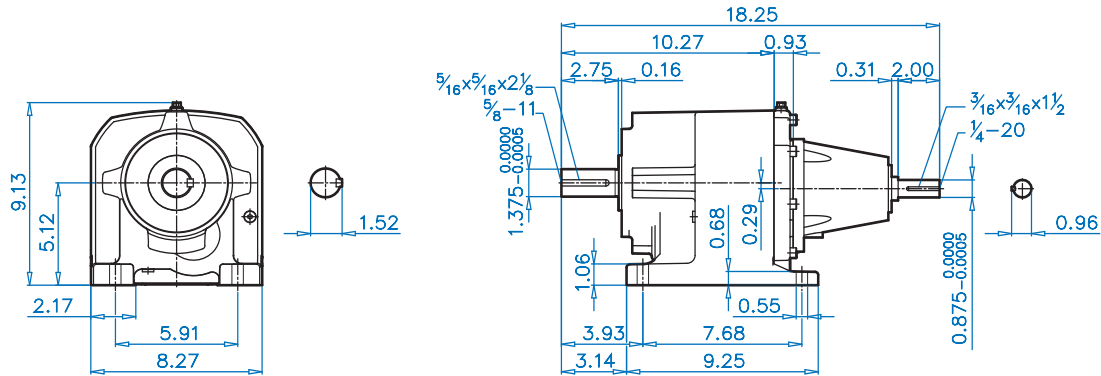
NEMA Dimensions

Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1	ZB
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	14,86	0,93
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	15,33	0,93
180TC	7,250	8,500	0,23	9,17	0,59	0,71	1,125	1,241	0,250	15,56	0,93
210TC	7,250	8,500	0,23	9,17	0,59	0,98	1,375	1,518	0,312	16,39	1,16

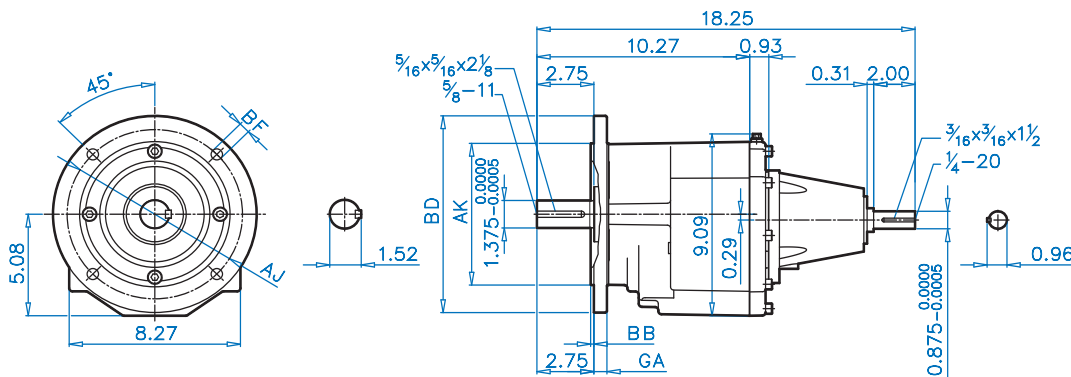
SK 672.1/673.1 + W SK 672.1F/673.1F + W



SK 672.1/673.1

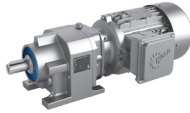


SK 672.1F/673.1F

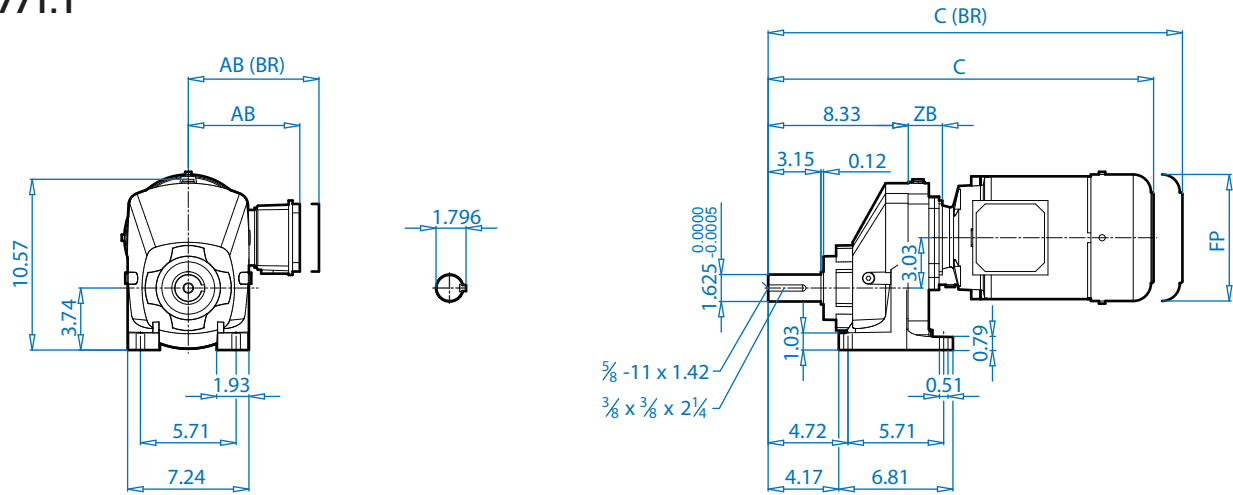


Mounting Flange

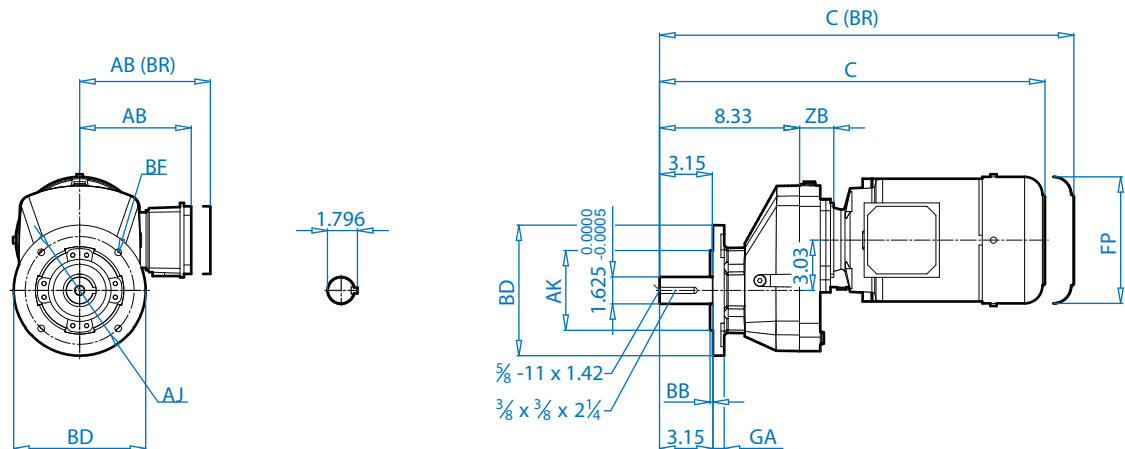
BD (mm)	AJ	AK		BB	BF	GA
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,55	0,63



SK 771.1



SK 771.1F



Mounting Flange

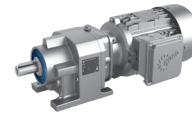
BD (mm)	AJ	AK		BB	BF	GA
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,14	0,53	0,59

Motor Dimensions

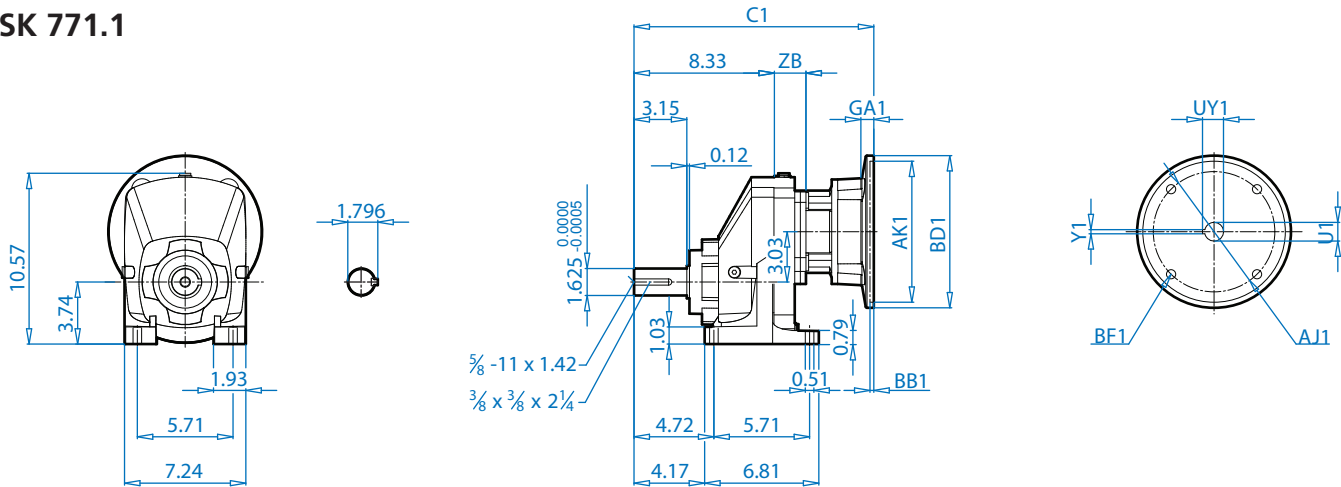
Standard efficiency	71S/L	80S/L	90S/L	100L	112M	132S/M
Premium efficiency		80LP	90SP/LP	100LP		112MP 132SP/MP
AB	4,86	5,59	5,79	6,65	7,05	7,05 8,03
AB (BR)	5,24	5,59	5,79	6,77	7,17	7,17 7,91
C	19,19	20,17	21,75	22,97	23,84	24,83 27,26
C (BR)	21,47	22,69	24,70	26,57	27,54	28,53 31,47
FP	5,72	6,43	7,19	7,90	8,87	8,87 10,45
ZB	1,56	1,56	1,56	1,56	1,56	1,56 1,79

(BR) Denotes Brakemotor

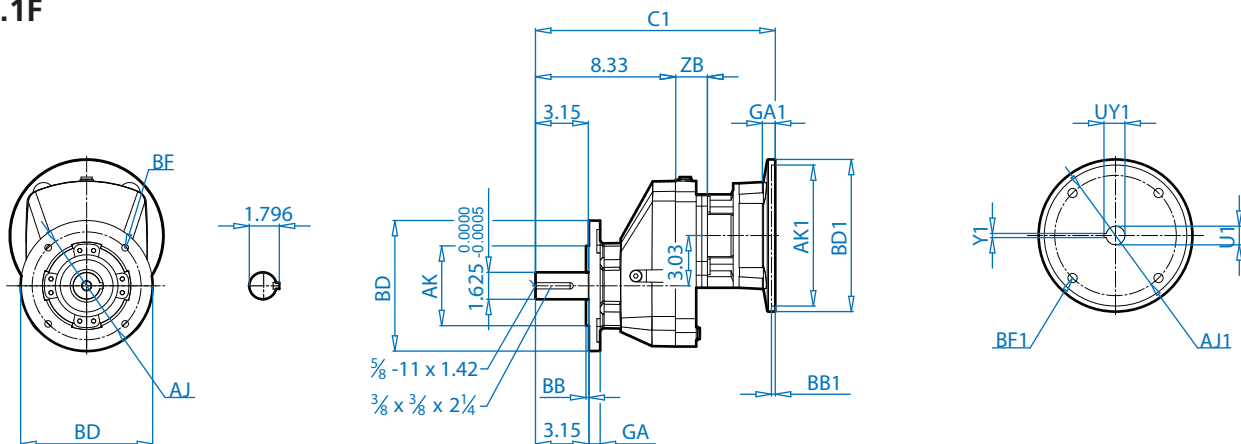
SK 771.1 + NEMA SK 771.1F + NEMA



SK 771.1



SK 771.1F



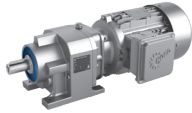
Dimensions

Mounting Flange

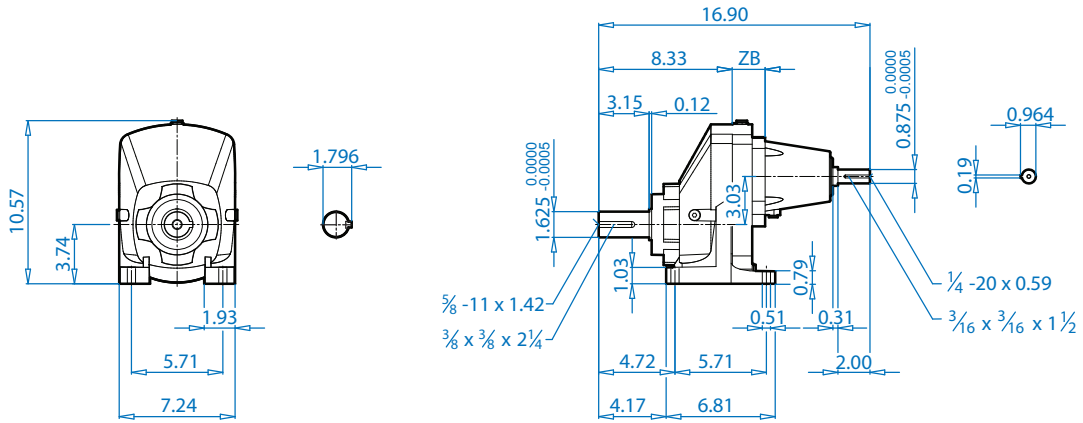
BD (mm)	AJ	AK		BB	BF	GA
6.30 (160)	5,118	4,331	+0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,14	0,43	0,47
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,14	0,53	0,59

NEMA Dimensions

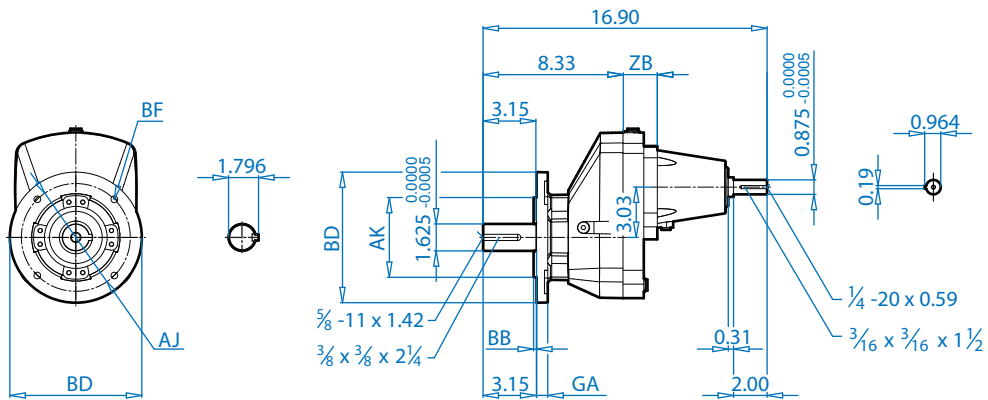
Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1	ZB
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	13,54	1,56
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	14,02	1,56
180TC	7,250	8,500	0,23	9,17	0,55	0,71	1,125	1,241	0,250	14,24	1,56
210TC	7,250	8,500	0,23	9,17	0,59	0,98	1,375	1,518	0,312	15,08	1,79



SK 771.1



SK 771.1F

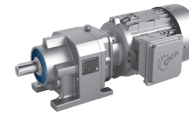


Dimensions

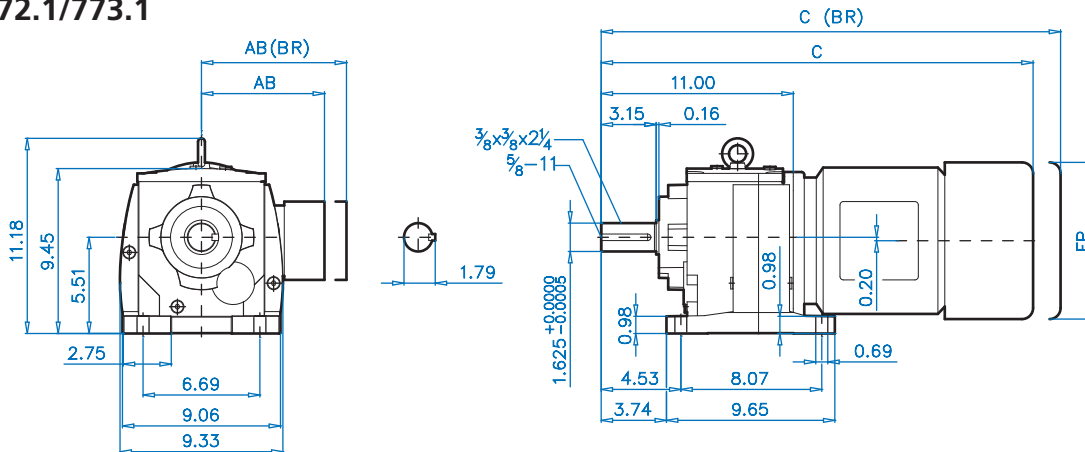
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
6.30 (160)	5,118	4,331 +0.0005 -0.0004	0,14	0,35	0,39
7.87 (200)	6,496	5,118 +0.0006 -0.0004	0,14	0,43	0,47
9.84 (250)	8,465	7,087 +0.0006 -0.0004	0,14	0,53	0,59

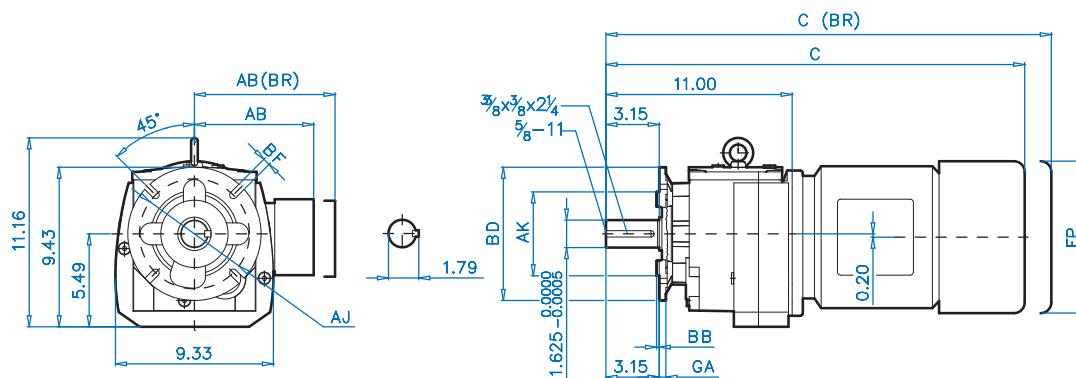
SK 772.1/773.1 + Motor SK 772.1F/773.1F + Motor



SK 772.1/773.1



SK 772.1F/773.1F



Dimensions

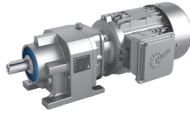
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,16	0,43
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,59
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,71

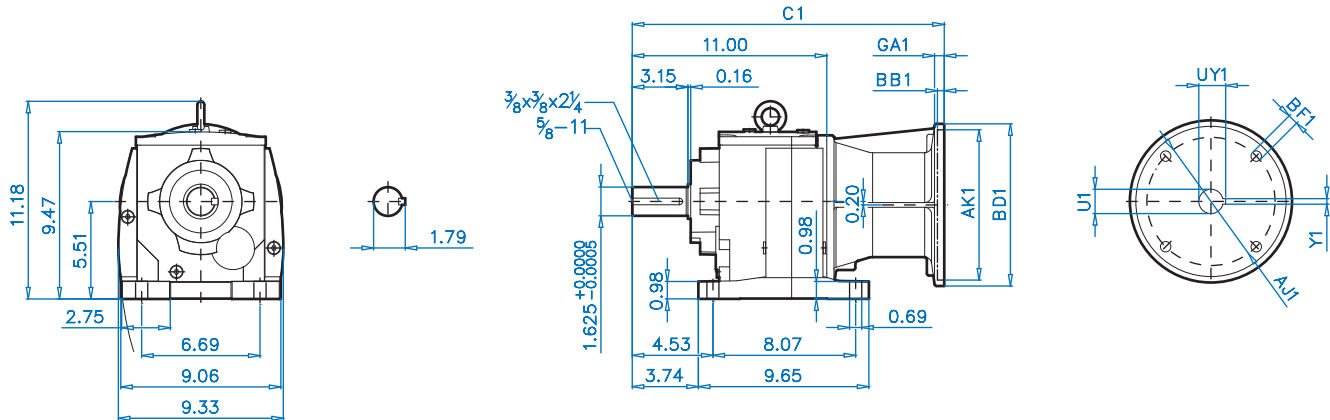
Motor Dimensions

Standard efficiency	71S/L	80S/L	90S/L	100L	112M	132S/M	160M/L		
Premium efficiency		80LP	90SP/LP	100LP		112MP	132SP/MP	160MP	160LP
AB	4,86	5,59	5,79	6,65	7,05	7,05	8,03	9,53	9,53
AB (BR)	5,24	5,59	5,79	6,77	7,17	7,17	7,91	9,53	9,53
C	20,08	21,06	22,63	23,85	24,72	25,72	28,15	31,20	32,96
C (BR)	22,36	23,58	25,59	27,46	28,43	29,65	32,36	36,52	37,41
FP	5,72	6,43	7,19	7,90	8,87	8,87	10,45	12,56	12,56

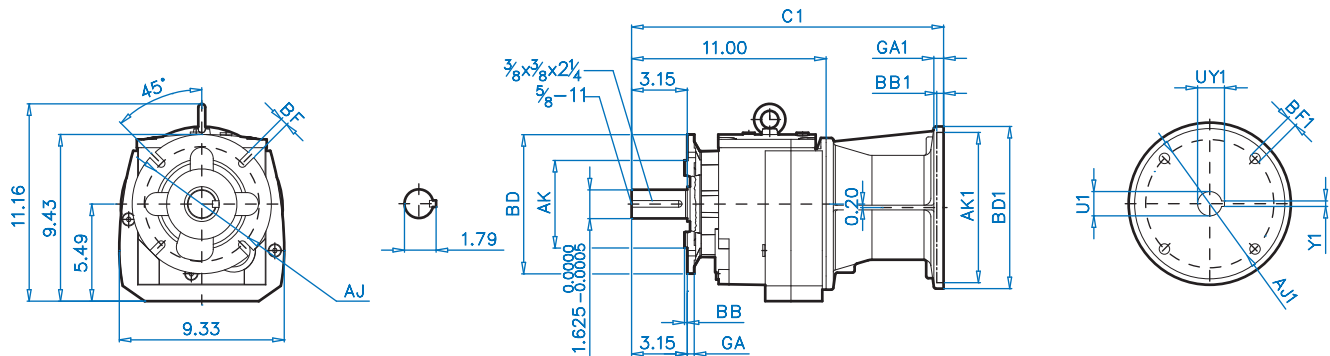
(BR) Denotes Brakemotor



SK 772.1/773.1



SK 772.1F/773.1F



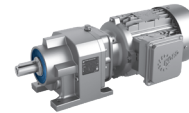
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
7.87 (200)	6,496	5,118 +0.0006 -0.0004	0,16	0,43	0,47
9.84 (250)	8,465	7,087 +0.0006 -0.0004	0,16	0,53	0,59
11.81 (300)	10,433	9,055 +0.0006 -0.0005	0,16	0,53	0,71

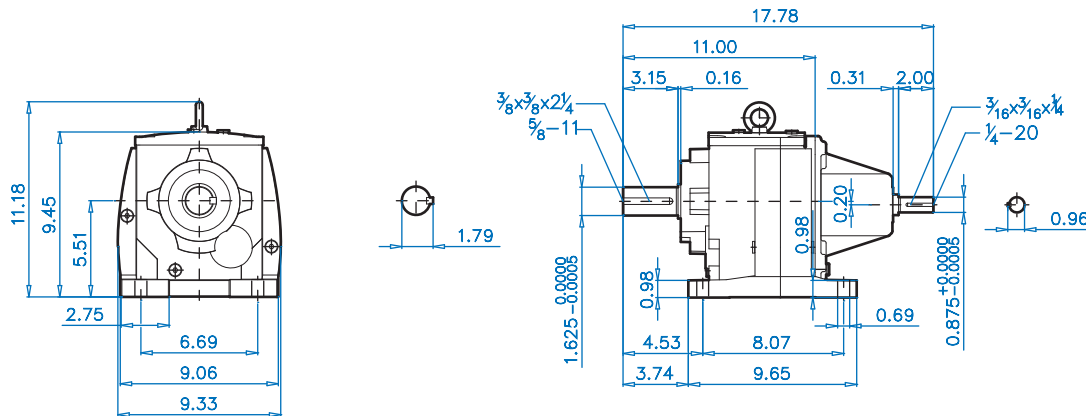
NEMA Dimensions

Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	15,61
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	15,61
180TC	7,250	8,500	0,23	9,17	0,59	0,71	1,125	1,241	0,250	16,52
210TC	7,250	8,500	0,23	9,17	0,59	0,98	1,375	1,518	0,312	17,65

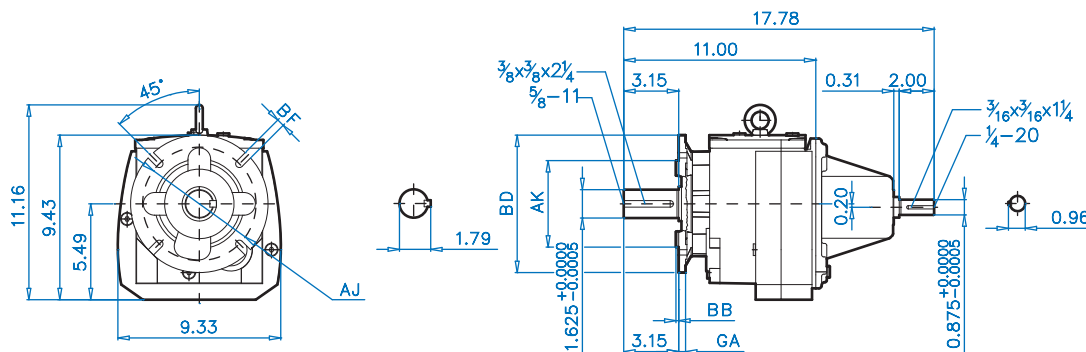
SK 772.1/773.1 + W SK 771.1F/773.1F + W



SK 772.1/773.1



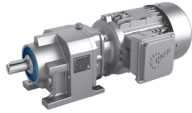
SK 772.1F/773.1F



Dimensions

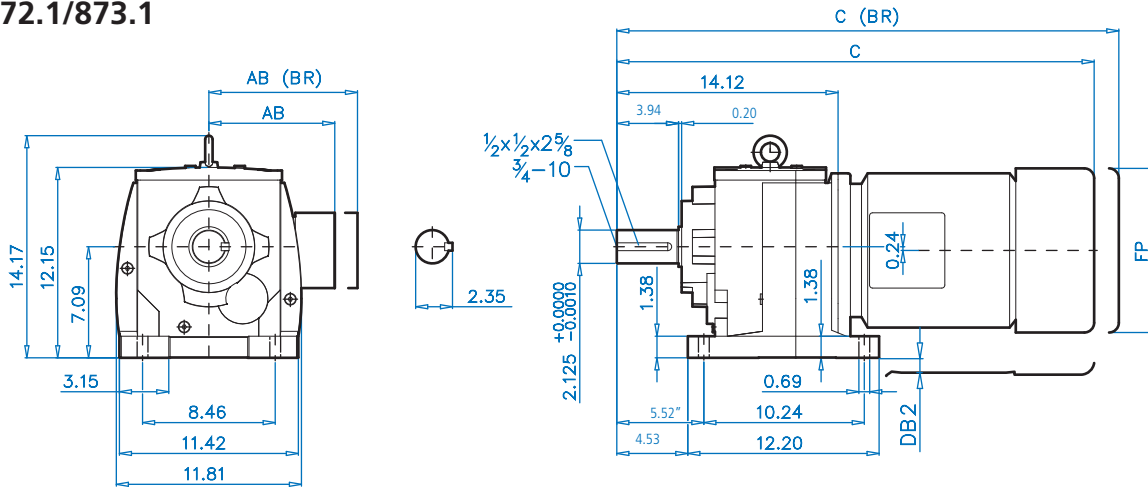
Mounting Flange

BD (mm)	AJ	AK		BB	BF	GA
7.87 (200)	6,496	5,118	+0.0006 -0.0004	0,16	0,43	0,47
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,53	0,59
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	0,71

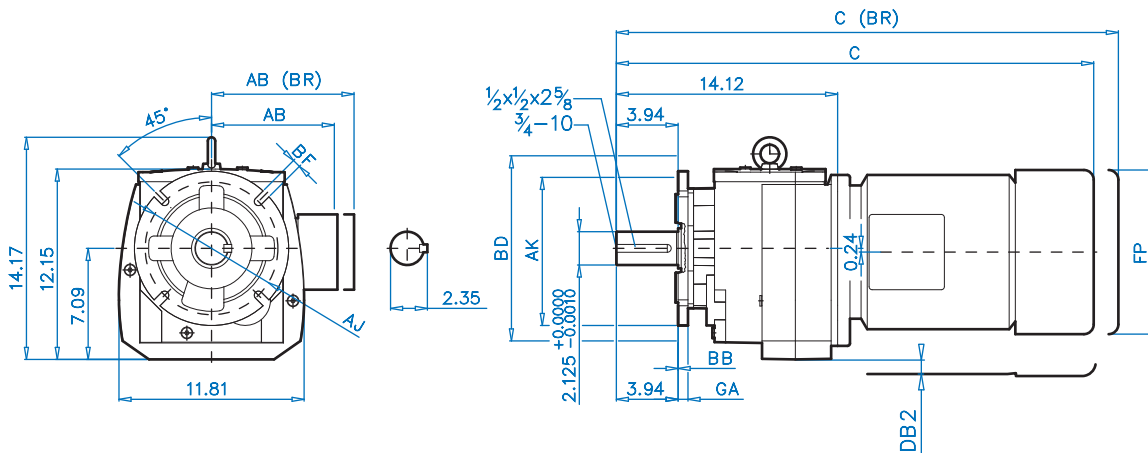


SK 872.1/873.1 + Motor SK 872.1F/873.1F + Motor

SK 872.1/873.1



SK 872.1F/873.1F



Dimensions

Mounting Flange

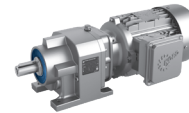
BD (mm)	AJ	AK		BB	BF	GA
9.84 (250)	8,465	7,087	$+0.0006$ -0.0004	0,16	0,53	0,63
11.81 (300)	10,433	9,055	$+0.0006$ -0.0005	0,16	0,53	0,79
13.78 (350)	11,811	9,843	$+0.0000$ -0.0011	0,20	0,69	0,79

Motor Dimensions

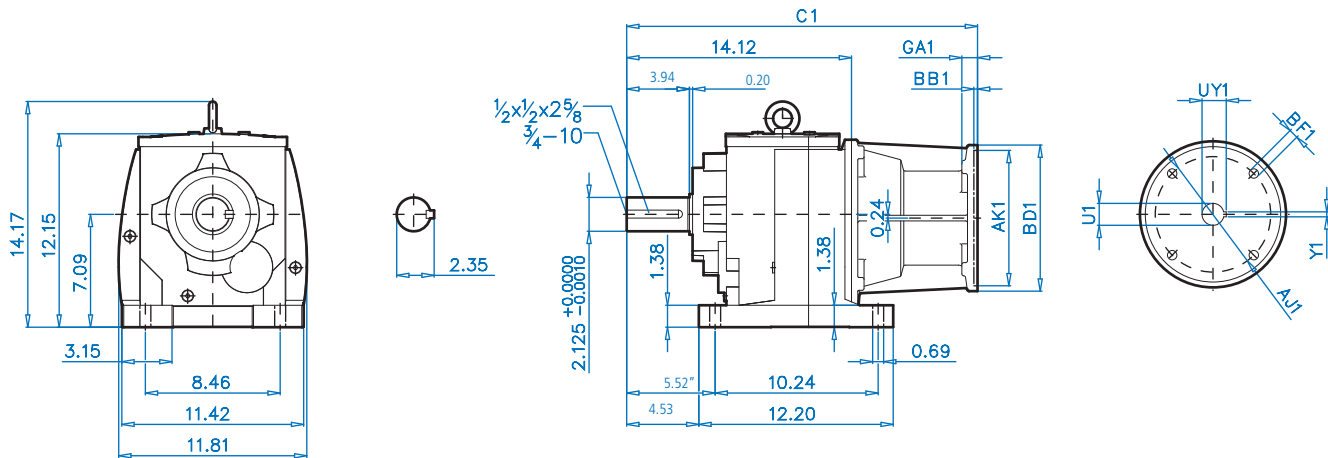
Standard eff.	90S/L	100L	112M		132S/M	160M/L		180MX	180LX	
Premium eff.	90SP/LP	100LP		112MP	132SP/MP	160MP	160LP			180MP/LP
AB	5,79	6,65	7,05	7,05	8,03	9,53	9,53	9,53	9,53	10,04
AB (BR)	5,79	6,77	7,17	7,17	7,91	9,53	9,53	9,53	9,53	9,53
C	24,97	26,19	27,06	28,06	30,49	33,54	35,30	33,54	35,30	38,66
C (BR)	27,93	29,80	30,77	32,78	34,70	38,86	40,53	38,86	40,58	43,66
FP	7,19	7,90	8,87	8,87	10,45	12,56	12,56	12,56	12,56	14,26
DB2	-	-	-	-	-	-	-	-	-	0,04

(BR) Denotes Brakemotor

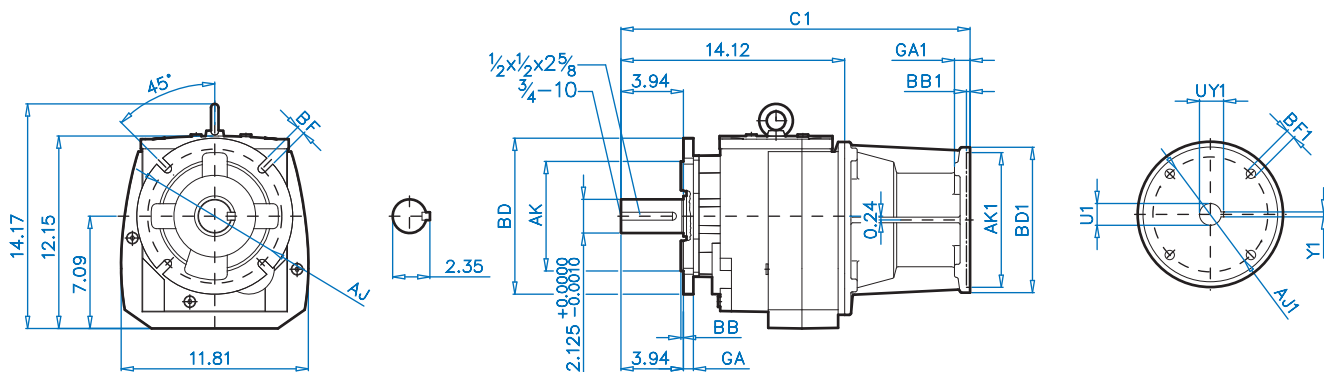
SK 872.1/873.1 + NEMA SK 872.1F/873.1F + NEMA



SK 872.1/873.1



SK 872.1F/873.1F



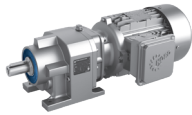
Dimensions

Mounting Flange

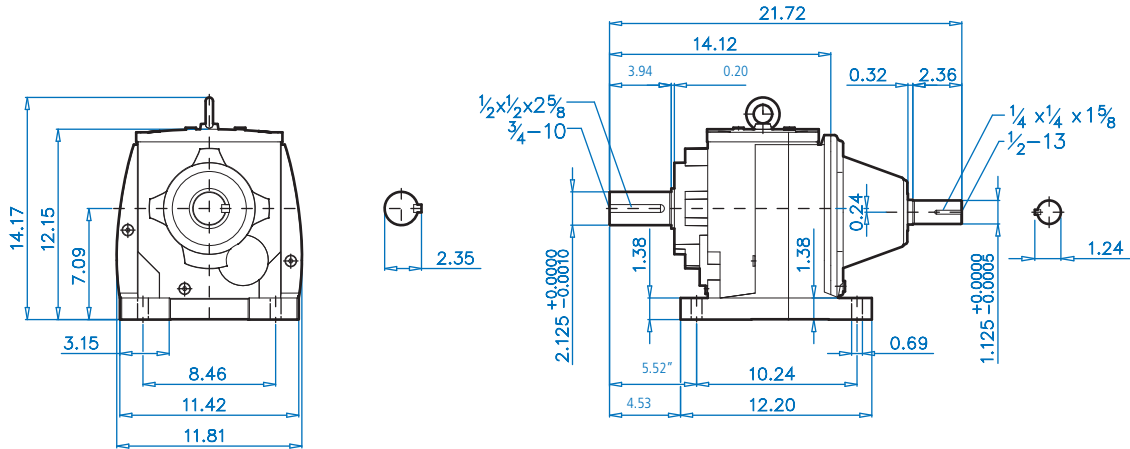
BD (mm)	AJ	AK	BB	BF	GA
9.84 (250)	8,465	7,087 +0.0006 -0.0004	0,16	0,53	0,63
11.81 (300)	10,433	9,055 +0.0006 -0.0005	0,16	0,53	0,79
13.78 (350)	11,811	9,843 +0.0000 -0.0011	0,20	0,69	0,79

NEMA Dimensions

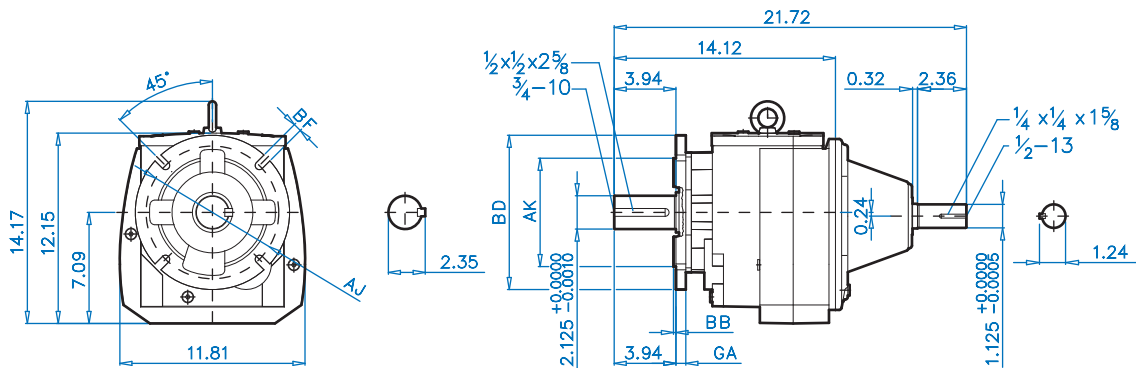
Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	18,46
140TC	5,875	4,500	0,18	6,54	0,43	0,63	0,875	0,964	0,188	18,46
180TC	7,250	8,500	0,23	9,17	0,59	0,71	1,125	1,241	0,250	19,76
210TC	7,250	8,500	0,23	9,17	0,59	0,98	1,375	1,518	0,312	22,05
250TC	7,250	8,500	0,23	9,17	0,59	0,98	1,625	1,800	0,375	22,05



SK 872.1/873.1



SK 872.1F/873.1F

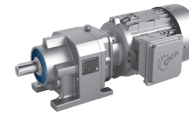


Mounting Flange

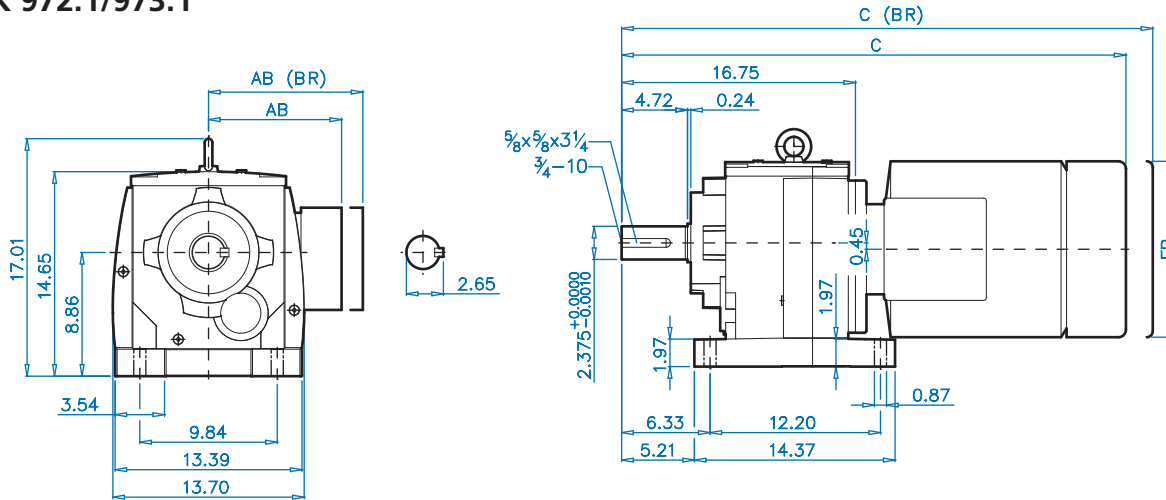
BD (mm)	AJ	AK		BB	BF	GA
9.84 (250)	8,465	7,087	+0.0006 -0.0004	0,16	0,53	0,63
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	0,79
13.78 (350)	11,811	9,843	+0.0000 -0.0011	0,20	0,69	0,79

Dimensions

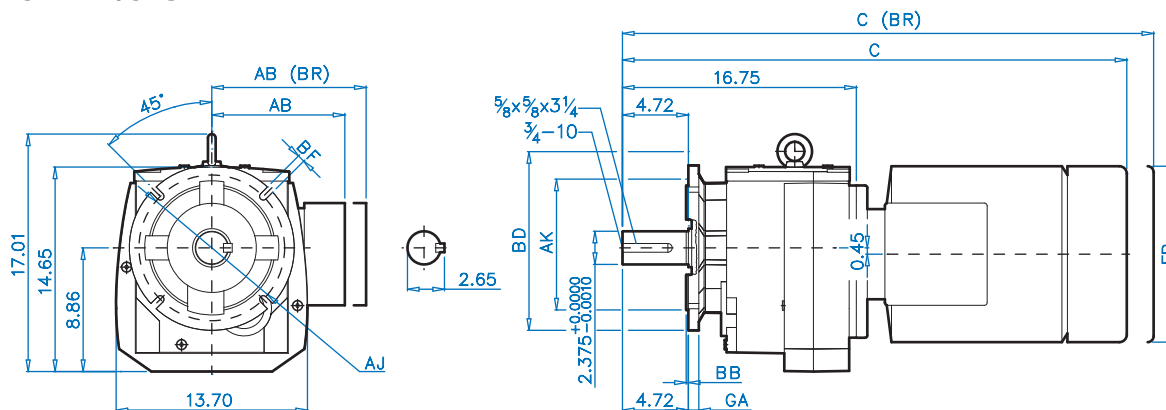
SK 972.1/973.1 + Motor SK 972.1F/973.1F + Motor



SK 972.1/973.1



SK 972.1F/973.1F



Dimensions

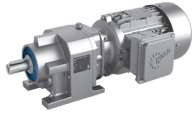
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA	
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	0,79
13.78 (350)	11,811	9,843	+0.0000 -0.0011	0,20	0,69	0,79
17.72 (450)	15,748	13,780	+0.0000 -0.0014	0,20	0,69	0,87

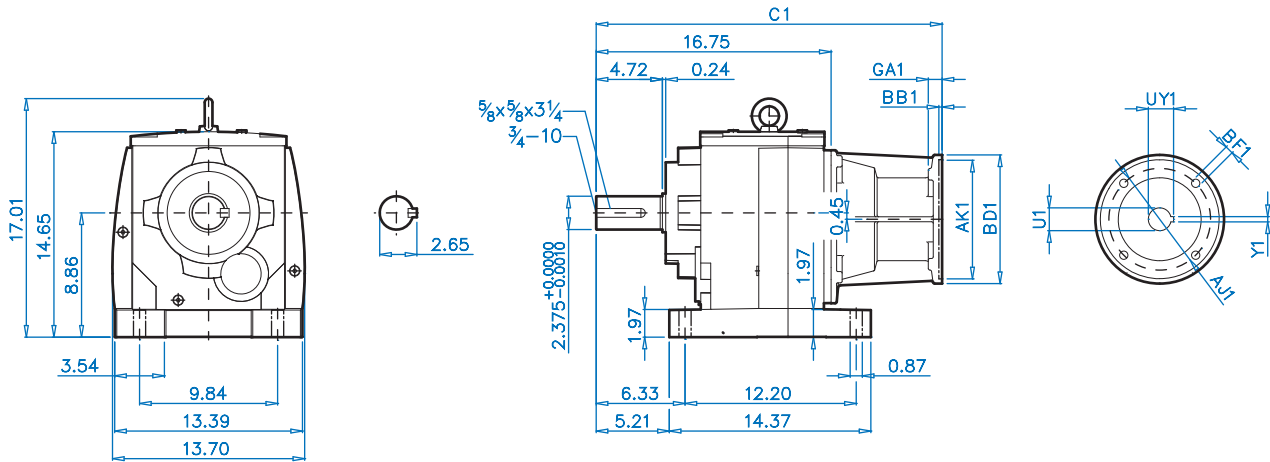
Motor Dimensions

Standard eff.	90S/L	100L	112M		132S/M	160M/L		180MX	180LX		200L	225S
Premium eff.	90SP/LP	100LP		112MP	132SP/MP	160MP	160LP			180MP/LP		
AB	5,79	6,65	7,05	7,05	8,03	9,53	9,53	9,53	9,53	10,04	12,01	12,01
AB (BR)	5,79	6,77	7,17	7,17	7,91	9,53	9,53	9,53	9,53	9,53	12,01	12,01
C	27,59	28,81	29,68	30,67	33,10	36,16	37,92	36,16	37,92	41,28	44,23	44,23
C (BR)	30,54	32,41	30,67	35,40	37,31	41,47	43,15	41,47	43,19	46,28	50,80	50,80
FP	7,19	7,90	8,87	8,87	10,45	12,56	12,56	12,56	12,56	14,26	15,83	15,83

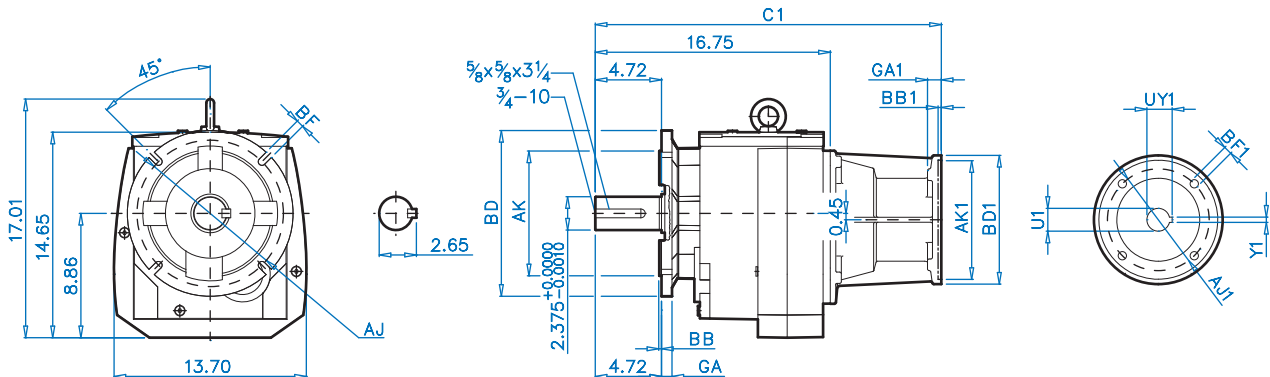
(BR) Denotes Brakemotor



SK 972.1/973.1



SK 972.1F/973.1F



Dimensions

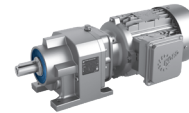
Mounting Flange

BD (mm)	AJ	AK	BB	BF	GA
11.81 (300)	10,433	9,055 +0.0006 -0.0005	0,16	0,53	0,79
13.78 (350)	11,811	9,843 +0.0000 -0.0011	0,20	0,69	0,79
17.72 (450)	15,748	13,780 +0.0000 -0.0014	0,20	0,69	0,87

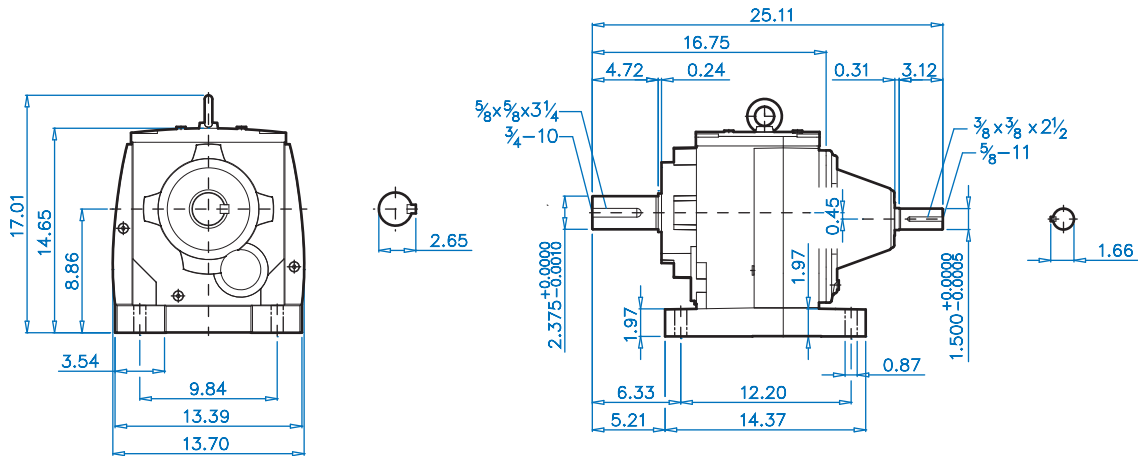
NEMA Dimensions

Type	AJ1	AK1	BB1	BD1	BF1	GA1	U1	UY1	Y1	C1
56C	5,875	4,500	0,18	6,54	0,43	0,47	0,625	0,709	0,188	21,08
140TC	5,875	4,500	0,18	6,54	0,43	0,47	0,875	0,964	0,188	21,08
180TC	7,250	8,500	0,23	9,17	0,59	0,71	1,125	1,241	0,250	22,38
210TC	7,250	8,500	0,23	9,17	0,59	0,98	1,375	1,518	0,312	24,66
250TC	7,250	8,500	0,23	9,17	0,59	0,98	1,625	1,800	0,375	24,66
280TC	9,000	10,500	0,23	13,78	0,55	0,79	1,875	2,100	0,500	25,17

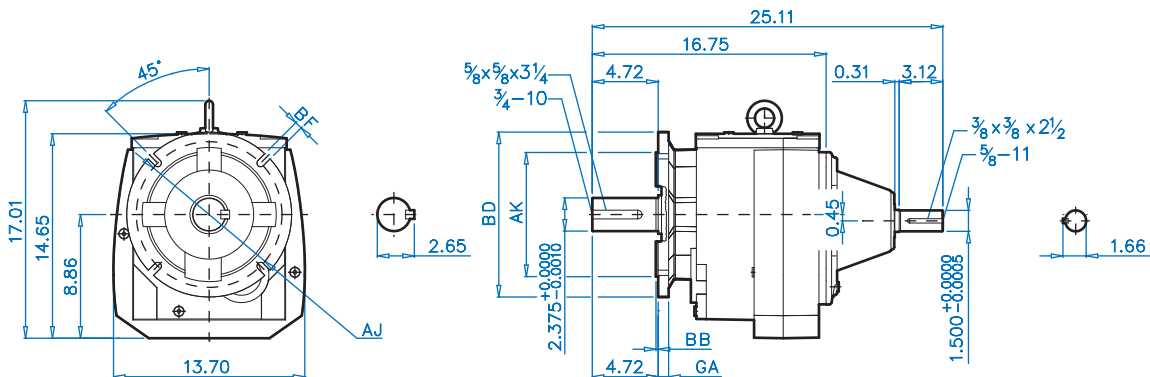
SK 972.1/973.1 + W SK 972.1F/973.1F + W



SK 972.1/973.1

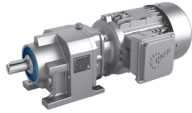


SK 972.1F/973.1F

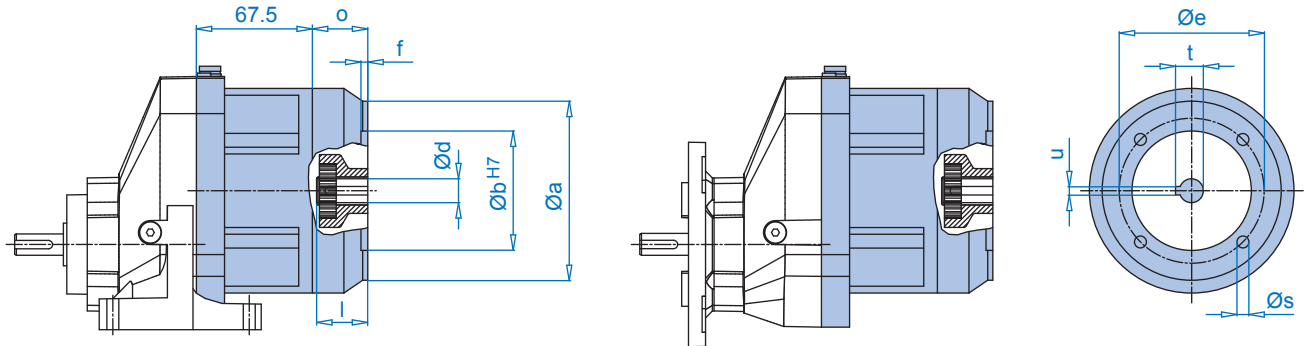


Mounting Flange

BD (mm)	AJ	AK		BB	BF	GA
11.81 (300)	10,433	9,055	+0.0006 -0.0005	0,16	0,53	0,79
13.78 (350)	11,811	9,843	+0.0000 -0.0011	0,20	0,69	0,79
17.72 (450)	15,748	13,780	+0.0000 -0.0014	0,20	0,69	0,87



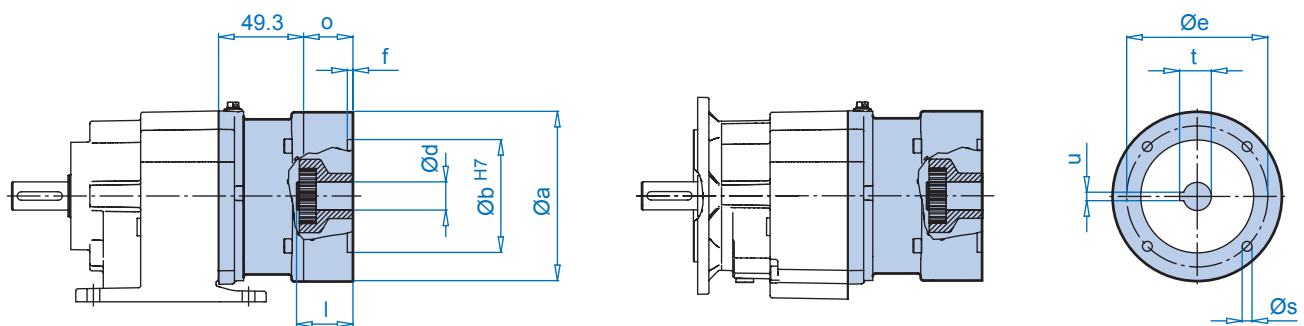
SK 071.1 - IEC 56..80 SK 071.1F - IEC 56..80



	a	b	e	f	s	o	d	l	t	u
IEC 56 - C105	105	70	85	3.0	7	32.5	9	20	11.4	3
IEC 56 - A120	120	80	100	3.5	7	32.5	9	20	11.4	3
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105*	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - C160	160	110	130	4.0	9	32.5	19	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6

*Standard

SK 072.1 - IEC 56..71 SK 072.1F - IEC 56..71

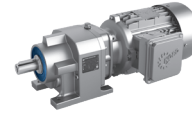


	a	b	e	f	s	o	d	l	t	u
IEC 56 - C105	105	70	85	3.0	7	29.5	9	20	11.4	3
IEC 56 - A120	120	80	100	3.5	7	29.5	9	20	11.4	3
IEC 63 - C90*	90	60	75	3.0	6	29.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	29.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	29.5	11	23	12.8	4
IEC 71 - C105*	105	70	85	3.0	7	29.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	29.5	14	30	16.3	5

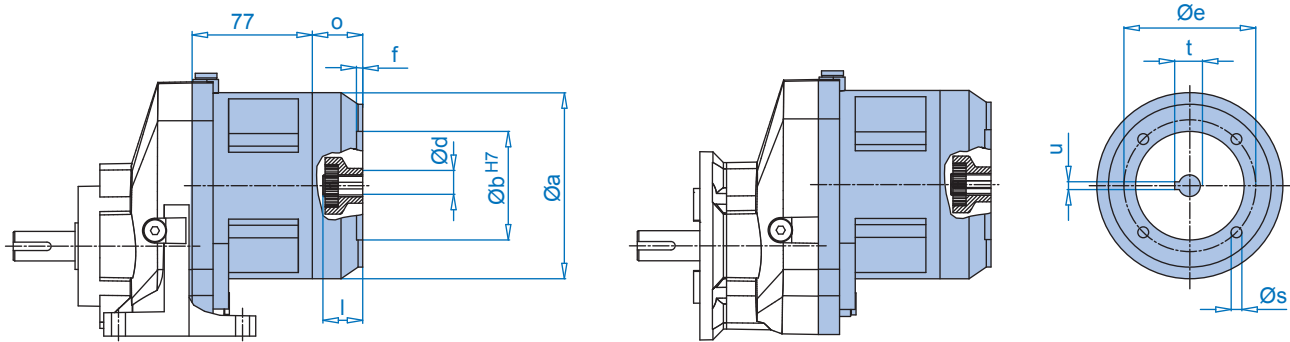
*Standard

NORDBLOC.1

IEC Dimensions

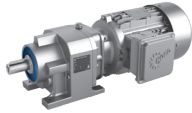


SK 171.1 - IEC 56..80
SK 171.1F - IEC 56..80

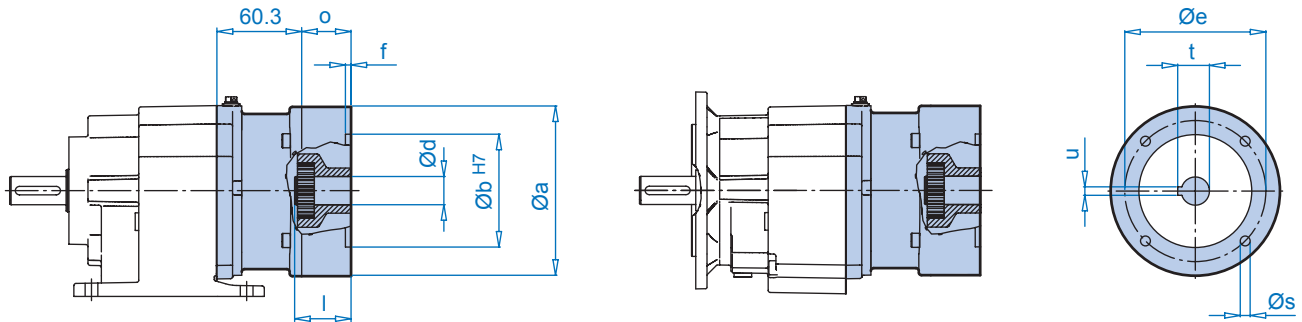


	a	b	e	f	s	o	d	l	t	u
IEC 56 - C105	105	70	85	3.0	7	32.5	9	20	11.4	3
IEC 56 - A120	120	80	100	3.5	7	32.5	9	20	11.4	3
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105*	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - C160	160	110	130	4.0	9	32.5	14	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6
IEC 90 - C140*	140	95	115	3.5	9	45.5	24	50	27.3	8
IEC 90 - C160	160	110	130	4.0	9	45.5	24	50	27.3	8
IEC 90 - A200	200	130	165	4.0	M10x20	45.5	24	50	27.3	8

*Standard



SK 172.1 - IEC 56..90
SK 172.1F - IEC 56..90

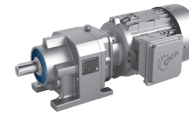


	a	b	e	f	s	o	d	l	t	u
IEC 56 - C105	105	70	85	3.0	7	32.5	9	20	11.4	3
IEC 56 - A120	120	80	100	3.5	7	32.5	9	20	11.4	3
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - A160	160	110	130	4.0	9	32.5	14	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6
IEC 90 - C140*	140	95	115	3.5	9	45.5	24	50	27.3	8
IEC 90 - C160	160	110	130	4.0	9	45.5	24	50	27.3	8
IEC 90 - A200	200	130	165	4.0	M10x20	45.5	24	50	27.3	8

*Standard

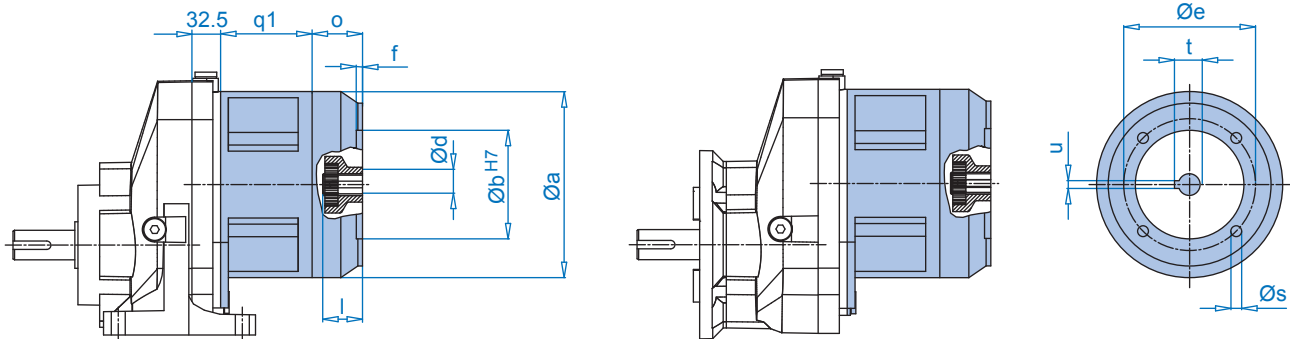
NORDBLOC.1

IEC Dimensions



SK 371.1 - IEC 63..90
SK 371.1F - IEC 63..90

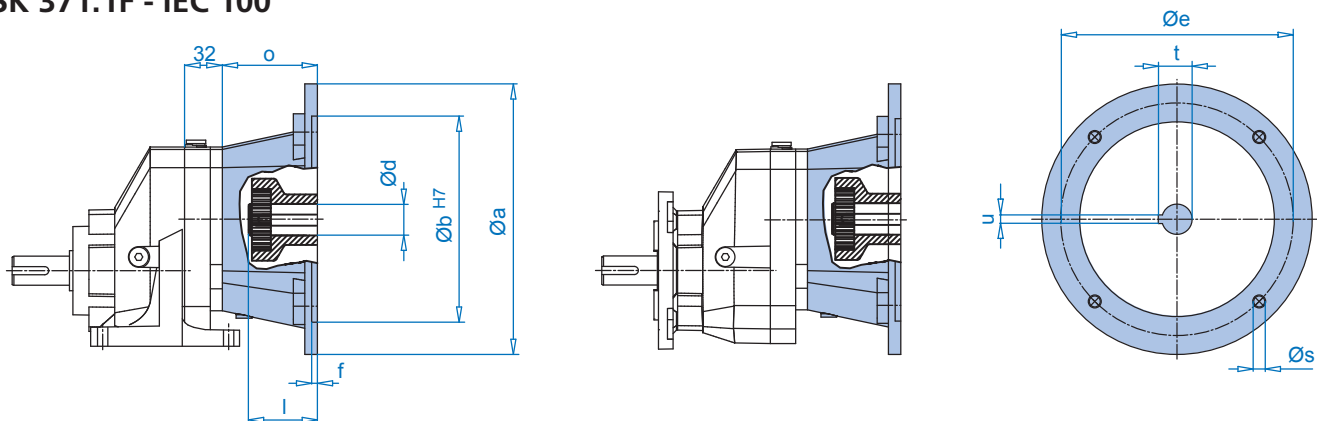
Gear Ratio	q1
≥ 4.40	56
< 4.40	40



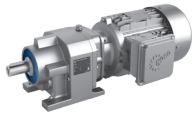
	a	b	e	f	s	o	d	l	t	u
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - C160	160	110	130	4.0	9	32.5	14	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6
IEC 90 - C140*	140	95	115	3.5	9	45.5	24	50	27.3	8
IEC 90 - C160	160	110	130	4.0	9	45.5	24	50	27.3	8
IEC 90 - A200	200	130	165	4.0	M10x20	45.5	24	50	27.3	8

*Standard

SK 371.1 - IEC 100
SK 371.1F - IEC 100



	a	b	e	f	s	o	d	l	t	u
IEC 100 - A250	250	180	215	5	M12	82	28	60	31.3	8

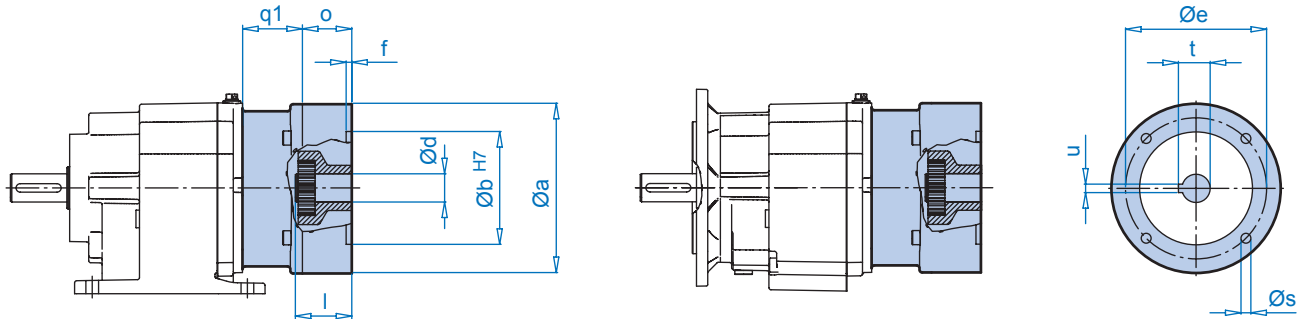


SK 372.1 - IEC 63..90
SK 372.1F - IEC 63..90

Gear Ratio	q1
≥ 16.50	56
< 16.50	40

SK 373.1 - IEC 63..90
SK 373.1F - IEC 63..90

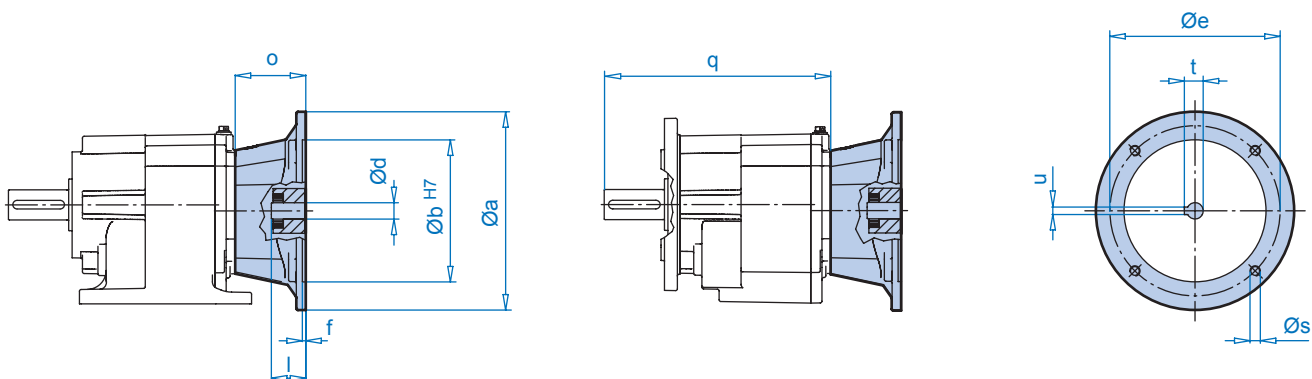
Gear Ratio	q1
≥ 82.57	56
< 82.57	40



	a	b	e	f	s	o	d	l	t	u
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - A160	160	110	130	4.0	9	32.5	14	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6
IEC 90 - C140*	140	95	115	3.5	9	45.5	24	50	27.3	8
IEC 90 - C160	160	110	130	4.0	9	45.5	24	50	27.3	8
IEC 90 - A200	200	130	165	4.0	M10x20	45.5	24	50	27.3	8

*Standard

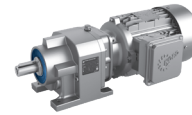
SK 372.1 - IEC 100
SK 372.1F - IEC 100



	a	b	e	f	s	o	d	l	t	u
IEC 100 - A250	250	180	215	5	M12	82	28	60	31.3	8

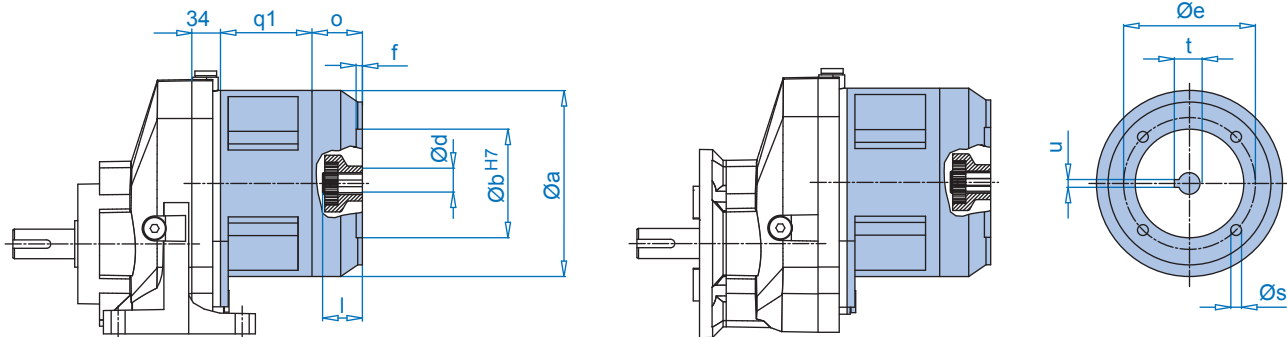
NORDBLOC.1

IEC Dimensions



SK 571.1 - IEC 63..90
SK 571.1F - IEC 63..90

Gear Ratio	q1
≥ 4.38	56
< 4.38	40

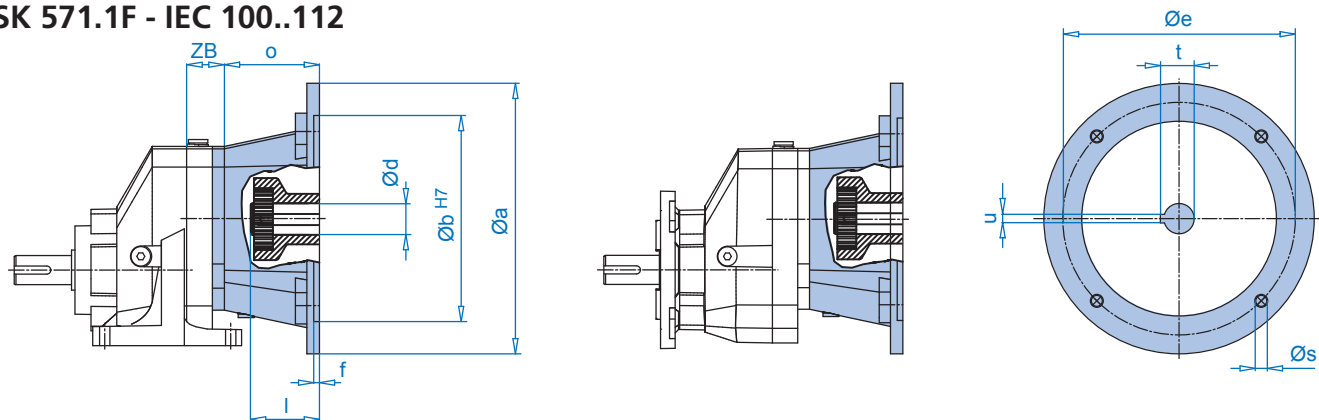


	a	b	e	f	s	o	d	l	t	u
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105*	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - A160	160	110	130	4.0	9	32.5	14	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6
IEC 90 - C140*	140	95	115	3.5	9	45.5	24	50	27.3	8
IEC 90 - C160	160	110	130	4.0	9	45.5	24	50	27.3	8
IEC 90 - A200	200	130	165	4.0	M10x20	45.5	24	50	27.3	8

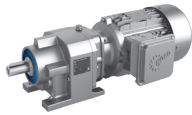
*Standard

Dimensions

SK 571.1 - IEC 100..112
SK 571.1F - IEC 100..112



	a	b	e	f	ZB	s	o	d	l	t	u
IEC 100 - A250	250	180	215	5.0	34	M12	82	28	60	31.3	8
IEC 112 - A250	250	180	215	5.0	34	M12	82	28	60	31.3	8
IEC 132 - A300	300	230	265	5.0	40	M12	111	38	80	41.3	10

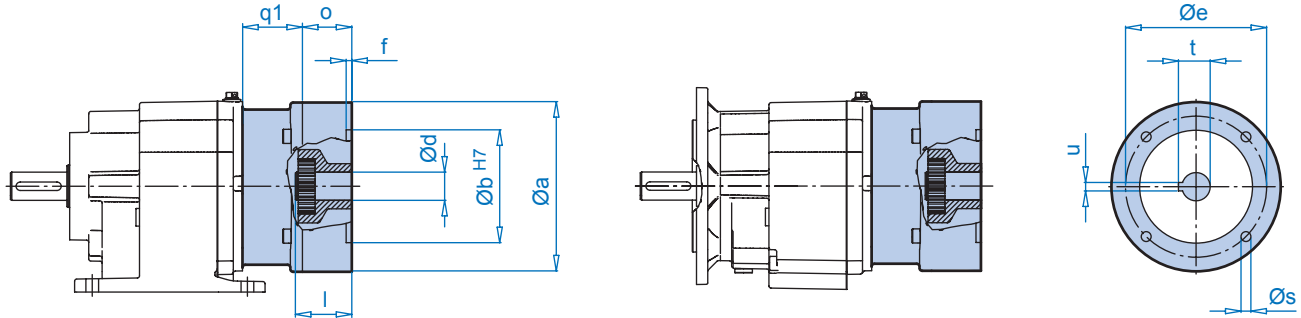


SK 572.1 - IEC 63..90
SK 572.1F - IEC 63..90

Gear Ratio	q1
≥21.85	56
<21.85	40

SK 573.1 - IEC 63..90
SK 573.1F - IEC 63..90

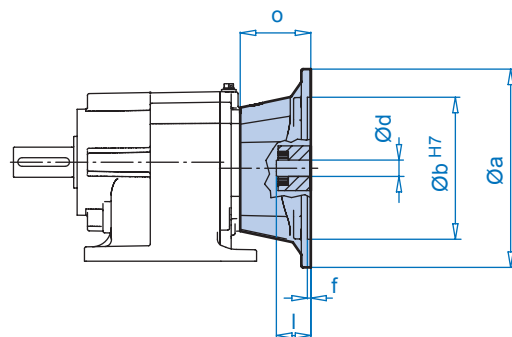
Gear Ratio	q1
≥109.12	56
<109.12	40



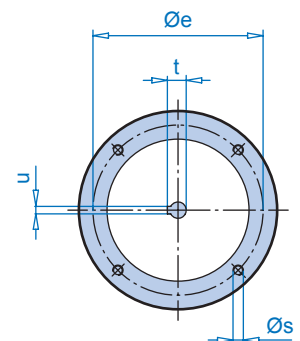
	a	b	e	f	s	o	d	l	t	u
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105*	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - A160	160	110	130	4.0	9	32.5	14	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6
IEC 90 - C140*	140	95	115	3.5	9	45.5	24	50	27.3	8
IEC 90 - C160	160	110	130	4.0	9	45.5	24	50	27.3	8
IEC 90 - A200	200	130	165	4.0	M10x20	45.5	24	50	27.3	8

*Standard

SK 572.1 - IEC 100..112
SK 572.1F - IEC 100..112



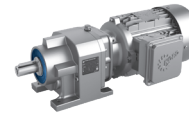
SK 573.1 - IEC 100..112
SK 573.1F - IEC 100..112



	a	b	e	f	s	o	d	l	t	u
IEC 100 - A250	250	180	215	5	M12	82	28	60	31.3	8
IEC 112 - A250	250	180	215	5	M12	82	28	60	31.3	8

NORDBLOC.1

IEC Dimensions

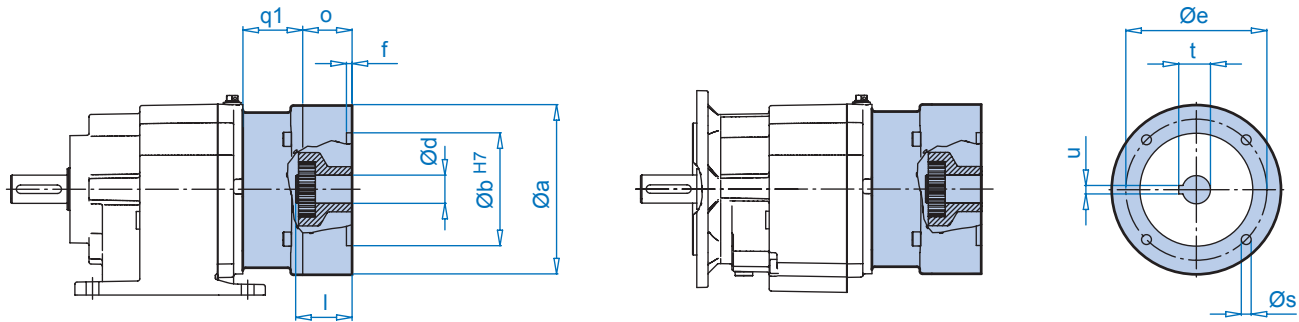


SK 672.1 - IEC 63..90
SK 672.1F - IEC 63..90

Gear Ratio	q1
≥23.41	56
<23.41	40

SK 673.1 - IEC 63..90
SK 673.1F - IEC 63..90

Gear Ratio	q1
≥ 115.89	56
< 115.89	40



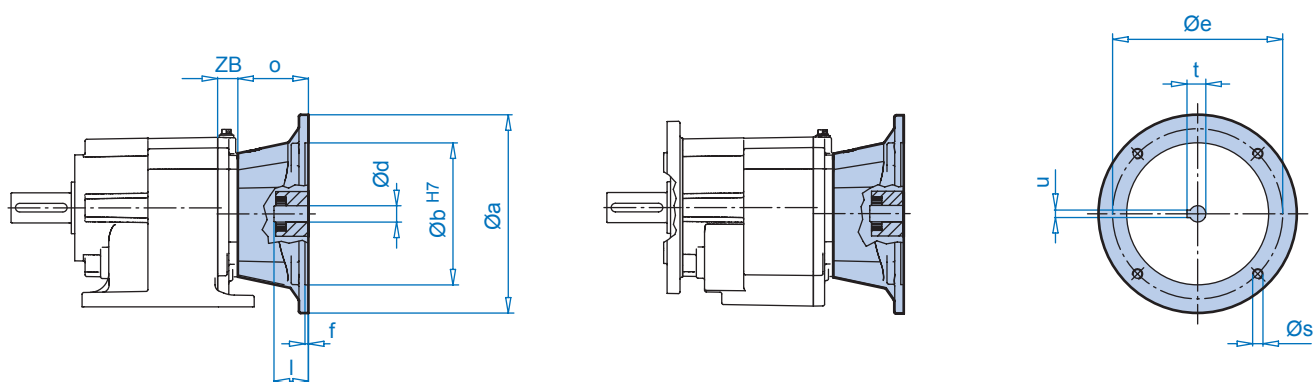
	a	b	e	f	s	o	d	l	t	u
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105*	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - A160	160	110	130	4.0	9	32.5	14	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6
IEC 90 - C140*	140	95	115	3.5	9	45.5	24	50	27.3	8
IEC 90 - C160	160	110	130	4.0	9	45.5	24	50	27.3	8
IEC 90 - A200	200	130	165	4.0	M10x20	45.5	24	50	27.3	8

*Standard

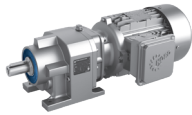
Dimensions

SK 672.1 - IEC 100..132
SK 672.1F - IEC 100..132

SK 673.1 - IEC 100..132
SK 673.1F - IEC 100..132

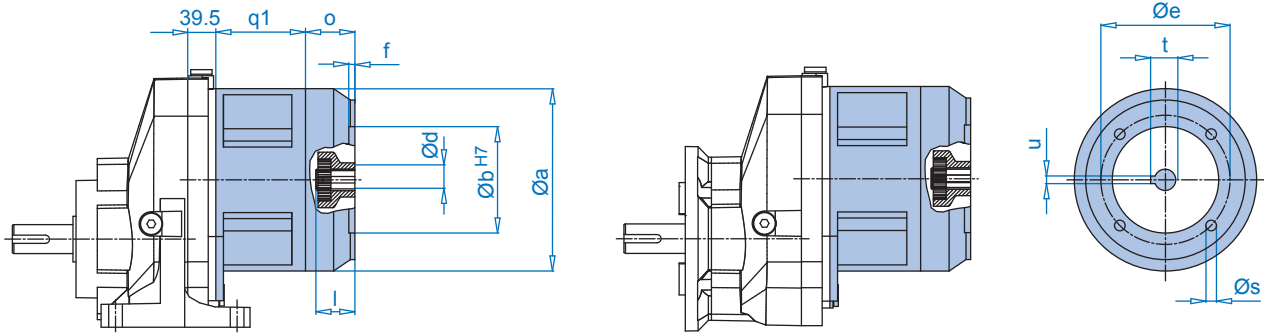


	a	b	e	f	ZB	s	o	d	l	t	u
IEC 100	250	180	215	5	23.5	M12	82	28	60	31.3	8
IEC 112	250	180	215	5	23.5	M12	82	28	60	31.3	8
IEC 132	300	230	265	5	20	M12	106	38	80	41.3	10



SK 771.1 - IEC 63..90
SK 771.1F - IEC 63..90

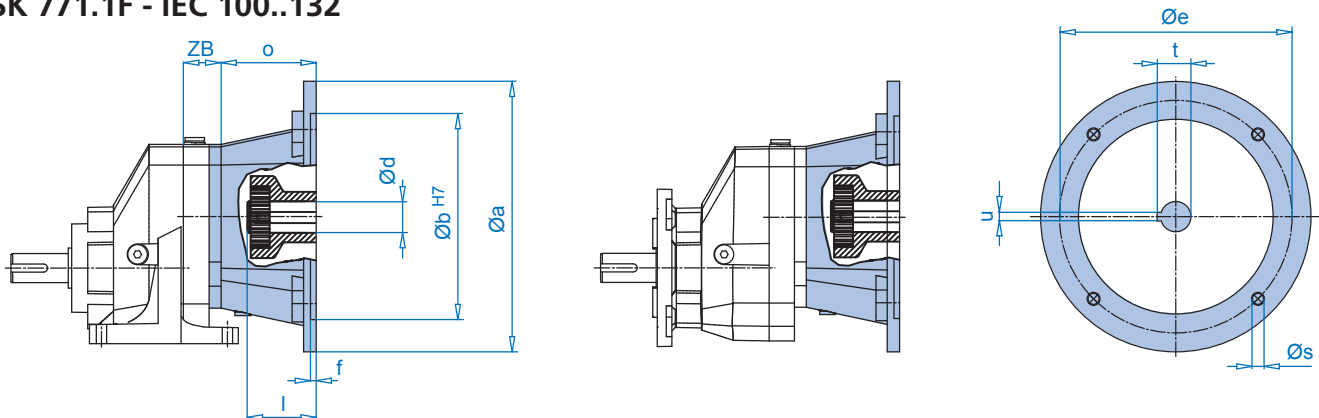
Gear Ratio	q1
≥ 6.23	56
< 6.23	40



	a	b	e	f	s	o	d	l	t	u
IEC 63 - C90*	90	60	75	3.0	6	32.5	11	23	12.8	4
IEC 63 - C120	120	80	100	3.5	7	32.5	11	23	12.8	4
IEC 63 - A140	140	95	115	3.5	9	32.5	11	23	12.8	4
IEC 71 - C105*	105	70	85	3.0	7	32.5	14	30	16.3	5
IEC 71 - C140	140	95	115	3.5	9	32.5	14	30	16.3	5
IEC 71 - A160	160	110	130	4.0	9	32.5	14	30	16.3	5
IEC 80 - C120*	120	80	100	3.5	7	32.5	19	40	21.8	6
IEC 80 - C160	160	110	130	4.0	9	32.5	19	40	21.8	6
IEC 80 - A200	200	130	165	4.0	M10x20	32.5	19	40	21.8	6
IEC 90 - C140*	140	95	115	3.5	9	45.5	24	50	27.3	8
IEC 90 - C160	160	110	130	4.0	9	45.5	24	50	27.3	8
IEC 90 - A200	200	130	165	4.0	M10x20	45.5	24	50	27.3	8

*Standard

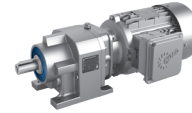
SK 771.1 - IEC 100..132
SK 771.1F - IEC 100..132



	a	b	e	f	ZB	s	o	d	l	t	u
IEC 100 - A250	250	180	215	5	39.5	M12	82	28	60	31.3	8
IEC 112 - A250	250	180	215	5	39.5	M12	82	28	60	31.3	8
IEC 132 - A300	300	230	265	5.0	45.5	M12	111	38	80	41.3	10

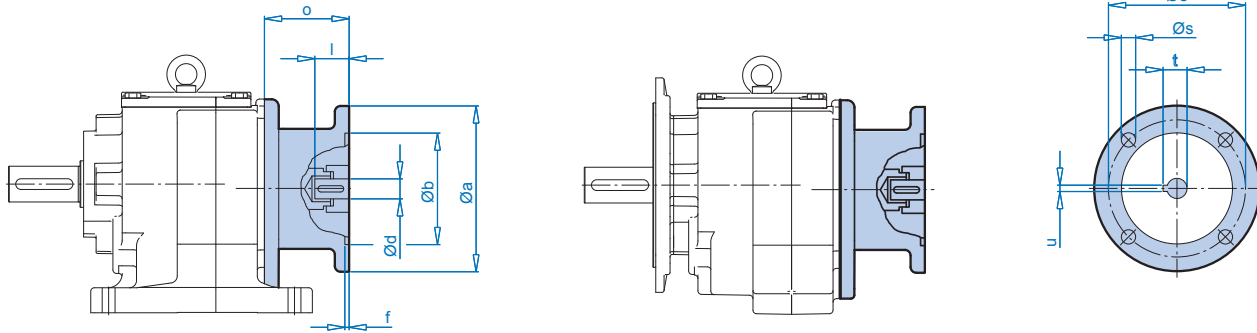
NORDBLOC.1

IEC Dimensions

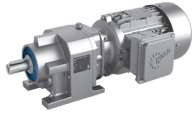


SK 772.1 - IEC 71...132
SK 772.1F - IEC 71...132

SK 773.1 - IEC 71...132
SK 773.1F - IEC 71...132

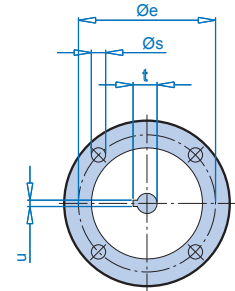
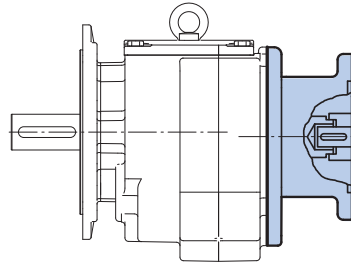
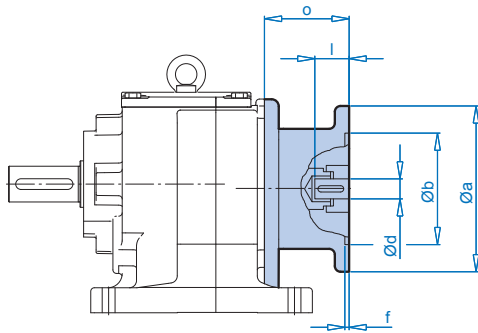


	a	b	e	f	s	o	d	l	t	u
IEC 71	160	110	130	4.0	M8	88	14	30	16.3	5
IEC 80	200	130	165	4.0	M10	108	19	40	21.8	6
IEC 90	200	130	165	4.0	M10	108	24	50	27.3	8
IEC 100	250	180	215	5.0	M12	125	28	60	31.3	8
IEC 112	250	180	215	5.0	M12	125	28	60	31.3	8
IEC 132	300	230	265	5.0	M12	156	38	80	41.3	10



SK 872.1 - IEC 90...180
SK 872.1F - IEC 90...180

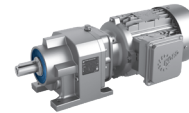
SK 873.1 - IEC 90...180
SK 873.1F - IEC 90...180



	a	b	e	f	s	o	d	l	t	u
IEC 90	200	130	165	4.0	M10	109	24	50	27.3	8
IEC 100	250	180	215	5.0	M12	133	28	60	31.3	8
IEC 112	250	180	215	5.0	M12	133	28	60	31.3	8
IEC 132	300	230	265	5.0	M12	190	38	80	41.3	10
IEC 160	350	250	300	6.0	M16	194	42	110	45.3	12
IEC 180	350	250	300	6.0	M16	194	48	110	51.8	14

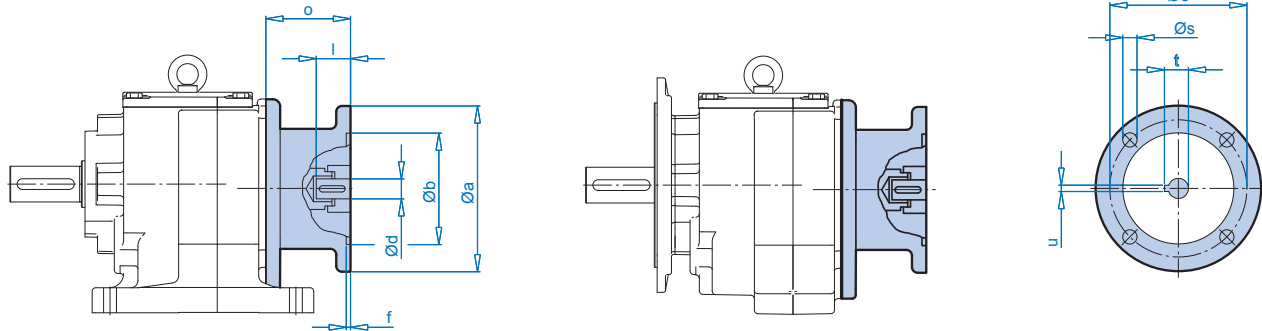
NORDBLOC.1

IEC Dimensions



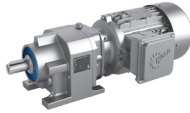
SK 972.1 - IEC 90...200
SK 972.1F - IEC 90...200

SK 973.1 - IEC90...200
SK 973.1F - IEC 90...200

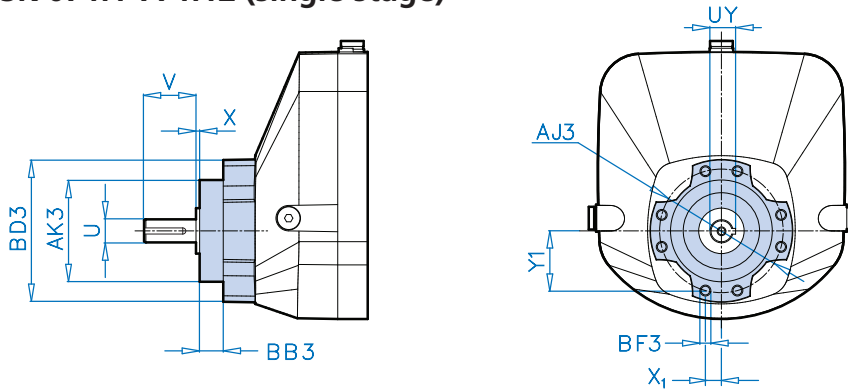


	a	b	e	f	s	o	d	l	t	u
IEC 90	200	130	165	4.0	M10	109	24	50	27.3	8
IEC 100	250	180	215	5.0	M12	133	28	60	31.3	8
IEC 112	250	180	215	5.0	M12	133	28	60	31.3	8
IEC 132	300	230	265	5.0	M12	190	38	80	41.3	10
IEC 160	350	250	300	6.0	M16	194	42	110	45.3	12
IEC 180	350	250	300	6.0	M16	194	48	110	51.8	14
IEC 200*	400	300	350	6.0	M16	245	55	110	59.3	16

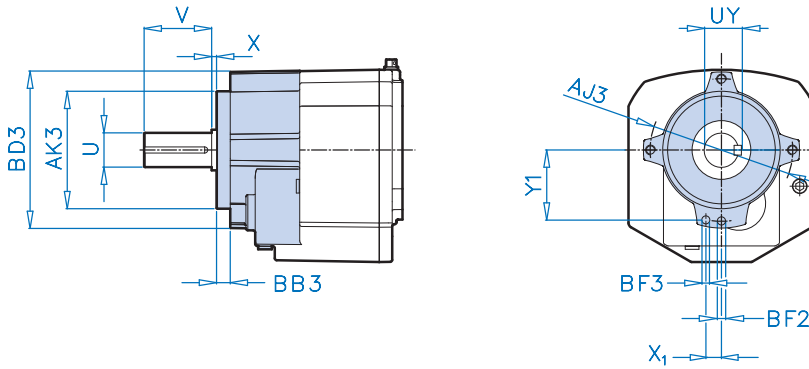
* Available for SK 972.1 & SK 972.1F only



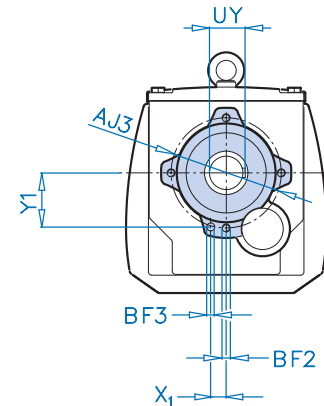
SK 071.1-771.1Z (single stage)



SK 072.1-673.1Z (2&3 Stage)



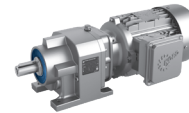
SK 772.1-973.1Z (2&3 stage)



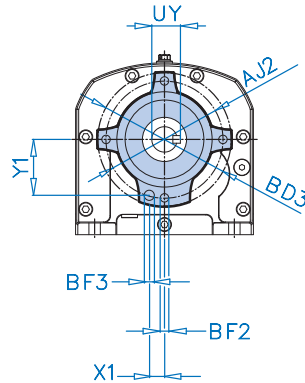
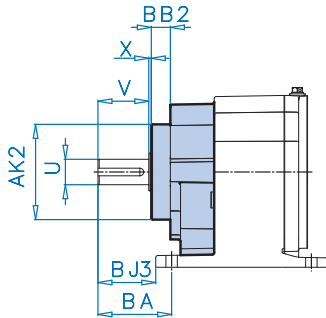
	BD3	AK3	AJ3	BB3	BF2	BF3	X1	Y1	U	UY	KEY	V	X
SK 071.1Z	3.07	2.205	2.68	0.51	M6 x 0.67	-	0.35	1.29	0.500	0.560	1/8 x 1/8 x 7/8	1.12	0.08
SK 072.1Z	3.07	2.205	2.68	0.49	M6 x 0.47	∅ 0.20 x 0.63	0.35	1.29	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
SK 171.1Z	4.17	2.953	3.62	0.59	M8 x 0.79	-	0.39	1.77	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
SK 172.1Z	4.33	2.953	3.62	0.59	M8 x 0.71	∅ 0.32 x 0.57	0.47	1.73	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
SK371.1Z	4.17	2.953	3.62	0.59	M8 x 0.79	-	0.39	1.77	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	0.08
SK 372.1Z SK 373.1Z	5.12	3.740	4.33	0.79	M8 x 0.63	∅ 0.24 x 0.79	0.41	2.13	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	0.12
SK 571.1Z	5.12	3.740	4.33	0.79	M8 x 0.71	-	0.41	2.13	1.250	1.367	5/16 x 5/16 x 1-5/8	2.36	0.12
SK 572.1Z* SK 573.1Z*	6.30	4.724	5.71	0.55	M10 x 0.67	∅ 0.32 x 0.79	0.67	2.76	1.250	1.367	5/16 x 5/16 x2-1/8	2.36	0.16
SK 572.1Z* SK 573.1Z*	6.30	4.724	5.71	0.55	M10 x 0.67	∅ 0.32 x 0.79	0.67	2.76	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 672.1Z SK 673.1Z	7.09	5.315	6.30	0.55	M10 x 0.79	∅ 0.39 x 0.79	0.79	3.05	1.375	1.518	5/16 x 5/16 x2-1/8	2.75	0.16
SK 771.1Z	5.12	3.740	4.33	0.79	M8 x 0.71	-	0.41	2.13	1.625	1.518	3/8 x 3/8 x 2-1/4	3.15	0.12
SK 772.1Z SK 773.1Z	5.98	4.13	5.12	0.63	M12 x 0.79	∅ 0.47 x 0.79	0.79	2.44	1.625	1.796	3/8 x 3/8 x 2-1/4	3.15	0.16
SK 872.1Z SK 873.1Z	7.64	5.31	6.50	0.79	M12 x 0.79	∅ 0.47 x 1.18	0.98	3.11	2.125	2.350	1/2 x 1/2 x 2-5/8	3.94	0.20
SK 972.1Z SK 973.1Z	9.29	6.61	7.87	0.98	M16 x 1.18	∅ 0.63 x 1.38	1.10	3.78	2.375	2.651	5/8 x 5/8 x 3-1/4	4.72	0.24

* When ordering this size unit with specific flange or shaft options the OHL information is derated from what is specified. ⇨ 15

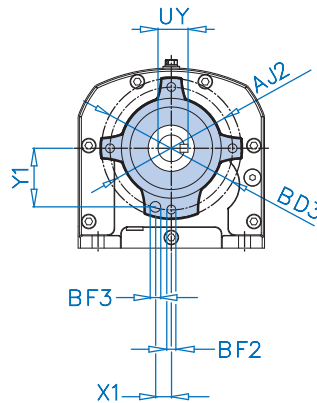
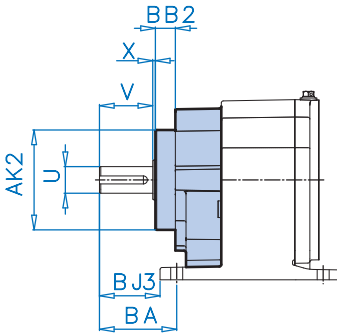
Foot + B14 Flange [XZ] Dimensions



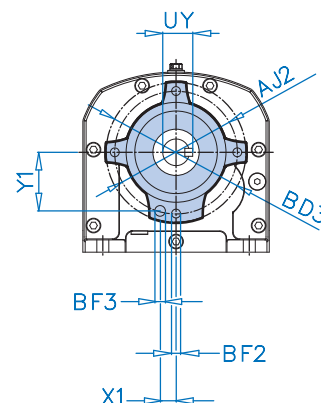
SK 071.1-771.1XZ (Single Stage)



SK 072.1-673.1XZ (2&3 Stage)



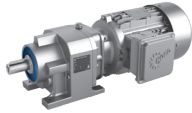
SK 772.1-973.1XZ (2&3 Stage)



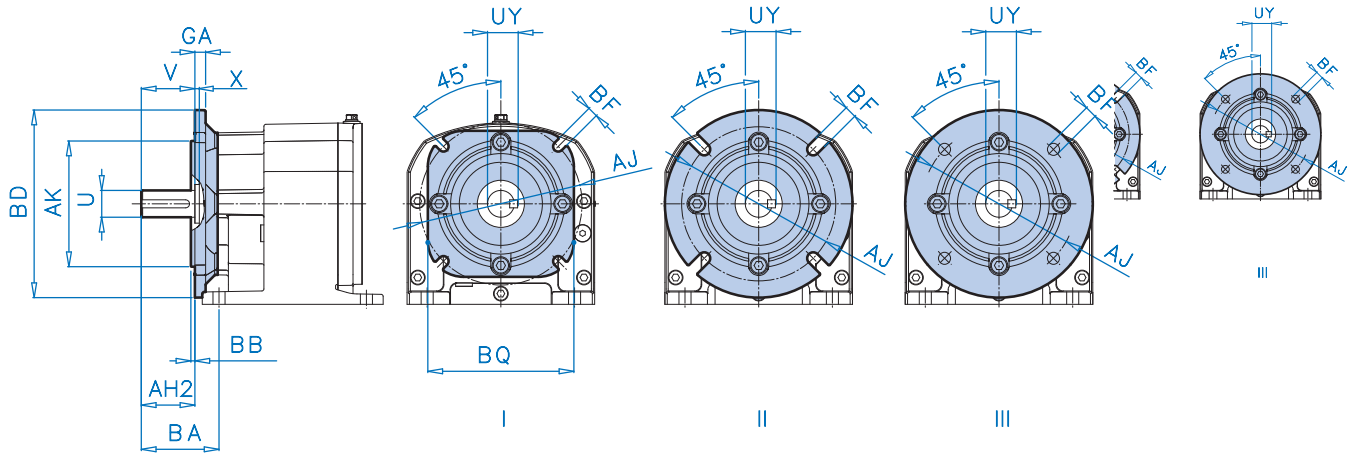
Dimensions

	BD3	AK2	AJ2	BB2	BF2	BF3	X1	Y1	BA	BJ3	U	UY	KEY	V	X
SK 071.1XZ	3.07	2.205	2.68	0.51	M6 x 0.67	-	0.35	1.29	2.27	1.95	0.500	0.560	1/8 x 1/8 x 7/8	1.12	0.08
SK 072.1XZ	3.35	2.205	2.68	0.49	M6 x 0.47	∅ 0.20 x 0.63	0.35	1.29	1.89	1.61	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
SK 171.1XZ	4.17	2.953	3.62	0.59	M8 x 0.79	-	0.39	1.77	2.67	2.30	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
SK 172.1XZ	4.33	2.953	3.62	0.59	M8 x 0.71	∅ 0.32 x 0.57	0.47	1.73	2.28	1.79	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
SK 371.1XZ	4.17	2.953	3.62	0.59	M8 x 0.79	-	0.39	1.77	3.07	2.66	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	0.08
SK 372.1XZ	5.12	3.740	4.33	0.79	M8 x 0.63	∅ 0.24 x 0.79	0.41	2.13	2.95	2.36	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	0.12
SK 373.1XZ	5.12	3.740	4.33	0.79	M8 x 0.63	∅ 0.24 x 0.79	0.41	2.13	2.95	2.36	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	0.12
SK 571.1XZ	5.12	3.740	4.33	0.79	M8 x 0.71	-	0.41	2.13	3.82	3.35	1.250	1.367	5/16 x 5/16 x 1-5/8	2.36	0.12
SK 572.1XZ*	6.30	4.724	5.71	0.55	M10 x 0.67	∅ 0.32 x 0.79	0.67	2.76	3.94	3.25	1.250	1.367	1/4 x 1/4 x 1-5/8	2.36	0.16
SK 573.1XZ*	6.30	4.724	5.71	0.55	M10 x 0.67	∅ 0.32 x 0.79	0.67	2.76	3.94	3.25	1.250	1.367	1/4 x 1/4 x 1-5/8	2.36	0.16
SK 572.1XZ*	6.30	4.724	5.71	0.55	M10 x 0.67	∅ 0.32 x 0.79	0.67	2.76	3.94	3.25	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 573.1XZ*	6.30	4.724	5.71	0.55	M10 x 0.67	∅ 0.32 x 0.79	0.67	2.76	3.94	3.25	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 672.1XZ	7.09	5.315	6.30	0.55	M10 x 0.79	∅ 0.39 x 0.79	0.79	3.05	3.94	3.15	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 673.1XZ	7.09	5.315	6.30	0.55	M10 x 0.79	∅ 0.39 x 0.79	0.79	3.05	3.94	3.15	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 771.1XZ	5.12	3.740	4.33	0.79	M8 x 0.71	-	0.41	2.13	4.72	4.17	1.625	1.518	3/8 x 3/8 x 2-1/4	3.15	0.12
SK 772.1XZ	6.85	4.016	5.12	0.47	M12 x 0.79	∅ 0.47 x 0.79	0.79	2.44	4.53	3.74	1.625	1.796	3/8 x 3/8 x 2-1/4	3.15	0.16
SK 773.1XZ	6.85	4.016	5.12	0.47	M12 x 0.79	∅ 0.47 x 0.79	0.79	2.44	4.53	3.74	1.625	1.796	3/8 x 3/8 x 2-1/4	3.15	0.16
SK 872.1XZ	8.27	5.118	6.50	0.47	M12 x 0.79	∅ 0.47 x 1.18	0.98	3.11	5.51	4.53	2.125	2.350	1/2 x 1/2 x 2-5/8	3.94	0.20
SK 873.1XZ	8.27	5.118	6.50	0.47	M12 x 0.79	∅ 0.47 x 1.18	0.98	3.11	5.51	4.53	2.125	2.350	1/2 x 1/2 x 2-5/8	3.94	0.20
SK 972.1XZ	10.24	6.102	7.87	0.59	M16 x 0.98	∅ 0.63 x 1.38	1.10	3.78	6.30	5.22	2.375	2.651	5/8 x 5/8 x 3-1/4	4.72	0.24
SK 973.1XZ	10.24	6.102	7.87	0.59	M16 x 0.98	∅ 0.63 x 1.38	1.10	3.78	6.30	5.22	2.375	2.651	5/8 x 5/8 x 3-1/4	4.72	0.24

* When ordering this size unit with specific flange or shaft options the OHL information is derated from what is specified. ⇒ 15



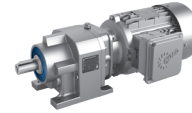
SK 071.1-973.1XF



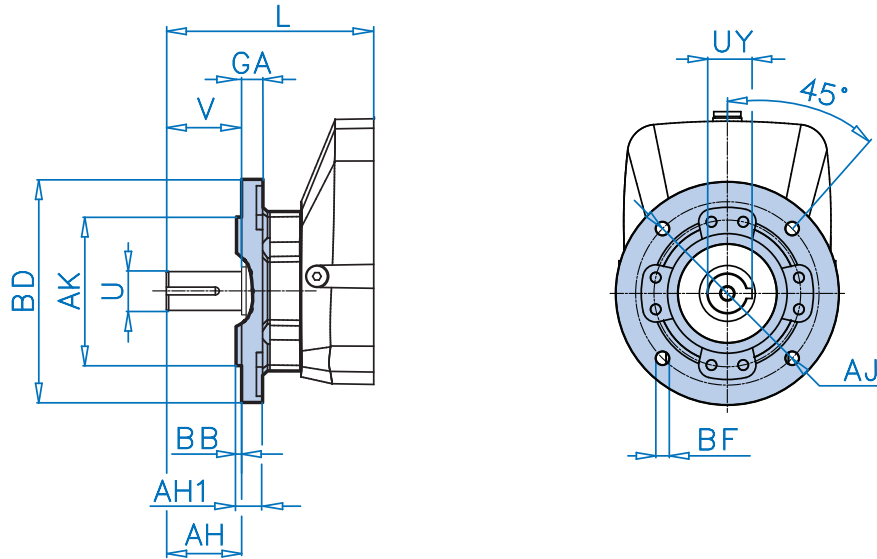
	Pic	BD	AK	BB	AJ	GA	BQ	BF	BA	AH2	U	UY	KEY	V	X
SK 071.1XF	IV	4.72	3.150	0.12	3.94	0.31	-	0.26							
	IV	5.51	3.740	0.12	4.53	0.31	-	0.35	2.27	1.95	0.500	0.560	1/8 x 1/8 x 7/8	1.12	0.08
	IV	6.30	4.331	0.14	5.12	0.39	-	0.35							
SK 072.1XF	I	4.72	3.150	0.12	3.94	0.28	3.54	0.26	1.89	1.57	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
SK 171.1XF	IV	4.72	3.150	0.12	3.94	0.31	-	0.26							
	IV	5.51	3.740	0.12	4.53	0.31	-	0.35	2.67	2.30	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
	IV	6.30	4.331	0.14	5.12	0.39	-	0.35							
	IV	7.87	5.118	0.14	6.50	0.47	-	0.43							
SK 172.1XF	II	4.72	3.150	0.12	3.94	0.31	-	0.26	2.28	1.57	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	0.08
		5.51	3.740	0.12	4.53	0.31	-	0.35	2.28	1.57					
SK 371.1XF	IV	4.72	3.150	0.12	3.94	0.31	-	0.26							
	IV	5.51	3.740	0.12	4.53	0.31	-	0.35	3.07	2.66	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	0.08
	IV	6.30	4.331	0.14	5.12	0.39	-	0.35							
	IV	7.87	5.118	0.14	6.50	0.47	-	0.43							
SK 372.1XF	II	5.51	3.740	0.12	4.53	0.35	-	0.34	2.95	1.97	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	0.12
SK 373.1XF	II	6.30	4.331	0.14	5.12	0.39	-	0.34	2.95	1.97					
SK 571.1XF	IV	6.30	4.331	0.14	5.12	0.39	-	0.35							
	IV	7.87	5.118	0.14	6.50	0.47	-	0.43	3.82	3.35	1.250	1.367	1/4 x 1/4 x 1-5/8	2.36	0.12
	IV	9.84	7.087	0.14	8.47	0.59	-	0.53							
SK 572.1XF*	II	7.87	5.118	0.14	6.50	0.47	-	0.43	3.94	2.76	1.250	1.367	1/4 x 1/4 x 1-5/8	2.36	0.16
SK 573.1XF*	II	7.87	5.118	0.14	6.50	0.47	-	0.43	3.94	2.76	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 572.1XF*	II	7.87	5.118	0.14	6.50	0.47	-	0.43	3.94	2.76	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 573.1XF*	II	7.87	5.118	0.14	6.50	0.47	-	0.43	3.94	2.76	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 672.1XF	III	7.87	5.118	0.16	6.50	0.47	-	0.43	3.46	2.76	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 673.1XF	III	7.87	5.118	0.16	6.50	0.47	-	0.43	3.46	2.76	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	0.16
SK 771.1XF	IV	6.30	4.331	0.14	5.12	0.39	-	0.35							
	IV	7.87	5.118	0.14	6.50	0.47	-	0.43	4.72	4.17	1.625	1.518	3/8 x 3/8 x 2-1/4	3.15	0.12
	IV	9.84	7.087	0.14	8.47	0.59	-	0.53							
SK 772.1XF	II	7.87	5.12	0.16	6.50	0.47	-	0.43	4.53	3.15	1.625	1.796	3/8 x 3/8 x 2-1/4	3.15	0.16
SK 773.1XF	II	9.84	7.09	0.16	8.46	0.59	-	0.53	4.53	3.15	1.625	1.796	3/8 x 3/8 x 2-1/4	3.15	0.16
SK 872.1XF	II	9.84	7.09	0.16	8.46	0.63	-	0.53	5.51	3.94	2.125	2.350	1/2 x 1/2 x 2-5/8	3.94	0.20
SK 873.1XF	II	11.81	9.06	0.16	10.43	0.79	-	0.53	5.51	3.94	2.125	2.350	1/2 x 1/2 x 2-5/8	3.94	0.20
SK 972.1XF	II	11.81	9.06	0.16	10.43	0.79	-	0.53	6.30	4.72	2.375	2.651	5/8 x 5/8 x 3-1/4	4.72	0.24
SK 973.1XF	II	13.78	9.84	0.20	11.81	0.79	-	0.69	6.30	4.72	2.375	2.651	5/8 x 5/8 x 3-1/4	4.72	0.24

* When ordering this size unit with specific flange or shaft options the OHL information is derated from what is specified. ⇨ 15

NEMA Output Flange & Shaft Dimensions

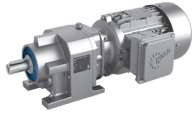


SK 071.1-771.1

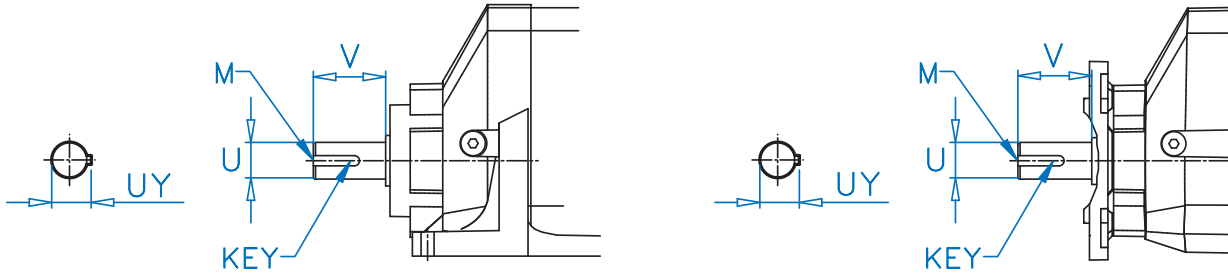


Dimensions

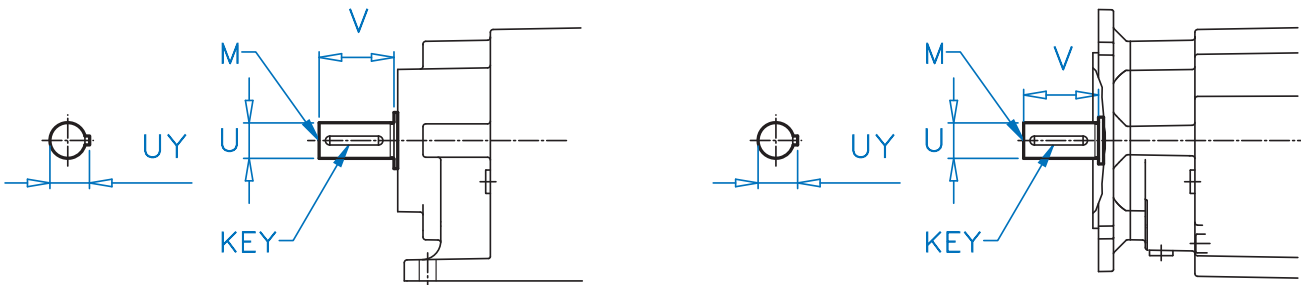
Type	NEMA	L	BD	AK	BB	AJ	GA	BF	AH	AH1	U	UY	KEY	V	TAP
SK 071.1	N56C	5.13	6.50	4.50	0.125	5.875	0.51	3/8" - 16	2.063	0.59	0.625	0.709	3/16 x 3/16 x 1-1/2	1.875	1/4" - 20
SK 171.1	N56C	5.15	6.50	4.50	0.125	5.875	0.59	3/8" - 16	2.063	0.79	0.625	0.709	3/16 x 3/16 x 1-1/2	1.875	1/4" - 20
	N140TC	5.22	6.50	4.50	0.125	5.875	0.59	3/8" - 16	2.125	0.79	0.875	0.964	3/16 x 3/16 x 1-5/8	2.250	1/4" - 20
SK 371.1	N140TC	6.17	6.50	4.50	0.125	5.875	0.59	3/8" - 16	2.125	0.79	0.875	0.964	3/16 x 3/16 x 1-5/8	2.250	1/4" - 20
	N180TC	6.79	9.00	8.50	0.250	7.250	0.84	1/2" - 13	2.625	0.92	1.125	1.241	1/4 x 1/4 x 2	2.750	1/2" - 13
SK 571.1	N180TC	7.09	9.00	8.50	0.250	7.250	1.037	1/2" - 13	2.625	1.16	1.125	1.241	1/4 x 1/4 x 2	2.750	1/2" - 13
	N210TC	7.59	9.00	8.50	0.250	7.250	1.037	1/2" - 13	3.125	1.16	1.375	1.518	5/16 x 5/16 x 2-3/4	3.375	5/8" - 11
SK 771.1	N210TC	8.53	9.00	8.50	0.250	7.250	1.037	1/2" - 13	3.125	1.16	1.375	1.518	5/16 x 5/16 x 2-3/4	3.375	5/8" - 11
	N250TC	9.04	10.00	8.50	0.250	7.250	1.037	1/2" - 13	3.750	1.16	1.625	1.796	3/8 x 3/8 x 3	4.000	5/8" - 11



SK 071.1-771.1 (Single Stage) Inch



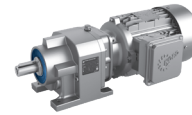
SK 072.1-973.1 (2&3 Stage) Inch



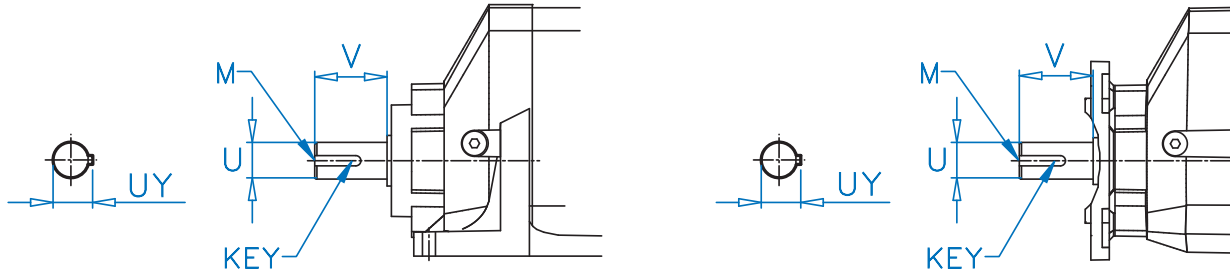
	U	UY	KEY	V	M Tap
SK 071.1	0.500	0.560	1/8 x 1/8 x 1-7/8	1.12	1/4-20 x 0.59
SK 072.1	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	1/4-20 x 0.59
SK 171.1	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	1/4-20 x 0.59
SK 172.1	0.750	0.837	3/16 x 3/16 x 1-1/4	1.57	1/4-20 x 0.59
SK 371.1	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	3/8-16 x 0.87
SK 372.1	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	3/8-16 x 0.87
SK 373.1	1.000	1.114	1/4 x 1/4 x 1-1/4	1.97	3/8-16 x 0.87
SK 571.1	1.250	1.367	1/4 x 1/4 x 1-5/8	2.36	1/2-13 x 1.10
SK 572.1*	1.250	1.367	1/4 x 1/4 x 1-5/8	2.36	1/2-13 x 1.10
SK 573.1*	1.250	1.367	1/4 x 1/4 x 1-5/8	2.36	1/2-13 x 1.10
SK 572.1*	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	5/8-11 x 1.42
SK 573.1*	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	5/8-11 x 1.42
SK 672.1	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	5/8-11 x 1.42
SK 673.1	1.375	1.518	5/16 x 5/16 x 2-1/8	2.75	5/8-11 x 1.42
SK 771.1	1.625	1.796	3/8 x 3/8 x 2-1/4	3.15	5/8-11 x 1.42
SK 772.1	1.625	1.796	3/8 x 3/8 x 2-1/4	3.15	5/8-11 x 1.42
SK 773.1	1.625	1.796	3/8 x 3/8 x 2-1/4	3.15	5/8-11 x 1.42
SK 872.1	2.125	2.350	1/2 x 1/2 x 2-5/8	3.94	3/4-10 x 1.73
SK 873.1	2.125	2.350	1/2 x 1/2 x 2-5/8	3.94	3/4-10 x 1.73
SK 972.1	2.375	2.651	5/8 x 5/8 x 3-1/4	4.72	3/4-10 x 1.73
SK 973.1	2.375	2.651	5/8 x 5/8 x 3-1/4	4.72	3/4-10 x 1.73

* When ordering this size unit with specific flange or shaft options the OHL information is derated from what is specified. ⇨ 15

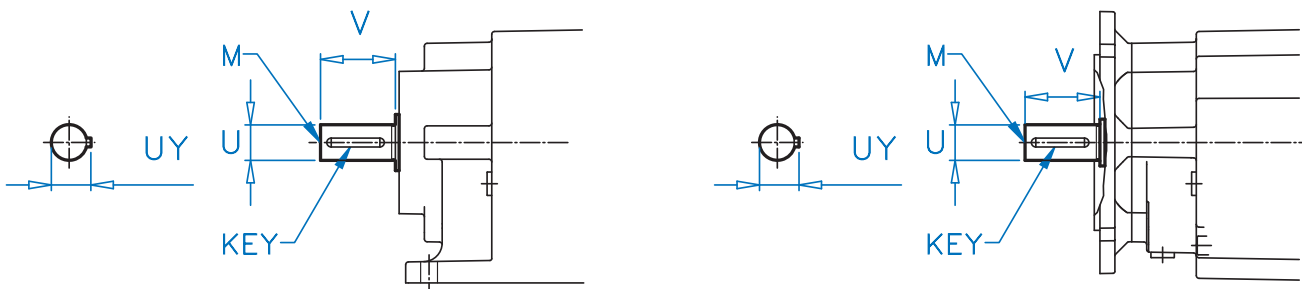
Output Shaft Dimensions [mm]



SK 071.1-771.1 (Single Stage) mm



SK 072.1-973.1 (2&3 Stage) mm



Dimensions

Type	U	UY	KEY	V	M Tap
SK 071.1	15	17.0	5 x 5 x 25	30	M5 x 12.5
SK 072.1	20	22.5	6 x 6 x 32	40	M6 x 16
SK 171.1	20	22.5	6 x 6 x 32	40	M6 x 16
SK 172.1	20	22.5	6 x 6 x 32	40	M6 x 16
SK 371.1	25	28.0	8 x 7 x 40	50	M10 x 22
SK 372.1	25	28.0	8 x 7 x 40	50	M10 x 22
SK 373.1	25	28.0	8 x 7 x 40	50	M10 x 22
SK 571.1	30	33.0	8 x 7 x 50	60	M10 x 22
SK 572.1*	30	33.0	8 x 7 x 50	60	M10 x 22
SK 573.1*	30	33.0	8 x 7 x 50	60	M10 x 22
SK 572.1*	35	38.0	10 x 8 x 60	70	M12 x 28
SK 573.1*	35	38.0	10 x 8 x 60	70	M12 x 28
SK 672.1	35	38.0	10 x 8 x 60	70	M12 x 28
SK 673.1	35	38.0	10 x 8 x 60	70	M12 x 28
SK 771.1	40	43.0	12 x 8 x 70	80	M16 x 36
SK 772.1	40	43.0	12 x 8 x 70	80	M16 x 36
SK 773.1	40	43.0	12 x 8 x 70	80	M16 x 36
SK 872.1	50	53.5	14 x 9 x 80	100	M16 x 36
SK 873.1	50	53.5	14 x 9 x 80	100	M16 x 36
SK 972.1	60	64.0	18 x 11 x 100	120	M20 x 42
SK 973.1	60	64.0	18 x 11 x 100	120	M20 x 42

* When ordering this size unit with specific flange or shaft options the OHL information is derated from what is specified. ⇨ 15



DRIVESYSTEMS

Motors

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Standards

All motors are in accordance with existing standards and regulations:

NEMA MG 1 - Motors and Generators:

- Electrical performance
- Motors for operation on variable AC vector drive

UL 1004 – Electric Motors

CSA C22.2 No. 100-04 - Motors and Generators:

Industrial Products IEC 60034 - parts 1, 5, 6, 8, 9, 11, 12 and 14.








- Part 1 – General rules
- Part 5 – Types of enclosures
- Part 6 – Types of cooling
- Part 8 – Terminal lead designations and sense of rotation
- Part 9 – Noise limits
- Part 11 – Integrated thermal protection
- Part 12 – Starting Performance
- Part 14 – Mechanical vibration

Inverter/Vector Duty

NORD single-speed motors are Inverter/Vector Duty. The construction of the NORD motors insulating system takes into account the non-sinusoidal wave forms produced by variable frequency drives. NORD uses high grade insulating components and extra first turn protection as well as double coated wire to ensure long service life when connected to AC vector drives. NORD motors can produce full torque at zero speed if properly sized, selected and controlled.



IEC 60038 – Standard voltages

	<p>NORD motors carry the CE mark in accordance with the Low Voltage Directive and, if installed properly, the Electromagnetic Compatibility Directive (EMC). The CE mark is required for installation in European Union (EU) states.</p>
	<p>Many NORD motors from frame size 63 to 315 are an Underwriters Laboratories Recognized component per UL standard 1004.</p> <ul style="list-style-type: none"> ■ File number E191510
	<p>The Canadian Standards Association CUS mark indicates that CSA has tested and approved NORD motors according to both US and Canadian standards. It is equivalent to the Underwriters Laboratories RU recognition mark (UL standard 1004) and the CSA mark according to CSA Standard C22.2 No. 100-04</p> <ul style="list-style-type: none"> ■ File number LR112560
	<p>NORD Premium Efficient motors up to frame 180 have been evaluated by the United States Department of Energy and recieved a Certificate of Compliance to certify the efficiency ratings. The certificate of compliance is CC 092B.</p>
	<p>NORD energy efficient motors carry the CSA energy efficiency verification mark. This mark ensures that CSA has verified that NORD motors are designed and manufactured to meet energy efficiency requirements number EEV112560.</p>
	<p>China Compulsory Certification Nr.: 200 701 040 125 842 9</p>
	<p>GOST® certificate for the import of motors into Russia.</p>



Global Standards and Directives

Energy savings, lowering operational costs, and protecting the environment are all important to our future. That is precisely why NORD supports global efforts to increase energy efficiency and minimize the human impact on our environment.

NORD's energy-saving motors and brake motors include premium efficient designs and optimal designs for intermittent duty applications. All NORD motors are inverter-duty that obtain improved dynamic performance and increased system efficiencies when paired with our high performance AC-drives.

NORD is able to provide motors that satisfy the latest global energy efficiency directives. Energy efficiency overviews by region may be found on the NORD website by clicking on "Products" then "Motor Efficiency Classes".

The screenshot shows the NORD website's 'Motor Efficiency Classes' page. The main heading is 'NATIONAL REGULATIONS'. Below it, a text block states: 'The implementation of the international standard IEC 60034-30-1:2014 will be carried out in different ways.' A world map is displayed with various countries highlighted and small icons representing each. To the right of the map is a 'SALES CONTACT' button. Below the map, a list of countries is provided with links to PDF documents:

- European Union | PDF (152 KB)
- Switzerland | PDF (140 KB)
- USA | PDF (280 KB)
- Canada | PDF (345 KB)
- Mexico | PDF (222 KB)
- Brasil | PDF (189 KB)
- Australia | PDF (105 KB)
- China | PDF (117 KB)
- South Korea | PDF (171 KB)

This catalogue has been produced with the greatest care on the most current legislation. However, NORD cannot accept liability for technical changes in regards to global requirements.



Standard Motor Construction

Our motors are an important part of our ability to provide a high quality, competitive, and complete drive system. NORD motors are designed for across-the-line or inverter/vector duty operation. NORD motors are constructed with superior insulating methods to provide excellent moisture protection, low temperature rise, and voltage spike resistance in accordance with NEMA MG1. Low rotor inertia and high starting torque allow peak performance in difficult applications involving high start/stop cycling rates or rapid acceleration/deceleration. Standard motors offer protection from the elements with many standard and optional design features.

NORD offers a variety of high performance motors including:

- NORD continuous duty, premium efficient motors (1–250 HP) satisfy global energy efficiency mandates, NORD’s premium efficient motors provide maximum energy savings, offer low rotor inertia, provide quick starts & stops, & handle high cycle rates in dynamic applications.
- NORD 60 minute duty motors (1 - 40 HP) motors are labeled “60 MIN” duty & are perfectly suited for intermittent or time limited applications. These motors offer higher cycling capacity, lower motor rotor inertia, & lower energy consumption while starting or stopping, as compared to the NORD Premium Efficient motors. NORD can also provide motors that satisfy other periodic duty or intermittent duty ratings.
- NORD continuous duty, standard efficient motors (0.16 – 0.75 HP) satisfy global energy efficiency mandates. Like 60 minute duty motors, these motors offer higher cycling capacity, lower motor rotor inertia, and lower energy consumption while starting or stopping, as compared to the NORD Premium Efficient motors.

Some of the standard design benefits include:

- Shaft lip seals on both ends of the motor shafts.
- Stator to endbell connections sealed to exclude moisture.
- Double coated magnetic wire insulation.
- Inverter/vector duty insulation system conforms to NEMA MG1, section 31.4 voltage spikes.
- Moisture resistant varnish dipped windings with improved varnish materials.
- Inorganic insulating components for tropical protection.
- Conduit box sealed with gaskets.
- Corrosion resistant alloy materials.
- Threaded cable entry holes.

Asynchronous Low Voltage Motors

The motors listed in this catalogue are low voltage asynchronous motors, which can be used as gear motors or stand-alone motors.

Non-Sparking Fan

The standard NORD motor fan is a non-sparking design. The fan will also provide proper airflow in either direction of rotation.

Terminal Block

Each NORD motor uses a terminal block, which is a superior method of wire termination when compared to pigtail leads. A terminal block ensures long-term reliability of the power connections.

Inverter/Vector Duty – Voltage Spikes

All NORD motors are constructed with an insulating system designed to withstand the repeated voltage spikes generated by modern AC vector drives. The insulation system withstands the ratings in conformance with NEMA MG1 Section 31.4.4.2 Voltage Spikes.

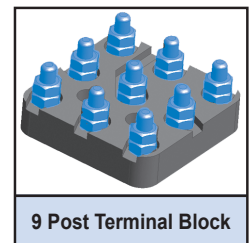
$$V_{\text{peak}} \leq 3.1 \times V_{\text{rated}} \text{ with a Rise time } \geq 0.1 \mu\text{s}.$$



Motor Production



Motor Production



9 Post Terminal Block



Insulation System

Insulation System

The NORD motor insulation system is designed to provide a superior degree of protection. NORD utilizes the following insulation components:

- Magnet wire – double coated insulation
- Varnish dip impregnation
- Slot liners
- Phase paper & separators
- Top sticks
- Wire sleeve connectors

Other motor manufacturers eliminate some of these insulating components for cost reduction which leads to less reliability.

Tropical Protection (Anti-fungal)

As a standard the NORD motor insulation system is tropically protected. The insulating and construction components are made of inorganic materials that resist fungal growth.

Low Inertia

The motor inertia in all NORD motors is extremely low which allows for an increased dynamic motor control capability. Low motor inertia is a significant advantage when using NORD motors with AC vector drives or controllers. NORD motors have the ability to cycle more frequently and require less mechanical energy to start than the standard NEMA frame motors. This leaves more energy to start the load.

High Starting Torque

NORD motors produce a higher starting torque than what is required by NEMA standards. This is achieved through improved motor winding, rotor design and construction.

Service Factor

NORD standard motors that are rated 230/460V-60Hz and 332/575V-60Hz have a service factor of 1.15. All other motors have a service factor of 1.0 or as noted in the motor rating tables beginning on page 45.

Poles / speeds

NORD offers a variety of single and two speed motors in addition to the standard 4 pole motor. NORD single speed motors are inverter/vector duty rated, however, it is not recommended to run a NORD two speed motor with an AC vector drive.

Number of Poles	Synchronous Speed at 60Hz	Synchronous Speed at 50Hz
Single Speed Motors		
4	1800 rpm	1500 rpm
2	3600 rpm	3000 rpm
6	1200 rpm	1000 rpm
Two Speed Motors		
4-2 - single winding	1800/3600 rpm	1500/3000 rpm
8-2 - dual winding	900/3600 rpm	750/3000 rpm

Other speeds available upon request.

Voltage and Frequency Variation



Voltage and frequency variations are based upon the assumption that the nameplate horsepower will not be exceeded and that the motor temperature may increase. Standard allowable deviations are based upon the type of motor labeling.

Poles	Efficiency	50 Hz NORD Motors			60 Hz NORD Motors		
		Motor Size Range	Power Range	Nominal Voltage	Motor Size Range	Power Range	Nominal Voltage
4	Standard (IE1)	63 S/4 - 100 L/4	0.12 - 2.2 kW	230/400 V Δ/Y	63 S/4 - 200 LX/4	0.16 - 40 Hp	230/460 V YY/Y
		100 LA/4 - 200 LX/4	3 - 30 kW	400/690 V Δ/Y			332/575 V Δ/Y
	Premium * Efficient (IE3)	80 LP/4 - 100 LP/4	0.75 - 2.2 kW	230/400 V Δ/Y	80 LP/4 - 225SP/4	1 - 50 HP	230/460 V YY/Y or 460 Δ
		100 AP/4 - 180 LP/4	3 - 22 kW	400/690 V Δ/Y			332/575 V Δ/Y
4-2	Standard (IE1)	63 S/4-2 - 160L/4-2	0.10/0.15 - 13/17 kW	400 V Δ/YY	63 S/4-2 - 132 M/4-2	0.13/0.20 - 8.7/10.7 HP	230V or 460V or 575V Δ/YY
8-2		71 S/8-2 WU - 132 M/8-2 WU	0.045/0.22 - 1.4/5.5 kW	400 V Y/Y	71 S/8-2 WU - 132 M/8/2 WU	0.06/0.3 - 1.9/7.4 HP	230V or 460V or 575V Y/Y

NEMA and CSA Labeled Motors

Variations are based upon the nominal utilization voltage, and not the service (supply) voltage as per ANSI C84.1. Voltage and frequency tolerances follow the guidelines set forth in NEMA MG-1.

Service Voltages	Utilization Voltages	Voltage Variation	Frequency Variation	Voltage/Frequency Variation
120V	115V	+/- 10%	+/- 5%	+/- 5%
208V	200V			
240V	230V			
480V	460V			
600V	575V			

50Hz CE Labeled Motors

Standard NORD motors are designed in accordance with IEC 60034-1, It is common practice to display the rated voltage on the motor nameplate. Alternatively, the allowable voltage range may be displayed on the motor nameplate. Allowable voltage and frequency variations are as specified in the table below:

Motor Voltage	Voltage Tolerance	Allowable Voltage Range	Frequency Variation
230/400V	+/- 5%	220-240 / 380-420V	+/- 2%
400/690V	+/- 5%	380-420 / 660-725V	+/- 2%

Voltage harmonization was introduced to the European Union in 1983, as part of IEC 60038 (formerly IEC 38). From 1995-2008 a transition period allowed motors to be labeled with the “harmonized voltage” however a reduced allowable voltage tolerance was permitted by the IEC 60038 standard as displayed in the table below:

Previous Motor Voltage	Harmonized Motor Voltage	Voltage Tolerance
220/380V	230/400V	+6 / -10%
240/415V	230/400V	+10 / -6%
380/660V	400/690V	+6 / -10%

US and Canadian Standard (CUS)

CUS motor construction defines that NORD motors are constructed in accordance to UL 1004 (electric motors) and CSA C22.2 No. 100-04 (motors and generators) guidelines. This option is standard for 208, 230, 460, and 575 Volt operation at 60 Hz.

Motors nameplated with the CUS option will be marked  and  indicating that the Underwriters Laboratories and CSA have tested and approved NORD motors according to both US and Canadian standards.



Increased Ambient Temperature or Elevation

Standard NORD motor windings are constructed using Class F insulating materials. Motors are designed to operate at ambient temperatures up to 40 °C (104° F) and elevations up to 1000 m ASL (3300 ft ASL) without changing the motor's allowable input power rating (P_n). For a standard NORD motor the maximum allowable temperature rise is 105 °C (221 °F) and the highest permissible winding temperature is 155 °C (311 °F). For motors operating at higher ambient temperatures or elevations, the motor's allowable input power rating (P_n) must be de-rated or reduced by the factor displayed in the table below.

Standard NORD Motors Rated for 40°C Ambient

Elevation		104 °F	113 °F	122 °F	131 °F	140 °F
ft ASL	m ASL	40 °C	45 °C	50 °C	55 °C	60 °C
3300	1000	100%	96%	92%	87%	82%
4900	1500	97%	93%	89%	84%	80%
6600	2000	94%	90%	86%	82%	77%
8200	2500	90%	86%	83%	78%	74%
9800	3000	86%	83%	79%	75%	71%
11500	3500	83%	80%	76%	72%	68%
13100	4000	80%	77%	74%	70%	66%

NORD is often asked to supply motors with rated for operation through an extended ambient temperature range. Standard motors with Class F insulation can be labeled at full power for ambient temperatures between – 20 °C to 45 °C (-4 °F to 113 °F), provided the elevation does not exceed 1000 m ASL (3300 ft ASL). For motors that require labeling for extended ambient temperature conditions, the motor's allowable input power rating (P_n) must be de-rated or reduced by the factor displayed in the table below.

NORD Motors Rated For Extended Ambient Temperature Conditions Between – 20°C to 45 °C

Elevation		113 °F	122 °F	131 °F	140 °F	149 °F
ft ASL	m ASL	45 °C	50 °C	55 °C	60 °C	65 °C
3300	1000	100%	96%	91%	85%	79%
4900	1500	97%	93%	88%	82%	77%
6600	2000	94%	90%	84%	79%	74%
8200	2500	90%	85%	81%	76%	71%
9800	3000	86%	82%	78%	74%	69%
11500	3500	83%	79%	75%	71%	67%
13100	4000	80%	77%	73%	69%	65%

Allowable input power ratings can deviate for motors operated for limited time durations. In addition, values will deviate for motors used in hazardous duty environments or explosion protected areas. NORD application engineers can review unique application requirements and advise the allowable input power rating for particular motors and operating conditions. If motors are operated in ambient conditions below -20 °C (-4 °F) or above 60 °C (140 °F) special measures may be required to meet the requirements of the application. Please contact NORD in these instances.

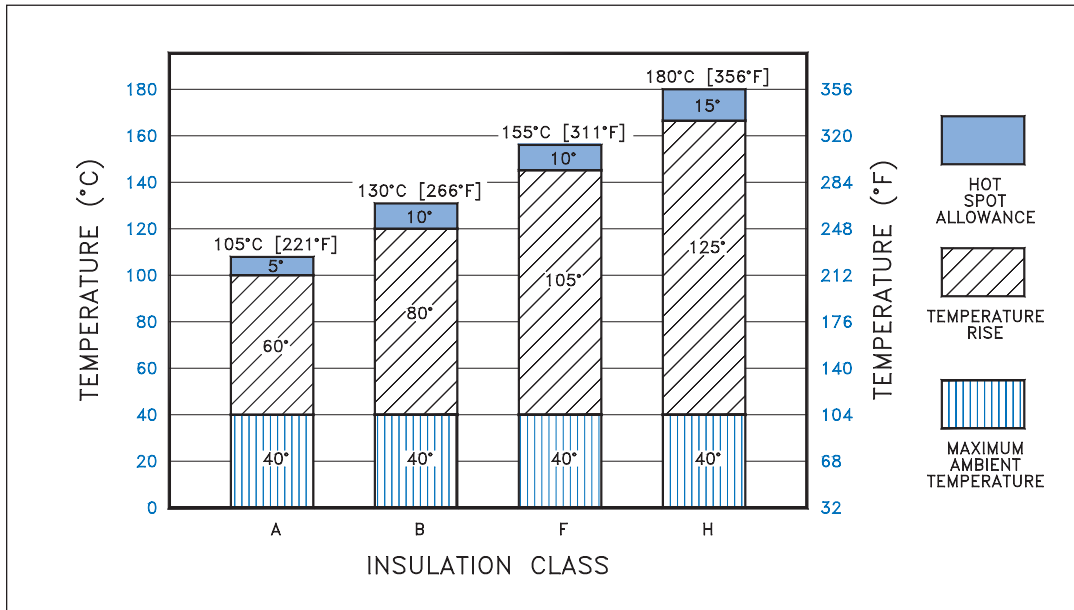
Class H Insulation

As an option, NORD motors are available with Class H insulating materials. These motors are designed to operate at ambient temperatures up to 40 °C (104° F) and elevations up 1000 m ASL (3300 ft ASL). Motors with Class H insulation may operate with a maximum temperature rise up of 125 °C (257 °F) and a permissible winding temperature of 180 °C (356 °F).



Insulation Class

NORD motors are constructed with a thermal class F insulating system. These motors are also designed for a class B temperature rise of up to 80°C. The use of class F insulation with a class B temperature rise provides increased operating life. Motors constructed with class H insulation are also available as an option.



Enclosure

The NORD standard motors are provided with Totally Enclosed Fan-Cooled (TEFC) with an IP55 enclosure rating. Other enclosures are available, including Totally Enclosed Non-Ventilated (TENV), Totally Enclosed Blower-Cooled (TEBC), and IP66.

The motor integral cooling fan provides proper air flow in either direction of rotation. The IEC cooling classification is IC 411 according to IEC 60034-6.

1st digit Foreign body protection		2nd digit Water protection	
0	No protection	0	No Protection
1	Protected against solid objects 50mm (2 in) in diameter and larger	1	Protected against dripping water
2	Protected against solid objects 12 mm (1/2 in) in diameter and larger	2	Protected against dripping water up to a 15 degree angle
3	Protected against solid objects 2.5 mm (0.1 in) in diameter and larger	3	Protection against sprayed water
4	Protected against solid objects 1 mm (0.04 in) in diameter and larger	4	Protection against splashed water
5	Protected against dust	5	Protection against water jets
6	Dust tight	6	Protection against high pressure water jets
7	--	7	Protection against intermittent submersion in water
8	--	8	Protection against continuous submersion in water



Duty Classes

The following duty types are defined in IEC 60034-1.

Duty Type	Explanation Excerpts
S1	Continuous operation at a constant load, the motor reaches thermal equilibrium
S2	Short-time operation at a constant load for a given time followed by a time of rest until the motor is completely cooled down to ambient temperature. Example: S2-10 minutes Recommended values for determination: 10, 30 min.
S3	Sequential intermittent operation, identical run and rest cycles with a constant load. Temperature equilibrium is never reached. Starting current has little effect on temperature rise. The cyclic duration factor (cdf) indicates the portion of operation time in relation to a complete duty cycle. The typical duty cycle time is 10 minutes, unless otherwise specified. Example: S3-40% Recommended values for determination: 25, 40, 60%
S6	Continuous operation with intermittent load sequential, identical cycles of running with constant load and running with no load. No rest periods. Example: S6-40% Recommended values for determination: 25, 40, 60%

Power Increasing Factor for Short-term & Intermittent Operation

Motor ratings in this catalog are based on continuous duty operation (S1). If a motor is designed for S1 duty, but is to be operated for short-time or intermittent operation it can be subjected to higher loads. The available motor power can be raised above the motor rated power by the “increasing factor” in the table below.

Duty Type		Increasing Factor
S2	Operating time	10 min
		30 min
S3	Cyclic duration factor (cdf)	25%
		40%
		60%
S6	Cyclic duration factor (cdf)	25%
		40%
		60%

Motor Rated Power = $[P_n \times \text{Increasing factor}]$





Protective Features

All NORD Motors and Speed Reducers are constructed to provide a high degree of protection against wet and severe environments. NORD motors and speed reducers are sealed against moisture ingress and use corrosion and moisture resistant components. NORD has recently made many enhancements in the motor and gear units standard construction to provide improved environmental protection. Many of the standard protection features of the NORD units are only available at an additional cost from other motor and gear drive suppliers. NORD designs all gearmotors, speed reducers and motors for installation in harsh industrial, commercial and municipal installation environments.

Motors for Indoor Operation - Option Codes

Motors for Outdoor Operation - Option Codes

	Dry Conditions	Wet or Humid Conditions		Sheltered from the Elements	Exposed to the Elements
Ambient Temp. Fluctuation	–	KB, SH	Ambient Temp. Fluctuation	KB, SH	KB, SH, KKV
Paint	–	NSD+	Paint	NSD+	NSDx3
Vertical Motor Mount 	RD	RDD	Vertical Motor Mount 	RD	RDD

Option Code Key

KB	Condensation Drain Holes - Plugged
SH	Space Heater
KKV	Terminal Box Sealed with Resin
NSD+	NORD Severe Duty Paint
NSDx3	NORD Severe Extreme Duty X3 Paint
RD	Canopy Drip Cover
RDD	Double Fan Cover



Mounting Positions

The motor mounting position helps to determine the use of specific options as well as help specify the terminal box location as well as the conduit entry location. However, unless a drip cover is used for shaft-up or shaft-down applications, drip-proof motors must be mounted in the horizontal or sidewall position to meet its enclosure definition. If considering any mounting positions that are not shown as catalog-standard options, it is critical that the customer consult with NORD prior to ordering. When mounting motors, secure the motor tightly to the mounting base of your equipment or onto to a flat and rigid surface.

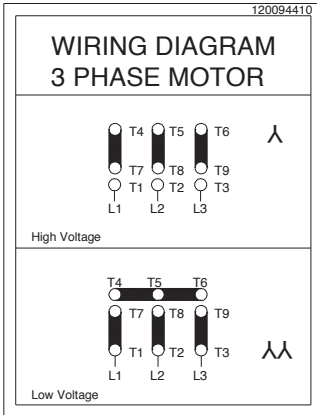
<p>Mounting Positions Footed Motors</p>	<p>Terminal Block & Conduit Entry For Footed Motors</p> <p>Hand Lever Positions For Footed Motors</p>
<p>Mounting Positions Flanged Motors</p>	<p>Terminal Block & Conduit Entry For Flanged Motors</p> <p>Hand Lever Positions For Flanged Motors</p>

Motors

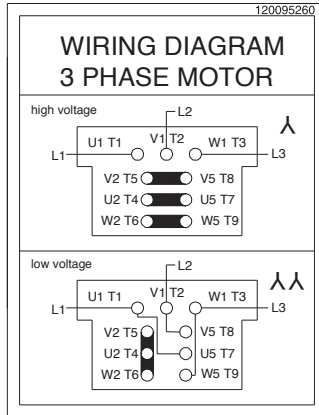


Motor Connection Diagrams

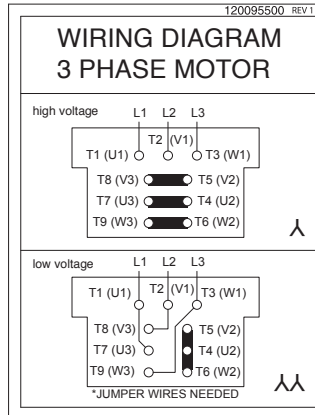
NORD Frames 63-225
230 / 460V, 60Hz, 3Ø | 200 / 400V, 50Hz, 3Ø



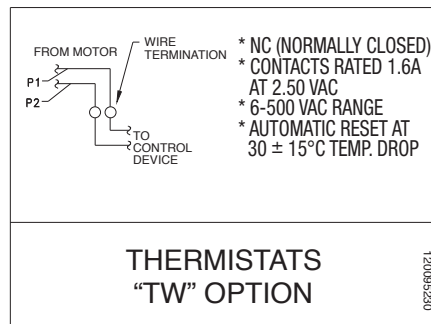
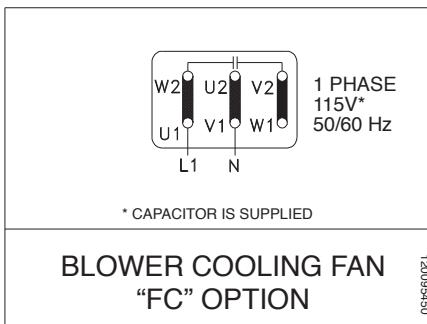
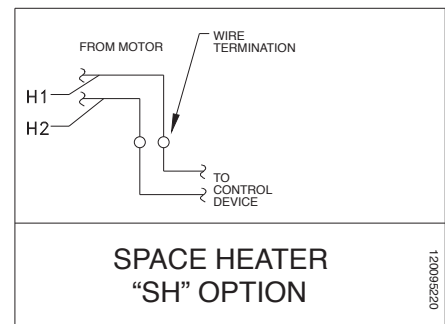
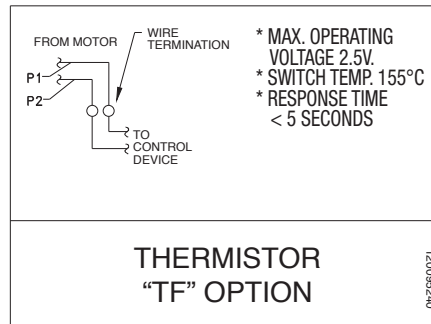
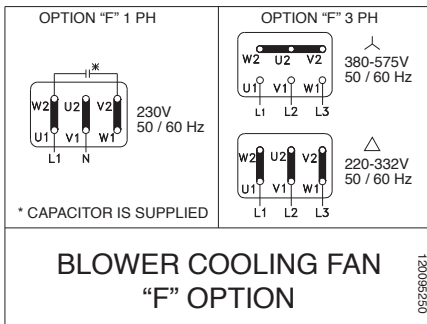
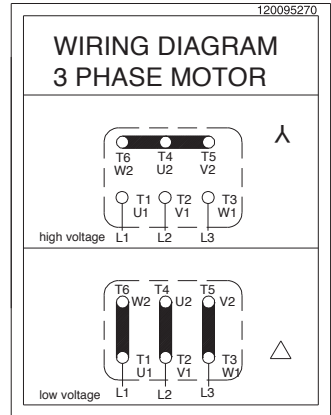
NORD Mfg by Siemens - Frames 200+
230 / 460V, 60Hz, 3Ø | 200 / 400V, 50Hz, 3Ø
190 / 380V, 60Hz, 3Ø



NORD Mfg by Siemens - Frames 200+
230 / 460V, 60Hz, 3Ø | 200 / 400V, 50Hz, 3Ø
190 / 380V, 60Hz, 3Ø



NORD Frames 63-225
460 / 800V, 60Hz, 3Ø | 230 / 400V, 50Hz, 3Ø
208 / 360V, 60Hz, 3Ø | 400 / 690V, 50Hz, 3Ø
332 / 575V, 60Hz, 3Ø





Motor Options & Construction

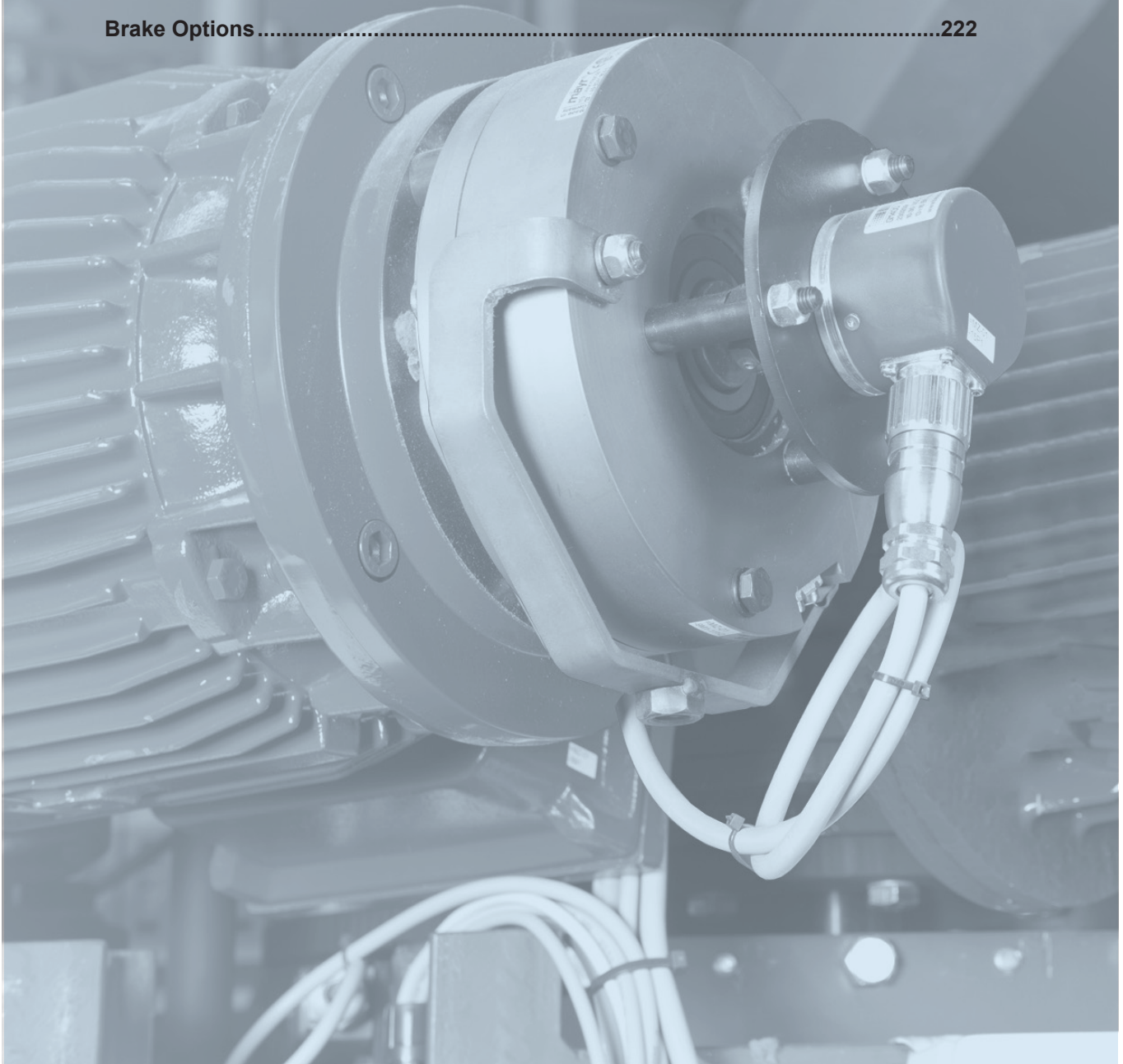
NORD motors are stocked in one of two ways. The first method is to stock a complete motor that is ready to be assembled to a gear reducer or shipped as a stand alone motor. The second method, the motor is assembled from component parts. The **M Modify** next to a motor option designates that the option can be added to a complete motor by simple modification. The **B Build** next to a motor option indicates that the motor will need to be built from component parts in order to incorporate the motor option.

Motor Options

Abbreviation	Description	M Modify	B Build
AG	Absolute Encoder		✓
AICM	Additional Insulation		✓
ECR	Single Phase Motors, 60Hz		✓
EKK	Small Terminal Box	✓	
EP	Epoxy Dipped Windings		✓
F	Blower Cooling Fan	✓	
FC	Blower Cooling Fan	✓	
HR	Hand Wheel		✓
IG...P	Incremental Encoder		✓
ISO H	Class H Insulation		✓
KB	Condensation Drain Holes - Plugged		✓
KBO	Condensation Drain Holes - Open		✓
KKV	Terminal Box Sealed with Resin		✓
MG	Magnetic Encoder		✓
MS	Quick Power Plug Connector	✓	
OL	Totally Enclosed Non-Ventilated	✓	
OL/H	Totally Enclosed Non Ventilated without Fan Cover		✓
RD	Canopy Drip Cover	✓	
RDD	Double Fan Cover	✓	
RLS	Motor Backstop		✓
RS	Round Motor Power Connectors		✓
SH	Space Heater		✓
TF	Thermistor		✓
TW	Thermostat		✓
WE	2nd Shaft Extension on Fan Side		✓
WU	High Resistance Rotor		✓
Z	High Inertia Cast Iron Fan		✓
-	IP65 Enclosure Protection	✓	
-	IP66 Enclosure Protection	✓	
-	Paint Coatings	✓	
-	Pre-Fabricated Motor Power Cable	✓	

For detailed motor option information please refer to the M7000 motor catalog

Motor Brake Information.....	212
Brake Selection.....	213
Brake Torque Selection.....	214
Brake Times & Electrical Selection.....	216
Brake Performance Data.....	220
Brake Calculations	221
Brake Options	222





Motor Brake (Option BRE)

The standard NORD motor brake is spring-set when power is removed from the BRE circuit (power-off). The brake coil utilizes a DC voltage supplied through a rectified power source.

Advantages

- Each NORD motor frame size has a number of available brake sizes, each with different torque capacities.
- Brake torque adjustments are possible by changing the brake spring combinations. In addition, brake sizes from 5-40 Nm (3.7-30 lb-ft) are typically supplied with an additional spanner-nut adjustment on the back of the brake.
- NORD brakes provide a high degree of safety because when power is removed the brake will automatically set to hold the load.
- The brake rotor or brake disc is environmentally safe and asbestos-free.
- The connection between the rectifier and the brake coil is completed at the factory and the brake air-gap is factory-set but can be adjusted in the event of wear.

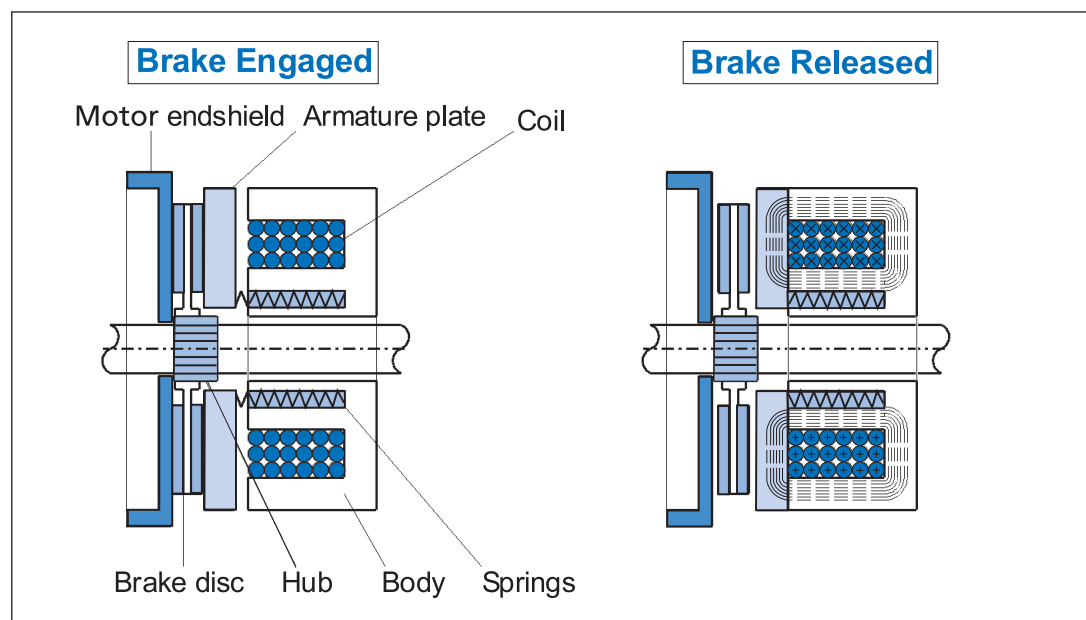
Basic Brake Operation

The standard NORD motor brake is “spring set”. When power is removed and the brake is de-energized (power-off), the brake springs exert a force against the armature plate in turn preventing the brake rotor (or brake disc) from rotating. When the brake coil is energized (power-on), a magnetic field pulls the armature plate across the air gap to the brake casing, which releases the brake rotor and allows the motor shaft to rotate.

NORD brakes are DC voltage brakes and in most instances are supplied with a motor mounted brake rectifier for easy connections to AC power. AC power is taken directly form the power line or from the terminal block of the motor and converted to DC by the supplied rectifier.

i
IMPORTANT NOTE
i

If the motor is connected to a frequency inverter, soft start, or is a two-speed motor, the AC power must be supplied separately to the brake rectifier.



Brakes



Brake Selection

The selection of a motor brake system is broken down into five phases. The selection of the braking torque, the selection of the braking times (release times and setting times), the selection of the electrical supply and connection, the selection of brake options, and the final phase is the verification of the permissible brake work.

Each NORD motor may be supplied with a number of brake torque sizes. Each brake may be adjusted to different brake torque values.

Selection steps

- 1) Brake torque selection 214
- 2) Brake times & electrical selection 216
- 3) Electrical supply and connection 218
- 4) Brake options 222
- 5) Brake work verification 221



Brake Torque Selection



Brake Torque Selection

Each NORD motor size has a number of brake torque sizes available.
The BRE value in the table below is the standard brake torque size for each motor.

Example for ordering: SK 32 - S/4 **BRE10** (**BRE 10** indicates a brake torque size of 10 Nm)

General Selection Considerations

NORD relies on the equipment builder to specify appropriate brake sizing for their application, while giving consideration to the following:

- For most applications, we advise sizing the brake to 1.5 - 2 times the motor rated torque.
- For vertical applications, it may be advisable to size the brake up to 3 times the motor rated torque.
- For some applications, it may be necessary to specify a reduced brake torque setting to prevent excessive peak load conditions developed at the reducer output.
- On travel drive applications, excessive brake torque may lead to wheel skid; in addition on crane applications excess hoist-cable swing can result.

	CAUTION	
BRE800 and BRE1200 brakes may only be controlled with a fast reaction rectifier (overexcitation), the maximum permissible nominal currents of the rectifier must be considered!		

Motor Size & Efficiency			Brake Size and Torque									
Frame Size	SE	PE		BRE5	BRE10	BRE20	BRE40	BRE60	BRE100	BRE150	BRE250	BRE400
			Nm	5	10	20	40	60	100	150	250	400
			lb-in	44	89	177	354	531	885	1328	2213	3540
			lb-ft	3.7	7.4	14.8	29.5	44.3	73.8	111	184	295
63	S/L			Std.	Opt. * #							
71	S/L			Std.	Opt. *							
80	S			Std.	Opt.	Opt. *						
80	L	LP		Opt.	Std.	Opt. *						
90	S	SP			Opt.	Std.	Opt.*					
90	L	LP			Opt.	Std.	Opt.*					
100	L	LP				Std.	Opt.	Opt. * #				
100	LA	AP				Opt.	Std.	Opt. * #				
112	M	MP				Opt.	Opt.	Std.				
132	S	SP						Std.	Opt.	Opt. *		
132	M	MP						Opt.	Std.	Opt. *		
132	MA							Opt.	Opt.	Std. *		
160									Opt.	Std.	Opt.	
160	M	MP							Opt.	Std.	Opt.	
160	L	LP							Opt.	Opt.	Std.	
180	MX									Opt.	Std.	
180	LX									Opt.	Std.	
180		MP									Std.	Opt. * #
180		LP									Std.	Opt. * #
200	LX										Opt.	Std. * #
225		RP									Opt.	Std.
225		SP									Opt.	Std.
Weight	kg			2	3	5.5	7	10	16	22	32	50
	lb			4.4	6.6	12.1	15.4	22	35	49	71	110
Inertia	kg-m ² x 10 ⁻³			0.015	0.045	0.153	0.45	0.86	1.22	2.85	6.65	19.5
	lb-ft ² x 10 ⁻³			0.356	1.068	3.63	10.68	20.4	29.0	67.6	158	463

* IP66 brake not possible

Manual brake release option not possible

²⁾ When used as a stopping brake, evaluation is essential.

³⁾ Designed as a holding brake or emergency stop only.

Std - Standard

Opt - Optional



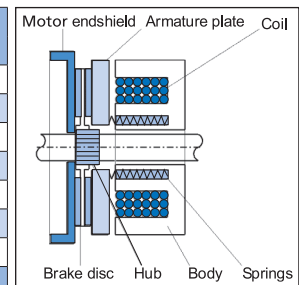
CAUTIONS	
<ul style="list-style-type: none"> • Brake torque - The brake torque is measured with a mean friction radius of the brake pad surface with a circumferential speed of 1m/sec (197 fpm). • Brake torque tolerance - For different applications and operating conditions, brake torque can vary from +40/-20% compared to the rated brake torque. • Hoisting (lifting/lowering) applications - must have the brake wired for fast response (DC-switching) • Initial operation & wear-in period - In new condition, the brake will have a reduced torque of up to 30%. In order to achieve full rated brake torque, a short run-in period is required. The run in time will vary depending on system loads. • The brake rotor or brake pad - must be protected against foreign matter, oil and grease. Contaminants of this type can greatly influence wear and reduce breaking torque. 	

Brake Torque Adjustment (ADJ)

Brake torque adjustments are possible by changing the brake spring combinations or by removing springs.

Brake Torque Reduction - Spring Removal

"Brake Size"	7 Springs		5 Springs		3 Springs	
	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[Nm]	[lb-ft]
BRE 5	5	3.7	3.5	2.6	2	1.5
BRE10	10	7.4	7	5.2	4	3.0
BRE20	20	14.8	14	10.3	8	5.9
BRE40	40	29.5	28	20.7	17	12.5
BRE60	60	44.3	43	31.7	26	19.2
BRE100	100	73.8	70	51.6	42	31.0
BRE150	150	111	107	78.9	65	47.9
"Brake Size"	8 Springs		6 Springs		4 Springs	
	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[Nm]	[lb-ft]
BRE250	250	184	187	138	125	92
BRE400	400	295	300	221	200	148



When adjusting the brake torque, start by removing the outer springs at opposite corners to prevent uneven brake wear.

On brake sizes 5-150 Nm (3.7-111 lb-ft) full brake torque is achieved with all (7) springs. The brake springs are placed in such a manner where there are (3) inner and (4) outer springs.

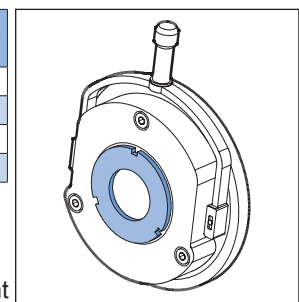
On brake sizes 250-1200 Nm (184-885 lb-ft) full brake torque is achieved with all (8) springs. The brake springs are placed in such a manner where there are (4) inner and (4) outer springs.

Spanner Nut Adjustment

"Brake Size"	Torque Reduction*		Max. Turns	Minimum Torque*	
	[Nm]	[lb-ft]		[Nm]	[lb-ft]
BRE 5	0.2	0.15	6	0.8	0.59
BRE10	0.2	0.15	12	1.6	1.18
BRE20	0.3	0.22	12	4.4	3.25
BRE40	1	0.74	9	8.0	5.90

- * With the minimum number of springs and maximum number of turns to the spanner nut.
- * Per each turn of the spanner nut

In addition, brake sizes from 5-40 Nm (3.7-30 lb-ft) are typically supplied with a threaded adjustment nut or spanner nut. Additional fine torque adjustment can be made by unscrewing the spanner nut a number of turns or "clicks" with a spanner wrench.





Brake Times & Electrical Selection

Brake timing performance is critical in selecting the optimal brake system. NORD brakes can provide exceptional performance in terms of the release (start) times and engagement (stop) times. Use the following guidelines in order to select the correct brake control components and connections.

- 1) Determine if the brake needs to be wired directly from the motor terminal block or powered by a separate source.
 - If you are using a AC vector drive, soft-start or a two- speed motor you will need to supply the rectifier from a separate power source.
 - If the motor is powered direct across-the-line the rectifier power can be supplied from the motor's terminal block.
- 2) What type of performance do I need?
 - Is the standard brake performance OK?
 - Is a higher performance required for fast brake release or very fast brake stopping?
- 3) Determine the brake supply voltage and check the rectifier compatibility table on page 218



Selection Suggestions

When Fast or Very Fast Stopping is Recommended

Any applications that require quick stops and positive action at stand-still, as well as all vertically mounted applications.

Recommended Applications

- conveyors and inclined conveyors
- hoists and lifts
- bulk material handling equipment (bucket elevators, idler conveyor's)

When Fast-Release is Recommended (Overexcitation)

Any application that is very high-cycling with frequent starts and stops. These applications require the brake to release very-quickly in order to avoid excessive heat build-up in the AC motor and brake coil.

Recommended Applications

- Index conveyors
- Diverters
- Storage and retrieval crane systems

	CAUTION	
Hoisting (lifting/lowering) applications - must have the brake wired for fast brake engagement.		

Power Source	Brake Release (start)	Brake engagement (stop)	Braking Method *	Rectifier
Motor Terminal Block	Standard	Standard (AC switching)	10	GVE/GHE/GUE
	Standard	Fast (DC switching)	15	GVE/GHE/GUE
	Standard	Very Fast (Reduced power holding)	40	GPE/PMG
	Fast (Overexcitation)	Standard (AC switching)	30	GPE/PMG
	Fast (Overexcitation)	Fast (DC switching)	35	GPE/PMG
Separate Power Source	Standard	Standard (AC switching)	20	GVE/GHE/GUE
	Standard	Fast (DC switching)	25	GVE/GHE/GUE
	Standard	Very Fast (Reduced power holding)	55	GPU/PMG
	Fast (Overexcitation)	Standard (AC switching)	45	GPU/PMG
	Fast (Overexcitation)	Fast (DC switching)	50	GPU/PMG

* Braking methods referenced in connection diagrams on pages 134 - 144 of the M7000 (09.15) catalog

Rectifier Styles

GV - Full Wave Rectifier (Bridge)

GH - Half Wave Rectifier

GU - Combination Rectifier, can be connected full or half wave

GPE - Hybrid Rectifier, Full wave then switches to half wave.

PMG - Hybrid Rectifier, Full wave then switches to half wave.

GPU - Hybrid Rectifier, Full wave, then switches to half wave. Has integrated DC Switching via voltage sensing.



Brake Rectifier Compatibility

Brake Voltage (VAC)	Coil Voltage (VDC)	Braking Method	Rectifier Type	Rectifier P/N	BRE 5	BRE 10	BRE 20	BRE 40	BRE 60	BRE 100	BRE 150	BRE 250	BRE 400	BRE 800
115	105	20	GVE20L	19141000	X	X	X	X	X	X	X			
	105	25	GVE20L	19141000	X	X	X	X	X	X	X			
208	180	10	GVE20L	19141000	X	X	X	X	X	X	X	X	X	
	180	15	GVE20L	19141000	X	X	X	X	X	X	X	X	X	
	180	20	GVE20L	19141000	X	X	X	X	X	X	X	X	X	
	180	25	GVE20L	19141000	X	X	X	X	X	X	X	X	X	
	105	30	GPE20L	19140230	X	X	X	X						
	105	30	PMG500	19140200					X	X	X	X	X	X
	105	35	GPE20L	19140230	X	X	X	X						
	105	35	PMG500	19140200					X	X	X	X	X	X
	180	40	GPE20L	19140230	X	X	X	X	X	X	X			
	180	40	PMG500	19140200								X	X	X
	105	45	GPU20L	19140090	X	X	X	X						
	105	45	PMG500	19140200					X	X	X	X	X	X
	105	50	GPU20L	19140090	X	X	X	X						
	105	50	PMG500	19140200					X	X	X	X	X	X
180	55	GPU20L	19140090	X	X	X	X	X	X	X				
180	55	PMG500	19140200									X	X	X
230	105	10	GHE40L	19141010	X	X	X	X	X	X	X			
	205	10	GVE20L	19141000	X	X	X	X	X	X	X	X	X	
	205	10	GUE40V	19140300	X	X	X	X	X	X	X			
	105	15	GHE40L	19141010	X	X	X	X	X	X	X			
	205	15	GVE20L	19141000	X	X	X	X	X	X	X	X	X	
	205	15	GUE40V	19140300	X	X	X	X	X	X	X			
	105	20	GHE40L	19141010	X	X	X	X	X	X	X			
	205	20	GUE40V	19140300	X	X	X	X	X	X	X	X	X	
	205	20	GVE20L	19141000	X	X	X	X	X	X	X			
	105	25	GHE40L	19141010	X	X	X	X	X	X	X			
	205	25	GUE40V	19140300	X	X	X	X	X	X	X	X	X	
	205	25	GVE20L	19141000	X	X	X	X	X	X	X			
	105	30	GPE20L	19140230	X	X	X	X						
	105	30	PMG500	19140200					X	X	X	X	X	X
	105	35	GPE20L	19140230	X	X	X	X						
	105	35	PMG500	19140200					X	X	X	X	X	X
	205	40	GPE20L	19140230	X	X	X	X	X	X	X			
	205	40	PMG500	19140200					X	X	X	X	X	X
	105	45	GPU20L	19140090	X	X	X	X						
	105	45	PMG500	19140200					X	X	X	X	X	X
	105	50	GPU20L	19140090	X	X	X	X						
	105	50	PMG500	19140200					X	X	X	X	X	X
	205	55	GPU20L	19140090	X	X	X	X	X	X	X			
	205	55	PMG500	19140200									X	X
205	55	GPU20	19140090	X	X	X	X	X	X	X				
205	55	PMG500	19140200									X	X	X



Brake Rectifier Compatibility

Brake Voltage (VAC)	Coil Voltage (VDC)	Braking Method	Rectifier Type	Rectifier P/N	BRE 5	BRE 10	BRE 20	BRE 40	BRE 60	BRE 100	BRE 150	BRE 250	BRE 400	BRE 800
332	180	30	GPE40L	19140240	X	X	X	X	X	X	X			
	180	30	PMG500	19140200								X	X	X
	180	35	GPE40L	19140240	X	X	X	X	X	X	X			
	180	35	PMG500	19140200								X	X	X
	180	45	GPU40L	19140170	X	X	X	X	X	X	X			
	180	50	GPU40L	19140170	X	X	X	X	X	X	X			
400	180	10	GHE40L	19141010	X	X	X	X	X	X	X			
	180	10	GUE40V	19140300	X	X	X	X	X	X	X			
	180	15	GHE40L	19141010	X	X	X	X	X	X	X			
	180	15	GUE40V	19140300	X	X	X	X	X	X	X			
	180	20	GHE40L	19141010	X	X	X	X	X	X	X			
	180	20	GUE40V	19140300	X	X	X	X	X	X	X			
	180	25	GHE40L	19141010	X	X	X	X	X	X	X			
	180	25	GUE40V	19140300	X	X	X	X	X	X	X			
	180	30	GPE40L	19140240	X	X	X	X	X	X	X			
	180	30	PMG500	19140200								X	X	X
	180	35	GPE40L	19140240	X	X	X	X	X	X	X			
	180	35	PMG500	19140200								X	X	X
	180	45	GPU20L	19140090	X	X	X	X	X	X	X			
	180	45	PMG500	19140200								X	X	X
	180	50	GPU20L	19140090	X	X	X	X	X	X	X			
	180	50	PMG500	19140200								X	X	X
460	205	10	GHE40L	19141010	X	X	X	X	X	X	X	X	X	
	205	10	GUE40V	19140300	X	X	X	X	X	X	X			
	205	15	GHE40L	19141010	X	X	X	X	X	X	X	X	X	
	205	15	GUE40V	19140300	X	X	X	X	X	X	X			
	205	20	GHE40L	19141010	X	X	X	X	X	X	X	X	X	
	205	20	GUE40V	19140300	X	X	X	X	X	X	X			
	205	25	GHE40L	19141010	X	X	X	X	X	X	X	X	X	
	205	25	GUE40V	19140300	X	X	X	X	X	X	X			
	205	30	GPE40L	19140240	X	X	X	X	X	X	X			
	205	30	PMG500	19140200								X	X	X
	205	35	GPE40L	19140240	X	X	X	X	X	X	X			
	205	35	PMG500	19140200								X	X	X
	205	45	GPU40L	19140170	X	X	X	X	X	X	X			
	205	45	PMG500	19140200								X	X	X
	205	50	GPU40L	19140170	X	X	X	X	X	X	X			
	205	50	PMG500	19140200								X	X	X
575	250	10	GHE50L	19141020	X	X	X	X	X	X	X	X	X	
	250	15	GHE50L	19141020	X	X	X	X	X	X	X	X	X	
	250	20	GHE50L	19141020	X	X	X	X	X	X	X	X	X	
	250	25	GHE50L	19141020	X	X	X	X	X	X	X	X	X	

Brakes

Brake Performance Data



Brake Performance Data

Brake Size		BRE5	BRE10	BRE20	BRE40	BRE60	BRE100	BRE150	BRE250	BRE400
Brake torque $-_{max}$	[lb-ft]	3.7	7.4	15	30	44	74	110	185	295
	[lb-in]	44	89	177	354	531	885	1330	2200	3500
	[Nm]	5	10	20	40	60	100	150	250	400
Power coil P_{20}	[W]	22	28	39	42	50	75	76	100	140
Nominal air gap	[in]	0.008	0.008	0.008	0.012	0.012	0.016	0.020	0.020	0.020
	[mm]	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.5
Maximum air gap (re-adjust) a_{max}	[in]	0.024	0.028	0.031	0.035	0.039	0.043	0.043	0.047	0.047
	[mm]	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.2
Max brake pad wear - must be replaced	[in]	0.118	0.118	0.111	0.118	0.138	0.138	0.138	0.138	0.138
	[mm]	3	3	2.8	3	3.5	3.5	3.5	3.5	3.5
Minimum brake pad thickness	[in]	0.177	0.217	0.295	0.374	0.453	0.492	0.571	0.571	0.650
	[mm]	4.5	5.5	7.5	9.5	11.5	12.5	14.5	14.5	16.5
Max work per cycle W_{max}	[J x 10 ³]	3	6	12	25	35	50	75	105	150
	[lb-ft x 10 ³]	2.2	4.4	8.9	18.4	25.8	36.9	55.3	77.4	110.6
Work until re-adjust W_m	[J x 10 ⁷]	5	12	20	35	60	125	200	340	420
	[lb-ft x 10 ⁷]	3.7	8.9	14.8	25.8	44.3	92.2	147.5	250.8	309.8
Heat load per cycle	[J/s]	80	100	130	160	200	250	300	350	400
	[lb-ft/s]	59.0	73.8	95.9	118.0	147.5	184.4	221.3	258.1	295.0
Release time (start) t_i	[ms]	35	45	70	80	120	160	200	220	230
Release time (start) $t_{1,OE}$	[ms]	15	15	28	28	75	110	110	n/a	n/a
Setting time (stop) $t_{2,AC}$	[ms]	70	95	140	175	210	280	350	500	800
Setting time (stop) $t_{2,DC}$	[ms]	30	45	30	75	90	120	150	180	200
Setting time (stop) $t_{2,DCRP}$	[ms]	5	6	11	12	12	13	17	24	n/a
IR relay delay (stop) $t_{2,IR}$	[ms]	18	18	18	18	18	18	18	18	18
Current – 250VDC coil	[A]	0.09	0.11	0.14	0.18	0.19	0.31	0.31	0.4	0.6
Current – 225VDC coil	[A]	0.09	0.13	0.18	0.20	0.22	0.35	0.36	0.5	0.6
Current – 205VDC coil	[A]	0.11	0.13	0.15	0.24	0.28	0.44	0.45	0.5	0.7
Current – 180VDC coil	[A]	0.12	0.16	0.19	0.25	0.30	0.46	0.47	0.6	0.8
Current – 105VDC coil	[A]	0.21	0.32	0.39	0.46	0.60	0.88	0.89	1.1	1.3
Current – 24VDC coil	[A]	0.92	1.17	1.42	1.75	2.08	3.10	3.20	4.2	5.9

* Holding Brakes with emergency-stop properties - switched with fast acting brake rectifier

Release times

t_i – Brake release time - Standard

$t_{1,OE}$ – Brake release time – Overexcitation (GP)

Set (stop) times

$t_{2,AC}$ – Brake set time – AC switching

$t_{2,DC}$ – Brake set time – DC switching

$t_{2,DCRP}$ – Brake set time – DC switching reduced power

$t_{2,IR}$ – Additional brake stopping of the IR relay



IMPORTANT NOTE



An increased air gap will alter the braking times listed above.



Brake Size Calculation

Torque and inertias below are based on the motor speed. Load side torques must always be divided by the gear reduction ratio. Inertias must be divided by the square of the gear ratio. You must also consider any external reduction ratio outside the gearbox.

Selection for holding loads (static)

$$T_{req} = T_{stat} = T_{load} \times K$$

Selection for stopping loads (static + dynamic)

$$\sum J = J_{motor} + \frac{J_{load}}{i^2}$$

Typically other inertias, like the gearbox, can be ignored.

$$T_{dyn} = \frac{\sum J \times n}{25.7 \times t}$$

$$T_{req} = (T_{dyn} + T_{load}) \times K$$

For driving loads use: $-T_{load}$

For overhauling loads use: $+T_{load}$

Brake Work Verification

$$W = \frac{\sum J \times n^2}{5880} \times \frac{T_B}{T_B \pm T_{load}} \Rightarrow W \leq W_{max}$$

For driving loads use: $+T_{load}$

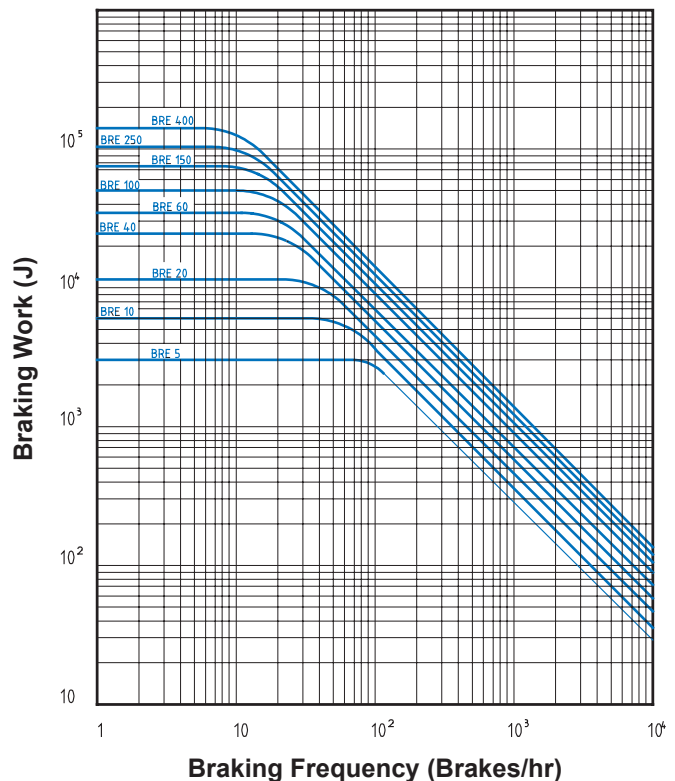
For overhauling loads use: $-T_{load}$

The permissible values for W_{max} (Friction work) depend on the stopping frequency. See diagram at right.

In applications where the brake is operated frequently, two brake work values should be evaluated to ensure adequate brake life: the braking work compared to the braking frequency and the maximum work limit for a single operation, such as an E-stop. Reviewing these two values will help determine the optimal solution and ensure long brake life.

Abbreviation Key

c/h	=	Number of brakes per hour
J [lb-ft ²]	=	Inertia
J _{motor} [lb-ft ²]	=	Motor inertia
i	=	System reduction ratio
K	=	Safety factors. Based on application and according to industry rules and practices Hoisting >2 Hoisting with people >2..3 Travel drives 0.5 to 1.5
T _B [lb-in]	=	Brake torque
T _{dyn} [lb-in]	=	Dynamic torque
T _{req} [lb-in]	=	Required brake torque
T _{load} [lb-in]	=	Load torque
T _{stat} [lb-in]	=	Static torque
n [rpm]	=	Motor speed
t _r [sec]	=	Stopping time
W [lb-ft]	=	Brake work
W _{max} [lb-ft]	=	Maximum brake work for one brake operations





Brake Options

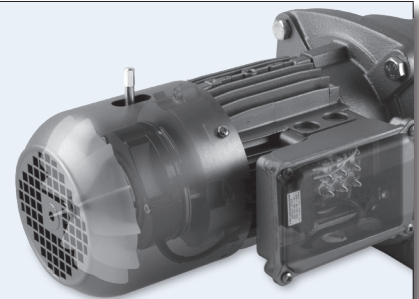
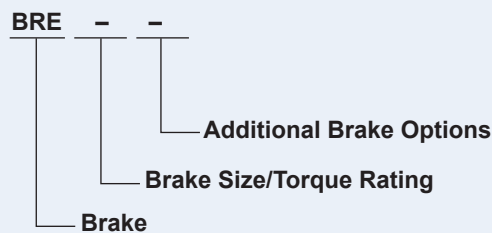
Abbreviation	Description
ADJ	Torque Adjustment - Brake torque may be adjusted at the factory
DBR	Double Brake (2xBRE) - Double brakes are used for redundancy and additional safety
FHL	Locking Hand Release Lever - Lockable manual hand release lever
HL	Hand Release Lever - Manual hand release lever
HLH	Hand Release Lever with Hole - Hand lever with 5.5 mm hole
IP66	IP66 Brake Enclosure - Brake with IP66 enclosure
IR	Current Sensing Relay - Fast brake engagement (stopping) without external control equipment
MIK	Micro-Switch - Brake fitted with a micro-switch for sensing the brake state (released or engaged)
NRB1	Quiet Brake Release - An o-ring is placed between the coil body and the armature plate for noise reduction
NRB2	Quiet Brake Motor Operation - An o-ring is placed between the carrier hub & the armature plate to prevent clattering.
RG	Corrosion Protected Brake - Corrosion protected brake
SR	Dust & Corrosion Protected Brake - Dust & corrosion protected brake

Rectifier Options

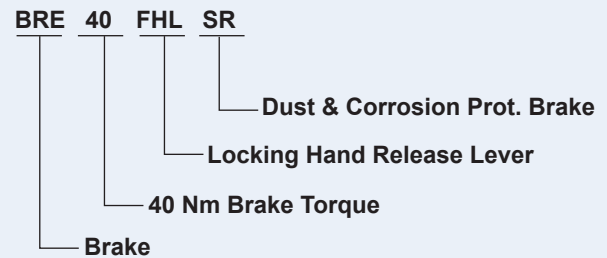
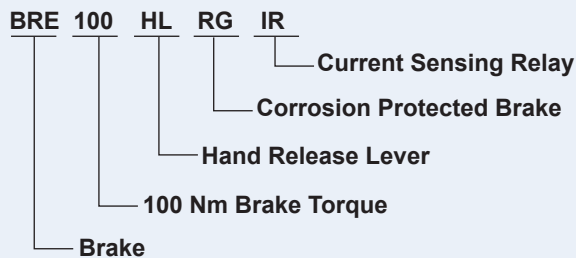
Abbreviation	Description
Rectifiers	Most NORD brakes are provided with a rectifier that converts AC voltage to DC voltage. Rectifiers are used because most motors are AC powered, but brakes require DC power.
GHE	Half Wave Rectifiers
GPE	Push Hybrid Rectifiers - External DC Switching
GPU	Push Hybrid Rectifiers - Integrated DC Switching
GUE	Dual Rectifier - Full/Half-Wave
GVE	Full Wave Rectifiers
PMG	Push Hybrid Rectifier - Integrated DC Switching
EBGR	Digital Input Dual Wave Rectifier

For detailed brake option and rectifier information please refer to the M7000 motor catalog

Brake Nomenclature



Ordering Examples



Brake, 100 Nm with a hand release lever, corrosion protected brake, and a current sensing relay.

Brake, 40 Nm with a locking hand release lever and dust & corrosion protected brake.



DRIVESYSTEMS

Ratings

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Continuous Duty 230/460V - 60Hz



Inverter duty • Induction motor • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 230/460V – 60Hz • 1.15 Service Factor
 Continuous Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	P _n Full Load Power		Eff. Class	n _N Full-Load Speed	I _n Full-Load Current		I ₂ /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full-Load Torque	T ₂ /T _n Locked Rotor Torque Ratio	T _v /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Efficiency	J _m Rotor Inertia	Wt. Weight
	[hp]	[kW]			[rpm]	230V [A]									
63 S/4	0.16	0.12	-	1700	0.88	0.44	250%	F	5.93	2.7	3.5	0.66	52.0%	0.0050	7.9
63 L/4	0.25	0.18	-	1680	1.12	0.56	270%	E	9.38	2.3	2.5	0.71	57.0%	0.0066	9.3
71 S/4	0.33	0.25	-	1710	1.56	0.78	310%	G	12.2	2.4	2.7	0.64	63.0%	0.017	12
71 L/4	0.5	0.37	-	1720	1.90	0.95	350%	F	18.3	2.3	2.7	0.69	71.0%	0.020	14
80 S/4	0.75	0.55	-	1710	2.70	1.35	350%	F	27.6	2.2	2.3	0.71	72.0%	0.026	18
80 LP/4	1	0.75	pe	1730	3.14	1.57	650	K	36.4	3.5	3.8	0.70	86.1	0.045	22
90 SP/4	1.5	1.1	pe	1740	4.20	2.10	840	L	54.3	4.2	4.9	0.76	86.9	0.081	33
90 LP/4	2	1.5	pe	1730	5.60	2.80	760	K	72.9	3.9	4.3	0.78	87.0	0.093	37
100 LP/4	3	2.2	pe	1770	7.68	3.84	920	L	107	3.0	4.5	0.79	90.0	0.192	62
112 MP/4	5	3.7	pe	1755	13.0	6.50	950	L	180	4.1	4.6	0.80	90.3	0.332	78
132 SP/4	7.5	5.5	pe	1770	19.5	9.75	1020	M	267	4.7	5.0	0.77	91.7	0.759	121
132 MP/4	10	7.5	pe	1765	26.7	13.4	960	M	357	4.7	5.0	0.77	91.7	0.831	137
160 MP/4	15	11	pe	1770	35.6	17.8	880	K	534	3.2	3.8	0.84	92.5	1.59	205
160 LP/4	20	15	pe	1775	47.6	23.8	1080	M	710	4.3	4.7	0.85	93.0	2.18	269
180 MP/4	25	18.5	pe	1780	60.6	30.3	1010	L	885	3.9	4.0	0.82	93.6	3.80	342
180 LP/4	30	22	pe	1780	69.6	34.8	880	K	1062	3.3	3.4	0.85	93.6	3.80	342
225 RP/4	40	30	pe	1785	-	49.5	890	K	1420	3.4	3.8	0.81	94.5	11.63	694
225 SP/4	50	37	pe	1785	-	59.7	880	K	1752	3.0	3.7	0.82	94.6	12.81	728

Motor Ratings





Inverter duty • Induction motor • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 230/460V – 60Hz • 1.15 Service Factor
 60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	P _n Full Load Power		n _n Full-Load Speed	I _n Full-Load Current		I _s /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full-Load Torque	T _s /T _n Locked Rotor Torque Ratio	T _b /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Efficiency	J _m Rotor Inertia	Wt. Weight
	[hp]	[kW]		[A]	[A]									
80 L/4	1	0.75	1650	3.66	1.83	390%	G	38.2	2.2	2.3	0.74	70.0%	0.034	20
90 S/4	1.5	1.1	1660	4.84	2.42	490%	G	57.0	2.5	2.8	0.78	73.0%	0.056	26
90 L/4	2	1.5	1660	6.34	3.17	510%	H	75.9	2.5	2.8	0.80	74.0%	0.074	31
100 L/4	3	2.2	1705	9.00	4.50	490%	G	111	2.3	2.6	0.81	76.0%	0.107	40
100 LA/4	5	3.7	1725	15.2	7.60	510%	G	183	2.7	3.1	0.75	81.0%	0.142	46
132 S/4	7.5	5.5	1735	19.8	9.90	540%	G	272	2.4	2.7	0.82	85.0%	0.570	97
132 M/4	10	7.5	1735	25.8	12.9	630%	H	363	2.9	3.2	0.84	87.0%	0.759	121
160 M/4	15	11	1770	35.8	17.9	820%	J	534	2.9	3.8	0.85	90.7%	1.19	172
160 L/4	20	15	1760	48.4	24.2	850%	K	716	2.9	3.9	0.87	89.4%	1.59	205
180 MX/4	25	18.5	1760	59.0	29.5	880%	K	895	3.4	4.3	0.87	90.5%	1.90	236
180 LX/4	30	22	1765	74.4	37.2	890%	K	1071	3.6	4.4	0.80	92.8%	2.18	269
200 LX/4	40	30	1770	98.6	49.3	690%	H	1424	3.2	3.6	0.83	92.1%	3.80	342



Inverter Duty - Continuous Duty

5:1 Constant Torque (VR)

230/460V - 60-12Hz



Inverter duty • Induction motor • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 230/460V – 60Hz • 1.0 Service Factor
 Continuous Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	Power		Eff. Class	Operating Range			Motor Across the line data											
	P _n Full Load Power			n ₆₀ Full Load Speed	n ₁₂ Full Load Speed	T ₆₀₋₁₂ Full Load Torque	n _N Full Load Speed	I _n Full-Load Current		I ₂ /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T ₂ /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J _m Rotor Inertia	Wt. Weight
	[HP]	[kW]		60 Hz [rpm]	12 Hz [rpm]	60-12 Hz [lb-in]	60 Hz [rpm]	230 V [A]	460 V [A]	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]
63 S/4-VR	0.16	0.12	-	1700	340	5.93	1700	0.88	0.44	250	F	5.93	2.7	3.5	0.66	52.0	0.0050	7.9
63 L/4-VR	0.25	0.18	-	1680	336	9.38	1680	1.12	0.56	270	E	9.38	2.3	2.5	0.71	57.0	0.0066	9.3
71 S/4-VR	0.33	0.25	-	1710	342	12.2	1710	1.56	0.78	310	G	12.2	2.4	2.7	0.64	63.0	0.017	12
71 L/4-VR	0.5	0.37	-	1720	344	18.3	1720	1.90	0.95	350	F	18.3	2.3	2.7	0.69	71.0	0.020	14
80 S/4-VR	0.75	0.55	-	1710	342	27.6	1710	2.70	1.35	350	F	27.6	2.2	2.3	0.71	72.0	0.026	18
80 LP/4-VR	1	0.75	pe	1730	346	36.4	1730	3.14	1.57	650	K	36.4	3.5	3.8	0.70	86.1	0.045	22
90 SP/4-VR	1.5	1.1	pe	1740	348	54.3	1740	4.20	2.10	840	L	54.3	4.2	4.9	0.76	86.9	0.081	33
90 LP/4-VR	2	1.5	pe	1730	346	72.9	1730	5.60	2.80	760	K	72.9	3.9	4.3	0.78	87.0	0.093	37
100 LP/4-VR	3	2.2	pe	1770	354	107	1770	7.68	3.84	920	L	107	3.0	4.5	0.79	90.0	0.192	62
112 MP/4-VR	5	3.7	pe	1755	351	180	1755	13	6.5	950	L	180	4.1	4.6	0.80	90.3	0.332	78
132 SP/4-VR	7.5	5.5	pe	1770	354	267	1770	19.5	9.75	1020	M	267	4.7	5.0	0.77	91.7	0.759	121
132 MP/4-VR	10	7.5	pe	1765	353	357	1765	26.7	13.4	960	M	357	4.7	5.0	0.77	91.7	0.831	137
160 MP/4-VR	15	11	pe	1770	354	534	1770	35.6	17.8	880	K	534	3.2	3.8	0.84	92.5	1.59	205
160 LP/4-VR	20	15	pe	1775	355	710	1775	47.6	23.8	1080	M	710	4.3	4.7	0.85	93.0	2.18	269
180 MP/4-VR	25	18.5	pe	1780	356	885	1780	60.6	30.3	1010	L	885	3.9	4.0	0.82	93.6	3.80	342
180 LP/4-VR	30	22	pe	1780	356	1062	1780	69.6	34.8	880	K	1062	3.3	3.4	0.85	93.6	3.80	342
225 RP/4-VR	40	30	pe	1785	357	1412	1785	-	49.5	890	K	1412	3.4	3.8	0.81	0.9	11.63	694
225 SP/4-VR	50	37	pe	1785	357	1765	1785	-	59.7	880	K	1765	3.0	3.7	0.82	0.9	12.81	728

Motor Ratings





Inverter Duty - Intermittent Duty 5:1 Constant Torque (VR) 230/460V - 60-12Hz

Inverter duty • Induction motor • TEFC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 230/460V – 60Hz • 1.0 Service Factor
60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P _n Full Load Power		Operating Range			Motor Across the line data											
			n ₆₀ Full Load Speed	n ₁₂ Full Load Speed	T ₆₀₋₁₂ Full Load Torque	n _N Full Load Speed	I _n Full-Load Current		I _l /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T _l /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J _m Rotor Inertia	Wt. Weight
	[HP]	[kW]	60 Hz [rpm]	12 Hz [rpm]	60-12 Hz [lb-in]	60 Hz [rpm]	230 V [A]	460 V [A]	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]
80 L/4-VR	1	0.75	1650	330	38.2	1650	3.66	1.83	390	G	38.2	2.2	2.3	0.74	70.0	0.034	20
90 S/4-VR	1.5	1.1	1660	332	57.0	1660	4.84	2.42	490	G	57.0	2.5	2.8	0.78	73.0	0.056	26
90 L/4-VR	2	1.5	1660	332	75.9	1660	6.34	3.17	510	H	75.9	2.5	2.8	0.80	74.0	0.074	31
100 L/4-VR	3	2.2	1705	341	111	1705	9.00	4.50	490	G	111	2.3	2.6	0.81	76.0	0.107	40
100 LA/4-VR	5	3.7	1725	345	183	1725	15.2	7.62	510	G	183	2.7	3.1	0.75	81.0	0.142	46
132 S/4-VR	7.5	5.5	1735	347	272	1735	19.8	9.90	540	G	272	2.4	2.7	0.82	85.0	0.570	97
132 M/4-VR	10	7.5	1735	347	363	1735	25.8	12.9	630	H	363	2.9	3.2	0.84	87.0	0.759	121
160 M/4-VR	15	11	1770	354	534	1770	35.8	17.9	820	J	534	2.9	3.8	0.85	90.7	1.19	172
160 L/4-VR	20	15	1760	352	716	1760	48.4	24.2	850	K	716	2.9	3.9	0.87	89.4	1.59	205
180 MX/4-VR	25	18.5	1760	352	895	1760	59.0	29.5	880	K	895	3.4	4.3	0.87	90.5	1.90	236
180 LX/4-VR	30	22	1765	353	1071	1765	74.4	37.2	890	K	1071	3.6	4.4	0.80	92.8	2.18	269
200 LX/4-VR	40	30	1770	354	1424	1770	98.6	49.3	690	H	1424	3.2	3.6	0.83	92.1	3.80	342

Motor Ratings



Inverter Duty - Continuous Duty 10:1 Constant Torque (VN) 230/460V - 60-6Hz



Inverter duty • Induction motor • TEFC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 230/460V – 60Hz • 1.0 Service Factor
Continuous Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P _n		Eff. Class	Operating Range						Motor Across the line data									
	Full Load Power			n ₆₀	n ₆	T ₆₀₋₆	n _N	I _n			I _g /I _n	NEMA	T _n	T _g /T _n	T _r /T _n	pf	η	J _m	Wt. Weight
	[HP]	[kW]		Full Load Speed	Full Load Speed	Full Load Torque	Full Load Speed	Full-Load Current		Locked Rotor Current Ratio	Code Letter	Full Load Torque	Locked Rotor Torque Ratio	Break Down Torque Ratio	Power Factor	Full Load Eff.	Rotor Inertia	Wt. Weight	
				60 Hz	6 Hz	60-6 Hz	60 Hz	230 V	460 V	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]	
63 S/4-VN	0.12	0.09	-	1720	172	4.40	1720	0.76	0.38	290	J	4.40	3.6	4.7	0.57	52.0	0.005	7.9	
63 L/4-VN	0.16	0.12	-	1720	172	5.86	1720	0.90	0.45	335	J	5.86	3.7	4.0	0.64	52.0	0.007	9.3	
71 S/4-VN	0.25	0.18	-	1740	174	9.06	1740	1.06	0.53	454	J	9.06	3.2	3.6	0.70	63.0	0.017	11.9	
71 L/4-VN	0.33	0.25	-	1745	175	11.9	1745	1.48	0.74	449	K	11.9	3.5	4.2	0.64	65.0	0.020	13.9	
80 S/4-VN	0.50	0.37	-	1745	175	18.1	1745	2.79	1.40	338	J	18.1	3.4	3.5	0.46	73.0	0.026	17.6	
80 LP/4-VN	0.75	0.55		1750	175	27.0	1750	2.32	1.16	881	M	27.0	4.7	5.1	0.71	85.6	0.045	22	
90 SP/4-VN	1	0.75		1760	176	35.8	1760	3.34	1.67	1057	R	35.8	6.4	7.4	0.65	86.3	0.081	33	
90 LP/4-VN	1.5	1.1		1755	176	53.9	1755	4.59	2.30	926	N	53.9	5.3	5.8	0.70	87.5	0.093	37	
100 LP/4-VN	2	1.5		1780	178	70.8	1780	5.72	2.86	1234	R	70.8	4.5	6.8	0.73	89.9	0.18	56	
112 MP/4-VN	3	2.2		1775	178	107	1775	9.33	4.67	1323	S	107	6.9	7.8	0.67	89.8	0.30	78	
132 SP/4-VN	5	3.7		1780	178	177	1780	15.7	7.9	1265	R	177	7.1	7.5	0.65	91.7	0.75	121	
132 MP/4-VN	7.5	5.5		1775	178	266	1775	21.5	10.8	1192	P	266	6.3	6.7	0.71	92.0	0.84	137	
160 MP/4-VN	10	7.5		1780	178	354	1780	27.6	13.8	1134	N	354	4.8	5.7	0.73	92.4	1.59	205	
160 LP/4-VN	15	11		1780	178	531	1780	38.4	19.2	1338	P	531	5.7	6.3	0.78	93.2	2.18	269	
180 MP/4-VN	20	15		1785	179	706	1785	49.6	24.8	1234	N	706	4.9	5.0	0.81	93.6	3.08	302	
180 LP/4-VN	25	18.5		1785	179	883	1785	59.7	29.9	1026	L	883	4.0	4.1	0.83	94.0	3.80	342	
225 RP/4-VN	30	22		1790	179	1056	1790	-	40.0	1101	N	1056	4.5	5.1	0.74	94.5%	11.63	694	
225 SP/4-VN	40	30		1790	179	1408	1790	-	50.6	1038	M	1408	3.8	4.6	0.78	94.8%	12.81	728	

Motor Ratings





Inverter Duty - Intermittent Duty 10:1 Constant Torque (VN) 230/460V - 60-6Hz

Inverter duty • Induction motor • TEFC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 230/460V – 60Hz • 1.0 Service Factor
60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P _n Full Load Power		Operating Range			Motor Across the line data											
			n ₆₀ Full Load Speed	n ₆ Full Load Speed	T ₆₀₋₆ Full Load Torque	n _N Full Load Speed	I _n Full-Load Current		I _L /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T _L /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J _m Rotor Inertia	Wt. Weight
	60 Hz [rpm]	6 Hz [rpm]	60-6 Hz [lb-in]	60 Hz [rpm]	230 V [A]	460 V [A]	[%]	[lb-in]									
80 L/4-VN	0.75	0.55	1740	174	27.2	1740	3.84	1.92	371	J	27.2	3.1	3.2	0.51	72.0	0.034	19.8
90 S/4-VN	1	0.75	1760	176	35.8	1760	3.90	1.95	609	L	35.8	4.0	4.5	0.65	74.0	0.056	26.5
90 L/4-VN	1.5	1.1	1750	175	54.0	1750	4.86	2.43	666	K	54.0	3.5	3.9	0.76	76.0	0.074	30.9
100 L/4-VN	2	1.5	1760	176	71.6	1760	7.26	3.63	608	K	71.6	3.6	4.0	0.68	76.0	0.11	39.7
100 LA/4-VN	3	2.2	1760	176	107	1760	13.0	6.48	598	M	107	4.6	5.3	0.50	86.0	0.14	46.3
132 S/4-VN	5	3.7	1775	178	178	1775	13.9	6.96	768	K	178	3.7	4.1	0.78	86.0	0.57	97.0
132 M/4-VN	7.5	5.5	1770	177	267	1770	20.5	10.2	794	K	267	3.9	4.4	0.78	88.0	0.76	121
160 M/4-VN	10	7.5	1780	178	354	1780	26.9	13.4	1092	N	354	4.4	5.7	0.77	90.4	1.19	172
160 L/4-VN	15	11	1775	178	533	1775	37.9	18.9	1085	M	533	3.9	5.2	0.81	91.2	1.59	205
180 MX/4-VN	20	15	1775	178	710	1775	51.1	25.6	1015	M	710	4.3	5.4	0.80	91.5	1.90	236
180 LX/4-VN	25	18.5	1775	178	888	1775	69.1	34.5	958	M	888	4.3	5.3	0.74	91.4	2.18	269
200 LX/4-VN	30	22	1785	179	1059	1785	85.0	42.5	801	L	1059	4.3	4.8	0.72	92.4	3.80	342

Motor Ratings



Inverter Duty - Continuous Duty

20:1 Constant Torque (VW)

230/460V - 80-4Hz



Inverter duty • Induction motor • TEBC
 Synchronous speed 1800rpm @ 80Hz • 4-pole • Three-phase
 Voltages: 230/460V – 60Hz • 1.0 Service Factor
 Continuous Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	Power		Eff. Class	Operating Range					Motor Across the line data									
	P _n			n ₈₀	n ₄	T ₈₀₋₄	n _N	I _n		I ₂ /I _{1n}	NEMA	T _n	T ₂ /T _n	T _k /T _n	pf	η	J _m	Wt. Weight
	Full Load Power			Full Load Speed	Full Load Speed	Full Load Torque	Full Load Speed	Full-Load Current		Locked Rotor Current Ratio	Code Letter	Full Load Torque	Locked Rotor Torque Ratio	Break Down Torque Ratio	Power Factor	Full Load Eff.	Rotor Inertia	
	[HP]	[kW]		80 Hz	4 Hz	80-4 Hz	60 Hz	230 V	460 V	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]
63 S/4-VW	0.16	0.12	-	2250	113	4.48	1700	0.88	0.44	250	F	5.93	2.7	3.5	0.66	52.0	0.0050	7.9
63 L/4-VW	0.25	0.18	-	2220	111	7.10	1680	1.12	0.56	270	E	9.38	2.3	2.5	0.71	57.0	0.0066	9.3
71 S/4-VW	0.33	0.25	-	2285	114	9.10	1710	1.56	0.78	310	G	12.2	2.4	2.7	0.64	63.0	0.017	12
71 L/4-VW	0.5	0.37	-	2280	114	13.8	1720	1.90	0.95	350	F	18.3	2.3	2.7	0.69	71.0	0.020	14
80 S/4-VW	0.75	0.55	-	2285	114	20.7	1710	2.70	1.35	350	F	27.6	2.2	2.3	0.71	72.0	0.026	18
80 LP/4-VW	1	0.75	pe	2230	112	28.3	1730	3.14	1.57	650	K	36.4	3.5	3.8	0.70	86.1	0.045	22
90 SP/4-VW	1.5	1.1	pe	2320	116	40.7	1740	4.20	2.10	840	L	54.3	4.2	4.9	0.76	86.9	0.081	33
90 LP/4-VW	2	1.5	pe	2310	116	54.6	1730	5.60	2.80	760	K	72.9	3.9	4.3	0.78	87.0	0.093	37
100 LP/4-VW	3	2.2	pe	2360	118	80.1	1770	7.68	3.84	920	L	107	3.0	4.5	0.79	90.0	0.192	62
112 MP/4-VW	5	3.7	pe	2335	117	135	1755	13	6.5	950	L	180	4.1	4.6	0.80	90.3	0.332	78
132 SP/4-VW	7.5	5.5	pe	2355	118	201	1770	19.5	9.75	1020	M	267	4.7	5.0	0.77	91.7	0.759	121
132 MP/4-VW	10	7.5	pe	2350	118	268	1765	26.7	13.4	960	M	357	4.7	5.0	0.77	91.7	0.831	137
160 MP/4-VW	15	11	pe	2360	118	401	1770	35.6	17.8	880	K	534	3.2	3.8	0.84	92.5	1.59	205
160 LP/4-VW	20	15	pe	2360	118	534	1775	47.6	23.8	1080	M	710	4.3	4.7	0.85	93.0	2.18	269
180 MP/4-VW	25	18.5	pe	2380	119	662	1780	60.6	30.3	1010	L	885	3.9	4.0	0.82	93.6	3.80	342
180 LP/4-VW	30	22	pe	2370	119	798	1780	69.6	34.8	880	K	1062	3.3	3.4	0.85	93.6	3.80	342
225 RP/4-VW	40	30	pe	2380	119	1059	1785	-	49.5	890	K	1412	3.4	3.8	0.81	94.5%	11.63	694
225 SP/4-VW	50	37	pe	2380	119	1324	1785	-	59.7	880	K	1765	3.0	3.7	0.82	94.6%	12.81	728

Motor Ratings





Inverter Duty - Intermittent Duty 20:1 Constant Torque (VW) 230/460V - 80-4Hz

Inverter duty • Induction motor • TEFC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 230/460V – 80Hz • 1.0 Service Factor
60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P _n Full Load Power		Operating Range			Motor Across the line data											
			n ₈₀ Full Load Speed	n ₄ Full Load Speed	T ₈₀₋₄ Full Load Torque	n _N Full Load Speed	I _n Full-Load Current		I ₂ /I _{1n} Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T _g /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J _n Rotor Inertia	Wt. Weight
	[HP]	[kW]	80 Hz [rpm]	4 Hz [rpm]	80-4 Hz [lb-in]	60 Hz [rpm]	230 V [A]	460 V [A]	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]
80 L/4-VW	1	0.75	2290	115	27.5	1650	3.66	1.83	390	G	38.2	2.2	2.3	0.74	70.0	0.034	20
90 S/4-VW	1.5	1.1	2310	116	40.9	1660	4.84	2.42	490	G	57.0	2.5	2.8	0.78	73.0	0.056	26
90 L/4-VW	2	1.5	2305	115	54.7	1660	6.34	3.17	510	H	75.9	2.5	2.8	0.80	74.0	0.074	31
100 L/4-VW	3	2.2	2310	116	81.9	1705	9.00	4.50	490	G	111	2.3	2.6	0.81	76.0	0.11	40
100 LA/4-VW	5	3.7	2295	115	137	1725	15.2	7.6	510	G	183	2.7	3.1	0.75	81.0	0.14	46
132 S/4-VW	7.5	5.5	2340	117	202	1735	19.8	9.9	540	G	272	2.4	2.7	0.82	85.0	0.57	97
132 M/4-VW	10	7.5	2340	117	269	1735	25.8	12.9	630	H	363	2.9	3.2	0.84	87.0	0.76	121
160 M/4-VW	15	11	2350	118	402	1770	35.8	17.9	820	J	534	2.9	3.8	0.85	90.7	1.19	172
160 L/4-VW	20	15	2350	118	536	1760	48.4	24.2	850	K	716	2.9	3.9	0.87	89.4	1.59	205
180 MX/4-VW	25	18.5	2354	118	669	1760	59.0	29.5	880	K	895	3.4	4.3	0.87	90.5	1.90	236
180 LX/4-VW	30	22	2360	118	801	1765	74.4	37.2	890	K	1071	3.6	4.4	0.80	92.8	2.18	269
200 LX/4-VW	40	30	2370	119	1064	1770	98.6	49.3	690	H	1424	3.2	3.6	0.83	92.1	3.80	342

Motor Ratings



Inverter Duty - Continuous Duty 1000:1 Constant Torque (F VZ) 230/460V - 60-0Hz



Inverter duty • Induction motor • TEBC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 230/460V – 60Hz • 1.0 Service Factor
Continuous Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P _n		Eff. Class	Operating Range			Motor Across the line data													
	Full Load Power			n ₆₀	n ₀	T ₆₀₋₀	n _N	I _n		I ₂ /I _{1n}	NEMA Code Letter	T _n	T ₂ /T _n	T _k /T _n	pf	η	J _m	Wt. Weight		
	[HP]	[kW]		Full Load Speed	Full Load Speed	Full Load Torque	Full Load Speed	Full-Load Current	Full-Load Current			Full Load Torque	Locked Rotor Torque Ratio	Break Down Torque Ratio					Full Load Eff.	Rotor Inertia
				60 Hz	0 Hz	60-0 Hz	60 Hz	230 V	460 V			[%]	[lb-in]							[%]
63 S/4-F VZ	0.16	0.12	-	1700	0	5.93	1700	0.88	0.44	250	F	5.93	2.7	3.5	0.66	52.0	0.005	7.9		
63 L/4-F VZ	0.25	0.18	-	1680	0	9.38	1680	1.12	0.56	270	E	9.38	2.3	2.5	0.71	57.0	0.007	9.3		
71 S/4-F VZ	0.33	0.25	-	1710	0	12.2	1710	1.56	0.78	310	G	12.2	2.4	2.7	0.64	63.0	0.017	12		
71 L/4-F VZ	0.5	0.37	-	1720	0	18.3	1720	1.90	0.95	350	F	18.3	2.3	2.7	0.69	71.0	0.020	14		
80 S/4-F VZ	0.75	0.55	-	1710	0	27.6	1710	2.70	1.35	350	F	27.6	2.2	2.3	0.71	72.0	0.026	18		
80 LP/4-F VZ	1	0.75	pe	1730	0	36.4	1730	3.14	1.57	650	K	36.4	3.5	3.8	0.70	86.1	0.045	22		
90 SP/4-F VZ	1.5	1.1	pe	1740	0	54.3	1740	4.20	2.10	840	L	54.3	4.2	4.9	0.76	86.9	0.081	33		
90 LP/4-F VZ	2	1.5	pe	1730	0	72.9	1730	5.60	2.80	760	K	72.9	3.9	4.3	0.78	87.0	0.093	37		
100 LP/4-F VZ	3	2.2	pe	1770	0	107	1770	7.68	3.84	920	L	107	3.0	4.5	0.79	90.0	0.192	62		
112 MP/4-F VZ	5	3.7	pe	1755	0	180	1755	13.0	6.50	950	L	180	4.1	4.6	0.80	90.3	0.332	78		
132 SP/4-F VZ	7.5	5.5	pe	1770	0	267	1770	19.5	9.75	1020	M	267	4.7	5.0	0.77	91.7	0.759	121		
132 MP/4-F VZ	10	7.5	pe	1765	0	357	1765	26.7	13.4	960	M	357	4.7	5.0	0.77	91.7	0.831	137		
160 MP/4-F VZ	15	11	pe	1770	0	534	1770	35.6	17.8	880	K	534	3.2	3.8	0.84	92.5	1.59	205		
160 LP/4-F VZ	20	15	pe	1775	0	710	1775	47.6	23.8	1080	M	710	4.3	4.7	0.85	93.0	2.18	269		
180 MP/4-F VZ	25	18.5	pe	1780	0	885	1780	60.6	30.3	1010	L	885	3.9	4.0	0.82	93.6	3.80	342		
180 LP/4-F VZ	30	22	pe	1780	0	1062	1780	69.6	34.8	880	K	1062	3.3	3.4	0.85	93.6	3.80	342		
225 RP/4-F VZ	40	30	pe	1785	0	1412	1785	-	49.5	890	K	1412	3.4	3.8	0.81	94.5%	11.63	694		
225 SP/4-F VZ	50	37	pe	1785	0	1765	1785	-	59.7	880	K	1765	3.0	3.7	0.82	94.6%	12.81	728		

Motor Ratings





Inverter Duty - Intermittent Duty

1000:1 Constant Torque (F VZ)

230/460V - 60-0Hz

Inverter duty • Induction motor • TEBC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 230/460V – 60Hz • 1.0 Service Factor
 60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	Power P _n Full Load Power		Operating Range			Motor Across the line data											
			n ₆₀ Full Load Speed	n ₀ Full Load Speed	T ₆₀₋₀ Full Load Torque	n _N Full Load Speed	I _n Full-Load Current		I ₂ /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T ₂ /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J _m Rotor Inertia	Wt. Weight
	60 Hz [rpm]	0 Hz [rpm]	60-0 Hz [lb-in]	60 Hz [rpm]	230 V [A]	460 V [A]	[%]	[lb-in]									
80 L/4-F VZ	1	0.75	1650	0	38.2	1650	3.66	1.83	390	G	38.2	2.2	2.3	0.74	70.0	0.034	20
90 S/4-F VZ	1.5	1.1	1660	0	57.0	1660	4.84	2.42	490	G	57.0	2.5	2.8	0.78	73.0	0.056	26
90 L/4-F VZ	2	1.5	1660	0	75.9	1660	6.34	3.17	510	H	75.9	2.5	2.8	0.80	74.0	0.074	31
100 L/4-F VZ	3	2.2	1705	0	111	1705	9.00	4.50	490	G	111	2.3	2.6	0.81	76.0	0.107	40
100 LA/4-F VZ	5	3.7	1725	0	183	1725	15.2	7.6	510	G	183	2.7	3.1	0.75	81.0	0.142	46
132 S/4-F VZ	7.5	5.5	1735	0	272	1735	19.8	9.9	540	G	272	2.4	2.7	0.82	85.0	0.570	97
132 M/4-F VZ	10	7.5	1735	0	363	1735	25.8	12.9	630	H	363	2.9	3.2	0.84	87.0	0.759	121
160 M/4-F VZ	15	11	1770	0	534	1770	35.8	17.9	820	J	534	2.9	3.8	0.85	90.7	1.19	172
160 L/4-F VZ	20	15	1760	0	716	1760	48.4	24.2	850	K	716	2.9	3.9	0.87	89.4	1.59	205
180 MX/4-F VZ	25	18.5	1760	0	895	1760	59.0	29.5	880	K	895	3.4	4.3	0.87	90.5	1.90	236
180 LX/4-F VZ	30	22	1765	0	1071	1765	74.4	37.2	890	K	1071	3.6	4.4	0.80	92.8	2.18	269
200 LX/4-F VZ	40	30	1770	0	1424	1770	98.6	49.3	690	H	1424	3.2	3.6	0.83	92.1	3.80	342



Continuous Duty 575V - 60Hz



Inverter duty • Induction motor • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 332/575V – 60Hz • 1.15 Service Factor
 Continuous Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	P _n Full Load Power		Eff. Class	n _N Full Load Speed	I _n Full Load Current	I _l /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T _l /T _n Locked Rotor Torque Ratio	T _b /T _n Break Down Torque Ratio	pf Power Factor	Eff. Normal Efficiency	J _m Rotor Inertia	Wt. Weight
	[hp]	[kW]												
63 S/4	0.16	0.12	-	1700	0.37	250	G	5.93	2.7	3.5	0.66	52.0	0.0050	7.9
63 L/4	0.25	0.18	-	1680	0.46	270	E	9.38	2.3	2.5	0.71	57.0	0.0066	9.3
71 S/4	0.33	0.25	-	1710	0.66	310	G	12.2	2.4	2.7	0.64	63.0	0.017	12
71 L/4	0.5	0.37	-	1720	0.80	350	F	18.3	2.3	2.7	0.69	71.0	0.020	14
80 S/4	0.75	0.55	-	1710	1.12	350	F	27.6	2.2	2.3	0.71	72.0	0.026	18
80 LP/4	1	0.75		1730	1.26	650	K	36.4	3.5	3.8	0.70	86.1	0.045	22
90 SP/4	1.5	1.1		1740	1.68	840	L	54.3	4.2	4.9	0.76	86.9	0.081	33
90 LP/4	2	1.5		1730	2.24	760	K	72.9	3.9	4.3	0.78	87.0	0.093	37
100 LP/4	3	2.2		1770	3.07	920	L	107	3.0	4.5	0.79	90.0	0.19	62
112 MP/4	5	3.7		1755	5.20	950	L	180	4.1	4.6	0.80	90.3	0.33	78
132 SP/4	7.5	5.5		1770	7.80	1020	M	267	4.7	5.0	0.77	91.7	0.76	121
132 MP/4	10	7.5		1765	10.7	960	M	357	4.7	5.0	0.77	91.7	0.83	137
160 MP/4	15	11		1770	14.2	880	K	534	3.2	3.8	0.84	92.5	1.59	205
160 LP/4	20	15		1775	19.0	1080	M	710	4.3	4.7	0.85	93.0	2.18	269
180 MP/4	25	18.5		1780	24.2	1010	L	885	3.9	4.0	0.82	93.6	3.80	342
180 LP/4	30	22		1780	27.8	880	K	1062	3.3	3.4	0.85	93.6	3.80	342
225 RP/4	40	30		1785	39.6	890%	K	1420	3.4	3.8	0.81	94.5%	11.63	694
225 SP/4	50	37		1785	47.8	880%	K	1752	3.0	3.7	0.82	94.6%	12.81	728

Motor Ratings





Inverter duty • Induction motor • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 332/575V – 60Hz • 1.15 Service Factor
 60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	P _n Full Load Power		n _N Full Load Speed	I _n Full Load Current	I _s /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T _s /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	Eff. Normal Efficiency	J _m Rotor Inertia	Wt. Weight
	[hp]	[kW]											
80 L/4	1	0.75	1650	1.46	390	G	38.2	2.2	2.3	0.74	70.0	0.034	20
90 S/4	1.5	1.1	1660	1.94	490	H	57.0	2.5	2.8	0.78	73.0	0.056	26
90 L/4	2	1.5	1660	2.54	510	H	75.9	2.5	2.8	0.80	74.0	0.074	31
100 L/4	3	2.2	1705	3.63	490	G	111	2.3	2.6	0.81	76.0	0.11	40
100 LA/4	5	3.7	1725	6.10	510	G	183	2.7	3.1	0.75	81.0	0.14	46
132 S/4	7.5	5.5	1735	7.92	540	G	272	2.4	2.7	0.82	85.0	0.57	97
132 M/4	10	7.5	1735	10.3	630	H	363	2.9	3.2	0.84	87.0	0.76	121
160 M/4	15	11	1770	14.5	820	J	534	2.9	3.8	0.85	90.7	1.19	172
160 L/4	20	15	1760	19.3	850	K	716	2.9	3.9	0.87	89.4	1.59	205
180 MX/4	25	18.5	1760	23.6	880	K	895	3.4	4.3	0.87	90.5	1.90	236
180 LX/4	30	22	1765	29.8	890	K	1071	3.6	4.4	0.80	92.8	2.18	269
200 LX/4	40	30	1770	39.4	690	H	1424	3.2	3.6	0.83	92.1	3.80	342

Inverter Duty - Continuous Duty

5:1 Constant Torque (VR)

575V - 60-12Hz



Inverter duty • Induction motor • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 575V – 60Hz • 1.0 Service Factor
 Continuous Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	Power P_n		Eff. Class	Operating Range			Motor Across the line Data										
	Full Load Power			n_{60}	n_{12}	T_{60-12}	n_N	I_n	I_a/I_n	NEMA	T_n	T_L/T_n	T_k/T_n	pf	η	J_m	Wt. Weight
	[HP]	[kW]		60 Hz	12 Hz	60-12 Hz	60 Hz	575 V		Code Letter	Full Load Torque	Locked Rotor Torque Ratio	Break Down Torque Ratio	Power Factor	Full Load Eff.	Rotor Inertia	
		[rpm]	[rpm]	[lb-in]	[rpm]	[A]	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]		
63 S/4-VR	0.16	0.12	-	1700	340	5.93	1700	0.35	250	F	5.93	2.7	3.5	0.66	52.0	0.0050	7.9
63 L/4-VR	0.25	0.18	-	1680	336	9.38	1680	0.45	270	E	9.38	2.3	2.5	0.71	57.0	0.0066	9.3
71 S/4-VR	0.33	0.25	-	1710	342	12.2	1710	0.62	310	G	12.2	2.4	2.7	0.64	63.0	0.017	12
71 L/4-VR	0.5	0.37	-	1720	344	18.3	1720	0.76	350	F	18.3	2.3	2.7	0.69	71.0	0.020	14
80 S/4-VR	0.75	0.55	-	1710	342	27.6	1710	1.08	350	F	27.6	2.2	2.3	0.71	72.0	0.026	18
80 LP/4-VR	1	0.75	pe	1730	346	36.4	1730	1.26	650	K	36.43	3.5	3.8	0.70	86.1	0.045	22
90 SP/4-VR	1.5	1.1	pe	1740	348	54.3	1740	1.68	840	L	54.33	4.2	4.9	0.76	86.9	0.081	33
90 LP/4-VR	2	1.5	pe	1730	346	72.9	1730	2.24	760	K	72.86	3.9	4.3	0.78	87.0	0.093	37
100 LP/4-VR	3	2.2	pe	1770	354	107	1770	3.07	920	L	106.82	3.0	4.5	0.79	90.0	0.192	62
112 MP/4-VR	5	3.7	pe	1755	351	180	1755	5.20	950	L	179.56	4.1	4.6	0.80	90.3	0.332	78
132 SP/4-VR	7.5	5.5	pe	1770	354	267	1770	7.80	1020	M	267.06	4.7	5.0	0.77	91.7	0.759	121
132 MP/4-VR	10	7.5	pe	1765	353	357	1765	10.7	960	M	357.08	4.7	5.0	0.77	91.7	0.831	137
160 MP/4-VR	15	11	pe	1770	354	534	1770	14.2	880	K	534.11	3.2	3.8	0.84	92.5	1.59	205
160 LP/4-VR	20	15	pe	1775	355	710	1775	19.0	1080	M	710.14	4.3	4.7	0.85	93.0	2.18	269
180 MP/4-VR	25	18.5	pe	1780	356	885	1780	24.2	1010	L	885.19	3.9	4.0	0.82	93.6	3.80	342
180 LP/4-VR	30	22	pe	1780	356	1062	1780	27.8	880	K	1062.23	3.3	3.4	0.85	93.6	3.80	342
225 RP/4-VR	40	30	pe	1785	357	1412	1785	39.6	890	K	1412	3.4	3.8	0.81	94.5%	11.63	694
225 SP/4-VR	50	37	pe	1785	357	1765	1785	47.8	880	K	1765	3.0	3.7	0.82	94.6%	12.81	728

Motor Ratings





Inverter Duty - Intermittent Duty 5:1 Constant Torque (VR) 575V - 60-12Hz

Inverter duty • Induction motor • TEFC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 575V – 60Hz • 1.0 Service Factor
60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P_n Full Load Power		Operating Range			Motor Across the line Data										
			n_{60} Full Load Speed	n_{12} Full Load Speed	T_{60-12} Full Load Torque	n_N Full Load Speed	I_n Full-Load Current	I_L/I_n Locked Rotor Current Ratio	NEMA Code Letter	T_n Full Load Torque	T_L/T_n Locked Rotor Torque Ratio	T_k/T_n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J_m Rotor Inertia	Wt. Weight
	[HP]	[kW]	60 Hz [rpm]	12 Hz [rpm]	60-12 Hz [lb-in]	60 Hz [rpm]	575 V [A]	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]
80 L/4-VR	1	0.75	1650	330	38.2	1650	1.46	390	G	38.2	2.2	2.3	0.74	70.0	0.034	20
90 S/4-VR	1.5	1.1	1660	332	57.0	1660	1.94	490	G	57.0	2.5	2.8	0.78	73.0	0.056	26
90 L/4-VR	2	1.5	1660	332	75.9	1660	2.54	510	H	75.9	2.5	2.8	0.80	74.0	0.074	31
100 L/4-VR	3	2.2	1705	341	111	1705	3.60	490	G	111	2.3	2.6	0.81	76.0	0.107	40
100 LA/4-VR	5	3.7	1725	345	183	1725	6.08	510	G	183	2.7	3.1	0.75	81.0	0.142	46
132 S/4-VR	7.5	5.5	1735	347	272	1735	7.92	540	G	272	2.4	2.7	0.82	85.0	0.570	97
132 M/4-VR	10	7.5	1735	347	363	1735	10.3	630	H	363	2.9	3.2	0.84	87.0	0.759	121
160 M/4-VR	15	11	1770	354	534	1770	14.3	820	J	534	2.9	3.8	0.85	90.7	1.19	172
160 L/4-VR	20	15	1760	352	716	1760	19.4	850	K	716	2.9	3.9	0.87	89.4	1.59	205
180 MX/4-VR	25	18.5	1760	352	895	1760	23.6	880	K	895	3.4	4.3	0.87	90.5	1.90	236
180 LX/4-VR	30	22	1765	353	1071	1765	29.8	890	K	1071	3.6	4.4	0.80	92.8	2.18	269
200 LX/4-VR	40	30	1770	354	1424	1770	39.4	690	H	1424	3.2	3.6	0.83	92.1	3.80	342

Motor Ratings



Inverter Duty - Continuous Duty

10:1 - Constant Torque (VN)

575V - 60-6Hz



Inverter duty • Induction motor • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 575V – 60Hz • 1.0 Service Factor
 Continuous Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	Power P _n		Eff. Class	Operating Range			Motor Across the line data										
	Full Load Power			n ₆₀	n ₆	T ₆₀₋₆	n _N	I _n	I ₂ /I _n	NEMA Code Letter	T _n	T ₂ /T _n	T _k /T _n	pf	η	J _m	Wt. Weight
	[HP]	[kW]		60 Hz [rpm]	6 Hz [rpm]	60-6 Hz [lb-in]	60 Hz [rpm]	575V [A]	Locked Rotor Current Ratio [%]		Full Load Torque [lb-in]	Locked Rotor Torque Ratio	Break Down Torque Ratio	Power Factor	Full Load Eff. [%]	Rotor Inertia [lb-ft ²]	[lb]
63 S/4-VN	0.12	0.09	-	1720	172	4.40	1720	0.30	290	J	4.40	3.6	4.7	0.57	52.0	0.005	7.9
63 L/4-VN	0.16	0.12	-	1720	172	5.86	1720	0.36	335	J	5.86	3.7	4.0	0.64	52.0	0.007	9.3
71 S/4-VN	0.25	0.18	-	1740	174	9.06	1740	0.43	454	J	9.06	3.2	3.6	0.70	63.0	0.017	11.9
71 L/4-VN	0.33	0.25	-	1745	175	11.9	1745	0.59	449	K	11.9	3.5	4.2	0.64	65.0	0.020	13.9
80 S/4-VN	0.50	0.37	-	1745	175	18.1	1745	1.12	338	J	18.1	3.4	3.5	0.46	73.0	0.026	17.6
80 LP/4-VN	0.75	0.55	pe	1750	175	27.0	1750	0.93	881	M	27.0	4.7	5.1	0.71	85.6	0.045	22
90 SP/4-VN	1	0.75	pe	1760	176	35.8	1760	1.33	1057	R	35.8	6.4	7.4	0.65	86.3	0.081	33
90 LP/4-VN	1.5	1.1	pe	1755	176	53.9	1755	1.84	926	N	53.9	5.3	5.8	0.70	87.5	0.093	37
100 LP/4-VN	2	1.5	pe	1780	178	70.8	1780	2.29	1234	R	70.8	4.5	6.8	0.73	89.9	0.18	56
112 MP/4-VN	3	2.2	pe	1775	178	107	1775	3.73	1323	S	107	6.9	7.8	0.67	89.8	0.30	78
132 SP/4-VN	5	3.7	pe	1780	178	177	1780	6.29	1265	R	177	7.1	7.5	0.65	91.7	0.75	121
132 MP/4-VN	7.5	5.5	pe	1775	178	266	1775	8.6	1192	P	266	6.3	6.7	0.71	92.0	0.84	137
160 MP/4-VN	10	7.5	pe	1780	178	354	1780	11.0	1134	N	354	4.8	5.7	0.73	92.4	1.59	205
160 LP/4-VN	15	11	pe	1780	178	531	1780	15.4	1338	P	531	5.7	6.3	0.78	93.2	2.18	269
180 MP/4-VN	20	15	pe	1785	179	706	1785	19.8	1234	N	706	4.9	5.0	0.81	93.6	3.08	302
180 LP/4-VN	25	18.5	pe	1785	179	883	1785	23.9	1026	L	883	4.0	4.1	0.83	94.0	3.80	342
225 RP/4-VN	30	22	pe	1790	179	1056	1790	32.0	1101	N	1056	4.5	5.1	0.74	94.5%	11.63	694
225 SP/4-VN	40	30	pe	1790	179	1408	1790	40.5	1038	M	1408	3.8	4.6	0.78	94.8%	12.81	728

Motor Ratings





Inverter Duty - Intermittent Duty 10:1 Constant Torque (VN) 575V - 60-6Hz

Inverter duty • Induction motor • TEFC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 575V – 60Hz • 1.0 Service Factor
60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P _n Full Load Power		Operating Range			Motor Across the line data										
			n ₆₀ Full Load Speed	n ₆ Full Load Speed	T ₆₀₋₆ Full Load Torque	n _N Full Load Speed	I _n Full Load Current	I ₂ /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T ₂ /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J _m Rotor Inertia	Wt. Weight
	[HP]	[kW]	60 Hz [rpm]	6 Hz [rpm]	60-6 Hz [lb-in]	60 Hz [rpm]	575V [A]	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]
80 L/4-VN	0.75	0.55	1740	174	27.2	1740	1.54	371	J	27.2	3.1	3.2	0.51	72.0	0.034	19.8
90 S/4-VN	1	0.75	1760	176	35.8	1760	1.56	609	L	35.8	4.0	4.5	0.65	74.0	0.056	26.5
90 L/4-VN	1.5	1.1	1750	175	54.0	1750	1.94	666	K	54.0	3.5	3.9	0.76	76.0	0.074	30.9
100 L/4-VN	2	1.5	1760	176	71.6	1760	2.90	608	K	71.6	3.6	4.0	0.68	76.0	0.11	39.7
100 LA/4-VN	3	2.2	1760	176	107	1760	5.19	598	M	107	4.6	5.3	0.50	86.0	0.14	46.3
132 S/4-VN	5	3.7	1775	178	178	1775	5.57	768	K	178	3.7	4.1	0.78	86.0	0.57	97.0
132 M/4-VN	7.5	5.5	1770	177	267	1770	8.19	794	K	267	3.9	4.4	0.78	88.0	0.76	121
160 M/4-VN	10	7.5	1780	178	354	1780	10.8	1092	N	354	4.4	5.7	0.77	90.4	1.19	172
160 L/4-VN	15	11	1775	178	533	1775	15.2	1085	M	533	3.9	5.2	0.81	91.2	1.59	205
180 MX/4-VN	20	15	1775	178	710	1775	20.5	1015	M	710	4.3	5.4	0.80	91.5	1.90	236
180 LX/4-VN	25	18.5	1775	178	888	1775	27.6	958	M	888	4.3	5.3	0.74	91.4	2.18	269
200 LX/4-VN	30	22	1785	179	1059	1785	34.0	801	L	1059	4.3	4.8	0.72	92.4	3.80	342

Motor Ratings



Inverter Duty - Continuous Duty

20:1 Constant Torque (VW)

575V - 80-4Hz



Inverter duty • Induction motor • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 Voltages: 575V – 60Hz • 1.0 Service Factor
 Continuous Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	Power P_n		Eff. Class	Operating Range			Motor Across the line data										
	Full Load Power			n_{60}	n_6	T_{60-6}	n_N	I_n	I_L/I_n	NEMA Code Letter	T_n	T_L/T_n	T_k/T_n	pf Power Factor	η Full Load Eff.	J_m Rotor Inertia	Wt. Weight
	[HP]	[kW]		80 Hz [rpm]	4 Hz [rpm]	80-4 Hz [lb-in]	60 Hz [rpm]	575V [A]	[%]		[lb-in]	[%]	[lb-ft ²]				
63 S/4-VW	0.16	0.12	-	2250	113	4.48	1700	0.35	250	F	5.93	2.7	3.5	0.66	52.0	0.0050	7.9
63 L/4-VW	0.25	0.18	-	2220	111	7.10	1680	0.45	270	E	9.38	2.3	2.5	0.71	57.0	0.0066	9.3
71 S/4-VW	0.33	0.25	-	2285	114	9.10	1710	0.62	310	G	12.2	2.4	2.7	0.64	63.0	0.017	12
71 L/4-VW	0.5	0.37	-	2280	114	13.8	1720	0.76	350	F	18.3	2.3	2.7	0.69	71.0	0.020	14
80 S/4-VW	0.75	0.55	-	2285	114	20.7	1710	1.08	350	F	27.6	2.2	2.3	0.71	72.0	0.026	18
80 LP/4-VW	1	0.75	pe	2230	112	28.3	1730	1.26	650	K	36.4	3.5	3.8	0.70	86.1	0.045	22
90 SP/4-VW	1.5	1.1	pe	2320	116	40.7	1740	1.68	840	L	54.3	4.2	4.9	0.76	86.9	0.081	33
90 LP/4-VW	2	1.5	pe	2310	116	54.6	1730	2.24	760	K	72.9	3.9	4.3	0.78	87.0	0.093	37
100 LP/4-VW	3	2.2	pe	2360	118	80.1	1770	3.07	920	L	107	3.0	4.5	0.79	90.0	0.192	62
112 MP/4-VW	5	3.7	pe	2335	117	135	1755	5.20	950	L	180	4.1	4.6	0.80	90.3	0.332	78
132 SP/4-VW	7.5	5.5	pe	2355	118	201	1770	7.80	1020	M	267	4.7	5.0	0.77	91.7	0.759	121
132 MP/4-VW	10	7.5	pe	2350	118	268	1765	10.7	960	M	357	4.7	5.0	0.77	91.7	0.831	137
160 MP/4-VW	15	11	pe	2360	118	401	1770	14.2	880	K	534	3.2	3.8	0.84	92.5	1.59	205
160 LP/4-VW	20	15	pe	2360	118	534	1775	19.0	1080	M	710	4.3	4.7	0.85	93.0	2.18	269
180 MP/4-VW	25	18.5	pe	2380	119	662	1780	24.2	1010	L	885	3.9	4.0	0.82	93.6	3.80	342
180 LP/4-VW	30	22	pe	2370	119	798	1780	27.8	880	K	1062	3.3	3.4	0.85	93.6	3.80	342
225 RP/4-VW	40	30	pe	2380	119	1059	1785	39.6	890	K	1412	3.4	3.8	0.81	94.5%	11.63	694
225 SP/4-VW	50	37	pe	2380	119	1324	1785	47.8	880	K	1765	3.0	3.7	0.82	94.6%	12.81	728

Motor Ratings





Inverter Duty - Intermittent Duty 20:1 Constant Torque (VW) 575V - 80-4Hz

Inverter duty • Induction motor • TEFC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 575V – 60Hz • 1.0 Service Factor
60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P _n Full Load Power		Operating Range			Motor Across the line data										
			n ₆₀ Full Load Speed	n ₆ Full Load Speed	T _{60.6} Full Load Torque	n _N Full Load Speed	I _n Full Load Current	I ₂ /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T ₂ /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J _m Rotor Inertia	Wt. Weight
	[HP]	[kW]	80 Hz [rpm]	4 Hz [rpm]	80-4 Hz [lb-in]	60 Hz [rpm]	575V [A]	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]
80 L/4-VW	1	0.75	2290	115	27.5	1650	1.46	390	G	38.2	2.2	2.3	0.74	70.0	0.034	20
90 S/4-VW	1.5	1.1	2310	116	40.9	1660	1.94	490	G	57.0	2.5	2.8	0.78	73.0	0.056	26
90 L/4-VW	2	1.5	2305	115	54.7	1660	2.54	510	H	75.9	2.5	2.8	0.80	74.0	0.074	31
100 L/4-VW	3	2.2	2310	116	81.9	1705	3.60	490	G	111	2.3	2.6	0.81	76.0	0.11	40
100 LA/4-VW	5	3.7	2295	115	137	1725	6.08	510	G	183	2.7	3.1	0.75	81.0	0.14	46
132 S/4-VW	7.5	5.5	2340	117	202	1735	7.92	540	G	272	2.4	2.7	0.82	85.0	0.57	97
132 M/4-VW	10	7.5	2340	117	269	1735	10.32	630	H	363	2.9	3.2	0.84	87.0	0.76	121
160 M/4-VW	15	11	2350	118	402	1770	14.3	820	J	534	2.9	3.8	0.85	90.7	1.19	172
160 L/4-VW	20	15	2350	118	536	1760	19.4	850	K	716	2.9	3.9	0.87	89.4	1.59	205
180 MX/4-VW	25	18.5	2354	118	669	1760	23.6	880	K	895	3.4	4.3	0.87	90.5	1.90	236
180 LX/4-VW	30	22	2360	118	801	1765	29.8	890	K	1071	3.6	4.4	0.80	92.8	2.18	269
200 LX/4-VW	40	30	2370	119	1064	1770	39.4	690	H	1424	3.2	3.6	0.83	92.1	3.80	342

Motor Ratings



Inverter Duty - Continuous Duty 1000:1 Constant Torque (F VZ) 575V - 60-0Hz



Inverter duty • Induction motor • TEBC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 575V – 60Hz • 1.0 Service Factor
Continuous Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P _n Full Load Power		Eff. Class	Operating Range			Motor Across the line data										
				n ₆₀ Full Load Speed	n ₆ Full Load Speed	T ₆₀₋₆ Full Load Torque	n _N Full Load Speed	I _n Full Load Current	I ₂ /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T ₂ /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J _m Rotor Inertia	Wt. Weight
	60 Hz [rpm]	0 Hz [rpm]		60-0 Hz [lb-in]	60 Hz [rpm]	575V [A]	[%]		[lb-in]					[%]	[lb-ft ²]	[lb]	
63 S/4-F VZ	0.16	0.12	-	1700	0	5.93	1700	0.35	250	F	5.93	2.7	3.5	0.66	52.0	0.005	7.9
63 L/4-F VZ	0.25	0.18	-	1680	0	9.38	1680	0.45	270	E	9.38	2.3	2.5	0.71	57.0	0.007	9.3
71 S/4-F VZ	0.33	0.25	-	1710	0	12.2	1710	0.62	310	G	12.2	2.4	2.7	0.64	63.0	0.017	12
71 L/4-F VZ	0.5	0.37	-	1720	0	18.3	1720	0.76	350	F	18.3	2.3	2.7	0.69	71.0	0.020	14
80 S/4-F VZ	0.75	0.55	-	1710	0	27.6	1710	1.08	350	F	27.6	2.2	2.3	0.71	72.0	0.026	18
80 LP/4-F VZ	1	0.75	pe	1730	0	36.4	1730	1.26	650	K	36.4	3.5	3.8	0.70	86.1	0.045	22
90 SP/4-F VZ	1.5	1.1	pe	1740	0	54.3	1740	1.68	840	L	54.3	4.2	4.9	0.76	86.9	0.081	33
90 LP/4-F VZ	2	1.5	pe	1730	0	72.9	1730	2.24	760	K	72.9	3.9	4.3	0.78	87.0	0.093	37
100 LP/4-F VZ	3	2.2	pe	1770	0	107	1770	3.07	920	L	107	3.0	4.5	0.79	90.0	0.192	62
112 MP/4-F VZ	5	3.7	pe	1755	0	180	1755	5.20	950	L	180	4.1	4.6	0.80	90.3	0.332	78
132 SP/4-F VZ	7.5	5.5	pe	1770	0	267	1770	7.80	1020	M	267	4.7	5.0	0.77	91.7	0.759	121
132 MP/4-F VZ	10	7.5	pe	1765	0	357	1765	10.7	960	M	357	4.7	5.0	0.77	91.7	0.831	137
160 MP/4-F VZ	15	11	pe	1770	0	534	1770	14.2	880	K	534	3.2	3.8	0.84	92.5	1.59	205
160 LP/4-F VZ	20	15	pe	1775	0	710	1775	19.0	1080	M	710	4.3	4.7	0.85	93.0	2.18	269
180 MP/4-F VZ	25	18.5	pe	1780	0	885	1780	24.2	1010	L	885	3.9	4.0	0.82	93.6	3.80	342
180 LP/4-F VZ	30	22	pe	1780	0	1062	1780	27.8	880	K	1062	3.3	3.4	0.85	93.6	3.80	342
225 RP/4-F VZ	40	30	pe	1785	0	1412	1785	39.6	890	K	1412	3.4	3.8	0.81	94.5%	11.63	694
225 SP/4-F VZ	50	37	pe	1785	0	1765	1785	47.8	880	K	1765	3.0	3.7	0.82	94.6%	12.81	728

Motor Ratings





Inverter Duty - Intermittent Duty 1000:1 Constant Torque (F VZ) 575V - 60-0Hz

Inverter duty • Induction motor • TEBC
Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
Voltages: 575V – 60Hz • 1.0 Service Factor
60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
Class B temperature rise • Class F insulation

Motor Type	Power P_n Full Load Power		Operating Range			Motor Across the line data										
			n_{60} Full Load Speed	n_6 Full Load Speed	T_{60-6} Full Load Torque	n_N Full Load Speed	I_n Full Load Current	I_a/I_n Locked Rotor Current Ratio	NEMA Code Letter	T_n Full Load Torque	T_s/T_n Locked Rotor Torque Ratio	T_k/T_n Break Down Torque Ratio	pf Power Factor	η Full Load Eff.	J_m Rotor Inertia	Wt. Weight
	[HP]	[kW]	60 Hz [rpm]	0 Hz [rpm]	60-0 Hz [lb-in]	60 Hz [rpm]	575V [A]	[%]		[lb-in]				[%]	[lb-ft ²]	[lb]
80 L/4-F VZ	1	0.75	1650	0	38.2	1650	1.46	390	G	38.2	2.2	2.3	0.74	70.0	0.034	20
90 S/4-F VZ	1.5	1.1	1660	0	57.0	1660	1.94	490	G	57.0	2.5	2.8	0.78	73.0	0.056	26
90 L/4-F VZ	2	1.5	1660	0	75.9	1660	2.54	510	H	75.9	2.5	2.8	0.80	74.0	0.074	31
100 L/4-F VZ	3	2.2	1705	0	111	1705	3.60	490	G	111	2.3	2.6	0.81	76.0	0.107	40
100 LA/4-F VZ	5	3.7	1725	0	183	1725	6.08	510	G	183	2.7	3.1	0.75	81.0	0.142	46
132 S/4-F VZ	7.5	5.5	1735	0	272	1735	7.92	540	G	272	2.4	2.7	0.82	85.0	0.570	97
132 M/4-F VZ	10	7.5	1735	0	363	1735	10.32	630	H	363	2.9	3.2	0.84	87.0	0.759	121
160 M/4-F VZ	15	11	1770	0	534	1770	14.3	820	J	534	2.9	3.8	0.85	90.7	1.19	172
160 L/4-F VZ	20	15	1760	0	716	1760	19.4	850	K	716	2.9	3.9	0.87	89.4	1.59	205
180 MX/4-F VZ	25	18.5	1760	0	895	1760	23.6	880	K	895	3.4	4.3	0.87	90.5	1.90	236
180 LX/4-F VZ	30	22	1765	0	1071	1765	29.8	890	K	1071	3.6	4.4	0.80	92.8	2.18	269
200 LX/4-F VZ	40	30	1770	0	1424	1770	39.4	690	H	1424	3.2	3.6	0.83	92.1	3.80	342

Motor Ratings



Continuous Duty 400V - 50Hz



Inverter Duty • Induction motor • TEFC
 Synchronous speed 1500rpm @ 50Hz • 4-pole • Three-phase
 Voltages: 400V – 50Hz • 1.0 Service Factor
 Continuous Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	P _n Full Load Power			n _N Full Load Speed	I _n Full Load Current	I _a /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T _a /T _n Locked Rotor Torque Ratio	T _b /T _n Break Down Torque Ratio	pf Power Factor	η Full-Load Efficiency	J _m Rotor Inertia	Wt. Weight
	[hp]	[kW]												
63 S/4	0.16	0.12	-	1335	0.55	290	H	7.55	2.7	2.7	0.64	50.0	0.0050	7.9
63 L/4	0.25	0.18	-	1390	0.68	300	G	11.3	2.6	2.7	0.61	58.0	0.0066	9.3
71 S/4	0.33	0.25	-	1380	0.76	330	F	15.1	2.2	2.1	0.77	63.0	0.017	12
71 L/4	0.5	0.37	-	1380	1.09	360	F	22.8	2.0	2.4	0.71	67.0	0.020	14
80 S/4	0.75	0.55	-	1375	1.52	330	E	34.4	1.9	2.0	0.73	75.1	0.026	18
80 LP/4	1	0.75	IE3	1415	1.79	540	H	44.5	3.0	3.1	0.72	83.7	0.045	22
90 SP/4	1.5	1.1	IE3	1430	2.38	680	J	66.1	3.6	4.0	0.78	85.3	0.081	33
90 LP/4	2	1.5	IE3	1415	3.23	590	H	89.1	3.3	3.5	0.79	85.3	0.093	37
100 LP/4	3	2.2	IE3	1465	4.27	820	K	129	2.6	3.9	0.83	88.1	0.19	62
100 AP/4	4	3	IE3	1460	6.06	730	J	173	2.4	3.6	0.81	88.1	0.19	62
112 MP/4	5.4	4	IE3	1440	7.85	740	J	236	3.3	3.5	0.83	88.6	0.33	78
132 SP/4	7.5	5.5	IE3	1465	10.9	860	K	323	3.9	4.1	0.80	90.9	0.76	121
132 MP/4	10	7.5	IE3	1460	15.7	750	K	432	3.9	4.2	0.77	90.4	0.83	137
160 SP/4	12	9.2	IE3	1470	16.7	810	J	514	2.9	3.3	0.88	91.0	1.59	205
160 MP/4	15	11	IE3	1465	20.5	740	J	645	2.9	3.4	0.85	91.4	1.59	205
160 LP/4	20	15	IE3	1465	27.9	910	K	860	3.8	4.3	0.85	92.3	2.18	269
180 MP/4	25	18.5	IE3	1480	34.0	920	K	1065	3.4	3.8	0.84	93.1	3.80	342
180 LP/4	30	22	IE3	1475	39.3	800	J	1282	2.8	3.2	0.87	93.1	3.80	342
225 RP/4	40	30	IE3	1485	56.2	780	J	1707	3.0	3.4	0.82	94.1	11.63	694
225 SP/4	50	37	IE3	1485	68.2	770	J	2106	2.9	3.2	0.83	94.1	12.81	728

* Standard motors 10hp (7.5kw) and below are rated 230Δ / 400Y volts, while motors 10hp (7.5kw) and above are rated 400Δ / 690Y volts.



Inverter Duty • Induction motor • TEFC
 Synchronous speed 1500rpm @ 50Hz • 4-pole • Three-phase
 Voltages: 400V – 50Hz • 1.0 Service Factor
 60 Minute Duty • 40°C Ambient • up to 3300ft Elevation
 Class B temperature rise • Class F insulation

Motor Type	P _n Full Load Power		n _N Full Load Speed	I _n Full Load Current	I _a /I _n Locked Rotor Current Ratio	NEMA Code Letter	T _n Full Load Torque	T _a /T _n Locked Rotor Torque Ratio	T _k /T _n Break Down Torque Ratio	pf Power Factor	η Full-Load Efficiency	J _m Rotor Inertia	Wt. Weight
	[hp]	[kW]											
80 L/4	1	0.75	1375	2.10	350%	F	45.8	2.0	2.1	0.74	75.5%	0.033	20
90 S/4	1.5	1.1	1395	2.81	440%	G	67.8	2.3	2.6	0.74	77.6%	0.056	26
90 L/4	2	1.5	1395	3.55	480%	G	90.4	2.3	2.6	0.78	77.5%	0.074	31
100 L/4	3	2.2	1440	5.20	510%	G	131	2.3	3.0	0.74	80.8%	0.11	40
100 LA/4	4	3	1415	6.52	540%	G	178	2.5	2.9	0.76	83.3%	0.14	46
112 M/4	5.4	4	1445	8.31	540%	G	236	2.3	2.9	0.80	85.1%	0.26	66
132 S/4	7.5	5.5	1445	11.4	550%	G	327	2.1	2.7	0.81	87.9%	0.57	97
132 M/4	10	7.5	1445	14.8	550%	G	436	2.5	2.8	0.84	87.7%	0.76	121
132 MA/4	12.3	9.2	1450	18.8	600%	H	535	2.6	3.1	0.80	86.9%	0.83	137
160 M/4	15	11	1455	20.9	650%	H	650	2.4	2.9	0.85	88.8%	1.19	172
160 L/4	20	15	1460	28.2	750%	J	863	2.9	3.5	0.85	89.7%	1.59	205
180 MX/4	25	18.5	1460	35.4	750%	J	1079	3.2	3.8	0.83	90.3%	1.90	236
180 LX/4	30	22	1460	42.6	750%	J	1295	3.3	3.8	0.82	90.3%	2.18	269
200 LX/4	40	30	1470	57.6	690%	H	1715	2.6	3.0	0.83	90.7%	3.80	342

* Standard motors 10hp (7.5kw) and below are rated 230Δ / 400Y volts, while motors 10hp (7.5kw) and above are rated 400Δ / 690Y volts.

Notes



A large grid of blue lines for taking notes, consisting of 20 columns and 30 rows.

Motor Ratings



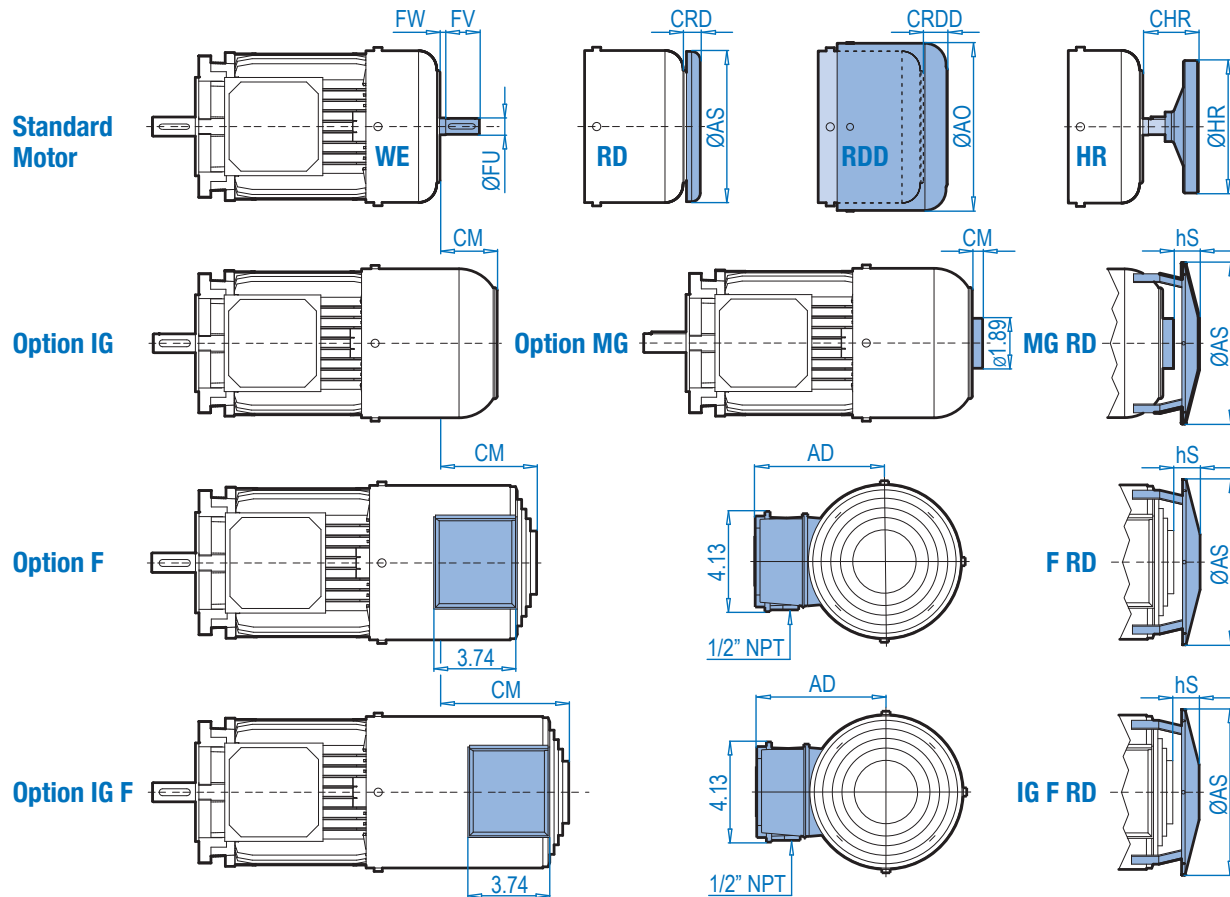
DRIVESYSTEMS

Dimensions

Integral Motor Option Dimensions.....	248
Conduit Box and Cable Entry Dimensions	250



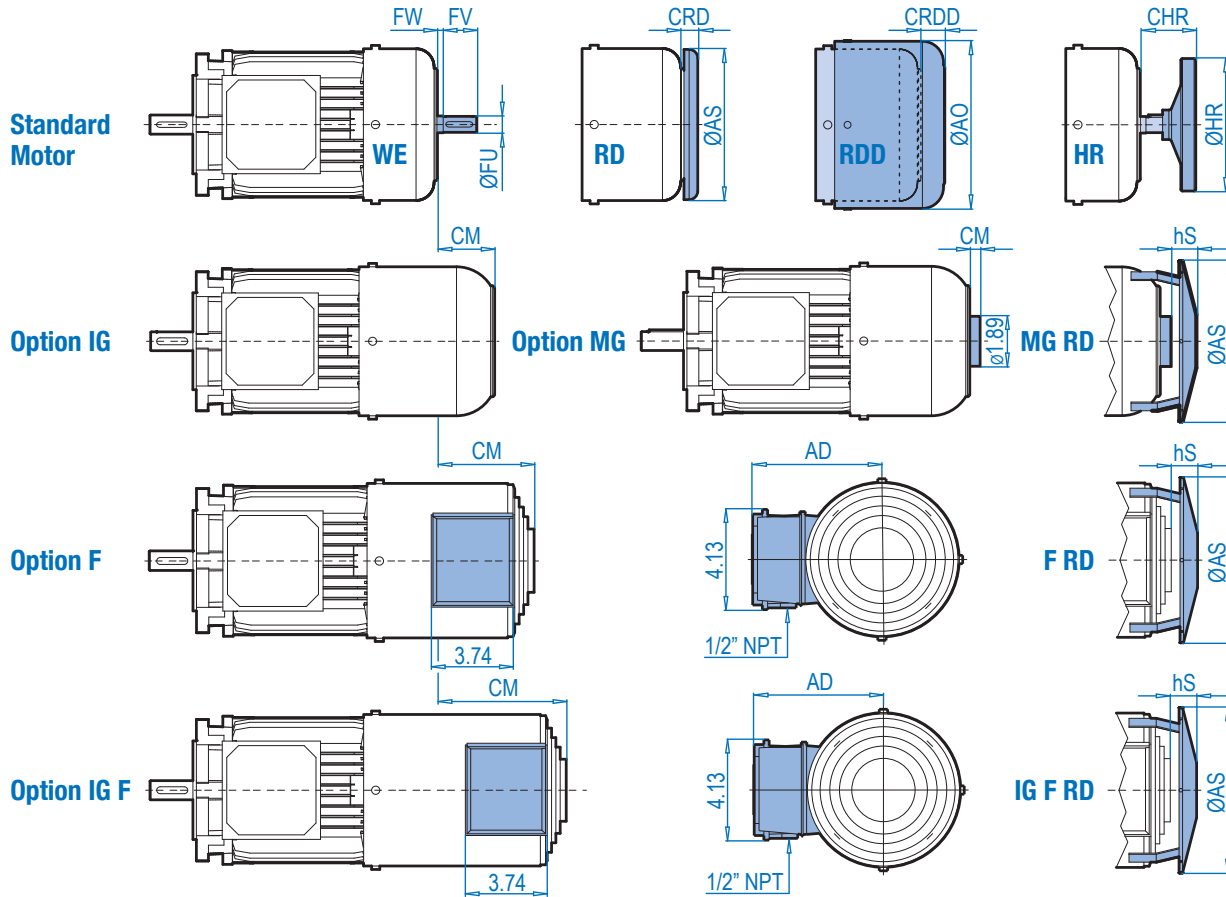
Motor Option Dimensions



Motor Frame Size		WE (mm)				RD		RDD		HR		MG	MG RD		IG	F	IG F	F RD / IG F RD		
Std. Eff.	Prem. Eff.	FU	Tap	FW	FV	AS	CRD	AS	CRDD	HR	CHR	CM	AS	hS	CM	CM	CM	AS	hs	AD
63 S/L	-	11	M4	0	23	4.84	0.43	5.43	1.02	3.94	1.54	0.41	4.84	0.43	2.17	3.46	6.22	5.24	1.46	4.49
71 S/L	-	11	M4	1	23	5.43	0.43	6.14	0.94	3.94	1.57	0.45	5.43	0.43	2.20	3.50	5.67	5.91	1.46	4.84
80 S	80 LP	14	M5	3	30	6.14	0.59	6.93	1.02	3.94	1.93	0.39	6.14	0.35	2.40	3.54	5.51	6.69	1.57	5.20
90 S/L	90 SP/LP	19	M6	7	40	6.93	0.59	7.64	1.22	6.30	2.64	0.55	6.93	0.35	2.83	4.09	5.87	7.40	1.18	5.59
100 L/LA	100 LP/AP	24	M8	6	50	7.64	0.59	8.58	1.10	6.30	2.99	0.49	7.64	0.33	2.72	3.74	6.10	8.27	1.10	5.94
112 M	112 MP	24	M8	4	50	8.58	0.59	10.16	1.50	6.30	2.91	0.49	8.58	0.33	2.68	3.90	5.87	9.80	1.30	6.42
132 S/M	132 SP/MP	32	M12	18	80	10.12	0.67	12.20	1.61	7.87	4.69	0.39	10.12	0.43	2.48	4.53	6.10	11.81	1.26	7.20
160 M/L	-	42	M16	9	110	12.20	0.67	14.45	1.77	7.87	5.59	0.63	12.20	0.41	2.76	5.91	9.25	13.31	1.26	8.27
-	160 SP/MP/LP	42	M16	9	110	12.20	0.67	14.45	1.77	12.40	5.59	0.63	12.20	0.41	2.76	5.71	9.25	13.31	1.26	8.27
180 MX	-	42	M16	9	110	12.20	0.67	14.45	1.77	12.40	5.59	0.63	12.20	0.41	2.76	5.91	9.25	13.31	1.26	8.27
180 LX	-	42	M16	9	110	12.20	0.67	14.45	1.77	12.40	5.59	0.63	12.20	0.41	2.76	5.71	9.25	13.31	1.26	8.27
-	180 MP/LP	48	M16	7	110	13.70	0.59	15.87	2.68	12.40	5.59	0.51	13.70	0.41	4.29	6.02	9.17	13.31	1.26	8.27
200 LX	-	48	M16	7	110	13.70	0.59	15.87	2.68	12.40	5.59	0.51	13.70	0.41	4.29	6.02	9.17	13.31	1.26	8.27
-	225 RP/SP	55	M20	10	110	13.70	3.41	20.43	3.31	-	-	-	-	-	2.64	5.00	11.30	-	-	9.84

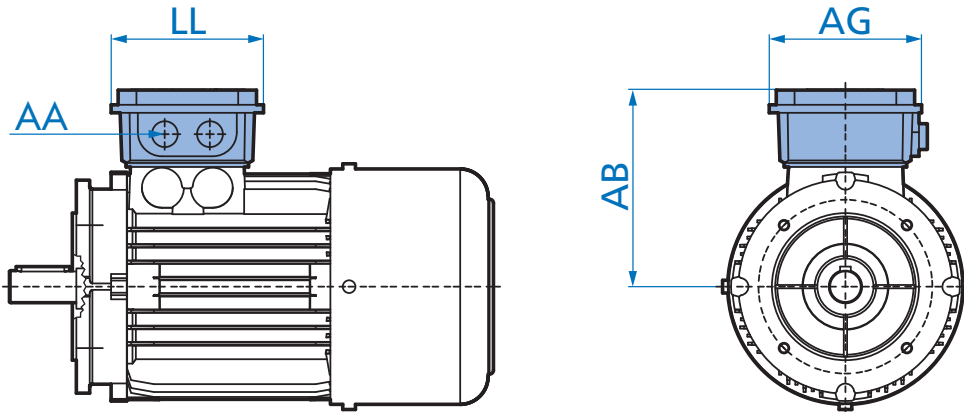


Brakemotor Option Dimensions



Motor Frame Size	BRE	WE (mm)					RD		RDD		HR		MG			IG			F		IG F			F RD / IG F RD		
Std. Eff.	Prem. Eff.	(Nm)	FU	Tap	FW	FV	AS	CRD	AS	CRDD	HR	CHR	CM	AS	hS	CM	CM	CM	AS	hs	AD	AS	hs	AD		
63 S/L	-	5	11	M4	4	23	4.84	0.43	5.43	1.02	3.94	1.69	0.57	4.84	0.43	2.44	3.54	4.92	5.24	1.46	4.49					
71 S/L	-	5	11	M4	4	23	5.43	0.43	6.14	0.94	3.94	1.69	0.67	5.43	0.43	2.91	3.70	5.47	5.91	1.46	4.84					
80 S	-	5	14	M5	4	30	6.14	0.59	6.93	1.02	3.94	1.97	0.47	6.14	0.35	2.24	3.54	5.51	6.69	1.57	5.20					
-	80 LP	10	14	M5	4	30	6.14	0.59	6.93	1.02	3.94	1.97	0.47	6.14	0.35	2.24	3.54	5.51	6.69	1.57	5.20					
90 S/L	90 SP/LP	20	14	M5	8	30	6.93	0.59	7.64	1.18	6.30	2.28	0.51	6.93	0.35	2.76	3.94	5.71	7.40	1.18	5.59					
100 L/LA	100 LP	20	24	M8	10	50	7.64	0.59	8.58	1.10	6.30	3.15	0.51	7.64	0.33	2.76	4.13	5.51	8.27	1.10	5.94					
-	100AP	40	24	M8	10	50	7.64	0.59	8.58	1.10	6.30	3.15	0.51	7.64	0.33	2.76	4.13	5.51	8.27	1.10	5.94					
112 M	-	60	24	M8	7	50	8.58	0.59	10.16	1.50	6.30	3.03	0.49	8.58	0.35	2.52	4.13	5.51	9.80	1.30	6.42					
-	112 MP	60	24	M8	7	50	8.58	0.59	10.16	1.50	6.30	3.03	0.49	8.58	0.33	2.52	4.13	5.51	9.80	1.30	6.42					
132 S	-	60	32	M12	10	80	10.12	0.67	12.20	1.42	7.87	4.37	0.33	10.12	0.45	2.56	4.92	6.10	11.81	0.98	7.20					
132 M	132 MP	100	32	M12	10	80	10.12	0.67	12.20	1.42	7.87	4.37	0.33	10.12	0.45	2.56	4.92	6.10	11.81	0.98	7.20					
160 M	160 SP/MP	150	28	M10	9	60	12.20	0.67	14.45	1.77	7.87	5.59	0.67	12.20	0.41	2.76	5.71	9.25	13.31	1.26	8.27					
160 L	-	250	42	M16	9	110	12.20	0.67	14.45	1.77	12.40	5.59	0.67	12.20	0.41	2.76	5.71	9.25	13.31	1.26	8.27					
-	160 LP	250	42	M16	9	110	12.20	0.67	14.45	1.77	12.40	5.59	0.67	12.20	0.41	2.76	5.71	9.25	13.31	1.26	8.27					
180 MX	-	250	42	M16	9	110	12.20	0.67	15.87	1.77	12.40	5.59	0.67	12.20	0.41	2.76	5.71	9.25	13.31	1.26	8.27					
180 LX	-	250	42	M16	9	110	12.20	0.67	15.87	1.77	12.40	5.59	0.67	12.20	0.41	2.76	5.71	9.25	13.31	1.26	8.27					
-	180 MP/LP	250	48	M16	9	110	13.70	0.67	15.87	2.76	12.40	5.59	0.71	13.70	0.41	2.76	5.75	9.88	13.31	1.26	8.27					
200 LX	-	250	48	M16	9	110	13.70	0.67	15.87	2.76	12.40	5.59	0.71	13.70	0.41	2.76	5.75	9.88	13.31	1.26	8.27					
-	225 RP/SP	400	55	M20	10	110	13.70	3.41	20.43	3.31	-	-	-	-	-	2.56	7.44	10.98	-	-	9.84					

Conduit Box & Cable Entry Dimensions



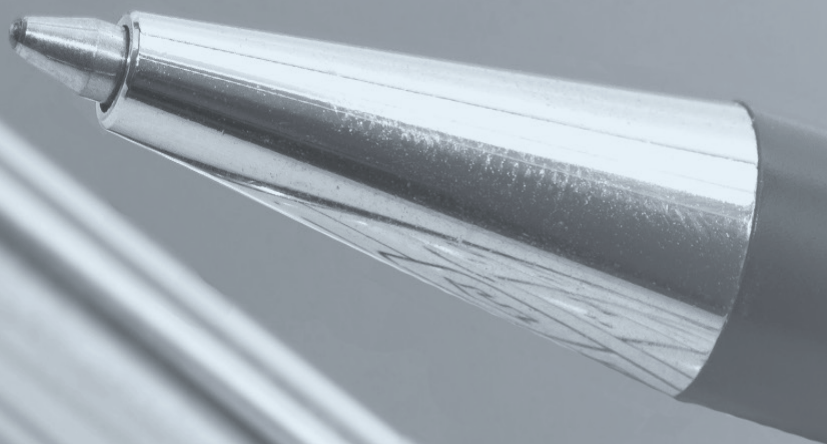
Motor Frame Size		Motor Conduit Box & Cable Entry Dimensions									
60 Min. (IE1)	Prem. Eff. (IE3)	AB		LL		AG		FP		AA	Conduit Adapter
		inch	mm	inch	mm	inch	mm	inch	mm		
63 S/L	-	4.51	115	3.95	100	3.95	100	5.08	129	M20 x 1.5	1/2" NPT
71 S/L	-	4.86	124	3.95	100	3.95	100	5.72	145	M20 x 1.5	1/2" NPT
80 S	80 LP	5.59	142	4.49	114	4.49	114	6.43	163	M25 x 1.5	3/4" NPT
90 S/L	90 SP/LP	5.79	147	4.49	114	4.49	114	7.19	183	M32 x 1.5	1" NPT
100 L/LA	100 LP/AP	6.65	169	4.49	114	4.49	114	7.90	201	M32 x 1.5	1" NPT
112 M	112 MP	7.05	179	4.49	114	4.49	114	8.87	225	M40 x 1.5	1" NPT
132 S/M	132 SP/MP	8.03	204	4.80	122	4.80	122	10.45	265	M40 x 1.5	1" NPT
160 M/L	160 SP/MP/LP	9.53	242	7.32	186	7.32	186	12.56	319	M40 x 1.5	1" NPT
180 MX/LX	-	9.53	242	7.32	186	7.32	186	12.56	319	M40 x 1.5	1" NPT
-	180 MP/LP	10.18	259	7.32	186	7.32	186	14.06	357	M40 x 1.5	1" NPT
200 LX	-	10.18	259	7.32	186	7.32	186	14.06	357	M40 x 1.5	1" NPT
-	225 RP/SP	13.68	348	9.65	245	9.65	245	17.87	454	M50 x 1.5	1-1/2" NPT

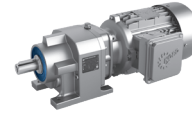
Motor Frame Size		Brakemotor Conduit Box & Cable Entry Dimensions									
60 Min. (IE1)	Prem. Eff. (IE3)	AB		LL		AG		FP		AA	Conduit Adapter
		inch	mm	inch	mm	inch	mm	inch	mm		
63 S/L	-	4.84	123	5.28	134	3.50	89	5.09	129	M20 x 1.5	1/2" NPT
71 S/L	-	5.24	133	5.28	134	3.50	89	5.72	145	M20 x 1.5	1/2" NPT
80 S	80 LP	5.59	142	6.02	153	4.25	108	6.43	163	M25 x 1.5	3/4" NPT
90 S/L	90 SP/LP	5.79	147	6.02	153	4.25	108	7.19	183	M32 x 1.5	1" NPT
100 L/LA	100 LP/AP	6.77	172	6.02	153	4.25	108	7.90	201	M32 x 1.5	1" NPT
112 M	112 MP	7.17	182	6.02	153	4.25	108	8.87	225	M40 x 1.5	1" NPT
132 S/M	132 SP/MP	7.91	201	7.29	185	5.48	139	10.45	265	M40 x 1.5	1" NPT
160 M/L	160 SP/MP/LP	9.53	242	7.32	186	7.32	186	12.56	319	M40 x 1.5	1" NPT
180 MX/LX	-	9.53	242	7.32	186	7.32	186	12.56	319	M40 x 1.5	1" NPT
-	180 MP/LP	10.18	259	7.32	186	7.32	186	14.06	357	M40 x 1.5	1" NPT
200 LX	-	10.18	259	7.32	186	7.32	186	14.06	357	M40 x 1.5	1" NPT
-	225 RP/SP	13.68	348	9.65	245	9.65	245	17.87	454	M50 x 1.5	1-1/2" NPT



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eMail: info.ca@nord.com

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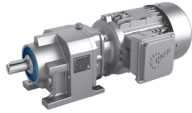


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For Sales office or distributors please contact us or see our website at www.nord.com



Nord Locator Tool

For international contacts (outside of North America), NORD makes it easy for you to locate address and phone number of the sales contact or facility nearest you on our homepage or with the web address: www.locator.nord.com.



SALES CONTACT →

1 **Country**
United States ▾

2 **or State search**
please select a State ▾

3 **Distance**
25 miles ▾

Zip code

or Phone number search
(Include at least the first 6 digits)

It is as easy as submitting your location and we provide you with a list of our nearest district managers, distributors and plant locations for your convenience.

NORD Office for

United States/Idaho Print List

NORD district manager(s) for Idaho

NORD Gear Corp
Scott Patzer
7645 E Arnhem Ave
Denver, CO 80231
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Fax: 1-800-551-3732
E-Mail: scott.patzer@nord.com
Homepage: <http://www.nord.com> Save VCard
Print

NORD Gear Corp
DuWayne Weber
2201 13th Ave Ct SW
Puyallup, WA 98373-4011
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E-Mail: duwayne.weber@nord.com
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Print

NORD plant for Idaho

NORD Gear Corp - West
1180 Railroad St
Corona, CA 92882
Phone: 1-988-314-6673
Fax: 1-988-498-6073
E-Mail: info.us@nord.com
Homepage: <http://www.nord.com> Save VCard
Google Maps
Print

Distributors Idaho

Bearings & Industrial Sales Inc
625 Lindsay Blvd
Idaho Falls, ID 83402
Phone: 1-208-522-0266
Fax: 1-208-522-0272 Print

NORD GEAR CORPORATION

Terms and Conditions of Sale

1. CONTRACT

Any contract between Nord Gear Corporation, hereinafter designated as Seller, and the Buyer is subject to the terms and conditions of sale hereinafter set forth. Any deviation from such terms and conditions must be specifically set forth in writing and consented to by Seller. Accordingly, the Buyer and Seller acknowledge and agree that the terms and conditions set forth below and on the face hereof shall govern Buyer's purchase of the goods described on the face hereof and shall take precedence over and represents the final agreement between Buyer and Seller, notwithstanding any inconsistent, contradictory or other prior or further conditions contained in any oral or written request or purchase order issued by Buyer or any other document furnished by Buyer in connection with its purchase of the Goods, regardless of whether such document or documents are exchanged simultaneously with this Invoice or prior or subsequent thereto. Any additional or different terms or conditions which may appear in any communication, oral or written, from Seller, its officers, employees, agents or representatives, are hereby expressly rejected and shall not be effective or binding upon the Seller, unless specifically hereafter agreed to in writing by Seller and no such additional or different terms or conditions in any document submitted to Seller by Buyer shall become part of the contract between Buyer and Seller, unless such written acceptance by Seller specifically recognizes and assents to their inclusion. Any objection by Buyer to the terms and conditions hereof shall be ineffective unless Seller is advised in writing thereof within two (2) days of the date of this Invoice.

2. CONFIRMATION

An order shall be deemed accepted only when duly confirmed by Seller, at Nord Gear Corporation's home office in Waunakee, Wisconsin, and upon such confirmation the order shall become a contract binding upon the parties hereto, their successors and assigns.

3. PRICES

Prices shown are list prices and may be subject to applicable discounts. Unless otherwise agreed upon in writing, prices are FOB factory Waunakee, Wisconsin. Prices and discounts are subject to change without notice until order is accepted. Seller's prices do not include cost of any inspection permits required.

4. LIMITED WARRANTY

Seller warrants the goods sold hereunder to be free from defects in material and workmanship under normal use and service not arising from misuse, negligence, or accident, including but not limited to the use, installation, and transportation of the goods by the Buyer, its agents, servants, employees, or by carriers. Such obligations under this warranty are limited to remedying any deficiencies in the goods at Waunakee, Wisconsin, or at such other place or places in the United States of America as may be designated by Seller. THIS WARRANTY SHALL PERTAIN TO ANY PART OR PARTS OF ANY GOODS TO WHICH BUYER OR ITS ASSIGNS HAS GIVEN WRITTEN NOTICE OF CLAIMED DEFECTS TO SELLER. NORD GEAR CORP. WARRANTS ITS PRODUCTS AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF 12 MONTHS FROM DATE OF INSTALLATION OR 18 MONTHS FROM DATE OF SHIPMENT WHICHEVER COMES FIRST ON ALL COMPONENTS. 36 MONTHS FROM DATE OF INVOICE OR 24 MONTHS FROM DATE OF INSTALLATION WHICHEVER COMES FIRST ON GEARS AND HOUSINGS ONLY. PARTS WHICH ARE SUBJECT TO OPERATIONAL WEAR AND TEAR, SUCH AS BELTS & TRACTION DISCS, ARE NOT COVERED BY THE LIMITED WARRANTY. Buyer shall be required to furnish Seller with details of such defects and this warranty shall be effective as to such goods which Seller's examination shall disclose to its satisfaction to have been defective and which of Seller's option shall promptly thereafter be returned to Seller or its nominees. THE LIMITED WARRANTY SET FORTH HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. EXCEPT FOR THE EXPRESS WARRANTIES SET FORTH HEREIN, SELLER HAS MADE AND MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. AS TO THE GOODS SOLD HEREUNDER, INCLUDING, BUT NOT LIMITED TO, THEIR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. ANY DESCRIPTION OR MODEL OF THE GOODS IS FOR IDENTIFICATION OR ILLUSTRATIVE PURPOSES ONLY AND SHALL NOT BE DEEMED TO CREATE ANY WARRANTY, EXPRESS OR IMPLIED. SELLER MAKES NO REPRESENTATIONS AS TO THE CAPACITY OR PERFORMANCE OF THE GOODS SOLD HEREUNDER, EXCEPT AS SET FORTH IN THE INVOICE'S SPECIFICATIONS OR OTHER VALID AGREEMENT OR CONDITION AGREED TO BETWEEN THE PARTIES, AND ANY SUCH REPRESENTATIONS ARE EXPRESSLY CONDITIONED UPON THE CORRECTNESS OF THE DATA AND INFORMATION FURNISHED BY THE BUYER AND UPON THE GOODS BEING PROPERLY INSTALLED AND MAINTAINED. THE REMEDIES OF THE BUYER PROVIDED HEREUNDER ARE EXCLUSIVE. In no event shall the Seller be liable to the Buyer or to any other person for any loss or damage, direct or indirect, arising out of or caused by the use or operation of the goods, or for the loss of profits, business, or good will, or for any incidental, special or consequential damages. Seller shall in no event be liable to any person or firm (including any assignee or Buyer) except Buyer and its successors. Unless specifically authorized by Seller in writing, Seller shall not become responsible for any repair work done by Buyer or any other party on any goods sold. Any and all costs of the return to the Seller of such goods and all related costs to remove and re-install such goods, shall be borne by Buyer. Goods sold but not manufactured by the Seller are being warranted as to defects in material and workmanship consistent with the limited warranty policy of the original manufacturer of the goods and if there is not such a limited warranty policy, the warranty shall be limited to the provision of the preceding paragraph of Article 4 herein. Standards for the operating characteristics of the gearboxes and the gearmotors are in conformity with Seller's tests.

5. SHORTAGE AND NONCONFORMITY

Any claim of shortage or that the goods do not conform with the specifications of the order or model must be made in writing within ten (10) days after delivery of the goods (as to which such claim is made) to Buyer or its nominees, but in no event shall the claim be later than within the time limit provided by the carrier or insurance company, otherwise such claim shall be deemed waived. Buyer may not return any goods claimed to be in non-conformity without Seller's prior written authorization. Goods returned without permission will not be accepted, including for credit, and will be returned to Buyer, F.O.B. Seller's plant. Any claim based on the receipt of damaged Goods must be filed with the carrier which delivered the goods. The samples, measurements, dimensions and weights contained in the Seller's catalogs, sales manuals, photographs and drawings constitute only an approximate guide. The Seller reserves the right to make any change which the Seller, in its absolute discretion, considers necessary. While the goods will be delivered principally according to specifications or standards or quantities agreed upon, insignificant deviations or insignificant changes in construction are permissible. The same applies to partial deliveries. In the event that Buyer has a verified claim of shortage or nonconformity of the goods to the specifications of the order or the model, and if such claim has been submitted within the required time limit as set forth above, the Seller shall, at its own expense, make up for the shortage of the goods, or replace or repair the goods, as the case may be, but in no event shall Seller be or become liable to Buyer or to any other person or persons for any loss in damage, direct or indirect, arising out of or caused by such incidents or for the loss of profits, business or good will. The liability of the Seller to Buyer, if any hereunder, for breach of warranty, contract, negligence or otherwise, shall in no event exceed the amount of the purchase price of the goods sold with respect to which any damages are claimed. Shipping dates are estimates unless parties expressly agree on time of the essence.

6. FORCE MAJEURE

The obligation of the Seller shall be modified or excused, as the case may be, for reasons of Acts of God, war, governmental law regulations, strikes or lock-outs, fire, breakdown of machinery, whether in its own business enterprise, or if for any other cause beyond Seller's control, the goods cannot be delivered or their delivery becomes delayed in whole or in part. In the above instances time for delivery shall be extended for the period of the delay caused, with the proviso, however, that either party may cancel in writing the undelivered portion of the order or contract if the delay exceeds six (6) months from the delivery date originally confirmed by Seller. In no event shall Seller become liable in the aforesaid instances to Buyer or any third party for consequential damages or business loss.

7. SHIPMENT AS UNIT

Each shipment by Seller shall be treated as a separate and distinct unit with respect, but only with respect to forwarding, terms of payment, and the making of claims by the Buyer: provided, however, that if the Buyer defaults in the payment of any obligation to Seller or any installments thereof, under any agreement between Buyer and Seller, or if Buyer refuses to accept any goods when tendered for delivery, the Seller may, on fifteen (15) days written notice to the Buyer, without prejudice to Seller's other lawful remedies, either defer further performance until the defaulted payments are made in full, or make future deliveries for cash in advance only, or treat the entire contract or contracts with Buyer as breached by the Buyer and pursue its remedies for breach.

8. BUYER'S REFUSAL OF DELIVERY

If Buyer refuses to accept delivery of any goods tendered for delivery, then Seller, without prejudice to Seller's other lawful remedies, may either store or cause such goods to be stored in a warehouse, for buyer's account and at Buyer's cost, risk and expense, or sell such goods (without notice) to any purchasers at public or private sale, and hold the Buyer liable for any difference between (a) the contract price of the goods, and (b) the price at which goods are resold less the costs and expense of such resale including brokerage commissions, or restocking charges.

9. GOODS IN TRANSIT

If prior to delivery or while the goods are in transit, Buyer or Seller becomes bankrupt or insolvent, or any petition in bankruptcy or for the reorganization or for a state court receivership is filed against Buyer or Seller, as the case may be, then the other party hereto may forthwith terminate this contract by giving written notice of such termination. Such termination shall not affect any claim for damages available to the Buyer, provided that if Buyer is then indebted to Seller, the amount of any such damage claim shall be abated to the extent that the indebtedness of Buyer to Seller, as actually paid in money, is abated by any order of judgement entered or any plan adopted in any bankruptcy, reorganization, receivership, or similar proceeding. Such termination shall not prejudice the Seller's rights to any amounts then due under the contract. If Buyer becomes bankrupt or insolvent or any petition in bankruptcy or for reorganization or if a state court receivership is filed against Buyer, then, at its option Seller may take possession of any goods theretofore sold to Buyer, in connection with which the full purchase price has not been paid, analogous to the terms and provisions set forth in Paragraphs 11 and 12 hereinafter.

10. DELIVERY

(a) Any indicated dates of delivery are approximate only, but NORD Gear will attempt to meet them whenever possible. (b) NORD Gear will not be liable for any penalty clauses contained in any specifications or order submitted unless agreed to in writing by an authorized officer of NORD Gear Corporation. (c) Unless otherwise agreed, delivery of the goods to any carrier shall constitute delivery to the Buyer, and thereafter the risk of loss or damage to the goods shall be upon the Buyer. (d) If the Buyer does not give delivery instructions to the Seller at least (10) days prior to the delivery date ex factory confirmed by the Seller, the Seller may deliver the goods to a carrier of its own choosing, at Buyer's cost and risk, or, at Seller's option, may store the goods on the pier or any warehouse, at Buyer's cost and risk. Any purchase price in such event becomes due and payable within ten (10) days of such storage.

11. PAYMENT OF PURCHASE PRICE

Time of payment is of the essence under the contract. Unless otherwise provided, terms of payment are 30 days net from the date of invoice with a 1% discount if paid within 10 days of date of invoice. Upon default in any of the terms of the contract, or failure to comply with any of the conditions thereof, or upon seizure of the property under execution or other legal process, or if the Buyer becomes bankrupt or insolvent, or any petition for reorganization or for a state court receivership is filed against Buyer, or if the Buyer makes any assignment for the benefit of its creditors or otherwise sells, encumbers or disposes of the goods, or if for any other reason the Seller should deem itself insecure, the full amount of the purchase price then remaining unpaid shall at once become due and payable at the option of the Seller.

12. BUYER'S DEFAULT

Upon the Buyer's default, the Seller may dispose of the merchandise in any manner that it deems fit and, if it desires to resell same, may do so at private or public sale, with or without notice, and with or without the property being at the place of sale, subject, however, to applicable laws. The Seller or its assigns shall have the right to bid at such sale and may become the purchaser of the property. The proceeds of the sale shall first be applied to the expenses incurred in retaking, repairing, storing and selling the goods, reasonable attorney's fees included, and then shall be applied to the payment of the balance due under the contract. Any surplus amount shall be paid to the Buyer. If a deficiency results after the resale, the Buyer agrees to pay such forthwith, together with reasonable attorney's fees, for the recovery of the goods incurred by the Seller. If upon the Buyer's default, the Seller elects not to resell any goods which it may repossess, then the cost of repossession, including reasonable attorney's fees, shall forthwith be due and payable from Buyer to Seller. Buyer agrees to pay all reasonable costs and reasonable attorney's fees incurred by Seller in enforcing Seller's rights against Buyer, including Seller's right to payment of the purchase price of the goods and Buyer's payment of all other amounts owing to Seller required under this Invoice and Conditions of Sale.

13. SECURITY INTEREST AND TITLE

In states and localities which are governed by the Uniform Commercial Code, this contract shall serve as security agreement, reserving in Seller a security interest until full payment of purchase price. The provisions of the Uniform Commercial Code regarding security interest shall have preference and apply if consistent with other terms of the conditions of sale. In states and localities where the Uniform Commercial Code does not apply, title to the goods shall remain in the Seller or its assigns until full payment of the purchase price. Buyer agrees to execute forthwith any and all documents in such a way and form as Seller may need for filing or recording the security interest under the Uniform Commercial Code with the proper registers or offices, or for filing or recording the conditional sales contract.

14. SALES AND USE TAX

Buyer agrees to bear and pay any sales or use tax in connection with the purchase herein, and to hold the Seller harmless from payment. At the option the Seller, Buyer shall give evidence of payment or of exemption certificate.

15. INSURANCE

The Buyer shall keep the goods insured against damage by fire, water or other casualty as required by Seller, with a company acceptable to Seller, with loss payable to Seller for the total purchase price until the Seller is fully paid. Seller, if it so elects, may place said insurance at Buyer's expense; Seller may cancel such insurance at any time and without notice and may receive the return premium, if any.

16. MODIFICATION BY SELLER

Any contract may be assigned or transferred by the Seller, or the time for the making of any payment due by Buyer may be extended by Seller without derogation of any of the rights of the Seller or its assigns. Waiver by any party of any default shall not be deemed a waiver of any subsequent default.

17. RETURNED GOODS

No goods will be accepted for return unless authorized in writing by Seller. In all cases, transportation and restocking charges will be borne by Buyer.

18. PACKING

The Buyer will be charged for export packaging or other special packing desired. Cost for cartage to ship or transfer express will be added to the invoice. No credit will be allowed if no packing is required.

19. CHANGES/CANCELLATION

NORD Gear will not accept changes in specifications to a confirmed order unless such changes are requested in writing and confirmed back in writing. In addition, the purchaser must to agree to any additional charges that may arise from the change. Placing orders on hold or cancellation of orders require Seller's written approval, and are subject to cancellation and/or restocking charges.

20. BUYER'S RESPONSIBILITY AS TO MAINTENANCE

Buyer shall use and shall require its employees and agents to use all safety devices and guards and shall maintain the same in proper working order. Buyer shall use and require its employees and agents to use safe operation procedures in operating the equipment and shall further obey and have its employees and agents obey safety instructions given by Seller. If Buyer fails to meet the obligations herein, Buyer agrees to defend, indemnify and save Seller harmless from any liability or obligation with regard to any personal injuries or property damages directly or indirectly connected with the operation of the equipment. Buyer further agrees to notify Seller promptly and in any event not later than ten (10) days after notice or knowledge of any accident or malfunction involving Seller's equipment which has caused personal injury or property damages and to cooperate fully with Seller in investigating and determining the causes of such accident and malfunction. In the event that Buyer fails to give such notice to Seller or to cooperate with Seller, Buyer shall be obligated to defend, indemnify and save Seller harmless from any such claims arising from such accident.

21. MISCELLANEOUS PROVISIONS

(a) If for any reason a provision of a contract is legally invalid, then in such event the rest of the contract shall remain in full force and effect, except that the parties shall try to replace such invalid provision closest to their original mutual intentions. (b) This Invoice and these Conditions of Sale constitute the entire agreement between the parties regarding the subject matter hereof and supercedes all prior agreements, understandings and statements, whether oral or written, regarding such subject matter. No modification to, change in or departure from, the provisions of this Invoice and Conditions of Sale shall be valid or binding on Seller, unless approved in writing by Seller. No course of dealing or usage of trade shall be applicable unless expressly incorporated into this Invoice and Conditions of Sale. Any amendments to any contract or contracts between the parties shall be valid only upon the written consent of both parties.

22. NON ASSIGNMENT BY BUYER

Contract or contracts may not be assigned by the Buyer without prior written consent of the Seller.

23. APPLICABLE LAW AND VENUE

All contracts and their interpretation are governed by the applicable, substantive laws of the State of Wisconsin. Any litigation brought by the Buyer regarding this Invoice or goods purchased hereunder may only be brought in the Circuit Court for Dane County, Wisconsin.

NORD GEAR LIMITED

Terms and Conditions of Sale

1. CONTRACT

Any contract between Nord Gear Limited, hereinafter designated as "Seller", and the party or parties accepting these terms and conditions of sale and any agent, officer, servant, employee or subcontractor of such party or parties, hereinafter designated as "Buyer", is subject to the terms and conditions of sale hereinafter set forth. Any deviation from such terms and conditions must be specifically set forth in writing and consented to by Seller.

2. CONFIRMATION

An order shall be deemed accepted only when duly confirmed by Seller, at Nord Gear Limited's home office in Brampton, Ontario, and upon such confirmation the orders shall become a contract binding upon the parties hereto, their successors and assigns.

3. PRICES

Prices shown are list prices and may be subject to applicable discounts. Unless otherwise agreed upon in writing, prices are FOB factory Brampton, Ontario. Prices and discounts are subject to change without notice until the order is accepted. Seller's prices do not include cost of any inspection permits required.

4. LIMITED WARRANTY

Seller warrants the goods sold hereunder to be free from defects in material and workmanship under normal use and service not arising from misuse, negligence, or accident, including but not limited to the use, installation, and transportation of the goods by Buyer, its agents, servants, employees, or by carriers. This warranty shall pertain to any part or parts of any goods to which Buyer or its assigns has within one year from date of delivery given written notice of claimed defects to Seller. Buyer shall be required to furnish Seller with details of such defects and this warranty shall be effective as to such goods which Seller's examination shall disclose to its satisfaction to have been defective and which at Seller's option shall promptly thereafter be returned to Seller or its nominees. EXCEPT FOR THE EXPRESS WARRANTIES SET FORTH ABOVE, SELLER HAS MADE NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE GOODS SOLD HEREUNDER, INCLUDING, BUT NOT LIMITED TO THEIR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. ANY DESCRIPTION OR MODEL OF THE GOODS IS FOR IDENTIFICATION OR ILLUSTRATIVE PURPOSES ONLY AND SHALL NOT BE DEEMED TO CREATE AN EXPRESS WARRANTY. The Buyer's exclusive remedy for claims arising from defective or nonconforming goods shall be limited to the repair or replacement thereof at the Seller's sole option. THE SELLER SHALL NOT BE RESPONSIBLE OR LIABLE FOR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE SALE, DELIVERY, USE, PERFORMANCE, OR SERVICE OF THE GOODS SOLD UNDER THIS AGREEMENT. SELLER SHALL NOT BE LIABLE FOR ANY LOST PROFITS OR FOR ANY CLAIM OR DEMAND AGAINST SELLER BY ANY PARTY. IN NO EVENT WILL SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SELLER'S AGGREGATE LIABILITY FOR DAMAGES UNDER THIS AGREEMENT, WHETHER ARISING FROM OR BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, TORT OR OTHER CAUSE OF ACTION, SHALL IN NO CASE EXCEED THE PURCHASE PRICE THAT BUYER PAYS FOR THE PARTICULAR GOODS INVOLVED. Seller shall in no event be liable to any person or firm (including any assignee or Buyer) except Buyer and its successors. Unless specifically authorized by Seller in writing, Seller shall not become responsible for any repair work done by Buyer or any other party on any goods sold. Any costs of the return of such goods to Seller shall be borne by Buyer. Goods sold but not manufactured by Seller are being warranted as to defects in material and workmanship consistent with the limited warranty policy of the original manufacturer of the goods and if there is not such a limited warranty policy, the warranty shall be limited to the provisions of Article 4 herein. Standards for the operating characteristics of the gearboxes and the gear motors are in conformity with Seller's tests. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE SELLER DOES NOT ASSUME, NOR DOES IT AUTHORIZE ANY PERSON TO ASSUME, ON ITS BEHALF, ANY OTHER OBLIGATION OR LIABILITY.

5. SHORTAGE AND NONCONFORMITY

Any claim of shortage or that the goods do not conform with the specifications of the order or model must be made in writing within ten (10) days after delivery of the goods (as to which such claim is made) to Buyer or its nominees, but in no event shall the claim be later than within the time limit provided by the carrier or insurance company, otherwise such claim shall be deemed waived. The samples, measurements, dimensions and weights contained in Seller's catalogs, sales manuals, photographs and drawings constitute only an approximate guide. Seller reserves the right to make any changes which Seller, in its absolute discretion, considers necessary. While the goods will be delivered principally according to specifications of standards or quantities agreed upon, insignificant deviations or insignificant changes in construction are permissible. The same applies to partial deliveries. In the event that Buyer has a verified claim of shortage or nonconformity of the goods to the specifications of the order or the model, and if such claim has been submitted within the required time limit as set forth above, Seller shall, at its own expense, make up for the shortage of the goods, or replace or repair the goods, as the cause may be, but in no event shall Seller be or become liable to Buyer or to any other person or persons for any loss in damage, direct or indirect, arising out of or caused by such incidents or for the loss of profits, business of good will. Shipping dates are estimates unless parties expressly agree on time of the essence.

6. FORCE MAJEURE

The obligation of Seller shall be modified or excused, as the case may be, for reasons of Acts of God, war, governmental law regulations, strikes or lock-outs, fire, breakdown of machinery, whether in its own business enterprise, or if for any other cause beyond Seller's control, the goods cannot be delivered or their delivery becomes delayed in whole or in part. In the above instances time for delivery shall be extended for the period of the delay caused, with the proviso, however, that either party may cancel in writing the undelivered portion of the order of contract if the delay exceeds six (6) months from the delivery date originally confirmed by Seller. In no event shall Seller become liable in the aforesaid instances to Buyer or any third party for consequential damages or business loss.

7. SHIPMENT AS UNIT

Each shipment by Seller shall be treated as a separate and distinct unit with respect, but only with respect to forwarding, terms of payment, and the making of claims by Buyer, provided, however, that if Buyer defaults in the payment of any obligation to Seller or any installments thereof, under any agreement between Buyer and Seller, or if Buyer refuses to accept any goods when tendered for delivery, Seller may, on fifteen (15) days written notice to Buyer, without prejudice to Seller's other lawful remedies, either defer further performance until the defaulted payments are made in full, or make future deliveries for cash in advance only, or to treat the entire contract or contracts with Buyer as breached by Buyer and pursue its remedies for breach.

8. BUYER'S REFUSAL OF DELIVERY

If Buyer refuses to accept delivery of any goods tendered for delivery, then Seller, without prejudice to Seller's other lawful remedies, may either store or cause such goods to be stored in a warehouse, for Buyer's account and at Buyer's cost, risk and expense, or sell such goods (without notice) to any purchaser at public or private sale, and hold Buyer liable for any difference between (A) the contract price of the goods, and (B) the price at which goods are resold less the costs and expense of such resale including brokerage commissions, or restocking charges.

9. GOODS IN TRANSIT

If prior to delivery or while the goods are in transit, Buyer or Seller becomes bankrupt or insolvent, or any petition in bankruptcy or for the reorganization or for appointment of a receiver is filed against Buyer or Seller, as the case may be, then the other party hereto may forthwith terminate this contract by giving written notice of such termination. Such termination shall not affect any claim for damages available to Buyer, to Seller, as actually paid in money, is abated by any order of judgment entered or any plan adopted in any bankruptcy, reorganization, receivership, or similar proceeding. Such termination shall not prejudice Seller's rights to any amounts then due under the contract. If Buyer becomes bankrupt or insolvent or any petition in bankruptcy or for reorganization or if a state court receivership is filed against Buyer, then, at its option, Seller may take possession of any goods theretofore sold to Buyer, in connection with which the full purchase price has not been paid, analogous to the terms and provisions set forth in Paragraphs 11 and 12 hereinafter.

10. DELIVERY

(A) Unless otherwise agreed, delivery of the goods to any carrier shall constitute delivery to Buyer, and thereafter the risk of loss or damage to the goods shall be upon Buyer. (B) If Buyer does not give delivery instructions to Seller at least ten (10) days prior to the delivery date ex factory confirmed by Seller, Seller may deliver the goods to a carrier of its own choosing, at Buyer's cost and risk, or, at Seller's option may store the goods on the pier or on any warehouse at Buyer's cost and risk. Any purchase price in such event becomes due and payable within ten (10) days of such storage.

11. PAYMENT OF PURCHASE PRICE

Time of payment is of the essence under the contract. Upon default in any of the terms of the contract, or failure to comply with any of the conditions thereof, or upon seizure of the property under execution or other legal process, or if Buyer becomes bankrupt or insolvent, or any petitions for reorganization or for appointment of a receiver is filed against Buyer, or if Buyer makes any assignment for the benefit of its creditors or otherwise sells, encumbers or disposes of the goods, or if for any other reason Seller should deem itself insecure, the full amount of the purchase price then remaining unpaid shall at once become due and payable at the option of Seller. Interest on the delinquent payment from the due date thereof until paid shall be at a rate of two (2%) percent per month.

12. BUYER'S DEFAULT

Upon Buyer's default, Seller may dispose of the merchandise in any manner that it deems fit and, if it desires to resell same, may do so at private or public sale, with or without notice, and with or without the property being at the place of sale, subject, however, to applicable laws. Seller or its assigns shall have the right to bid at such sale and may become the purchaser of the property. The proceeds of the sale shall first be applied to the expenses incurred in retaking, repairing, storing and selling the goods; reasonable solicitor's fees included, and then shall be applied to the payment of the balance due under the contract. Any surplus amount shall be paid to Buyer. If a deficiency results after the sale, Buyer agrees to pay such forthwith, together with reasonable solicitor's fees, for the recovery of the goods incurred by Seller. If upon Buyer's default, Seller elects not to resell any goods which it may repossess, then the cost of repossession, including reasonable solicitor's fees, shall forthwith be due and payable from Buyer to Seller.

13. SECURITY INTEREST AND TITLE

In provinces which are governed by a Personal Property Security Act, this contract shall serve as a security agreement, reserving in Seller a security interest until full payment of the purchase price. The provisions of the Personal Property Security Act regarding security interest shall have preference and apply if inconsistent with other terms of the conditions of sale herein. In provinces where a Personal Property Security Act does not apply, title to the goods shall remain in the Seller or its assigns until full payment of the purchase price. Buyer agrees to execute forthwith any and all documents in such a way and form as Seller may need for filing or recording the security interest under a Personal Property Security Act with the proper registers or offices, or for filing or recording the Conditional Sales Contract herein.

14. SALES AND USE TAX

Seller's prices do not include sales, use, excise or other taxes payable to any governmental authority in respect of the sale of Seller's goods. Buyer shall pay, in addition to Seller's price, the amount of any such taxes or shall reimburse Seller for the amount thereof that Seller may be required to pay. At the option of Seller, Buyer shall give evidence of payment or of exemption certificate.

15. INSURANCE

Buyer shall keep the goods insured against damage by fire, water or other casualty as required by Seller, with a company acceptable to Seller, with loss payable to Seller for the total purchase price until Seller is fully paid. Seller, if it so elects, may place said insurance at Buyer's expense; Seller may cancel such insurance at any time and without notice and may receive the return premium, if any.

16. MODIFICATION BY SELLER

Seller may be assigned or transferred by Seller, or the time for the making of any payment due by Buyer may be extended by Seller without derogation of any of the rights of Seller or its assigns. Waiver by any party of any default shall not be deemed a waiver of any subsequent default.

17. RETURNED GOODS

No goods will be accepted for return unless authorized in writing by Seller. In all cases, transportation and restocking charges will be borne by Buyer.

18. PACKING

Seller does not charge for standard packaging for domestic shipment. Buyer will be charged, however, for export packaging or other special packing desired. Cost for cartage to ship or transfer express will be added to the invoice. No credit will be allowed if no packing is required.

19. EXPORT ORDER

Export orders are to be accompanied by a confirmed irrevocable Letter of Credit in Seller's favor, in Canadian currency, with an accredited Canadian bank, subject to Seller's draft, with shipping documents attached.

20. CANCELLATION

Placing orders on hold or cancellation of orders require Seller's written approval, and are subject to cancellation and/or restocking charges.

21. BUYER'S RESPONSIBILITY AS TO MAINTENANCE

Buyer shall use and shall require its employees and agents to use all safety devices and guards and shall maintain the same in proper working order. Buyer shall use and require its employees and agents to use safe operating procedures in operating the equipment and shall further obey and have its employees and agents obey safety instructions given by Seller. If Buyer fails to meet the obligations herein, Buyer agrees to indemnify and save Seller harmless from any liability or obligation with regard to any personal injuries or property damages directly or indirectly connected with the operation of the equipment. Buyer further agrees to notify Seller promptly and in any event not later than ten (10) days after notice or knowledge of any accident or malfunction involving Seller's equipment which has caused personal injury or property damages and to cooperate fully with Seller in investigating and determining the causes of such accident and malfunction. In the event that Buyer fails to give such notice to Seller or to cooperate with Seller, Buyer shall be obligated to indemnify and save Seller harmless from any such claims arising from such accident.

22. MISCELLANEOUS PROVISIONS

(A) If for any reason a provision of a contract is legally invalid, then in such event the rest of the contract shall remain in full force and effect, except that the parties shall try to replace such invalid provision with a provision closest to their original mutual intentions. (B) Any amendments to any contract or contracts require the consent in writing by both parties. Headings in this document are for ease of reference only.

23. NON ASSIGNMENT BY BUYER

Contract or contracts may not be assigned by Buyer without prior written consent of Seller.

24. APPLICABLE LAW

This agreement shall be governed by the laws of the Province of Ontario and the applicable laws of Canada. Buyer and Seller agree that any judicial proceeding with respect to this agreement must be brought and maintained in the City of Toronto, in the Province of Ontario.

25.

This instrument sets forth the entire understanding and agreement of the parties hereto in respect of the subject matter hereof, and all prior undertaking between the parties hereto, together with all representations and obligations of such parties in respect of such subject matter, shall be superseded by and merged into this instrument.

26.

The provisions of this agreement shall bind and ensure to the benefit of the parties hereto and their respective heirs, executors, administrators, successors and (subject to any restrictions or assignment herein above set forth) assigns, as the case may be.

27.

The parties acknowledge that they have requested this document and all notices or other documents relating thereto be drafted in the English language.

Les parties reconnaissent qu'ils ont requis que ce contrat et tous les avis ou autres documents qui s'y rapportent soient rédigés en langue anglaise.

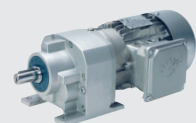
Terms and Conditions in French available upon request.

UNICASE™ SPEED REDUCERS



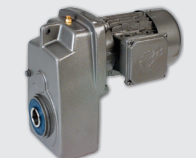
HELICAL IN-LINE

- Foot or Flange Mount
- Torque up to 205,000 lb-in
- Gear ratios – 1.82:1 to over 300,000:1



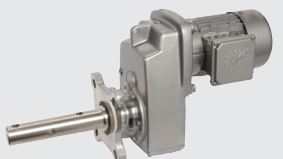
NORDBLOC®.1 HELICAL IN-LINE

- Foot or Flange Mount
- Torque up to 26,550 lb-in
- Gear ratios – 1.88:1 to over 370:1



PARALLEL HELICAL CLINCHER™

- Shaft, Flange or Foot Mount
- Torque up to 797,000 lb-in
- Gear ratios – 4.26:1 to over 300,000:1



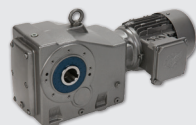
SCP SCREW CONVEYOR PACKAGE

- Shaft, or Flange Mount
- Torque up to 53,100 lb-in
- Gear ratios – 4.32:1 to over 1500:1



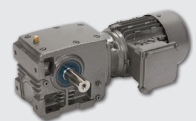
RIGHT ANGLE HELICAL-BEVEL 2-STAGE

- Foot, Flange or Shaft Mount
- Torque up to 5,840 lb-in
- Gear ratios – 4.1:1 to 70:1



RIGHT ANGLE HELICAL-BEVEL

- Foot, Flange or Shaft Mount
- Torque up to 283,000 lb-in
- Gear ratios – 8.04:1 to over 300,000:1



RIGHT ANGLE HELICAL-WORM

- Foot, Flange or Shaft Mount
- Torque up to 27,585 lb-in
- Gear ratios – 4.40:1 to over 300,000:1

HIGH PERFORMANCE MOTORS & BRAKEMOTORS



INVERTER/VECTOR DUTY

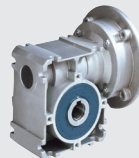
- Standard or Energy Efficient
- Integral, NEMA or Metric IEC
- 1/6 to 250 hp

UNICASE™ SPEED REDUCERS



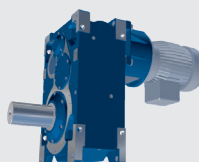
MINICASE™ RIGHT ANGLE WORM

- Foot, Flange or Shaft Mount
- Torque up to 3,540 lb-in
- Gear ratios – 5:1 to 500:1



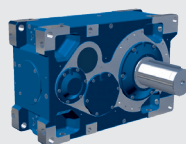
FLEXBLOC™ WORM

- Modular bolt-on options
- Torque up to 4,683 lb-in
- Gear ratios – 5:1 to 3,000:1



MAXXDRIVE™ LARGE INDUSTRIAL GEAR UNITS PARALLEL HELICAL

- Modular bolt-on options
- Torque up to 2,027,000 lb-in
- Gear ratios – 5:1 to 1,600:1



MAXXDRIVE™ LARGE INDUSTRIAL GEAR UNITS HELICAL-BEVEL

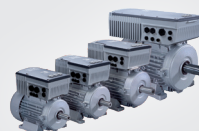
- Modular bolt-on options
- Torque up to 2,027,000 lb-in
- Gear ratios – 5:1 to 1,600:1

NORDAC AC VECTOR DRIVES



SK180E FAMILY

- Distributed, simple speed control
- 380-480V, 3-phase to 3.0 hp
- 200-240V, 3-phase to 1.5 hp
- 200-240V, 1-phase to 1.5 hp
- 100-120V, 1-phase to 0.75 hp



SK200E FAMILY

- Distributed, high performance
- 380-480V, 3-phase to 30 hp
- 200-240V, 3-phase to 15 hp
- 200-240V, 1-phase to 1.5 hp
- 100-120V, 1-phase to 1 hp



SK500E FAMILY

- Compact, cabinet mount, high performance
- 380-480V, 3-phase, to 125 hp
- 200-240V, 3-phase, to 25 hp
- 200-240V, 1-phase, to 3 hp
- 100-120V, 1-phase, to 1.5 hp

Global Vision, Local Support

NORD makes its wide product range easily available through a global network that includes representation in over 60 countries. By providing all of our customers with prompt delivery, and expert support services, we are firmly committed to exceeding customer expectations and being responsive to the ideas and specifications of every customer, anywhere in the world.





Global Presence

Allows for short lead times and quick response times throughout the world.

Modular Design

More than 20 million totally unique product combinations guarantees that you won't need to look anywhere else.

Quality Manufacturing

NORD produces maintenance free products that have a long life in order to save you money for the long haul.

Dependable Service

With emergency service available 24/7 we can help you out when you need us most.

Innovative Products

Our engineers are hard at work creating solutions to everyday problems.

We Have you Covered

NORD provides Gear Drives, Motors & AC inverters in order to provide you with a complete Drivesystem solution.



NORD Gear Corporation

MEMBER OF THE NORD DRIVESYSTEMS GROUP
info.us@nord.com

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Corona, CA
1180 Railroad St.
Corona, CA 92882
Tel. 951.393.6565

Charlotte, NC
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NORD Gear Limited - Canada

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41 West Drive
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