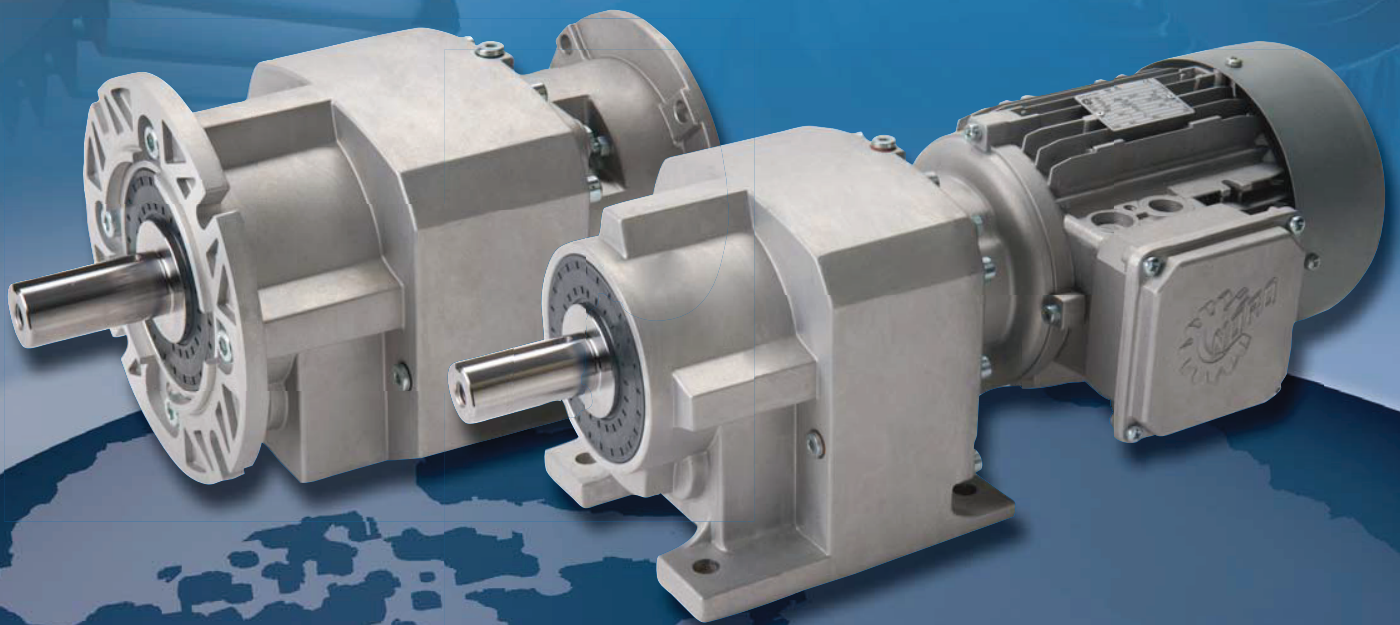



Intelligent Drivesystems



NORDBLOC.1[®] SERIES GEARMOTORS & SPEED REDUCERS

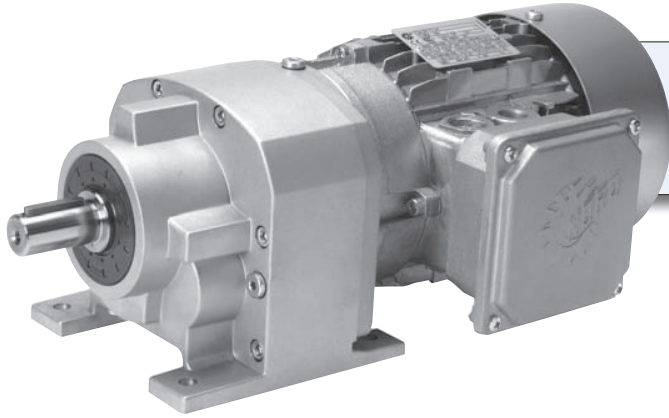
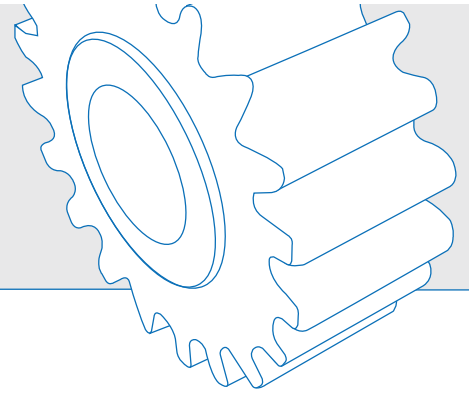
Compact High Performance

G1013


DRIVESYSTEMS

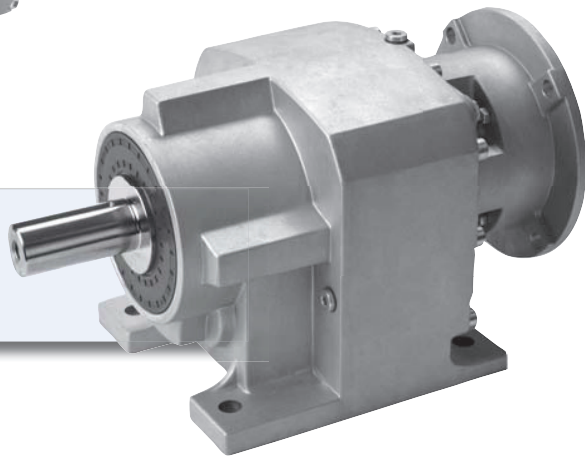
NORDBLOC.1® SERIES

Innovative Design

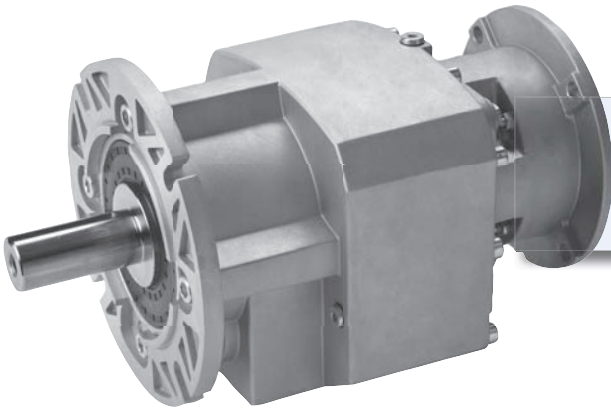


**FOOT-MOUNT
GEARMOTOR**

**FOOT-MOUNT REDUCER
NEMA C-FACE INPUT**



**FLANGE-MOUNT REDUCER
NEMA C-FACE INPUT**



**COMPACT COUPLED
C-FACE ADAPTER**

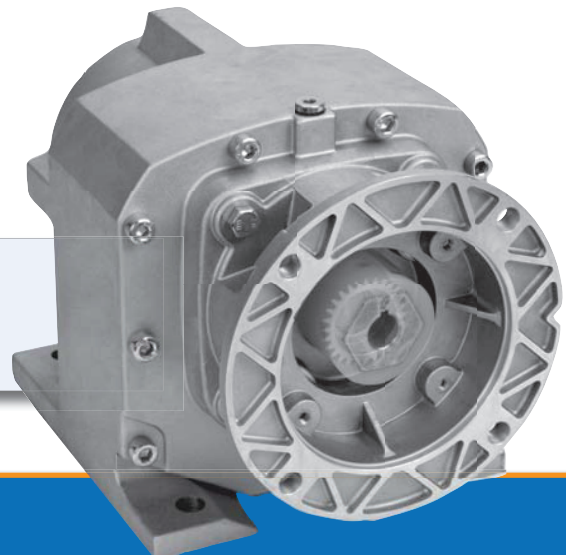


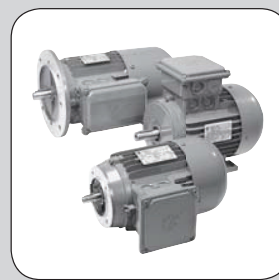
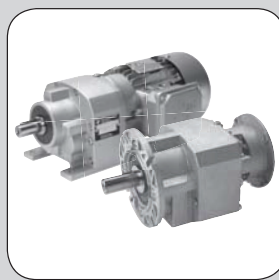
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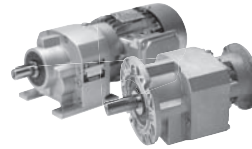
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www.nord.com



NORD Gear



Company Overview

Since 1965, NORD Gear has grown to global proportions on the strength of product performance, superior customer service, and intelligent solutions to a never ending variety of industrial challenges.

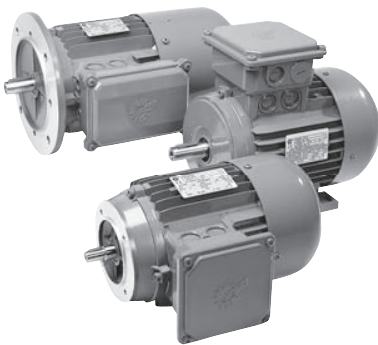
All mechanical and electrical components of a drive are available from NORD Gear. Our products cover the full range of drive equipment: helical in-line, Clincher™ shaft-mount, helical-bevel, and helical-worm gearboxes, motors and AC drives from 1/6 hp to 250 hp, with torques from 90 lb-in to 900,000 lb-in.

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

NORD Gear makes its wide range of products easily available through a global network that provides all customers with prompt delivery and expert support services to consistently exceed customer expectations. We are firmly committed to being totally responsive to the ideas and specifications of every customer, anywhere in the world.

High-Performance Motors & Brakemotors

NORD motors are designed to run cool for 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.



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 paired with a globally linked network, we have the ability to offer our customers:

- Fast, reliable responses
- Greater product versatility
- Shorter lead times
- Timely shipping
- Rapid delivery

Quality

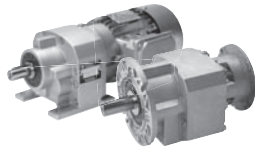
Quality is assured at NORD's assembly and manufacturing facilities, based on ISO 9000 standards — from careful inspection of incoming materials to closely monitored machining operations, including gear cutting, turning, hardening & grinding as well as finishing & assembly.



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.





Manufacturing

NORD continually invests in research, manufacturing and automation technology. This is to ensure the highest possible quality at affordable prices. NORD invests heavily in our North American facilities as well as our factories around the world. Recent examples include expanding our Waunakee factory and adding numerous new large gear unit assembly cells. In our Glinde, Germany gear factory we added a state-of-the-art multi-chamber vacuum carburization system.



Global Availability

From Shanghai to Charlotte, and all points in-between, NORD reaches customers around the world. Deliveries, service, and product support are close at hand, regardless of your location.

Worldwide Standards

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

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 North America and giving our customers the shortest lead times in the industry.

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.



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.

More than 20,000,000 combinations of totally unique gearmotors and speed reducers are possible – assembled in-line or right-angle, mounted by foot or flange, featuring solid or hollow shafts with either metric or inch shaft extensions – to give 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

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.

NORDBLOC® Design

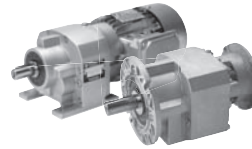
The NORDBLOC® gear units have two different designs for different torque ranges. For the lower torque range NORD has introduced a new NORDBLOC®.1 series with design points specifically tailored to their torque range. One key design point for the NORDBLOC®.1 units is the use of a corrosion resistant aluminum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

NORDBLOC® .1 Units

SK072.1	
SK172.1	
SK372.1	SK373.1
SK572.1	SK573.1
SK672.1	SK673.1
SK772.1	SK773.1
SK872.1	SK873.1
SK972.1	SK973.1

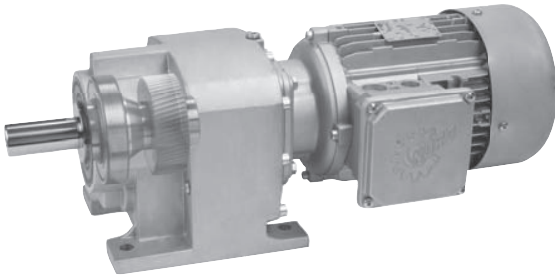
The NORDBLOC® size 772.1 and larger units also have key features optimized for their torque ranges, including class 35 grey cast iron housing as opposed to an aluminum alloy housing.

Key Features

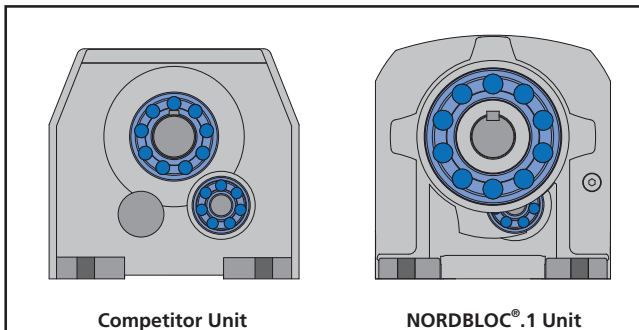


Bearing Design

The bearing system design is a key innovation in the new NORDBLOC®.1 units. The output bearing is greatly oversized which provides a number of important advantages.



The design results in a much larger bearing capacity than what is required if the bearing were selected based on load forces. In order to accommodate larger bearings, an innovative design called staggered bearing topology was developed. It is common to have the support bearings for different shafts in the same plane, which greatly restricts the physical size of the bearings. As you can see in the scaled drawing below, the output bearing in the NORDBLOC®.1 unit is much larger than the competitor's unit.



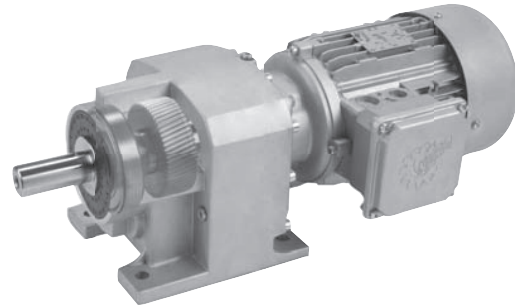
Staggered bearing topology also allows for larger bearing spans, which is a key in bearing system design. The larger bearing spans increase the overall bearing system capacity. Increased shaft diameters are also a byproduct of the larger bearings, thus enhancing shaft strength.

Advantages & Benefits

- Oversized bearings
- Staggered bearing topology
- Longer bearing life
- Higher OHL capacity
- Increased thrust capacity
- No assembly covers needed

Housing

The gear housing design for the new NORDBLOC®.1 has many important advantages.

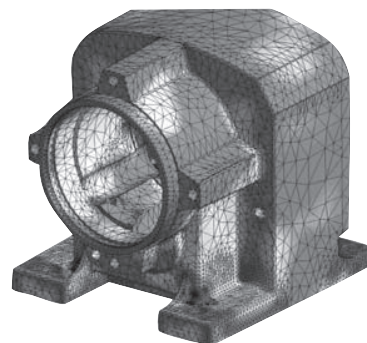


UNICASE®

NORD heavy-duty, one-piece housings are precisely machined to meticulous standards. Internal reinforcements further increase strength and rigidity. All bearings and seal seats 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 one step, producing extremely precise tolerances — thus ensuring accurate positioning of gear teeth, bearings and seals, and longer life for all components.

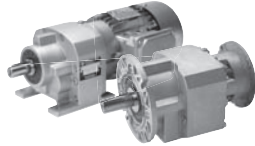
Benefits

- Leak-free design
- Quiet operation
- High output torque capabilities
- Extended lubrication life
- Longer gear and bearing life
- Superior dependability/low maintenance/longer life



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.



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 673.1. 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

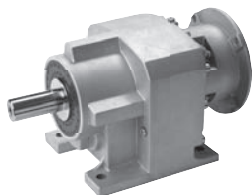
- Paint free
- Light weight
- Corrosion resistant
- Better thermal conductivity (lower temperature)
- Longer service life

Cast Iron Housing

The larger NORDBLOC®.1 units utilize a cast iron gear housing. NORD uses a Class 35 material to produce a stronger finished product. The material paired with FEM design optimization analysis creates an extremely strong and durable gear housing.

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

Standard NORD features

Modular Design

All NORD products including the new NORDBLOC®.1 units are modular in design and provide incredible flexibility. The NORDBLOC®.1 units provide great mounting versatility including:

- Foot mount
- Flange mount B5
- Face flange mount B14
- Foot mount with a B5 or B14 flange

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

- Integral motor (Gearmotor)
- NEMA C-face motor adapter
- IEC B5 motor adapter
- Solid input shaft
- Custom motor adapter (servo, hydraulic motors, and more)

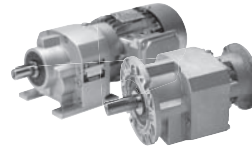
Large Ratio Per Gear Stage

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

Key Features



AUTOVENT™

The AUTOVENT™ prevents bearing damage by blocking entry of foreign material (water, dust, corrosives, etc.) through the breather. A ball and spring check valve opens at approximately 2 psi during operation and closes tightly when the gearbox cools, producing a slightly negative pressure that ensures the valve seals tight. This keeps contaminants out of the oil to maintain proper oil cleanliness reducing contamination, foaming and oxidation. The AUTOVENT™ is perfect for humid conditions, washdown applications, and dusty environments.

Benefits

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

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

Factory Oil Filled

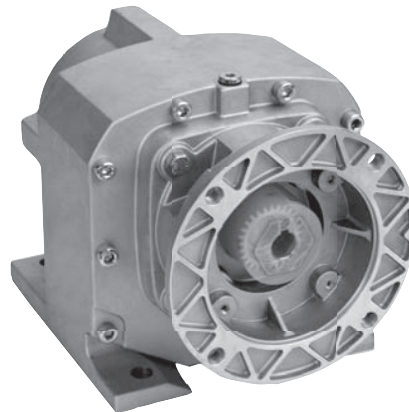
All NORDBLOC® units are filled at the factory with the proper quantity and type of lubrication. Oil fill before shipping prevents damage from dry start-ups.

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 adapter 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 adapter uses a high strength motor coupling and provides the space advantages of a quill but without the severe drawbacks.

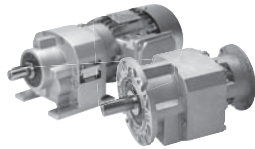


Benefits

- 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.



SK	① Gear Unit	② Shaft/Mounting	③ Reducer Options	-	④ Input/Motor	Motor Options
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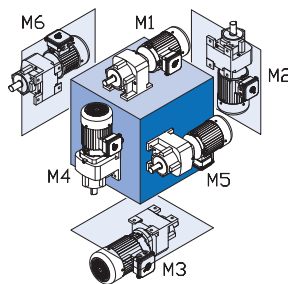
see page 143

①	Gear Unit		② Shaft/Mounting											
	072.1		- Footed 16		Z - B14 Flange 17									
	172.1		F - B5 Flange 17		XZ - Foot/B14 Flange 17									
	372.1	373.1	• B5 Flange Diameter		XF - Foot/B5 Flange 17									
	572.1	573.1			• XF Flange Diameter									
	672.1	673.1	③ Reducer Options											
	772.1	773.1	<input type="checkbox"/> VL - Heavy Duty Output Bearings 18 <input type="checkbox"/> AL - Axial/Thrust Output Bearings 18 <input type="checkbox"/> PR - Flange Pilot Removal 17 <input type="checkbox"/> VI - Fluoro Rubber Seals 18 <input type="checkbox"/> SWV - Special Solid Shaft 18 <input type="checkbox"/> SMS - 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									
	872.1	873.1												
	972.1	973.1												
④							Input Shaft		NEMA Adapter	IEC	Integral Motors		Integral Energy Efficient 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 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 200L/4 - 40hp 225S/4 - 50hp	80LH/4 - 1hp 90SH/4 - 1.5hp 90LH/4 - 2hp 100LH/4 - 3hp 112MH/4 - 5hp 132SH/4 - 7.5hp 132MH/4 - 10hp	160MH/4 - 15hp 160LH/4 - 20hp 180MH/4 - 25hp 180LH/4 - 30hp 200LH/4 - 40hp 225SH/4 - 50hp	
							Other Speeds Available	Other Speeds Available						

Product Specifications

Ratio
 :1
 see pages 54 - 85
 — OR —
Output Speed
 rpm
 see pages 88 - 101

- Mounting Position 14**
- M1
 - M2
 - M3
 - M4
 - M5
 - M6
 - Special _____



- Paint 20**
- No Paint (Standard)
 - Stainless Steel Paint
 - NSD+ (gray)
 - NSD+W (white)
 - NSD-X3 (gray)
 - NSD-X3W (white)
 - Special _____

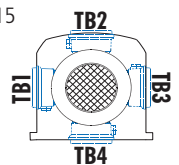
- Lubricant 22**
- Standard
 - Synthetic
 - Food Grade
 - Other _____

Shaft Diameter

Gearmotor Only Details

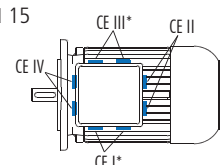
- Voltage & Frequency**
- 230/460V-60Hz
 - 575V-60Hz
 - 208V-60Hz
 - 400V-50Hz
 - 115/230V-60Hz, 1 ph.
 - Other _____

- Terminal Box Pos. 15**
- TB1
 - TB2
 - TB3
 - TB4



Mtg. Pos. M1 Shown

- Conduit Entry Loc. 15**
- CE I *
 - CE II
 - CE III *
 - CE IV



Mtg. Pos. M1 Shown

* Brakemotor

Motor Order Form



SK	Frame	Size	Poles	Motor Options	Brake Size	Brake Options
				<p>Electrical Motor Options</p> <input type="checkbox"/> H - Energy Efficient Motor <input type="checkbox"/> TW - Thermostat <input type="checkbox"/> TF - Thermistor <input type="checkbox"/> SH - Space Heater (select voltage) <input type="radio"/> 110 Volt <input type="radio"/> 230 Volt <input type="radio"/> 460 Volt <input type="checkbox"/> ISO H - Class H insulation <input type="checkbox"/> WU - High Resistance Rotor <input type="checkbox"/> 4-2 - 2-Speed, 4/2 Pole, 1800/3600rpm <input type="checkbox"/> 8-2 - 2-Speed, 8/2 Pole, 900/3600rpm <input type="checkbox"/> ECR - Single Phase Motor <p>Environmental Options</p> <input type="checkbox"/> NSD+ - Nord Severe Duty Paint <input type="checkbox"/> NSDx3 - Nord Extreme Duty Paint <input type="checkbox"/> RD - Canopy Drip Cover <input type="checkbox"/> RDD - Double Fan Cover <input type="checkbox"/> KB - Condensation Drain Holes (plugged) <input type="checkbox"/> KBO - Condensation Drain Holes (open) <input type="checkbox"/> IP66 - IP66 Enclosure Protection <input type="checkbox"/> KKV - Terminal Box Sealed with Resin <input type="checkbox"/> AICM - Additional Insulation <input type="checkbox"/> EP - Epoxy Dipped Windings <p>Frequency Inverter Related Options</p> <input type="checkbox"/> F - Blower Fan (200-575V 1 & 3 Phase) <input type="checkbox"/> FC - Blower Cooling Fan (115V, 1 Phase) <input type="checkbox"/> IG__ - Incremental Encoder <input type="checkbox"/> IG_P - Incremental Encoder with Plug <input type="checkbox"/> AG - Absolute Encoder <p>Additional Motor Options</p> <input type="checkbox"/> OL - Totally Enclosed Non-Ventilated (TENV) <input type="checkbox"/> OL/H - (TENV) Without Fan Cover <input type="checkbox"/> WE - Second Shaft Extension (Fan Side) <input type="checkbox"/> HR - Hand Wheel <input type="checkbox"/> Z - High Inertia Cast Iron Fan <input type="checkbox"/> RLS - Motor Backstop (rotation viewing fan) <input type="radio"/> Clockwise <input type="radio"/> Counter-Clockwise <input type="checkbox"/> EKK - Small Terminal Box (not UL approved) <input type="checkbox"/> MS - Quick Power Plug Connector	<p>BRE 5 BRE 10 BRE 20 BRE 40 BRE 60 BRE 100 BRE 150 BRE 250 BRE 400 BRE 800</p> <input type="checkbox"/> HL - Hand Release Lever <input type="checkbox"/> FHL - Locking Hand Release Lever <input type="checkbox"/> HLH - Hand Release Lever with Hole <input type="checkbox"/> RG - Corrosion Protected Brake <input type="checkbox"/> SR - Dust and Corrosion Protected Brake <input type="checkbox"/> ADJ ___ Nm - Adjust Brake Torque <input type="checkbox"/> BIP66 - IP66 Brake Enclosure <input type="checkbox"/> MIK - Micro-switch <input type="checkbox"/> BSH - Brake Heating/Bifilar Coil <input type="checkbox"/> NRB1 - Quiet Brake Release <input type="checkbox"/> NRB2 - Quiet Brake Motor Operation <input type="checkbox"/> FBR - Brass Foil <input type="checkbox"/> DBR - Double Brake <input type="checkbox"/> G...P - High Performance Rectifier <input type="checkbox"/> G...V - Sealed Rectifier <input type="checkbox"/> IR - Current Sensing Relay	
				<p>Paint</p> <input type="radio"/> Unpainted Aluminum <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>Rectifier Selection</p> <p>Rectifier Wiring</p> <input type="radio"/> Across the line (from motor terminal box) <input type="radio"/> Separate power source (frequency inverter, soft starter) <p>Brake Supply Voltage</p> <input type="radio"/> 24 VDC <input type="radio"/> 115 VAC <input type="radio"/> 200 VAC <input type="radio"/> 230 VAC <input type="radio"/> 400 VAC <input type="radio"/> 460 VAC <input type="radio"/> 500 VAC <input type="radio"/> 575 VAC <input type="radio"/> Other _____ <p>Braking Method</p> <input type="radio"/> Method 10 <input type="radio"/> Method 15 <input type="radio"/> Method 20 <input type="radio"/> Method 25 <input type="radio"/> Method 30 <input type="radio"/> Method 35 <input type="radio"/> Method 40 <input type="radio"/> Method 45 <input type="radio"/> Method 50 <input type="radio"/> Method 55
						<p>Hand Release Position</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <input type="radio"/> HL1 <input type="radio"/> HL2 <input type="radio"/> HL3 <input type="radio"/> HL4 </div> </div>

Mounting

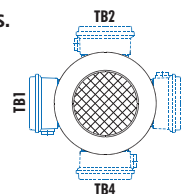
- Integral to gearbox
- NEMA C-Face
- IEC B5 Mount

Voltage & Frequency

- 230/460V-60Hz
- 575V-60Hz
- 208V-60Hz
- 400V-50Hz
- 115/230V, 60Hz-1-ph.
- Other

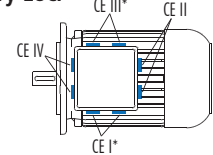
Terminal Box Pos.

- TB1
- TB2
- TB3
- TB4



Conduit Entry Loc.

- CE I *
- CE II
- CE III *
- CE IV



Mtg. Pos. M1 Shown

* Brakemotor

Mtg. Pos. M1 Shown