

CMG

transmission



Cycloid 600 speed reducers

Compact high efficiency cycloidal speed reducers



“Solutions, not just products.”

Specialists in Electric Motors, Geared Motors & AC Drives

At CMG we offer customised packages to the most demanding industrial markets. Our success is built on a strong commitment to our customers’ needs and a willingness to find the best solution possible. We have been in business since 1948 so you can be confident our expertise and experience is second to none.

With over 500 staff around the globe, our branches extend across Australia, New Zealand, Asia Pacific, South Africa, Europe and the Middle East.

We have the capability to value-add our products through partnerships with leading international companies whose technical skills are equal to ours, including Gear Motors from NORD and AC Drives from VACON. In return we offer these companies superior technical support that complements their own R&D capabilities.

Our manufacturing facility in Melbourne, Australia, demonstrates our commitment to efficient automated manufacturing processes. This facility includes a NATA accredited laboratory which offers complete design and testing services.

“We specialise in an extensive range of Electric Motors, Geared Motors and AC Drives. Offering a “complete package” ensures our customers get the most efficient, cost effective solution possible.”



➤ Electric Motors



➤ Geared Motors



➤ AC Drives

CMG Cycloid 600 series, compact high efficiency cycloidal speed reducers, 0.37 to 22kW, up to 3890Nm

This is the CMG short form catalogue for the CMG range of Cycloid 600 compact high efficiency cycloidal speed reducers.

Cycloid 600 series reducers

CMG Cycloid 600 reducers in this catalogue are solid shaft. Gearcases are precision machined in one process.

The cycloidal discs are made from high quality bearing steel, and are precision machined to ultra fine tolerances to provide a smooth rolling action.

Bearings are adequately selected and proportioned assuring maximum life. For size 610 to 612 the cycloidal discs and bearings operate in a grease packed system. For sizes 613 to 618 the cycloidal discs and bearings operate in an oil bath. The tolerances between shaft and bores as well as keys and keyways are selected to ensure proper fit.

This catalogue details CMG's range of Standard foot, flange and face mount Cycloid 600 series reducers. Special mountings are available on request.

HGA motor - MEPS2 compliant (Eff 1)

The CMG enhanced performance HGA range of motors are recognized for their inherent suitability for all geared motor applications. Motors are designed in accordance with MEPS AS/NZS 1359.5.2004 for minimum efficiency motors, equivalent to European Eff 1.

Standard motors are 3 phase, 415 volt, 50 Hz. Motors are manufactured with 'F' class insulation, with windings designed to limit the temperature rise to 80K. The HGA motor has an all cast iron construction, and provides a protection rating of IP55 for both motor and terminal box.

Motors in this catalogue have the same performance and dimensions as standard HGA B5 or B14 flange mount motors but are provided with a reduced output shaft to suit the gearbox input. Models listed are 4 pole (1500 r/pm) with other motor speeds available upon request.

Service factors

Where the required service factor is not known it can be calculated using the following table.

Hours per day	Uniform	Moderate	Heavy
0-3 hours	0.80	1.00	1.35
4-10 hours	1.00	1.20	1.50
11-24 hours	1.20	1.35	1.60

Principle of operation

The cycloidal design has three major components:

- 1) Input shaft assembly (high speed) with eccentric cam, roller bearings and seals
- 2) Cycloidal discs
- 3) Output shaft assembly (slow speed) with support bearings and seals.

Torque transmitted to the high speed shaft rotates the eccentric cam and roller bearing assembly, and rolls the cycloidal discs around the internal circumference of the stationary ring gear housing.

The teeth of the cycloidal discs contact the pins of the stationary ring gear, producing a reverse rotation at a reduced speed. Each rotation of the high speed shaft advances the cycloidal discs a distance of one tooth pitch in the opposite direction.

The reduced rotation of the cycloidal discs is transmitted to the output shaft assembly by means of drive pins and rollers, that are projected through holes located around the bore of the cycloidal discs.

Product code specification

When placing an order the product code should be specified. The product code of the Cycloid 600 is composed in accordance with the following example:

T	R	C	6	1	3	0	2	1	1	1	R	S
1-3			4-6			7-9			10-11	12	13	

Positions 1 to 3

TRC = CMG Cycloid 600 cycloidal speed reducer

Positions 4 to 6

Gearbox model

611, 612, 613, 614, 615, 616, 617 or 618

Positions 7 to 9

Gearbox ratio

Padded to 3 digits

Positions 10 and 11

Gearbox motor input

00 = Reducer

For geared motor units standard motor frame sizes apply:

07 = 71 **80** = 80 **09** = 90 **10** = 100
11 = 112 **13** = 132 **16** = 160 **18** = 180

Position 12

Input shaft

R = Reduced motor shaft input

X = IEC hollow input

C = IEC solid input

Position 13

Mounting arrangement

S = Standard foot mount

V = V Type output flange

F = F Type output flange

Product advantages

By replacing more conventional helical, worm and spur gear units throughout the world, the Cycloid 600 series high-efficiency speed reducer has proven itself in a wide variety of applications.

High efficiency

The superior cycloidal design over conventional gear tooth design, with all torque transmitting parts operating in compression, allows for many teeth to share the load. Cycloidal teeth transmit torque by rolling from one element to another. There is no sliding friction as in conventional gear reducers. This design eliminates sliding friction and creates a vibration-free operation. High efficiencies are reached in excess of 90% in single stage reduction units and 80% plus in double stage reduction units. CMG Cycloid 600 series speed reducers can make your individual applications more productive and efficient.

Overload protection

The Cycloid 600 cycloidal tooth design maximizes 67% tooth contact. The load sharing capabilities eliminates gears teeth being sheared off and provides an overload protection of 500% (gearbox only).

Warranty

Exceptionally versatile engineering and manufacturing capabilities enable us to offer Cycloid 600 speed reducers for virtually any industrial application. Every Cycloid 600 speed reducer comes with 12 months warranty as standard. Proper selection and correct maintenance will provide the end-user with unequalled service life for many years.

Extensive range

CMG provides a range of speed reducers in combinations of sizes, ratios, input powers, mountings and configurations. High reduction ratios 6:1 through 119:1 per single stage, through 7569:1 double and almost up to 1,000,000:1 triple reductions. Input kilowatt from 0.18 to over 150kW, output torque exceeds 60,000Nm

A wide variety of horizontal and vertical mounts with various IEC input adaptors for maximum ease of installation are available. Cycloid housings are manufactured from ductile iron for ultimate durability. The power transmitting internals are manufactured from bearing steel 52100 series, through hardened and tempered to Rockwell Rc. 59-62.

These manufacturing features have produced a very compact reducer compared to conventional helical reducers for similar applications. Since we can now provide a smaller compact reducer, with high efficiency, this allows us to use a smaller size motor to provide the same output torque rating as previously required. We have this compact motor designed for integral coupling with the Cycloid 600 series.

General information

Shaft rotation

For single and triple reduction units, the low speed shaft turns in the opposite direction to the high speed shaft. For double reduction drives, the low speed and high speed shafts turn in the same direction.

Note: On all Cycloid 600 series speed reducers, the high speed and low speed shafts have the same common axis.

Motor input speeds (nominal)

1500 r/min (4 pole)

1000 r/min (6 pole)

750 r/min (8 pole)

Note: For non-standard input speed, please contact your CMG representative to confirm torque ratings.

Shaft connections

Proper mounting of sleeves, gears, pulleys, chain sprockets, belt and couplings is essential for trouble free operation. All shaft connections must be mounted as close as possible to the cycloidal housing, but never touching. Overhung loads should be located as close to the bearing as possible. If shaft connections are mounted at the end of the shaft, the overhung load may cause excessive loading on the bearings and possible shaft deflection. Radial loads have been designed at the midpoint of the slow speed shaft. If this is not possible, please contact your CMG representative to confirm proper selection. Proper alignment procedures for all shaft connections are imperative for trouble free operation.

Permissible torsional forces such as thrust and radial loads applied to the low speed shaft must be calculated to confirm their allowable limits for each selection.

Gearbox selection data

Type	□	r/min	Nm	SF	Ratio	Product Code
0.37 kW MOTOR SGA71B-4 B14 1345 r/min 1 Amps CODE M34000377SGAGT□						
611	1	17	209	2.33	87	TRC611087071•
		21	170	2.45	71	TRC611071071•
610	0	17	29	1.22	87	TRC610087071•
		21	170	1.22	71	TRC610071071•
		25	142	1.50	59	TRC610059071•
		29	122	1.68	51	TRC610051071•
		35	103	2.32	43	TRC610043071•
		43	84	2.55	35	TRC610035071•
0.55 kW MOTOR SGA80A-4 B14 1390 r/min 1.4 Amps CODE M34000557SGAGT□						
613	3	17	292	2.62	87	TRC613087080•
		21	236	3.25	71	TRC613071080•
611	1	17	292	1.67	87	TRC611087080•
		21	236	1.77	71	TRC611071080•
		25	198	2.45	59	TRC611059080•
		29	171	2.97	51	TRC611051080•
		35	142	3.50	43	TRC611043080•
		43	115	<4	35	TRC611035080•
610	0	35	142	1.69	43	TRC610043080•
		43	115	1.86	35	TRC610035080•
		52	95	2.53	29	TRC610029080•
		60	83	2.61	25	TRC610025080•
		71	70	3.64	21	TRC610021080•
		88	56	3.82	17	TRC610017080•
		100	50	<4	15	TRC610015080•
		115	43	<4	13	TRC610013080•
		136	36	<4	11	TRC610011080•
		188	26	<4	8	TRC610008080•
		250	20	3.99	6	TRC610006080•
		0.75 kW MOTOR HGA80B-4 B14 1410 r/min 1.85 Amps CODE M34000757HGAGT□				
613	3	17	392	1.95	87	TRC613087080•
		21	320	2.40	71	TRC613071080•
611	1	17	392	1.24	87	TRC611087080•
		21	320	1.31	71	TRC611071080•
		25	266	1.83	59	TRC611059080•
		29	230	2.21	51	TRC611051080•
		35	194	2.56	43	TRC611043080•
		43	158	3.23	35	TRC611035080•
610	0	35	194	1.24	43	TRC610043080•
		43	158	1.36	35	TRC610035080•
		52	130	1.84	29	TRC610029080•
		60	113	1.92	25	TRC610025080•
		71	94	2.69	21	TRC610021080•
		88	76	2.79	17	TRC610017080•
		100	67	3.65	15	TRC610015080•
		115	58	3.54	13	TRC610013080•
		136	49	3.62	11	TRC610011080•
		188	36	3.63	8	TRC610008080•
		250	27	2.95	6	TRC610006080•

Type	□	r/min	Nm	SF	Ratio	Product Code
1.5 kW MOTOR HGA90L-4 B14 1430 r/min 3.4 Amps CODE M34001507HGAGT□						
616	6	17	783	2.23	87	TRC616087090•
		21	639	2.73	71	TRC616071090•
614	3	17	783	1.30	87	TRC614087090•
		25	531	1.87	59	TRC614059090•
613	3	21	639	1.20	71	TRC613071090•
		25	531	1.43	59	TRC613059090•
		29	459	1.67	51	TRC613051090•
		35	687	1.97	43	TRC613043090•
		43	315	2.43	35	TRC613035090•
611	1	29	459	1.11	51	TRC611051090•
		35	387	1.28	43	TRC611043090•
		43	315	1.61	35	TRC611035090•
		52	261	1.90	29	TRC611029090•
		60	225	2.13	25	TRC611025090•
		71	189	2.69	21	TRC611021090•
		88	153	3.12	17	TRC611017090•
610	0	71	189	1.35	21	TRC610021090•
		88	153	1.39	17	TRC610017090•
		100	135	1.83	15	TRC610015090•
		115	117	1.77	13	TRC610013090•
		136	99	1.81	11	TRC610011090•
		188	72	1.81	8	TRC610008090•
		250	54	1.47	6	TRC610006090•
2.2 kW MOTOR HGA100LA-4 B14 1455 r/min 4.7 Amps CODE M34002207HGAGT□						
617	7	17	1150	2.20	87	TRC617087100•
616	6	17	1150	1.52	87	TRC616087100•
		21	937	1.86	71	TRC616071100•
		25	779	2.25	59	TRC616059100•
		29	673	2.59	51	TRC616051100•
615	3	21	937	1.00	71	TRC615071100•
		25	779	1.28	59	TRC615059100•
		29	673	1.51	51	TRC615051100•
		35	568	1.75	43	TRC615043100•
613	3	29	673	1.14	51	TRC613051100•
		35	568	1.34	43	TRC613043100•
		43	462	1.65	35	TRC613035100•
		52	383	2.00	29	TRC613029100•
		60	330	2.31	25	TRC613025100•
611	1	43	462	1.10	35	TRC611035100•
		52	383	1.30	29	TRC611029100•
		60	330	1.45	25	TRC611025100•
		71	277	1.83	21	TRC611021100•
		88	224	2.13	17	TRC611017100•
		100	198	2.20	15	TRC611015100•
		115	172	2.22	13	TRC611013100•
		136	145	2.29	11	TRC611011100•
610	0	188	106	2.28	8	TRC611008100•
		250	79	2.25	6	TRC611006100•
		100	198	1.24	15	TRC610015100•
		115	172	1.21	13	TRC610013100•
		136	145	1.24	11	TRC610011100•
		188	106	1.24	8	TRC610008100•
		250	79	1.00	6	TRC610006100•

Gearbox selection data

Type	▣	r/min	Nm	SF	Ratio	Product Code
3 kW	MOTOR HGA100LB-4 B14 1455 r/min 6.2 Amps					
	CODE M34003007HGAGT▣					
617	7	17	1584	1.59	87	TRC617087100•
		21	1282	2.00	71	TRC617071100•
616	6	17	1584	1.10	87	TRC616087100•
		21	1282	1.36	71	TRC616071100•
		25	1077	1.63	59	TRC616059100•
		29	928	1.88	51	TRC616051100•
		35	769	2.27	43	TRC616043100•
615	3	29	928	1.09	51	TRC615051100•
		35	769	1.30	43	TRC615043100•
		43	626	1.62	35	TRC615035100•
		52	518	1.96	29	TRC615029100•
613	3	35	769	1.00	43	TRC613043100•
		43	626	1.21	35	TRC613035100•
		52	517	1.48	29	TRC613029100•
		60	448	1.70	25	TRC613025100•
		71	379	2.01	21	TRC613021100•
611	1	60	449	1.06	25	TRC611025100•
		71	379	1.33	21	TRC611021100•
		88	306	1.56	17	TRC611017100•
		100	269	1.62	15	TRC611015100•
		115	234	1.63	13	TRC611013100•
		136	198	1.68	11	TRC611011100•
		188	143	1.69	8	TRC611008100•
250	108	1.65	6	TRC611006100•		
4 kW	MOTOR HGA112M-4 B5 1455 r/min 8.2 Amps					
	CODE M34004005HGAGT▣					
618	8	17	1930	2.03	87	TRC618087112•
617	7	17	1930	1.31	87	TRC617087112•
		21	1580	1.62	71	TRC617071112•
		25	1311	1.97	59	TRC617059112•
		29	1130	2.25	51	TRC617051112•
616	6	21	1580	1.10	71	TRC616071112•
		25	1311	1.34	59	TRC616059112•
		29	1130	1.54	51	TRC616051112•
		35	955	1.83	43	TRC616043112•
		43	777	2.34	35	TRC616035112•
		52	644	2.62	29	TRC616029112•
615	3	35	955	1.04	43	TRC615043112•
		43	777	1.31	35	TRC615035112•
		52	644	1.58	29	TRC615029112•

Type	▣	r/min	Nm	SF	Ratio	Product Code		
614	3	52	644	1.31	29	TRC614029112•		
		60	555	1.58	25	TRC614025112•		
613	3	43	777	1.00	35	TRC613035112•		
		52	644	1.19	29	TRC613029112•		
		60	555	1.37	25	TRC613025112•		
		71	466	1.64	21	TRC613021112•		
		88	377	1.90	17	TRC613017112•		
		100	333	2.06	15	TRC613015112•		
		115	289	2.49	13	TRC613013112•		
		136	244	2.62	11	TRC613011112•		
611	1	71	466	1.09	21	TRC611021112•		
		88	377	1.26	17	TRC611017112•		
		100	333	1.31	15	TRC611015112•		
		115	289	1.32	13	TRC611013112•		
		136	244	1.36	11	TRC611011112•		
611	1	188	178	1.36	8	TRC611008112•		
		250	133	1.34	6	TRC611006112•		
		5.5 kW MOTOR HGA132S-4 B5 1460 r/min 10.6 Amps						
		CODE M34005505HGAGT▣						
		618	8	17	2870	1.34	87	TRC618087132•
				21	2340	1.34	71	TRC618071132•
				25	1950	1.79	59	TRC618059132•
29	1680			2.07	51	TRC618051132•		
617	7	21	2340	1.09	71	TRC617071132•		
		25	1950	1.32	59	TRC617059132•		
		29	1680	1.52	51	TRC617051132•		
		35	1420	1.69	43	TRC617043132•		
		43	1160	2.27	35	TRC617035132•		
		616	6	29	1680	1.04	51	TRC616051132•
35	1420	1.23		43	TRC616043132•			
43	1160	1.57		35	TRC616035132•			
52	957	1.76		29	TRC616029132•			
60	825	2.11		25	TRC616025132•			
614	3	71	693	2.40	21	TRC616021132•		
		60	825	1.06	25	TRC614025132•		
		71	693	1.22	21	TRC614021132•		
614	3	88	561	1.65	17	TRC614017132•		
		115	495	1.66	13	TRC614013132•		
		613	3	71	693	1.10	21	TRC613021132•
88	561	1.28		17	TRC613017132•			
115	495	1.39		13	TRC613013132•			
136	363	1.76		11	TRC613011132•			
188	264	1.82		8	TRC613008132•			
612	3	250	198	1.81	6	TRC613006132•		
		188	264	1.24	8	TRC612008132•		
612	3	250	198	1.20	6	TRC612006132•		

Gearbox selection data

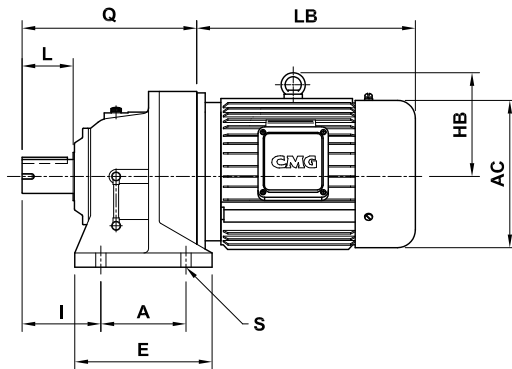
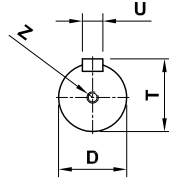
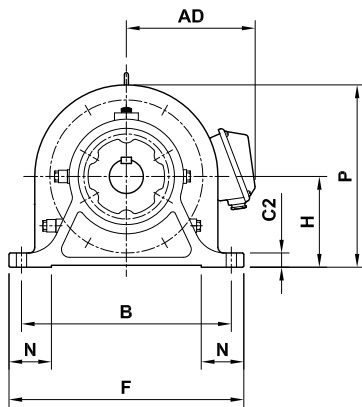
Type	▣	r/min	Nm	SF	Ratio	Product Code		
7.5 kW		MOTOR HGA132M-4 B5 1455 r/min 14.3 Amps CODE M34007505HGAGT▣						
618	8	21	3200	1.00	71	TRC618071132•		
		25	2660	1.31	59	TRC618059132•		
		29	2300	1.52	51	TRC618051132•		
		35	1940	2.00	43	TRC618043132•		
617	7	29	2300	1.11	51	TRC617051132•		
		35	1940	1.24	43	TRC617043132•		
		43	1580	1.67	35	TRC617035132•		
		52	1310	1.91	29	TRC617029132•		
		60	1130	2.07	25	TRC617025132•		
616	6	43	1580	1.15	35	TRC616035132•		
		52	1310	1.29	29	TRC616029132•		
		60	1130	1.55	25	TRC616025132•		
		71	945	1.76	21	TRC616021132•		
		88	765	2.00	17	TRC616017132•		
		100	675	1.97	15	TRC616015132•		
		100	675	1.32	15	TRC616015132•		
		115	585	2.27	13	TRC616013132•		
		115	585	1.37	13	TRC616013132•		
		136	495	2.41	11	TRC616011132•		
615	3	136	495	1.73	11	TRC615011132•		
		188	360	2.37	8	TRC615008132•		
		188	360	1.73	8	TRC615008132•		
		250	270	1.95	6	TRC615006132•		
		250	270	1.73	6	TRC615006132•		
614	3	88	765	1.21	17	TRC614017132•		
613	3	100	675	1.02	15	TRC613015132•		
		115	585	1.23	13	TRC613013132•		
		136	495	1.31	11	TRC613011132•		
		188	360	1.33	8	TRC613008132•		
		250	270	1.33	6	TRC613006132•		
11 kW		MOTOR HGA160M-4 B5 1470 r/min 20.7 Amps CODE M34011005HGAGT▣						
618	8	29	3370	1.04	51	TRC618051160•		
		35	2840	1.36	43	TRC618043160•		
		43	2310	1.68	35	TRC618035160•		
		52	1910	1.67	29	TRC618029160•		
		60	1650	2.07	25	TRC618025160•		
617	7	43	2310	1.14	35	TRC617035160•		
		52	1910	1.30	29	TRC617029160•		
		60	1650	1.41	25	TRC617025160•		
		71	1390	1.68	21	TRC617021160•		
		88	1120	1.75	17	TRC617017160•		
		100	990	2.08	15	TRC617015160•		
		115	858	2.43	13	TRC617013160•		
		250	396	1.94	6	TRC617006160•		
616	6	60	1650	1.05	25	TRC616025160•		
		71	1390	1.20	21	TRC616021160•		
		88	1120	1.36	17	TRC616017160•		
		100	990	1.36	15	TRC616015160•		
		115	858	1.54	13	TRC616013160•		
		136	726	1.64	11	TRC616011160•		
		188	528	1.62	8	TRC616008160•		
		250	396	1.33	6	TRC616006160•		
		615	3	136	726	1.18	11	TRC615011160•
				188	528	1.18	8	TRC615008160•
250	396			1.18	6	TRC615006160•		

Type	▣	r/min	Nm	SF	Ratio	Product Code
15 kW		MOTOR HGA160L-4 B5 1465 r/min 27.6 Amps CODE M34015005HGAGT▣				
618	8	35	3870	1.00	43	TRC618043160•
		43	3150	1.23	35	TRC618035160•
		52	2610	1.23	29	TRC618029160•
		60	2250	1.52	25	TRC618025160•
		71	1890	1.79	21	TRC618021160•
		100	1350	2.02	15	TRC618015160•
		115	1170	2.21	13	TRC618013160•
617	7	60	2250	1.03	25	TRC617025160•
		71	1890	1.23	21	TRC617021160•
		88	1530	1.29	17	TRC617017160•
		100	1350	1.53	15	TRC617015160•
		115	1170	1.78	13	TRC617013160•
616	6	88	1530	1.00	17	TRC616017160•
		100	1350	1.00	15	TRC616015160•
		115	1170	1.13	13	TRC616013160•
		136	990	1.21	11	TRC616011160•
615	3	188	720	1.19	8	TRC616008160•
		250	540	1.43	6	TRC615006160•
18.5 kW		MOTOR HGA180M-4 B5 1465 r/min 32.8 Amps CODE M34018505HGAGT▣				
618	8	43	3890	1.00	35	TRC618035180•
		52	3220	1.00	29	TRC618029180•
		60	2780	1.23	25	TRC618025180•
		71	2330	1.45	21	TRC618021180•
		88	1890	1.62	17	TRC618017180•
		100	1670	1.64	15	TRC618015180•
		115	1440	1.79	13	TRC618013180•
617	7	136	1220	1.74	11	TRC618011180•
		71	2330	1.00	21	TRC617021180•
		88	1890	1.04	17	TRC617017180•
		100	1670	1.24	15	TRC617015180•
		115	1440	1.44	13	TRC617013180•
616	6	136	1220	1.46	11	TRC617011180•
		250	666	1.16	6	TRC617006180•
		250	666	1.16	6	TRC617006180•
22 kW		MOTOR HGA180L-4 B5 1470 r/min 38 Amps CODE M34022005HGAGT▣				
618	8	60	3300	1.04	25	TRC618025180•
		71	2770	1.22	21	TRC618021180•
		88	2240	1.36	17	TRC618017180•
		100	1980	1.38	15	TRC618015180•
		115	1720	1.50	13	TRC618013180•
617	7	136	1450	1.47	11	TRC618011180•
		100	1980	1.04	15	TRC617015180•
		115	1720	1.21	13	TRC617013180•
		136	1450	1.23	11	TRC617011180•

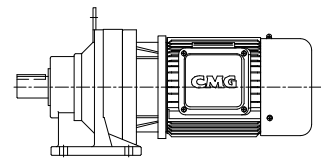
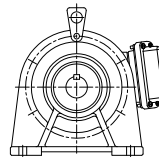
Dimensions

600HM Foot mount gear motors

Sizes 613-618



Sizes 610-612



Model	Reducer dimensions															Reducer weight [kg]	
	A	B	C2	D	E	F	H	I	L	N	P	Q	S	T	U		Z
610	90	150	12	28h6	139	184	100	60	35	40	175	156	4x11	31.0	8	-	13
611	115	190	15	38h6	159	234	120	82	55	55	222	186	4x14	41.0	10	-	24
612	115	190	15	38h6	159	234	140	82	55	60	242	186	4x14	41.0	10	-	25
613	145	290	22	50h6	199	334	150	100	70	65	265	240	4x18	53.5	14	M10 x 18	43
614	145	290	22	50h6	199	334	150	120	90	65	265	260	4x18	53.5	14	M10 x 18	44
615	145	290	22	50h6	199	334	160	120	90	70	275	260	4x18	53.5	14	M10 x 18	46
616	150	370	25	60h6	242	414	160	139	90	75	310	308	4x18	64.0	18	M10 x 18	85
617	275	380	30	70h6	339	434	200	125	90	80	370	252	4x22	74.5	20	M12 x 24	125
618	320	420	30	80h6	384	474	220	145	110	85	405	389	4x22	85.0	22	M12 x 24	162

Motor rated power [kW]	Motor dimensions		Motor weight [kg]
	Frame	Range	
0.37	71B	SGA	11
0.55	80A	SGA	17
0.75	80B	HGA	22
1.5	90L	HGA	29
2.2	100LA	HGA	36
3	100LB	HGA	40
4	112M	HGA	52
5.5	132S	HGA	71
7.5	132M	HGA	84
11	160M	HGA	127
15	160L	HGA	148
18.5	180M	HGA	186
22	180L	HGA	194

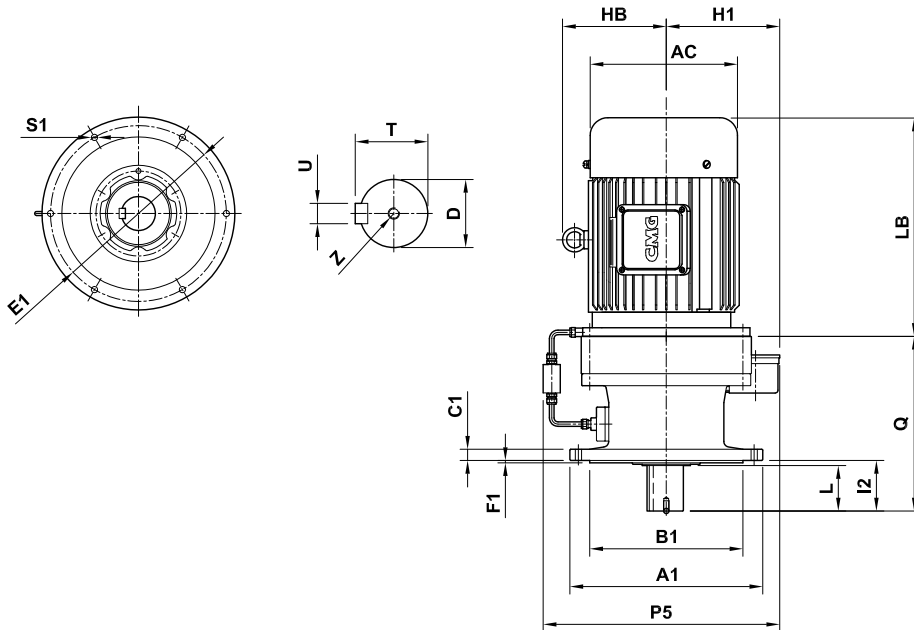
Motor-Reducer selection cross-reference

Motor rated power [kW]	Model									
	610	611	612	613	614	615	616	617	618	
0.37	•	•								
0.55	•	•	•							
0.75	•	•	•							
1.5	•	•	•	•						
2.2	•	•	•			•	•	•		
3		•	•			•	•	•		
4		•	•	•	•	•	•	•	•	
5.5			•	•	•		•	•	•	
7.5			•	•	•		•	•	•	
11							•	•	•	
15							•	•	•	
19								•	•	
22									•	

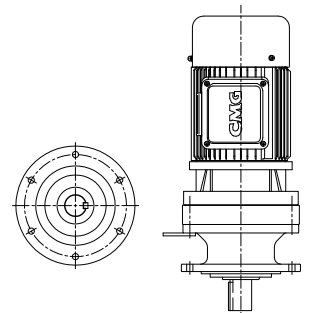
Dimensions

600VM Flange mount gear motors

Sizes 613-618



Sizes 610-612



Model	Reducer dimensions														Reducer weight [kg]	
	A1	B1	C1	D	E1	F1	H1	I2	L	P5	Q	S1	T	U		Z
610	160	110f8	9	28h6	134	3	-	48	35	-	156	4xØ11	31.0	8	-	12
611	210	140f8	13	38h6	180	4	-	69	55	-	186	6xØ11	41.0	10	-	24
612	210	140f8	13	38h6	180	4	-	69	55	-	186	6xØ11	41.0	10	-	24
613	260	200f8	15	50h6	230	4	209	76	61	361	240	6xØ11	53.5	10	M10 x 18	43
614	260	200f8	15	50h6	230	4	209	96	81	361	260	6xØ11	53.5	14	M10 x 18	43
615	260	200f8	15	50h6	230	4	206	96	81	358	260	6xØ11	53.5	14	M10 x 18	43
616	340	270f8	20	60h6	310	4	200	89	80	417	308	6xØ11	64.0	18	M10 x 18	80
617	400	316f8	22	70h6	360	5	225	94	84	447	352	8xØ14	74.5	20	M12 x 24	125
618	430	345f8	22	80h6	390	5	240	110	100	477	389	8xØ18	85.0	22	M12 x 24	150

Motor rated power [kW]	Motor dimensions		Motor weight [kg]	
	Frame	Range		
0.37	71B	SGA	138 - 219	11
0.55	80A	SGA	165 90 245	17
0.75	80B	HGA	172 100 260	22
1.50	90L	HGA	185 115 305	29
2.20	100LA	HGA	210 150 350	36
3.00	100LB	HGA	210 150 350	40
4.00	112M	HGA	260 153 400	52
5.50	132S	HGA	298 200 410	71
7.50	132M	HGA	298 200 450	84
11.00	160M	HGA	325 215 490	127
15.00	160L	HGA	325 215 535	148
18.50	180M	HGA	360 230 560	186
22.00	180L	HGA	360 230 600	194

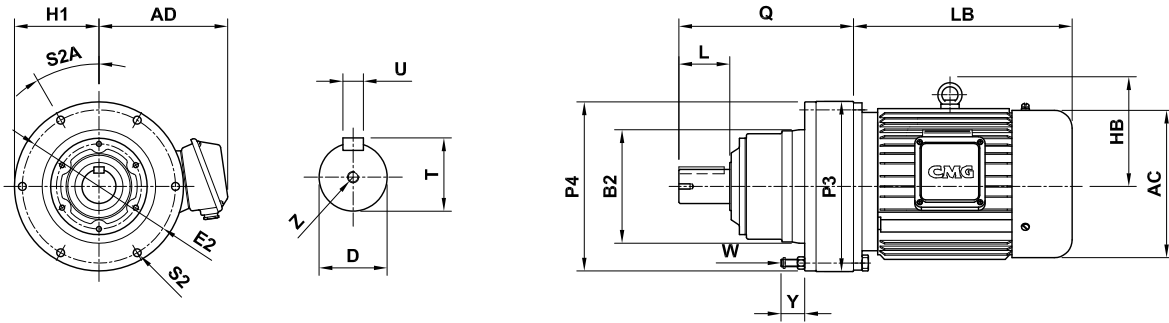
Motor-Reducer selection cross-reference

Motor rated power [kW]	Model									
	610	611	612	613	614	615	616	617	618	
0.37	•	•								
0.55	•	•	•							
0.75	•	•	•							
1.5	•	•	•	•			•			
2.2	•	•	•	•		•	•	•		
3		•	•	•		•	•	•		
4		•	•	•	•	•	•	•	•	
5.5			•	•	•		•	•	•	
7.5			•	•	•	•	•	•	•	
11						•	•	•	•	
15						•	•	•	•	
19								•	•	
22								•	•	

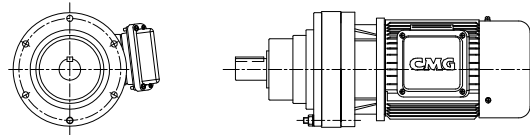
Dimensions

600FM Face mount gear motors

Sizes 613-618



Sizes 610-612



Model	Reducer dimensions															Reducer Weight [kg]
	B2	D	E2	H1	L	P3	P4	Q	S2	S2A	T	U	W	Y	Z	
610	105g6	28	134	-	35	150	150	150	8 x 9	22.5°	31.0	8	M8	28	-	10
611	115g6	32	146	-	45	162	162	162	8 x 9	22.5°	35.0	10	M8	26	-	11
612	140g6	38	180	-	55	204	200	200	6 x 11	60°	41.0	10	M10	33	-	20
613	165g6	50	205	208	70	230	266	178	6 x 11	60°	53.5	14	M10	31	M10 x 18	36
614	165g6	50	205	208	90	230	266	198	6 x 11	60°	53.5	14	M10	31	M10 x 18	37
615	165g6	50	205	208	90	230	266	198	6 x 11	60°	53.5	14	M10	31	M10 x 18	37
616	200g6	60	270	228	90	318	296	222	6 x 14	30°	64.0	18	M12	35	M10 x 18	66
617	250g6	70	300	243	90	362	330	262	8 x 14	22.5°	74.5	20	M12	41	M12 x 24	96
618	280g6	80	330	258	110	390	360	299	8 x 14	22.5°	85.0	22	M12	38	M12 x 24	131

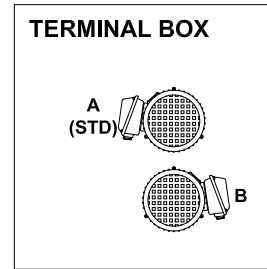
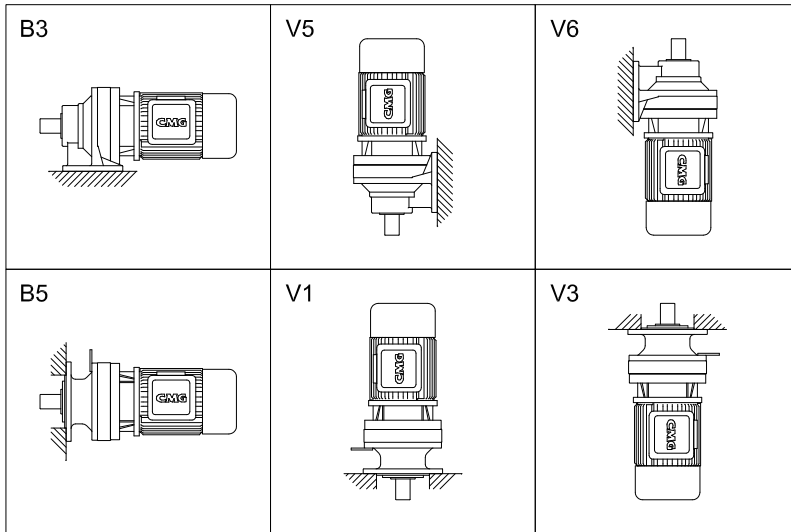
Motor rated power [kW]	Frame	Range	Motor dimensions				Motor weight [kg]
			AC	AD	HB	LB	
0.37	71B	SGA	138	126	-	219	11
0.55	80A	SGA	165	145	90	245	17
0.75	80B	HGA	172	151	100	260	22
1.5	90L	HGA	185	156	115	305	29
2.2	100LA	HGA	210	175	150	350	36
3	100LB	HGA	210	175	150	350	40
4	112M	HGA	260	185	153	400	52
5.5	132S	HGA	298	227	200	410	71
7.5	132M	HGA	298	227	200	450	84
11	160M	HGA	325	325	215	490	127
15	160L	HGA	325	325	215	535	148
18.5	180M	HGA	360	270	230	560	186
22	180L	HGA	360	270	230	600	194

Motor-Reducer selection cross-reference

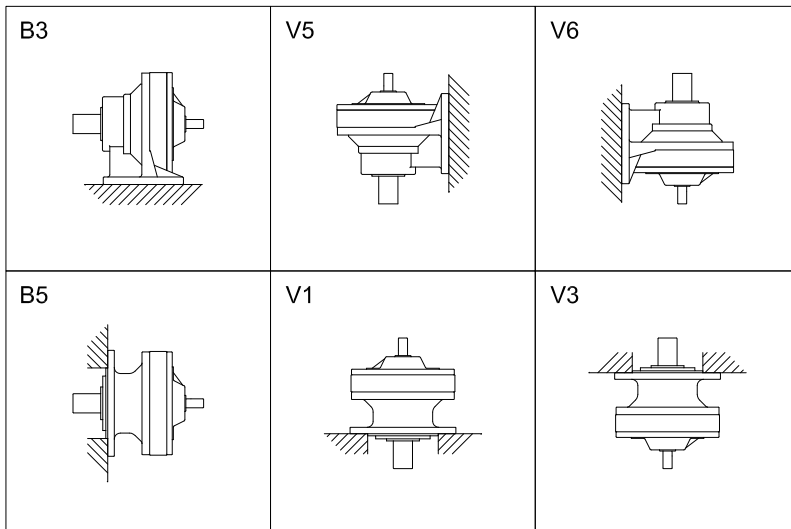
Motor rated power [kW]	Model									
	610	611	612	613	614	615	616	617	618	
0.37	•	•								
0.55	•	•	•							
0.75	•	•	•							
1.5	•	•	•	•		•				
2.2	•	•	•			•	•	•		
3		•	•			•	•	•		
4		•	•	•	•	•	•	•	•	
5.5			•	•	•	•	•	•	•	
7.5			•	•	•	•	•	•	•	
11						•	•	•	•	
15						•	•	•	•	
19								•	•	
22								•	•	

Mounting positions

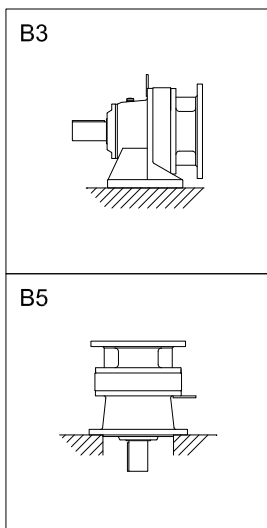
Gear motors



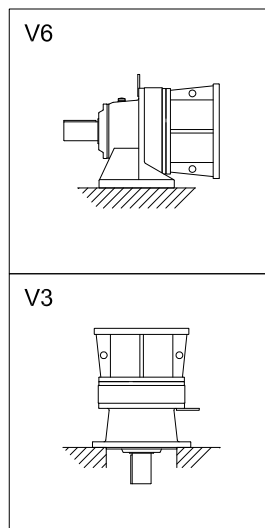
Reducers



IEC Hollow adaptor



IEC Solid adaptor



Reducer selection process

Follow the steps below when selecting a reducer. Two examples are given to provide a better understanding. Consult CMG for further assistance with selecting the right reducer, or understanding the selection process. Service Factor tables can all be found on the next page.

Model selection

Value	Step	Example 1	Example 2
	(a) Reducer Input Speed [r/min]	1,200	600 r/min
	(b) Reducer Output Speed [r/min]	28	20 r/min
	(c) Reducer ratio = (a) / (b)	43:1	30:1
	(d) Load type (Uniform, Moderate, Heavy)	Moderate	Moderate
	(e) Running cycle [hours/day]	10 hrs/day	24 hrs/day
	(f) Service factor. Use (d) and (e) on Table A.	1.2	1.35
	(g) Maximum driven torque [Nm]	3,100 Nm	2,000 Nm
	(h) Maximum reducer torque = (f) x (g) [Nm]	3,720 Nm	2,700 Nm
	(i) Reducer model In the Reducer selection tables (p14-16) 1. Use (c) to first select the nearest reducer ratio block. 2. Then use (a) to chose the nearest row. 3. Scan across the row to the column with the next highest torque above (h). 4. Scan up the column to identify which reducer model.	618	617

Overhung load check

When a gear, sprocket or other form of pulley is coupled to the reducer output shaft it is very important to make sure the applied overhung load is less than the maximum allowable load. Confirm the calculated overhung load on the output shaft is less than the maximum permissible overhung load with the following steps:

Value	Step	Example 2
	(j) Reducer maximum overhung load. Use (b) and (i) in Table B to identify.	26,281
	(k) Coupling factor. Select according to coupling type from Table C.	1
	(l) Shock factor. Select according to shock type from Table D.	1.2
	(m) Total shaft load factor = (k) x (l)	1.2
	(n) Maximum permissible overhung load = (j) / (m)	21,900
	(o) Pulley/Sprocket Pitch Circle Radius (PCR)	0.15
	(p) Calculated overhung load = (h) / (o)	18,000
	(q) If (p) ≤ (n) then the reducer size (i) is still suitable.	OK

Example 1: Background

Driven machine: Mixer, moderate load, direct coupled, output shaft vertical down, V-flange mounting

Operation time: 10 hrs/day

Input speed: 1,200 r/min

Output speed: 28 r/min

Transmitted torque: Torque on the slow speed shaft (output) of the reducer is 3100 Nm.

Example 2: Background

Driven machine: Chain conveyor, moderate load (variable feed), horizontal foot mounted, sprocket fitted to output shaft is pitch circle radius $R = 0.15$ m, Radial load position: center of slow speed shaft, light shock load.

Operation time: 24 hrs/day

Input speed: 600 r/min,

Output speed: 20 r/min

Transmitted torque: Torque on the slow speed shaft (output) of the reducer is 2000 Nm.

Service factor tables

Table A: Service factor

Hours per day	Uniform	Moderate	Heavy
0-3 hours	0.80	1.00	1.35
4-10 hours	1.00	1.20	1.50
11-24 hours	1.20	1.35	1.60

Table B: Reducer maximum overhung load

Output speed [r/min]	Unit size								
	610	611	612	613	614	615	616	617	618
<2	5,393	8,629	9,806	13,386	14,709	15,690	20,103	28,439	39,226
3	5,393	8,629	9,806	13,386	14,709	15,690	20,103	28,439	43,149
4	5,393	8,629	9,806	13,386	14,709	15,690	20,103	28,439	39,226
5	5,393	8,629	9,806	13,386	14,709	15,690	20,103	28,439	39,226
6	5,393	8,629	9,806	13,386	14,709	15,690	20,103	28,439	39,226
8	5,393	8,629	9,806	13,386	14,709	15,690	20,103	28,439	39,226
10	5,393	8,629	9,806	13,386	14,709	15,690	20,103	28,439	38,245
15	5,393	8,629	9,806	13,386	14,709	15,690	20,103	28,439	37,265
20	5,393	8,629	9,806	13,337	14,709	15,690	19,613	26,281	35,205
25	5,393	8,629	9,806	12,699	14,709	15,690	19,613	24,418	32,656
30	5,393	8,629	9,806	11,964	14,709	15,690	19,446	22,947	30,792
35	5,393	8,629	9,806	11,227	14,317	15,690	18,436	21,770	29,272
40	5,393	8,629	9,365	10,885	13,778	15,386	17,701	20,790	27,889
50	5,393	8,629	8,718	10,100	12,895	15,023	16,475	19,319	25,889
60	5,393	8,188	8,188	9,463	12,179	14,249	14,494	18,191	24,418
80	5,393	7,354	7,453	8,629	11,189	13,042	14,043	16,524	22,064
100	5,393	7,354	6,913	8,021	10,395	12,170	13,072	15,347	20,593
125	5,099	6,413	6,423	7,433	9,757	11,395	12,062	14,219	19,073
150	4,805	6,031	6,031	7,011	9,218	10,787	11,424	13,386	17,946
200	4,344	5,462	5,491	6,344	8,453	9,904	10,296	12,179	16,328
250	4,069	5,060	5,089	5,893	7,943	9,218	9,561	11,297	
300	3,824	4,775	4,775	5,570	7,502	8,727	9,022	10,600	

Table C: Coupling factor, Cf

Type of coupling	Cf
Chain	1
Gears	1.2
V - belt	1.5
Flat belt	2.5

Table D: Shock factor, Fs

Degree of shock	Fs
No shock	1
Light shock	1 to 1.2
Severe shock	1.4 to 1.6

Reducer selection tables

		Model																	
		610		611		612		613		614		615		616		617		618	
Input speed [r/min]	Output speed [r/min]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]
Ratio 6:1																			
1800	300	2.26	67	4.88	144	6.78	197	9.97	294			13.0	383	14.6	430	22.5	662		
1500	250	2.21	78	4.96	175	6.62	234	9.97	353			13.0	459	14.6	516	21.4	757		
1200	200	1.86	82	4.25	188	5.85	259	8.64	382			11.2	496	12.5	552	18.4	809		
1000	167	1.73	92	3.78	201	5.13	272	7.59	403			9.97	529	11.0	583	16.1	855		
900	150	1.69	100	3.50	207	4.73	279	6.98	412			9.22	544	10.2	602	15.0	882		
750	125	1.52	109	3.09	219	4.04	286	6.19	438			8.25	584	9.00	635	13.2	932		
600	100	1.33	118	2.69	238	3.30	292	5.32	470			6.73	596	7.70	679	11.3	1000		
Ratio 8:1																			
1800	225	2.76	109	5.01	197	6.78	267	10.0	394			12.9	509	17.9	704				
1500	188	2.72	128	5.02	237	6.83	322	10.0	472			13.0	614	17.8	840				
1200	150	2.32	137	4.30	254	5.83	344	8.65	511			10.9	638	16.9	1000				
1000	125	2.08	147	3.76	267	5.12	363	7.66	542			9.79	693	15.1	1068				
900	113	1.91	150	3.52	277	4.81	378	7.01	552			9.08	714	13.9	1098				
750	94	1.71	162	3.10	293	4.22	398	6.35	600			8.00	755	12.4	1176				
600	75	1.45	172	2.64	312	3.39	400	5.40	637			6.81	804	10.5	1245				
Ratio 11:1																			
1800	164	2.70	146	4.98	270	4.96	269	9.77	528	9.93	537	12.9	698	17.8	965	26.8	1450	32.4	1754
1500	136	2.72	176	5.03	326	5.07	329	9.69	629	9.84	639	13.0	842	18.1	1176	27.0	1754	32.0	2097
1200	109	2.32	188	4.26	346	4.34	352	8.40	681	8.50	690	11.1	903	17.2	1392	22.6	1833	33.0	2675
1000	91	2.05	200	3.76	367	3.78	368	7.37	717	7.50	730	9.70	945	14.9	1450	19.5	1901	29.2	2842
900	82	1.88	204	3.57	386	3.59	388	6.82	738	7.02	760	8.90	962	13.5	1460	18.5	1999	27.4	2960
750	68	1.57	204	3.13	407	3.16	411	5.78	751	6.15	798	7.70	1000	11.2	1460	16.2	2097	23.7	3077
600	55	1.26	205	2.69	437	2.72	441	4.64	753	5.31	861	6.16	1000	9.06	1470	13.9	2254	20.2	3283
Ratio 13:1																			
1800	138	2.64	169	4.98	311	5.00	319	9.25	591	9.74	622	10.2	649	17.0	1088	26.8	1715	33.0	2107
1500	115	2.66	204	4.88	374	5.00	383	9.21	707	9.72	746	10.3	790	17.0	1303	26.7	2048	33.1	2538
1200	92	2.13	204	4.19	402	4.30	413	7.84	752	8.29	795	8.72	836	14.6	1401	22.6	2166	31.6	3028
1000	77	1.77	204	3.67	422	3.82	439	6.54	753	7.38	850	7.66	881	12.9	1490	20.4	2342	27.9	3214
900	69	1.59	204	3.37	431	3.54	453	5.90	755	6.94	887	7.06	903	11.9	1519	18.8	2401	26.0	3322
750	58	1.33	204	3.00	452	3.06	469	4.92	755	6.02	924	6.16	946	10.5	1617	16.6	2548	22.9	3508
600	46	1.07	206	2.56	492	2.58	495	3.94	755	5.11	980	5.26	1009	9.05	1735	14.2	2724	32.0	3744
Ratio 15:1																			
1800	120	2.72	201	4.82	356	4.94	365	7.60	561	9.16	675	9.87	728	15.0	1107	22.8	1686	30.0	2215
1500	100	2.74	242	4.84	428	4.95	438	7.64	676	9.14	809	9.91	877	15.0	1323	22.9	2029	30.3	2675
1200	80	2.30	255	4.16	460	4.26	471	6.56	726	7.86	869	8.52	943	12.8	1411	19.6	2166	23.7	2911
1000	67	1.92	255	3.66	486	3.76	499	5.68	755	6.93	919	7.53	1000	11.2	1490	17.3	2048	22.8	2293
900	60	1.73	255	3.39	500	3.39	500	5.12	755	6.49	957	6.84	1009	10.4	1539	16.0	2156	21.3	2362
750	50	1.44	255	2.82	500	2.82	500	4.26	755	5.70	1009	5.70	1009	9.30	1646	14.1	2499	18.7	3312
600	40	1.15	255	2.26	500	2.26	500	3.41	755	4.56	1009	4.56	1009	7.84	1735	12.1	2675	16.0	3548

Reducer selection tables

		Model																	
		610		611		612		613		614		615		616		617		618	
Input speed [r/min]	Output speed [r/min]	Max Input Power [kW]	Max Output Torque [Nm]	Max Input Power [kW]	Max Output Torque [Nm]	Max Input Power [kW]	Max Output Torque [Nm]	Max Input Power [kW]	Max Output Torque [Nm]	Max Input Power [kW]	Max Output Torque [Nm]	Max Input Power [kW]	Max Output Torque [Nm]	Max Input Power [kW]	Max Output Torque [Nm]	Max Input Power [kW]	Max Output Torque [Nm]	Max Input Power [kW]	Max Output Torque [Nm]
Ratio 17:1																			
1800	106	2.05	172	4.60	384	4.97	416	7.06	590	9.03	755	9.04	756	14.9	1245	19.3	1617	29.8	2489
1500	88	2.09	210	4.68	469	4.98	500	7.04	707	9.06	908	9.07	909	15.0	1509	19.3	1940	30.0	3009
1200	71	1.79	224	3.99	500	3.99	500	6.00	753	7.82	980	7.82	980	12.8	1607	16.6	2078	25.5	3195
1000	59	1.58	237	3.32	500	3.32	500	5.02	755	6.71	1009	6.71	1009	11.4	1715	14.6	2205	22.6	3401
900	53	1.48	248	2.99	500	2.99	500	4.51	755	6.04	1009	6.04	1009	10.6	1764	13.5	2264	20.9	3499
750	44	1.27	255	2.49	500	2.49	500	3.76	755	5.03	1009	5.03	1009	8.94	1793	12.0	2401	18.5	2724
600	35	1.02	255	1.99	51	1.99	51	3.01	755	4.02	103	4.02	103	7.15	183	10.3	264	15.8	405
Ratio 21:1																			
1800	86	2.01	208	4.00	414	4.00	414	6.02	621	6.65	687	7.04	727	13.3	1372	18.4	1901	26.9	2773
1500	71	2.02	250	4.03	500	4.03	500	6.05	750	6.70	830	7.08	877	13.2	1637	18.5	2293	26.9	3332
1200	57	1.64	255	3.23	500	3.23	500	4.87	755	5.73	888	6.06	938	11.4	1764	15.9	2460	23.1	3577
1000	48	1.73	255	2.69	500	2.69	500	4.06	755	5.06	941	5.33	990	9.65	1793	13.9	2587	20.4	3793
900	43	1.23	255	2.42	500	2.42	500	3.65	755	4.70	970	4.89	1009	8.68	1793	13.0	2685	19.0	3920
750	36	1.03	255	2.02	500	2.02	500	3.04	755	4.07	1009	4.07	1009	7.24	2724	11.0	4018	16.2	5576
600	29	0.82	255	1.61	500	1.61	500	2.44	755	3.26	1009	3.26	1009	5.79	1793	8.80	2724	13.0	4018
Ratio 25:1																			
1800	72	1.47	180	3.19	392	3.34	411	5.08	624	5.82	715	6.94	853	11.6	1431	15.6	1921	22.8	2803
1500	60	1.44	213	3.20	472	3.35	494	5.08	750	5.84	861	6.71	990	11.6	1715	15.5	2293	22.8	3371
1200	48	1.24	229	2.71	500	2.71	500	4.09	755	5.00	921	5.48	1009	9.73	1793	13.3	2450	19.5	3597
1000	40	1.08	240	2.26	500	2.26	500	3.41	755	4.43	980	4.56	1009	8.11	1793	11.7	2597	17.2	3802
900	36	1.02	250	2.03	500	2.03	500	3.07	755	4.11	1009	4.11	1009	7.30	1793	10.9	2685	16.1	3959
750	30	0.86	255	1.69	500	1.69	500	2.56	755	3.42	1009	3.42	1009	6.08	1793	9.24	2724	13.6	4018
600	24	0.69	255	1.36	500	1.36	500	2.05	755	2.74	1009	2.74	1009	4.86	1793	9.39	2724	10.9	4018
Ratio 29:1																			
1800	62	1.38	197	2.84	405	2.84	406	4.41	628	4.84	691	5.88	839	9.69	1312	14.3	2038	18.3	2607
1500	52	1.38	236	2.85	487	2.86	490	4.41	755	4.85	830	5.84	1000	9.68	1656	14.3	2450	18.4	3156
1200	41	1.17	250	2.34	500	2.33	499	3.53	755	4.20	899	4.72	1009	8.34	1784	12.2	2617	15.9	3410
1000	34	1.00	254	1.95	500	1.95	500	2.94	755	3.63	931	3.93	1009	6.99	1793	10.6	2724	13.9	3567
900	31	0.89	255	1.75	500	1.75	500	2.65	755	3.40	1009	3.54	1793	6.29	2724	9.55	3920	12.9	3910
750	26	0.74	255	1.46	500	1.46	500	2.20	755	2.95	1009	2.95	1793	5.24	2724	7.96	4018	11.4	3881
600	21	0.60	255	1.17	500	1.17	500	1.76	755	2.36	1009	2.36	1009	4.19	1793	6.37	2724	9.39	4018
Ratio 35:1																			
1800	51	1.03	177	2.40	413	2.40	413	3.62	622	4.61	794	4.84	832	8.60	1480	12.4	2127	18.4	3165
1500	43	1.02	211	2.42	499	2.42	499	3.64	752	4.63	956	4.84	1000	8.64	1784	12.5	2577	18.5	3812
1200	34	0.87	240	1.94	500	1.94	500	2.92	753	3.91	1009	3.91	1009	6.95	1793	10.5	2715	15.5	4008
1000	29	0.78	251	1.61	500	1.61	500	2.44	755	3.26	1009	3.26	1009	5.79	1793	8.80	2724	13.0	4018
900	26	0.62	255	1.21	500	1.21	500	1.83	755	2.44	1009	2.44	1009	4.34	1793	6.60	2724	9.73	4018
750	21	0.62	255	1.21	500	1.21	500	7.83	755	2.44	1009	2.44	1009	4.34	1793	6.60	2724	9.73	4018
600	17	0.49	255	0.97	500	0.97	500	1.46	755	1.96	1009	1.96	1009	3.47	1793	5.28	2724	7.78	4018

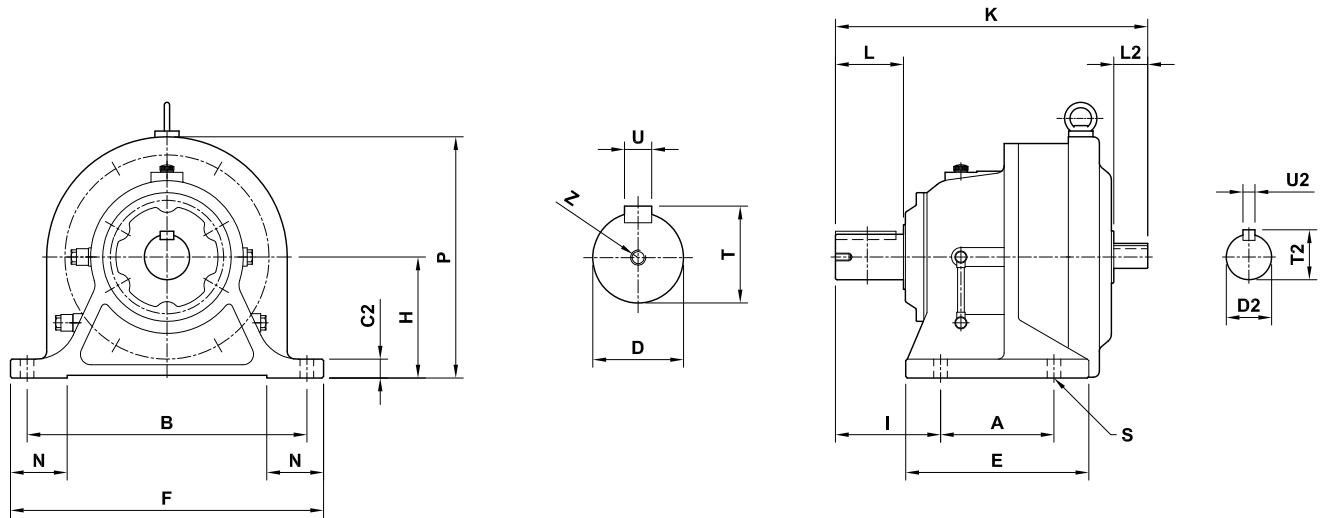
Reducer selection tables

		Model																	
		610		611		612		613		614		615		616		617		618	
Input speed [r/min]	Output speed [r/min]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]	Max Input Power [kW]	Output Torque [Nm]
Ratio 43:1																			
1800	42	0.93	196	0.92	406	1.96	415	2.96	626	3.15	666	3.85	813	6.72	1421	9.27	2010	14.8	3136
1500	35	0.93	236	1.92	487	1.97	499	2.96	750	3.16	803	3.86	980	6.76	1715	9.31	2362	15.0	3793
1200	28	0.80	253	1.58	500	1.58	500	2.38	755	2.71	860	3.18	1009	5.66	1793	8.04	2548	12.7	4018
1000	23	0.67	251	1.31	500	1.31	500	1.98	755	2.39	1009	2.65	1009	4.71	1793	7.16	2724	10.6	4018
900	21	0.60	255	1.18	500	1.18	500	1.78	936	2.21	1009	2.39	1793	4.24	2724	6.44	4018	9.50	6076
750	17	0.50	255	0.98	500	0.98	500	1.49	755	1.99	1009	1.99	1009	3.53	1793	5.37	2724	7.92	4018
600	14	0.40	127	0.79	255	1.19	500	1.59	500	1.59	500	2.83	754	4.30	1009	6.34	1793	10.8	2724
Ratio 51:1																			
1800	35	0.66	167	1.87	469	1.87	469	2.52	632	2.94	737	3.40	853	5.67	1421	8.32	2087	11.4	2852
1500	29	0.67	201	1.66	499	1.66	499	2.50	752	2.97	894	3.32	1000	5.70	1715	8.34	2508	11.4	3430
1200	24	0.57	215	1.33	500	1.33	500	2.00	754	2.53	951	2.66	1000	4.72	1774	7.11	2675	9.69	3646
1000	20	0.50	226	1.11	500	1.11	500	1.67	755	2.21	1000	2.24	1009	3.95	1784	6.04	2724	8.90	4018
900	18	0.48	239	1.00	500	1.00	500	1.50	755	2.01	1009	2.01	1009	3.58	1793	5.43	2724	8.01	4018
750	15	0.48	250	0.83	500	0.83	500	1.25	755	1.68	1009	1.68	1009	2.98	1793	4.53	2724	6.68	4018
600	12	0.34	255	0.66	500	0.66	500	1.00	755	1.34	1009	1.34	1009	2.38	1793	3.62	2724	5.34	4018
Ratio 59:1																			
1800	31	0.61	176	1.38	400	1.38	402	2.16	627	2.84	823	2.90	841	4.90	1421	7.23	2097	9.73	2822
1500	25	0.60	211	1.37	477	1.38	479	2.15	749	2.80	976	2.82	980	4.96	1725	7.29	2538	9.85	3430
1200	20	0.52	228	1.14	498	1.15	499	1.73	753	2.25	980	2.25	980	4.10	1784	6.08	2646	8.11	3528
1000	17	0.45	237	0.96	500	0.96	500	1.44	754	1.93	1009	1.93	1009	3.43	1793	5.22	2724	7.08	3695
900	15	0.43	249	0.86	500	0.86	500	1.30	755	1.74	1009	1.74	1009	3.09	1793	4.70	2724	6.40	3714
750	13	0.37	255	0.72	500	0.72	500	1.08	755	1.45	1009	1.45	1009	2.58	1793	3.91	2724	5.67	3949
600	10	0.29	255	0.57	500	0.57	500	0.87	755	1.16	1009	1.16	1009	2.06	1793	3.13	2724	4.62	4018
Ratio 71:1																			
1800	25	0.49	172	0.98	341	1.01	352	1.82	634	2.10	735	2.17	757	4.10	1431	6.01	2097	7.33	2558
1500	21	0.49	207	0.98	410	1.02	427	1.80	753	2.11	884	2.17	910	4.09	1754	6.01	2519	7.35	3077
1200	17	0.42	222	0.84	441	0.87	456	1.44	755	1.81	949	1.87	977	3.42	1793	5.16	2724	6.27	3283
1000	14	0.37	235	0.72	456	0.76	480	1.20	755	1.58	990	1.59	1000	2.85	1793	4.34	2724	5.54	3479
900	13	0.34	241	0.68	471	0.72	500	1.08	755	1.44	1009	1.44	1009	2.57	1793	3.90	2724	5.15	3597
750	11	0.30	255	0.59	496	0.60	500	0.90	755	1.20	1009	1.20	1009	2.14	1793	3.25	2724	4.55	3812
600	8.5	0.24	255	0.48	500	0.48	500	0.72	755	0.96	1009	0.96	1009	1.71	1793	2.60	2724	3.84	4018
Ratio 87:1																			
1800	21	0.49	211	0.93	397	0.93	400	1.47	627	1.96	838	1.99	852	3.34	1431	4.83	2068	7.35	3146
1500	17	0.49	254	0.93	478	0.94	480	1.46	750	1.95	1000	1.97	1009	3.34	1715	4.83	2479	7.35	3773
1200	14	0.40	255	0.78	500	0.78	500	1.18	755	1.57	1009	1.57	1009	2.80	1793	4.14	2656	6.26	4018
1000	11	0.33	255	0.65	500	0.65	500	0.98	755	1.31	1009	1.31	1009	2.33	1793	3.54	2724	5.22	4018
900	10	0.30	255	0.58	500	0.58	755	0.88	1009	1.18	1009	1.18	1793	2.10	2724	3.18	4018	4.70	7056
750	8.6	0.20	255	0.49	500	0.49	755	0.74	1009	0.98	1793	0.98	2724	1.75	4018	2.65	7154	3.91	7154
600	6.9	0.20	255	0.39	500	0.39	500	0.59	755	0.79	1009	1.04	1009	2.12	1793	3.13	2724	5.58	4018

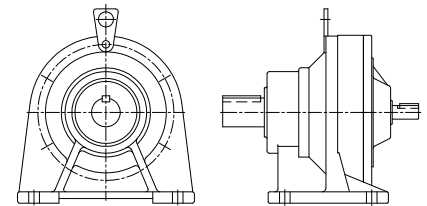
Dimensions

600H Foot mount reducers

Sizes 613-618



Sizes 610-612

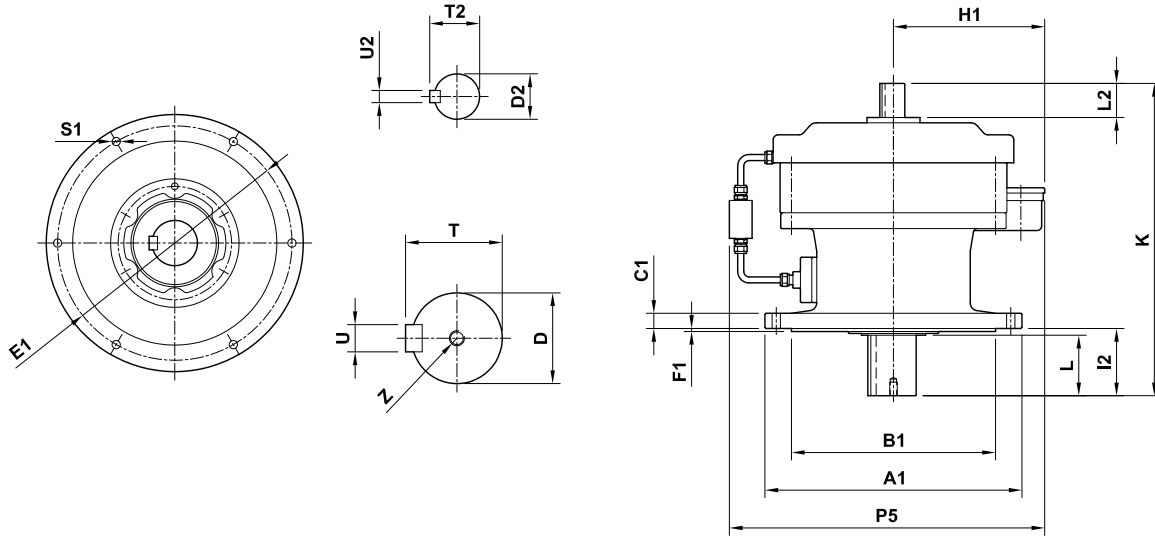


Model	Reducer dimensions																			Reducer weight [kg]	
	A	B	C2	D	D2	E	F	H	I	K	L	L2	N	P	S	T	T2	U	U2		Z
610	90	150	12	28h6	15h6	139	184	100	60	208	35	25	40	175	4x11	31	29.5	8	5	-	13
611	115	190	15	38h6	18h6	159	234	120	82	259	55	35	55	222	4x14	41	40.5	10	6	-	24
612	115	190	15	38h6	18h6	159	234	140	82	259	55	35	60	242	4x14	41	40.5	10	6	-	25
613	145	290	22	50h6	22h6	199	334	150	100	321	70	40	65	265	4x18	53.5	52.5	14	6	M10 x 18	43
614	145	290	22	50h6	22h6	199	334	150	120	341	90	40	65	265	4x18	53.5	52.5	14	6	M10 x 18	44
615	145	290	22	50h6	22h6	199	334	160	120	341	90	40	70	275	4x18	53.5	52.5	14	6	M10 x 18	46
616	150	370	25	60h6	30h6	242	414	160	139	413	90	45	75	310	4x18	64	63	18	8	M10 x 18	85
617	275	380	30	70h6	35h6	339	434	200	125	477	90	55	80	370	4x22	74.5	73	20	10	M12 x 24	125
618	320	420	30	80h6	40h6	384	474	220	145	527	110	65	85	405	4x22	85	83	22	12	M12 x 24	162

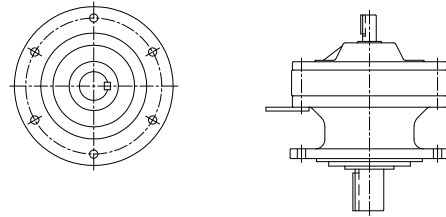
Dimensions

600V Flange mount reducers

Sizes 613-618



Sizes 610-612

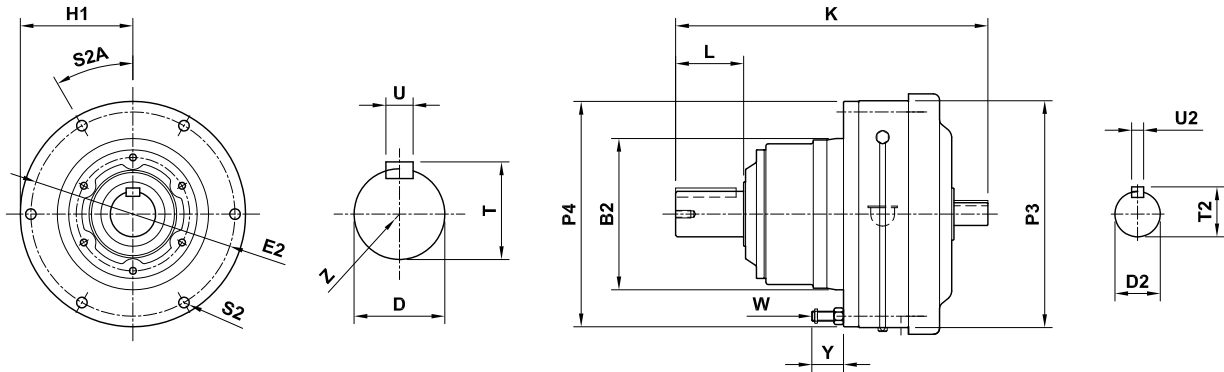


Model	Reducer dimensions																		Reducer weight [kg]	
	A1	B1	C1	D	D2	E1	F1	H1	K	I2	L	L2	P5	S1	T	T2	U	U2		Z
610	160	110f8	9	28h6	15h6	134	3	-	208	48	35	25	-	4xØ11	31.0	17.0	8	5	-	12
611	210	140f8	13	38h6	18h6	180	4	-	259	69	55	35	-	6xØ11	41.0	20.5	10	6	-	24
612	210	140f8	13	38h6	18h6	180	4	-	259	69	55	35	-	6xØ11	41.0	20.5	10	6	-	24
613	260	200f8	15	50h6	22h6	230	4	209	321	76	61	40	361	6xØ11	53.5	24.5	10	6	M10 x 18	43
614	260	200f8	15	50h6	22h6	230	4	209	341	96	81	40	361	6xØ11	53.5	24.5	14	6	M10 x 18	43
615	260	200f8	15	50h6	22h6	230	4	206	341	96	81	40	358	6xØ11	53.5	24.5	14	6	M10 x 18	43
616	340	270f8	20	60h6	30h6	310	4	200	413	89	80	45	417	6xØ11	64.0	33.0	18	8	M10 x 18	80
617	400	316f8	22	70h6	35h6	360	5	225	477	94	84	55	447	8xØ14	74.5	38.0	20	10	M12 x 24	125
618	430	345f8	22	80h6	40h6	390	5	240	527	110	100	65	477	8xØ18	85.0	43.0	22	12	M12 x 24	150

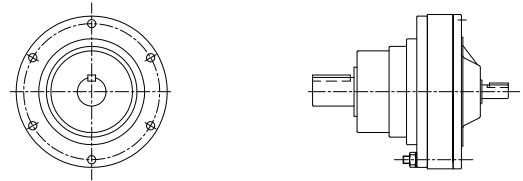
Dimensions

600F Face mount reducers

Sizes 613-618



Sizes 610-612

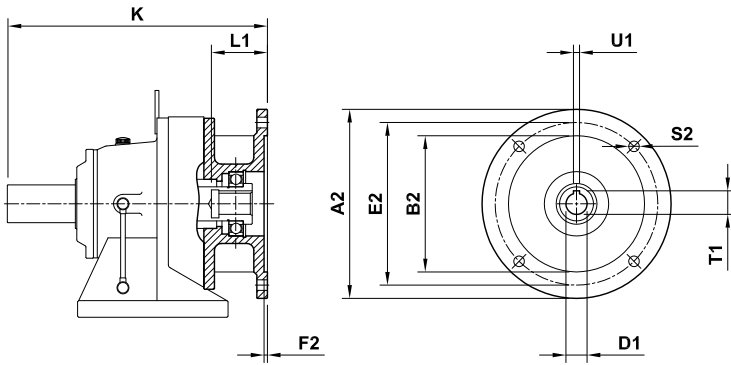


Model	Reducer dimensions																		Reducer Weight [kg]
	B2	D	D2	E2	H1	K	L	P3	P4	S2	S2A	T	T2	U	U2	W	Y	Z	
610	105g6	28	15	134	-	208	35	150	150	8 x 9	22.5°	31.0	17.0	8	5	M8	28	-	10
611	115g6	32	15	146	-	218	45	162	162	8 x 9	22.5°	35.0	17.0	10	10	M8	26	-	11
612	140g6	38	18	180	-	259	55	204	200	6 x 11	60°	41.0	20.5	10	10	M10	33	-	20
613	165g6	50	22	205	208	321	70	230	266	6 x 11	60°	53.5	24.5	14	14	M10	31	M10 x 18	36
614	165g6	50	22	205	208	341	90	230	266	6 x 11	60°	53.5	24.5	14	14	M10	31	M10 x 18	37
615	165g6	50	22	205	208	341	90	230	266	6 x 11	60°	53.5	24.5	14	14	M10	31	M10 x 18	37
616	200g6	60	30	270	228	413	90	318	296	6 x 14	30°	64.0	33.0	18	18	M12	35	M10 x 18	66
617	250g6	70	35	300	243	477	90	362	330	8 x 14	22.5°	74.5	38.0	20	20	M12	41	M12 x 24	96
618	280g6	80	40	330	258	527	110	390	360	8 x 14	22.5°	85.0	43.0	22	22	M12	38	M12 x 24	131

Dimensions

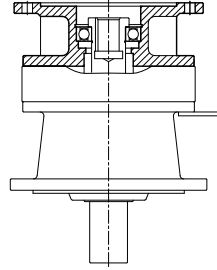
600X Type IEC Adaptor

600H reducers



Motor Frame	A2	B2	D1	E2	F2	L1	S2	T1	U1
71	160	110	14	130	4.5	30	9	16.3	5
80	200	130	19	165	4.5	40	11	21.8	6
90	200	130	24	165	4.5	50	11	27.3	8
100	250	180	28	215	5.0	60	14	31.3	8
112	250	180	28	215	5.0	60	14	31.3	8
132	250	230	38	265	5.0	80	14	41.3	10
160	350	250	42	300	6.0	110	18	45.3	12

600V reducers

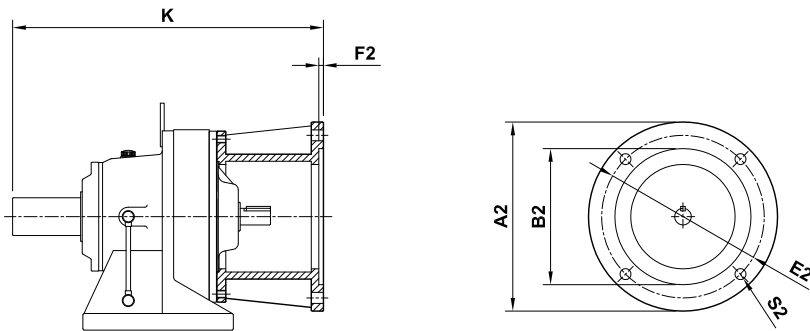


K dimension

Motor Frame	Model									
	610	611	612	613	614	615	616	617	618	
71	202	240	240							
80	208	245	245	294						
90	221	255	255	308	328	328	376			
100	270	272	272	324	344	344	392	436		
112		272	272	324	344	344	392	436	473	
132			292	350	370	370	418	462	500	
160						410	353	497	534	
180								560	610	

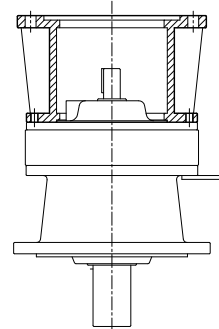
600C type coupling adaptor

600H reducers



Motor frame	A2	B2	E2	F2	S2
71	160	110	130	5	10
80	200	130	165	5	12
90	200	130	165	5	12
100	250	180	215	6	12
112	250	180	215	6	12
132	300	230	265	6	15
160	350	250	300	7	19
180	400	300	350	7	19

600V reducers



K dimension

Motor frame	Model									
	610	611	612	613	614	615	616	617	618	
71	256	286	286							
80	251	281	281	335						
90	269	312	312	374	373	373	466			
100	292	322	322	376	396	396	444	488		
112		322	322	376	396	396	444	488	525	
132			374	428	448	448	496	540	577	
160						478	526	570	607	

Lubrication and maintenance

Sizes 610 to 612

Size 610 to 612 Cycloid 600 units are factory packed and ready for operation. These units are filled with specially designated long life grease to ensure maintenance free operation. Replenishment after every 20,000 hours is recommended for longer service life.

Recommended grease type is Shell Alvania Grease RA or equivalent which has an ambient operating temperature range of -15 to + 50 °C.

Grease weights

Reducer model	Weight [g]	
	Speed reduction mechanism	Slow speed shaft bearings
610	96.39	113.40
611	246.65	144.59
612	246.65	144.59

Sizes 613 to 618

Oil change interval

Under all conditions every Cycloid 600 unit needs an initial oil change after 500 hours of operation. The subsequent oil change interval will depend on the operating conditions described in the table below:

Operating condition	Oil change interval
Less than 10 hours / day operation	Every 6 months
10 - 24 hours / day operation	Every 2500 hours
Heavy operation conditions - such as high ambient temperature & high humidities	Every 1-3 months

Oil volumes

Reducer model	Lubricant type		Volume [l]	
	Horizontal mounting	Vertical mounting	Horizontal mounting	Vertical mounting
613	Oil - Bath	Oil - Bath	0.76	1.14
614	Oil - Bath	Oil - Bath	0.76	1.14
615	Oil - Bath	Oil - Bath	0.76	1.14
616	Oil - Bath	Forced*	1.52	1.14
617	Oil - Bath	Forced*	1.89	1.89
618	Oil - Bath	Forced*	2.27	1.89

* Must have forced lube via Internal plunger lubrication pump.

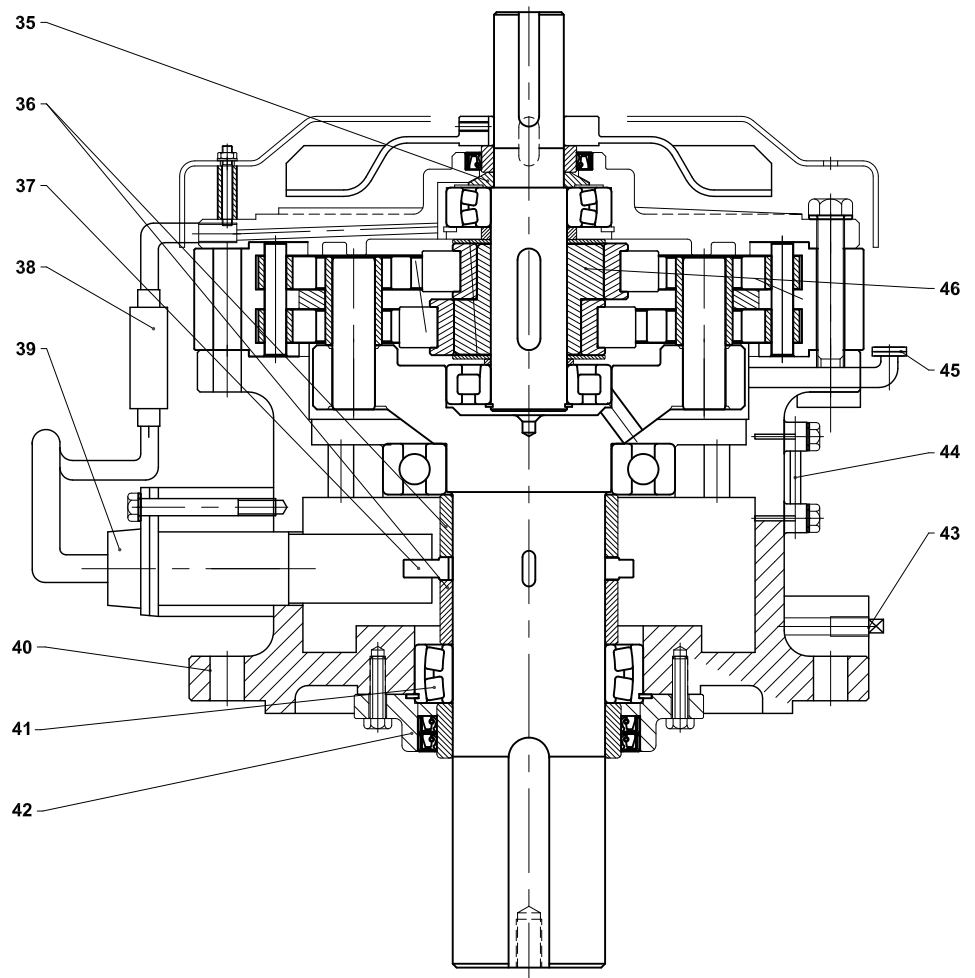
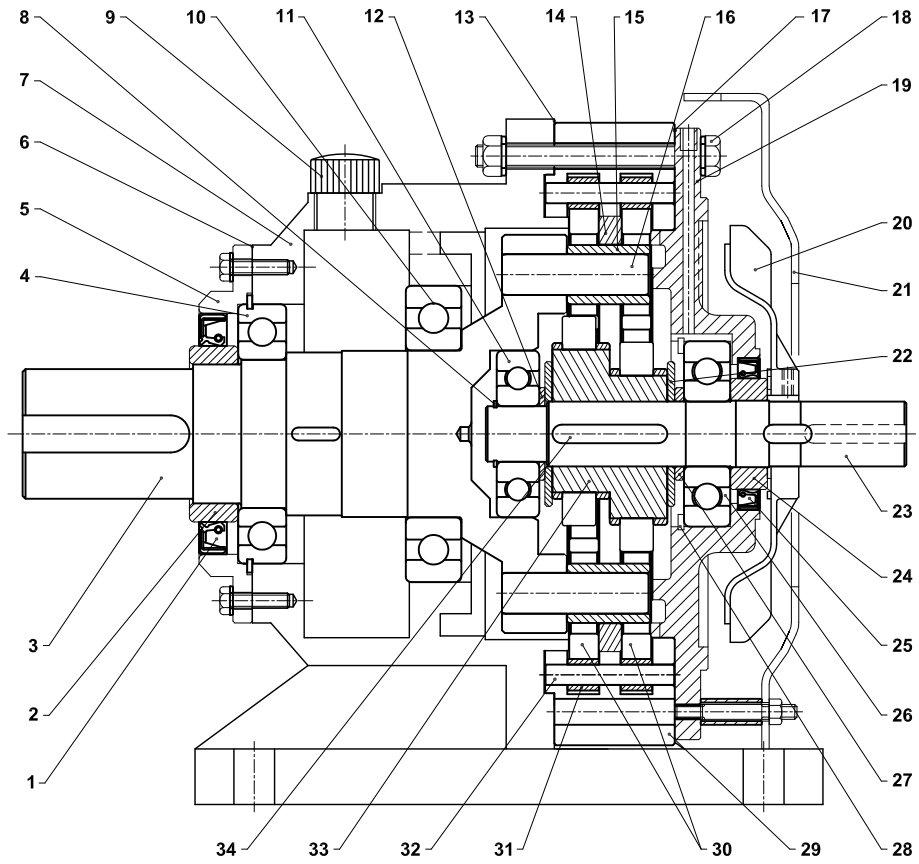
Recommended oil grades

Use only quality brand oils. Inferior quality oils will reduce the life of your reducer.

Ambient operating temperature range [°C]	Recommended oil grade
-15 to + 5	ISO VG 68
0 to + 35	ISO VG 100-150
+ 30 to + 50	ISO VG 200-460

Parts lists

Item	Description
1	Oil seal
2	Collar (low speed shaft)
3	Slow speed shaft
4	Bearing A (low speed shaft)
5	Slow speed end cap
6	Gasket A*
7	Horizontal casing
8	Retaining ring
9	Oil filter plug
10	Bearing B (low speed shaft)
11	Bearing A (high speed shaft)
12	Spacer
13	Gasket B*
14	Spacer ring
15	Slow speed shaft roller
16	Slow speed shaft pin
17	Gasket C*
18	Bolt for ring gear housing
19	High speed end shield
20	Cooling fan
21	Fan cover
22	Spacer
23	High speed shaft
24	Collar (high speed shaft)
25	Oil seal
26	Bearing B (high speed shaft)
27	Circlip
28	Retaining ring
29	Ring gear housing
30	Cycloid disc
31	Ring gear roller
32	Ring gear pin
33	Eccentric assembly
34	Key
35	Oil slinger
36	Spacer
37	Cam
38	Oil sight glass
39	Plunger pump
40	Flanged casing
41	Angular contact bearing
42	Slow speed end cap
43	Plug (oil drain)
44	Oil level gauge
45	Oil filter plug
46	Eccentric assembly



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- Cycloid 600** Compact High Efficiency Cycloidal speed reducers
- Geardrive** C-frame sub-fractional horsepower units
- SMR®** Helical shaft mounted reducers

Other

- Corporate Brochure & Product Selection Guide

Please note: not all products are available worldwide.



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