

Section 9:

Gearboxes: CYCLO

A whole new concept in gear design using a patented epicyclic gear profile to offer trouble free, high ratio solutions to a wide range of industries.

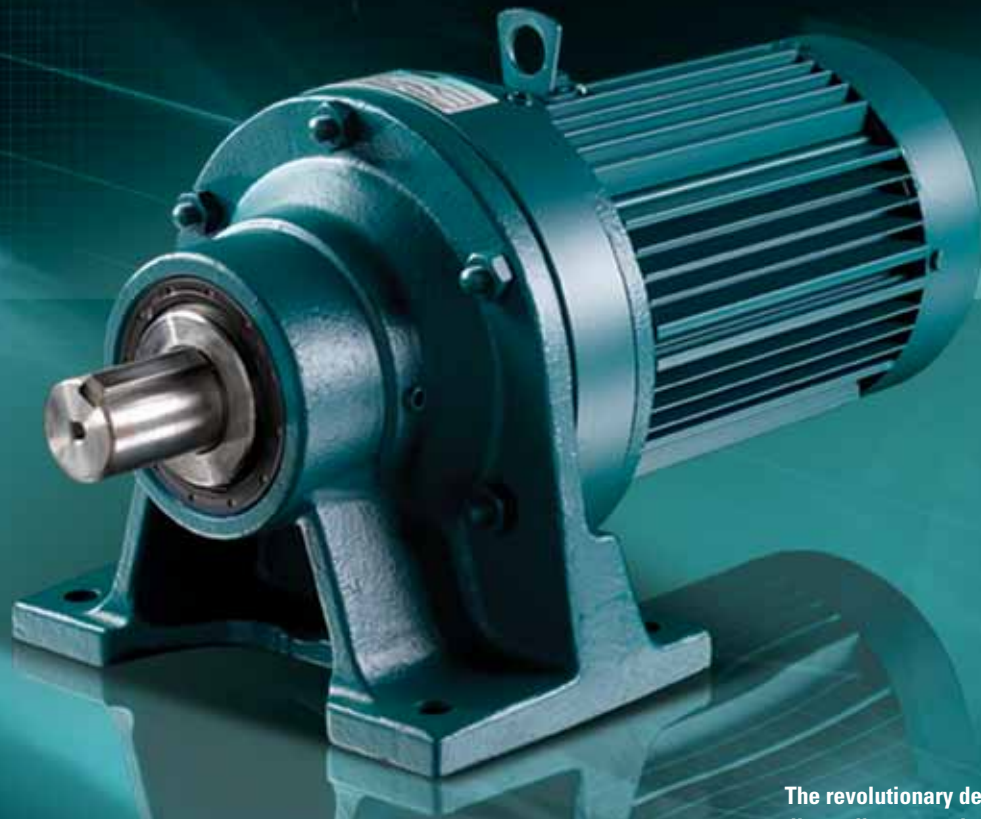


- 21 sizes with ratings from 0.12 to 55kW
- Ratios from 6:1 to 658,503:1
- 500% shock overload capacity
- 2 year warranty
- Dry-fit gearhead
- Standard IEC or integrated motor options
- Compact, silent & low maintenance

Geared Drives: Design Data Required	
Motorised (integral motor) or non-motorised?	<ul style="list-style-type: none"> > If motorised: electrical supply available any special motor features required (brake, thermistors, flameproof etc.) > If non-motorised: type of prime mover rotational speed of prime mover power rating of prime mover is an input shaft coupling required? If so, prime mover shaft dia.
Flange mounted or foot mounted?	<ul style="list-style-type: none"> > If shaft mounted, machine shaft diameter/length > if flange mounted, is an output shaft and coupling required?
Type of driven machine	
Rotational speed of driven machine	> constant or variable over what range?
Power absorbed by driven machine (or required output torque)	
Hours/day duty & start/stop frequency	

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The revolutionary design of the Cyclo discs offers smooth and silent operation and excellent resistance to overloads. Extremely high ratios can be achieved within a very small envelope offering high efficiency in a very small package.

Fenner CYCLO

Revolutionary design offers smooth, silent, efficient operation.

- > High overload capacity up to 500%
- > Offering high efficiency, especially at high reduction ratios
- > Compact size and low noise level
- > High reliability with 2 years warranty
- > Exceptional life compared to other types of gearing

OPERATING PRINCIPLE

The unique concept of the Cyclo unit provides exceptional performance, reliability and long life in the most severe applications.

Unlike Helical gears, the Cyclo has thirty percent of its reduction components in contact at all times offering an extremely high overload capacity.

As the Eccentric bearing rotates, it rolls the Cyclo Disc around the internal circumference of the stationary Ring Gear Housing (an action similar to that of a wheel rolling around the inside of a ring).

As the Cyclo Disc travels in a clockwise path around the Ring Gear Housing, the Cyclo Disc itself rotates slowly on its own axis in the opposite direction. For each complete revolution of the INPUT shaft, the Cyclo Disc turns one cycloidal tooth pitch in the opposite direction.

The ratio of the Cyclo drive is numerically equal to the number of cycloidal teeth on the Cyclo Disc.

The reduced speed is transmitted to the OUTPUT shaft by means of the Slow speed shaft pins and rollers which engage with the holes located around the middle of each disc. Typically a Two-Disc system is used allowing a smoother and vibration-free drive with a higher torque capacity.

Fenner®

THE MARK OF ENGINEERING EXCELLENCE

Cyclo Gearboxes : Selection Procedure

SELECTION PROCEDURE

(a) Service Factor

From table 1 select the Mechanical Service Factor (Fm) applicable to the drive. If the unit is to be subjected to frequent stop/starts then multiply factor Fm by Factor Fs from table 2.

(b) Motor Power

Refer to the selection tables on pages 344 to 348 and choose a motor power equal or in excess of that required. If the power is not known, use the formula below to establish a minimum input power and select from the nearest available selection table.

$$P_2 = \frac{M_2 \times n_2}{9550}$$

P₂ = Absorbed power (kW)

M₂ = Output torque (Nm)

n₂ = Output speed (rpm)

(c) Unit Selection

Refer to the selection tables for the required motor selected in step (b) on pages 344 to 348. Read down the column to find the closest speed to meet your requirements. Trace along the line to the service factor from step (a). If the service factor is either lower or significantly higher than that required, scan up and down to establish if a better selection is available.

(d) Overhung Loads

If an indirect drive is to be fitted to the output shaft, calculate the overhung load value using the formula below and ensure that the maximum allowable overhung load is not exceeded. If the calculated overhung load is greater than the allowable overhung load, either re-design the indirect drive or select a unit with a greater overhung load capacity.

$$F_{Rq} = \frac{2000 \times M_{ef} \times F_{B1} \times L_f \times C_f}{PCD \text{ of drive element (mm)}}$$

F_{Rq} = Equivalent radial load used for selection (N)

M_{ef} = Required output torque (Nm)

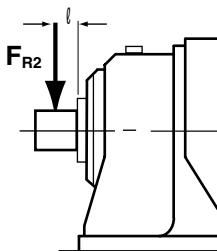
F_{B1} = Service factor from section (a)

L_f = Correction factor for load position

C_f = Correction factor for type of drive

C_f value for different drive types

- Chain = 1.00
- Pinion = 1.25
- V-Belt = 1.50



SELECTION EXAMPLE

A Fenner Cyclo geared motor unit is required to operate a stone crusher that will start 35 times a day and operate for a total of 9 hours per day.

The absorbed torque is 700Nm and the speed required is 50rpm. There will be a flexible coupling on the output shaft so the Overhung Load will not be an issue.

(a) Service Factor

From table 1 a stone crusher has been classified as a Heavy Shock Load. The service factor for such a unit operating at up to 10 hours per day is shown as 1.35. The unit is going to experience frequent stop/starts so the Fm factor needs to be multiplied by the Fs factor from table 2. For Heavy Shock Loads <200 stop/starts per day, the Fs factor is 1.25.

(b) Motor Power

As we do not know the motor power required, we need to calculate it based on our torque requirement.

$$\text{Therefore the absorbed Power } P_A = \frac{700\text{Nm} \times 50 \text{ rpm}}{9550} = 3.66 \text{ kW}$$

(c) Unit Selection

Refer to the selection table relevant to the closest motor size of 4.0kW on page 346. Look down the Output speed column for the nearest speed to 50rpm and for a unit with a service factor equal to or greater than 1.69. The closest selection is a 614X1146.

TABLE 1 - MECHANICAL SERVICE FACTOR (Fm)

Types of Driven Machine	Operational Hours		
	Under 3	3 to 10	Over 10
Uniform Loads Agitators and Mixers – liquid or semi-liquid Conveyors – uniformly loaded Cookers Paper Bleaching apparatus Pumps – centrifugal Rubber extruders	0.80	1.00	1.20
Moderate Shock Loads Agitators and Mixers – variable viscosity Calenders Conveyors - heavy duty with irregular loads Cranes and hoists Drying drums Dyeing machines Excavator winches Rolling mill transfer beds Scrapers Screw pumps Sugar mills Tanning machines	1.00	1.10	1.35
Heavy Shock Loads Brick Presses Kneading machines Metal presses and shears Paper beaters and wet presses Roller tables Stone crushers	1.20	1.40	1.60

TABLE 2 - STARTING SERVICE FACTOR (Fs)

	Start/stops per hour		
	< 10	< 200	< 500
Uniform Load	1.00	1.10	1.15
Moderate ShockLoad	1.00	1.18	1.32
Heavy Shock Load	1.00	1.25	1.40

TABLE 3 - CORRECTION FACTOR (LF) FOR LOAD POSITION

Unit Size	5 mm	10 mm	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	60m m	70 mm	80 mm	90 mm	100 mm	120 mm
606	0.83	0.94	1.19	1.56	1.74	1.98	-	-	-	-	-	-	-	-	-	-
607	0.82	0.91	1.00	1.29	1.59	1.88	2.00	2.23	-	-	-	-	-	-	-	-
608	0.81	0.87	0.94	1.03	1.28	1.54	1.80	1.85	2.00	2.19	-	-	-	-	-	-
609	0.86	0.92	0.97	1.13	1.38	1.64	1.90	1.98	2.15	2.32	-	-	-	-	-	-
610	0.86	0.92	0.97	1.13	1.38	1.64	1.90	1.98	2.15	2.32	2.68	-	-	-	-	-
611	0.78	0.84	0.90	0.96	1.02	1.08	1.19	1.36	1.53	1.65	1.71	2.00	-	-	-	-
612	-	0.82	0.87	0.92	0.97	1.08	1.25	1.42	1.59	1.76	1.90	2.15	-	-	-	-
613	-	-	0.83	0.87	0.92	0.96	1.00	1.13	1.25	1.38	1.63	1.88	1.95	2.19	2.67	-
614	-	-	-	0.66	0.73	0.80	0.87	0.93	1.00	1.10	1.30	1.50	1.70	1.90	2.05	-
616	-	-	-	0.83	0.87	0.90	0.93	0.97	1.00	1.11	1.32	1.53	1.75	1.96	-	-
617	-	-	-	0.86	0.89	0.92	0.94	0.97	1.00	1.11	1.32	1.53	1.75	1.96	-	-
618	-	-	-	-	0.85	0.87	0.90	0.93	0.95	0.98	1.09	1.26	1.43	1.60	1.78	-
619	-	-	-	-	-	0.85	0.87	0.89	0.91	0.93	0.97	1.04	1.18	1.32	1.46	1.75

Cyclo Gearboxes : Motorised selection

0.12 KW MOTOR

Table with 5 columns: Speed Rev/Min, Output Torque Nm, Service Factor, Unit Selection, Overhung Load N. Lists various gearbox models and their specifications for a 0.12 KW motor.

0.18 KW MOTOR

Table with 5 columns: Speed Rev/Min, Output Torque Nm, Service Factor, Unit Selection, Overhung Load N. Lists various gearbox models and their specifications for a 0.18 KW motor.

Table with 5 columns: Speed Rev/Min, Output Torque Nm, Service Factor, Unit Selection, Overhung Load N. Lists various gearbox models and their specifications.

0.25 KW MOTOR

Table with 5 columns: Speed Rev/Min, Output Torque Nm, Service Factor, Unit Selection, Overhung Load N. Lists various gearbox models and their specifications for a 0.25 KW motor.

Table with 5 columns: Speed Rev/Min, Output Torque Nm, Service Factor, Unit Selection, Overhung Load N. Lists various gearbox models and their specifications.

0.37 KW MOTOR

Table with 5 columns: Speed Rev/Min, Output Torque Nm, Service Factor, Unit Selection, Overhung Load N. Lists various gearbox models and their specifications for a 0.37 KW motor.

Cyclo Gearboxes : Motorised selection

Speed Rev/Min	Output Torque Nm	Service Factor	Unit Selection	Overhung Load N
40.9	894	1.03	613X1246	9490
40.9	894	1.57	614X1246	15300
49.3	741	0.87	612X1146	3320
49.3	741	1.22	613X1146	9070
49.3	741	1.88	614X1146	14300
57.2	639	0.98	612X1046	6850
57.2	639	1.44	613X1046	8650
57.2	639	1.98	614X1046	14000
68.1	537	1.20	612X0946	7420
68.1	537	1.68	613X0946	8340
84.1	434	0.98	611X0846	5610
84.1	434	1.42	612X0846	6970
95.3	383	0.98	611X0746	5570
95.3	383	1.48	612X0746	6730
110.0	332	0.98	611X0646	5250
110.0	332	1.48	612X0646	6400
130.0	281	0.98	611X0546	5090
130.0	281	1.48	612X0546	6090
178.8	178	1.12	611X0446	4480
178.8	178	2.00	612X0446	5510
238.3	153	0.98	611X0346	4040
238.3	153	1.74	612X0346	5020

5.5 KW MOTOR

Speed Rev/Min	Output Torque Nm	Service Factor	Unit Selection	Overhung Load N
7.49	6450	1.24	619DBX2654	59000
8.85	5450	0.92	618DBX2354	41700
8.85	5450	1.47	619DBX2354	59000
10.2	4730	1.05	618DBX2254	41700
10.2	4730	1.64	619DBX2254	59000
12.1	4000	1.22	618DBX2154	41700
12.1	4000	1.92	619DBX2154	59000
14.0	3440	1.45	618DBX2054	41700
20.6	2480	0.86	616X1654	22100
24.7	2060	1.03	616X1554	22100
28.6	1780	1.20	616X1454	20800
34.0	1500	0.85	614X1354	13700
34.0	1500	1.42	616X1354	20000
41.7	1220	1.14	614X1254	15000
41.7	1220	1.74	616X1254	18800
50.3	1010	0.89	613X1154	8880
50.3	1010	1.37	614X1154	14200
50.3	1010	2.07	616X1154	17800
58.4	872	1.05	613X1054	8490
58.4	872	1.44	614X1054	13900
69.5	733	1.20	613X0954	8210
69.5	733	1.70	614X0954	13300
85.9	593	1.50	613X0854	7720
97.3	523	1.61	613X0754	7210
112.3	454	1.90	613X0654	7080
132.7	384	2.10	613X0554	6810
182.5	279	2.10	613X0454	5980
243.3	209	2.10	613X0354	5370

7.5 KW MOTOR

Speed Rev/Min	Output Torque Nm	Service Factor	Unit Selection	Overhung Load N
7.49	8670	0.91	619DBX2656	59000
8.85	7330	1.08	619DBX2356	59000
10.2	6360	1.20	619DBX2256	59000
12.1	5380	0.89	618DBX2156	41700
12.1	5380	1.41	619DBX2156	59000
14.0	4620	1.06	618DBX2056	41700
14.0	4620	1.59	619DBX2056	59000
28.6	2390	0.88	616X1456	20400
34.0	2020	1.04	616X1356	19700
41.7	1640	0.84	614X1256	13100
41.7	1640	1.28	616X1256	18600
50.3	1360	1.01	614X1156	14100
50.3	1360	1.52	616X1156	17600
58.4	1170	1.06	614X1056	13800
58.4	1170	1.79	616X1056	16900
69.5	985	0.90	613X0956	8020
69.5	985	1.27	614X0956	13200
69.5	985	2.13	616X0956	16200

Speed Rev/Min	Output Torque Nm	Service Factor	Unit Selection	Overhung Load N
85.9	798	1.11	613X0856	7580
85.9	798	1.60	614X0856	12400
85.9	798	2.51	616X0856	15100
97.3	704	1.20	613X0756	7090
97.3	704	1.93	614X0756	11900
112.3	610	1.36	613X0656	6970
112.3	610	2.01	614X0656	11400
132.7	516	1.51	613X0556	6710
132.7	516	2.01	614X0556	11100
182.5	375	1.51	613X0456	5890
182.5	375	2.02	614X0456	9910
243.3	282	1.51	613X0356	5300
243.3	282	2.01	614X0356	8950

11.0 KW MOTOR

Speed Rev/Min	Output Torque Nm	Service Factor	Unit Selection	Overhung Load N
41.7	2410	0.87	616X1266	18100
50.3	2000	1.04	616X1166	17200
58.4	1720	1.22	616X1066	16600
69.5	1450	1.45	616X0966	15900
85.9	1170	1.71	616X0866	14900
97.3	1030	2.04	616X0766	14500
112.3	895	2.08	616X0666	13700

15.0 KW MOTOR

Speed Rev/Min	Output Torque Nm	Service Factor	Unit Selection	Overhung Load N
58.0	2330	0.90	616X1068	16200
69.0	1960	1.07	616X0968	15600
85.3	1580	1.27	616X0868	14600
96.7	1400	1.50	616X0768	14200
112	1210	1.52	616X0668	13500
132	1030	1.61	616X0568	12900
181	746	1.61	616X0468	11400
242	559	1.61	616X0368	10200

Larger power selections are also possible using integrated motors or by means of the alternate IEC adapter detailed on page 376.

Please consult your local authorised distributor for assistance on selections outside the range shown above.

Selection tables show part numbers for the preferred "dry-fit" IEC geared motor option.

Please refer to page 379 for coding of alternate mounting configurations.

0.1570 RPM 9,251:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
30	0.12	606TAX6748	1180
60	0.12	607TAX6748	1770
200	0.12	609TAX6748	3340
300	0.12	610TAX6748	5400
630	0.18	612TAX6702	6740
940	0.18	613TAX6702	14500
1370	0.18	614TAX6702	16000
2100	0.25	616TAX6706	22100
3150	0.37	617TAX6708	29500
5000	0.37	618TAX6708	41700
7960	0.75	619TBX6718	58400

0.1330RPM RPM 10,933:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
30	0.12	606TAX6848	1180
60	0.12	607TAX6848	1770
200	0.12	609TAX6848	3340
300	0.12	610TAX6848	5400
630	0.18	612TAX6802	6740
940	0.18	613TAX6802	14500
1370	0.18	614TAX6802	16000
2100	0.18	616TAX6802	22100
3150	0.37	617TAX6808	29500
5000	0.37	618TAX6808	41700
7960	0.75	619TBX6818	58400

0.1060RPM 13,629:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
57	0.12	607TAX6948	1770
146	0.12	609TAX6948	3340
296	0.12	610TAX6948	5400
630	0.12	612TAX6948	6740
1050	0.18	613TAX6902	14500
1370	0.18	614TAX6902	16000
2100	0.18	616TAX6902	22100
3150	0.37	617TAX6908	29500
5000	0.37	618TAX6908	41700
7960	0.75	619TBX6918	58400

0.0894RPM 16,211:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
30	0.12	606TAX7048	1180
60	0.12	607TAX7048	1770
200	0.12	609TAX7048	3340
300	0.12	610TAX7048	5400
630	0.12	612TAX7048	6740
940	0.18	613TAX7002	14500
1370	0.18	614TAX7002	16000
2100	0.18	616TAX7002	22100
3150	0.37	617TAX7008	29500
5000	0.37	618TAX7008	41700
7960	0.75	619TBX7018	58400

0.0713RPM 20,339:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
30	0.12	606TAX7148	1180
60	0.12	607TAX7148	1770
200	0.12	609TAX7148	3340
300	0.12	610TAX7148	5400
630	0.12	612TAX7148	6740
940	0.18	613TAX7102	14500
1370	0.18	614TAX7102	16000
2100	0.18	616TAX7102	22100
3150	0.18	617TAX7102	29500
5000	0.37	618TAX7108	41700
7960	0.37	619TAX7108	58400

Cyclo Gearboxes : Motorised selection

0.0603RPM 24,037:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
30	0.12	606TAX7248	1180
60	0.12	607TAX7248	1770
200	0.12	609TAX7248	3340
300	0.12	610TAX7248	5400
630	0.12	612TAX7248	6740
940	0.18	613TAX7202	14500
1370	0.18	614TAX7202	16000
2100	0.18	616TAX7202	22100
3150	0.18	617TAX7202	29500
5000	0.18	618TAX7202	41700
7960	0.37	619TAX7208	58400

0.0461RPM 31,4331: RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
57	0.12	607TAX7348	1770
146	0.12	609TAX7348	3340
296	0.12	610TAX7348	5400
630	0.12	612TAX7348	6740
1050	0.18	613TAX7302	14500
1370	0.18	614TAX7302	16000
2100	0.18	616TAX7302	22100
3150	0.18	617TAX7302	29500
5000	0.18	618TAX7302	41700
7960	0.37	619TAX7308	58400

0.0379RPM 38,291:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
146	0.12	609TAX7548	3340
296	0.12	610TAX7548	5400
630	0.12	612TAX7548	6740
1050	0.18	613TAX7502	14500
1370	0.18	614TAX7502	16000
2100	0.18	616TAX7502	22100
3150	0.18	617TAX7502	29500
5000	0.18	618TAX7502	41700
7960	0.37	619TAX7508	58400

0.0894RPM 16,211:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
57	0.12	607TAX7648	1770
146	0.12	609TAX7648	3340
296	0.12	610TAX7648	5400
630	0.12	612TAX7648	6740
1050	0.18	613TAX7602	14500
1370	0.18	614TAX7602	16000
2100	0.18	616TAX7602	22100
3150	0.18	617TAX7602	29500
5000	0.18	618TAX7602	41700
7960	0.37	619TAX7608	58400

0.0270RPM 53,621:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
30	0.12	606TAX7748	1180
60	0.12	607TAX7748	1770
200	0.12	609TAX7748	3340
300	0.12	610TAX7748	5400
630	0.12	612TAX7748	6740
940	0.18	613TAX7702	14500
1370	0.18	614TAX7702	16000
2100	0.18	616TAX7702	22100
3150	0.18	617TAX7702	29500
5000	0.18	618TAX7702	41700
7960	0.37	619TAX7708	58400

0.0245RPM 59,177:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
146	0.12	609TAX7848	3340
296	0.12	610TAX7848	5400
630	0.12	612TAX7848	6740
1050	0.18	613TAX7802	14500
1370	0.18	614TAX7802	16000
2100	0.18	616TAX7802	22100
3150	0.18	617TAX7802	29500
5000	0.18	618TAX7802	41700
7960	0.37	619TAX7808	58400

0.0245RPM 59,177:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
57	0.12	607TAX7948	1770
146	0.12	609TAX7948	3340
296	0.12	610TAX7948	5400
630	0.12	612TAX7948	6740
1050	0.18	613TAX7902	14500
1370	0.18	614TAX7902	16000
2100	0.18	616TAX7902	22100
3150	0.18	617TAX7902	29500
5000	0.18	618TAX7902	41700
7960	0.37	619TAX7908	58400

0.0182RPM 79,507:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
30	0.12	606TAX8048	1180
60	0.12	607TAX8048	1770
200	0.12	609TAX8048	3340
300	0.12	610TAX8048	5400
630	0.12	612TAX8048	6740
940	0.18	613TAX8002	14500
1370	0.18	614TAX8002	16000
2100	0.18	616TAX8002	22100
3150	0.18	617TAX8002	29500
5000	0.18	618TAX8002	41700
7960	0.18	619TAX8002	58400

0.0133RPM 109,091:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
57	0.12	607TAX8148	1770
146	0.12	609TAX8148	3340
296	0.12	610TAX8148	5400
630	0.12	612TAX8148	6740
1050	0.18	613TAX8102	14500
1370	0.18	614TAX8102	16000
2100	0.18	616TAX8102	22100
3150	0.18	617TAX8102	29500
5000	0.18	618TAX8102	41700
7960	0.18	619TAX8102	58400

0.0097RPM 149,683:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
146	0.12	609TAX8248	3340
296	0.12	610TAX8248	5400
630	0.12	612TAX8248	6740
1050	0.18	613TAX8202	14500
1370	0.18	614TAX8202	16000
2100	0.18	616TAX8202	22100
3150	0.18	617TAX8202	29500
5000	0.18	618TAX8202	41700
7960	0.18	619TAX8202	58400
7960	0.18	619TAX8102	58400

0.0033RPM 446,571:1 RATIO

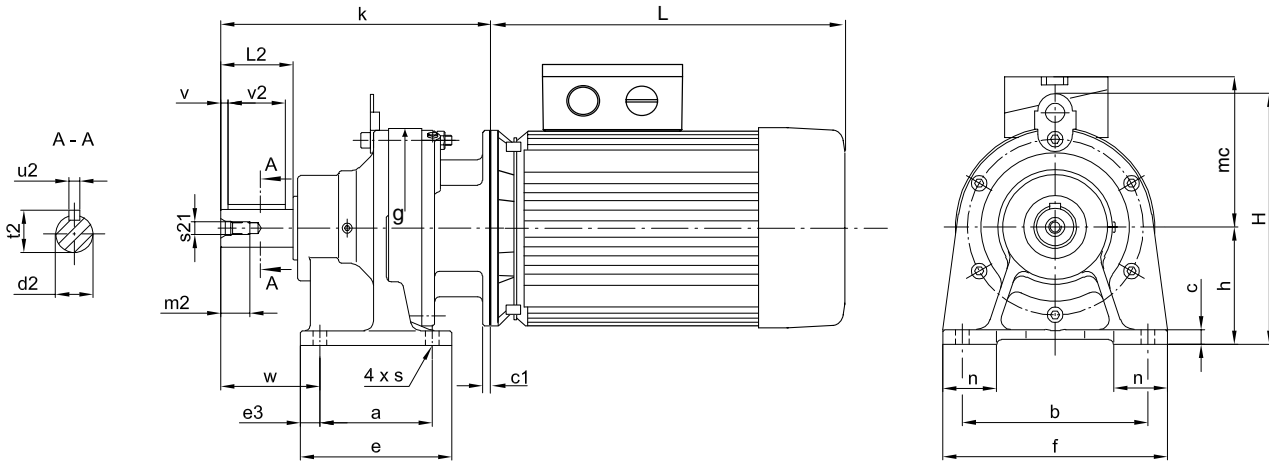
Output Torque	Motor Power	Unit Selection	Overhung Load N
630	0.12	612TBX8348	6740
979	0.18	613TBX8302	14500
1250	0.18	614TBX8302	16000
2050	0.18	616TAX8302	22100
3150	0.18	617TAX8302	29500
5000	0.18	618TAX8302	41700
7960	0.18	619TAX8302	58400

0.0022RPM 658,503:1 RATIO

Output Torque	Motor Power	Unit Selection	Overhung Load N
2050	0.18	616TDX8402	22100
3150	0.18	617TDX8402	29500
5000	0.18	618TDX8402	41700
7960	0.18	619TDX8402	58400

Cyclo Gearboxes : Dimensions (IEC) Foot Mounted

FOOT MOUNTING (TYPE X)



Unit Size	a	b	c	Ød2	e	e3	f	Øg	h	H	L2	m2	n	s	s21	t2	u2	v	v2	w	Weight ~kg
606	60	120	10	14k6	84	12	144	110	80	-	30	12	48	Ø9	M5	12	5	2.5	25	46	4.5
607	60	120	10	20k6	84	12	144	110	80	-	40	15	48	Ø9	M6	23	6	4	32	57	4.5
608	75	120	13	25k6	99	12	144	134	90	-	50	22	49	Ø9	M10	28	8	3.5	40	67	12
609	90	150	12	25k6	135	15	180	150	100	-	50	22	65	Ø11	M10	28	8	3.5	40	75	12
610	90	150	12	30k6	135	15	180	150	100	-	60	22	40	Ø11	M10	33	8	3.5	50	85	17
611	90	150	12	35k6	135	15	180	162	120	-	70	28	45	Ø11	M12	38	10	7	56	95	20
612	115	190	15	35k6	155	20	230	204	120	257	70	28	55	Ø14	M12	38	10	7	56	97	32
613	145	290	22	50k6	195	25	330	230	150	300	100	36	65	Ø18	M16	54	14	10	80	130	53
614	145	290	22	50k6	195	25	330	230	150	300	100	36	65	Ø18	M16	54	14	10	80	130	54
616	150	370	25	60h6	238	44	410	300	160	367	90	18	75	Ø18	M10	64	18	-	80	139	98

All dimensions are in mm ~ Gearbox kg refers to the approximate weight without motor - see table below for additional motor weight

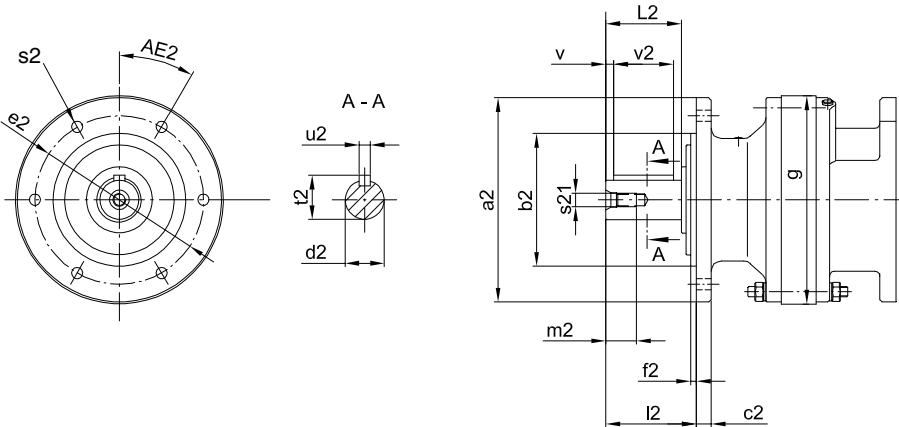
MOTOR OPTIONS AVAILABLE (using 4 pole motors)

Unit Size	kW	Frame	IEC	c1	k	L	mc	Motor kg
606	0.12	63K	B5	11	154	192	98	3.5
	0.18	63G	B5	11	154	192	98	4.0
	0.25	71K	B5	11	154	210	126	6.1
607	0.12	63K	B5	11	165	192	98	3.5
	0.18	63G	B5	11	165	192	98	4.0
	0.25	71K	B5	11	165	210	126	6.1
608	0.37	71J	B5	11	165	210	126	6.7
	0.12	63K	B5	11	201	192	98	3.5
	0.18	63G	B5	11	201	192	98	4.0
	0.25	71K	B5	11	206	210	126	6.1
	0.37	71J	B5	11	206	210	126	6.7
	0.55	80K	B5	12	223	255	142	8.9
609	0.75	80G	B5	12	223	255	142	9.6
	1.10	90S	B5	12	223	265	160	13.8
	0.12	63K	B5	11	217	192	98	3.5
610	0.18	63G	B5	11	217	192	98	4.0
	0.25	71K	B5	11	217	210	126	6.1
	0.37	71J	B5	11	217	210	126	6.7
	0.55	80K	B5	12	243	255	142	8.9
	0.75	80G	B5	12	243	255	142	9.6
	1.10	90S	B5	13	243	265	160	13.8
611	1.50	90L	B5	13	243	290	160	16.5
	0.25	71K	B5	11	241	210	126	6.1
	0.37	71J	B5	11	241	210	126	6.7
	0.55	80K	B5	13	267	255	142	8.9
	0.75	80G	B5	13	267	255	142	9.6
	1.10	90S	B5	13	267	290	160	16.5
612	1.50	90L	B5	13	267	290	160	16.5
	2.20	100L	B14	14	277	325	165	21.5
	0.37	71J	B5	11	256	210	126	6.7
	0.55	80K	B5	12	278	255	142	8.9
	0.75	80G	B5	12	278	255	142	9.6
	1.10	90S	B5	12	278	265	160	13.8
613	1.50	90L	B5	12	278	290	160	16.5
	2.20	100L	B5	14	287	325	165	25.3
	3.00	100Lx	B5	14	287	325	165	25.3
	0.75	80G	B5	11	351	255	142	9.6
	1.10	90S	B5	11	351	265	160	13.8
	1.50	90L	B5	11	351	290	160	16.5
614	2.20	100L	B5	13	361	325	165	21.5
	3.00	100Lx	B5	13	361	325	165	25.3
	4.00	112M	B5	13	361	335	188	32.0
	5.50	132S	B5	17	387	392	208	47.0
	7.50	132M	B5	17	387	430	208	58.0
	0.75	80G	B5	11	351	255	142	9.6
615	1.10	90S	B5	11	351	265	160	13.8
	1.50	90L	B5	11	351	290	160	16.5
	2.20	100L	B5	13	361	325	165	21.5
	3.00	100Lx	B5	13	361	325	165	25.3
	4.00	112M	B5	14	394	335	188	32.0
	5.50	132S	B5	16	416	392	208	47.0
616	7.50	132M	B5	16	416	430	208	58.0
	11.00	160M	B5	16	452	490	252	125.0
	15.00	160L	B5	16	452	550	252	146.0

Unit Size	kW	Frame	IEC	c1	k	L	mc	Motor kg
612	0.55	80K	B5	13	279	255	142	8.9
	0.75	80G	B5	13	279	255	142	9.6
	1.10	90S	B5	13	279	265	160	13.8
	1.50	90L	B5	13	279	290	160	16.5
	2.20	100L	B5	14	289	325	165	21.5
	3.00	100Lx	B5	14	289	325	165	25.3
613	4.00	112M	B5	14	289	335	188	32.0
	0.75	80G	B5	11	351	255	142	9.6
	1.10	90S	B5	11	351	265	160	13.8
	1.50	90L	B5	11	351	290	160	16.5
	2.20	100L	B5	13	361	325	165	21.5
	3.00	100Lx	B5	13	361	325	165	25.3
614	4.00	112M	B5	13	361	335	188	32.0
	5.50	132S	B5	17	387	392	208	47.0
	7.50	132M	B5	17	387	430	208	58.0
	0.75	80G	B5	11	351	255	142	9.6
	1.10	90S	B5	11	351	265	160	13.8
	1.50	90L	B5	11	351	290	160	16.5
615	2.20	100L	B5	13	361	325	165	21.5
	3.00	100Lx	B5	13	361	325	165	25.3
	4.00	112M	B5	13	361	335	188	32.0
	5.50	132S	B5	17	387	392	208	47.0
	7.50	132M	B5	17	387	430	208	58.0
	11.00	160M	B5	16	452	490	252	125.0

Cyclo Gearboxes : Alternate Mounting Arrangements

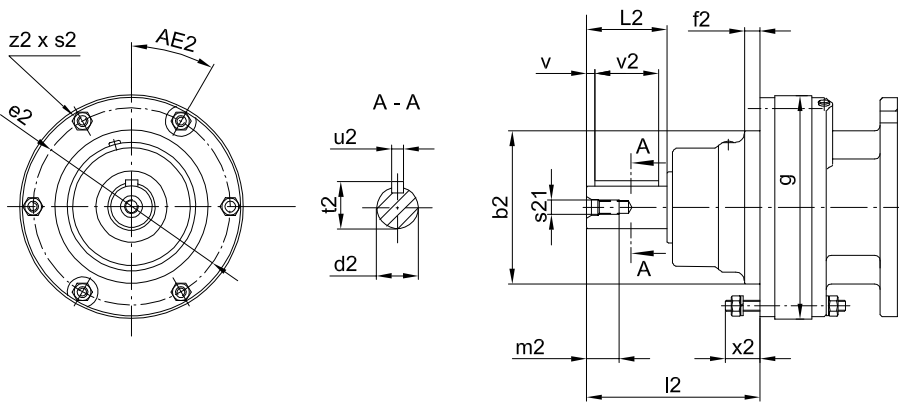
FLANGE MOUNTING (TYPE Y)



All sizes have 6 holes on the flange with the exception of sizes 607, 608, 609 & 610 which have 4.

Unit Size	Øa2	Øb2	c2	Ød2	Øe2	f2	Øg	l2	L2	m2	s2	s21	t2	u2	v	v2	AE2	kg
606	120	80 j6	8	14k6	100	3	110	39	30	12	9	M5	16.0	5	2.5	25	30°	5.5
607	160	110 j6	9	20k6	130	3	110	52	40	15	11	M6	22.5	6	4.0	32	45°	6.5
608	160	110 j6	9	25k6	130	3	134	63	50	22	11	M10	28.0	8	3.5	40	45°	13
609	160	110 j6	9	25k6	130	3	150	63	50	22	11	M10	28.0	8	3.5	40	45°	13
610	160	110 j6	9	30k6	130	3	150	73	60	22	11	M10	33.0	8	3.5	50	45°	15
611	200	130 j6	11	35k6	165	4	162	83	70	28	11	M12	38.0	10	7.0	56	30°	18
612	200	130 j6	13	35k6	165	4	204	84	70	28	11	M12	38.0	10	7.0	56	30°	31
613	260	200 f8	15	50k6	230	4	230	106	100	36	11	M16	53.5	14	10	80	0°	52
614	260	200 f8	15	50k6	230	4	230	106	100	36	11	M16	53.5	14	10	80	0°	53
616	340	270 f8	20	60h6	310	4	300	89	90	18	11	M10	64.0	18	0	80	0°	95

FLANGE MOUNTING (TYPE Z)



Unit Size	Øb2	Ød2	Øe2	f2	Øg	l2	L2	m2	s2	s21	t2	u2	v	v2	x2	z2	AE2	kg
606	80 g6	14k6	98	4	110	73	30	12	M6	M5	16.0	5	2.5	25	21	6	0°	5
607	80 g6	20k6	98	4	110	84	40	15	M6	M6	22.5	6	4.0	32	21	6	0°	5
608	95 g6	25k6	118	5	134	106	50	22	M8	M10	28.0	8	3.5	40	27	8	22.5°	12
609	105 g6	25k6	134	6	150	129	50	22	M8	M10	28.0	8	3.5	40	29	8	22.5°	12
610	105 g6	30k6	134	6	150	139	60	22	M8	M10	33.0	8	3.5	50	28	8	22.5°	14
611	115 g6	35k6	146	6	162	143	70	28	M8	M12	38.0	10	7.0	56	28	8	22.5°	16
612	140 g6	35k6	180	14	204	154	70	28	M10	M12	38.0	10	7.0	56	30	6	0°	28
613	165 g6	50k6	205	16	230	208	100	36	M10	M16	53.5	14	10	80	31	6	0°	47
614	165 g6	50k6	205	16	230	208	100	36	M10	M16	53.5	14	10	80	31	6	0°	48
616	200 g6	60h6	270	10	300	222	90	18	M12	M10	64.0	18	-	80	35	6	30°	84

TECHNICAL NOTES

Tolerances according to DIN ISO 286 part 2.
Keys and keyways according to DIN 6885

MOUNTING POSITIONS

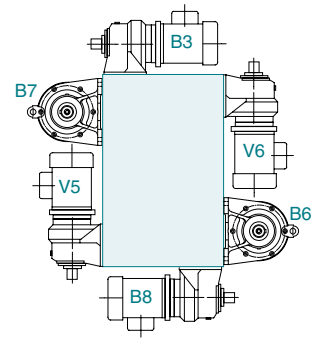
Foot mounted and Flange mounted units from size 606 - 612 are grease lubricated for life and suitable for any mounting position.

Units from size 613 - 616 are oil lubricated for Horizontal and vertical mounting.

Size 616 requires an additional oil pump and circulating pipe when used in the vertical position - please consult your local Authorised Distributor.

Size 613-616 Flange mounted units use special Ring Gear Housings.

FOOT MOUNTED



Horizontal Mounting

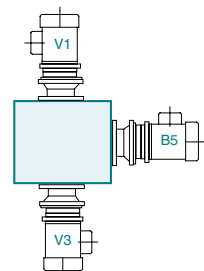
Approximate oil quantity (litres)

	B3	B6	B7	B8
613	0.7	0.7	0.7	0.7
614	0.7	0.7	0.7	0.7
616	1.4	1.4	1.4	1.4

Vertical Mounting

	V5	V6
613	Please consult your local Authorised Distributor	
614	Please consult your local Authorised Distributor	
616	Please consult your local Authorised Distributor	

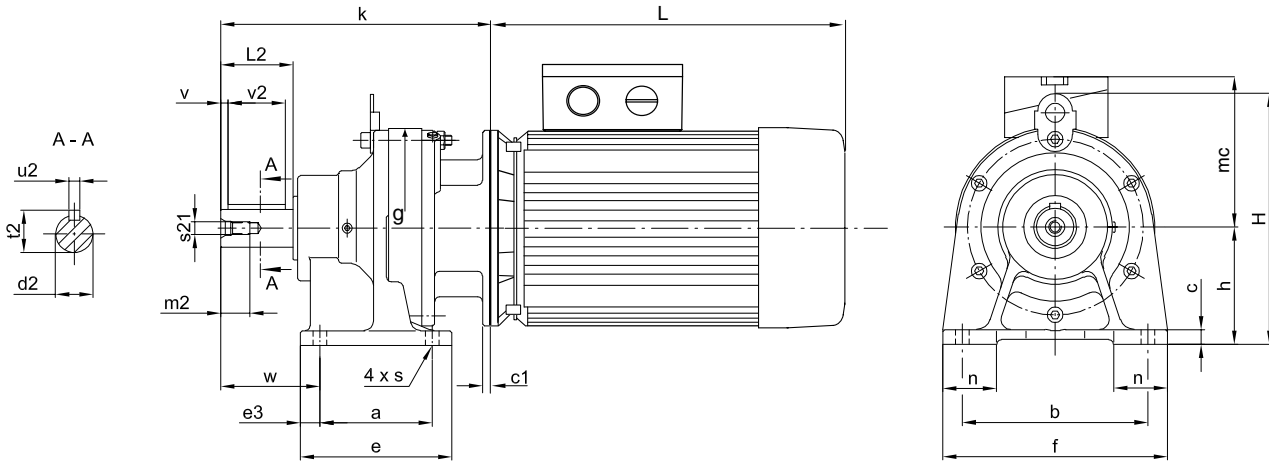
FLANGE MOUNTED



	B5	V1	V3
613	Please consult your local Authorised Distributor		
614	Please consult your local Authorised Distributor		
616	Please consult your local Authorised Distributor		

Cyclo Gearboxes : Dimensions (IEC) Foot Mounted

FOOT MOUNTING (TYPE dAX / dBX / dCX)



Unit Size	a	b	c	Ød2	e	e3	f	Øg	h	H	L2	m2	n	s	s21	t2	u2	v	v2	w	Weight ~kg
606DA	60	120	10	14k6	84	12	144	110	80	-	30	12	48	9	M5	16	5	2.5	25	46	6
607DA	60	120	10	20k6	84	12	144	110	80	-	40	15	48	9	M6	23	6	4	32	57	7
609DA	90	150	12	25k6	135	15	180	150	100	-	50	22	65	11	M10	28	8	3.5	40	75	14
610DA	90	150	12	30k6	135	15	180	150	100	-	60	22	40	11	M10	33	8	3.5	50	85	17
612DA	115	190	15	35k6	155	20	230	204	120	257	70	28	55	14	M12	38	10	7	56	97	28
612DB	115	190	15	35k6	155	20	230	204	120	257	70	28	55	14	M12	38	10	7	56	97	34
613DB	145	290	22	50k6	195	25	330	230	150	300	100	36	65	18	M16	53.5	14	10	80	130	50
613DC	145	290	22	50k6	195	25	330	230	150	300	100	36	65	18	M16	53.5	14	10	80	130	50
614DC	145	290	22	50k6	195	25	330	230	150	300	100	36	65	18	M16	53.5	14	10	80	130	50
616DB	150	370	25	60h6	238	44	410	300	160	353	90	18	75	18	M10	64	18	0	80	139	90
616DC	150	370	25	60h6	238	44	410	300	160	353	90	18	75	18	M10	64	18	0	80	139	100
617DC	275	380	30	70h6	335	30	430	340	200	418	90	24	80	22	M12	74.5	20	0	80	125	133
618DB	320	420	30	80h6	380	30	470	370	220	451	110	24	85	22	M12	85	22	0	100	145	190
619DA	380	480	35	95h6	440	30	530	430	250	531	135	34	90	26	M20	100	25	0	125	170	250
619DB	380	480	35	95h6	440	30	530	430	250	531	135	34	90	26	M20	100	25	0	125	170	260

All dimensions are in mm ~ Gearbox kg refers to the approximate weight without motor - see table below for additional motor weight

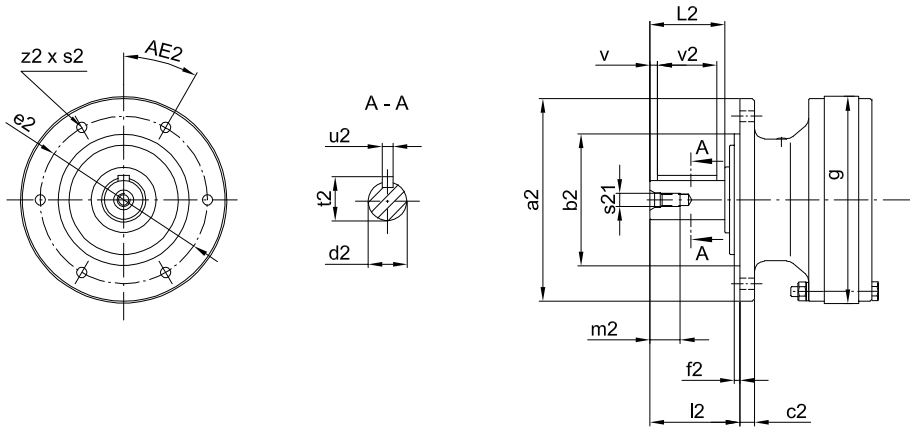
MOTOR OPTIONS AVAILABLE (using 4 pole motors)

Unit Size	kW	Frame	IEC	c1	k	L	mc	Motor kg
606DA	0.12	63K	B5	11	188	192	98	3.5
	0.18	63G	B5	11	188	192	98	4.0
607DA	0.12	63K	B5	11	199	192	98	3.5
	0.18	63G	B5	11	199	192	98	4.0
609DA	0.12	63K	B5	11	263	192	98	3.5
	0.18	63G	B5	11	263	192	98	4.0
	0.25	71K	B5	11	263	210	126	6.1
610DA	0.37	71J	B5	11	263	210	126	6.7
	0.12	63K	B5	11	287	192	98	3.5
612DA	0.18	63G	B5	11	287	192	98	4.0
	0.25	71K	B5	11	287	210	126	6.1
	0.37	71J	B5	11	287	210	126	6.7
612DB	0.12	63K	B5	11	313	192	98	3.5
	0.18	63G	B5	11	313	192	98	4.0
	0.25	71K	B5	11	313	210	126	6.1
613DB	0.37	71J	B5	11	313	210	126	6.7
	0.25	71K	B5	11	327	210	126	6.1
	0.37	71J	B5	11	327	210	126	6.7
	0.55	80K	B5	12	353	255	142	8.9
	0.75	80G	B5	12	353	255	142	9.6
614DC	1.1	90S	B5	12	353	265	160	13.8
	1.5	90L	B5	12	353	290	160	16.5
	0.12	63K	B5	11	393	192	98	3.5
	0.18	63G	B5	11	393	192	98	4.0
	0.25	71K	B5	11	393	210	126	6.1
619DA	0.37	71J	B5	11	393	210	126	6.7
	0.55	80K	B5	12	419	255	142	8.9
	0.75	80G	B5	12	419	255	142	9.6
	1.1	90S	B5	12	419	265	160	13.8
	1.5	90L	B5	12	419	290	160	16.5
619DB	0.25	71K	B5	11	407	210	126	6.1
	0.37	71J	B5	11	407	210	126	6.7
	0.55	80K	B5	12	433	255	142	8.9
	0.75	80G	B5	12	433	255	142	9.6
	1.1	90S	B5	12	433	265	160	13.8

Unit Size	kW	Frame	IEC	c1	k	L	mc	Motor kg
614DC	1.50	90L	B5	12	433	290	160	16.5
	2.20	100L	B5	14	433	325	165	21.5
	3.0	100Lx	B5	14	433	325	165	25.3
616DB	0.55	80K	B5	12	473	255	142	8.9
	0.75	80G	B5	12	473	255	142	9.6
	1.10	90S	B5	12	473	265	160	13.8
	1.50	90L	B5	12	473	290	160	16.5
	2.20	100L	B5	14	483	325	165	21.5
616DC	3.0	100Lx	B5	14	483	325	165	25.3
	4.0	112M	B5	14	483	325	165	25.3
	2.20	100L	B5	14	478	325	165	21.5
	3.0	100Lx	B5	14	478	325	165	25.3
	4.0	112M	B5	14	478	335	188	32.0
617DC	0.55	80K	B5	13	515	255	142	8.9
	0.75	80G	B5	13	515	255	142	9.6
	1.10	90S	B5	13	515	265	160	13.8
	1.50	90L	B5	13	515	290	160	16.5
	2.20	100L	B5	14	525	325	165	21.5
618DB	3.0	100Lx	B5	14	525	325	165	25.3
	4.0	112M	B5	14	525	335	188	32.0
	0.75	80G	B5	11	577	255	142	9.6
	1.10	90S	B5	11	577	265	160	13.8
	1.50	90L	B5	11	577	290	160	16.5
619DA	2.20	100L	B5	13	587	325	165	21.5
	3.0	100Lx	B5	13	587	325	165	25.3
	4.0	112M	B5	13	587	335	188	32.0
	5.50	132S	B5	17	613	392	208	47.0
	7.50	132M	B5	17	613	430	208	58.0
619DB	1.10	90S	B5	13	635	265	160	13.8
	1.50	90L	B5	13	635	290	160	16.5
	2.20	100L	B5	14	645	325	165	21.5
619DB	3.0	100Lx	B5	14	645	325	165	25.3
	4.0	112M	B5	14	645	335	188	32.0
	4.0	112M	B5	13	663	335	188	32.0
619DB	5.50	132S	B5	17	689	392	208	47.0
	7.50	132M	B5	17	689	430	208	58.0

Cyclo Gearboxes : Alternate Mounting Arrangements

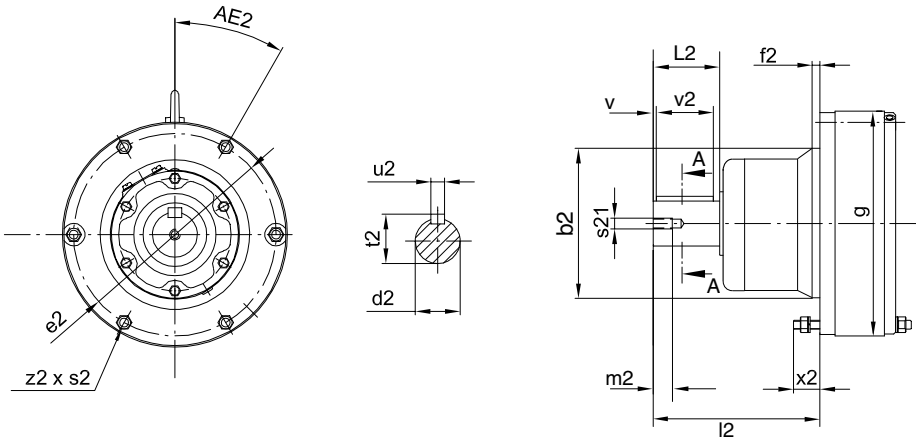
FLANGE MOUNTING (TYPE dAY / dBY / dCY)



All sizes have 6 holes on the flange with the exception of sizes 607, 608, 609 & 610 which have 4.

Unit Size	$\theta a2$	$\theta b2$	c2	$\theta d2$	$\theta e2$	f2	θg	l2	L2	m2	s2	s21	t2	u2	v	v2	z2	AE2
606DA	120	80 j6	8	14k6	100	3	110	39	30	12	9	M5	16.0	5	2.5	25	6	30°
607DA	160	110 j6	9	20k6	130	3	110	52	40	15	11	M6	22.5	6	4.0	32	6	45°
609DA	160	110 j6	9	25k6	130	3	150	63	50	22	11	M10	28.0	8	3.5	40	8	45°
610DA	160	110 j6	9	30k6	130	3	150	73	60	22	11	M10	33.0	8	3.5	50	8	45°
612D	200	130 j6	13	35k6	165	4	204	84	70	28	11	M12	38.0	10	7.0	56	6	30°
613D	260	200 f8	15	50k6	230	4	230	106	100	36	11	M16	53.5	14	10	80	6	0°
614D	260	200 f8	15	50k6	230	4	230	106	100	36	11	M16	53.5	14	10	80	6	0°
616D	340	270 f8	20	60h6	310	4	300	89	90	18	11	M10	64.0	18	0	80	6	0°
617D	400	316 f8	22	70h6	360	5	340	94	243	24	14	M12	74.5	20	0	80	8	22.5°
618D	430	345 f8	22	80h6	390	5	370	110	258	24	18	M12	85.0	22	0	100	8	22.5°
619D	490	400 f8	30	95h6	450	6	430	145	284	34	18	M20	100	25	0	125	12	15°

FACE MOUNTING (TYPE dAZ / dBZ / dCZ)



Unit Size	$\theta b2$	$\theta d2$	$\theta e2$	f2	θg	l2	L2	m2	s2	s21	t2	u2	v	v2	x2	z2	AE2
606 DA	80 g6	14 k6	98	4	110	73	30	12	M6	M5	16.0	5	2.5	25	22	6	0°
607 DA	80 g6	20 k6	98	4	110	84	40	15	M6	M6	22.5	6	4.0	32	22	6	0°
609 DA	105 g6	25 k6	134	6	150	129	50	22	M8	M10	28.0	8	3.5	40	25	8	22.5°
610 DA	105 g6	30 k6	134	6	150	139	60	22	M8	M10	33.0	8	3.5	50	26	8	22.5°
612 D	140 g6	35 k6	180	14	204	154	70	28	M10	M12	38.0	10	7.0	56	30	6	0°
613 D	165 g6	50 k6	205	16	230	208	100	36	M10	M16	53.5	14	10.0	80	31	6	0°
614 D	165 g6	50 k6	205	16	230	208	100	36	M10	M16	53.5	14	10.0	80	31	6	0°
616 D	200 g6	60 h6	270	10	300	222	90	18	M12	M10	64.0	18	0	80	36	6	30°
617 D	250 g6	70 h6	300	12	340	262	90	24	M12	M12	74.5	20	0	80	41	8	22.5°
618 D	280 g6	80 h6	330	12	370	299	110	24	M12	M12	85.0	22	0	100	42	8	22.5°
619 D	320 g6	95 h6	380	10	430	365	135	34	M12	M20	100	25	0	125	41	12	15°

TECHNICAL NOTES

Tolerances according to DIN ISO 286 part 2.
Keys and keyways according to DIN 6885.

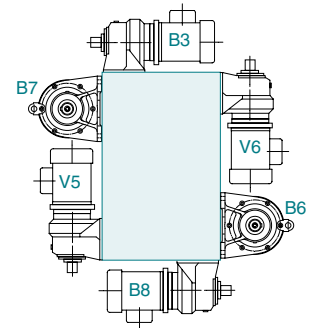
MOUNTING POSTIONS

Foot mounted units from size 606DA - 612DB are grease lubricated for life and suitable for any mounting position.

Other sizes are either grease or oil lubricated based upon mounting position - typically, Horizontally mounted units up to 616DB are grease lubricated and larger units are oil lubricated.

Vertical mounted units are grease lubricated with the exclusion of 616DC - 619DB that use special oil lubrication systems.

FOOT MOUNTED



Horizontal Mounting

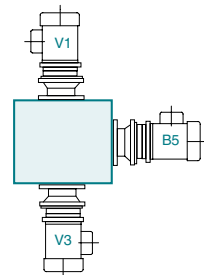
Approximate oil quantity (litres)

	B3	B6	B7	B8
616DC	0.7	0.7	0.7	Please consult your local Authorised Distributor
617DC	0.7	0.7	0.7	
618DB	1.4	1.4	1.4	
619DA	5.8	5.8	5.8	
619DB	6.0	6.0	6.0	

Vertical Mounting

	V5	V6	Ratios Applicable
616DC	Please consult your local Authorised Distributor	Please consult your local Authorised Distributor	<473 : 1
617DC			<841 : 1
618DC			<1015 : 1
619DA			<2065 : 1
619DB			<2065 : 1

FLANGE MOUNTED

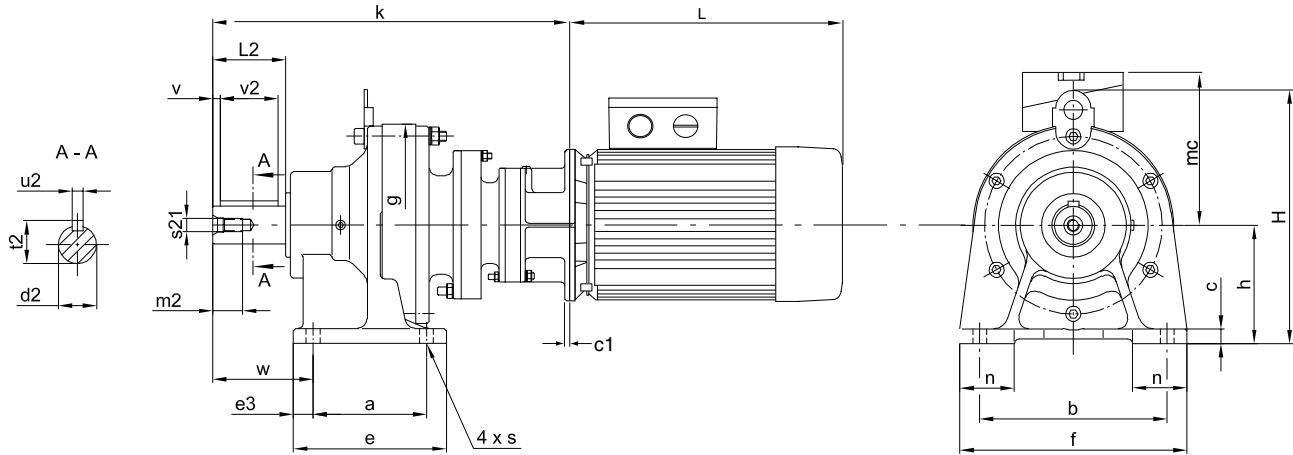


	B5	V1	V3
616DC	Please consult your local Authorised Distributor		
617DC			
618DC			
619DA			
619DB			

Specially modified ring gear housing is required

Cyclo Gearboxes : Dimensions (IEC) Foot Mounted

FOOT MOUNTING (TYPE TA_X / TB_X / TC_X / TD_X)



Unit Size	a	b	c	Ød2	e	e3	f	Øg	h	H	L2	m2	n	s	s21	t2	u2	v	v2	w	Weight ~kg
606TA	60	120	10	14 k6	84	12	144	110	80	-	30	12	48	9	M5	16	5	2.5	25	46	8.0
607TA	60	120	10	20 k6	84	12	144	110	80	-	40	15	48	9	M6	23	6	4	32	57	9.0
609TA	90	150	12	25 k6	135	15	180	150	100	-	50	22	65	11	M10	28	8	3.5	40	75	16.0
610TA	90	150	12	30 k6	135	15	180	150	100	-	60	22	40	11	M10	33	8	3.5	50	85	18.0
612TA	115	190	15	35 k6	155	20	230	204	120	257	70	28	55	14	M12	38	10	7	56	97	30.0
612TB	115	190	15	35 k6	155	20	230	204	120	257	70	28	55	14	M12	38	10	7	56	97	36.0
613TA	145	290	22	50 k6	195	25	330	230	150	300	100	36	65	18	M16	54	14	10	80	130	50.0
613TB	145	290	22	50 k6	195	25	330	230	150	300	100	36	65	18	M16	54	14	10	80	130	52.0
614TA	145	290	22	50 k6	195	25	330	230	150	300	100	36	65	18	M16	54	14	10	80	130	50.0
614TB	145	290	22	50 k6	195	25	330	230	150	300	100	36	65	18	M16	54	14	10	80	130	52.0
616TA	150	370	25	60 h6	238	44	410	300	160	367	90	18	75	18	M10	64	18	0	80	139	84.0
616TD	150	370	25	60 h6	238	44	410	300	160	367	90	18	75	18	M10	64	18	0	80	139	103
617TA	275	380	30	70 h6	335	30	430	340	200	429	90	24	80	22	M12	74.5	20	0	80	125	125
617TD	275	380	30	70 h6	335	30	430	340	200	429	90	24	80	22	M12	74.5	20	0	80	125	137
618TA	320	420	30	80 h6	380	30	470	370	220	467	110	24	85	22	M12	85	22	0	100	145	178
618TC	320	420	30	80 h6	380	30	470	370	220	467	110	24	85	22	M12	85	22	0	100	145	192
619TA	380	480	35	95 h6	440	30	530	430	250	538	135	34	90	26	M20	100	25	0	125	170	255
619TB	380	480	35	95 h6	440	30	530	430	250	538	135	34	90	26	M20	100	25	0	125	170	262

All dimensions are in mm ~ Gearbox kg refers to the approximate weight without motor - see table below for additional motor weight

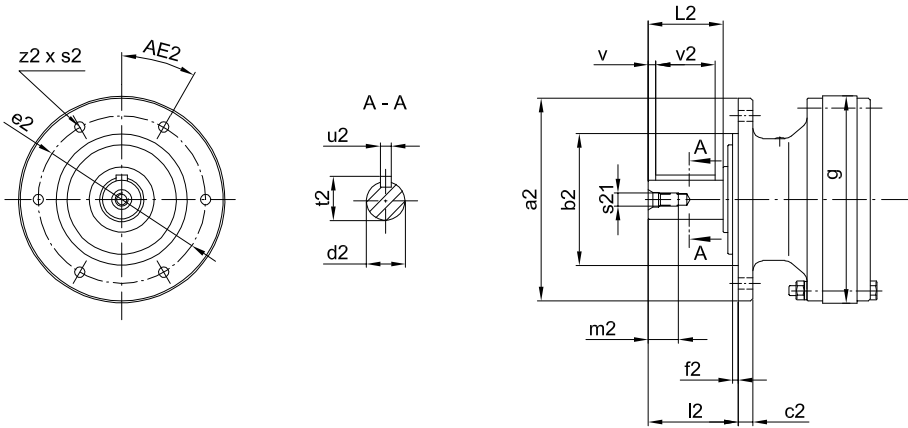
MOTOR OPTIONS AVAILABLE (using 4 pole motors)

Unit Size	kW	Frame	IEC	c1	k	L	mc	Motor kg
606TA	0.12	63K	B5	11	222	192	98	3.5
607TA	0.12	63K	B5	11	233	192	98	3.5
609TA	0.12	63K	B5	11	297	192	98	3.5
610TA	0.12	63K	B5	11	321	192	98	3.5
612TA	0.12	63K	B5	11	347	192	98	3.5
612TB	0.18	63G	B5	11	347	192	98	4
612TA	0.12	63K	B5	11	373	192	98	3.5
613TA	0.18	63G	B5	11	375	192	98	4
613TB	0.18	63G	B5	11	439	192	98	4
614TA	0.18	63G	B5	11	375	192	98	4
614TB	0.18	63G	B5	11	439	192	98	4
616TA	0.18	63G	B5	11	469	192	98	4
616TD	0.25	71K	B5	11	469	210	126	6.1
616TD	0.18	63G	B5	11	542	192	98	4

Unit Size	kW	Frame	IEC	c1	k	L	mc	Motor kg
617TA	0.18	63G	B5	11	516	192	98	4
617TA	0.37	71J	B5	11	516	210	126	6.7
617TD	0.18	63G	B5	11	589	192	98	4
618TA	0.18	63G	B5	11	539	192	98	4
618TA	0.37	71J	B5	11	539	210	126	6.7
618TC	0.18	63G	B5	11	661	192	98	4
619TA	0.18	63G	B5	11	681	192	98	4
619TA	0.37	71J	B5	11	681	210	126	6.7
619TB	0.18	63G	B5	11	737	192	98	4
619TB	0.75	80G	B5	11	737	255	142	9.6

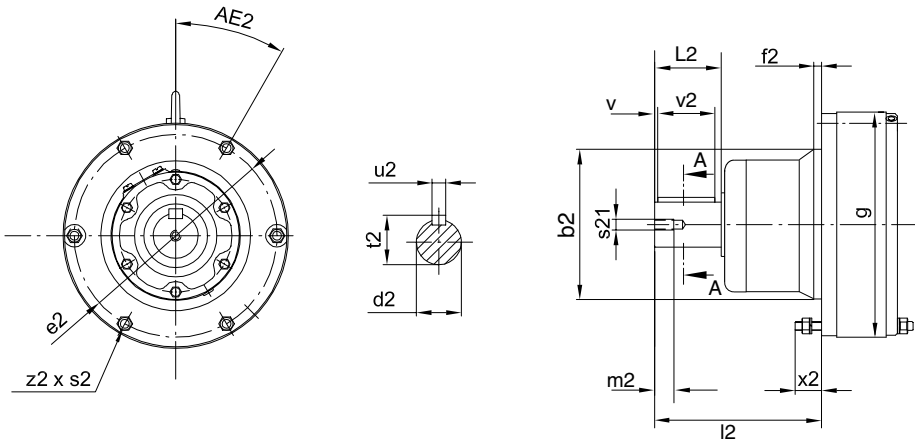
Cyclo Gearboxes : Alternate Mounting Arrangements

FLANGE MOUNTING (TYPE TA_Y / TB_Y / TC_Y / TD_Y)



Unit Size	Øa2	Øb2	c2	Ød2	Øe2	f2	Øg	l2	L2	m2	s2	s21	t2	u2	v	v2	z2	AE2
606TA	120	80 j6	8	Ø14k6	100	3	110	39	30	12	9	M5	16.0	5	2.5	25	6	30°
607TA	160	110 j6	9	Ø20k6	130	3	110	52	40	15	11	M6	22.5	6	4.0	32	6	45°
609TA	160	110 j6	9	Ø25k6	130	3	150	63	50	22	11	M10	28.0	8	3.5	40	8	45°
610TA	160	110 j6	9	Ø30k6	130	3	150	73	60	22	11	M10	33.0	8	3.5	50	8	45°
612T	200	130 j6	13	Ø35k6	165	4	204	84	70	28	11	M12	38.0	10	7.0	56	8	30°
613T	260	200 f8	15	Ø50k6	230	4	230	106	100	36	11	M16	53.5	14	10	80	6	0°
614T	260	200 f8	15	Ø50k6	230	4	230	106	100	36	11	M16	53.5	14	10	80	6	0°
616T	340	270 f8	20	Ø60h6	310	4	300	89	90	18	11	M10	64.0	18	0	80	6	0°
617T	400	316 f8	22	Ø70h6	360	5	340	94	243	24	14	M12	74.5	20	0	80	8	22.5°
618T	430	345 f8	22	Ø80h6	390	5	370	110	258	24	18	M12	85.0	22	0	100	8	22.5°
619T	490	400 f8	30	Ø95h6	450	6	430	145	284	34	18	M20	100	25	0	125	12	15°

FACE MOUNTING (TYPE TA_Z / TB_Z / TC_Z / TD_Z)



Unit Size	Øb2	Ød2	Øe2	f2	Øg	l2	L2	m2	s2	s21	t2	u2	v	v2	x2	z2	AE2
606 TA	80 g6	14 k6	98	4	110	73	30	12	M6	M5	16.0	5	2.5	25	22	6	0°
607 TA	80 g6	20 k6	98	4	110	84	40	15	M6	M6	22.5	6	4.0	32	22	6	0°
609 TA	105 g6	25 k6	134	6	150	129	50	22	M8	M10	28.0	8	3.5	40	25	8	22.5°
610 TA	105 g6	30 k6	134	6	150	139	60	22	M8	M10	33.0	8	3.5	50	26	8	22.5°
612 T	140 g6	35 k6	180	14	204	154	70	28	M10	M12	38.0	10	7.0	56	30	6	0°
613 T	165 g6	50 k6	205	16	230	208	100	36	M10	M16	53.5	14	10.0	80	31	6	0°
614 T	165 g6	50 k6	205	16	230	208	100	36	M10	M16	53.5	14	10.0	80	31	6	0°
616 T	200 g6	60 h6	270	10	300	222	90	18	M12	M10	64.0	18	0	80	36	6	30°
617 T	250 g6	70 h6	300	12	340	262	90	24	M12	M12	74.5	20	0	80	41	8	22.5°
618 T	280 g6	80 h6	330	12	370	299	110	24	M12	M12	85.0	22	0	100	42	8	22.5°
619 T	320 g6	95 h6	380	10	430	365	135	34	M12	M20	100	25	0	125	41	12	15°

TECHNICAL NOTES

Tolerances according to DIN ISO 286 part 2.
Keys and keyways according to DIN 6885.

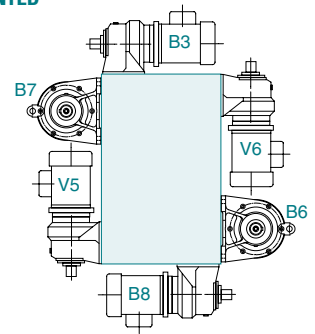
MOUNTING POSITIONS

All Three-stage CYCLO units are grease lubricated.

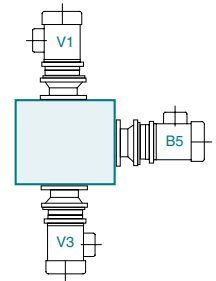
Size 606TA - 612TB are suitable for all mounting positions and are maintenance free.

Sizes 613TA and above are also grease lubricated for all mounting positions but on units mounted vertically, the gearheads have double sealing on the output and shielded bearings.

FOOT MOUNTED

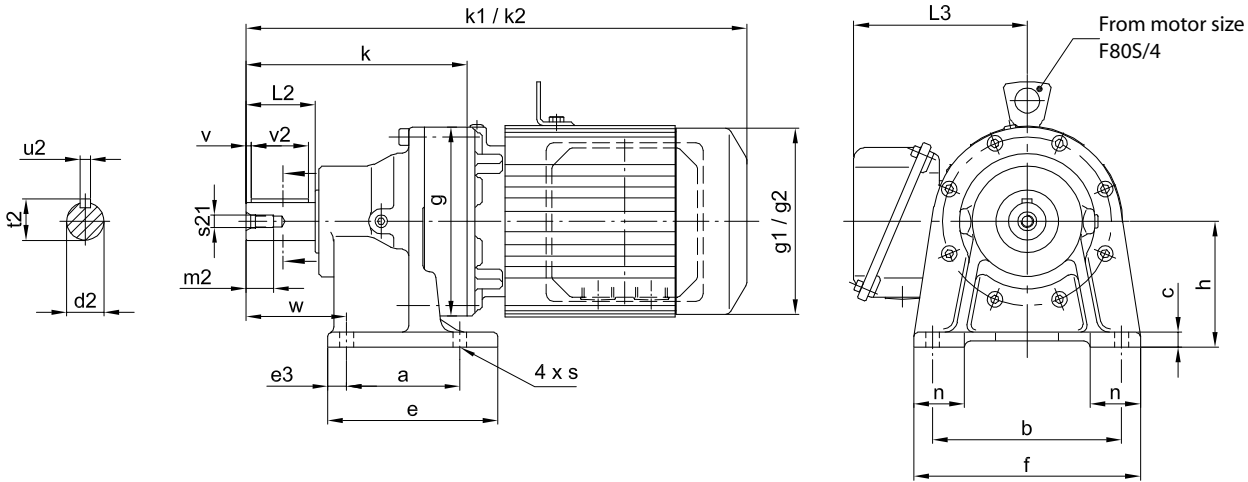


FLANGE MOUNTED



Cyclo Gearboxes : Dimensions (Integrated Motor) Foot Mounted

FOOT MOUNTING (TYPE A)



Unit Size	a	b	c	Ød2	e	e3	f	Øg	h	k	L2	m2	n	Øs	s21	t2	u2	v	v2	w
606	60	120	10	14k6	84	12	144	110	80	97	30	12	48	9	M5	16	5	2.5	25	46
607	60	120	10	20k6	84	12	144	110	80	108	40	51	48	9	M6	23	6	4	32	57
608	75	120	13	25k6	99	12	144	134	90	144	50	22	49	9	M10	28	8	3.5	40	67
609	90	150	12	25k6	135	15	180	150	100	157	50	22	65	11	M10	28	8	3.5	40	75
610	90	150	12	30k6	135	15	180	150	100	181	60	22	40	11	M10	33	8	3.5	50	85
611	90	150	12	35k6	135	15	180	162	120	195	70	28	45	11	M12	38	10	7	56	95
612	115	190	15	35k6	155	20	230	204	120	201	70	28	55	14	M12	38	10	7	56	97
613	145	290	22	50k6	195	25	330	230	150	270	100	36	65	18	M16	54	14	10	80	130
614	145	290	22	50k6	195	25	330	230	150	270	100	36	65	18	M16	54	14	10	80	130
616	150	370	25	60h6	238	44	410	300	160	308	90	18	75	18	M10	64	18	0	80	139

All dimensions are in mm. Units from size 612 have a lifting eye fitted to the gearhead rather than the motor - please consult your local authorised distributor.

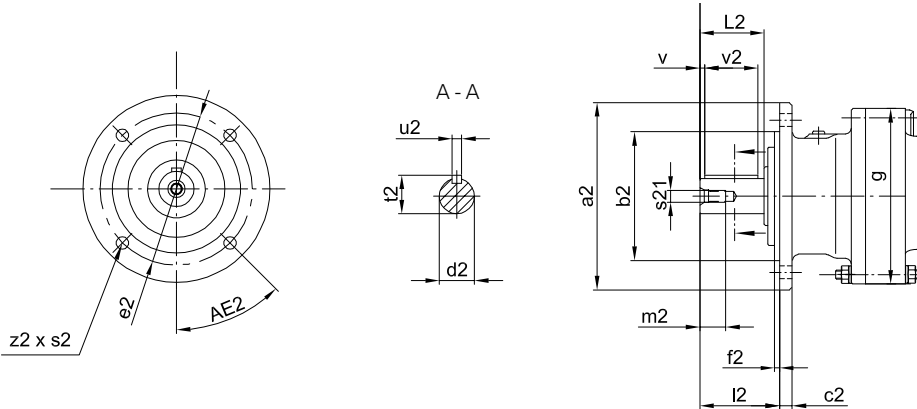
MOTOR OPTIONS AVAILABLE (using 4 pole motors)

Unit Size	kW	Frame	Standard			Braked			L3
			Øg1	k1	kg	Øg2	k2	kg	
606	0.12	F63S/4	119	259	6	124	266	7	128
	0.18	F63M/4	124	277	7	124	305	8	128
	0.25	F63M/4	124	277	7	124	305	8	128
607	0.12	F63S/4	119	270	6	124	277	7	128
	0.18	F63M/4	124	288	7	124	316	8	128
	0.25	F63M/4	124	288	7	124	316	8	128
608	0.37	F71M/4	124	308	8	124	336	9	128
	0.12	F63S/4	119	301	9	124	308	10	128
	0.18	F63M/4	124	319	10	124	347	11	128
	0.25	F63M/4	124	319	10	124	347	11	128
	0.37	F71M/4	124	339	12	124	367	13	128
609	0.55	F80S/4	148	376	16	148	419	17	138
	0.75	F80M/4	148	376	16	148	419	17	138
	0.12	F63S/4	119	318	11	124	326	13	128
	0.18	F63M/4	124	336	12	124	365	14	128
	0.25	F63M/4	124	336	12	124	365	14	128
610	0.37	F71M/4	124	356	13	124	385	15	128
	0.55	F80S/4	148	394	17	148	437	20	138
	0.75	F80M/4	148	394	17	148	437	20	138
	1.1	F90S/4	160	427	20	160	489	25	143
	1.5	F90L/4	160	427	20	160	489	25	143
	0.18	F63M/4	124	360	18	124	389	19	128
	0.25	F63M/4	124	360	18	124	389	19	128
	0.37	F71M/4	124	380	19	124	409	20	128
	0.55	F80S/4	148	418	22	148	461	25	138
	0.75	F80M/4	148	418	22	148	461	25	138
611	1.1	F90S/4	160	451	26	160	513	31	143
	1.5	F90L/4	160	451	26	160	513	31	143
	2.2	F100L/4	173	471	30	173	534	36	150
	0.37	F71M/4	124	391	19	124	419	20	128
	0.55	F80S/4	148	428	22	148	471	25	138
	0.75	F80M/4	148	428	22	148	471	25	138
	1.1	F90S/4	160	461	25	160	523	30	143
	1.5	F90L/4	160	461	25	160	523	30	143
	2.2	F100L/4	173	481	29	173	544	35	150
	3.0	F112S/4	212	516	39	212	588	49	166
4.0	F112M/4	212	516	39	212	588	49	166	

Unit Size	kW	Frame	Standard			Braked			L3
			Øg1	k1	kg	Øg2	k2	kg	
612	0.37	F71M/4	124	406	29	124	434	31	128
	0.55	F80S/4	148	438	31	148	481	33	138
	0.75	F80M/4	148	438	31	148	481	33	138
	1.1	F90S/4	160	471	35	160	533	40	143
	1.5	F90L/4	160	471	35	160	533	40	143
	2.2	F100L/4	173	491	39	173	554	46	150
	3.0	F112S/4	212	514	49	212	586	59	166
	4.0	F112M/4	212	514	49	212	586	59	166
	5.5	F132S/4	212	558	56	212	630	66	166
	0.75	F80M/4	148	507	50	148	550	53	138
613	1.1	F90S/4	160	540	54	160	602	59	143
	1.5	F90L/4	160	540	54	160	602	59	143
	2.2	F100L/4	173	560	57	173	623	64	150
	3.0	F112S/4	212	583	67	212	655	77	166
	4.0	F112M/4	212	583	67	212	655	77	166
	5.5	F132S/4	212	627	74	212	699	84	166
	7.5	F132M/4	251	650	89	251	745	107	211
	11.0	F160M/4	251	710	103	251	805	120	211
	0.75	F80M/4	148	507	51	148	550	54	138
	1.1	F90S/4	160	540	55	160	602	60	143
614	1.5	F90L/4	160	540	55	160	602	60	143
	2.2	F100L/4	173	560	58	173	623	65	150
	3.0	F112S/4	212	583	68	212	655	78	166
	4.0	F112M/4	212	583	68	212	655	78	166
	5.5	F132S/4	212	627	75	212	699	85	166
	7.5	F132M/4	251	650	90	251	745	108	211
	11.0	F160M/4	251	710	103	251	805	121	211
	15.0	G160L/4	323	800	155	323	890	188	261
	1.5	F90L/4	160	583	93	160	645	98	143
	2.2	F100L/4	173	598	96	173	661	102	150
616	3.0	F112S/4	212	621	105	212	693	115	166
	4.0	F112M/4	212	621	105	212	693	115	166
	5.5	F132S/4	212	665	112	212	737	122	166
	7.5	F132M/4	251	693	128	251	788	145	211
	11.0	F160M/4	251	753	142	251	848	159	211
	15.0	G160L/4	323	838	195	323	928	228	261

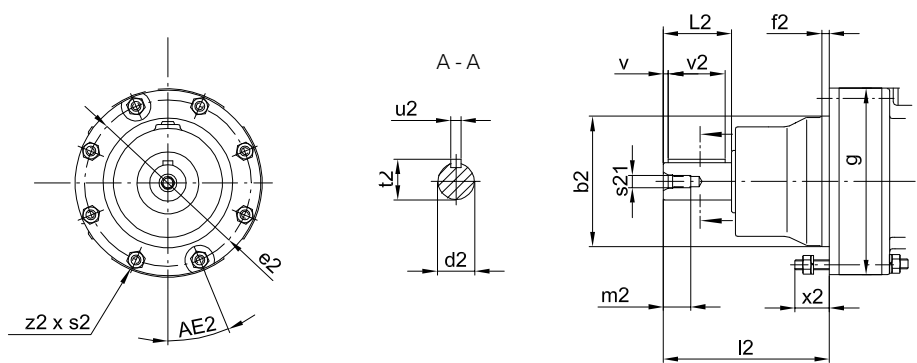
Cyclo Gearboxes : Alternate Mounting Arrangements

FLANGE MOUNTING (TYPE B)



Unit Size	Øa2	Øb2	c2	Ød2	Øe2	f2	Øg	l2	L2	m2	s2	s21	t2	u2	v	v2	z2	AE2
606	120	80 j6	8	Ø14k6	100	3	Ø110	39	30	12	9	M5	16.0	5	2.5	25	6	30°
607	160	110 j6	9	Ø20k6	130	3	Ø110	52	40	15	11	M6	22.5	6	4.0	32	6	45°
608	160	110 j6	9	Ø25k6	130	3	Ø134	63	50	22	11	M10	28.0	8	3.5	40	8	45°
609	160	110 j6	9	Ø25k6	130	3	Ø150	63	50	22	11	M10	28.0	8	3.5	40	8	45°
610	160	110 j6	9	Ø30k6	130	3	Ø150	73	60	22	11	M10	33.0	8	3.5	50	8	45°
611	200	130 j6	11	Ø35k6	165	4	Ø162	83	70	28	11	M12	38.0	10	7.0	56	8	30°
612	200	130 j6	13	Ø35k6	165	4	Ø204	84	70	28	11	M12	38.0	10	7.0	56	6	30°
613	260	200 f8	15	Ø50k6	230	4	Ø230	106	100	36	11	M16	53.5	14	10	80	6	0°
614	260	200 f8	15	Ø50k6	230	4	Ø230	106	100	36	11	M16	53.5	14	10	80	6	0°
616	340	270 f8	20	Ø60h6	310	4	Ø300	89	90	18	11	M10	64.0	18	0	80	6	0°

FACE MOUNTING (TYPE C)



Unit Size	Øb2	Ød2	Øe2	f2	Øg	l2	L2	m2	s2	s21	t2	u2	v	v2	x2	z2	AE2
606	80 g6	Ø14k6	98	4	110	73	30	12	M6	M5	12.0	5	2.5	25	21	6	0°
607	80 g6	Ø20k6	98	4	110	84	40	15	M6	M6	23.0	6	4.0	32	21	6	0°
608	95 g6	Ø25k6	118	5	134	106	50	22	M8	M10	28.0	8	3.5	40	27	8	22.5°
609	105 g6	Ø25k6	134	6	150	129	50	22	M8	M10	28.0	8	3.5	40	29	8	22.5°
610	105 g6	Ø30k6	134	6	150	139	60	22	M8	M10	33.0	8	3.5	50	28	8	22.5°
611	115 g6	Ø35k6	146	6	162	143	70	28	M8	M12	38.0	10	7.0	56	28	8	22.5°
612	140 g6	Ø35k6	180	14	204	154	70	28	M10	M12	38.0	10	7.0	56	30	6	0°
613	165 g6	Ø50k6	205	16	230	208	100	36	M10	M16	54.0	14	10	80	31	6	0°
614	165 g6	Ø50k6	205	16	230	208	100	36	M10	M16	54.0	14	10	80	31	6	0°
616	200 g6	Ø60h6	270	10	300	222	90	18	M12	M10	64.0	18	-	80	35	6	30°

TECHNICAL NOTES

Tolerances according to DIN ISO 286 part 2.
Keys and keyways according to DIN 6885.

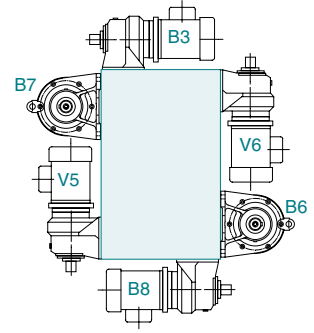
MOUNTING POSITIONS

Foot mounted units from size 606 - 612 are grease lubricated for life and suitable for any mounting position. Units from size 613 - 616 are oil lubricated for Horizontal and vertical mounting.

Size 616 requires an additional oil pump and circulating pipe when used in the vertical position - please consult your local authorised distributor.

Size 613-616 Flange mounted units use special Ring Gear Housings.

FOOT MOUNTED



Horizontal Mounting

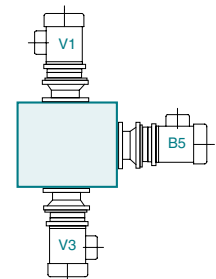
Approximate oil quantity (litres)

	B3	B6	B7	B8
613	0.7	0.7	0.7	0.7
614	0.7	0.7	0.7	0.7
616	1.4	1.4	1.4	1.4

Vertical Mounting

	V5	V6
613	Please consult your local	
614	Authorised Distributor	
616	Authorised Distributor	

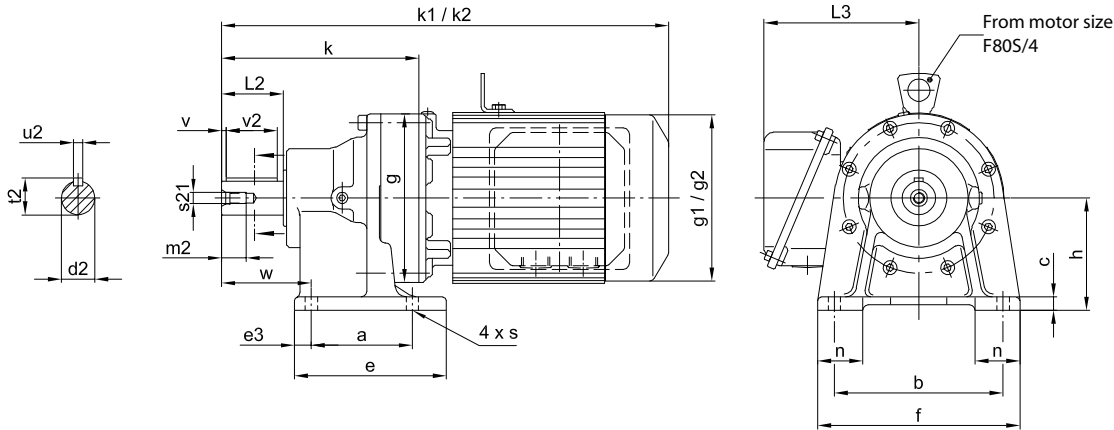
FLANGE MOUNTED



	B5	V1	V3
613	Please consult your local Authorised Distributor as a special ring gear housing is required for flange and face mounted units.		
614			
616			

Cyclo Gearboxes : Dimensions (Integrated Motor) Foot Mounted

FOOT MOUNTING (TYPE dAA / dVA / dCA)



Unit Size	a	b	c	Ød2	e	e3	f	Ø g	h	H	k	L2	m2	n	Øs	s21	t2	u2	v	v2	w
606DA	60	120	10	14k6	84	12	144	110	80	-	131	30	12	48	9	M5	16.0	5	2.5	25	46
607DA	60	120	10	20k6	84	12	144	110	80	-	142	40	15	48	9	M6	23.0	6	4	32	57
609DA	90	150	12	25k6	135	15	180	150	100	-	206	50	22	65	11	M10	28.0	8	3.5	40	75
610DA	90	150	12	30k6	135	15	180	150	100	-	230	60	22	40	11	M10	33.0	8	3.5	50	85
612DA	115	190	15	35k6	155	20	230	204	120	257	256	70	28	55	14	M12	38.0	10	7	56	97
612DB	115	190	15	35k6	155	20	230	204	120	257	267	70	28	55	14	M12	38.0	10	7	56	97
613DB	145	290	22	50k6	195	25	330	230	150	300	334	100	36	65	18	M16	53.5	14	10	80	130
613DC	145	290	22	50k6	195	25	330	230	150	300	348	100	36	65	18	M16	53.5	14	10	80	130
614DC	145	290	22	50k6	195	25	330	230	150	300	348	100	36	65	18	M16	53.5	14	10	80	130
616DB	150	370	25	60h6	238	44	410	300	160	353	388	90	18	75	18	M10	64.0	18	0	80	139
616DC	150	370	25	60h6	238	44	410	300	160	353	390	90	18	75	18	M10	64.0	18	0	80	139
617DC	275	380	30	70h6	335	30	430	340	200	418	437	90	24	80	22	M12	74.5	20	0	80	125
618DB	320	420	30	80h6	380	30	470	370	220	451	496	496	24	85	22	M12	85.0	22	0	100	145

All dimensions are in mm.

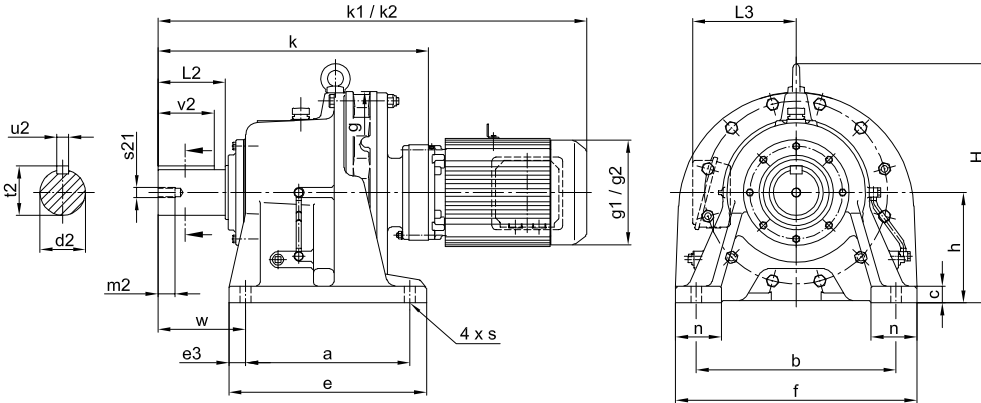
MOTOR OPTIONS AVAILABLE (using 4 pole motors)

Unit Size	kW	Frame	Standard			Braked			L3
			Øg1	k1	kg	Øg2	k2	kg	
606DA	0.12	F63S/4	119	292	8	124	300	9	128
607DA	0.12	F63S/4	119	303	8	124	311	9	128
	0.18	F63M/4	124	321	9	124	350	10	128
609DA	0.12	F63S/4	119	367	16	124	375	17	128
	0.18	F63M/4	124	385	17	124	414	18	128
	0.25	F63M/4	124	385	17	124	414	18	128
610DA	0.37	F71M/4	124	405	18	124	434	19	128
	0.12	F63S/4	119	391	18	124	399	19	128
	0.18	F63M/4	124	409	19	124	438	20	128
612DA	0.25	F63M/4	124	435	30	124	464	31	128
	0.37	F71M/4	124	429	20	124	458	21	128
	0.12	F63S/4	119	417	29	124	425	30	128
612DB	0.12	F63S/4	119	424	32	124	436	34	128
	0.18	F63M/4	124	447	33	124	475	35	128
	0.25	F63M/4	124	447	33	124	475	35	128
	0.37	F71M/4	124	467	34	124	495	36	128
	0.55	F80S/4	148	504	38	148	547	41	138
613DB	0.75	F80M/4	148	504	38	148	547	41	138
	1.1	F90S/4	160	537	41	160	599	46	143
	1.5	F90L/4	160	537	41	160	599	46	143
	0.12	F63S/4	119	495	47	124	503	49	128
	0.18	F63M/4	124	513	48	124	542	50	128
613DC	0.25	F63M/4	124	513	48	124	542	50	128
	0.37	F71M/4	124	533	49	124	562	51	128
	0.55	F80S/4	148	571	53	148	614	56	138
	0.75	F80M/4	148	571	53	148	614	56	138
	1.1	F90S/4	160	604	56	160	666	61	143
618DB	1.5	F90L/4	160	604	56	160	666	61	143
	0.55	F80S/4	148	585	55	148	628	58	138
	0.75	F80M/4	148	585	55	148	628	58	138
	1.1	F90S/4	160	618	59	160	680	64	143
	1.5	F90L/4	160	618	59	160	680	64	143

Unit Size	kW	Frame	Standard			Braked			L3
			Øg1	k1	kg	Øg2	k2	kg	
614DC	0.18	F63M/4	124	527	50	124	556	52	128
	0.25	F63M/4	124	527	50	124	556	52	128
	0.37	F71M/4	124	547	51	124	576	53	128
	0.55	F80S/4	148	585	55	148	628	58	138
	0.75	F80M/4	148	585	55	148	628	58	138
	1.1	F90S/4	160	618	59	160	680	64	143
	1.5	F90L/4	160	618	59	160	680	64	143
	2.2	F100L/4	173	638	63	173	701	69	150
616DB	0.18	F63M/4	124	568	92	124	596	93	128
	0.25	F63M/4	124	568	92	124	596	93	128
	0.37	F71M/4	124	588	93	124	616	94	128
	0.55	F80S/4	148	625	96	148	668	99	138
	0.75	F80M/4	148	625	96	148	668	99	138
	1.1	F90S/4	160	658	100	160	720	105	143
616DC	1.5	F90L/4	160	658	100	160	720	105	143
	2.2	F100L/4	173	678	104	173	741	110	150
	2.2	F100L/4	173	680	110	173	743	117	150
	3	F112S/4	212	703	120	212	775	130	166
	4	F112M/4	212	703	120	212	775	130	166
617DC	5.5	F132S/4	212	747	127	212	819	137	166
	0.37	F71M/4	124	641	133	124	670	135	128
	0.55	F80S/4	148	674	137	148	717	140	138
	0.75	F80M/4	148	674	137	148	717	140	138
	1.1	F90S/4	160	707	140	160	769	145	143
	1.5	F90L/4	160	707	140	160	769	145	143
	2.2	F100L/4	173	727	144	173	790	151	150
	3	F112S/4	212	750	154	212	822	164	166
	4	F112M/4	212	750	154	212	822	164	166
	5.5	F132S/4	212	794	161	212	866	171	166
618DB	0.75	F80M/4	148	733	189	148	776	192	138
	1.1	F90S/4	160	766	192	160	828	197	143
	1.5	F90L/4	160	766	192	160	828	197	143
	2.2	F100L/4	173	786	196	173	849	203	166
	3	F112S/4	212	809	206	212	881	216	166
	4	F112M/4	212	809	206	212	881	216	166
	5.5	F132S/4	212	853	213	212	925	223	166
	7.5	F132M/4	251	876	228	251	971	246	211
	11	F160M/4	251	936	242	251	1031	260	211

Cyclo Gearboxes : Dimensions (Integrated Motor) Foot Mounted

FOOT MOUNTING (TYPE dAA / dB / dCA)



Unit Size	a	b	c	Ød2	e	e3	f	Øg	h	H	k	L2	m2	n	Øs	s21	t2	u2	v2	w
619DA	380	480	35	95h6	440	30	530	430	250	531	557	135	34	90	26	M20	100	25	125	170
619DB	380	480	35	95h6	440	30	530	430	250	531	572	135	34	90	26	M20	100	25	125	170
620DB	360	440	35	100h6	440	40	530	448	250	530	624	165	34	100	26	M20	106	28	165	215
621DA	395	480	40	110h6	475	40	580	485	265	575	651	165	34	110	26	M20	116	28	165	210
622DA	420	540	40	120h6	520	50	620	526	280	610	692	165	34	115	33	M20	127	32	165	230
622DB	420	540	40	120h6	520	50	620	526	280	610	735	165	34	115	33	M20	127	32	165	230
623DA	460	580	45	130h6	560	50	670	562	300	667	778	200	41	120	33	M24	137	32	200	260
624DA	480	630	45	140h6	580	50	720	614	335	729	816	200	41	128	39	M24	148	36	200	263
625DA	520	670	50	160h6	630	55	780	670	375	815	956	240	49	140	39	M30	169	40	240	320
626DA	590	770	55	170h6	700	55	880	736	400	874	1088	300	49	160	45	M30	179	40	300	39

All dimensions are in mm.

MOTOR OPTIONS AVAILABLE (using 4 pole motors)

Unit Size	kW	Frame	Standard			Braked			L3	
			Øg1	k1	kg	Øg2	k2	kg		
619DA	0.55	F80S/4	148	794	249	148	837	252	138	
	0.75	F80M/4	148	794	249	148	837	252	138	
	1.1	F90S/4	160	827	253	160	889	258	143	
	1.5	F90L/4	160	827	253	160	889	258	143	
	2.2	F100L/4	173	847	257	173	910	264	150	
	3	F112S/4	212	870	267	212	942	277	166	
619DB	4	F112M/4	212	870	267	212	942	277	166	
	5.5	F132S/4	212	914	274	212	986	284	166	
	2.2	F100L/4	173	862	264	173	925	271	150	
	3	F112S/4	212	885	274	212	957	284	166	
	4	F112M/4	212	885	274	212	957	284	166	
	5.5	F132S/4	212	929	281	251	1001	291	211	
620DB	7.5	F132M/4	251	952	296	251	1047	314	211	
	11	F160M/4	251	1012	310	323	1107	328	261	
	15	G160L/4	323	1102	362	323	1192	395	261	
	0.75	F80M/4	148	861	281	148	904	284	138	
	1.1	F90S/4	160	894	285	160	956	290	143	
	1.5	F90L/4	160	894	285	160	956	290	143	
621DA	2.2	F100L/4	173	914	288	173	977	295	150	
	3	F112S/4	212	937	298	212	1009	308	166	
	4	F112M/4	212	937	298	212	1009	308	166	
	5.5	F132S/4	212	981	305	212	1053	315	166	
	7.5	F132M/4	251	1004	320	251	1099	338	211	
	11	F160M/4	251	1064	333	251	1159	351	211	
622DA	15	G160L/4	323	1154	385	323	1234	417	261	
	0.75	F80M/4	148	887	362	148	930	365	138	
	1.1	F90S/4	160	920	366	160	982	371	143	
	1.5	F90L/4	160	920	366	160	982	371	143	
	2.2	F100L/4	173	940	369	173	1003	376	150	
	3	F112S/4	212	964	379	212	1035	389	166	
623DA	4	F112M/4	212	964	379	212	1035	389	166	
	5.5	F132S/4	212	1007	386	212	1079	396	166	
	7.5	F132M/4	251	1030	401	251	1125	419	211	
	11	F160M/4	251	1090	414	251	1185	432	211	
	15	G160L/4	323	1180	466	323	1270	499	261	
	624DA	1.1	F90S/4	160	962	440	160	1024	445	143
1.5		F90L/4	160	962	440	160	1024	445	143	
2.2		F100L/4	173	982	443	173	1045	450	150	
3		F112S/4	212	1005	453	212	1077	463	166	
4		F112M/4	212	1005	453	212	1077	463	166	
5.5		F132S/4	212	1049	460	212	1121	470	166	
625DA	7.5	F132M/4	251	1072	475	251	1167	493	211	
	11	F160M/4	251	1132	489	251	1227	507	211	
	15	G160L/4	323	1222	541	323	1312	574	261	
	626DA	5.5	F132S/4	212	1480	1365	212	1552	1375	166
		7.5	F132M/4	251	1493	1380	251	1588	1400	211
		11	F160M/4	251	1553	1395	251	1648	1410	211
15		G160L/4	323	1618	1445	323	1708	1480	261	
18.5		F180MG/4	394	1713	1520	394	1923	1565	342	
22		F180MG/4	394	1713	1520	394	1923	1565	342	

Unit Size	kW	Frame	Standard			Braked			L3
			Øg1	k1	kg	Øg2	k2	kg	
622DB	5.5	F132S/4	212	1107	505	212	1179	516	166
	7.5	F132M/4	251	1125	520	251	1220	538	211
	11	F160M/4	251	1185	534	251	1280	552	211
	15	G160L/4	323	1265	588	323	1355	621	261
	18.5	F180MG/4	394	1360	656	394	1570	707	342
	22	F180MG/4	394	1360	656	394	1570	707	342
623DA	30	F180L/4	394	1360	673	394	1570	724	342
	2.2	F100L/4	173	1068	560	173	1131	566	150
	3	F112S/4	212	1091	569	212	1163	579	166
	4	F112M/4	212	1091	569	212	1163	579	166
	5.5	F132S/4	212	1135	576	212	1207	586	166
	7.5	F132M/4	251	1163	592	251	1258	609	211
624DA	11	F160M/4	251	1223	606	251	1318	623	211
	15	G160L/4	323	1308	659	323	1398	692	261
	18.5	F180MG/4	394	1403	732	394	1613	783	342
	22	F180MG/4	394	1403	732	394	1613	783	342
	2.2	F100L/4	173	1106	669	173	1169	675	150
	3	F112S/4	212	1129	678	212	1201	688	166
625DA	4	F112M/4	212	1129	678	212	1201	688	166
	5.5	F132S/4	212	1173	685	212	1245	695	166
	7.5	F132M/4	251	1201	701	251	1296	718	211
	11	F160M/4	251	1261	715	251	1356	732	211
	15	G160L/4	323	1346	768	323	1436	801	261
	18.5	F180MG/4	394	1441	835	394	1651	886	342
626DA	22	F180MG/4	394	1441	835	394	1651	886	342
	3	F112S/4	212	1284	1030	212	1356	1040	166
	4	F112M/4	212	1284	1030	212	1356	1040	166
	5.5	F132S/4	212	1328	1040	212	1400	1050	166
	7.5	F132M/4	251	1346	1055	251	1441	1070	211
	11	F160M/4	251	1406	1070	251	1501	1085	211
626DA	15	G160L/4	323	1486	1120	323	1576	1155	261
	18.5	F180MG/4	394	1581	1190	394	1791	1241	342
	22	F180MG/4	394	1581	1190	394	1791	1241	342
	30	F180L/4	394	1581	1210	394	1791	1253	342
	5.5	F132S/4	212	1480	1365	212	1552	1375	166
	7.5	F132M/4	251	1493	1380	251	1588	1400	211
626DA	11	F160M/4	251	1553	1395	251	1648	1410	211
	15	G160L/4	323	1618	1445	323	1708	1480	261
	18.5	F180MG/4	394	1713	1520	394	1923	1565	342
	22	F180MG/4	394	1713	1520	394	1923	1565	342
	30	F180L/4	394	1713	1535	394	1923	1578	342
	37	F200L/4	394	1828	1570	394	2043	1667	342
45	F225S/6	394	1828	1570	394	2043	1667	342	

Cyclo Gearboxes : Reducer selection

SPEED REDUCER SELECTION TABLES - 580RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P_1 = Allowable Input Power (kW)
- n_2 = Output Speed (rpm)

Unit Size	n_2	96.7	72.5	52.7	44.6	38.7	34.1	27.6	23.2	20.0	16.6	13.5	11.4	9.83	8.17	6.67	4.87	
	Ratio	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	
606	P_1	0.267	0.216	0.174	0.148	0.128	0.113	0.091	0.077	0.066	0.055	0.045	-	-	-	-	-	-
	M_2	25.0	27.1	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	F_{R2}	796	811	957	1050	1170	1180	1180	1180	1180	1180	1180	1180	-	-	-	-	-
607	P_1	0.316	0.280	0.291	0.273	0.256	0.226	0.183	0.153	0.132	0.110	0.089	0.071	0.062	-	-	-	-
	M_2	29.7	36.1	50.1	55.5	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	56.9	57.4	-	-	-
	F_{R2}	1690	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1660	1550	1560	-	-	-
608	P_1	0.778	0.778	0.581	0.492	0.426	0.376	0.235	0.256	0.220	0.183	0.149	0.125	0.108	0.090	0.073	-	-
	M_2	73.0	97.3	100	100	100	100	77.2	100	100	100	100	100	100	100	100	100	100
	F_{R2}	2280	2440	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560
609	P_1	1.47	1.34	1.05	0.984	0.952	0.752	0.609	0.499	0.441	0.365	0.297	0.192	0.158	0.119	0.131	0.058	-
	M_2	138	168	181	200	200	200	195	200	200	200	200	153	146	132	178	108	-
	F_{R2}	3340	3340	3340	3240	3240	3240	3240	3340	3240	3240	3240	3240	3340	3340	3340	3340	3340
610	P_1	1.82	1.86	1.79	1.48	1.28	1.13	0.913	0.767	0.661	0.548	0.446	0.372	0.321	0.238	0.220	0.139	-
	M_2	171	233	308	300	300	300	300	300	300	300	300	297	296	264	300	258	-
	F_{R2}	4770	5300	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5120	4880	4680	4690	4660
611	P_1	2.06	3.25	2.44	2.07	1.79	1.58	1.28	1.07	0.926	0.767	0.624	0.526	0.455	0.378	0.309	-	-
	M_2	193	406	420	420	420	420	420	420	420	420	420	420	420	420	420	420	-
	F_{R2}	5490	5940	6860	6830	6960	6760	6690	6430	6320	6380	6660	6660	6680	6640	6670	-	-
612	P_1	3.90	4.00	3.47	3.10	2.69	2.37	1.92	1.61	1.39	1.15	0.940	0.790	0.680	0.533	0.463	-	-
	M_2	366	501	596	630	630	630	630	630	630	630	630	630	630	630	592	630	-
	F_{R2}	6650	7260	7520	6740	6760	6740	6740	6740	6740	6740	6870	6740	6740	7610	6740	-	-
613	P_1	6.47	6.11	5.46	4.62	4.01	3.53	2.86	2.30	2.07	1.72	1.40	1.21	1.14	0.938	0.719	-	-
	M_2	607	764	940	940	940	940	940	900	940	940	940	967	1050	1040	979	-	-
	F_{R2}	6970	7780	8920	9370	9630	10400	11200	11700	12300	13000	13600	13300	14200	14300	14500	-	-
614	P_1	7.64	7.80	7.51	6.74	5.79	5.15	4.07	3.50	3.02	2.50	2.04	1.72	1.48	1.19	0.917	-	-
	M_2	717	976	1290	1370	1360	1370	1340	1370	1370	1370	1370	1370	1370	1320	1250	-	-
	F_{R2}	11600	12800	14400	14400	14500	14500	14700	14500	14200	14400	14100	14200	16000	16000	16000	-	-
616	P_1	14.10	14.90	12.20	10.30	8.95	7.90	6.39	5.37	4.63	3.84	3.12	2.63	2.28	1.89	1.51	-	-
	M_2	1320	1870	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2050	-	-
	F_{R2}	13500	14900	17000	18000	19200	19900	21500	22100	22100	22100	22100	22100	22100	22100	21800	-	-
617	P_1	19.80	20.80	18.30	15.50	13.40	11.80	9.59	8.06	6.94	5.75	4.68	3.95	3.41	2.84	2.31	-	-
	M_2	1860	2600	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	-
	F_{R2}	15100	16500	18900	19900	21000	22000	24100	25100	26600	28400	29500	29500	29500	29500	29500	-	-
618	P_1	-	-	27.90	24.10	19.90	18.80	15.20	12.80	11.00	9.13	7.43	6.27	5.42	4.06	3.67	-	-
	M_2	-	-	4810	4900	4670	5000	5000	5000	5000	5000	5000	5000	5000	4510	5000	-	-
	F_{R2}	-	-	25200	26400	28000	29600	32200	33600	35300	37900	40800	41700	41600	41700	41700	-	-
619	P_1	-	-	44.00	36.10	33.20	29.90	24.20	20.40	17.50	14.50	11.80	9.98	8.63	7.17	5.85	-	-
	M_2	-	-	7570	7350	7800	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	-	-
	F_{R2}	-	-	35100	36700	38600	41000	44600	46900	49500	52500	56700	58200	58100	58000	58400	-	-

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

SPEED REDUCER SELECTION TABLES - 720RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
 F_{R2} = Allowable Radial load applied to middle of shaft (N)
 P_1 = Allowable Input Power (kW)
 n_2 = Output Speed (rpm)

Unit Size	n_2	120	90.0	65.5	55.4	48.0	42.4	34.3	28.8	24.8	20.6	16.7	14.1	12.2	10.1	8.3	6.1
	Ratio	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119
606	P_1	0.286	0.259	0.216	0.183	0.159	0.140	0.113	0.095	0.082	0.068	0.055	-	-	-	-	-
	M_2	21.6	26.1	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	-	-	-	-
	F_{R2}	796	811	957	1050	1170	1180	1180	1180	1180	1180	1180	-	-	-	-	-
607	P_1	0.376	0.325	0.344	0.322	0.317	0.280	0.227	0.190	0.164	0.136	0.111	0.089	0.077	-	-	-
	M_2	28.4	32.8	47.7	52.7	60.0	60.0	60.0	60.0	60.0	60.0	60.0	56.9	57.4	-	-	-
	F_{R2}	1570	1730	1770	1770	1770	1770	1770	1770	1770	1770	1660	1550	1560	-	-	-
608	P_1	0.778	0.778	0.683	0.610	0.529	0.467	0.292	0.317	0.274	0.227	0.185	0.156	0.135	0.112	0.091	-
	M_2	58.8	78.4	94.7	100	100	100	77.2	100	100	100	100	100	100	100	100	-
	F_{R2}	2140	2300	2530	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2260	-
609	P_1	1.52	1.52	1.24	1.19	1.06	0.934	0.756	0.588	0.547	0.453	0.369	0.239	0.196	0.148	0.154	0.072
	M_2	115	153	172	196	200	200	200	185	200	200	200	153	146	132	169	108
	F_{R2}	3340	3340	3340	3240	3240	3240	3240	3340	3240	3240	3240	3340	3340	3340	3340	3340
610	P_1	2.26	2.20	2.22	1.83	1.59	1.40	1.13	0.952	0.821	0.680	0.554	0.462	0.398	0.295	0.274	0.172
	M_2	171	222	308	300	300	300	300	300	300	300	300	297	296	264	300	258
	F_{R2}	4430	4920	5400	5400	5400	5400	5400	5400	5400	5400	5400	5120	4880	4680	4690	4660
611	P_1	2.56	3.92	3.03	2.56	2.22	1.96	1.59	1.33	1.15	0.952	0.775	0.654	0.565	0.469	0.383	-
	M_2	193	395	420	420	420	420	420	420	420	420	420	420	420	420	420	-
	F_{R2}	5100	5510	6350	6620	6960	6760	6690	6430	6320	6380	6660	6660	6680	6640	6670	-
612	P_1	4.85	4.72	4.09	3.69	3.33	2.94	2.38	2.00	1.72	1.43	1.16	0.980	0.847	0.661	0.575	-
	M_2	366	476	567	605	630	630	630	630	630	630	630	630	630	592	630	-
	F_{R2}	6160	6740	7480	7320	6760	6740	6740	6740	6740	6740	6870	6740	6740	7610	6740	-
613	P_1	7.87	7.27	6.78	5.74	4.97	4.39	3.55	2.86	2.57	2.13	1.73	1.49	1.41	1.160	0.893	-
	M_2	595	733	940	940	940	940	940	900	940	940	940	959	1050	1040	979	-
	F_{R2}	6450	7220	8240	8680	8920	9620	10300	10800	11400	12100	13000	13300	14200	14300	14500	-
614	P_1	9.48	9.20	9.32	8.36	7.18	6.40	5.06	4.35	3.75	3.10	2.53	2.13	1.84	1.48	1.14	-
	M_2	717	928	1290	1370	1360	1370	1340	1370	1370	1370	1370	1370	1370	1320	1250	-
	F_{R2}	10900	12000	13500	13800	14500	14500	14700	14500	14200	14400	14100	14200	16000	16000	16000	-
616	P_1	17.50	17.80	15.20	12.80	11.10	9.80	7.94	6.67	5.75	4.76	3.88	3.27	2.82	2.35	1.87	-
	M_2	1320	1790	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2050	-
	F_{R2}	12500	13800	15800	16600	17700	18400	19900	21000	22000	22100	22100	22100	22100	22100	21800	-
617	P_1	24.60	25.80	22.70	19.20	16.70	14.70	11.90	10.00	8.62	7.14	5.81	4.90	4.24	3.52	2.87	-
	M_2	1860	2600	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	-
	F_{R2}	13900	15200	17500	18400	19400	20400	22300	23300	24600	26300	28200	29500	29500	29500	29500	-
618	P_1	-	-	34.70	29.90	23.50	22.40	18.90	15.90	13.70	11.30	9.23	7.78	6.73	5.05	4.56	-
	M_2	-	-	4810	4900	4440	4790	5000	5000	5000	5000	5000	5000	5000	4510	5000	-
	F_{R2}	-	-	23300	24400	26000	27400	29800	31200	32700	35100	37800	39400	41300	41700	41700	-
619	P_1	-	-	48.100	42.60	39.20	37.20	30.10	25.30	21.80	18.00	14.70	12.40	10.70	8.90	7.26	-
	M_2	-	-	6670	6980	7410	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	-
	F_{R2}	-	-	32800	34100	35800	37900	41400	43500	45900	48700	52600	55000	57900	58000	58400	-

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

SPEED REDUCER SELECTION TABLES - 980RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P_1 = Allowable Input Power (kW)
- n_2 = Output Speed (rpm)

Unit Size	n_2	163	123	89.1	75.4	65.3	57.6	46.7	39.2	33.8	28.0	22.8	19.2	16.6	13.8	11.3	8.24
	Ratio	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119
606	P_1	0.286	0.286	0.286	0.249	0.216	0.191	0.154	0.130	0.112	0.093	0.075	-	-	-	-	-
	M_2	15.9	21.2	29.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	-	-	-	-
	F_{R2}	802	861	968	1050	1170	1180	1180	1180	1180	1180	1180	-	-	-	-	-
607	P_1	0.407	0.386	0.407	0.407	0.404	0.381	0.309	0.245	0.223	0.185	0.151	0.119	0.101	-	-	-
	M_2	22.6	28.6	41.4	49.0	56.1	60.0	60.0	56.8	60.0	60.0	60.0	56.4	55.1	-	-	-
	F_{R2}	1420	1570	1730	1770	1770	1770	1770	1770	1770	1770	1660	1590	1620	-	-	-
608	P_1	0.778	0.778	0.778	0.778	0.720	0.635	0.397	0.432	0.372	0.309	0.251	0.212	0.183	0.152	0.121	-
	M_2	43.2	57.6	79.2	93.6	100	100	77.2	100	100	100	100	100	100	100	97.6	-
	F_{R2}	1940	2090	2290	2440	2530	2560	2560	2560	2560	2500	2560	2560	2560	2560	2560	2560
609	P_1	1.52	1.52	1.52	1.51	1.44	1.27	1.03	0.745	0.698	0.610	0.471	0.325	0.267	0.201	0.195	0.098
	M_2	84.2	112	154	182	200	200	200	172	187	198	187	153	146	132	157	108
	F_{R2}	3340	3340	3340	3340	3240	3240	3340	3340	3340	3320	3340	3340	3340	3340	3340	3340
610	P_1	3.02	2.78	2.86	2.49	2.16	1.91	1.54	1.30	1.12	0.926	0.754	0.629	0.530	0.402	0.372	0.235
	M_2	168	206	291	300	300	300	300	300	300	300	300	297	290	264	300	258
	F_{R2}	3980	4430	5000	5220	5400	5400	5400	5400	5400	5400	5400	5120	4880	4680	4690	4660
611	P_1	3.48	3.92	3.92	3.49	3.02	2.67	2.16	1.81	1.56	1.30	1.06	0.890	0.769	0.639	0.521	-
	M_2	193	290	399	420	420	420	420	420	420	420	420	420	420	420	420	-
	F_{R2}	4580	5050	5710	5930	6360	6460	6690	6430	6320	6380	6660	6660	6680	6640	6670	-
612	P_1	6.40	5.97	5.18	4.68	4.54	4.00	3.24	2.72	2.35	1.94	1.58	1.33	1.15	0.843	0.761	-
	M_2	355	442	527	563	630	630	630	630	630	630	630	630	630	630	554	613
	F_{R2}	5530	6070	6740	7110	6760	6740	6740	6740	6740	6740	6870	6740	6740	8320	7150	-
613	P_1	9.96	9.20	9.23	7.58	6.77	5.97	4.84	3.89	3.50	2.90	2.36	1.89	1.81	1.50	1.22	-
	M_2	553	682	940	912	940	940	940	900	940	940	940	892	987	987	979	-
	F_{R2}	5800	6490	7360	7780	7980	8620	9270	9730	10300	10900	11700	12300	12900	13800	14500	-
614	P_1	12.2	11.6	12.1	11.4	9.78	8.71	6.88	5.92	5.10	4.23	3.44	2.74	2.36	1.94	1.55	-
	M_2	678	863	1230	1370	1360	1370	1340	1370	1370	1370	1370	1290	1290	1280	1250	-
	F_{R2}	9890	11000	12300	12500	13200	13800	14700	14500	14200	14400	14100	14500	16000	16000	16000	-
616	P_1	23.8	22.5	20.6	17.4	15.1	13.3	10.8	9.07	7.82	6.48	5.28	4.45	3.84	3.19	2.55	-
	M_2	1320	1670	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2050	-
	F_{R2}	11100	12400	14100	14900	15900	16500	17800	18800	19700	21000	22100	22100	22100	22100	21800	-
617	P_1	30.1	30.1	30.1	26.2	22.3	20.0	16.2	13.6	11.7	9.72	7.91	6.67	5.77	4.79	3.91	-
	M_2	1670	2230	3070	3150	3100	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	-
	F_{R2}	12600	13800	15600	16400	17300	18200	20000	20800	22100	23600	25200	26500	27900	29500	29500	-
618	P_1	-	-	39.0	39.0	29.8	28.3	25.7	21.6	18.6	15.4	12.6	10.6	9.15	6.87	6.21	-
	M_2	-	-	3970	4690	4130	4450	5000	5000	5000	5000	5000	5000	5000	4510	5000	-
	F_{R2}	-	-	21200	21900	23400	24700	26700	27900	29300	31500	33900	35400	37100	39800	41700	-
619	P_1	-	-	48.1	48.1	48.1	48.1	40.9	34.4	29.6	24.6	20.0	16.9	14.6	12.1	9.88	-
	M_2	-	-	4900	5790	6680	7570	7960	7960	7960	7960	7960	7960	7960	7960	7960	-
	F_{R2}	-	-	30000	31000	32300	34100	37100	39000	41200	43700	47200	49400	52000	55300	58400	-

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

SPEED REDUCER SELECTION TABLES - 1450RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
 F_{R2} = Allowable Radial load applied to middle of shaft (N)
 P_1 = Allowable Input Power (kW)
 n_2 = Output Speed (rpm)

Unit Size	n_2 Ratio	242	181	132	112	96.7	85.5	69.0	58.0	50.0	41.4	33.7	28.4	24.6	20.4	16.7	12.2
		6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119
606	P_1	0.286	0.286	0.286	0.286	0.286	0.282	0.228	0.166	0.165	0.137	0.112	-	-	-	-	-
	M_2	10.7	14.3	19.7	23.3	26.9	30.0	30.0	25.9	30.0	30.0	30.0	-	-	-	-	-
	F_{R2}	708	808	1070	1140	1180	1180	1180	1180	1180	1180	1180	-	-	-	-	-
607	P_1	0.407	0.407	0.407	0.407	0.407	0.407	0.407	0.294	0.286	0.272	0.223	0.143	0.136	-	-	-
	M_2	15.3	20.4	28.0	33.1	38.2	43.3	53.5	46.0	52.0	59.6	60.0	45.7	50.1	-	-	-
	F_{R2}	1260	1390	1550	1630	1630	1720	1710	1720	1710	1720	1660	1620	1600	-	-	-
608	P_1	0.778	0.778	0.778	0.778	0.778	0.778	0.550	0.475	0.467	0.412	0.294	0.241	0.234	0.202	0.121	-
	M_2	29.2	38.9	53.5	63.3	73.0	82.7	72.3	74.3	84.8	90.2	79.1	76.9	86.2	89.7	66.0	-
	F_{R2}	1720	1860	2040	2330	2400	2510	2510	2560	2560	2560	2560	2560	2560	2560	2560	-
609	P_1	1.52	1.52	1.52	1.52	1.52	1.52	1.51	0.866	0.784	0.758	0.603	0.407	0.336	0.278	0.263	0.145
	M_2	56.9	75.8	104	123	142	161	198	136	142	166	162	130	124	124	143	108
	F_{R2}	3340	3340	3340	3340	3340	3340	3310	3340	3340	3340	3340	3340	3340	3340	3340	3340
610	P_1	3.18	3.18	3.18	3.18	3.18	2.46	2.28	1.67	1.59	1.20	1.08	0.776	0.681	0.506	0.503	0.286
	M_2	119	159	219	259	298	261	300	262	288	262	292	248	251	225	274	213
	F_{R2}	3530	3920	4430	4590	4830	4960	4970	4970	4970	4970	4970	4980	4910	4700	4700	4690
611	P_1	3.92	3.92	3.92	3.90	3.90	3.90	3.11	2.22	2.22	1.81	1.52	1.11	1.01	0.758	0.758	-
	M_2	147	196	270	317	366	415	409	348	403	396	408	355	373	337	412	-
	F_{R2}	4040	4490	5100	5260	5580	5620	6000	6200	6330	6400	6670	6720	6730	6720	6680	-
612	P_1	6.96	6.95	5.92	5.92	5.92	5.66	4.79	3.96	3.47	2.88	2.34	1.97	1.62	1.14	1.03	-
	M_2	261	348	407	482	556	602	630	619	630	630	630	630	598	506	559	-
	F_{R2}	4910	5370	5970	6260	6560	6820	6740	7010	6740	6750	6870	6750	7470	9110	8240	-
613	P_1	11.3	11.3	11.3	10.2	8.97	8.29	6.72	5.75	4.88	4.11	3.35	2.55	2.44	2.03	1.65	-
	M_2	424	566	778	832	842	882	883	900	886	900	900	813	900	900	900	-
	F_{R2}	5160	5730	6500	6810	6990	7520	8100	8470	8960	9480	10200	10800	11300	12000	13000	-
614	P_1	15.1	15.1	15.1	15.1	14.5	12.0	9.49	7.91	7.53	6.26	4.67	3.70	3.18	2.62	2.16	-
	M_2	569	758	1040	1230	1360	1280	1250	1240	1370	1370	1260	1180	1170	1160	1170	-
	F_{R2}	8810	9750	10900	11100	11600	12200	13100	13800	14100	14400	14600	14900	16000	16000	16000	-
616	P_1	24.1	24.1	24.1	22.6	22.4	18.8	16.0	13.4	11.4	9.59	7.81	6.58	5.69	4.73	3.77	-
	M_2	903	1200	1660	1840	2100	2000	2100	2100	2070	2100	2100	2100	2100	2100	2050	-
	F_{R2}	9990	11100	12500	13100	13800	14300	15500	16300	17100	18300	19600	20600	22100	22100	21800	-
617	P_1	30.1	30.1	30.1	30.1	30.1	24.1	23.6	19.5	17.4	14.4	11.3	9.87	8.29	6.98	5.62	-
	M_2	1130	1510	2070	2450	2820	2560	3100	3050	3150	3150	3040	3150	3060	3100	3060	-
	F_{R2}	11300	12400	14100	14600	15100	16100	17300	18100	19200	20500	22000	23000	24300	25800	27800	-
618	P_1	-	-	39.0	39.0	39.0	38.2	38.1	30.1	24.1	22.6	18.6	15.1	12.0	9.79	8.59	-
	M_2	-	-	2680	3170	3660	4060	5000	4710	4360	4950	5000	4810	4430	4350	4680	-
	F_{R2}	-	-	19000	19600	20500	21600	23200	24400	25800	27500	29500	30900	32500	34800	37400	-
619	P_1	-	-	48.1	48.1	48.1	48.1	48.1	40.5	37.8	30.1	27.1	20.9	18.8	15.6	13.6	-
	M_2	-	-	3310	3910	4510	5120	6320	6330	6860	6600	7300	6680	6950	6930	7420	-
	F_{R2}	-	-	26700	27600	28900	30500	32700	34400	36200	38400	41400	43500	45700	48500	52300	-

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

SPEED REDUCER SELECTION TABLES - 2900RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P_1 = Allowable Input Power (kW)
- n_2 = Output Speed (rpm)

Unit Size	n_2	483	362	263	223	193	171	138	116	100	82.9	67.4	56.9	49.2	40.9	33.3	24.4
	Ratio	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119
606	P_1	0.286	0.286	0.286	0.249	0.216	0.191	0.154	0.130	0.112	0.093	0.075	-	-	-	-	-
	M_2	15.9	21.2	29.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	-	-	-	-
	F_{R2}	802	861	968	1050	1170	1180	1180	1180	1180	1180	1180	-	-	-	-	-
607	P_1	0.407	0.386	0.407	0.407	0.404	0.381	0.309	0.245	0.223	0.185	0.151	0.119	0.101	-	-	-
	M_2	22.6	28.6	41.4	49.0	56.1	60.0	60.0	56.8	60.0	60.0	60.0	56.4	55.1	-	-	-
	F_{R2}	1420	1570	1730	1770	1770	1770	1770	1770	1770	1770	1660	1590	1620	-	-	-
608	P_1	0.778	0.778	0.778	0.778	0.720	0.635	0.397	0.432	0.372	0.309	0.251	0.212	0.183	0.152	0.121	-
	M_2	43.2	57.6	79.2	93.6	100	100	77.2	100	100	100	100	100	100	100	97.6	-
	F_{R2}	1940	2090	2290	2440	2530	2560	2560	2560	2500	2560	2560	2560	2560	2560	2560	2560
609	P_1	1.52	1.52	1.52	1.51	1.44	1.27	1.03	0.745	0.698	0.610	0.471	0.325	0.267	0.201	0.195	0.098
	M_2	84.2	112	154	182	200	200	200	172	187	198	187	153	146	132	157	108
	F_{R2}	3340	3340	3340	3340	3240	3240	3340	3340	3340	3320	3340	3340	3340	3340	3340	3340
610	P_1	3.02	2.78	2.86	2.49	2.16	1.91	1.54	1.30	1.12	0.926	0.754	0.629	0.530	0.402	0.372	0.235
	M_2	168	206	291	300	300	300	300	300	300	300	300	297	290	264	300	258
	F_{R2}	3980	4430	5000	5220	5400	5400	5400	5400	5400	5400	5400	5120	4880	4680	4690	4660
611	P_1	3.48	3.92	3.92	3.49	3.02	2.67	2.16	1.81	1.56	1.30	1.06	0.890	0.769	0.639	0.521	-
	M_2	193	290	399	420	420	420	420	420	420	420	420	420	420	420	420	-
	F_{R2}	4580	5050	5710	5930	6360	6460	6690	6430	6320	6380	6660	6660	6680	6640	6670	-
612	P_1	6.40	5.97	5.18	4.68	4.54	4.00	3.24	2.72	2.35	1.94	1.58	1.33	1.15	0.843	0.761	-
	M_2	355	442	527	563	630	630	630	630	630	630	630	630	630	630	554	613
	F_{R2}	5530	6070	6740	7110	6760	6740	6740	6740	6740	6740	6870	6740	6740	8320	7150	-
613	P_1	9.96	9.20	9.23	7.58	6.77	5.97	4.84	3.89	3.50	2.90	2.36	1.89	1.81	1.50	1.22	-
	M_2	553	682	940	912	940	940	940	900	940	940	940	892	987	987	979	-
	F_{R2}	5800	6490	7360	7780	7980	8620	9270	9730	10300	10900	11700	12300	12900	13800	14500	-
614	P_1	12.2	11.6	12.1	11.4	9.78	8.71	6.88	5.92	5.10	4.23	3.44	2.74	2.36	1.94	1.55	-
	M_2	678	863	1230	1370	1360	1370	1340	1370	1370	1370	1370	1290	1290	1280	1250	-
	F_{R2}	9890	11000	12300	12500	13200	13800	14700	14500	14200	14400	14100	14500	16000	16000	16000	-
616	P_1	23.8	22.5	20.6	17.4	15.1	13.3	10.8	9.07	7.82	6.48	5.28	4.45	3.84	3.19	2.55	-
	M_2	1320	1670	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2050	-
	F_{R2}	11100	12400	14100	14900	15900	16500	17800	18800	19700	21000	22100	22100	22100	22100	21800	-
617	P_1	30.1	30.1	30.1	26.2	22.3	20.0	16.2	13.6	11.7	9.72	7.91	6.67	5.77	4.79	3.91	-
	M_2	1670	2230	3070	3150	3100	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	-
	F_{R2}	12600	13800	15600	16400	17300	18200	20000	20800	22100	23600	25200	26500	27900	29500	29500	-
618	P_1	-	-	39.0	39.0	29.8	28.3	25.7	21.6	18.6	15.4	12.6	10.6	9.15	6.87	6.21	-
	M_2	-	-	3970	4690	4130	4450	5000	5000	5000	5000	5000	5000	5000	4510	5000	-
	F_{R2}	-	-	21200	21900	23400	24700	26700	27900	29300	31500	33900	35400	37100	39800	41700	-
619	P_1	-	-	48.1	48.1	48.1	48.1	40.9	34.4	29.6	24.6	20.0	16.9	14.6	12.1	9.88	-
	M_2	-	-	4900	5790	6680	7570	7960	7960	7960	7960	7960	7960	7960	7960	7960	-
	F_{R2}	-	-	30000	31000	32300	34100	37100	39000	41200	43700	47200	49400	52000	55300	58400	-

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

TWO STAGE REDUCER SELECTION - 580RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M₂ = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P₁ = Allowable Input Power (kW)
- n₂ = Output Speed (rpm)

Unit Size	n ₂	5.58	4.79	4.06	3.52	2.97	2.51	2.12	1.82	1.62	1.54	1.36	1.23	1.10	1.04	0.975	0.894	0.793	
	Ratio	104	121	143	165	195	231	273	319	357	377	425	473	525	559	595	649	731	
606DA	P ₁	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	-	0.040	
	M ₂	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	30.0	
	F _{R2}	1180	1140	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	-	1180
607DA	P ₁	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
	M ₂	60.0	50.8	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	57.4	60.0
	F _{R2}	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1660	1770	1660	1770	1660
609DA	P ₁	0.117	0.089	0.087	0.082	0.069	0.058	0.049	0.042	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
	M ₂	181	160	183	200	200	200	200	200	200	200	195	200	195	200	200	200	146	200
	F _{R2}	3340	3340	3340	3340	3340	3340	3340	3340	3200	3340	3200	3340	3200	3190	3220	3200	3300	3220
610DA	P ₁	0.195	0.172	0.142	0.123	0.104	0.088	0.074	0.063	0.057	0.054	0.048	0.043	0.040	0.040	0.040	0.040	0.040	0.040
	M ₂	300	308	300	300	300	300	300	300	300	300	300	300	300	300	300	296	300	300
	F _{R2}	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5090	5400
612DA	P ₁	0.304	0.308	0.297	0.258	0.218	0.184	0.156	0.133	0.119	0.113	0.100	0.090	0.081	0.076	0.071	0.066	0.058	
	M ₂	469	552	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630
	F _{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
612DB	P ₁	0.409	0.347	0.297	0.258	0.218	0.184	0.156	0.133	0.119	0.113	0.100	0.090	0.081	0.076	0.071	0.066	0.058	
	M ₂	630	622	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630
	F _{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
613DB	P ₁	0.610	0.524	0.444	0.384	0.325	0.275	0.232	0.199	0.178	0.168	0.143	0.134	0.116	0.113	0.107	0.109	0.087	
	M ₂	940	940	940	940	940	940	940	940	940	940	900	940	900	940	940	1050	940	
	F _{R2}	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
613DC	P ₁	0.610	0.524	0.444	0.384	0.325	0.275	0.232	0.199	0.178	0.168	0.143	0.134	0.116	0.113	0.107	0.109	0.087	
	M ₂	940	940	940	940	940	940	940	940	940	940	900	940	900	940	940	1050	940	
	F _{R2}	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
614DC	P ₁	0.889	0.721	0.646	0.555	0.470	0.391	0.331	0.290	0.253	0.245	0.218	0.195	0.176	0.165	0.155	0.142	0.126	
	M ₂	1370	1290	1370	1360	1360	1340	1340	1370	1340	1370	1370	1370	1370	1370	1370	1370	1370	1370
	F _{R2}	15900	16000	15900	16000	16000	16000	16000	16000	15800	16000	15800	16000	15700	16000	15700	16000	16000	15700
616DB	P ₁	1.36	1.17	0.991	0.859	0.727	0.613	0.519	0.444	0.397	0.376	0.333	0.300	0.270	0.254	0.238	0.218	0.194	
	M ₂	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	F _{R2}	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
616DC	P ₁	1.36	1.17	0.991	0.859	0.727	0.613	0.519	0.444	0.397	0.376	0.333	0.300	0.270	0.254	0.238	0.218	0.194	
	M ₂	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	F _{R2}	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
617DC	P ₁	2.04	1.76	1.49	1.29	1.09	0.920	0.779	0.666	0.595	0.564	0.500	0.449	0.405	0.380	0.357	0.328	0.291	
	M ₂	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150
	F _{R2}	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500
618DB	P ₁	3.18	2.68	2.31	2.01	1.70	1.46	1.24	1.06	0.945	0.895	0.794	0.713	0.643	0.604	0.567	0.520	0.462	
	M ₂	4900	4810	4900	4920	4920	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
	F _{R2}	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41600	41700
619DA	P ₁	4.22	3.66	3.60	3.23	2.74	2.33	1.97	1.68	1.50	1.42	1.26	1.14	1.02	0.961	0.903	0.828	0.735	
	M ₂	6510	6560	7630	7910	7910	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960
	F _{R2}	58200	59000	58200	58300	58300	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000
619DB	P ₁	4.95	4.23	3.60	3.23	2.74	2.33	1.97	1.68	1.50	1.42	1.26	1.14	1.02	0.961	0.903	0.828	0.735	
	M ₂	7630	7580	7630	7910	7910	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960
	F _{R2}	58200	59000	58200	58300	58300	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

TWO STAGE REDUCER SELECTION - 720RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P_1 = Allowable Input Power (kW)
- n_2 = Output Speed (rpm)

Unit Size	n_2	6.92	5.95	5.03	4.36	3.69	3.12	2.64	2.26	2.02	1.91	1.69	1.52	1.37	1.29	1.21	1.11	0.985
	Ratio	104	121	143	165	195	231	273	319	357	377	425	473	525	559	595	649	731
606DA	P_1	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	-	0.050
	M_2	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	30.0
	F_{R2}	1180	1140	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	-	1180
607DA	P_1	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
	M_2	60.0	50.8	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	57.4
	F_{R2}	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1660	1770	1660	1770	1580
609DA	P_1	0.146	0.111	0.107	0.102	0.086	0.073	0.061	0.053	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
	M_2	181	160	183	200	200	200	200	200	200	200	195	200	195	200	200	146	200
	F_{R2}	3340	3340	3340	3340	3340	3340	3340	3340	3200	3340	3200	3190	3220	3190	3220	3200	3300
610DA	P_1	0.242	0.213	0.176	0.152	0.129	0.109	0.092	0.079	0.070	0.067	0.059	0.053	0.050	0.050	0.050	0.050	0.050
	M_2	300	308	300	300	300	300	300	300	300	300	300	300	300	300	300	296	300
	F_{R2}	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5090	5400
612DA	P_1	0.343	0.363	0.363	0.320	0.271	0.228	0.193	0.165	0.148	0.140	0.124	0.112	0.101	0.094	0.089	0.081	0.072
	M_2	426	524	620	630	630	630	630	630	630	630	630	630	630	630	630	630	630
	F_{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
612DB	P_1	0.507	0.431	0.369	0.320	0.271	0.228	0.193	0.165	0.148	0.140	0.124	0.112	0.101	0.094	0.089	0.081	0.072
	M_2	630	622	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630
	F_{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
613DB	P_1	0.757	0.651	0.551	0.477	0.404	0.341	0.288	0.247	0.221	0.209	0.177	0.166	0.144	0.141	0.132	0.136	0.108
	M_2	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	1050	940
	F_{R2}	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
613DC	P_1	0.757	0.651	0.551	0.477	0.404	0.341	0.288	0.247	0.221	0.209	0.177	0.166	0.144	0.141	0.132	0.136	0.108
	M_2	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	1050	940
	F_{R2}	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
614DC	P_1	1.10	0.894	0.803	0.689	0.583	0.485	0.411	0.360	0.314	0.304	0.270	0.243	0.219	0.205	0.193	0.177	0.157
	M_2	1370	1290	1370	1360	1360	1340	1340	1370	1340	1370	1370	1370	1370	1370	1370	1370	1370
	F_{R2}	15900	16000	15900	16000	16000	16000	16000	15800	16000	15800	16000	15700	16000	15700	16000	16000	15700
616DB	P_1	1.69	1.45	1.23	1.07	0.902	0.762	0.644	0.551	0.493	0.467	0.414	0.372	0.335	0.315	0.296	0.271	0.241
	M_2	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	F_{R2}	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
616DC	P_1	1.69	1.45	1.23	1.07	0.902	0.762	0.644	0.551	0.493	0.467	0.414	0.372	0.335	0.315	0.296	0.271	0.241
	M_2	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	F_{R2}	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
617DC	P_1	2.54	2.18	1.85	1.60	1.35	1.14	0.967	0.827	0.739	0.700	0.621	0.558	0.503	0.472	0.443	0.407	0.361
	M_2	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150
	F_{R2}	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500
618DB	P_1	3.95	3.33	2.87	2.50	2.11	1.81	1.53	1.31	1.17	1.11	0.986	0.886	0.798	0.749	0.704	0.645	0.573
	M_2	4900	4810	4900	4920	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
	F_{R2}	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700
619DA	P_1	4.98	4.32	4.32	3.93	3.40	2.89	2.44	2.09	1.87	1.77	1.57	1.41	1.27	1.19	1.12	1.03	0.912
	M_2	6180	6230	7370	7750	7910	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960
	F_{R2}	58800	59000	58300	58400	58300	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000
619DB	P_1	6.14	5.25	4.47	4.02	3.40	2.89	2.44	2.09	1.87	1.77	1.57	1.41	1.27	1.19	1.12	1.03	0.912
	M_2	7630	7580	7630	7910	7910	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960
	F_{R2}	58200	59000	58200	58300	58300	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

TWO STAGE REDUCER SELECTION - 980RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M₂ = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P₁ = Allowable Input Power (kW)
- n₂ = Output Speed (rpm)

Unit Size	n ₂	9.42	8.10	6.85	5.94	5.03	4.24	3.59	3.07	2.75	2.60	2.31	2.07	1.87	1.75	1.65	1.51	1.34	
	Ratio	104	121	143	165	195	231	273	319	357	377	425	473	525	559	595	649	731	
606DA	P ₁	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	-	0.068	
	M ₂	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	30.0	
	F _{R2}	1180	1140	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	-	1180
607DA	P ₁	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
	M ₂	60.0	50.8	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	57.4	60.0
	F _{R2}	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1660	1770	1660	1770	1580	1660
609DA	P ₁	0.198	0.151	0.146	0.138	0.117	0.099	0.084	0.071	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
	M ₂	181	160	183	200	200	200	200	200	200	200	195	200	195	200	200	200	146	200
	F _{R2}	3340	3340	3340	3340	3340	3340	3340	3340	3200	3340	3200	3190	3220	3190	3220	3200	3300	3220
610DA	P ₁	0.329	0.290	0.239	0.207	0.175	0.148	0.125	0.107	0.096	0.091	0.080	0.072	0.068	0.068	0.068	0.068	0.068	0.068
	M ₂	300	308	300	300	300	300	300	300	300	300	300	300	300	300	300	300	296	300
	F _{R2}	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400
612DA	P ₁	0.407	0.429	0.429	0.429	0.368	0.311	0.263	0.225	0.201	0.191	0.169	0.152	0.137	0.129	0.121	0.111	0.098	
	M ₂	372	456	539	621	630	630	630	630	630	630	630	630	630	630	630	630	630	630
	F _{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
612DB	P ₁	0.691	0.586	0.502	0.435	0.368	0.311	0.263	0.225	0.201	0.191	0.169	0.152	0.137	0.129	0.121	0.111	0.098	
	M ₂	630	622	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630
	F _{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
613DB	P ₁	1.03	0.886	0.750	0.650	0.550	0.464	0.393	0.336	0.300	0.284	0.241	0.227	0.195	0.192	0.180	0.184	0.147	
	M ₂	940	940	940	940	940	940	940	940	940	940	940	940	900	940	940	1050	940	
	F _{R2}	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
613DC	P ₁	1.03	0.886	0.750	0.650	0.550	0.464	0.393	0.336	0.300	0.284	0.241	0.227	0.195	0.192	0.180	0.184	0.147	
	M ₂	940	940	940	940	940	940	940	940	940	940	940	940	900	940	940	1050	940	
	F _{R2}	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
614DC	P ₁	1.50	1.22	1.09	0.940	0.790	0.660	0.560	0.490	0.430	0.410	0.370	0.330	0.300	0.280	0.260	0.240	0.210	
	M ₂	1370	1290	1370	1360	1360	1340	1340	1370	1340	1370	1370	1370	1370	1370	1370	1370	1370	
	F _{R2}	15900	16000	15900	16000	16000	16000	16000	15800	16000	15800	16000	15700	16000	15700	16000	16000	16000	15700
616DB	P ₁	2.30	1.98	1.67	1.45	1.23	1.04	0.877	0.751	0.671	0.635	0.563	0.506	0.456	0.428	0.402	0.369	0.328	
	M ₂	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	F _{R2}	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
616DC	P ₁	2.30	1.98	1.67	1.45	1.23	1.04	0.877	0.751	0.671	0.635	0.563	0.506	0.456	0.428	0.402	0.369	0.328	
	M ₂	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	F _{R2}	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
617DC	P ₁	3.45	2.97	2.51	2.18	1.84	1.55	1.32	1.13	1.01	0.950	0.850	0.760	0.680	0.640	0.600	0.550	0.490	
	M ₂	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150
	F _{R2}	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500
618DB	P ₁	5.37	4.53	3.91	3.40	2.88	2.47	2.09	1.79	1.60	1.51	1.34	1.21	1.09	1.02	0.960	0.880	0.780	
	M ₂	4900	4810	4900	4920	4920	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
	F _{R2}	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41600	41700
619DA	P ₁	6.31	5.46	5.31	4.83	4.33	3.93	3.32	2.85	2.54	2.41	2.14	1.92	1.73	1.62	1.53	1.40	1.24	
	M ₂	5750	5800	6660	6990	7410	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960
	F _{R2}	58900	59000	58600	58600	58500	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000
619DB	P ₁	8.36	7.14	6.08	5.46	4.62	3.93	3.32	2.85	2.54	2.41	2.14	1.92	1.73	1.62	1.53	1.40	1.24	
	M ₂	7630	7580	7630	7910	7910	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960
	F _{R2}	58200	59000	58200	58300	58300	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

TWO STAGE REDUCER SELECTION - 1450RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M₂ = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P₁ = Allowable Input Power (kW)
- n₂ = Output Speed (rpm)

Unit Size	n ₂	13.9	12.0	10.1	8.79	7.44	6.28	5.31	4.55	4.06	3.85	3.41	3.07	2.76	2.59	2.44	2.23	1.98	
	Ratio	104	121	143	165	195	231	273	319	357	377	425	473	525	559	595	649	731	
606DA	P ₁	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	-	0.100	
	M ₂	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	30.0	
	F _{R2}	1180	1140	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	-	1180
607DA	P ₁	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
	M ₂	60.0	50.8	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	57.4	60.0
	F _{R2}	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1660	1770	1660	1770	1580	1660
609DA	P ₁	0.293	0.224	0.216	0.204	0.173	0.146	0.124	0.106	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
	M ₂	181	160	183	200	200	200	200	200	200	200	195	200	195	200	200	200	146	200
	F _{R2}	3340	3340	3340	3340	3340	3340	3340	3340	3200	3340	3200	3190	3220	3190	3220	3200	3300	3220
610DA	P ₁	0.429	0.429	0.354	0.307	0.260	0.219	0.185	0.159	0.142	0.134	0.119	0.107	0.100	0.100	0.100	0.100	0.100	0.100
	M ₂	265	308	300	300	300	300	300	300	300	300	300	300	300	300	300	296	300	
	F _{R2}	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5090	5400
612DA	P ₁	0.429	0.429	0.429	0.429	0.429	0.429	0.389	0.333	0.298	0.282	0.250	0.225	0.202	0.190	0.179	0.164	0.145	
	M ₂	265	308	364	420	496	588	630	630	630	630	630	630	630	630	630	630	630	630
	F _{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
612DB	P ₁	1.02	0.867	0.743	0.644	0.545	0.460	0.389	0.333	0.298	0.282	0.250	0.225	0.202	0.190	0.179	0.164	0.145	
	M ₂	630	622	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630
	F _{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
613DB	P ₁	1.52	1.31	1.11	0.961	0.813	0.686	0.581	0.497	0.444	0.421	0.357	0.335	0.289	0.284	0.267	0.273	0.217	
	M ₂	940	940	940	940	940	940	940	940	940	940	900	940	900	940	940	1050	940	
	F _{R2}	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
613DC	P ₁	1.52	1.31	1.11	0.961	0.813	0.686	0.581	0.497	0.444	0.421	0.357	0.335	0.289	0.284	0.267	0.273	0.217	
	M ₂	940	940	940	940	940	940	940	940	940	940	900	940	900	940	940	1050	940	
	F _{R2}	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
614DC	P ₁	2.22	1.80	1.62	1.39	1.17	0.977	0.827	0.725	0.632	0.613	0.544	0.489	0.440	0.413	0.388	0.356	0.316	
	M ₂	1370	1290	1370	1360	1360	1340	1340	1370	1370	1370	1370	1370	1370	1370	1370	1370	1370	1370
	F _{R2}	15900	16000	15900	16000	16000	16000	16000	15800	16000	15800	15800	16000	15700	16000	15700	16000	16000	15700
616DB	P ₁	3.36	2.93	2.48	2.15	1.82	1.53	1.30	1.11	0.992	0.940	0.834	0.749	0.675	0.634	0.595	0.546	0.485	
	M ₂	2070	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	F _{R2}	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
616DC	P ₁	3.41	2.93	2.48	2.15	1.82	1.53	1.30	1.11	0.992	0.940	0.834	0.749	0.675	0.634	0.595	0.546	0.485	
	M ₂	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	F _{R2}	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
617DC	P ₁	5.11	4.39	3.72	3.22	2.73	2.30	1.95	1.67	1.49	1.41	1.25	1.12	1.01	0.951	0.893	0.819	0.727	
	M ₂	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150
	F _{R2}	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500
618DB	P ₁	7.95	6.70	5.78	5.03	4.26	3.65	3.09	2.64	2.36	2.24	1.98	1.78	1.61	1.51	1.42	1.30	1.15	
	M ₂	4900	4810	4900	4920	4920	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
	F _{R2}	39900	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41600	41700	41700
619DA	P ₁	7.33	6.25	6.25	6.25	5.63	5.81	4.92	4.21	3.76	3.56	3.16	2.84	2.56	2.40	2.26	2.07	1.84	
	M ₂	4520	4480	5300	6110	6500	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960
	F _{R2}	56500	59000	59000	59000	58800	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000
619DB	P ₁	11.90	10.60	9.00	8.09	6.84	5.81	4.92	4.21	3.76	3.56	3.16	2.84	2.56	2.40	2.26	2.07	1.84	
	M ₂	7350	7580	7630	7910	7910	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960
	F _{R2}	55400	59000	58200	58300	58300	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000	

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

TWO STAGE REDUCER SELECTION - 2900RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P_1 = Allowable Input Power (kW)
- n_2 = Output Speed (rpm)

Unit Size	n_2	27.9	24.0	20.3	17.6	14.9	12.6	10.6	9.09	8.12	7.69	6.82	6.13	5.52	5.19	4.87	4.47	3.97	
	Ratio	104	121	143	165	195	231	273	319	357	377	425	473	525	559	595	649	731	
606DA	P_1	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	-	0.200	
	M_2	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	30.0	
	F_{R2}	1180	1140	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	-	1180
607DA	P_1	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	M_2	60.0	50.8	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	57.4	60.0
	F_{R2}	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1660	1770	1660	1770	1580	1660
609DA	P_1	0.422	0.429	0.429	0.409	0.346	0.292	0.247	0.212	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	M_2	130	154	182	200	200	200	200	200	200	200	195	200	195	200	200	200	146	200
	F_{R2}	3340	3340	3340	3340	3340	3340	3340	3340	3200	3340	3200	3190	3220	3190	3220	3200	3300	3220
610DA	P_1	0.422	0.429	0.429	0.429	0.429	0.429	0.371	0.317	0.284	0.268	0.238	0.214	0.200	0.200	0.200	0.200	0.200	0.200
	M_2	130	154	182	210	248	294	300	300	300	300	300	300	300	300	300	300	296	300
	F_{R2}	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5090	5400
612DA	P_1	0.422	0.429	0.429	0.429	0.429	0.429	0.429	0.429	0.429	0.429	0.429	0.429	0.405	0.380	0.357	0.328	0.291	
	M_2	130	154	182	210	248	294	347	406	454	480	541	602	630	630	630	630	630	
	F_{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
612DB	P_1	1.19	1.60	1.49	1.29	1.09	0.920	0.779	0.666	0.595	0.564	0.500	0.449	0.405	0.380	0.357	0.328	0.291	
	M_2	367	573	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	
	F_{R2}	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810	9810
613DB	P_1	1.19	1.60	1.60	1.60	1.60	1.37	1.16	0.994	0.888	0.841	0.715	0.671	0.578	0.567	0.533	0.546	0.434	
	M_2	367	573	678	782	924	940	940	940	940	940	940	940	940	940	940	940	1050	940
	F_{R2}	12900	13600	14200	14400	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
613DC	P_1	3.05	2.62	2.22	1.92	1.63	1.37	1.16	0.994	0.888	0.841	0.715	0.671	0.578	0.567	0.533	0.546	0.434	
	M_2	940	940	940	940	940	940	940	940	940	940	900	940	900	940	940	1050	940	
	F_{R2}	12500	13300	14000	14300	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
614DC	P_1	3.36	3.36	3.23	2.78	2.35	1.95	1.65	1.45	1.26	1.23	1.09	0.977	0.880	0.827	0.777	0.712	0.632	
	M_2	1030	1200	1370	1360	1360	1340	1340	1370	1340	1370	1370	1370	1370	1370	1370	1370	1370	
	F_{R2}	16000	16000	15900	16000	16000	16000	16000	15800	16000	15800	16000	15700	16000	15700	16000	16000	16000	
616DB	P_1	3.36	3.36	3.36	3.36	3.36	3.07	2.60	2.22	1.98	1.88	1.67	1.50	1.35	1.27	1.19	1.09	0.969	
	M_2	1030	1200	1420	1640	1940	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	
	F_{R2}	21900	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
616DC	P_1	6.81	5.86	4.95	4.29	3.63	3.07	2.60	2.22	1.98	1.88	1.67	1.50	1.35	1.27	1.19	1.09	0.969	
	M_2	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	
	F_{R2}	21300	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
617DC	P_1	7.31	6.25	6.25	6.25	5.45	4.60	3.89	3.33	2.98	2.82	2.50	2.25	2.02	1.90	1.79	1.64	1.45	
	M_2	2250	2240	2650	3060	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	
	F_{R2}	24100	25800	26800	28000	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	
618DB	P_1	15.9	13.4	11.6	10.1	8.52	7.30	6.18	5.29	4.73	4.47	3.97	3.57	3.21	3.02	2.84	2.60	2.31	
	M_2	4900	4810	4900	4920	4920	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	
	F_{R2}	31200	33400	34900	37000	39200	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41700	41600	
619DA	P_1	7.31	6.25	6.25	6.25	6.25	6.25	6.25	6.25	5.97	6.25	5.97	5.68	5.12	4.80	4.51	4.14	3.67	
	M_2	2250	2240	2650	3060	3610	4280	5060	5910	6320	6980	7520	7960	7960	7960	7960	7960	7960	
	F_{R2}	45300	48300	50300	52800	55700	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	
619DB	P_1	21.9	21.1	18.0	16.2	13.7	11.6	9.84	8.42	7.52	7.12	6.32	5.68	5.12	4.80	4.51	4.14	3.67	
	M_2	6740	7580	7630	7910	7910	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	7960	
	F_{R2}	43700	46500	48500	51100	54100	58800	59000	59000	59000	59000	59000	59000	59000	59000	58600	58100	59000	

* For larger unit ratings, please refer to page 368

Cyclo Gearboxes : Reducer selection

SINGLE STAGE REDUCER SELECTION - 580RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P_1 = Allowable Input Power (kW)
- n_2 = Output Speed (rpm)

Unit Size	n_2	52.7	38.7	27.6	20.0	13.5	9.8	6.7
	Ratio	11	15	21	29	43	59	87
620	P_1	46.8	39.5	28.2	20.3	13.8	10.1	6.43
	M_2	8050	9270	9270	9230	9300	9300	8760
	F_{R2}	67300	72500	81600	84100	84100	84100	84100
621	P_1	64.0	51.9	38.1	27.9	18.8	13.7	8.28
	M_2	11000	12200	12500	12700	12700	12700	11300
	F_{R2}	67300	72600	82500	90200	102000	104000	104000
622	P_1	74.7	61.7	45.1	33.2	23.8	17.2	11.1
	M_2	12900	14500	14800	15000	16000	15900	15100
	F_{R2}	71100	77100	86900	95200	108000	118000	133000
623	P_1	99.9	83.6	57.5	41.7	30.5	22.2	12.6
	M_2	17200	19600	18900	18900	20500	20500	17200
	F_{R2}	88800	95300	108000	119000	133000	146000	166000
624	P_1	117.0	112.0	78.5	56.9	38.4	28.0	16.6
	M_2	20200	26200	25800	25800	25800	25800	22600
	F_{R2}	98600	106000	119000	131000	149000	163000	185000
625	P_1	151.0	133.0	94.4	71.6	51.3	37.4	22.8
	M_2	25900	31200	31000	32500	34500	34500	31000
	F_{R2}	121000	130000	146000	161000	182000	200000	226000
626	P_1	175.0	175.0	140.0	101.0	68.4	49.8	32.3
	M_2	30100	41000	46000	46000	46000	46000	44000
	F_{R2}	148000	158000	177000	197000	222000	243000	274000

SINGLE STAGE REDUCER SELECTION - 720RPM INPUT

Unit Size	n_2	65.5	48.0	34.3	24.8	16.7	12.2	8.3
	Ratio	11	15	21	29	43	59	87
620	P_1	55.2	49.0	35.0	25.3	17.2	12.5	7.99
	M_2	7650	9270	9270	9230	9300	9300	8760
	F_{R2}	63000	67800	76300	83600	84100	84100	84100
621	P_1	75.3	64.4	47.2	34.6	23.3	17.0	10.3
	M_2	10400	12200	12500	12700	12700	12700	11300
	F_{R2}	63000	67900	77200	84400	95800	104000	104000
622	P_1	88.1	76.6	55.9	41.2	29.5	21.4	13.7
	M_2	12200	14500	14800	15000	16000	15900	15100
	F_{R2}	66600	72100	81200	89000	101000	110000	124000
623	P_1	113.0	104.0	71.4	51.7	37.6	27.3	15.7
	M_2	15700	19600	18900	18900	20400	20300	17200
	F_{R2}	83400	89000	101000	111000	125000	137000	155000
624	P_1	132.0	132.0	97.5	70.6	47.6	34.7	20.7
	M_2	18300	24900	25800	25800	25800	25800	22600
	F_{R2}	92600	98800	112000	123000	139000	152000	173000
625	P_1	151.0	151.0	117.0	88.9	61.5	44.9	28.3
	M_2	20900	28500	31000	32500	33300	33400	31000
	F_{R2}	114000	122000	136000	151000	170000	187000	211000
626	P_1	175.0	175.0	140.0	101.0	68.4	49.8	32.3
	M_2	24200	33000	45400	46000	46000	46000	44000
	F_{R2}	140000	149000	166000	184000	208000	228000	257000

Cyclo Gearboxes : Reducer selection

SINGLE STAGE REDUCER SELECTION - 980RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
 F_{R2} = Allowable Radial load applied to middle of shaft (N)
 P_1 = Allowable Input Power (kW)
 n_2 = Output Speed (rpm)

Unit Size	n_2	89.1	65.3	46.7	33.8	22.8	16.6	11.3
	Ratio	11	15	21	29	43	59	87
620	P_1	59.7	59.7	47.7	34.4	23.4	17.0	10.9
	M_2	6080	8290	9270	9230	9300	9300	8760
	F_{R2}	57700	61800	69400	76000	84100	84100	84100
621	P_1	75.3	75.3	64.3	47.1	31.8	23.2	14.0
	M_2	7670	10500	12500	12700	12700	12700	11300
	F_{R2}	58000	62000	70100	76600	87100	95100	104000
622	P_1	99.5	99.5	76.1	56.0	40.2	29.1	18.7
	M_2	10100	13800	14800	15000	16000	15900	15100
	F_{R2}	61000	65500	73700	80800	91700	100000	113000
623	P_1	113.0	113.0	97.2	70.4	47.6	34.6	21.3
	M_2	11500	15700	18900	18900	18900	18900	17200
	F_{R2}	76700	81700	91900	101000	114000	125000	141000
624	P_1	132.0	132.0	120.0	94.2	64.8	47.2	28.1
	M_2	13400	18300	23300	25300	25800	25800	22600
	F_{R2}	85200	91100	102000	112000	126000	138000	157000
625	P_1	151.0	151.0	151.0	118.0	77.9	56.8	38.5
	M_2	15300	20900	29300	31800	31000	31000	31000
	F_{R2}	104000	112000	124000	137000	155000	170000	192000
626	P_1	175.0	175.0	172.0	159.0	113.0	84.2	53.4
	M_2	17800	24300	33400	42700	45000	46000	43000
	F_{R2}	128000	137000	152000	168000	189000	207000	234000

SINGLE STAGE REDUCER SELECTION - 1450RPM INPUT

Unit Size	n_2	131.8	96.7	69.0	50.0	33.7	24.6	16.7
	Ratio	11	15	21	29	43	59	87
620	P_1	59.7	59.7	59.2	45.7	31.8	22.6	15.9
	M_2	4110	5600	7780	8280	8550	8340	8650
	F_{R2}	51700	55400	61800	67500	76500	83500	84100
621	P_1	75.3	75.3	75.3	58.5	45.2	33.9	19.7
	M_2	5190	7070	9900	10600	12200	12500	10700
	F_{R2}	52000	55700	62600	68300	77200	84200	95400
622	P_1	99.5	99.5	94.2	75.3	56.5	39.3	26.7
	M_2	6850	9330	12400	13700	15200	14500	14600
	F_{R2}	54800	59000	65700	71800	81300	89000	100000
623	P_1	-	-	-	-	-	-	-
	M_2	-	-	-	-	-	-	-
	F_{R2}	-	-	-	-	-	-	-
624	P_1	-	-	-	-	-	-	-
	M_2	-	-	-	-	-	-	-
	F_{R2}	-	-	-	-	-	-	-
625	P_1	-	-	-	-	-	-	-
	M_2	-	-	-	-	-	-	-
	F_{R2}	-	-	-	-	-	-	-
626	P_1	-	-	-	-	-	-	-
	M_2	-	-	-	-	-	-	-
	F_{R2}	-	-	-	-	-	-	-

Cyclo Gearboxes : Reducer selection

TWO STAGE REDUCER SELECTION - 720RPM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
- F_{R2} = Allowable Radial load applied to middle of shaft (N)
- P_1 = Allowable Input Power (kW)
- n_2 = Output Speed (rpm)

Unit Size	n_2	5.95	4.36	3.69	3.12	2.64	2.26	2.02	1.91	1.52	1.29	1.11	0.985
	Ratio	121	165	195	231	273	319	357	377	473	559	649	731
620DB	P_1	5.97	4.71	3.98	3.36	2.85	2.42	2.18	2.05	1.65	1.39	1.20	1.09
	M_2	8620	9270	9270	9270	9270	9230	9270	9230	9300	9300	9300	9300
	F_{R2}	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100
621DA	P_1	7.16	6.18	5.23	4.53	3.84	3.32	2.93	2.81	2.24	1.90	1.63	1.45
	M_2	10300	12200	12200	12500	12500	12700	12500	12700	12700	12700	12700	12700
	F_{R2}	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000
622DB	P_1	9.32	7.35	6.22	5.37	4.54	3.95	3.47	3.34	2.83	2.40	2.05	1.83
	M_2	13500	14500	14500	14800	14800	15000	14800	15000	16000	16000	15900	16000
	F_{R2}	140000	145000	145000	145000	145000	145000	145000	145000	145000	145000	145000	145000
623DA	P_1	13.0	9.96	8.42	6.95	5.80	4.96	4.43	4.20	3.63	3.07	2.65	2.35
	M_2	18700	19600	19600	18900	18900	18900	18900	18900	20500	20500	20500	20500
	F_{R2}	174000	179000	179000	179000	179000	179000	179000	179000	179000	179000	179000	179000
624DA	P_1	14.2	13.3	11.3	9.36	7.92	6.78	6.05	5.73	4.57	3.87	3.33	2.96
	M_2	20500	26200	26200	25800	25800	25800	25800	25800	25800	25800	25800	25800
	F_{R2}	194000	208000	208000	208000	208000	208000	208000	208000	208000	208000	208000	208000
625DA	P_1	19.0	15.8	13.4	11.2	9.51	8.53	7.27	7.22	6.11	5.17	4.45	3.95
	M_2	27500	31200	31200	31000	31000	32500	31000	32500	34500	34500	34500	34500
	F_{R2}	237000	255000	258000	258000	258000	258000	258000	258000	258000	258000	258000	258000
626DA	P_1	21.7	22.2	18.8	16.7	14.1	12.1	10.8	10.2	8.15	6.89	5.94	5.27
	M_2	31300	43700	43700	46000	46000	46000	46000	46000	46000	46000	46000	46000
	F_{R2}	276000	276000	276000	276000	276000	276000	276000	276000	276000	276000	276000	276000

TWO STAGE REDUCER SELECTION - 980RPM INPUT

Unit Size	n_2	8.10	5.94	5.03	4.24	3.59	3.07	2.75	2.60	2.07	1.75	1.51	1.34
	Ratio	121	165	195	231	273	319	357	377	473	559	649	731
620DB	P_1	8.12	6.41	5.42	4.58	3.87	3.30	2.96	2.79	2.24	1.90	1.63	1.49
	M_2	8620	9270	9270	9270	9270	9230	9270	9230	9300	9300	9300	9300
	F_{R2}	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100
621DA	P_1	9.70	8.40	7.10	6.20	5.20	4.50	4.00	3.80	3.10	2.60	2.20	2.00
	M_2	10300	12200	12200	12500	12500	12700	12500	12700	12700	12700	12700	12700
	F_{R2}	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000
622DB	P_1	12.7	10.0	8.50	7.30	6.20	5.40	4.70	4.60	3.90	3.30	2.80	2.50
	M_2	13500	14500	14500	14800	14800	15000	14800	15000	16000	16000	15900	16000
	F_{R2}	127000	138000	145000	145000	145000	145000	145000	145000	145000	145000	145000	145000
623DA	P_1	17.6	13.6	11.5	9.30	7.90	6.80	6.00	5.70	4.90	4.20	3.60	3.20
	M_2	18700	19600	19600	18900	18900	18900	18900	18900	20500	20500	20500	20500
	F_{R2}	159000	171000	179000	179000	179000	179000	179000	179000	179000	179000	179000	179000
624DA	P_1	19.4	18.1	15.3	12.7	10.8	9.20	8.20	7.80	6.20	5.30	4.50	4.00
	M_2	20500	26200	26200	25800	25800	25800	25800	25800	25800	25800	25800	25800
	F_{R2}	176000	189000	199000	208000	208000	208000	208000	208000	208000	208000	208000	208000
625DA	P_1	25.9	21.5	18.2	15.3	12.9	11.6	9.90	9.82	8.32	7.04	6.06	5.38
	M_2	27500	31200	31200	31000	31000	32500	31000	32500	34500	34500	34500	34500
	F_{R2}	215000	232000	244000	258000	258000	258000	258000	258000	258000	258000	258000	258000
626DA	P_1	29.5	30.2	25.6	22.7	19.2	16.4	14.7	13.9	11.1	9.40	8.10	7.20
	M_2	31300	43700	43700	46000	46000	46000	46000	46000	46000	46000	46000	46000
	F_{R2}	264000	276000	276000	276000	276000	276000	276000	276000	276000	276000	276000	276000

Cyclo Gearboxes : Reducer selection

TWO STAGE REDUCER SELECTION - 1450PM INPUT

These rating tables are based on a service factor of 1.0 - suitable for 10hrs/day at Uniform Load.

- M_2 = Allowable output torque (Nm)
 F_{R2} = Allowable Radial load applied to middle of shaft (N)
 P_1 = Allowable Input Power (kW)
 n_2 = Output Speed (rpm)

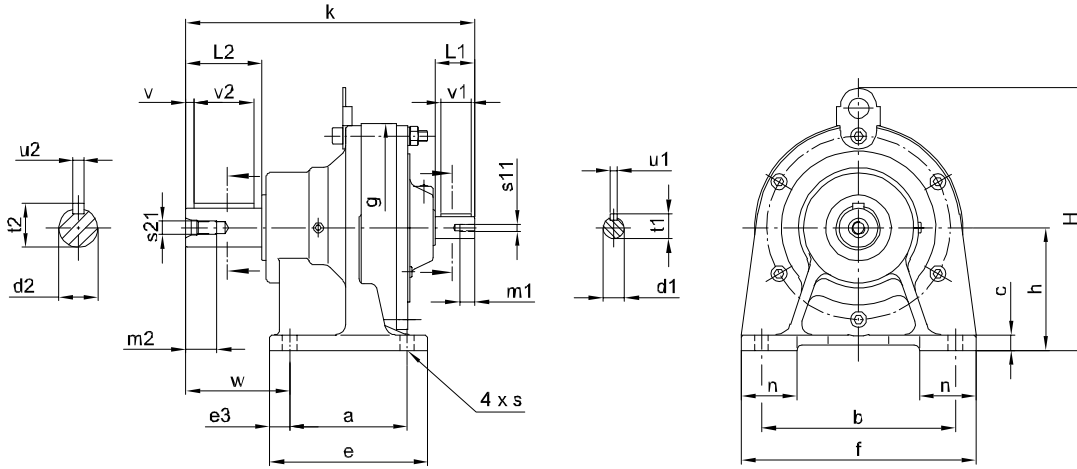
Unit Size	n_2	12.0	8.79	7.44	6.28	5.31	4.55	4.06	3.85	3.41	3.07	2.76	2.59
	Ratio	121	165	195	231	273	319	357	377	425	473	525	559
620DB	P_1	11.9	9.48	8.02	6.77	5.73	4.88	4.38	4.13	3.32	2.81	2.42	2.20
	M_2	8560	9270	9270	9270	9270	9230	9270	9230	9300	9300	9300	9300
	F_{R2}	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100
621DA	P_1	11.9	11.9	10.5	9.13	7.72	6.69	5.91	5.66	4.51	3.82	3.29	2.92
	M_2	8560	11700	12200	12500	12500	12700	12500	12700	12700	12700	12700	12700
	F_{R2}	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000	104000
622DB	P_1	18.8	14.8	12.5	10.8	9.15	7.95	6.99	6.73	5.71	4.83	4.13	3.69
	M_2	13500	14500	14500	14800	14800	15000	14800	15000	16000	16000	15900	16000
	F_{R2}	113000	122000	129000	137000	145000	145000	145000	145000	145000	145000	145000	145000
623DA	P_1	25.4	20.0	17.0	13.8	11.7	10.0	8.93	8.46	7.31	6.19	5.33	4.73
	M_2	18200	19600	19600	18900	18900	18900	18900	18900	20500	20500	20500	20500
	F_{R2}	141000	151000	159000	171000	179000	179000	179000	179000	179000	179000	179000	179000
624DA	P_1	25.4	25.4	22.7	18.8	15.9	13.6	12.2	11.5	9.20	7.79	6.71	5.95
	M_2	18200	24800	26200	25800	25800	25800	25800	25800	25800	25800	25800	25800
	F_{R2}	157000	168000	177000	189000	199000	208000	208000	208000	208000	208000	208000	208000
625DA	P_1	31.8	31.8	27.0	22.6	19.2	17.2	14.6	14.5	12.3	10.4	8.97	7.96
	M_2	22800	31100	31200	31000	31000	32500	31000	32500	34500	34500	34500	34500
	F_{R2}	192000	206000	216000	231000	243000	255000	258000	258000	258000	258000	258000	258000
626DA	P_1	43.7	44.7	37.8	33.6	28.4	24.3	21.7	20.6	16.4	13.9	12.0	10.6
	M_2	31300	43700	43700	46000	46000	46000	46000	46000	46000	46000	46000	46000
	F_{R2}	234000	250000	263000	276000	276000	276000	276000	276000	276000	276000	276000	276000

TWO STAGE REDUCER SELECTION - 2900RPM INPUT

Unit Size	n_2	24.0	17.6	14.9	12.6	10.6	9.09	8.12	7.69	6.13	5.19	4.47	3.97
	Ratio	121	165	195	231	273	319	357	377	473	559	649	731
620DB	P_1	24.0	19.0	16.0	13.5	11.5	9.76	8.77	8.26	6.63	5.61	4.83	-
	M_2	8620	9270	9270	9270	9270	9230	9270	9230	9300	9300	9300	-
	F_{R2}	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100	84100	-
621DA	P_1	30.9	24.9	21.1	18.3	15.4	13.4	11.8	11.3	9.02	7.64	6.58	-
	M_2	11100	12200	12200	12500	12500	12700	12500	12700	12700	12700	12700	-
	F_{R2}	86100	92900	97800	104000	104000	104000	104000	104000	104000	104000	104000	-
622DB	P_1	-	-	-	-	-	-	-	-	-	-	-	-
	M_2	-	-	-	-	-	-	-	-	-	-	-	-
	F_{R2}	-	-	-	-	-	-	-	-	-	-	-	-
623DA	P_1	52.2	40.1	33.9	27.6	23.4	20.0	17.9	16.9	14.6	12.4	10.7	-
	M_2	18700	19600	19600	18900	18900	18900	18900	18900	20500	20500	20500	-
	F_{R2}	113000	122000	128000	138000	146000	152000	158000	160000	170000	179000	179000	-
624DA	P_1	57.3	53.7	45.4	37.7	31.9	27.3	24.4	23.1	18.4	15.6	13.4	-
	M_2	20500	26200	26200	25800	25800	25800	25800	25800	25800	25800	25800	-
	F_{R2}	126000	135000	142000	153000	161000	168000	175000	177000	190000	200000	208000	-
625DA	P_1	76.7	63.7	53.9	45.3	38.3	34.3	29.3	29.1	24.6	20.8	17.9	-
	M_2	27500	31200	31200	31000	31000	32500	31000	32500	34500	34500	34500	-
	F_{R2}	154000	166000	175000	186000	196000	206000	213000	217000	232000	244000	254000	-
626DA	P_1	87.4	89.4	75.7	67.2	56.9	48.7	43.5	41.2	32.8	27.8	23.9	-
	M_2	31300	43700	43700	46000	46000	46000	46000	46000	46000	46000	46000	-
	F_{R2}	189000	202000	212000	227000	239000	252000	259000	265000	276000	276000	276000	-

Cyclo Gearboxes : Speed Reducer - Foot Mounted

FOOT MOUNTING (TYPE G)



Unit Size	a	b	c	d1 HS	d2 LS	e	e3	f	Øg	h	H	k	L1	L2	m1	m2	n	s	s11	s21	t1	t2	u1	u2	v	v1	v2	w	kg
606	60	120	10	12	14	84	12	144	110	80	-	150	25	30	8	12	48	9	M4	M5	13.5	16	4	5	2.5	22	25	46	2.5
607	60	120	10	12	20	84	12	144	110	80	-	161	25	40	8	15	48	9	M4	M6	13.5	22.5	4	6	4	22	32	57	2.5
608	75	120	13	12	25	99	12	144	134	90	-	193	25	50	8	22	49	9	M4	M10	13.5	28	4	8	3.5	22	40	67	8
609	90	150	12	14	25	135	15	180	150	100	-	217	25	50	10	22	65	11	M5	M10	16	28	5	8	3.5	21	40	75	9
610	90	150	12	14	30	135	15	180	150	100	-	233	25	60	10	22	40	11	M5	M10	16	33	5	8	3.5	21	50	85	13
611	90	150	12	14	35	135	15	180	162	120	-	243	25	70	10	28	45	11	M5	M12	16	38	5	10	7	21	56	95	15
612	115	190	15	19	35	155	20	230	204	120	257	274	35	70	12	28	55	14	M5	M12	21.5	38	6	10	7	27	56	97	24
613	145	290	22	22	50	195	25	330	230	150	300	351	40	100	16	36	65	18	M8	M16	24.5	53.5	6	14	10	34	80	130	43
614	145	290	22	22	50	195	25	330	230	150	300	351	40	100	16	36	65	18	M8	M16	24.5	53.5	6	14	10	34	80	130	44
616	150	370	25	30	60	238	44	410	318	160	367	413	45	90	16	18	75	18	M8	M10	33	64	8	18	0	45	80	139	84
617	275	380	30	35	70	335	30	430	362	200	429	477	55	90	16	24	80	22	M8	M12	38	74.5	10	20	0	50	80	125	125
618	320	420	30	40	80	380	30	470	390	220	467	527	65	110	18	24	85	22	M10	M12	43	85	12	22	0	63	100	145	163
619	380	480	35	45	95	440	30	530	451	250	538	620	70	135	18	34	90	26	M10	M20	48.5	100	14	25	0	70	125	170	240
620	360	440	35	45	100	440	40	530	471	250	530	678	82	165	18	34	100	26	M10	M20	48.5	106	14	28	0	82	165	215	255
621	395	480	40	50	110	475	40	580	507	265	575	708	82	165	18	34	110	26	M10	M20	53.5	116	14	28	0	82	165	210	336
622	420	540	40	55	120	520	50	620	549	280	610	752	82	165	18	34	115	33	M10	M20	59	127	16	32	0	82	165	230	409
623	460	580	45	60	130	560	50	670	591	300	667	839	105	200	18	41	120	33	M10	M24	64	137	18	32	0	105	200	260	503
624	480	630	45	65	140	580	50	720	637	335	729	877	105	200	24	41	128	39	M12	M24	69	148	18	36	0	105	200	263	614
625	520	670	50	80	160	630	55	780	703	375	815	1040	130	240	24	49	140	39	M12	M30	85	169	22	40	0	130	240	320	957
626	590	770	55	80	170	700	55	880	772	400	874	1150	130	300	24	49	160	45	M12	M30	85	179	22	40	0	130	300	390	1190
627	420	1050	60	90	180	1040	100	1160	986	540	1161	1462	150	330	24	52	200	45	M16	M30	95	190	25	45	0	140	330	485	2460

All dimensions are in mm

TECHNICAL NOTES

Keys and keyways acc. to DIN 6885-1.
Tolerances according to DIN ISO 286-2.

Output Shaft Tolerances are k6 up to and including Ø35mm and h6 from Ø50mm and above. Input shafts of Ø22mm and below have a k6 tolerance and from Ø30mm and above have a h6 tolerance.

MOUNTING POSTIONS

Foot mounted and Flange mounted units from size 606 - 612 are grease lubricated for life and suitable for any mounting position.

Units from size 613 - 625 are oil lubricated for Horizontal and vertical mounting.

For unit sizes 616 and above there is an additional oil circulating pump system required for vertical mounting positions - please consult your local Authorised Distributor.

All speed reducers are also available as flange mounted or face mounted, for additional dimensions please see page 352.

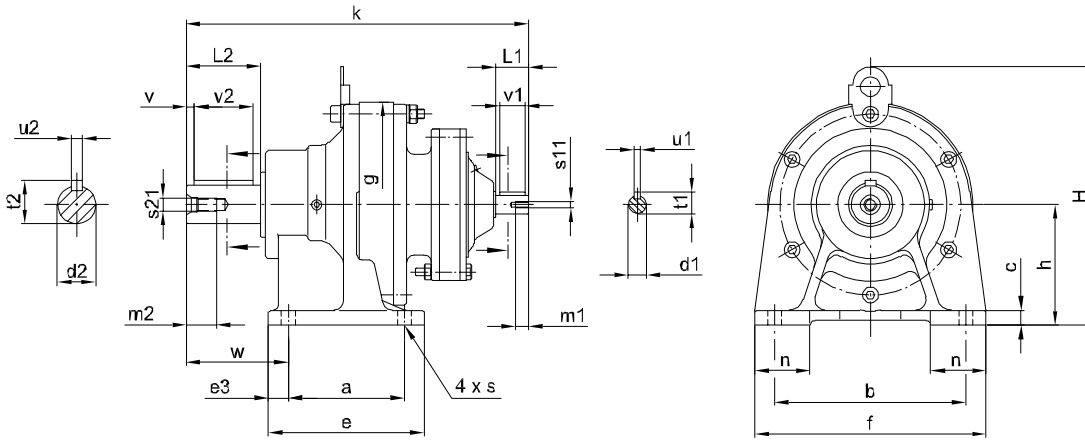
LUBRICANT QUANTITIES

Size	Oil Qty*
613	0.7
614	0.7
616	1.4
617	1.9
618	2.5
619	4.0
620	5.5
621	8.5
622	10.0
623	15.0
624	16.0
625	21.0
626	29.0
627	56.0

* For foot mounted horizontal units. This quantity is an approximate figure only - the actual fill quantity should be determined by means of the oil level gauge.

Cyclo Gearboxes : Speed Reducer - Foot Mounted

FOOT MOUNTING (TYPE DA G / DB G / DC G)



Unit Size	a	b	c	d1 HS	d2 LS	e	e3	f	Øg	h	H	k	L1	L2	m1	m2	n	s	s11	s21	t1	t2	u1	u2	v	v1	v2	w	kg
606DA	60	120	10	12	14	84	12	144	110	80	-	178	25	30	8	12	48	9	M4	M5	13.5	16	4	5	2.5	22	25	46	4
607DA	60	120	10	12	20	84	12	144	110	80	-	194	25	40	8	15	48	9	M4	M6	13.5	22.5	4	6	4	22	32	57	5
609DA	90	150	12	12	25	135	15	180	150	100	-	258	25	50	8	22	65	11	M4	M10	13.5	28	4	8	3.5	22	40	75	12
610DA	90	150	12	12	30	135	15	180	150	100	-	283	25	60	8	22	40	11	M4	M10	13.5	33	4	8	3.5	22	50	85	15
612DA	115	190	15	12	35	155	20	230	204	120	257	308	25	70	8	28	55	14	M4	M12	13.5	38	4	10	3.5	22	56	97	26
612DB	115	190	15	14	35	155	20	230	204	120	257	327	25	70	10	28	55	14	M5	M12	16	38	5	10	7	21	56	97	30
613DB	145	290	22	14	50	195	25	330	230	150	300	394	25	100	10	36	65	18	M5	M16	16	53.5	5	14	10	21	80	130	45
613DC	145	290	22	14	50	195	25	330	230	150	300	400	25	100	10	36	65	18	M5	M16	16	53.5	5	14	10	21	80	130	46
614DC	145	290	22	14	50	195	25	330	230	150	300	400	25	100	10	36	65	18	M5	M16	16	53.5	5	14	10	21	80	130	46
616DB	150	370	25	14	60	238	44	410	300	160	353	440	25	90	10	18	75	18	M5	M10	16	64	5	18	0	21	80	139	87
616DC	150	370	25	19	60	238	44	410	300	160	353	463	35	90	12	18	75	18	M6	M10	21.5	64	6	18	0	27	80	139	94
617DC	275	380	30	19	70	335	30	430	340	200	418	510	35	90	12	24	80	22	M6	M12	21.5	74.5	6	20	0	27	80	125	128
618DB	320	420	30	22	80	380	30	470	370	220	451	577	40	110	16	24	85	22	M8	M12	24.5	85	6	22	0	34	100	145	183
619DA	380	480	35	19	95	440	30	530	430	250	531	629	35	135	12	34	90	26	M8	M20	21.5	100	6	25	0	27	125	170	241
619DB	380	480	35	22	95	440	30	530	430	250	531	653	40	135	16	34	90	26	M8	M20	24.5	100	6	25	0	34	125	170	250
620DB	360	440	35	22	100	440	40	530	448	250	530	705	40	165	16	34	100	26	M8	M20	24.5	106	6	28	0	34	165	215	273
621DA	395	480	40	22	110	475	40	580	485	265	575	731	40	165	16	34	110	26	M8	M20	24.5	116	6	28	0	34	165	210	354
622DA	420	540	40	22	120	520	50	620	526	280	610	773	40	165	16	34	115	33	M8	M20	24.5	127	6	32	0	34	165	230	429
622DB	420	540	40	35	120	520	50	620	526	280	610	860	55	165	16	34	115	33	M8	M20	38	127	10	32	0	50	165	230	476
623DA	460	580	45	30	130	560	50	670	562	300	667	883	45	200	16	41	120	33	M8	M24	33	137	8	32	0	45	200	260	548
624DA	480	630	45	30	140	580	50	720	614	335	729	921	45	200	16	41	128	39	M8	M24	33	148	8	36	0	45	200	263	656
625DA	520	670	50	35	160	630	55	780	670	375	815	1081	55	240	16	49	140	39	M8	M30	38	169	10	40	0	50	240	320	1010
626DA	590	770	55	45	170	700	55	880	736	400	874	1243	70	300	18	49	160	45	M10	M30	48.5	179	14	40	0	70	300	390	1340
627DA	420	1050	60	45	180	1040	100	1160	950	540	1161	1505	70	330	18	52	200	45	M10	M30	48.5	190	14	45	0	70	330	485	2480

All dimensions are in mm

TECHNICAL NOTES

Keys and keyways acc. to DIN 6885-1.
Tolerances according to DIN ISO 286-2.

Output Shaft Tolerances are k6 up to and including Ø35mm and h6 from Ø50mm and above. Input shafts of Ø22mm and below have a k6 tolerance and from Ø30mm and above have a h6 tolerance.

MOUNTING POSITIONS

Size 606DA - 616DB are Grease lubricated for all mounting positions.

Size 616DC - 627DA are oil lubricated for Horizontal mounting and grease lubricated for vertical mounting positions.

All speed reducers are also available as flange mounted or face mounted, for additional dimensions see page 352.

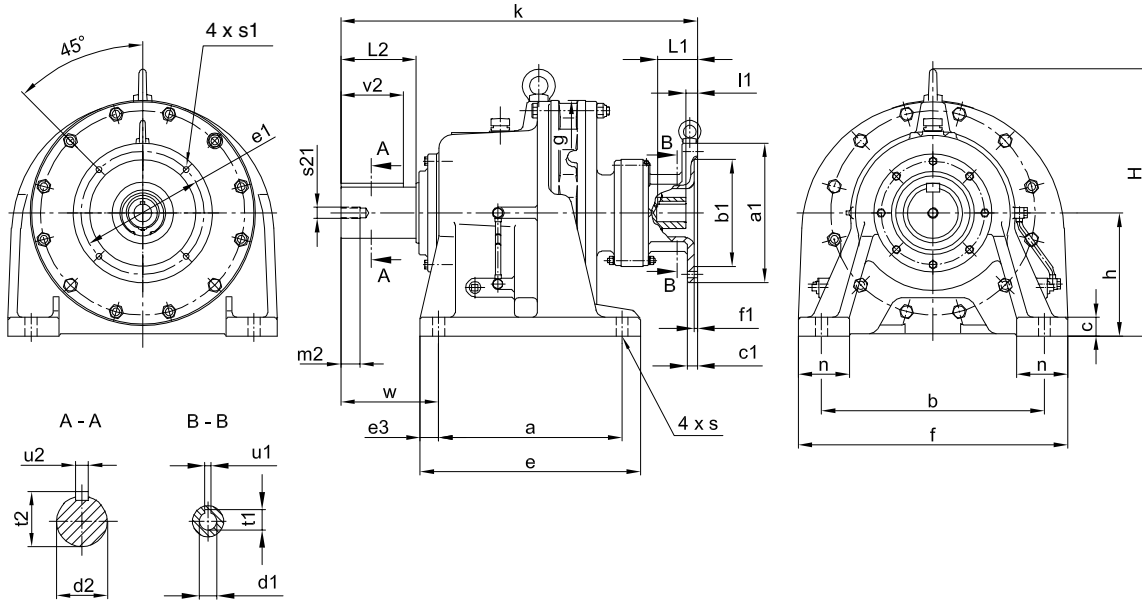
LUBRICANT QUANTITIES

Size	Oil Qty*
616DC	1.5
617DC	2.4
618DB	3.5
619DA	5.8
619DB	6.0
620DB	6.0
621DA	10.0
622DA	11.0
622DB	11.0
623DA	17.0
624DA	18.0
625DA	23.0
626DA	32.0
627DA	70.0

* For foot mounted horizontal units. This quantity is an approximate figure only - the actual fill quantity should be determined by means of the oil level gauge.

Cyclo Gearboxes : Reducer - Dimensions Motor-ready (IEC) Foot Mounted

FOOT MOUNTED (TYPE DAD / DBD)



Unit Size	a	b	c	Ø d2	e	e3	f	Ø g	h	H	L2	m2	n	Ø s	s21	t2	u2	v2	w
620DB	360	440	35	100 h6	440	40	530	448	250	530	165	34	100	26	M20	106	28	165	215
621DA	395	480	40	110 h6	475	40	580	485	265	575	165	34	110	26	M20	116	28	165	210
622DA	420	540	40	120 h6	520	50	620	526	280	610	165	34	115	33	M20	127	32	165	230
623DA	460	580	45	130 h6	560	50	670	562	300	667	200	41	120	33	M24	137	32	200	260
624DA	480	630	45	140 h6	580	50	720	614	335	729	200	41	128	39	M24	148	36	200	263

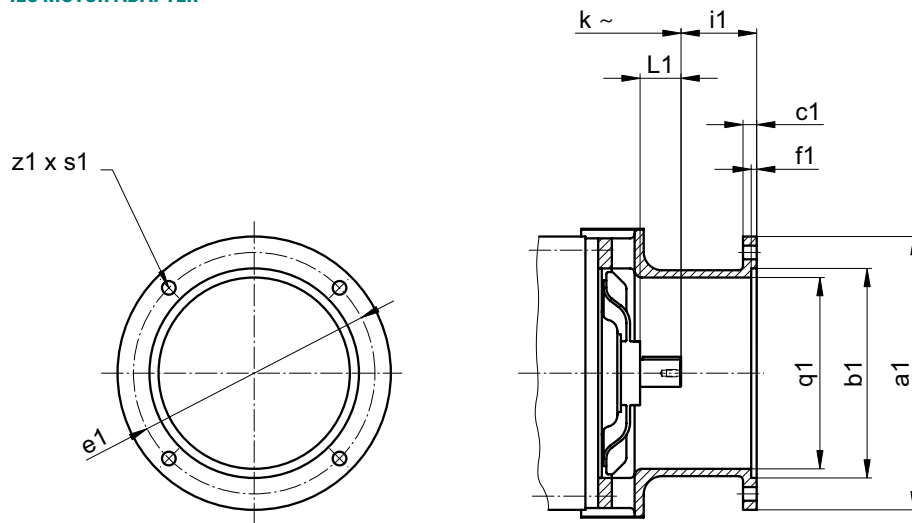
All dimensions are in mm.

Unit Size	Frame	Ø a1	Ø b1	c1	Ø e1	f1	k	Ø s1	Ø d1	l1	L1	u1	t1	kg
620DB	90	200	130 H8	11	165	4.5	705	11	24 F7	14	50	8 Js9	27.3	276
	100/112	250	180 H8	13	215	5	715	14	28 F7	18	60	8 Js9	31.3	278
	132	300	230 H8	17	265	5	741	14	38 F7	23	80	10 Js9	41.3	283
621DA	90	200	130 H8	11	165	4.5	732	11	24 F7	14	50	8 Js9	27.3	357
	100/112	250	180 H8	13	215	5	742	14	28 F7	18	60	8 Js9	31.3	359
	132	300	230 H8	17	265	5	768	14	38 F7	23	80	10 Js9	41.3	364
622DA	90	200	130 H8	11	165	4.5	773	11	24 F7	14	50	8 Js9	27.3	432
	100/112	250	180 H8	13	215	5	783	14	28 F7	18	60	8 Js9	31.3	434
	132	300	230 H8	17	265	5	809	14	38 F7	23	80	10 Js9	41.3	439
623DA	100/112	250	180 H8	14	215	5	864	14	28 F7	18	60	8 Js9	31.3	552
	132	300	230 H8	16	265	5	876	14	38 F7	23	80	10 Js9	41.3	557
	160	350	250 H8	16	300	6	922	18	42 F7	47	110	12 Js9	45.3	562
624DA	100/112	250	180 H8	14	215	5	902	14	28 F7	18	60	8 Js9	31.3	660
	132	300	230 H8	16	265	5	924	14	38 F7	23	80	10 Js9	41.3	665
	160	350	250 H8	16	300	6	960	18	42 F7	47	110	12 Js9	45.3	670

For two stage units larger than this size, use speed reducers (page 367) and IEC motor adaptor and coupling (page 376)

Cyclo Gearboxes : IEC Adapter Housing

IEC MOTOR ADAPTER



Unit Size	Frame	a1	b1	c1	e1	f1	i1	L1	s1	z1	q1	Input Coupling	Motor Shaft	Gearbox Shaft	Weight kg*
617	100/112	250	180h8	15	215	6	63	55	14	4	150	HRC90	28	35	20.8
	132	300	230 H8	15	265	6	83	55	14	4	190	HRC110	38	35	25.0
	160	350	250 H8	20	300	7	113	55	18	4	200	HRC110	42	35	33.0
	180	350	250 H8	20	300	7	113	55	18	4	200	HRC130	48	35	33.5
618	100/112	250	180h8	15	215	6	63	65	14	4	160	HRC110	28	40	28.0
	132	300	230 H8	15	265	7	83	65	15	4	190	HRC130	38	40	30.5
	160	350	250 H8	20	300	7	113	65	18	4	200	HRC130	42	40	33.5
	180	350	250 H8	20	300	7	113	65	18	4	200	HRC130	48	40	35.5
	200	400	300 H8	19	350	7	114	65	18	4	220	HRC130	55	40	40.5
619	225	450	350 H8	20	400	7	144	70	18	8	270	HRC150	60	40	50.2
	132	300	230 H8	16	265	6	83	70	15	4	190	HRC110	38	45	25.0
	160	350	250 H8	20	300	7	113	70	18	4	190	HRC130	42	45	38.5
	180	350	250 H8	20	300	7	113	70	18	4	190	HRC130	48	45	38.5
	200	400	300 H8	20	350	7	114	70	18	4	220	HRC130	55	45	49.5
620	225	450	350 H8	20	400	7	144	70	18	8	270	HRC150	60	45	50.2
	160	350	250 H8	20	300	7	113	82	18	4	200	HRC130	42	45	50.5
	180	350	250 H8	20	300	7	113	82	18	4	200	HRC130	48	45	50.5
	200	400	300 H8	20	350	7	114	82	18	4	220	HRC130	55	45	52.5
	225#	450	350 H8	19	400	7	144	82	18	8	270	HRC150	60	45	69.2
621	160	350	250 H8	20	300	7	113	82	18	4	200	HRC130	42	50	57.5
	180	350	250 H8	20	300	7	113	82	18	4	200	HRC130	48	50	57.5
	200	400	300 H8	23	350	7	114	82	18	4	210	HRC130	55	50	65.5
	225	450	350 H8	23	400	7	144	82	18	8	270	HRC150	60	50	72.2
	250#	550	450 H8	22	500	7	144	82	18	8	290	HRC150	65	50	84.2
622	180	350	250 H8	18	300	7	114	82	18	4	200	HRC130	48	55	72.5
	200	400	300 H8	18	350	7	114	82	18	4	210	HRC130	55	55	75.5
	225	450	350 H8	22	400	7	144	82	18	8	270	HRC150	60	55	87.2
	250#	550	450 H8	22	500	7	144	82	18	8	290	HRC150	65	55	101.2
623/624	200	400	300 H8	20	350	7	114	105	18	4	260	HRC150	55	60/65	84.2/102.2
	225	450	350 H8	22	400	7	144	105	18	8	270	HRC150	60	60/65	92.2/108.2
	250	550	450 H8	22	500	7	144	105	18	8	300	HRC150	65	60/65	103.2/132.2
	280	550	450 H8	22	500	7	144	105	18	8	300	HRC180	75	60/65	112.6/141.6
625	225	450	350 H8	22	400	7	144	130	19	8	280	HRC230	60	80	143
	250	550	450 H8	22	500	7	144	130	18	8	350	HRC230	65	80	157
	280	550	450 H8	22	500	7	144	130	18	8	350	HRC230	75	80	157
626	250	550	450 H8	22	500	7	144	130	19	8	350	HRC230	65	80	181
	280	550	450 H8	22	500	7	144	130	19	8	350	HRC230	75	80	181

*The kg shown is an additional weight of couplings and adaptor to be added to the speed reducer weight on page 374

Larger frames are available on request - please contact your local authorised distributor

- For k dimensions refer to page 374.

Cyclo Gearboxes : Minimum Motor Power Requirements

MINIMUM MOTOR POWER REQUIREMENTS

Two stage units require a minimum input power in order to provide a safe start under difficult conditions.

The gearheads are limited by their rated output torque.

Note: Operation with full motor power is not possible and we advise some method of torque limiting be installed.

Unit Size	841 29 x 29	1003 59 x 17	1247 43 x 29	1479 87 x 17	1849	2065	2537	3045	3481	4437	5133	6177	7569
606DA	0.12	-	0.12	-	0.12	-	-	-	-	-	-	-	-
607DA	0.12	0.12	0.12	-	0.12	0.12	0.12	-	-	-	-	-	-
609DA	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	-	-
610DA	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	-	-
612DA	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.12	0.12
612DB	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
613DA	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
613DB	0.37	0.37	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
613DC	0.37	0.37	0.25	0.25	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
614DA	0.37	0.37	0.37	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
614DB	0.37	0.37	0.37	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
614DC	0.37	0.37	0.37	0.25	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
616DA	0.37	0.37	0.37	0.25	0.18	0.18	0.18	0.18	0.18	0.18	0.75	0.18	0.18
616DB	0.75	0.75	0.37	0.37	0.37	0.18	0.18	0.18	0.18	0.18	0.75	0.18	0.18
616DC	0.75	0.75	0.37	0.25	0.18	0.37	0.18	0.18	0.18	0.18	0.75	0.18	0.18
617DA	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
617DB	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
617DC	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.75	0.75	0.75
618DA	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
618DB	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
619DA	1.5	1.5	1.5	1.5	1.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
619DB	1.5	1.5	1.5	1.5	1.5	1.1	1.1	1.1	1.1	1.1	1.1	0.75	0.75
620DA	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.1	1.1
620DB	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.1	1.1
621DA	4.0	4.0	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
621DB	4.0	4.0	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
622DA	4.0	4.0	4.0	4.0	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
622DB	5.5	4.0	4.0	2.2	2.2	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5
623DA	5.5	4.0	4.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
623DB	5.5	4.0	4.0	3.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
624DA	5.5	5.5	5.5	4.0	4.0	4.0	4.0	2.2	4.0	2.2	4.0	2.2	2.2
624DB	5.5	5.5	5.5	4.0	4.0	4.0	4.0	2.2	4.0	2.2	4.0	2.2	2.2
625DA	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0	5.5	4.0	4.0
625DB	7.5	7.5	7.5	5.5	5.5	5.5	5.5	4.0	5.5	5.5	5.5	4.0	4.0
626DA	11.0	11.0	7.5	7.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
627DA	15.0	15.0	11.0	11.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5

Cyclo Gearboxes : Minimum Input Power & Breakaway Torque

MINIMUM INPUT POWER REQUIREMENTS

A minimum input power is necessary to accelerate the reducer to its rated input speed under its worst operating conditions within the thermal available time.

The values shown give the necessary power per 100rpm at the input shaft.

The output torque during operation may not exceed the maximum allowable torque above. Column 3 gives the approximate output shaft speed for the selected speed and ratio combination.

Unit Size	Combination	Input Power (kW/100rpm)
606DA	606+606	0.0067
607DA	607+606	0.0067
609DA	609+607	0.0067
610DA	610+607	0.0067
612DA	612+607	0.0067
612DB	612+609	0.0067
613DA	613+607	0.0133
613DB	613+609	0.0133
613DC	613+610	0.0133
614DA	614+607	0.0133
614DB	614+609	0.0133
614DC	614+610	0.0133
616DA	616+609	0.0133
616DB	616+610	0.0133
616DC	616+612	0.0267
617DA	617+609	0.0267
617DB	617+610	0.0267
617DC	617+612	0.0500

Unit Size	Combination	Input Power (kW/100rpm)
618DA	618+610	0.0500
618DB	618+613	0.1000
619DA	619+612	0.1000
619DB	619+613	0.1000
620DA	620+612	0.1000
620DB	620+613	0.1000
621DA	621+613	0.1000
621DB	621+616	0.1000
622DA	622+613	0.1000
622DB	622+617	0.2467
623DA	623+616	0.1467
623DB	623+618	0.3067
624DA	624+616	0.2467
624DB	624+618	0.3067
625DA	625+617	0.2467
625DB	625+619	0.3667
626DA	626+619	0.3667
626DB	626+619	0.3667

BREAKAWAY TORQUE

The Breakaway Torques shown below are obtained with standard lubrication and do not include any dynamic torques or external loads. The ambient temperature is taken as 20°C.

These values are average values and a deviation of ±50% has to be considered.

The BOLD figure is for speed increasers (driving the output shaft) and the other figure is for standard speed reducers (driving the input shaft).

To determine breakaway torque (TB) for units with more than one stage, use the following formulae:

$$\text{Slow speed } T_B = T_{B1} + T_{B2} / i_1$$

$$\text{High speed } T_B = T_{B1} + T_{B2} \times i_2$$

$$T_{B1} = 1\text{st stage } T_B \quad T_{B2} = 2\text{nd stage } T_B \quad i_1 = \text{Ratio 1st stage} \\ i_2 = \text{Ratio 2nd stage}$$

Unit Size	Breakaway Torque Required at Ratio (Nm)															
	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119
606	0.53	0.70	0.95	1.10	1.30	1.50	1.80	2.20	2.50	3.00	3.70	-	-	-	-	-
	0.088	0.088	0.087	0.087	0.087	0.087	0.087	0.087	0.087	0.087	0.087	-	-	-	-	-
607	0.53	0.70	0.97	1.10	1.30	1.50	1.80	2.20	2.50	3.10	3.80	4.50	5.20	-	-	-
	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	-	-	-
608	1.30	1.40	1.60	1.60	1.80	2.10	2.60	2.60	3.00	3.60	4.40	5.30	6.10	7.30	9.00	-
	0.220	0.180	0.150	0.120	0.120	0.120	0.120	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	-
609	1.90	2.50	2.70	2.90	3.40	3.80	4.70	6.10	7.10	11.0	12.0	11.0	13.0	16.0	22.0	29.2
	0.310	0.310	0.250	0.230	0.230	0.230	0.230	0.230	0.250	0.230	0.200	0.150	0.150	0.130	0.130	0.120
610	2.20	2.70	2.70	3.20	3.70	4.20	5.20	8.30	9.60	12.0	14.0	13.0	15.0	18.0	25.0	34.0
	0.360	0.330	0.250	0.250	0.250	0.250	0.260	0.260	0.260	0.250	0.230	0.170	0.170	0.140	0.140	0.140
611	2.80	3.30	4.00	4.20	4.60	4.50	5.60	8.60	10.0	12.0	15.0	17.0	17.0	18.0	26.0	-
	0.460	0.410	0.360	0.330	0.300	0.260	0.260	0.270	0.270	0.250	0.250	0.230	0.200	0.150	0.150	-
612	3.10	3.50	4.10	4.50	4.90	5.30	6.20	7.40	11.0	13.0	17.0	23.0	28.0	34.0	42.0	-
	0.510	0.440	0.370	0.340	0.330	0.310	0.290	0.290	0.290	0.270	0.270	0.290	0.310	0.270	0.270	-
613	1.90	2.40	3.20	3.60	4.00	4.50	6.20	7.40	8.50	9.30	11.0	10.0	11.0	12.0	19.0	-
	0.310	0.290	0.290	0.270	0.260	0.260	0.290	0.290	0.290	0.260	0.250	0.190	0.190	0.170	0.220	-
614	2.10	2.60	3.60	4.00	4.40	5.00	6.80	8.10	9.40	10.0	11.0	11.0	13.0	14.0	17.0	-
	0.340	0.320	0.320	0.300	0.290	0.290	0.320	0.320	0.320	0.290	0.260	0.220	0.220	0.200	0.200	-
616	5.40	6.60	8.40	9.40	10.0	12.0	13.9	16.6	20.0	25.0	32.0	21.0	25.0	32.0	36.0	-
	0.700	0.640	0.590	0.560	0.530	0.530	0.510	0.510	0.530	0.550	0.570	0.320	0.320	0.340	0.340	-
617	10.0	12.0	16.0	17.0	20.0	22.0	27.0	31.0	36.0	45.0	55.0	68.0	78.0	60.0	74.0	-
	1.080	0.980	0.900	0.830	0.830	0.800	0.800	0.780	0.780	0.810	0.810	0.840	0.840	0.540	0.540	-
618	-	-	16.0	18.0	21.0	24.0	30.0	35.0	42.0	51.0	59.0	70.0	81.0	65.0	75.0	-
	-	-	0.930	0.910	0.910	0.910	0.910	0.910	0.930	0.930	0.880	0.880	0.880	0.880	0.590	0.560
619	-	-	21.0	23.0	25.0	28.0	35.0	41.0	48.0	58.0	67.0	80.0	73.0	82.0	88.0	-
	-	-	1.100	1.000	1.000	1.000	1.000	1.000	0.980	0.980	0.930	0.930	0.740	0.690	0.590	-
620	-	-	42.0	-	32.0	-	36.0	-	43.0	-	51.0	-	75.0	-	61.0	-
	-	-	0.980	-	0.980	-	0.980	-	1.000	-	0.980	-	0.980	-	0.590	-
621	-	-	48.0	-	40.0	-	43.0	-	51.0	-	61.0	-	90.0	-	78.0	-
	-	-	1.200	-	1.200	-	1.200	-	1.200	-	1.200	-	1.200	-	0.690	-
622	-	-	54.0	-	45.0	-	46.0	-	60.0	-	61.0	-	105	-	89.0	-
	-	-	1.400	-	1.400	-	1.400	-	1.400	-	1.200	-	1.400	-	0.780	-
623	-	-	33.0	-	45.0	-	59.0	-	65.0	-	91.0	-	135	-	180	-
	-	-	1.800	-	1.800	-	1.800	-	1.800	-	1.800	-	1.800	-	1.800	-
624	-	-	36.0	-	50.0	-	66.0	-	80.0	-	101	-	150	-	222	-
	-	-	2.000	-	2.000	-	2.000	-	2.000	-	2.000	-	2.000	-	2.000	-
625	-	-	54.0	-	74.0	-	99.0	-	119	-	152	-	226	-	333	-
	-	-	2.900	-	2.900	-	2.900	-	2.900	-	2.900	-	2.900	-	2.900	-
626	-	-	82.0	-	110	-	132	-	168	-	202	-	301	-	444	-
	-	-	3.900	-	3.900	-	3.900	-	3.900	-	3.900	-	2.900	-	2.900	-
627	-	-	-	-	-	-	-	-	-	-	329	-	451	-	-	-
	-	-	-	-	-	-	-	-	-	-	5.900	-	5.900	-	-	-

Cyclo Gearboxes : Output Torque Ratings - 1450rpm

SINGLE STAGE UNITS

Ratio Code	Exact Ratio	606	607	608	609	610	611	612	613	614	616
01 *	3.00	-	-	-	-	67.0	-	110	199	267	413
02 *	5.00	-	-	-	-	94.0	-	183	332	445	689
03	6.00	10.7	15.3	29.2	56.9	119	147	261	424	569	903
04	8.00	14.3	20.4	38.9	75.8	159	196	348	566	758	1200
05	11.00	19.7	28.0	53.5	104	219	270	407	778	1040	1660
06	13.00	23.3	33.1	63.3	123	259	317	482	832	1230	1840
07	15.00	26.9	38.2	73.0	142	298	366	556	842	1360	2100
08	17.00	30.0	43.3	82.7	161	261	415	602	882	1280	2000
09	21.00	30.0	53.5	72.3	198	300	409	630	883	1250	2100
10	25.00	25.9	46.0	74.3	136	262	348	619	900	1240	2100
11	29.00	30.0	52.0	84.8	142	288	403	630	886	1370	2070
12	35.00	30.0	59.6	90.2	166	262	396	630	900	1370	2100
13	43.00	30.0	60.0	79.1	162	292	408	630	900	1260	2100
14	51.00	-	45.7	76.9	130	248	355	630	813	1180	2100
15	59.00	-	50.1	86.2	124	251	373	598	900	1170	2100
16	71.00	-	-	89.7	124	225	337	506	900	1160	2100
17	87.00	-	-	66.0	143	274	412	559	900	1170	2050
18	119.00	-	-	-	108	213	-	-	-	-	-

*Special order items - please consult your local authorised distributor

TWO STAGE UNITS

Ratio Code	Exact Ratio	606DA	607DA	609DA	610DA	612DA	612DB	613DB	613DC	614DC	616DB	616DC	617DC	618DB	619DA	619DB
19	102.00	30	60	181	265	265	630	940	940	1370	1760	2100	3150	4900	4520	7350
20	104.00	30	60	181	265	265	630	940	940	1370	1760	2100	3150	4900	4520	7350
21	121.00	30	51	160	308	308	622	940	940	1290	1760	2100	3150	4810	4480	7580
22	143.00	30	60	183	300	364	630	940	940	1370	1760	2100	3150	4900	5300	7630
23	165.00	30	60	200	300	420	630	940	940	1360	1760	2100	3150	4920	6110	7910
24	174.00	30	60	200	300	420	630	940	940	1360	1760	2100	3150	4920	6110	7910
25	187.00	30	60	200	300	420	630	940	940	1360	1760	2100	3150	4920	6110	7910
26	195.00	30	60	200	300	496	630	940	940	1360	1760	2100	3150	4920	6500	7910
27	210.00	30	60	200	300	496	630	940	940	1360	1760	2100	3150	4920	6500	7910
28	231.00	30	60	200	300	588	630	940	940	1340	1760	2100	3150	5000	7960	7960
29	258.00	30	60	200	300	588	630	940	940	1340	1760	2100	3150	5000	7960	7960
30	273.00	30	60	200	300	630	630	940	940	1340	1760	2100	3150	5000	7960	7960
31	289.00	30	60	200	300	630	630	940	940	1340	1760	2100	3150	5000	7960	7960
32	319.00	30	60	200	300	630	630	940	940	1370	1760	2100	3150	5000	7960	7960
33	354.00	-	-	200	300	630	630	940	940	1370	1760	2100	3150	5000	7960	7960
34	357.00	30	60	200	300	630	630	940	940	1340	1760	2100	3150	5000	7960	7960
35	377.00	30	60	200	300	630	630	940	940	1370	1760	2100	3150	5000	7960	7960
36	385.00	30	60	200	300	630	630	940	940	1370	1760	2100	3150	5000	7960	7960
37	425.00	30	60	195	300	630	630	900	900	1370	1760	2100	3150	5000	7960	7960
38	435.00	30	60	195	300	630	630	940	940	1370	1760	2100	3150	5000	7960	7960
39	473.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
40	493.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
41	522.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
42	525.00	30	60	195	300	630	630	940	940	1370	1760	2100	3150	5000	7960	7960
43	559.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
44	595.00	30	60	200	300	630	630	940	940	1370	1760	2100	3150	5000	7960	7960
45	649.00	-	57	146	296	630	630	1050	1050	1370	1760	2100	3150	5000	7960	7960
46	731.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
47	841.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
48	957.00	-	-	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
49	1,003.00	-	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
50	1,131.00	-	-	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
51	1,225.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
52	1,247.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
53	1,479.00	-	-	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
54	1,505.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
55	1,711.00	-	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
56	1,849.00	30	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
57	2,065.00	-	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
58	2,193.00	-	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
59	2,537.00	-	60	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
60	3,045.00	-	-	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
61	3,481.00	-	-	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
62	3,741.00	-	-	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
63	4,437.00	-	-	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
64	5,133.00	-	-	200	300	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
65	6,177.00	-	-	-	-	630	630	940	940	1370	1740	2100	3150	5000	7960	7960
66	7,569.00	-	-	-	-	630	630	940	940	1370	1740	2100	3150	5000	7960	7960

Cyclo Gearboxes : Output Torque Ratings - 1450rpm

THREE STAGE UNITS

Ratio Code	Exact Ratio	606TA	607TA	609TA	610TA	612TA 612TB	613TA 613TB	614TA 614TB	616TA 616TD	617TA 617TD	618TA 618TC	619TA	619TB
67	9,251.00	30.0	60.0	200	300	630	940	1370	2100	3150	5000	-	7960
68	10,933.00	30.0	60.0	200	300	630	940	1370	2100	3150	5000	-	7960
69	13,629.00	-	57.4	146	300	630	1050	1370	2100	3150	5000	-	7960
70	16,211.00	30.0	60.0	200	296	630	940	1370	2100	3150	5000	-	7960
71	20,339.00	30.0	60.0	200	300	630	940	1370	2100	3150	5000	7960	-
72	24,037.00	30.0	60.0	200	300	630	940	1370	2100	3150	5000	7960	-
73	27,907.00	-	57.4	146	296	630	1050	1370	2100	3150	5000	7960	-
74	31,433.00	30.0	60.0	200	300	630	940	1370	2100	3150	5000	7960	-
75	38,291.00	-	-	146	296	630	1050	1370	2100	3150	5000	7960	-
76	43,129.00	-	57.4	146	296	630	1050	1370	2100	3150	5000	7960	-
77	53,621.00	30.0	60.0	200	300	630	940	1370	2100	3150	5000	7960	-
78	59,177.00	-	-	146	296	630	1050	1370	2100	3150	5000	7960	-
79	73,573.00	-	57.4	146	296	630	1050	1370	2100	3150	5000	7960	-
80	79,507.00	30.0	60.0	200	300	630	940	1370	2100	3150	5000	7960	-
81	109,091.00	-	57.4	146	296	630	1050	1370	2100	3150	5000	7960	-
82	149,683.00	-	-	146	296	630	1050	1370	2100	3150	5000	7960	-
83	446,571.00	-	-	-	-	630	979	1250	2050	3150	5000	7960	-
84	658,503.00	-	-	-	-	-	-	-	2050	3150	5000	-	7960

Cyclo Gearboxes : Ordering instructions

These codes should be included on all enquiries, correspondences and orders.

First Three Digits: Unit Size

Select from the tables on pages 344-348 for motorised units.

Single stage units use just the size code e.g. **606**

Multistage units use the size with letters e.g. **606DA/606TA**

Fourth Digit: Mounting Type

- X: Foot Mounted - standard IEC motor
- Y: Flange Mounted - standard IEC motor
- Z: Face Mounted - standard IEC motor
- A: Foot Mounted - alternative integrated motor
- B: Flange Mounted - alternative integrated motor
- C: Face Mounted - alternative integrated motor
- D: Foot Mounted Motor ready to suit IEC motor
- E: Flange Mounted Motor ready to suit IEC motor
- F: Face Mounted Motor ready to suit IEC motor
- G: Foot Mounted - Speed Reducer
- H: Flange Mounted - Speed Reducer
- J: Face Mounted - Speed Reducer

Fifth and Sixth Digit: Ratio Code.

The two digit code can be obtained from the Ratio Codes table opposite.

Seventh and Eighth Digits: Input Code

Motorised units use a unique motor code obtained from the selection tables.

Speed reducers are given a code of **00**

Motor ready units use the frame size code of the motor input required taken from the table below.

Code	Frame	Flange	ØShaft	Flange
63C	63	B14	11	90
63D	63	B5	11	140
71C	71	B14	14	105
71D	71	B5	14	160
80C	80	B14	19	120
80D	80	B5	19	200
90C	90	B14	24	140
90D	90	B5	24	200
10C	100/112	B14	28	160
10D	100/112	B5	28	250
13D	132	B5	38	300
16D	160	B5	42	350

Ninth Digit: Type of motor variant

Additional motor features as below:

Code Motor Type

- A Fitted with A/C heaters (specify voltage 110/230v)
- B Fitted with motorised backstop module (specify rotation)
- N Fitted with brake & Hand Release (specify voltage)
- P Fitted with premium efficiency EFF1 motor
- S Fitted with Single Phase motor
- T Fitted with Thermistors
- Q Special - refer to serial number records
- Z Fitted with Force Vent Unit

MOTOR CODES

2 POLE MOTORS

Code	kW	Speed	Frame	kg
47	0.12	2820	63	4.0
01	0.18	2730	63	4.0
03	0.25	2780	63	4.0
09	0.37	2815	71	7.5
10	0.55	2800	71	8.5
19	0.75	2800	80	11.5
20	1.1	2800	80	12.0
26	1.5	2870	90	17.0
29	2.2	2840	90	18.5
39	3.0	2890	100	26.0
44	4.0	2900	112	33.0
52	5.5	2935	132	56.0
58	7.5	2920	132	60.5
63	11.0	2910	160	106.0
64	15.0	2930	160	116.0
69	18.5	2930	160	129.0
77	22.0	2950	180	180.0

4 POLE MOTORS

Code	kW	Speed	Frame	kg
48	0.12	1370	63	4.0
02	0.18	1400	63	5.0
06	0.25	1400	71	8.5
08	0.37	1390	71	9.0
16	0.55	1440	80	11.5
18	0.75	1415	80	12.0
24	1.1	1440	90	16.0
28	1.5	1410	90	19.0
36	2.2	1410	100	25.5
38	3.0	1410	100	28.0
46	4.0	1420	112	32.0
54	5.5	1470	132	57.0
56	7.5	1470	132	62.5
66	11.0	1470	160	105.0
68	15.0	1460	160	121.0
76	18.5	1475	180	160.0
78	22.0	1470	180	183.0
88	30.0	1475	200	233.0
94	37.0	1480	225	350.0
95	45.0	1475	225	382.0
96	55.0	1475	250	460.0
98	75.0	1485	280	735.0
99	90.0	1485	280	802.0

2 POLE MOTORS

Code	kW	Speed	Frame	kg
13	0.12	915	63	5.0
05	0.18	890	71	8.5
07	0.25	890	71	9.5
12	0.37	925	80	10.5
17	0.55	920	80	12.5
23	0.75	910	90	15.0
27	1.1	920	90	19.0
37	1.5	940	100	25.5
45	2.2	930	112	28.0
53	3.0	950	132	57.5
55	4.0	940	132	58.0
57	5.5	945	132	66.0
65	7.5	965	160	121.0
67	11.0	970	160	134.0
74	15.0	965	180	181.0
75	18.5	975	200	219.0
84	22.0	975	200	228.0
91	30.0	985	225	366.0
92	37.0	980	250	440.0
93	45.0	985	280	610.0
97	55.0	985	280	655.0

RATIO CODES

SINGLE STAGE

Code	Exact Ratio	1	Code	Exact Ratio	1
01*	3.0	P	10	25.0	25
02*	5.0	P	11	29.0	29
03	6.0	6	12	35.0	35
04	8.0	8	13	43.0	43
05	11.0	11	14	51.0	51
06	13.0	13	15	59.0	59
07	15.0	15	16	71.0	71
08	17.0	17	17	87.0	87
09	21.0	21	18	119.0	119

TWO STAGE

Code	Exact Ratio	2	1
19	102.0	17	6
20	104.0	13	8
21	121.0	11	11
22	143.0	13	11
23	165.0	15	11
24	174.0	29	6
25	187.0	17	11
26	195.0	15	13
27	210.0	35	6
28	231.0	21	11
29	258.0	43	6
30	273.0	21	13
31	289.0	17	17
32	319.0	29	11
33	354.0	59	6
34	357.0	21	17
35	377.0	29	13
36	385.0	35	11
37	425.0	25	17
38	435.0	29	15
39	473.0	43	11
40	493.0	29	17
41	522.0	87	6
42	525.0	25	21
43	559.0	43	13
44	595.0	35	17
45	649.0	59	11
46	731.0	43	17
47	841.0	29	29
48	957.0	87	11
49	1003.0	59	17
50	1131.0	87	13
51	1225.0	35	35
52	1247.0	43	29
53	1479.0	87	17
54	1505.0	43	35
55	1711.0	59	29
56	1849.0	43	43
57	2065.0	59	35
58	2193.0	51	43
59	2537.0	59	43
60	3045.0	87	35
61	3481.0	59	59
62	3741.0	87	43
63	4437.0	87	51
64	5133.0	87	59
65	6177.0	87	71
66	7569.0	87	87

THREE STAGE

Code	Exact Ratio	3	2	1
67	9,251	29	29	11
68	10,933	29	29	13
69	13,629	59	21	11
70	16,211	43	29	13
71	20,339	43	43	11
72	24,037	43	43	13
73	27,907	59	43	11
74	31,433	43	43	17
75	38,291	59	59	11
76	43,129	59	43	17
77	53,621	43	43	29
78	59,177	59	59	17
79	73,573	59	43	29
80	79,507	43	43	43
81	109,091	59	43	43
82	149,683	59	59	43
83	446,571	87	87	59
84	658,503	87	87	87