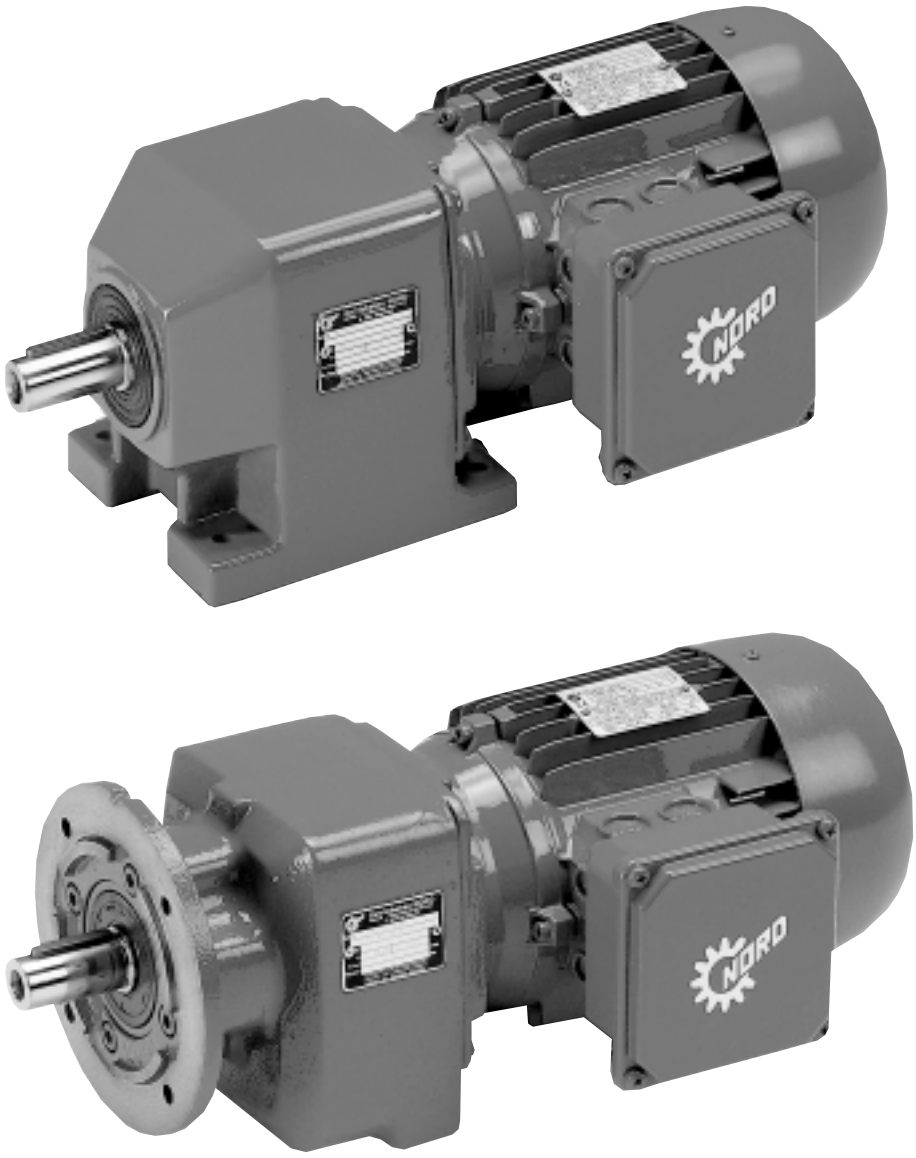
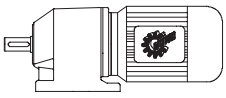
NORDBLOC®

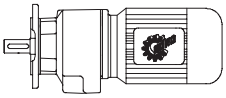
SK320 Gearmotor & Speed Reducer



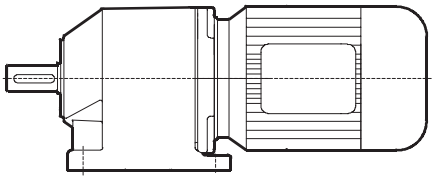
B1320/2000

EXPLANATORY NOTES



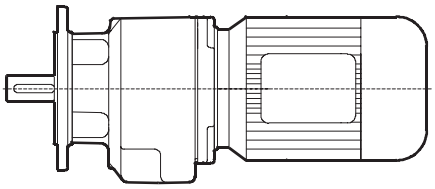


GEAR TYPE			GEAR DESIGN	
FOOT MOUNTED				
SK 320	=	Helical Gearboxes double reduction, foot mounted	Flange mounting	**B14**
			Foot/Flange mounting	**B3/B14**
			Foot/Flange mounting	**B3/B5**
FLANGE MOUNTED				
SK 320 F	=	Helical Gearboxes double reduction, flange mounted		



SK 320 - 80 S/4

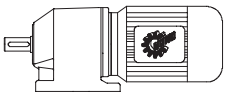
Helical Geared Motor, double reduction, foot mounting

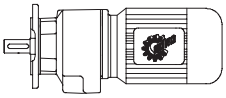


SK 320 F - 80 S/4

Helical Geared Motor, double reduction, bolt-on flange mounting

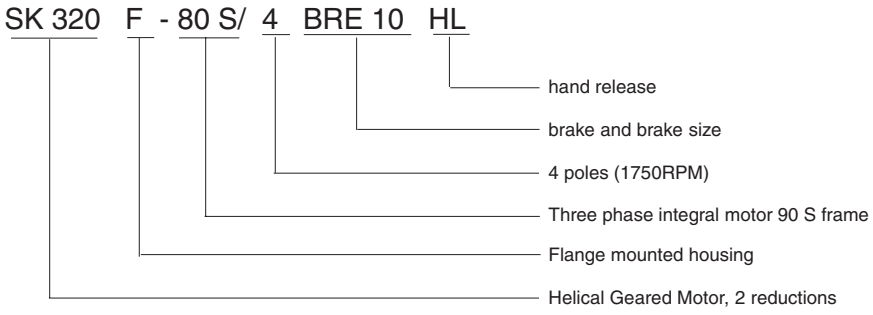
EXPLANATORY NOTES



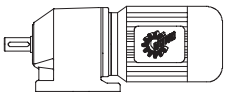
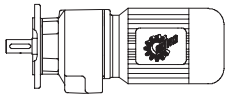


INPUT OPTIONS	MOTOR	NUMBER OF POLES	INTEGRAL MOTOR OPTIONS
W = solid input shaft **C - Face Motor Adapters** = 56 C ..... 140 TC **Metric Motor Adapters** = IEC 63 ..... IEC 80	**Integral Motors** = 63 S ..... 80 L **C - Face Motors** = 56 C ..... 145 TC **IEC Motors** = 63 ..... 80 **High Efficiency Integral Motors** = 80 LH	**4** = 4 - poles (1750) other pole combinations on request	**BRE** = with brake **RG** = Brake corrosion-protected **SR** = Brake dust-proof **HL** = Brake motor with hand release **TF** = Thermistors **TW** = Thermostat **WE** = 2 nd motor shaft end **WU** = Soft start rotor **Z** = high inertia fan **EF** = Blower fan, single phase 230 V, IP 54 63 - 132 frames only **ZF** = Blower fan, 2- phase 460 V, IP 56 63, 71 and 80 frames only **DF** = Blower fan, 3-phase 460 V, IP 56 90 - 160 frames only **IG** = Incremental encoder **FK** = Overrunning clutches **RLS** = Backstop

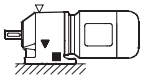
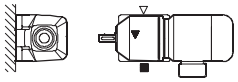
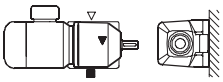
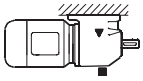
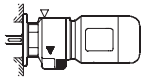
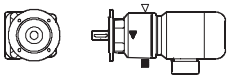
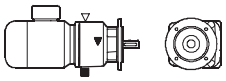
EXAMPLE WHEN ORDERING:



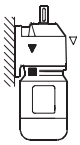
MOUNTING POSITIONS

HORIZONTAL POSITION

B 3		**B 6**		**B 7**	
B 8		**B 5**		**B 5 I**	
B5 II		**B5 III**			

VERTICAL POSITION

V 1		**V 3**		**V 5**	
V 6					

Symbols: Vent plug Oil level  Drain plug  Mounting surface 

ATTENTION

The Gear Units **SK 320** are lubricated with synthetic oil (viscosity class ISO 220 ambient temperature - 20° C to 60° C).
Under normal conditions this lubricant is sufficient for 20.000 service hours. **There are no vent or drain plugs.**

MOUNTING POSITIONS

POSITION OF TERMINAL BOX AND CABLE ENTRY

Please specify position of terminal box and cable entry.

Integral motor design:

Terminal box at 1, cable entry at I.

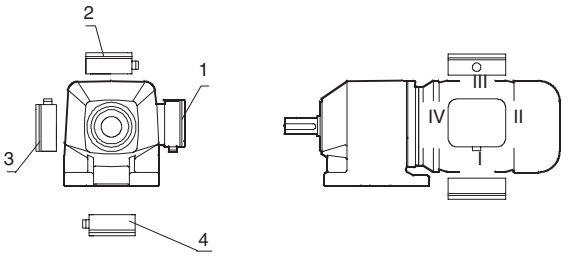
If other positions required, please specify exactly when ordering.

Cable entries at brakemotors only possible at pos. I.

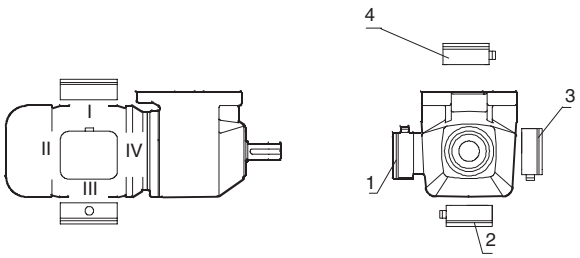
NEMA C-face motor:

Terminal box at 3.

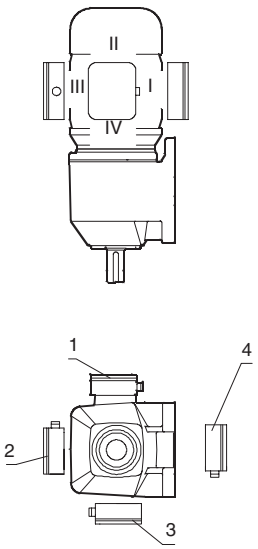
Cable entry at I or III only.



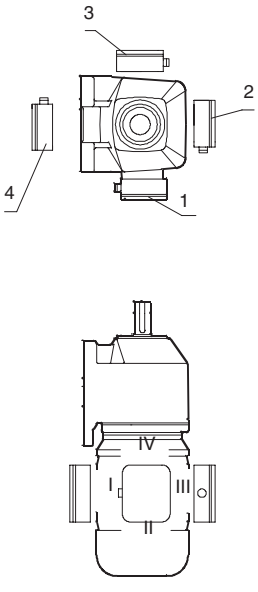
B 3



B 8



B 7



B 6

LUBRICATION

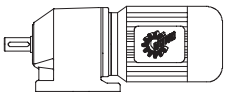
All Nord Gear Motors and Speed Reducer leave the factory filled with lubricant adjusted according to the mounting position shown on page 3.
Gear units have mineral oil ISO 220 grade as a standard lubricant.

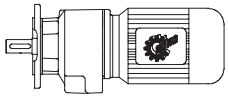
When other lubricants are selected please specify the ISO grade and the type of lubricant.

Mineral based lubricant should be changed every 10.000 service hours or after two years. For synthetic oils, the lube should be changed every 20.000 service hours or after four years. In case of extreme operating conditions (e.g. high humidity, aggressive environment or large temperature variations), shorter intervals between changes are recommended. It is advisable to combine lubricant change with a thorough cleaning of the gear unit. Bearings filled with grease must also cleaned as scheduled above and packed with fresh grease.
Ensure that the bearing cavity is packed to about 1/3 full with grease.
Note: Synthetic and mineral based lubricants must do not mixed !

Type of lubricant	Ambient temperature ^0C	ARAL	BP	CASTROL	TEXACO	ESSO	KLUBER	MOBIL	OPTIMAL	SHELL	TRIBOL
Mineral oil	- 5... 40 (normal) ISO VG 220	Degol BG 220	Energol GR-XP 220	Alpha SP 220 Alpha MW 220 Alpha MAX 220	Meropa 220	Spartan EP 220	Klüberoil GEM 1-220	Mobilgear 630	Optigear BM 220	Shell Omala 220	Tribol 1100 / 220
	-15...25 ISO VG 100	Degol BG 100	Energol GR-XP 100	Alpha SP 100 Alpha MW 100 Alpha MAX 100	Meropa 150	Spartan EP 100	Klüberoil GEM 1-100	Mobilgear 629	Optigear BM 100	Shell Omala 100	Tribol 1100 / 100
	* -50...-15 ISO VG 15	Vitamol 1010	Bartran HV15	Hyspin AWS 15 Hyspin SP 15 Hyspin ZZ 15	Rando HGZ 15	Univis J 13	Isoflex MT 30 rot	Mobil DTE 11 M	Optimol Ultra 10	Shell Tellus T15	Tribol 943 AW 22
Synthetic Oil	- 25... 80 ISO VG 220	Degol GS 220	Enersyn SG-XP 220	Alphasyn PG 220	Pinnacle EP 220	Glycolube 220	Klübersynth GH 6-220	SHC 630	Optiflex A 220	Shell Tivela WB	Tribol 800 / 220
Biodegradable oil	- 25... 80 ISO VG 220	Degol BAB 220	Biogear SE 220	Carelube GES 220			Klüber-Bio GM2 - 220		Optisynt BS 220		Tribol Bio Top 1418 / 220
Food grade oil [1]	-25...80 ISO VG 220	Eural Gear 220		Vitalube GS 220	Cygnus 220	GEAR OIL FM 220	Klüberoil 4UH1 - 220 Klübersynth UH1 -6- 220	Mobil DTE FM 220	Optileb GT 220	Shell Cassida Fluid GL 220	Tribol Food Proof 1810 / 220 oder 1800 / 220
Synthetic fluid grease	- 35... 60	Aralub BAB EP0	Enersyn GSF	Alpha Gel 00	Starfak 220	Fließfett S 420	Klübersynth GE 46-1200	Glygoyle Grease 00	Obeen UF 00	Shell Tivela compound A Tivela GL 00	Tribol 800 / 1000
ANTI FRICTION BEARINGS											
Grease (mineral oil base)	- 30 ... 60 (normal)	Aralub HL 2	Energrease LS 2	Spheerol AP - 2 LZV - EP	Premium RB	Mehrzweckfett Beacon 2	Centoplex 2	Mobilux 3	Longtime PD 2	Shell Alvania R 2 oder RL 2	Tribol 4020 / 220 - 2
	* - 50 ... 110	Aralub SEL 2		Spheerol EPL - 2			Centoplex 1DL	Mobilux 2			Tribol 3785
Synthetic grease	* - 50 ... 110	Aralub SKL 2		Product 783/46	Starfak Lowtemp EP	Beacon 325	Isoflex Topas NB 52	Mobiltemp SHC 32	Optitemp LG 2	Aero Shell Grease 16 oder 7	Tribol 3499
Biodegradable grease	- 20 ... 120	Aralub BAB EP2	BP Biogrease EP 2	Biotec			Klüberbio M32-82	Schmierfett UE 100 B		Shell Alvania RLB 2	Molub - Alloy Bio Top 9488
Food grade grease [1]	- 20 ... 120	Eural Grease EP 2	BP Energrease FM 2	Vitalube HT Grease 2	Cygnus 2	Carum 330	Klübersynth UH1 14 - 151	Mobilgrease FM 102	Obeen UF 2	Shell Cassida RLS 2	Molub - Alloy Food Proof 823 -2F M

[1] Food grade lubricants with USDA-H1 approval: H1 / FDA 178.3570
* With ambient temperatures below - 30° C and above approx. 60° C, special oil seals must be used.





OVERHUNG LOADS

The following table lists the overhung loads for foot and flange mounted units. Loads are calculated as applied to the midpoint of the shaft. The listed values are based on service factor $f_B = 1$. For shock loading applications the service factor has to be taken into consideration.
The permissible overhung load values listed are based on the least favorable loading direction. For higher overhung load values please contact the factory with the exact loading direction and required life expectancy.

If there are transmission elements connected to the output shaft a factor f_z has to be taken into account when calculating the applied overhung load.

The effective overhung load at the gearbox shaft will be determined as follows:

$$F_{Q\ exis.} = \frac{2 \cdot T_2}{do} \cdot f_z \leq F_{Q\ perm}$$

$F_{Q\ exis.}$ Existing overhung load at the gearbox shaft [Lb]

$F_{Q\ perm}$ perm. overhung load values from selection table [Lb]

T_2 output torque of gearbox [Lb-in]

f_z coefficient from table

do dia of overhung load member [in]

Table for f_z

Transmission elements	Factor f_z	Notes
Gears	1.1	z ≤ 17 teeth
Sprockets	1.4	z ≤ 13 teeth
Sprockets	1.2	z ≤ 20 teeth
Narrow V-belt pulleys	1.7	pre-tension
Flat belt pulleys	2.5	pre-tension

If the load is not applied at the midpoint of the shaft, the permissible overhung load value can be calculated for any-point on the shaft (=x) by using the following equation I and II.

Equation I $F_{QXL} = F_Q \cdot \frac{z}{y + x}$

Equation II $F_{QXW} = \frac{c}{f + x}$

F_{QXL} permiss. overhung load values at point x - working life [Lb]

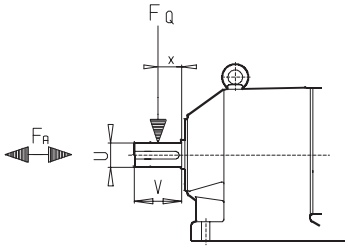
F_{QXW} permiss. overhung load values at point x - shaft strength [Lb]

F_Q permiss. overhung load from table, application of force at center of shaft [Lb]

x distance from shaft shoulder to the point where the load is applied [in]

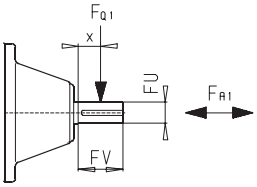
c [Lb-in]
f [in]
y [in]
z [in]
for factors see table

Please note that after calculating equation I (life) and equation II (shaft strength) the lower of the two results is the permissible overhung load value.



CONVERSION TABLE FOR OVERHUNG LOADS AT OUTPUT SHAFT

Gearbox type	y [in]	z [in]	c normal [Lb-in]	c reinforced [Lb-in]	f normal [in]	f reinforced [in]	U [in]	V [in]
SK 320	1.417	2.205	619,5	---	0.394	---	0.750	1.57

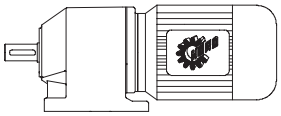


CONVERSION TABLE FOR OVERHUNG LOADS AT INPUT SHAFT

Gearbox type	y [in]	z [in]	c [Lb-in]	FU [in]	FV [in]	f
SK 320	2.303	3.091	230,1	0.500	1.13	0

PERMISSIBLE OVERHUNG LOADS F_{Q1} / AXIAL LOADS F_{A1} - INPUT SHAFT

Gearbox type	Power **Pn** [HP]									
	0.16	0.25	0.33	0.50	0.75	1.00	1.50	2.00	3.00	5.00
	F_{Q1} [Lbs] Application of load at midpoint of shaft									
	F_{A1} [Lbs]									
SK 320	191	185	176	169	162	158	136	97	95	52
	277	252	224	200	173	131	79	65	45	34



HELICAL GEARMOTORS

THREE PHASE

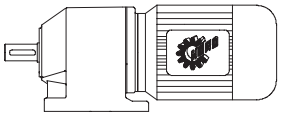
Power	Output speed n_2 [RPM] AGMA			Torque T_2	Service-Factor f_B	Red. Ratio i_{total}	Normal bearing		Reinforced bearing		Type	Weight approx.	Dimensions page
[Hp]	I	II	III	[LB-IN.]			F_{QN} [1] OHL [LBS]	F_{AN} [2] Thrust [LBS]	F_{QVL} [1] OHL [LBS]	F_{AVL} [2] Thrust [LBS]		[LBS]	
0.16	20			504	1.1	79.56	549	736	-	-	**SK 320 - 63S/4**	26	11
		28		363	1.6	58.96	563	736	-	-			
			34	301	2.3	48.32	567	736	-	-			
			36	283	2.1	45.40	567	736	-	-			
			44	230	3.0	37.21	572	736	-	-			
			54	186	4.1	30.58	572	736	-	-			
			60	168	4.1	27.61	574	736	-	-			
			97	106	5.7	17.17	500	736	-	-			
			112	89	6.6	14.84	479	736	-	-			
			127	80	7.1	12.98	461	736	-	-			
			136	74	7.8	12.16	450	736	-	-			
			145	70	7.8	11.41	443	736	-	-			
			168	60	8.7	10.07	423	736	-	-			
			181	56	9.5	9.35	412	736	-	-			
			205	50	10.4	8.25	396	736	-	-			
			221	46	11.1	7.68	385	736	-	-			
			244	42	12.2	6.94	374	736	-	-			
			266	38	12.4	6.34	365	736	-	-			
			295	35	14.2	5.74	351	736	-	-			
			325	31	14.5	5.21	342	736	-	-			
			359	28	16.1	4.71	331	736	-	-			
			415	24	17.8	4.07	317	729	-	-			
			434	23	18.7	3.90	311	713	-	-			
			502	20	20.7	3.37	297	671	-	-			
			558	18	21.3	3.03	286	641	-	-			
			646	16	22.1	2.62	272	603	-	-			
			758	13	21.3	2.23	259	565	-	-			
			877	12	22.1	1.93	248	531	-	-			
0.25	28			566	1.1	58.96	511	736	-	-	**SK 320 - 63L/4**	26	11
		34		460	1.5	48.32	524	736	-	-			
		36		434	1.4	45.40	540	736	-	-			
		44		354	1.9	37.21	536	736	-	-			
			54	292	2.6	30.58	520	736	-	-			
			56	283	2.5	29.10	529	736	-	-			
			60	266	2.6	27.61	511	736	-	-			
			70	221	3.2	23.91	515	736	-	-			
			77	204	3.5	21.59	506	736	-	-			
			92	168	3.8	17.87	488	736	-	-			
			97	159	3.6	17.17	488	736	-	-			
			112	142	4.2	14.84	468	736	-	-			
			127	124	4.6	12.98	450	736	-	-			
			136	115	5.0	12.16	441	736	-	-			
			145	106	5.0	11.41	434	736	-	-			
			168	97	5.6	10.07	414	736	-	-			
			181	87	6.1	9.35	405	736	-	-			
			205	77	6.7	8.25	389	736	-	-			
			221	72	7.1	7.68	380	736	-	-			
			244	65	7.8	6.94	369	736	-	-			
			266	59	7.9	6.34	360	736	-	-			
			295	53	9.1	5.74	347	736	-	-			
			325	49	9.3	5.21	338	736	-	-			
			359	44	10.3	4.71	326	736	-	-			
			415	38	11.4	4.07	313	707	-	-			
			434	36	11.9	3.90	308	693	-	-			

* service factor < 1.0

I = f_B 0.8 - 1.39
II = f_B 1.4 - 1.99
III = f_B > 2.0

1) with F_A = 0 Lb

2) with F_Q = 0 Lb



HELICAL GEARMOTORS

THREE PHASE

Power	Output speed n_2 [RPM] AGMA			Torque T_2	Service-Factor f_B	Red. Ratio i_{total}	Normal bearing F_{QN} 1) OHL	Normal bearing F_{AN} 2) Thrust	Reinforced bearing F_{QVL} 1) OHL	Reinforced bearing F_{AVL} 2) Thrust	Type	Weight approx.	Dimensions page
[Hp]	I	II	III	[LB-IN.]			[LBS]	[LBS]	[LBS]	[LBS]		[LBS]	
0.25			502	31	13.2	3.37	295	655	-	-	**SK 320 - 63L/4**	26	11
			558	28	13.6	3.03	284	626	-	-			
			646	25	14.2	2.62	270	590	-	-			
			758	20	13.6	2.23	257	551	-	-			
			877	18	14.2	1.93	245	522	-	-			
0.33	28			743	* 0.8	58.96	362	736	-	-	**SK 320 - 71S/4**	29	11
	34			611	1.1	48.32	396	736	-	-			
	36			575	1.0	45.40	423	736	-	-			
		44		469	1.5	37.21	443	736	-	-			
			54	389	2.0	30.58	434	736	-	-			
		56		372	1.9	29.10	459	736	-	-			
			60	345	2.0	27.61	441	736	-	-			
			70	301	2.4	23.91	448	736	-	-			
			77	274	2.7	21.59	446	736	-	-			
			92	230	2.9	17.87	434	736	-	-			
			97	212	2.8	17.17	464	736	-	-			
			112	186	3.2	14.84	455	736	-	-			
			127	168	3.5	12.98	441	736	-	-			
			136	150	3.8	12.16	432	736	-	-			
			145	142	3.8	11.41	425	736	-	-			
			168	124	4.2	10.07	407	736	-	-			
			181	115	4.6	9.35	398	736	-	-			
			205	97	5.1	8.25	385	736	-	-			
			221	97	5.4	7.68	374	736	-	-			
			244	85	5.9	6.94	365	736	-	-			
			266	78	6.0	6.34	356	736	-	-			
			295	71	6.9	5.74	342	736	-	-			
			325	64	7.1	5.21	333	736	-	-			
			359	58	7.8	4.71	324	722	-	-			
			415	50	8.6	4.07	311	686	-	-			
			434	48	9.0	3.90	304	673	-	-			
			502	42	10.0	3.37	290	639	-	-			
			558	37	10.3	3.03	281	610	-	-			
			646	32	10.7	2.62	268	578	-	-			
			758	27	10.3	2.23	254	538	-	-			
			877	24	10.7	1.93	243	511	-	-			
0.50	44			717	1.0	37.21	223	736	-	-	**SK 320 - 71L/4**	31	11
	54			584	1.3	30.58	259	736	-	-			
	56			566	1.2	29.10	290	736	-	-			
	60			522	1.3	27.61	279	736	-	-			
		70		451	1.6	23.91	317	736	-	-			
		77		407	1.8	21.59	326	736	-	-			
		92		345	1.9	17.87	329	736	-	-			
		97		327	1.8	17.17	374	736	-	-			
			112	283	2.1	14.84	380	736	-	-			
			127	248	2.3	12.98	383	736	-	-			
			136	230	2.5	12.16	378	736	-	-			
			145	221	2.5	11.41	380	736	-	-			
			168	186	2.8	10.07	380	736	-	-			
			181	177	3.0	9.35	369	736	-	-			
			205	150	3.3	8.25	371	736	-	-			
			221	142	3.5	7.68	360	736	-	-			
			244	133	3.9	6.94	349	736	-	-			

* service factor < 1.0

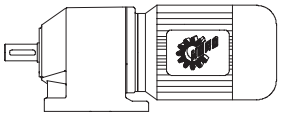
I = f_B 0.8 - 1.39

II = f_B 1.4 - 1.99

III = f_B > 2.0

1) with F_A = 0 Lb

2) with F_Q = 0 Lb



HELICAL GEARMOTORS

THREE PHASE

Power	Output speed n_2 [RPM] AGMA			Torque T_2	Service-Factor f_B	Red. Ratio i_{total}	Normal bearing		Reinforced bearing		Type	Weight approx.	Dimensions page
[Hp]	I	II	III	[LB-IN.]			$F_{Q\,N}$ 1) OHL [LBS]	$F_{A\,N}$ 2) Thrust [LBS]	$F_{Q\,VL}$ 1) OHL [LBS]	$F_{A\,VL}$ 2) Thrust [LBS]		[LBS]	
0.50			266	115	4.0	6.34	347	736	-	-	**SK 320 - 71L/4**	31	11
			295	106	4.6	5.74	333	711	-	-			
			325	97	4.7	5.21	326	700	-	-			
			359	88	5.1	4.71	317	680	-	-			
			415	76	5.7	4.07	304	646	-	-			
			434	73	6.0	3.90	299	632	-	-			
			502	63	6.6	3.37	286	603	-	-			
			558	57	6.8	3.03	277	578	-	-			
			646	49	7.1	2.62	263	551	-	-			
			758	42	6.8	2.23	250	513	-	-			
			877	36	7.1	1.93	239	488	-	-			
0.75	70			673	1.1	23.91	104	538	-	-	**SK 320 - 80S/4**	35	11
	77			611	1.2	21.59	131	554	-	-			
	92			513	1.3	17.87	164	576	-	-			
	97			487	1.2	17.17	241	693	-	-			
		112		425	1.4	14.84	263	702	-	-			
		127		372	1.5	12.98	284	716	-	-			
		136		345	1.7	12.16	284	707	-	-			
		145		327	1.7	11.41	295	713	-	-			
		168		283	1.9	10.07	304	709	-	-			
			181	266	2.0	9.35	297	693	-	-			
			205	230	2.2	8.25	306	693	-	-			
			221	212	2.4	7.68	299	671	-	-			
			244	195	2.6	6.94	295	650	-	-			
			266	177	2.6	6.34	308	666	-	-			
			295	159	3.0	5.74	293	626	-	-			
			325	142	3.1	5.21	302	632	-	-			
			359	133	3.4	4.71	293	608	-	-			
			415	115	3.8	4.07	288	590	-	-			
			434	106	4.0	3.90	286	581	-	-			
			502	97	4.4	3.37	277	551	-	-			
			558	85	4.5	3.03	268	531	-	-			
			646	73	4.7	2.62	257	511	-	-			
			758	62	4.5	2.23	245	477	-	-			
			877	54	4.7	1.93	234	457	-	-			

* service factor < 1.0

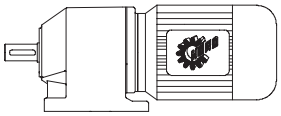
I = f_B 0.8 - 1.39

II = f_B 1.4 - 1.99

III = f_B > 2.0

1) with F_A = 0 Lb

2) with F_Q = 0 Lb



HELICAL GEARMOTORS

THREE PHASE

Power	Output speed			Torque	Service-Factor	Red. Ratio	Normal bearing		Reinforced bearing		Type	Weight approx.	Dimen sions
	n_2 [RPM]			T_2	f_B	i_{total}	$F_{Q\,N}$ [1] OHL	$F_{A\,N}$ [2] Thrust	$F_{Q\,VL}$ [1] OHL	$F_{A\,VL}$ [2] Thrust			
[Hp]	AGMA			[LB-IN.]			[LBS]	[LBS]	[LBS]	[LBS]		[LBS]	page
	I	II	III										
1.00	70			903	* 0.8	23.91	-	-	-	-	**SK 320 - 80L/4**	40	11
	77			823	* 0.9	21.59	-	-	-	-	***SK 320 - 80LH/4 **		
	92			681	* 0.9	17.87	-	-	-	-			
	97			646	* 0.9	17.17	99	466	-	-			
	112			566	1.1	14.84	140	506	-	-			
	127			496	1.1	12.98	176	542	-	-			
	136			460	1.2	12.16	182	542	-	-			
	145			434	1.2	11.41	205	565	-	-			
		168		372	1.4	10.07	230	585	-	-			
		181		345	1.5	9.35	230	576	-	-			
		205		310	1.7	8.25	239	576	-	-			
		221		283	1.8	7.68	236	565	-	-			
			244	257	2.0	6.94	239	558	-	-			
			266	239	2.0	6.34	257	576	-	-			
			295	212	2.3	5.74	243	542	-	-			
			325	195	2.3	5.21	257	554	-	-			
			359	177	2.6	4.71	254	542	-	-			
			415	150	2.9	4.07	259	536	-	-			
			434	142	3.0	3.90	254	527	-	-			
			502	124	3.3	3.37	252	511	-	-			
			558	115	3.4	3.03	241	482	-	-			
			646	97	3.5	2.62	241	470	-	-			
			758	83	3.4	2.23	227	441	-	-			
			877	72	3.5	1.93	225	425	-	-			

* service factor < 1.0

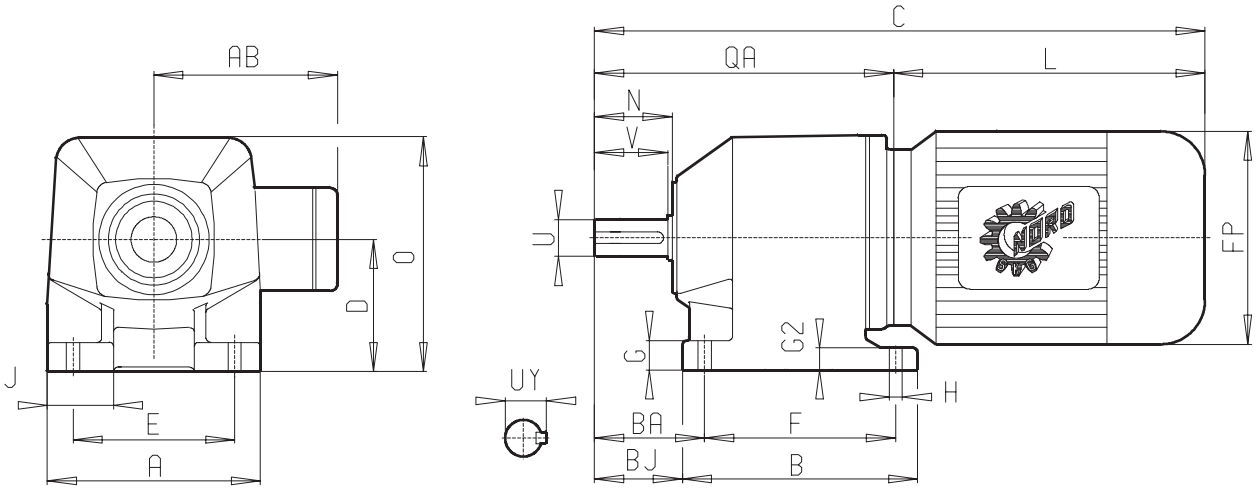
** Gearmotors in Italics include an Energy Efficient motor and have an "H" in the type*

I = f_B 0.8 - 1.39
II = f_B 1.4 - 1.99
III = f_B > 2.0

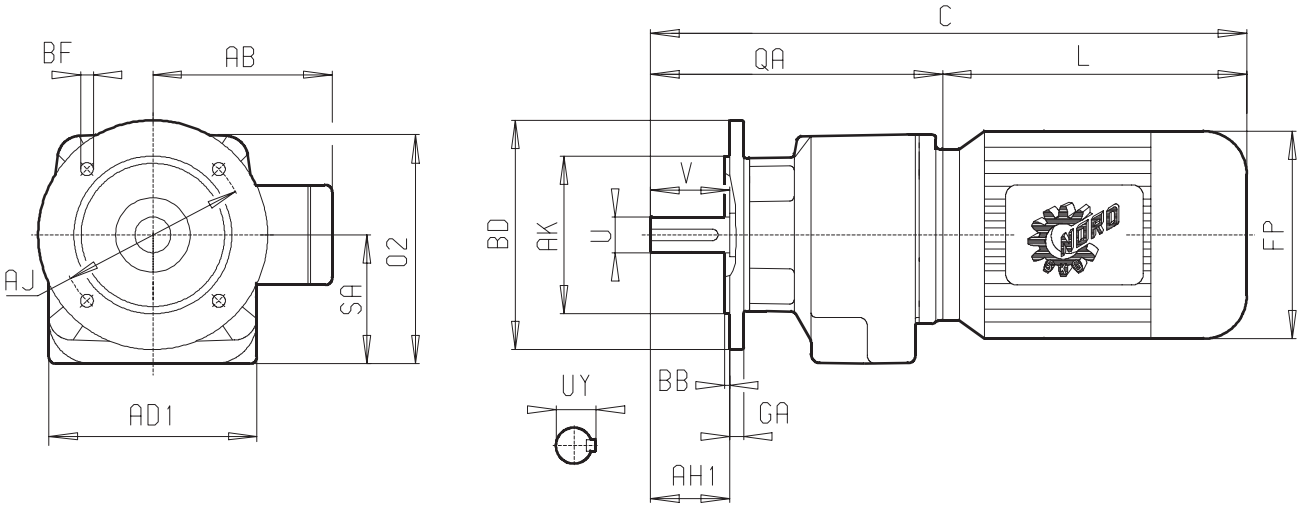
1) with F_A = 0 Lb

2) with F_Q = 0 Lb

DOUBLE REDUCTION

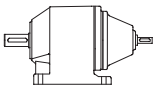


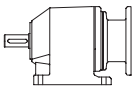
Type	Mounting dimensions (foot)				Outline dimensions										Shaft dimensions		
	A B	E F	G G2	H J	AB	BA	BJ	C	D	FP	L	N	O	QA	U	UY *Key*	V
SK 320 - 63 S/L	5.31	4.33	0.47	0.35	4.33			13.58		5.12	7.40				0.750	0.83	1.57
- 71 S/L					4.69	2.28	1.79	14.57	2.95	5.71	8.39	1.65	5.51	6.18			
- 80 S/L	433	3.35	0.39	1.22	5.51			15.28		6.50	9.09					*3/16 * 3/16 * 1-1/16*	



Type	Mounting dimensions (bolt-on flange)						Outline dimensions									Shaft dimensions		
	AJ	AK	BB	BD	BF	GA	AB	AD1	AH1	C	FP	L	O2	QA	SA	U	UY *Key*	V
SK 320 F - 63 S/L	3.94	3.150	0.12	4.72	0.26	0.39	4.33			14.25	5.12	7.40				0.750	0.83	1.57
- 71 S/L	4.53	3.740	0.12	5.51	0.35	0.39	4.69	5.31	1.57	15.24	5.71	8.39	5.59	6.85	3.03			
- 80 S/L	5.12	4.331	0.14	6.30	0.35	0.39	5.51			15.94	6.50	9.09						
	6.50	5.118	0.14	7.87	0.43	0.47											*3/16 * 3/16 * 1-1/16*	

Technical design may be subject to change. DXF files available upon request.





HELICAL GEAR UNITS

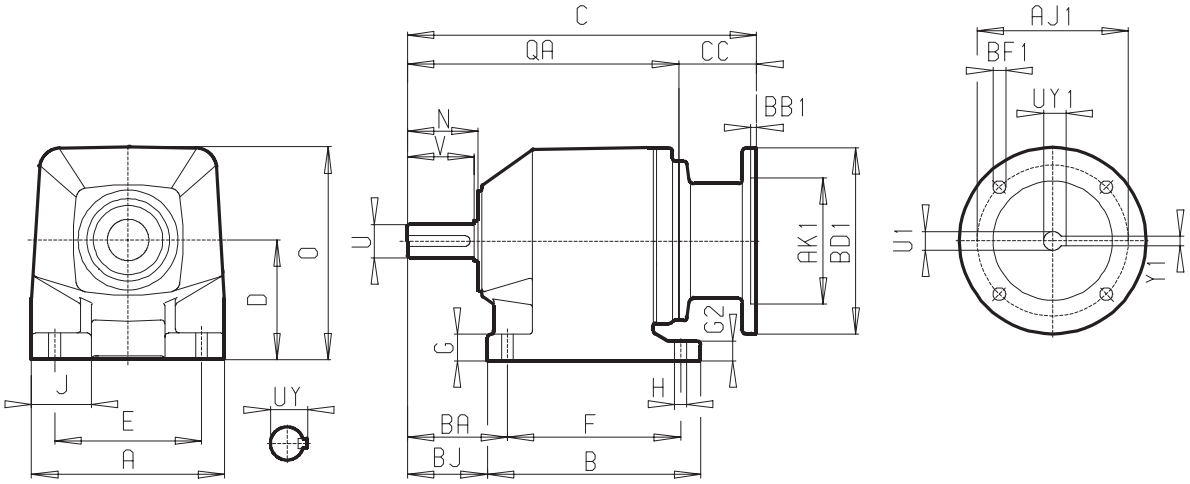
TABLE OF PERFORMANCES AND REDUCTIONS WITH SOLID INPUT SHAFT, TYPE W, OR FOR ASSEMBLY WITH NEMA MOTORS

Type	Reduction ratio	Output speed n_2 4-pol / 60 Hz	$T_{2\,max}$	max. input power [HP] * at $f_B = 1$			NEMA frame adapter size *							
				4 - pol.	6 - pol.	8 - pol.								
	i_{total}	**[RPM]**	**[LB-IN]**	**1750**	**1155**	**875**								
SK 320	**79.56**	**20.00**	558	0.12	0.09	0.06	56	-	-	-	-	-	-	-
	58.96	**28.00**	593	0.17	0.13	0.09	56	-	-	-	-	-	-	-
W	**48.32**	**34.00**	690	0.25	0.19	0.12	56	-	-	-	-	-	-	-
+	**45.40**	**36.00**	593	0.22	0.17	0.11	56	-	-	-	-	-	-	-
NEMA	**37.21**	**44.00**	690	0.32	0.24	0.16	56	-	-	-	-	-	-	-
	30.58	**54.00**	761	0.43	0.33	0.22	56	-	-	-	-	-	-	-
	29.10	**56.00**	690	0.40	0.31	0.20	56	140	-	-	-	-	-	-
	27.61	**60.00**	690	0.43	0.33	0.22	56	-	-	-	-	-	-	-
	23.91	**70.00**	726	0.53	0.40	0.27	56	140	-	-	-	-	-	-
	21.59	**77.00**	717	0.58	0.44	0.29	56	140	-	-	-	-	-	-
	17.87	**92.00**	646	0.62	0.47	0.31	56	140	-	-	-	-	-	-
	17.17	97.00	593	0.60	0.46	0.30	56	140	-	-	-	-	-	-
	14.84	112.00	593	0.70	0.53	0.35	56	140	-	-	-	-	-	-
	12.98	127.00	566	0.75	0.57	0.38	56	140	-	-	-	-	-	-
	12.16	136.00	575	0.82	0.62	0.41	56	140	-	-	-	-	-	-
	11.41	145.00	540	0.82	0.62	0.41	56	140	-	-	-	-	-	-
	10.07	168.00	522	0.92	0.70	0.46	56	140	-	-	-	-	-	-
	9.35	181.00	531	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	8.25	205.00	513	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	7.68	221.00	504	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	6.94	244.00	504	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	6.34	266.00	469	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	5.74	295.00	487	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	5.21	325.00	451	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	4.71	359.00	451	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	4.07	415.00	434	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	3.90	434.00	434	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	3.37	502.00	416	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	3.03	558.00	416	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	2.62	646.00	398	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	2.23	758.00	381	0.99	0.75	0.50	56	140	-	-	-	-	-	-
	1.93	877.00	363	0.99	0.75	0.50	56	140	-	-	-	-	-	-

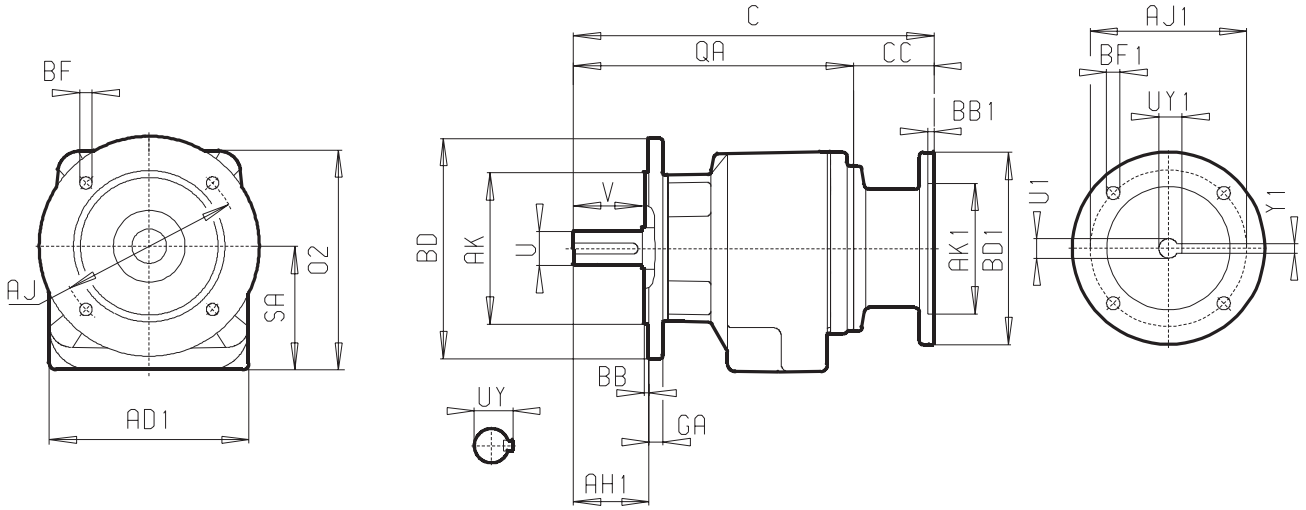
* max input power see table

For permissible Overhung- and Thrust loads of the output shaft please see corresponding tables in the chapter referring to Geared Motors. (Please, consider power and output speed). For permissible loads applied on the input shaft of Gearboxes (Type W) please see page 6.

DOUBLE REDUCTION. FOR ASSEMBLY WITH NEMA MOTORS



Type	Mounting dimensions (foot)				Outline dimensions								Shaft dimensions		
	A	E	G	H	BA	BJ	C	CC	D	N	O	QA	U	U	Y	V
	B	F	G2	J										*Key*		
SK 320 - 56 C	5.31	4.33	0.47	0.35	2.28	1.79	10.47	4.29	2.95	1.65	5.51	6.18	0.750	0.83	1.57	
- 140 TC	433	3.35	0.39	1.22			10,47	4,29					*3/16x3/16x1-11/6*			

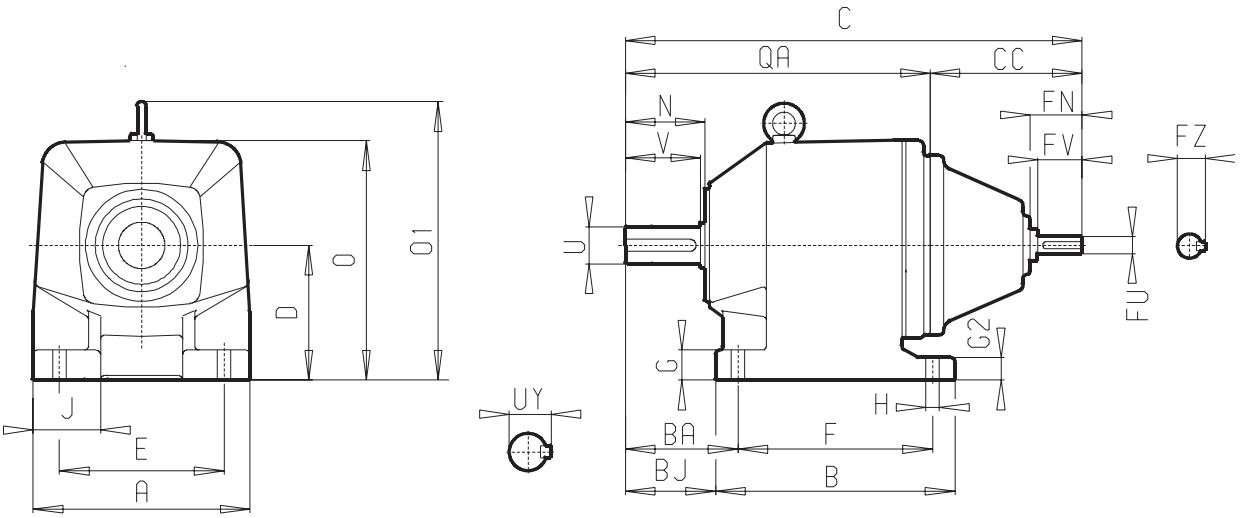


Type	Mounting dimensions (bolt-on flange)						Outline dimensions							Shaft dimensions		
	AJ	AK	BB	BD	BF	GA	AD1	AH1	C	CC	O2	QA	SA	U	UY	V
															Key	
SK 320 F - 56 C	3.94	3.150	0.12	4.72	0.26	0.39	5.31	1.57	11.14	4.29	5.59	6.85	3.03	0.750	0.83	1.57
	4.53	3.740	0.12	5.51	0.35	0.39										
- 140 TC	5.12	4.331	0.14	6.30	0.35	0.39			11.14	4.29						
	6.50	5.118	0.14	7.87	0.43	0.47								*3/16x3/16x1-1/16*		

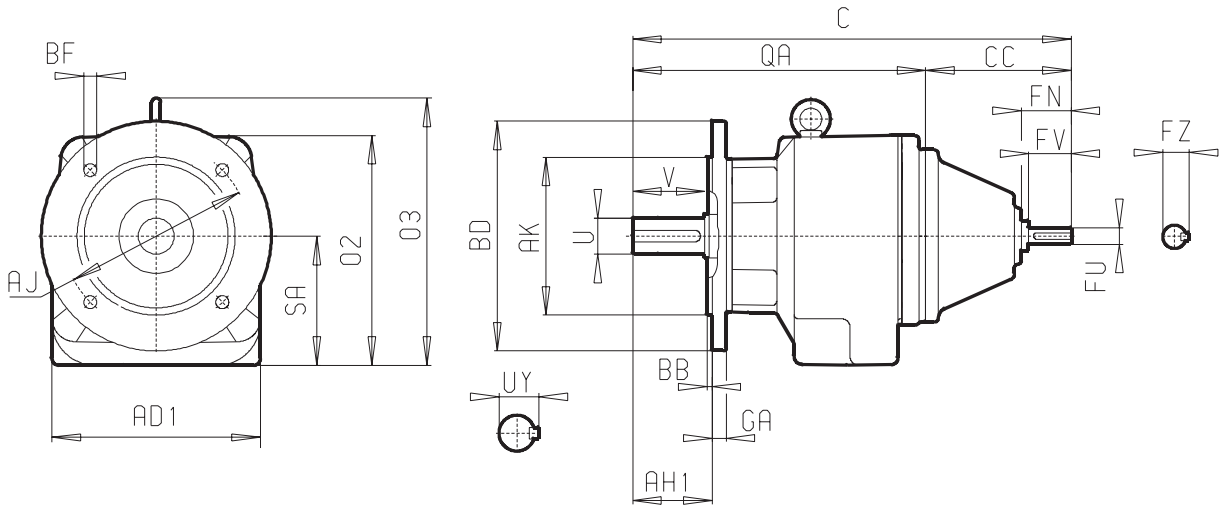
NEMA	AJ1	AK1	BB1	BD1	BF1	U1	UY1	Y1
56 C	5.88	4.500	0.20	6.61	0.43	0.625	.71	0.188
140 TC	5.88	4.500	0.20	6.61	0.43	0.875	0.96	0.188

Technical design may be subject to change. DXF files available upon request.

DOUBLE REDUCTION
WITH SOLID INPUT SHAFT - TYPE **W**



Type	Mounting dimensions (foot)								Outline dimensions								Shaft dimensions					
											C					O		Output shaft			Input shaft		
	A	B	E	F	G	G2	H	J	BA	BJ	CC	D	F	N	N	O1	QA	U	UY	V	FU	FV	FZ
																			Key			*Key*	
SK 320 - W	5.31	4.33	4.33	3.35	0.47	0.39	0.35	1.22	2.28	1.79	10.47	2.95	1.73	1.65		5.51	6.18	0.750	0.83	1.57	0.500	1.13	0.55
											4.29					--		*3/16x3/16x1-1/16*			*1/8 x 1/8 x 7/8*		



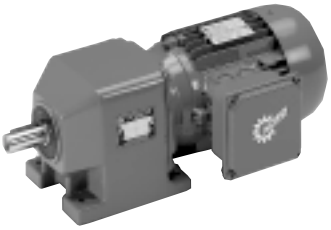
Type	Mounting dimensions (bolt-on flange)						Outline dimensions						Shaft dimensions					
									C		O2		Output shaft			Input shaft		
	AJ	AK	BB	BD	BF	GA	AD1	AH1	CC	FN	O3	QA	SA	U	UY	V	FU	FV	FZ
															Key			*Key*	
SK 320 F - W	3.94	3.150	0.12	4.72	0.26	0.39			11.14		5.59			0.750	0.83	1.57	0.500	1.13	0.55
	4.53	3.740	0.12	5.51	0.35	0.39	5.31	1.57		1.73		6.85	3.03						
	5.12	4.331	0.14	6.30	0.35	0.39			4.29		--								
	6.50	5.118	0.14	7.87	0.43	0.47								*3/16 x 3/16 x 1-1/16*			*1/8 x 1/8 x 7/8*		

Technical design may be subject to change. DXF files available upon request.

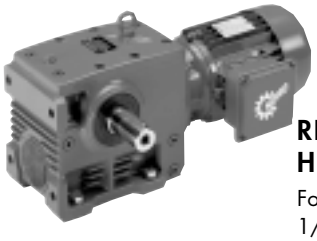
The NORD Family of Gearmotors

HELICAL IN-LINE
Foot or Flange Mount
1/6 to 200 hp
Torque up to 177,000 lb-in
Output speeds – 0.1 to 960 rpm
Gear ratios – 1.82:1 to over 300,000:1
Efficiency 95%+

RIGHT ANGLE HELICAL-BEVEL 2-STAGE
Foot, Flange or Shaft Mount
1/6 to 7.5 hp
Torque up to 6950 lb-in
Output speeds – 24 to 360 rpm
Gear ratios – 4.1:1 to 72:1
Efficiency 95%+



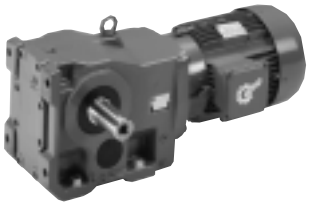
NORDBLOC® HELICAL IN-LINE
Foot or Flange Mount
1/6 to 50 hp
Torque up to 26,550 lb-in
Output speeds – 4.8 to 900 rpm
Gear ratios – 1.88:1 to over 370:1
Industry interchange



RIGHT ANGLE HELICAL-WORM
Foot, Flange or Shaft Mount
1/6 to 20 hp
Torque up to 27,585 lb-in
Output speeds – 0.1 to 398 rpm
Gear ratios – 4.40:1 to over 300,000:1

PARALLEL HELICAL CLINCHER™
Shaft, Flange or Foot Mount
1/6 to 200 hp
Torque up to 531,000 lb-in
Output speeds – 0.1 to 410 rpm
Gear ratios – 4.26:1 to over 300,000:1
Efficiency 95%+

MINICASE® RIGHT ANGLE WORM
Foot, Flange or Shaft Mount
1/6 to 2 hp
Torque up to 2,390 lb-in
Output speed – 3 to 324 rpm
Gear ratios – 5.40:1 to 582:1



RIGHT ANGLE HELICAL-BEVEL
Foot, Flange or Shaft Mount
1/6 to 200 hp
Torque up to 230,100 lb-in
Output speeds – 0.1 to 218 rpm
Gear ratios – 8.04:1 to over 300,000:1
Efficiency 95%+

MOTORS AND BRAKEMOTORS
1/6 to 200 hp
Standard and High Efficiency
230/460V – 60Hz,
575V – 60Hz
400V – 50Hz
Others Available

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