

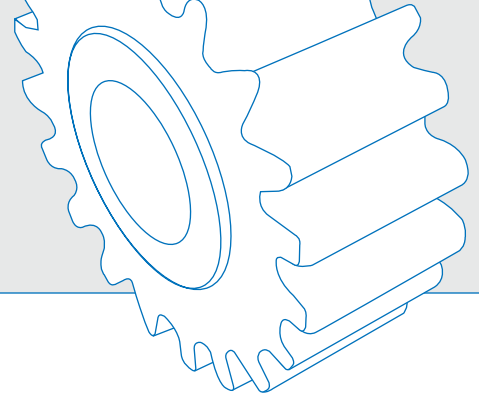
Intelligent Drivesystems



FLEXBLOC™ & MINICASE®
WORM DRIVES
Speed Reducer / Gear Motors

F1033

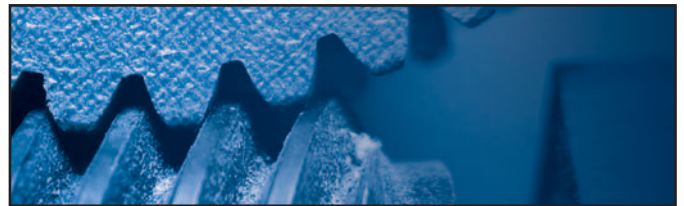

DRIVESYSTEMS



FLEXBLOC™ & MINICASE® Speed Reducers

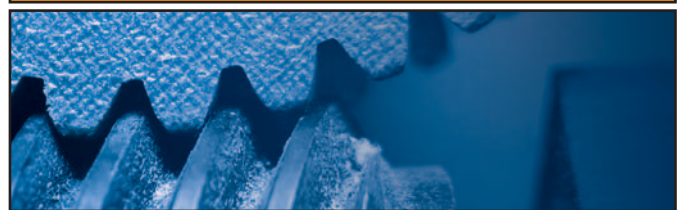
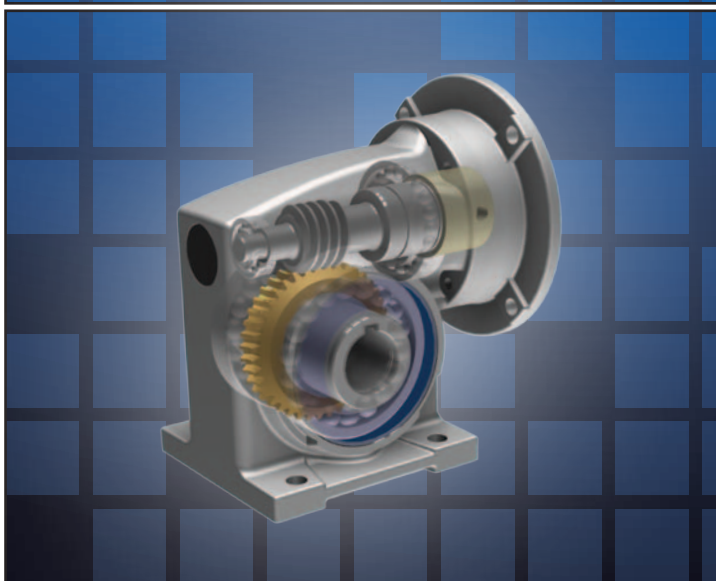
FLEXBLOC™ and MINICASE® Worm Gears

NORD modular worm gear products cover 5 industry standard center distances from 31 mm-75 mm (1.2 in-3.0 in) and range in torque capacity up to 3,779 lb-in. This product offering comes in a variety of standard, single worm, and compound worm ratios ranging from 5:1 to 10,000:1. The product family consists of the FLEXBLOC™ (SI Series) worm with universal gear housing and the MINICASE® (SMI Series) worm characterized by its smooth outer surface design and its separate footed and flanged gear housing. Exceptional modularity is guaranteed by offering a unified set of factory-stocked and easy-to-assemble accessory kits. This flexibility allows for a variety of input and output mounting options along with a large variety of output shaft options. The FLEXBLOC™ and MINICASE® worm gear products share many innovative design features.



FLEXBLOC™ Key Features:

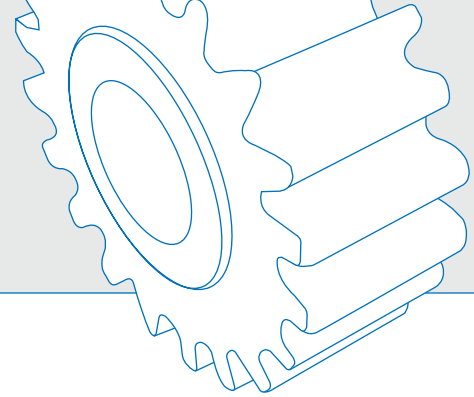
- Factory-stocked worm-modules & accessory kits
- Universal foot and flange-mount housings
- Keyed hollow-bore units with solid shaft kits
- Adaptable to any mounting position (universal oil fill)
- Easy to assemble accessories
- NEMA, IEC, or solid shaft input as standard
- Accommodates stocked C-Face motors or brakemotors



MINICASE® Key Features:

- Factory-assembled from stocked parts
- Separate smooth-bodied foot & flange-mount housings
- Keyed hollow-bore or one-piece solid shaft as standard
- Specific bores accommodate plug-in shafts
- Easy to assemble accessories
- NEMA, IEC, or solid shaft input
- Supplied as an integral motor or brakemotor (C-Face motorized options possible)

Product Features



Dual Pinion Shaft Bearings

Two bearing supports maintain accurate gear and shaft alignment, isolate and protect motor bearings, and provide smooth/quiet operation.

Worm Pinion Gear

Surfaced hardened alloy steel gears with an optimized tooth form maximize gear contact and provide long service life.

Aluminum Alloy Housing

Light weight, high strength, optimal heat dissipation and natural corrosion resistance. Flange or torque-arm mount options available.

Input Configuration

NEMA, IEC and free input shaft designs are readily available. Integral motor mounting is optional. Adaptation to servo motors is possible.

Worm Gear

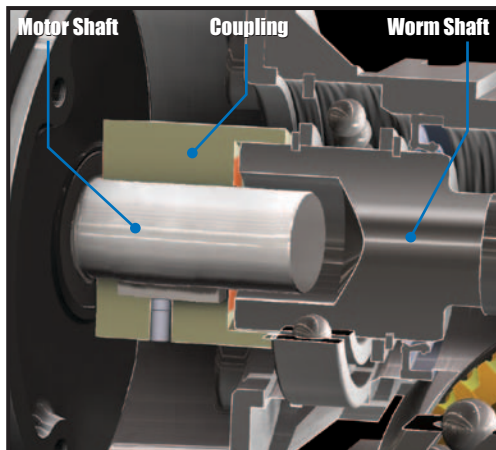
Fine-grained bronze alloy minimizes wear providing maximum strength and durability.

Motor Coupling

Guarantees accurate motor shaft alignment, minimizes fretting and provides a low backlash / high strength connection.

Output Shaft

Hollow bore and single-sided or double-sided shafted models are also available.



Output Bearings

Oversized bearings provide high radial and axial load capacities and long service life.

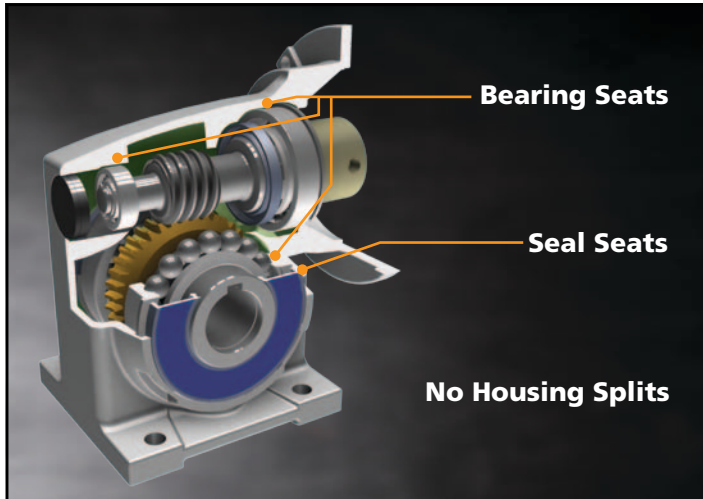
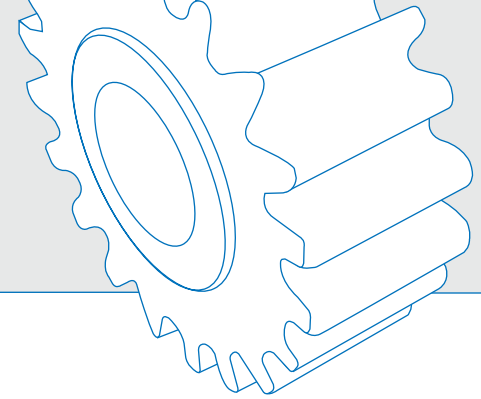
Oil Seals

Double-lip oil seals provide extra sealing and protection against the elements.

Advantages of the NORD Compact Coupled Unit

- Easy to assemble and disassemble.
- Eliminates fretting corrosion common to quill-mount inputs.
- Maintains shaft alignment and provides vibration-free torque transfer.
- Protects and isolates motor shaft and reducer shaft bearings.
- Provides a stiff, high-strength, near-zero backlash connection.
- Reduces the chance of bearing, shaft and key failures.

Innovative Design Features



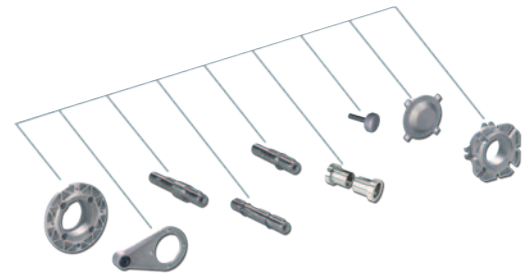
UNICASE® One Piece Housing

NORD heavy-duty, one-piece housings are precisely machined to exacting 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.

- Increased torsional strength and rigidity.
- Eliminates housing splits and bolt-on carriers.
- Leak-free housing design.
- Versatile mounting options and accessory kits.

Modular Construction

- Easy-to-configure input and output accessories.
- Integral motor or motorized c-face units.
- NEMA, IEC or solid shaft input options.
- Footed, flanged or shaft-mount.
- 10:1 helical pre-stage & compound assemblies.
- Keyed hollow bore, solid shaft, and bushing-kit options.



Factory Oil Filled

NORD factory-filled gear units allow for easy commissioning of the gear unit and prevent damage caused by dry start-ups. Each unit is filled with a quality gear lubricant that is recognized by the industry.

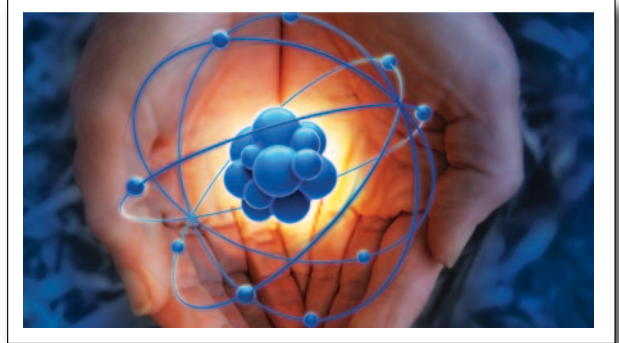
- Maintenance free / lubricated-for-life.
- High-quality long-life synthetic lubricant.
- USDA H1 lubrication readily available.
- Optional venting capabilities.



Sealed Surface Conversion

The NEW NSD^{tupH} Sealed Surface Conversion System offers a cost effective weight saving alternative to stainless steel reducers. Through a revolutionary process the reducer housing and its components are electrically catalyzed resulting in a surface conversion at the molecular level. NSD^{tupH} provides exceptional chemical, corrosion and abrasion resistance. The converted surface also becomes extremely scratch resistant as it becomes 6-7 times harder than the original aluminum alloy.

The NSD^{tupH} package includes stainless steel reducer hardware and c-face gasket for the motor. Options include stainless steel reducer shafting, smooth-bodied stainless steel c-face motors, and food grade lubricants. NSD^{tupH} is the ideal package for many harsh environments involving chemicals or wash-downs and areas where sanitation and cleanliness are the highest priority.

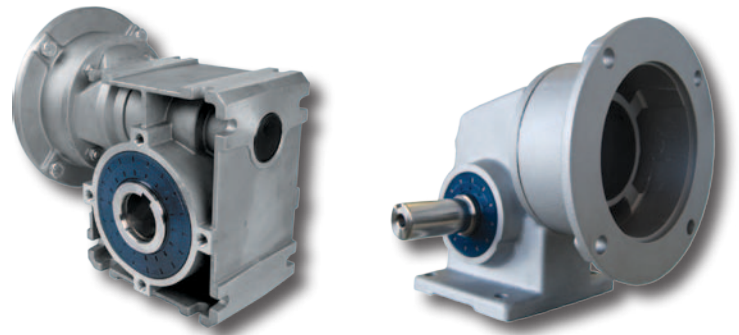


Available FLEXBLOC™ / MINICASE® worm Units with NSD^{tupH} Conversion

	SK1SI31 / SK1SMI31	SK1SI40 / SK1SMI40	SK1SI50 / SK1SMI50	SK1SI63 / SK1SMI63
N48C Input	X			
N56C Input		X	X	X
N140TC Input		X	X	X

NSD^{tupH} System Package

- Standard electrically catalyzed reducer housing and accessories
- 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



NSD^{tupH} is Useful in Many Harsh Environments (not limited to but including)

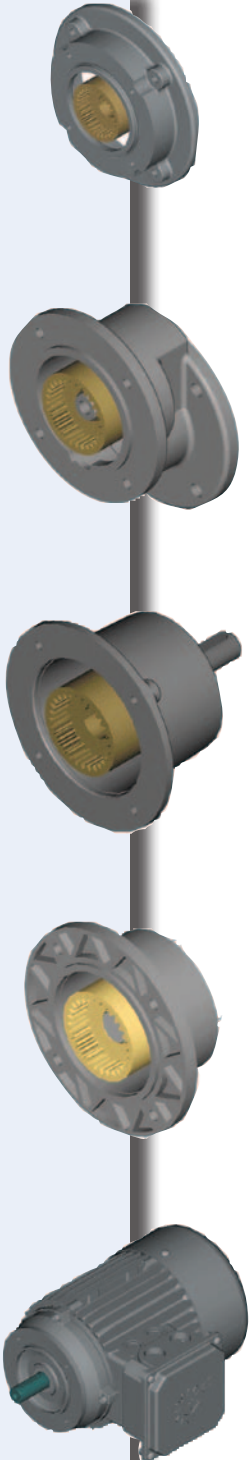
- Chemical wash down
- Damp and wet environments
- Marine / Coastal
- Food & Beverage industry
- Car Wash
- Dairy
- Pharmaceutical
- Water and waste treatment

Some of the Many Benefits of NSD^{tupH}

- Cost effective alternate to stainless steel
- Corrosion resistance
- Chip resistance
- Non propagating from scratches or other blemishes
- Highly Cleanable low friction surface
- Non-porous
- Lighter than stainless
- Chemical resistant
- Elimination of galvanic corrosion
- Surface conversion is 1000X harder than paint

FLEXBLOC™ & MINICASE®

Flexible Solutions & Bolt-On Modules



NEMA C-FACE COUPLING ADAPTER

For attaching standard motors

Kit contains:

- Adapter flange
- Coupling
- Nuts and bolts

2ND REDUCTION

Helical 10:1 gear set
Fits all size gearboxes
Lifetime synthetic lubricant
Sealed unit

Kit contains:

- Pre-assembled unit
- Bolts

SOLID INPUT SHAFT

Fits all size gearboxes
Lifetime lubricant
Sealed unit

Kit contains:

- Pre-assembled unit
- Bolts

DOUBLE WORM ADAPTER

Mounts the SK1SI/SMI31 to the input of the larger SK1SI/SMI40 - SK1SI/SMI75 to produce a high reduction double worm gear unit

Kit contains:

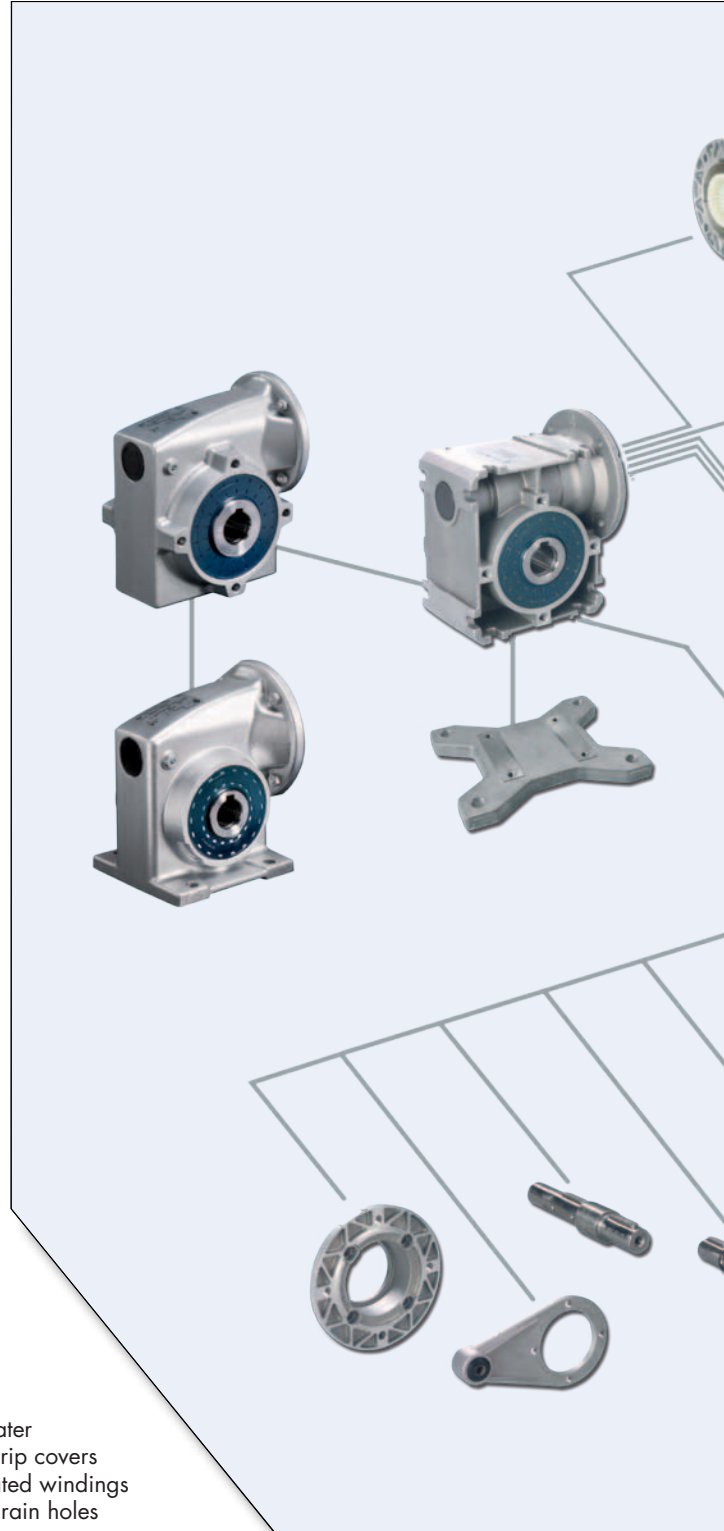
- Adapter flange
- Coupling
- Shaft
- Keys
- Bolts

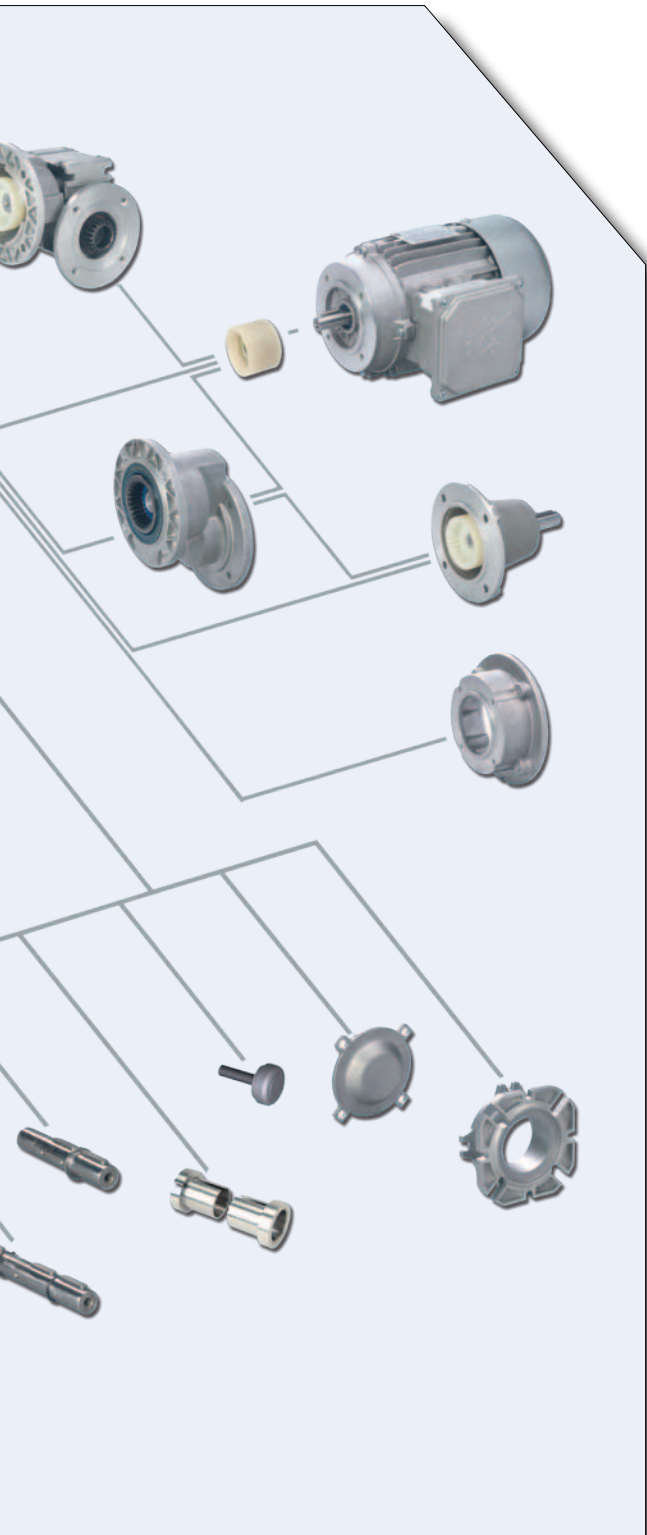
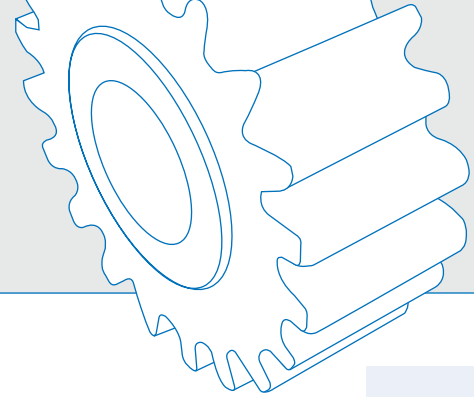
NORD C-FACE MOTORS & BRAKEMOTORS

3 phase, 230/460, 60 Hertz
3 phase, 575V, 60 Hertz

Options:

- Power off brake
- Numerous brake options
- Thermistor temperature sensors
- Thermostat temperature sensors
- Blower fan
- Encoders
- Space heater
- Canopy drip covers
- Encapsulated windings
- End bell drain holes





SOLID OUTPUT SHAFT

Inch dimensions with standard keys
Plug into standard hollow shaft
Install on either side

Kit contains:

- Shaft
- Keys
- External snap ring

Options:

- Double solid shaft

B5 OUTPUT FLANGE

Multiple flanges available for each size gearbox. Flange pilots are centered in seal bore.

Kit contains:

- Die cast flange
- Bolts

SHAFT PROTECTION COVER

Seals shaft end Safety protection from rotating shafts.

Kit contains:

- Cover
- Bolts

FOOT PLATE

Mounts to the bottom of the FLEXBLOC™ to provide drop-in compatibility with many worm gear reducers.

Kit contains:

- Foot plate
- Bolts

TORQUE REACTION ARM

For shaft mounting
Rubber shock absorber installed in attachment end.

Kit contains:

- Torque arm
- Bolts

SHAFT BUSHING

Hollow shaft bushing for increased bore flexibility.

Kit contains:

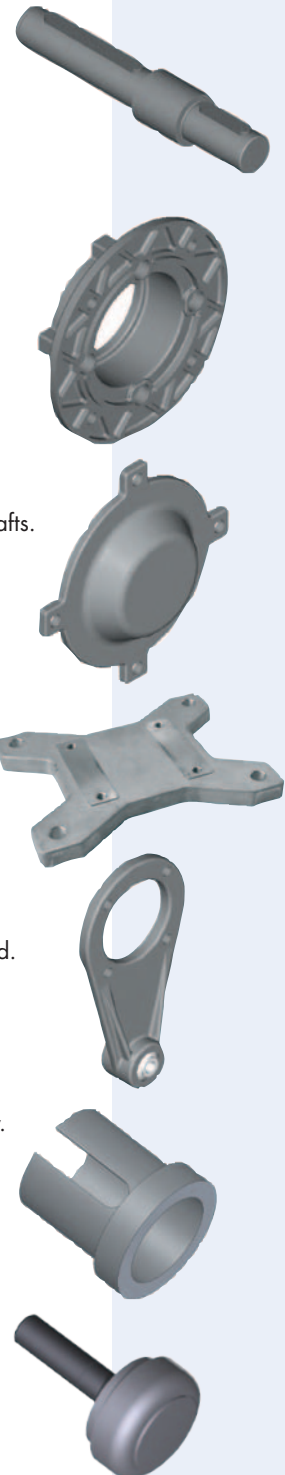
- Bushings with set screw
- Key

FIXING KIT

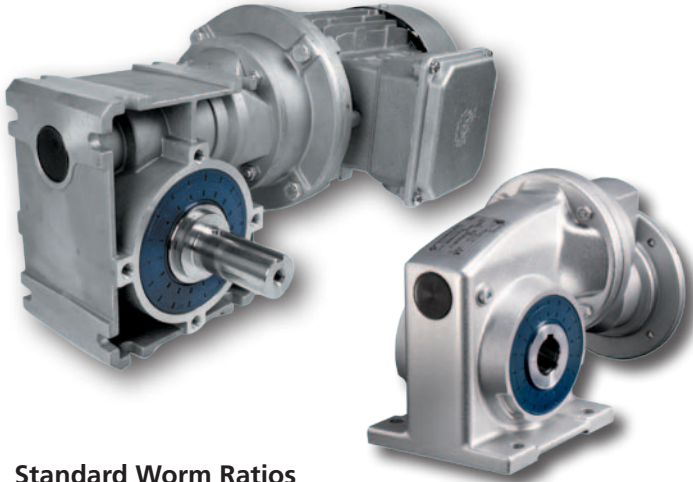
Optional mounting device that engages the customer solid shaft tap and draws the end of the shaft into contact with the hollow bore snap ring.

Kit contains:

- Carbon Steel retaining washer and bolt
- Spring loaded steel snap ring
- Plastic cover



Gearbox Ratings



Standard Worm Ratios

- 5:1 - 100:1 single worm ratios.
- Up to 1000:1 with a 10:1 helical pre-stage option.
- Compound Unit ratios up to 10,000:1

Type	Ratio	Output RPM	Torque [lb-in]	Max Input HP
SK 1SI 31	5	350	204	1.30
	7.5	233	239	1.06
	10	175	230	0.80
SK 1SMI 31	12.5	140	212	0.61
	15	117	257	0.66
	20	88	239	0.49
	25	70	221	0.38
	30	58	266	0.44
	40	43	248	0.34
	50	35	230	0.27
	60	29	212	0.23
	80	22	195	0.18
	100	18	186	0.17

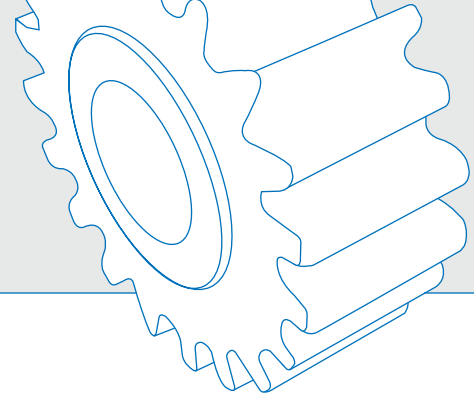
Type	Ratio	Output RPM	Torque [lb-in]	Max Input HP
SK 1SI 40	5	350	336	2.10
	7.5	233	389	1.69
SK 1SMI 40	10	175	372	1.24
	12.5	140	363	1.00
	15	117	434	1.06
	20	88	398	0.77
	25	70	372	0.60
	30	58	442	0.67
	40	43	407	0.51
	50	35	381	0.41
	60	29	354	0.34
	80	22	327	0.27
SK 1SI 40/H10 SK 1SMI 40/H10	100	18	301	0.23
	50	35	549	0.38
SK 1SI 40/31 SK 1SMI 40/31	thru			
	1000	1.8	487	0.06
SK 1SI 40/31 SK 1SMI 40/31	150	12	655	0.30
	thru			
3000	0.6	876	0.06	

Type	Ratio	Output RPM	Torque [lb-in]	Max Input HP
SK 1SI 50 SK 1SMI 50	5	350	584	3.56
	7.5	233	690	2.90
	10	175	664	2.14
	12.5	140	637	1.69
	15	117	770	1.79
	20	88	717	1.30
	25	70	673	1.01
	30	58	796	1.11
	40	43	735	0.83
	50	35	681	0.65
	60	29	646	0.55
	80	22	593	0.43
	SK 1SI 50/H10 SK 1SMI 50/H10	100	18	549
50		35	742	0.50
SK 1SI 50/31 SK 1SMI 50/31	thru			
	1000	1.8	894	0.09
SK 1SI 50/31 SK 1SMI 50/31	150	12	1177	0.49
	thru			
3000	0.6	1575	0.11	

Type	Ratio	Output RPM	Torque [lb-in]	Max Input HP
SK 1SI 63 SK 1SMI 63	5	350	1044	6.30
	7.5	233	1230	5.05
	10	175	1186	3.74
	12.5	140	1142	2.91
	15	117	1372	3.07
	20	88	1274	2.22
	25	70	1195	1.72
	30	58	1416	1.86
	40	43	1301	1.38
	50	35	1212	1.09
	60	29	1150	0.90
	80	22	1044	0.69
	SK 1SI 63/H10 SK 1SMI 63/H10	100	18	974
50		35	751	0.50
SK 1SI 63/31 SK 1SMI 63/31	thru			
	1000	1.8	1584	0.16
SK 1SI 63/31 SK 1SMI 63/31	150	12	2097	0.83
	thru			
3000	0.6	2797	0.20	

Type	Ratio	Output RPM	Torque [lb-in]	Max Input HP
SK 1SI 75 SK 1SMI 75	5	350	1735	10.36
	7.5	233	2071	8.41
	10	175	2009	6.2
	12.5	140	1912	4.77
	15	117	2336	5.1
	20	88	2168	3.65
	25	70	2036	2.79
	30	58	1929	2.25
	40	43	2212	2.21
	50	35	2062	1.71
	60	29	1956	1.41
	80	22	1779	1.05
	SK 1SI 75/40	100	18	1655
150		12	2832	0.96
SK 1SI 75/40	thru			
	3000	0.60	3779	0.19

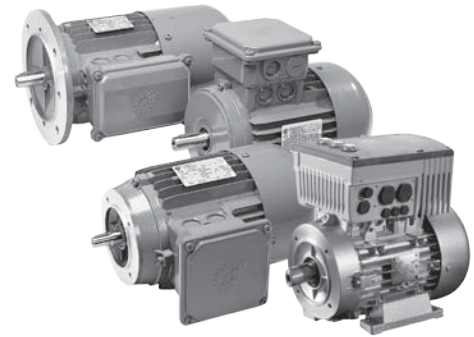
Motor Ratings



Motor Specifications



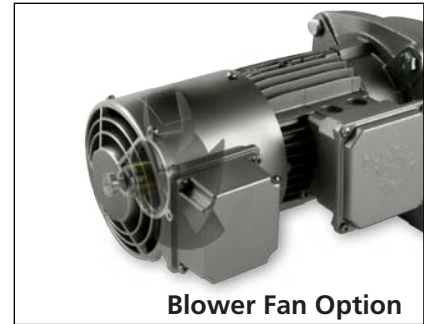
Inverter duty • TEFC
 Synchronous speed 1800rpm @ 60Hz • 4-pole • Three-phase
 1.15 Service Factor • Continuous Duty • 40°C Ambient
 up to 3300ft Elevation • Class B temperature rise
 Class F insulation



230/460V or 200-208V or 575V – 60Hz



Power		Speed [rpm]	Motor Type (Frame)	
[hp]	[kW]		Integral	NEMA C-Face
0.16	0.12	1700	63 S/4	63 S/4-56C
0.25	0.18	1680	63 L/4	63 L/4-56C
0.33	0.25	1710	71 S/4	71 S/4-56C
0.5	0.37	1720	71 L/4	71 L/4-56C
0.75	0.55	1710	80 S/4	80 S/4-56C
1	0.75	1650	80 L/4	80 L/4-56C



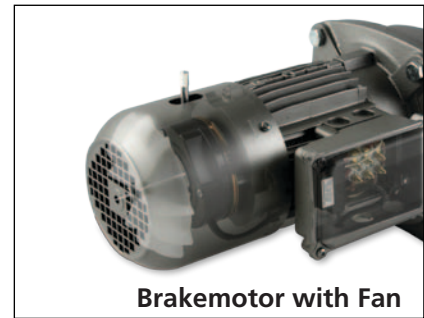
Blower Fan Option

230/460V+ or 575V – 60Hz | Energy Efficient (EPAct)



Power		Speed [rpm]	Motor Type (Frame)	
[hp]	[kW]		Integral	NEMA C-Face
1	0.75	1750	80 LH/4	80 LH/4-56C
1	0.75	1750	80 LH/4	80 LH/4-143TC
1.5	1.1	1740	90 SH/4	90 SH/4-145TC
2	1.5	1745	90 LH/4	90 LH/4-145TC
3	2.2	1765	*	100 LH/4-182TC
5	3.7	1770	*	112 MH/4-184TC

* Consider a gear unit with NEMA C-face input
 + 208-230/460V Rating Possible



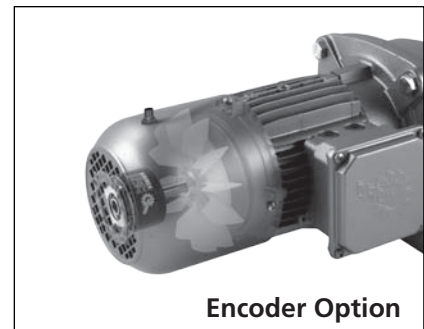
Brakemotor with Fan

230/460V+ or 575V – 60Hz | Premium Efficient (EISA)



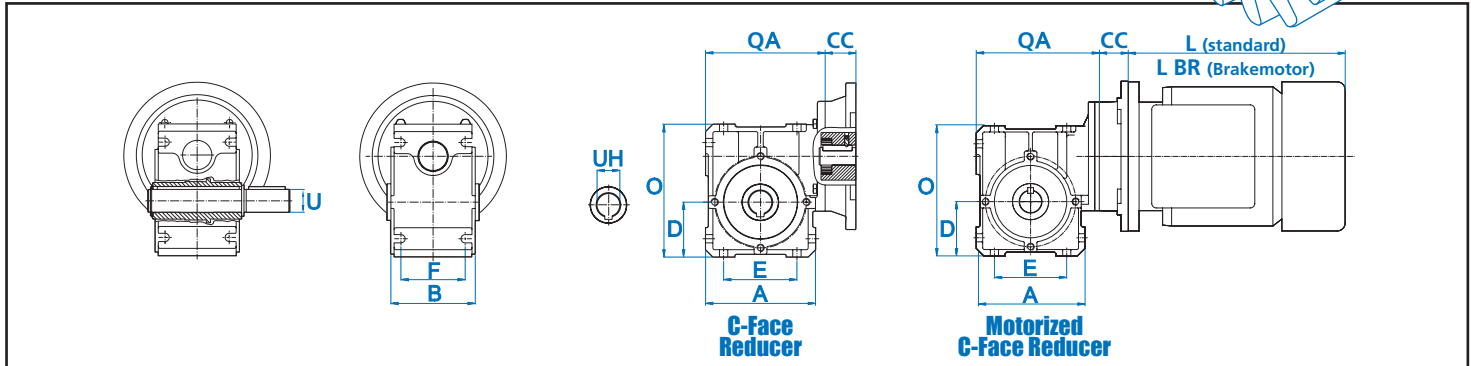
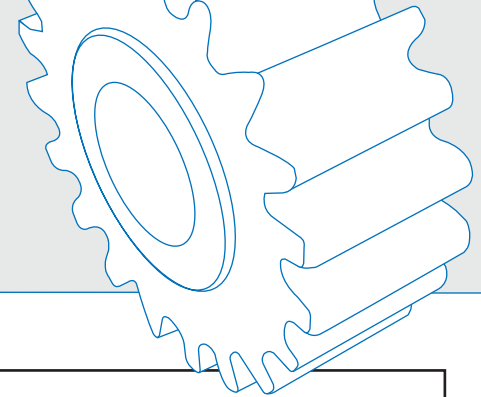
Power		Speed [rpm]	Motor Type (Frame)	
[hp]	[kW]		Integral	NEMA C-Face
1	0.75	1750	80 LP/4	80 LP/4-56C
1	0.75	1750	80 LP/4	80 LP/4-143TC
1.5	1.1	1740	90 SP/4	90 SP/4-145TC
2	1.5	1745	90 LP/4	90 LP/4-145TC
3	2.2	1765	*	100 LP/4-182TC
5	3.7	1770	*	112 MP/4-184TC

* Consider a gear unit with NEMA C-face input
 + 208-230/460V Rating Possible



Encoder Option

FLEXBLOC™ Worm Dimensions



DIMENSIONS

	A	B	D	E	F	O	QA	U	UH
SK 1SI 31	3.15	2.48	1.57	2.13	1.73	3.82	3.82	0.625	0.625
SK 1SI 40	3.94	3.07	1.97	2.76	2.36	4.78	4.69	0.750	1.000
SK 1SI 50	4.72	3.62	2.36	3.15	2.76	5.67	5.16	1.000	1.125
SK 1SI 63	5.67	4.41	2.83	3.94	3.35	6.85	6.22	1.125	1.4375
SK 1SI 75	6.77	5.12	3.39	4.72	3.54	8.08	7.87	1.375	1.9375

Metric Shaft available

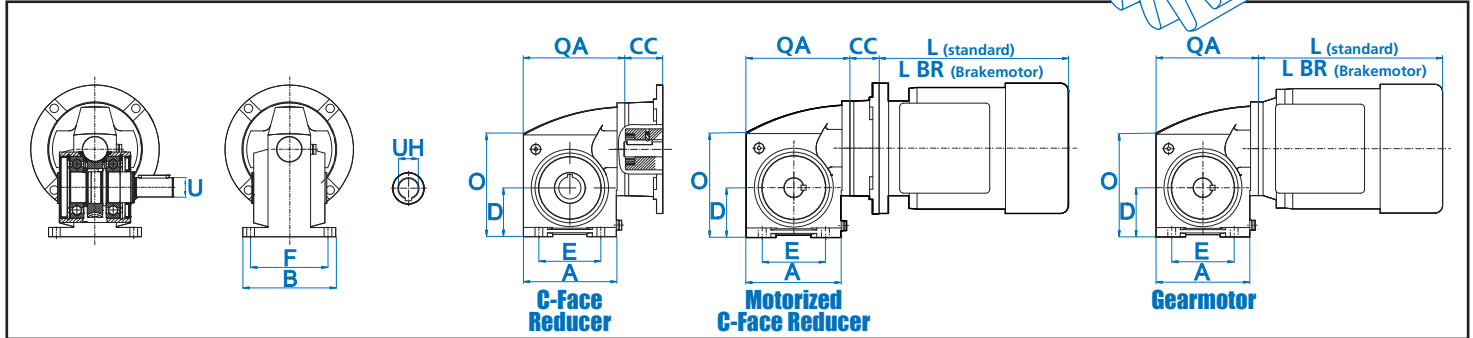
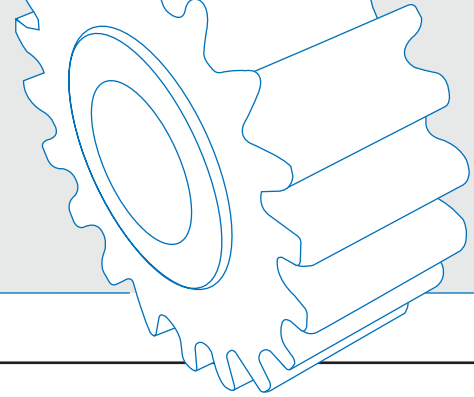
NEMA C-FACE DIMENSIONS

	48C		56C		140TC		180TC	
	Available	CC	Available	CC	Available	CC	Available	CC
SK 1SI 31	X	1.50	X	1.89	-	-	-	-
SK 1SI 40	-	-	X	1.46	X	1.93	-	-
SK 1SI 50	-	-	X	1.46	X	1.93	-	-
SK 1SI 63	-	-	X	1.46	X	1.93	X	3.06
SK 1SI 75	-	-	X	1.61	X	1.61	X	2.16

NEMA C-FACE GEARMOTOR DIMENSIONS

	56C-63S/L		56C-71S/L		56C-80S/L-LH-LP		140TC-80L-LH-LP		140TC-90LH-LP		180TC-100LH-LP		180TC-112MH-MP	
	L	L BR	L	L BR	L	L BR	L	L BR	L	L BR	L	L BR	L	L BR
SK 1SI 31	7.57	9.78	8.44	10.72	9.46	11.98	9.46	11.98	-	-	-	-	-	-
SK 1SI 40	7.57	9.78	8.44	10.72	9.46	11.98	9.46	11.98	11.00	13.95	-	-	-	-
SK 1SI 50	7.57	9.78	8.44	10.72	9.46	11.98	9.46	11.98	11.00	13.95	-	-	-	-
SK 1SI 63	7.57	9.78	8.44	10.72	9.46	11.98	9.46	11.98	11.00	13.95	11.97	15.57	-	-
SK 1SI 75	-	-	8.44	10.72	9.46	11.98	9.46	11.98	11.00	13.95	11.97	15.57	13.56	17.26

MINICASE® Worm Dimensions



GEARBOX & SHAFT DIMENSIONS

	A	B	D	E	F	O	QA	U	UH
SK 1SMI 31	3.27	3.54	1.57	2.56	2.95	3.54	3.82	0.500	0.625
SK 1SMI 40	3.78	4.72	2.09	3.15	3.94	4.53	4.69	0.750	1.000
SK 1SMI 50	4.72	4.72	2.48	3.15	3.94	5.24	5.16	1.000	1.125
SK 1SMI 63	5.67	5.31	2.95	3.94	4.33	6.34	6.18	1.250	1.4375
SK 1SMI 75	6.77	6.69	3.54	5.12	5.51	7.94	7.87	1.375	1.9375

Metric Shaft available

NEMA C-FACE DIMENSIONS

	48C		56C		140TC		180TC	
	Available	CC	Available	CC	Available	CC	Available	CC
SK 1SMI 31	X	1.50	X	1.89	-	-	-	-
SK 1SMI 40	-	-	X	1.46	X	1.93	-	-
SK 1SMI 50	-	-	X	1.46	X	1.93	-	-
SK 1SMI 63	-	-	X	1.46	X	1.93	X	3.06
SK 1SMI 75	-	-	X	1.61	X	1.61	X	2.16

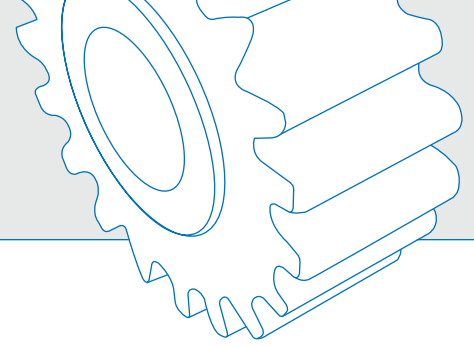
INTEGRAL GEARMOTOR DIMENSIONS

	63S/L		71S/L		80S/L/SH/LH/SP/LP		90SH/LH/SP/LP		100LH/LP		112MH/MP	
	L	L BR	L	L BR	L	L BR	L	L BR	L	L BR	L	L BR
SK 1SMID 31	7.57	9.78	8.44	10.72	-	-	-	-	-	-	-	-
SK 1SMID 40	7.59	9.79	8.44	10.72	9.31	11.83	-	-	-	-	-	-
SK 1SMID 50	-	-	8.44	10.72	9.31	11.83	10.84	13.80	-	-	-	-
SK 1SMID 63	-	-	-	-	9.31	11.83	10.84	13.80	-	-	-	-

NEMA C-FACE GEARMOTOR DIMENSIONS

	56C-63S/L		56C-71S/L		56C-80S/L-LH-LP		140TC-80L-LH-LP		140TC-90LH-LP		180TC-100LH-LP		180TC-112MH-MP	
	L	L BR	L	L BR	L	L BR	L	L BR	L	L BR	L	L BR	L	L BR
SK 1SMI 31	7.57	9.78	8.44	10.72	9.46	11.98	9.46	11.98	-	-	-	-	-	-
SK 1SMI 40	7.57	9.78	8.44	10.72	9.46	11.98	9.46	11.98	11.00	13.95	-	-	-	-
SK 1SMI 50	7.57	9.78	8.44	10.72	9.46	11.98	9.46	11.98	11.00	13.95	-	-	-	-
SK 1SMI 63	7.57	9.78	8.44	10.72	9.46	11.98	9.46	11.98	11.00	13.95	11.97	15.57	-	-
SK 1SMI 75	-	-	8.44	10.72	9.46	11.98	9.46	11.98	11.00	13.95	11.97	15.57	13.56	17.26

Product Overview



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



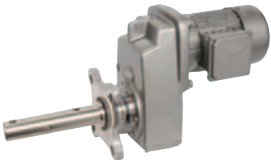
NORDBLOC®.1 HELICAL IN-LINE

- 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 72:1



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



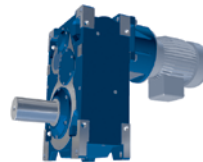
MINICASE™ RIGHT ANGLE WORM

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



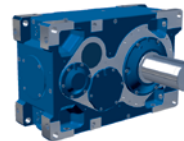
FLEXBLOC™ WORM

- 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



SK200E FAMILY

- Decentralized, high performance
- 380-480V, 3-phase to 10 hp
- 200-240V, 3-phase to 5 hp
- 200-240V, 1-phase to 1.5 hp
- 100-120V, 1-phase to 1 hp



SK500E FAMILY

- Compact, high performance
- 380-480V, 3-phase, to 50hp
- 200-240V, 3-phase, to 15hp
- 200-240V, 1-phase, to 3hp
- 110-120V, 1-phase, to 1.5hp



DRIVESYSTEMS

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