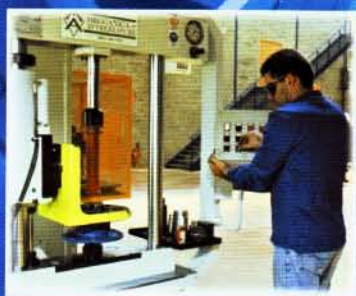




MOTOVARIO



**SPAGGIARI
TRASMISSIONI**



SERVICE FACTOR

The service factor (f.s.) depends on the operating conditions the reduction unit is subjected to.

The parameters that need to be taken into consideration to select the most adequate service factor correctly comprise:

- type of load of the operated machine : **A - B - C**
- length of daily operating time: **hours/day (Δ)**
- start-up frequency: **starts/hour (*)**

TYPE OF LOAD: **A** - uniform $f_a \leq 0.3$
 B - moderate shocks $f_a \leq 3$
 C - heavy shocks $f_a \leq 10$

$f_a = J_e/J_m$

- J_e (kgm^2) moment of reduced external inertia at the drive-shaft

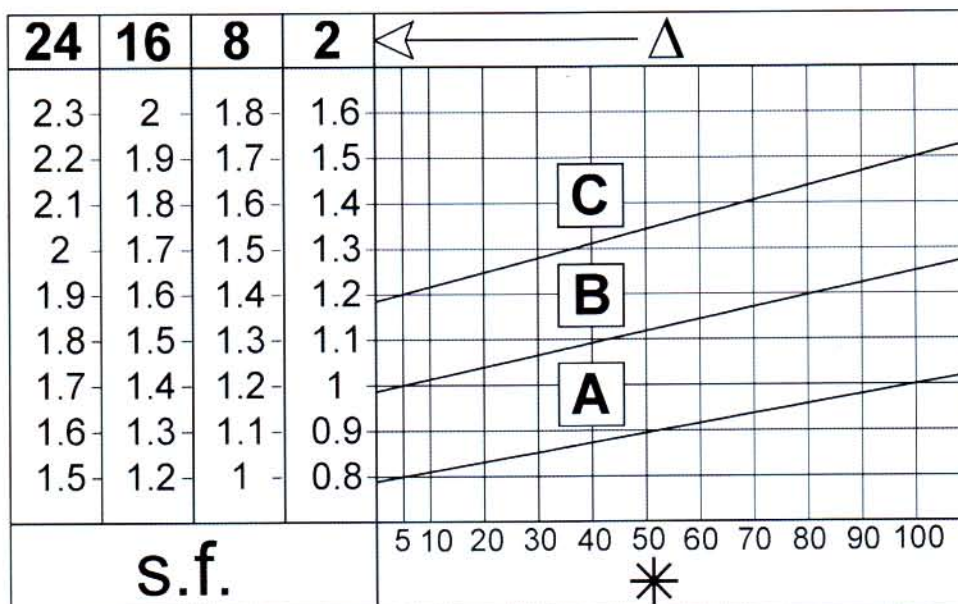
- J_m (kgm^2) moment of inertia of motor

If $f_a > 10$ call our Technical Service.

A -Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.

B -Winding devices, woodworking machine feeders, goods lifts, balancers, threading machines, medium mixers, conveyor belts for heavy materials, winches, sliding doors, fertilizer scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.

C -Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.



LUBRICATION

	ST 003 ÷ 100 SF 003 ÷ 100 TXF 002 ÷ 010	H A30 ÷ A60 H 030 ÷ 140 RT2-40 RF2-40		NMRV 110 ÷ 150		NMRV 025 ÷ 105 SW 030 ÷ 105 PC 063 ÷ 090
	Mineral oil	Mineral oil		Mineral oil		Synthetic oil
T °C ISO VG...	(-25) ÷ (+40) ISO VG 32	(-5) ÷ (+40) ISO VG220	(-15) ÷ (+25) ISO VG 150	(-5) ÷ (+40) ISO VG 460	(-15) ÷ (+25) ISO VG220	(-25) ÷ (+50) ISO VG320
AGIP	A.T.F. DEXRON	BLASIA 220	BLASIA 150	BLASIA 460	BLASIA 220	TELIUM VSF320
SHELL	A.T.F. DEXRON	OMALA OIL220	OMALA OIL150	OMALA OIL460	OMALA OIL220	TIVELA OIL SC320
ESSO	A.T.F. DEXRON	SPARTAN EP220	SPARTAN EP150	SPARTAN EP460	SPARTAN EP220	S220
MOBIL	MOBIL A.T.F. 220	MOBILGEAR 630	MOBILGEAR 629	MOBILGEAR 634	MOBILGEAR 630	GLYGOYLE 30
CASTROL	TQ DEXRON II	ALPHA MAX 220	ALPHA MAX 150	ALPHA MAX 460	ALPHA MAX 220	ALPHASYN PG320
BP	AUTRAN DX	ENERGOL GR-XP220	ENERGOL GR-XP150	ENERGOL GR-XP460	ENERGOL GR-XP220	ENERGOL SG-XP320

MOTOR - VARIATORS



TXF...



TXF(SF)+H...



TXF(SF)+NMRV...



ST...

S... PERFORMANCE

VARIATOR SIZE	MOTOR (kW)	MOTOR POLES	VARIATOR		VARIATOR + DIFFERENTIAL	
			OUTPUT SPEED (RPM)	OUTPUT TORQUE (Nm)	OUTPUT SPEED (RPM)	MAX. OUTPUT TORQUE (Nm)
S_003	0.15	6	125-620	4.0-2.1	-	-
	0.22	4	190-950	4.0-2.0	-	-
	0.37	2	380-1900	4.0-1.7	-	-
S_005	0.25	6	122-610	6.0-3.0	0-610	6.0
	0.25	4	190-950	6.0-2.0	-	-
	0.37	4	190-950	6.0-3.0	0-950	6.0
	0.55	4	190-950	6.0-4.4	0-950	6.0
	0.55	2	380-1900	6.0-2.2	0-1900	6.0
	0.75	2	380-1900	6.0-3.0	0-1900	6.0
S_010	0.55	6	122-610	12.0-6.6	0-610	12.0
	0.55	4	190-950	12.0-4.4	-	-
	0.75	4	190-950	12.0-6.0	0-950	12.0
	1.1	4	190-950	12.0-8.8	0-950	12.0
	1.1	2	380-1900	12.0-4.4	0-1900	12.0
	1.5	2	380-1900	12.0-6.0	0-1900	12.0
S_020	1.1	6	122-660	24.0-13.5	0-660	24.0
	1.1	4	190-1000	24.0-9.0	0-1000	24.0
	1.5	4	190-1000	24.0-12.0	0-1000	24.0
	2.2	4	190-1000	24.0-18.0	0-1000	24.0
	1.5	2	380-2000	24.0-6.0	0-2000	24.0
	2.2	2	380-2000	24.0-9.0	0-2000	24.0
S_030	1.5	6	122-660	48.0-18.0	0-660	48.0
	2.2	4	190-1000	48.0-18.0	0-1000	48.0
	3	4	190-1000	48.0-24.0	0-1000	48.0
S_050	2.2	6	122-660	64.0-27.0	0-660	64.0
	4	4	190-1000	64.0-32.0	0-1000	64.0
	4.8	4	190-1000	64.0-40.0	0-1000	64.0
S_100	5.5	6	122-660	144.0-66.0	0-660	144.0
	5.5	4	190-1000	144.0-44.0	0-1000	144.0
	7.5	4	190-1000	144.0-60.0	0-1000	144.0
	11.0	4	190-1000	144.0-88.0	0-1000	144.0

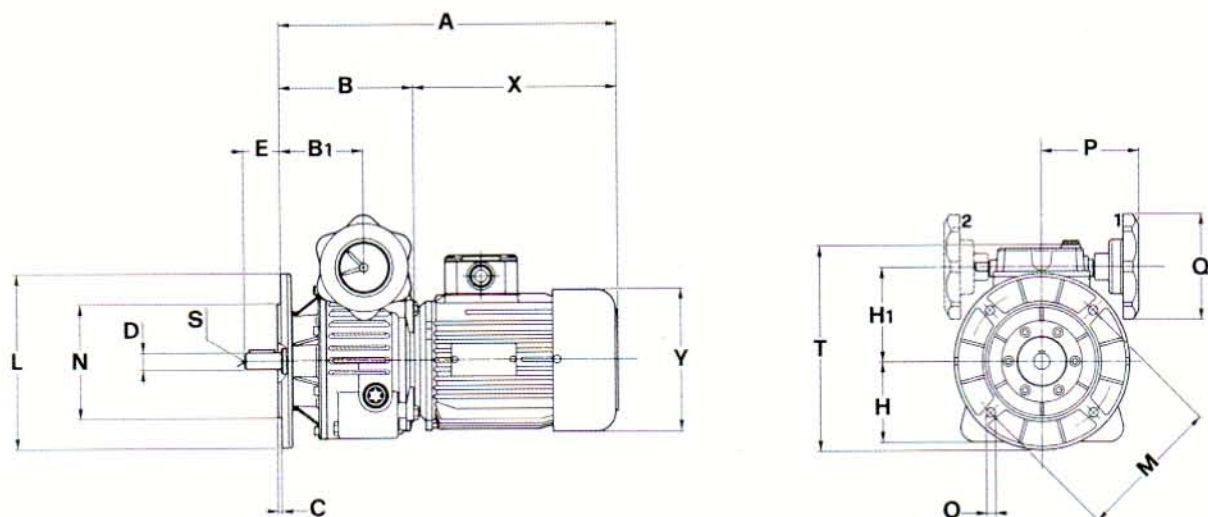
TXF... PERFORMANCE

n1	MOTOR	VARIATOR	n2 max	n2 min	M2 min	M2 max
2800	0.37kW/2P	TXF002/063	1760	340	1.7	4
	0.55kW/2P	TXF005/071	2000	340	2.2	6
	0.75kW/2P	TXF005/071	2000	340	3	6
	0.75kW/2P	TXF005/080	1900	540	3.2	6
	1.1kW/2P	TXF005/080	1900	540	4.7	6
	1.1kW/2P	TXF010/080	2000	340	4.4	12
	1.5kW/2P	TXF005/080	1900	540	6	6
	1.5kW/2P	TXF010/080	2000	340	6	12
	1.5kW/2P	TXF010/090	1900	540	6.3	12
	2.2kW/2P	TXF010/090	1900	540	9.3	12

n1	MOTOR	VARIATOR	n2 max	n2 min	M2 min	M2 max
1400	0.22kW/4P	TXF002/063	880	170	2	4
	0.25kW/4P	TXF005/071	1000	170	2	6
	0.37kW/4P	TXF005/071	1000	170	3	6
	0.55kW/4P	TXF005/080	950	270	4.6	6
	0.55kW/4P	TXF010/080	1000	170	4.4	12
	0.75kW/4P	TXF005/080	950	270	6	6
	0.75kW/4P	TXF010/080	1000	170	6	12
	1.1kW/4P	TXF010/090	950	270	9.1	12
	1.5kW/4P	TXF010/090	950	270	12	12

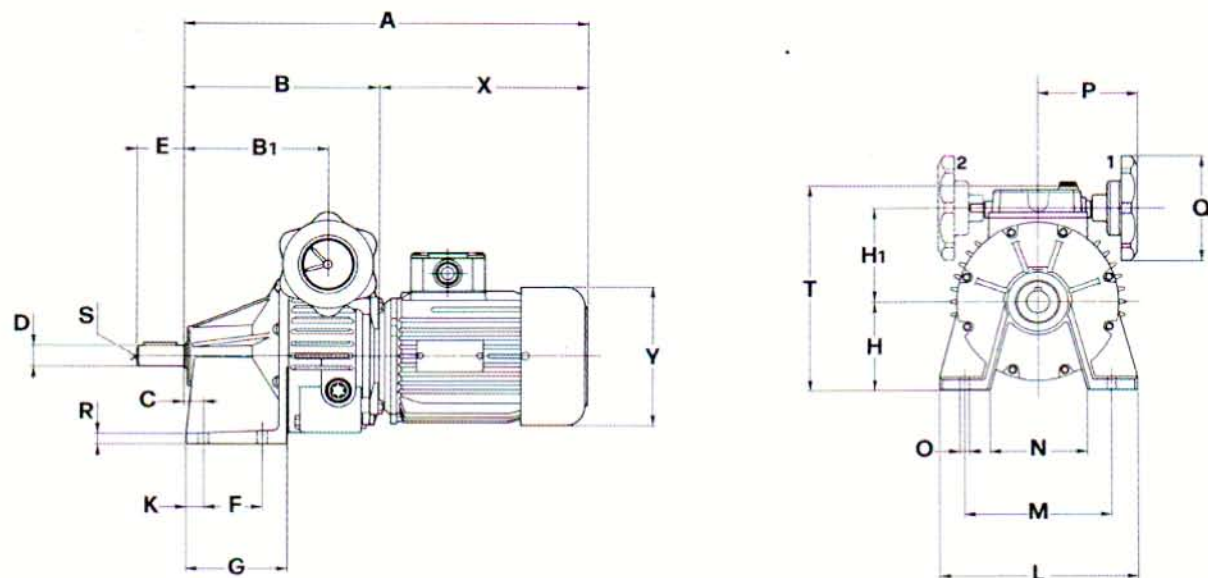
n1	MOTOR	VARIATOR	n2 max	n2 min	M2 min	M2 max
900	0.15kW/6P	TXF002/063	566	109	2.1	4
	0.25kW/6P	TXF005/071	643	109	3	6
	0.37kW/6P	TXF005/080	611	174	4.7	6
	0.55kW/6P	TXF005/080	611	174	6	6
	0.55kW/6P	TXF010/080	643	109	6.6	12
	0.75kW/6P	TXF010/090	611	174	9.5	12
	1.1kW/6P	TXF010/090	611	174	12	12

DIMENSIONS AND CLEARANCES OF SF MOTOR - VARIATOR



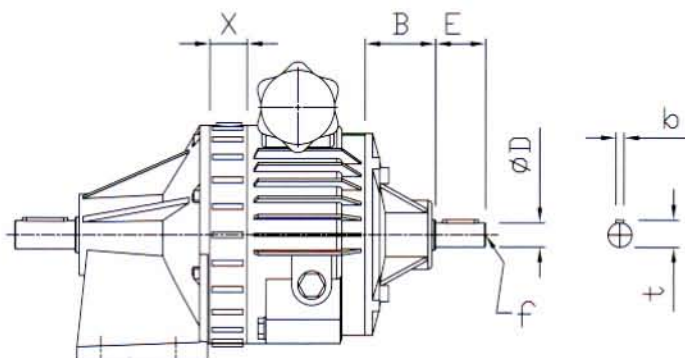
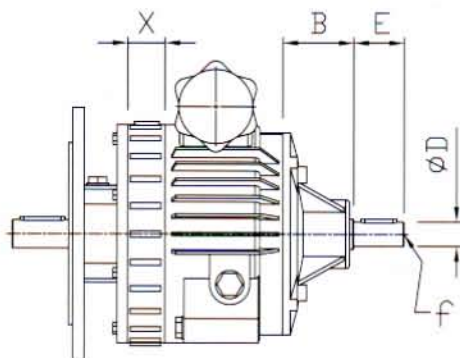
TYPE	A	B	B1	C	D	E	H	H1	L	M	N	O	P	Q	S	T	X	Y
SF-003	288	103	65.5	3	11	23	58	75	140	115	95	9	97	90	M4	165	185	122
				3.5	14	30			160	130	110	9			M5	175		
SF-005	337.5	127.5	78.5	3.5	14	30	70	88	160	130	110	9	97	90	M5	188	210	137
				3.5	19	40			200	165	130	11			M6	208		
SF-010	382.5	152.5	94.5	3.5	19	40	90	107	160	130	110	9	107	90	M6	223	230	158
				3.5	24	50			200	165	130	11			M8	233		
SF-020	443	173	105.5	3.5	24	50	108	126	200	165	130	11	117	90	M8	260	270	177
				4	28	60			250	215	180	14			M10	277		
SF-030/050	547.5	207.5	123.5	4	28	60	134	158.5	250	215	180	14	155	120	M10	320.5	340	197
				5	38	80			300	265	230	14			M12	336.5		
SF-100	688	266	164.5	5	38	80	165	205.5	300	265	230	14	183	120	M12	398.5	402	253
				5	42	80			350	300	250	18			M12	408.5		

DIMENSIONS AND CLEARANCES OF ST MOTOR - VARIATOR



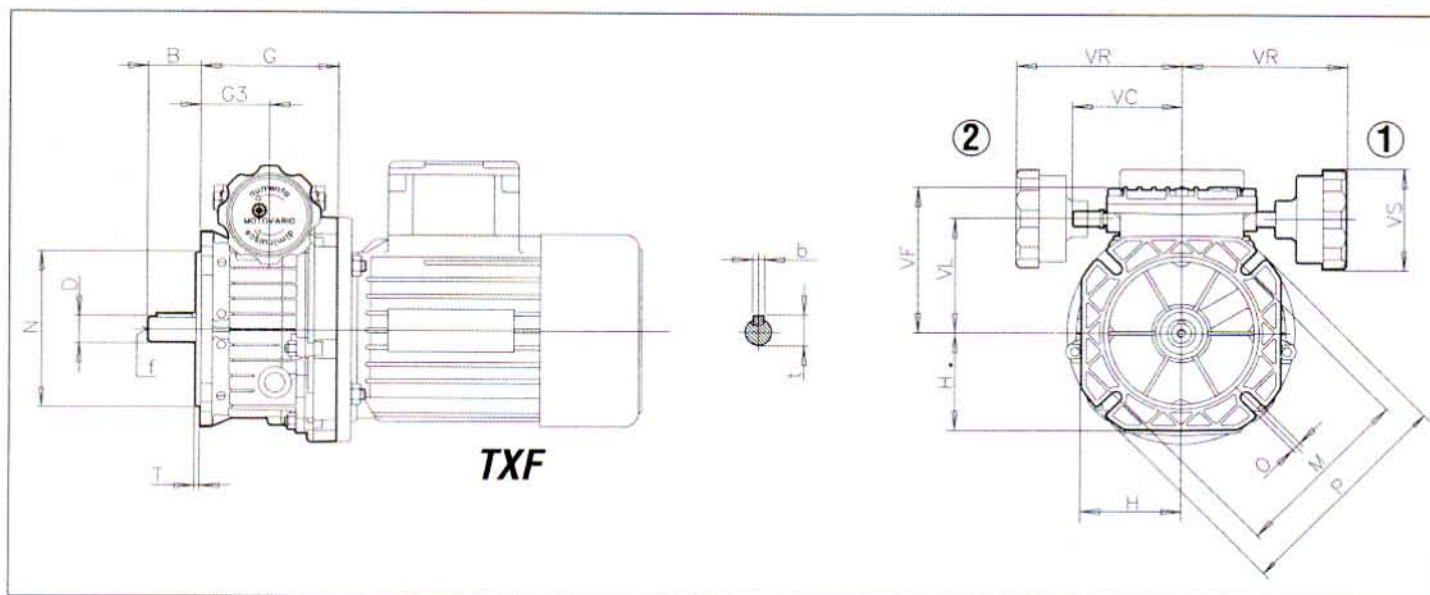
TYPE	A	B	B1	C	D	E	F	G	H	H1	K	L	M	N	O	P	Q	R	S	T	X	Y
ST-003	316	131	93.5	16	14	30	25	60	70	75	15	130	95	60	9	97	90	8	M6	165	185	122
ST-005	387.5	177.5	128.5	16	19	40	55	90	80	88	15	180	150	90	11	97	90	10	M6	188	210	137
ST-010	444.5	214.5	156.5	19.5	24	50	65	110	102	107	18.5	220	165	108	11	107	90	12	M8	235	230	158
ST-020	522	252	184.5	25.5	28	60	75	130	125	126	23.5	250	185	120	14	117	90	14	M8	277	270	177
ST-030/050	634.5	294.5	210.5	29	38	80	85	150	150	158.5	25	310	240	150	18	155	120	16	M10	336.5	340	197
ST-100	776	354	252.5	32	42	80	120	186	190	205.5	29	380	295	195	20	183	120	20	M10	423.5	422	253

DIFFERENTIAL DEVICE / ECE INPUT SHAFT



S						
TYPE	003	005	010	020	030 - 050	100
X	-	37.5	33.5	37	54	54
B	50	50	65	70	95	110
D	11	14	19	24	28	38
E	23	30	40	50	60	80
f	M4	M6	M6	M8	M8	M10
b	4	5	6	8	8	10
t	12.5	16	21.5	27	31	41

TXF - DIMENSIONS



	B	D j6	G	G3	M	N f8	O	P	T	
002/063	23 (30)	11 (14)	82.5	40	115	95	9	140	3	
005/071	30 (40)	14 (19)	94	47	130	110	9	160	3.5	
005/080	30 (40)	14 (19)	104	47	130	110	9	160	3.5	
010/080	40 (50)	19 (24)	120	57	165	130	11	200	3.5	
010/090	40 (50)	19 (24)	120	57	165	130	11	200	3.5	

	VC	VF	VL	VR	VS	H	b	f	t	Kg.
002/063	79.5	91.5	69	116.5	71	62.5	4 (5)	--- (M6)	12.5 (16)	2.3
005/071	79.5	104.5	82	116.5	71	70	5 (6)	M6 (M6)	16 (21.5)	3.3
005/080	79.5	104.5	82	116.5	71	70	5 (6)	M6 (M6)	16 (21.5)	4
010/080	89.5	127	103	126.5	71	90	6 (8)	M6 (M8)	21.5 (27)	6.1
010/090	89.5	127	103	126.5	71	90	6 (8)	M6 (M8)	21.5 (27)	6.7

Dimensions in brackets () are supplied only on request

n1 = Input Speed (RPM)

n2 max = Maximum Output Speed (RPM)

n2 min = Minimum Output Speed (RPM)

kg : Weight without motor

M2 min = Minimum Output Torque (Nm)

M2 max = Maximum Output Torque (Nm)

HELICAL GEARED MOTORS



H...



IH...



CH...

PERFORMANCE

P1 = 0.25 HP(0.18 kW) - n1= 1380 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
469.4	2.94	7.2	HA-041
290.5	4.75	5.6	
253.2	5.45	4.4	
175.1	7.88	2.7	
127.4	10.83	1.6	
469.4	2.94	11.7	HA-051
290.5	4.75	8.9	
253.2	5.45	7.8	
175.1	7.88	4.4	
127.4	10.83	1.9	
255.6	5.4	12.6	HA-032
212.3	6.5	10.4	
170.4	8.1	7.8	
126.6	10.9	7.0	
103.8	13.3	5.1	
83.6	16.5	4.1	
68.0	20.3	3.8	
56.3	24.5	2.9	
45.2	30.5	2.2	
39.0	35.4	2.2	
31.3	44.1	1.7	HA-042
28.3	48.8	1.4	
22.7	60.7	1.3	
68.0	20.3	6.1	
56.3	24.5	5.6	
45.2	30.5	3.9	H-033
39.0	35.4	3.3	
31.3	44.1	2.7	
28.3	48.8	2.3	
22.7	60.7	2.0	
25.8	53.6	3.33	H-041
20.7	66.8	2.61	
18.5	74.8	2.33	
13.9	99.3	1.7	
12.8	108.0	1.60	
11.2	123.7	1.40	
9.6	143.3	1.21	
7.7	178.6	0.97	
7.0	197.2	0.88	
5.6	245.7	0.72	

P1 = 0.5 HP (0.37 kW) - n1 = 1370 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
466.0	2.94	4.2	HA-041
288.4	4.75	2.6	
251.4	5.45	2.2	
173.9	7.88	1.3	
466.0	2.94	5.7	HA-051
288.4	4.75	4.3	
251.4	5.45	3.7	
173.9	7.88	2.1	
253.7	5.4	6.1	HA-032
210.8	6.5	5.1	
169.1	8.1	3.8	
125.7	10.9	3.4	
103.0	13.3	2.5	
83.0	16.5	2.0	
67.5	20.3	1.8	
55.9	24.5	1.4	
44.9	30.5	1.1	
38.7	35.4	1.0	
253.7	5.4	10.8	HA-042
210.8	6.5	8.9	
169.1	8.1	6.5	
125.7	10.9	5.7	
103.0	13.3	4.3	
83.0	16.5	3.5	
67.5	20.3	3.1	
55.9	24.5	2.6	
44.9	30.5	1.9	
38.7	35.4	1.7	
31.1	44.1	1.3	H-041
28.1	48.8	1.1	
22.6	60.7	1.0	
537.3	2.55	4.86	
505.5	2.71	4.59	
440.5	3.11	5.14	
381.6	3.59	5.14	
326.2	4.20	4.32	
274.0	5.00	3.78	
249.1	5.50	3.78	
225.0	6.09	3.40	H-051
178.6	7.67	2.66	
156.6	8.75	2.57	
533.1	2.57	11.08	
432.2	3.17	10.27	
371.3	3.69	10.00	H-051
342.5	4.00	9.19	
287.2	4.77	8.11	

P1 = 0.5 HP (0.37 kW) - n1 = 1370 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
136.5	10.04	3.0	RT2-40
96.3	14.22	2.3	
82.2	16.67	2.1	
69.0	19.87	1.8	
56.5	24.24	1.4	
153.9	8.9	5.95	H-032
135.6	10.1	5.68	
116.1	11.8	5.14	
100.0	13.7	5.14	
93.2	14.7	4.86	
81.6	16.8	4.59	
75.3	18.2	4.59	
68.8	19.9	4.05	
60.4	22.7	3.51	
57.6	23.8	3.51	
51.9	26.4	3.24	
46.1	29.7	2.70	
41.6	32.9	2.43	
36.2	37.9	2.20	
33.1	41.4	1.99	
29.0	47.3	1.75	
25.6	53.6	1.60	H-033
20.5	66.8	1.26	
18.3	74.8	1.13	
13.8	99.3	0.85	
31.3	43.8	2.65	H-042
28.8	47.5	2.40	
25.2	54.3	2.13	
22.2	61.8	2.00	H-043
17.9	76.7	1.65	
15.7	87.1	1.45	
12.0	114.5	1.10	
15.1	90.5	2.32	H-053
12.6	108.9	1.90	
10.2	134.8	1.56	
8.7	157.3	1.34	
7.0	194.6	1.08	
9.2	149.5	2.40	H-063
8.0	170.7	2.10	
7.4	186.2	1.92	
6.4	215.2	1.66	
5.8	234.7	1.53	
5.1	268.0	1.34	

P1 = 1 HP(0.75 kW) - n1 = 1390 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
472.8	2.94	2.7	HA-051
292.6	4.75	2.1	
255.0	5.45	1.8	
317.4	4.38	5.1	HA-061
179.4	7.75	2.3	
130.3	10.67	1.3	
257.4	5.4	5.3	HA-042
213.9	6.5	4.4	
171.6	8.1	3.2	
127.5	10.9	2.8	
104.5	13.3	2.2	

P1 = 1 HP(0.75 kW) - n1 = 1390 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
84.2	16.5	1.7	HA-042
68.5	20.3	1.5	
56.7	24.5	1.3	
82.2	16.9	3.6	HA-052
67.8	20.5	2.9	
54.7	25.4	2.3	
46.5	29.9	2.0	
38.4	36.2	1.7	
30.9	45.0	1.3	HA-062
38.4	36.2	2.7	
30.9	45.0	2.0	
27.9	49.8	1.5	
22.5	61.9	1.4	H-041
545.1	2.55	2.40	
512.9	2.71	2.27	
446.9	3.11	2.53	
387.2	3.59	2.53	
331.0	4.20	2.20	
278.0	5.00	1.81	
252.7	5.50	1.83	
228.2	6.09	1.65	H-051
652.6	2.13	5.73	
540.9	2.57	5.47	
438.5	3.17	5.07	
376.7	3.69	4.93	
347.5	4.00	4.53	
291.4	4.77	4.00	
264.8	5.25	3.87	
238.8	5.82	3.50	H-032
189.6	7.33	2.80	
165.9	8.38	2.40	
138.4	10.04	1.5	
97.8	14.22	1.1	
156.2	8.9	2.93	
137.6	10.1	2.80	
117.8	11.8	2.53	
101.5	13.7	2.53	
94.6	14.7	2.40	
82.7	16.8	2.27	H-042
76.4	18.2	2.27	
69.8	19.9	2.00	
61.2	22.7	1.71	
58.4	23.8	1.71	
52.7	26.4	1.54	
46.8	29.7	1.37	
42.2	32.9	1.24	
36.7	37.9	1.07	
60.2	23.1	2.27	
53.5	26.0	2.00	H-052
50.5	27.5	2.13	
45.6	30.5	1.90	
40.8	34.1	1.67	
36.8	37.8	1.51	
31.7	43.8	1.30	
29.3	47.5	1.20	
25.6	54.3	1.05	H-052
30.6	45.4	2.13	
28.3	49.1	2.00	
24.8	56.1	1.78	

P1 = 1 HP(0.75 kW) - n1 = 1390 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
23.6	58.8	1.80	H-053
19.1	72.7	1.43	
15.4	90.5	1.15	
12.8	108.9	0.95	
20.4	68.0	2.53	H-063
16.2	85.8	2.00	
14.7	94.8	1.90	
11.8	118.0	1.50	
10.3	135.4	1.31	
9.3	149.5	1.18	
8.1	170.7	1.04	
7.5	186.2	0.95	
9.8	142.2	2.67	H-083
9.0	154.8	2.40	
8.6	162.3	2.27	
7.8	179.1	2.10	
7.1	195.1	1.92	
6.2	222.8	1.68	
9.8	142.2	2.93	SH-093
9.0	154.8	2.67	
8.6	162.3	2.53	
7.8	179.1	2.32	
7.1	195.1	2.13	
6.2	222.8	1.87	

P1 = 2 HP(1.5 kW) - n1 = 1410 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
564.0	2.50	3.6	HA-061
321.9	4.38	2.5	
261.1	5.4	2.6	HA-042
216.9	6.5	2.2	
174.1	8.1	1.6	
129.4	10.9	1.4	
146.9	9.6	3.2	HA-052
120.5	11.7	2.4	
97.2	14.5	2.0	
83.4	16.9	1.8	
68.8	20.5	1.4	
68.8	20.5	2.3	HA-062
55.5	25.4	1.7	
47.2	29.9	1.5	
39.0	36.2	1.3	
662.0	2.13	2.87	H-051
548.6	2.57	2.73	
444.8	3.17	2.53	
382.1	3.69	2.47	
352.5	4.00	2.27	
295.6	4.77	2.00	
268.6	5.25	1.92	
242.3	5.82	1.73	
192.4	7.33	1.37	
168.3	8.38	1.20	
300.0	4.7	2.10	H-032
227.4	6.2	1.72	
180.8	7.8	1.64	

P1 = 2 HP(1.5 kW) - n1 = 1410 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
158.4	8.9	1.49	H-032
139.6	10.1	1.41	
119.5	11.8	1.26	
102.9	13.7	1.26	
95.9	14.7	1.18	
83.9	16.8	1.15	
158.4	8.9	2.40	H-042
136.9	10.3	2.40	
119.5	11.8	2.13	
103.7	13.6	1.90	
88.1	16.0	1.59	
74.2	19.0	1.34	
67.1	21.0	1.21	
61.0	23.1	1.14	
70.5	20.0	2.33	H-052
65.0	21.7	2.20	
57.1	24.7	1.90	
53.8	26.2	1.91	
49.6	28.4	1.75	
44.8	31.5	1.58	
42.7	33.0	1.51	
36.2	39.0	1.28	
48.1	29.3	2.80	H-062
44.1	32.0	2.73	
38.1	37.0	2.20	
35.0	40.3	2.15	
30.6	46.1	1.88	
28.5	49.5	1.80	
25.8	54.6	1.62	H-063
20.7	68.0	1.30	
16.4	85.8	1.03	
25.0	56.5	2.90	H-083
19.7	71.5	2.60	
17.9	78.9	2.40	
16.5	85.6	2.20	
14.4	98.1	1.91	
12.5	112.8	1.66	
11.3	124.4	1.50	
9.9	142.2	1.32	
9.1	154.8	1.21	
8.7	162.3	1.15	
7.9	179.1	1.04	SH-093
7.2	195.1	0.96	
25.0	56.5	3.47	
19.7	71.5	2.93	
17.9	78.9	2.64	
16.5	85.6	2.40	
14.4	98.1	2.12	
12.5	112.8	1.84	
11.3	124.4	1.67	
9.9	142.2	1.46	
9.1	154.8	1.34	H-103 (SH-103)
8.7	162.3	1.28	
7.9	179.1	1.16	
7.2	195.1	1.07	
9.8	143.4	2.53	
8.8	160.8	2.27	
7.8	181.1	2.00	

P1 = 2 HP(1.5 kW) - n1 = 1410 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
7.3	194.2	1.87	H-103 (SH-103)
6.5	215.5	1.70	
5.8	242.6	1.54	

P1 = 3 HP(2.2 kW) - n1 = 1425 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
570.0	2.5	2.5	HA-061
325.3	4.38	1.7	
279.4	5.1	3.2	HA-052
229.8	6.2	2.7	
185.1	7.7	2.2	
148.4	9.6	2.2	
121.8	11.7	1.7	
98.3	14.5	1.3	HA-062
98.3	14.5	2.0	
84.3	16.9	2.1	
69.5	20.5	1.6	
56.1	25.4	1.2	H-051
669.0	2.13	1.94	
554.5	2.57	1.87	
449.5	3.17	1.74	
386.2	3.69	1.68	
356.3	4.00	1.55	H-061
298.7	4.77	1.37	
669.0	2.13	3.86	
554.5	2.57	3.23	
449.5	3.17	2.82	
386.2	3.69	2.77	H-042
356.3	4.00	2.59	
298.7	4.77	2.30	
259.1	5.5	2.00	
197.9	7.2	1.55	
160.1	8.9	1.64	H-052
138.3	10.3	1.62	
120.8	11.8	1.47	
104.8	13.6	1.28	
148.4	9.6	2.68	
123.9	11.5	2.36	H-062
100.4	14.2	2.10	
85.8	16.6	1.88	
79.2	18.0	1.77	
71.3	20.0	1.60	
65.7	21.7	1.51	H-062
57.7	24.7	1.32	
54.4	26.2	1.30	
50.2	28.4	1.20	
45.2	31.5	1.08	
61.2	23.3	2.55	H-062
55.5	25.7	2.32	
48.6	29.3	1.90	
44.5	32.0	1.84	
38.5	37.0	1.50	
35.4	40.3	1.46	H-062
30.9	46.1	1.28	

P1 = 3 HP(2.2 kW) - n1 = 1425 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
28.8	49.5	1.20	H-063
26.1	54.6	1.10	
41.4	34.4	3.23	H-082
36.8	38.7	2.90	
33.3	42.8	2.60	
29.6	48.1	2.31	
25.2	56.5	2.00	H-083
19.9	71.5	1.79	
18.1	78.9	1.62	
16.7	85.6	1.49	
14.5	98.1	1.30	
12.6	112.8	1.13	
11.5	124.4	1.03	
10.0	142.2	0.90	
25.2	56.5	2.38	SH-093
19.9	71.5	1.98	
18.1	78.9	1.80	
16.7	85.6	1.66	
14.5	98.1	1.45	
12.6	112.8	1.26	
11.5	124.4	1.14	
10.0	142.2	1.00	
16.9	84.2	2.95	H-103 (SH-103)
15.3	93.4	2.64	
14.2	100.1	2.50	
11.8	120.8	2.05	
10.6	134.1	1.86	
9.9	143.4	1.73	
8.9	160.8	1.54	
7.9	181.1	1.37	
7.3	194.2	1.28	
6.6	215.5	1.15	
5.9	242.6	1.05	H-123 (SH-123)
9.2	155.2	2.30	
8.3	172.8	2.05	
7.5	189.2	1.87	
6.9	207.4	1.71	
6.2	230.9	1.53	
5.5	259.6	1.37	

P1 = 5.5 HP (4 kW) - n1 = 1435 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
281.4	5.1	1.8	HA-052
231.5	6.2	1.5	
186.4	7.7	1.2	
149.5	9.6	1.2	
281.4	5.1	2.8	HA-062
231.5	6.2	2.3	
186.4	7.7	1.9	
149.5	9.6	1.8	
122.6	11.7	1.4	
99.0	14.5	1.1	
84.9	16.9	1.1	

P1 = 5.5 HP (4 kW) - n1 = 1435 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
673.7	2.13	2.13	H-061
558.4	2.57	1.76	
452.7	3.17	1.55	
388.9	3.69	1.54	
358.8	4.00	1.42	
300.8	4.77	1.27	
565.0	2.54	4.15	H-081
441.5	3.25	3.60	
385.8	3.72	3.15	
358.8	4.00	3.02	
307.3	4.67	2.60	
251.8	5.7	1.70	H-052
208.0	6.9	1.61	
168.8	8.5	1.52	
149.5	9.6	1.48	
124.8	11.5	1.29	
101.1	14.2	1.15	
86.5	16.6	1.04	H-062
168.8	8.5	2.70	
152.7	9.4	2.45	
122.7	11.7	2.12	
113.0	12.7	2.10	
97.0	14.8	1.81	
88.0	16.3	1.88	
81.1	17.7	1.79	
70.7	20.3	1.60	
61.6	23.3	1.39	
55.8	25.7	1.26	
49.0	29.3	1.04	
44.8	32.0	1.01	H-082
74.0	19.4	3.15	
67.1	21.4	2.85	
62.9	22.8	2.68	
54.0	26.6	2.30	
51.4	27.9	2.20	
46.0	31.2	1.95	
41.7	34.4	1.80	
37.1	38.7	1.58	
33.5	42.8	1.43	
29.8	48.1	1.27	H-083
25.4	56.5	1.10	
20.1	71.5	0.98	
25.4	56.5	1.31	SH-093
20.1	71.5	1.09	
42.0	34.2	3.60	H-102 (SH-102)
37.3	38.5	2.78	
34.8	41.3	3.05	
31.3	45.8	2.75	
27.9	51.5	2.45	
26.3	54.5	2.50	H-103 (SH-103)
20.6	69.7	1.95	
18.0	79.8	1.70	
17.0	84.2	1.62	
15.4	93.4	1.46	
14.3	100.1	1.36	
11.9	120.8	1.13	
10.7	134.1	1.02	
10.0	143.4	0.95	

P1 = 5.5 HP (4 kW) - n1 = 1435 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
15.9	90.0	2.17	H-123 (SH-123)
14.3	100.3	1.94	
13.3	108.3	1.80	
12.1	118.6	1.64	
11.2	128.2	1.52	
9.9	144.8	1.35	
9.2	155.2	1.26	
8.3	172.8	1.13	
7.6	189.2	1.03	
6.9	207.4	0.94	

P1 = 7.5 HP (5.5 kW) - n1 = 1450 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
751.3	1.93	3.27	H-081
570.9	2.54	3.03	
446.2	3.25	2.62	
389.8	3.72	2.29	
362.5	4.00	2.20	
310.5	4.67	1.88	
443.4	3.27	5.04	H-101
391.9	3.70	4.45	
343.6	4.22	3.96	
297.1	4.88	3.49	
268.5	5.4	2.60	H-062
245.8	5.9	2.57	
195.9	7.4	2.07	
170.6	8.5	1.96	
154.3	9.4	1.77	
123.9	11.7	1.54	
114.2	12.7	1.53	
98.0	14.8	1.32	
89.0	16.3	1.36	
81.9	17.7	1.30	
71.4	20.3	1.16	H-082
181.3	8.0	2.76	
162.9	8.9	2.82	
131.8	11.0	2.78	
107.4	13.5	2.87	
97.3	14.9	2.80	
87.3	16.6	2.51	
78.4	18.5	2.20	
74.7	19.4	2.29	
67.8	21.4	2.08	
63.6	22.8	1.95	
54.5	26.6	1.67	
52.0	27.9	1.59	
46.5	31.2	1.43	
42.2	34.4	1.29	H-102 (SH-102)
37.5	38.7	1.15	
33.9	42.8	1.04	
47.2	30.7	2.89	
42.4	34.2	2.60	
37.7	38.5	2.00	
35.1	41.3	2.22	H-102 (SH-102)
31.7	45.8	2.00	
28.2	51.5	1.78	

P1 = 7.5 HP (5.5 kW) - n1 = 1450 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
26.1	55.5	1.78	H-103 (SH-103)
20.8	69.7	1.40	
18.2	79.8	1.24	
17.2	84.2	1.18	
15.5	93.4	1.06	
14.5	100.1	0.99	
21.5	67.3	2.11	H-123 (SH-123)
19.7	73.7	1.93	
17.4	83.3	1.70	
16.1	90.0	1.58	
14.5	100.3	1.41	
13.4	108.3	1.31	
12.2	118.6	1.20	
11.3	128.2	1.11	
10.0	144.8	0.98	
16.8	86.4	2.62	H-143
15.1	96.2	2.36	
13.9	104.5	2.20	
12.5	115.9	1.96	
11.3	128.5	1.77	
10.4	139.6	1.63	
9.4	154.3	1.47	
7.8	186.0	1.22	
7.0	206.1	1.10	

P1 = 10HP (7.5 kW) - n1 = 1450 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
751.3	1.93	2.40	H-081
570.9	2.54	2.22	
446.2	3.25	1.92	
389.8	3.72	1.68	
362.5	4.00	1.61	
310.5	4.67	1.38	
443.4	3.27	3.69	H-101
391.9	3.70	3.27	
343.6	4.22	2.91	
297.1	4.88	2.56	
268.5	5.4	1.90	H-062
245.8	5.9	1.89	
196.0	7.4	1.52	
170.6	8.5	1.44	
154.3	9.4	1.30	
123.9	11.7	1.13	
268.5	5.4	2.64	H-082
245.8	5.9	2.40	
196.0	7.4	2.20	
181.3	8.0	2.03	
162.9	8.9	2.07	
131.8	11.0	2.03	
107.4	13.5	2.11	
97.3	14.9	2.05	
87.3	16.6	1.84	
78.4	18.5	1.65	
74.7	19.4	1.68	
67.8	21.4	1.52	
63.6	22.8	1.43	

P1 = 10HP (7.5 kW) - n1 = 1450 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
54.5	26.6	1.22	H-082
52.0	27.9	1.17	
46.5	31.2	1.05	
81.0	17.9	3.65	H-102 (SH-102)
73.2	19.8	3.28	
67.8	21.4	3.04	
60.4	24.0	2.80	
56.0	25.9	2.60	
50.5	28.7	2.33	
47.2	30.7	2.12	
42.4	34.2	1.90	
37.7	38.5	1.48	
35.1	41.3	1.63	
31.7	45.8	1.47	
28.2	51.5	1.30	
26.1	55.5	1.30	H-103 (SH-103)
20.8	69.7	1.04	H-122 (SH-122)
43.9	33.0	3.08	
40.2	36.1	2.81	
32.9	44.1	2.31	H-123 (SH-123)
31.7	45.8	2.27	
25.9	55.9	1.87	
21.5	67.3	1.50	
19.7	73.7	1.41	
17.4	83.3	1.25	
16.1	90.0	1.16	
14.5	100.3	1.04	
13.4	108.3	0.96	
16.8	86.4	1.90	H-143
15.1	96.2	1.73	
13.9	104.5	1.59	
12.5	115.9	1.44	
11.3	128.5	1.29	
10.4	139.6	1.19	
9.4	154.3	1.08	
7.8	186.0	0.89	

P1 = 15HP (11 kW) - n1 = 1460 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
719.2	2.03	3.05	H-101
588.7	2.48	3.05	
446.5	3.27	2.52	
394.6	3.70	2.20	
346.0	4.22	1.98	
299.2	4.88	1.75	
588.7	2.48	4.44	H-121
494.9	2.95	3.72	
465.0	3.14	3.58	
407.8	3.58	3.26	
354.4	4.12	2.84	
304.2	4.80	2.49	
270.4	5.4	1.80	H-082
247.5	5.9	1.63	
197.3	7.4	1.50	
182.5	8.0	1.38	

P1 = 15 HP (11 kW) - n1 = 1460 RPM

Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
164.0	8.9	1.41	H-082
132.7	11.0	1.39	
108.2	13.5	1.44	
98.0	14.9	1.40	
88.0	16.6	1.25	
78.9	18.5	1.12	
75.3	19.4	1.15	
68.2	21.4	1.04	
270.4	5.4	2.83	SH-092
247.5	5.9	2.57	
197.3	7.4	2.25	
182.5	8.0	2.25	
164.0	8.9	2.20	
132.7	11.0	1.89	
108.2	13.5	1.65	
98.0	14.9	1.49	
88.0	16.6	1.34	
78.9	18.5	1.20	
75.3	19.4	1.15	
68.2	21.4	1.04	
175.9	8.3	4.19	H-102 (SH-102)
146.0	10.0	3.89	
131.5	11.1	3.75	
109.8	13.3	3.23	
90.7	16.1	2.76	
81.6	17.9	2.50	
73.7	19.8	2.24	
68.2	21.4	2.07	
60.8	24.0	1.91	
56.4	25.9	1.77	
50.9	28.7	1.59	
47.6	30.7	1.45	
42.7	34.2	1.30	
35.4	41.3	1.11	
31.9	45.8	1.00	
53.1	27.5	2.53	H-122 (SH-122)
48.8	29.9	2.33	
44.2	33.0	2.10	
40.4	36.1	1.92	
33.1	44.1	1.57	
31.9	45.8	1.50	H-123 (SH-123)
26.1	55.9	1.27	
21.7	67.3	1.05	
33.9	43.1	2.58	H-142
30.2	48.3	2.35	H-143
24.7	59.2	1.92	
23.2	63.0	1.80	
20.5	71.4	1.59	
18.5	79.1	1.43	
16.9	86.4	1.31	
15.2	96.2	1.18	
14.0	104.5	1.09	
12.6	115.9	0.98	

P1 = 20 HP (15 kW) - n1 = 1460 RPM

Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
719.2	2.03	2.23	H-101
588.7	2.48	2.23	
446.5	3.27	1.80	
394.6	3.70	1.63	
346.0	4.22	1.46	
299.2	4.88	1.28	
588.7	2.48	3.25	H-121
494.9	2.95	2.73	
465.0	3.14	2.63	
407.8	3.58	2.39	
354.4	4.12	2.10	
304.2	4.80	1.83	H-082
270.4	5.4	1.30	
247.5	5.9	1.20	
197.3	7.4	1.10	
182.5	8.0	1.02	
164.0	8.9	1.04	
132.7	11.0	1.02	
108.2	13.5	1.06	
98.0	14.9	1.03	SH-092
270.4	5.4	2.08	
247.5	5.9	1.88	
197.3	7.4	1.65	
182.5	8.0	1.65	
164.0	8.9	1.61	
132.7	11.0	1.39	
108.2	13.5	1.21	
98.0	14.9	1.09	H-102 (SH-102)
275.5	5.3	3.50	
228.1	6.4	3.20	
205.6	7.1	3.32	
175.9	8.3	3.08	
146.0	10.0	2.85	
131.5	11.1	2.76	
109.8	13.3	2.37	
90.7	16.1	2.02	
81.6	17.9	1.82	
73.7	19.8	1.64	
68.2	21.4	1.52	
60.8	24.0	1.40	
56.4	25.9	1.30	
50.9	28.7	1.17	
47.6	30.7	1.06	H-122 (SH-122)
64.9	22.5	2.30	
59.6	24.5	2.08	
53.1	27.5	1.85	
48.8	29.9	1.70	
44.2	33.0	1.54	
40.4	36.1	1.41	
33.1	44.1	1.15	H-123 (SH-123)
31.9	45.8	1.10	
26.1	55.9	0.93	
45.3	32.2	2.53	H-142
37.5	38.9	2.09	
33.9	43.1	1.90	
30.2	48.3	1.70	H-143
24.7	59.2	1.40	
23.2	63.0	1.32	
20.5	71.4	1.17	

P1 = 20 HP (15 kW) - n1 = 1460 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
18.5	79.1	1.05	H-143
16.9	86.4	0.96	

P1 = 25 HP (18.5 kW) - n1 = 1470 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
724.1	2.03	1.81	H-101
592.7	2.48	1.81	
449.5	3.27	1.50	
397.3	3.70	1.32	
348.3	4.22	1.18	
301.2	4.88	1.04	
592.7	2.48	2.64	H-121
498.3	2.95	2.21	
468.2	3.14	2.10	
410.6	3.58	1.94	
356.8	4.12	1.69	
306.3	4.80	1.48	
277.4	5.3	2.80	H-102 (SH-102)
229.7	6.4	2.60	
207.0	7.1	2.69	
177.1	8.3	2.49	
147.0	10.0	2.31	
132.4	11.1	2.23	
110.5	13.3	1.92	
91.3	16.1	1.64	
82.1	17.9	1.48	
74.2	19.8	1.33	
68.7	21.4	1.23	
61.3	24.0	1.14	
56.8	25.9	1.05	
277.4	5.3	4.70	H-122 (SH-122)
253.5	5.8	4.57	
210.0	7.0	4.22	
190.9	7.7	3.94	
172.9	8.5	3.70	
142.7	10.3	3.19	
115.8	12.7	2.87	
105.8	13.9	2.74	
87.0	16.9	2.34	
76.2	19.3	2.14	
71.4	20.6	2.01	
65.3	22.5	1.83	
60.0	24.5	1.69	
53.5	27.5	1.50	
49.2	29.9	1.38	
44.6	33.0	1.25	
40.7	36.1	1.14	
54.9	26.8	2.46	H-142
45.7	32.2	2.00	
37.8	38.9	1.70	
34.1	43.1	1.53	
30.4	48.3	1.40	H-143
24.8	59.2	1.14	
23.3	63.0	1.07	

P1 = 30 HP (22 kW) - n1 = 1465 RPM			
Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
721.7	2.03	1.52	H-101
590.7	2.48	1.52	
448.0	3.27	1.26	
590.7	2.48	2.22	H-121
496.6	2.95	1.86	
466.6	3.14	1.79	
409.2	3.58	1.63	
355.6	4.12	1.42	
305.2	4.80	1.25	
276.4	5.3	2.40	H-102 (SH-102)
228.9	6.4	2.18	
206.3	7.1	2.26	
176.5	8.3	2.10	
146.5	10.0	1.95	
132.0	11.1	1.88	
110.2	13.3	1.61	
91.0	16.1	1.38	
81.8	17.9	1.24	
74.0	19.8	1.12	
68.5	21.4	1.04	H-122 (SH-122)
276.4	5.3	3.90	
252.6	5.8	3.85	
209.3	7.0	3.54	
190.3	7.7	3.32	
172.4	8.5	3.11	
142.2	10.3	2.68	
115.4	12.7	2.41	
105.4	13.9	2.30	
86.7	16.9	1.97	
75.9	19.3	1.80	
71.1	20.6	1.69	
65.1	22.5	1.54	
59.8	24.5	1.42	
53.3	27.5	1.26	H-142
49.0	29.9	1.16	
44.4	33.0	1.05	
60.5	24.2	2.30	
54.7	26.8	2.07	
45.5	32.2	1.72	H-143
37.7	38.9	1.43	
34.0	43.1	1.29	
30.3	48.3	1.20	
24.8	59.2	0.96	

P1 = 40 HP (30 kW) - n1 = 1472 RPM

Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
593.6	2.48	1.63	H-121
499.0	2.95	1.36	
468.8	3.14	1.31	
411.2	3.58	1.20	
357.3	4.12	1.04	
277.7	5.3	2.90	H-122 (SH-122)
253.8	5.8	2.82	
210.3	7.0	2.60	
191.2	7.7	2.43	
173.2	8.5	2.28	
142.9	10.3	1.97	
115.9	12.7	1.77	
105.9	13.9	1.69	
87.1	16.9	1.44	
76.3	19.3	1.32	
71.5	20.6	1.24	
65.4	22.5	1.13	
84.1	17.5	2.30	H-142
73.6	20.0	2.03	
60.8	24.2	1.69	
54.9	26.8	1.52	
45.7	32.2	1.26	
37.8	38.9	1.05	
34.2	43.1	0.95	

P1 = 60 HP (45 kW) - n1 = 1480 RPM

Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
279.2	5.3	3.0	H-142
231.3	6.4	2.62	
211.4	7.0	2.41	
189.7	7.8	2.29	
155.8	9.5	2.33	
141.0	10.5	2.33	
113.0	13.1	1.90	
93.7	15.8	1.68	
84.6	17.5	1.54	
74.0	20.0	1.35	
61.2	24.2	1.12	
55.2	26.8	1.01	

P1 = 50 HP (37 kW) - n1 = 1475 RPM

Output Speed (rpm)	Ratio	Service Factor (SF)	Geared Type
278.3	5.3	3.60	H-142
230.5	6.4	3.18	
210.7	7.0	2.93	
189.1	7.8	2.79	
155.3	9.5	2.84	
140.5	10.5	2.84	
112.6	13.1	2.30	
93.4	15.8	2.04	
84.3	17.5	1.87	
73.8	20.0	1.65	
61.0	24.2	1.37	
55.0	26.8	1.23	
45.8	32.2	1.02	

Remark

$$T = \frac{9550 (P1) (E)}{n2}$$

Where T = Output torque on low speed shaft in Nm.

P1 = Input power in kW

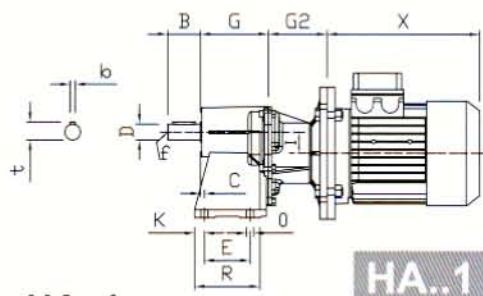
n2 = Output speed in RPM

E ≈ 0.98 for single stage helical gear unit

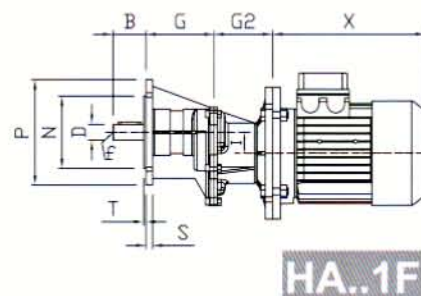
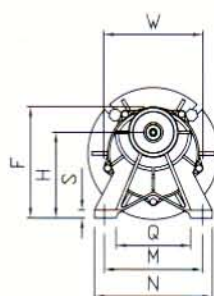
≈ 0.96 for two stage helical gear unit

≈ 0.94 for three stage helical gear unit

HA..1 DIMENSIONS



HA..1



HA..1F

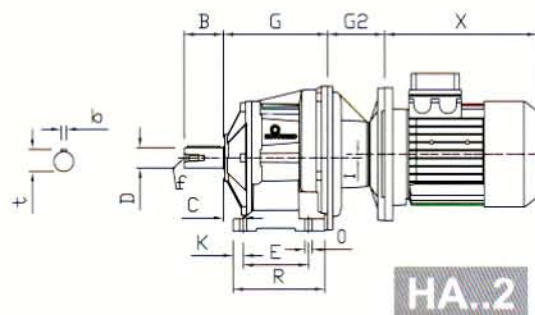
HA..1

	B	C	D	E	F	G	H	I	K	M	N	O	Q	R	S	W	b	t	s
A41	40	20	19 j6	45	151	95.5	113	32	12.5	105	130	9	75	70	12	152	6	21.5	M6
A51	50	6	24 j6	70	169	104	130	32	15	150	180	11	115	100	12	152	8	27	M6
A61	60	7.5	28 j6	70	219.5	129	165	47.5	20	165	200	11	120	110	15	218	8	31	M8

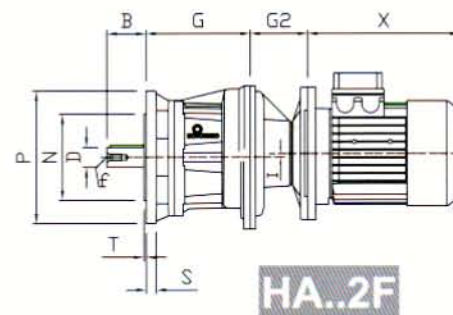
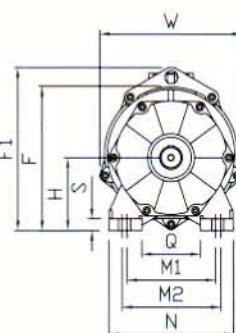
HA..1F

	M	N	O	P	S	T	V
A41F	115	95 f8	9	140	10	3	111.5
A51F	130	110 f8	11	160	10	3.5	111.5
A61F	165	130 f8	11	200	15	3.5	161.5

HA..2 DIMENSIONS



HA..2



HA..2F

HA..2

	D	B	b	t	f	C	E	F	F1	G	H	I	K	M1	M2	N	O	Q	R	S	W
A32	20 j6	40	6	22.5	M6																
	(16 j6)	40	5	18	M6	18	80	155	/	117.5	75	10	13	110	120	145	9	75	111	15	152
	(14 j6)	30	5	16	M6																
A42	25 j6	50	8	28	M10																
	(19 j6)	40	6	21.5	M6	25	85	160	/	124.5	80	10	13	110	120	145	9	75	111	15	152
A52	30 j6	60	8	33	M10																
	(35 j6)	70	10	38	M12	30	100	217.5	255.5	159	110	5.5	15.5	135	150	190	11	90	140	18	218
	(24 j6)	50	8	27	M8																
A62	40 j6	80	12	43	M16																
	(28 j6)	60	8	31	M10	35	110	237.5	275.5	168	120	15.5	20	170	185	230	14	120	150	20	218

HA..2F

	P	M	N f8	O	G	I	S	T	W
A32F	140	115	95						
	(120)	100	80	9	117.5	10	10	3	152
A42F	160	130	110						
	(140)	115	95	9	124.5	10	10	3.5	152
A52F	200	165	130						
	(160)	130	110	11	159	5.5	15	3.5	218
A62F	250	215	180						
	(200)	165	130	14	168	15.5	15	4	218

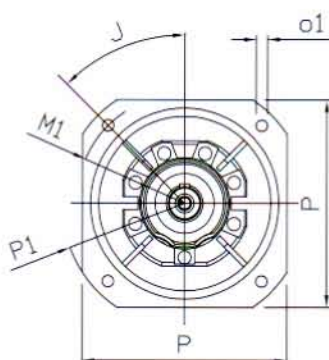
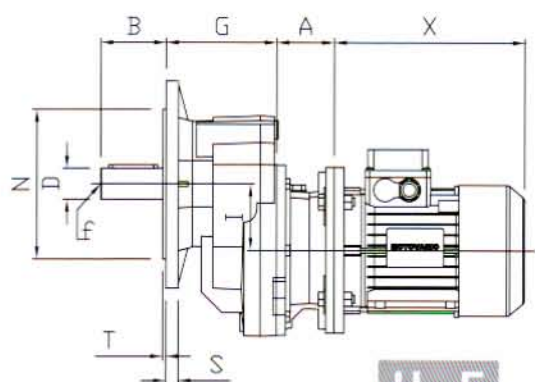
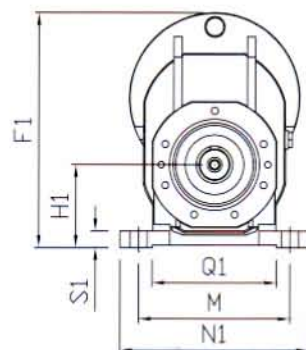
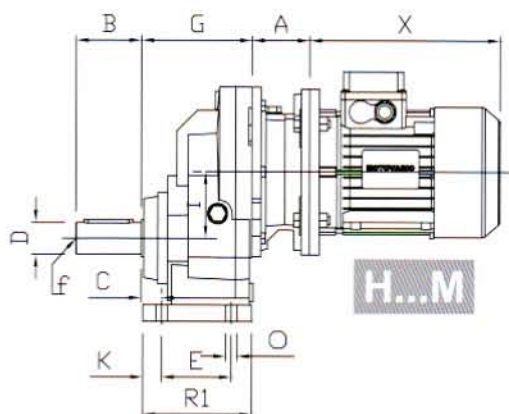
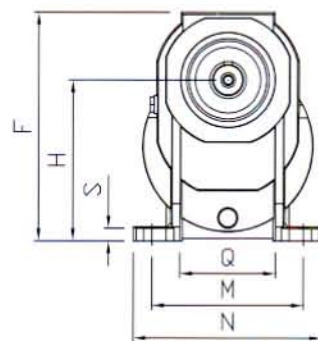
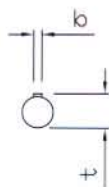
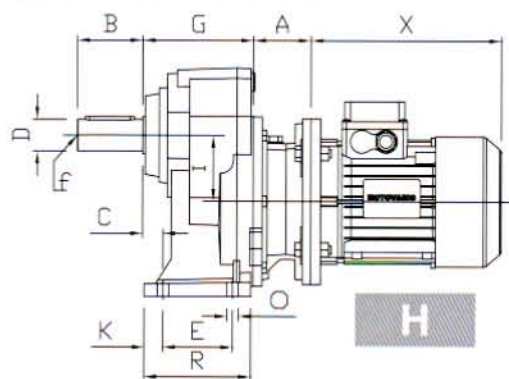
PAM. Flanges

	Pm		G2	
	B5	B14	A41-A51, A32-A42	A61, A52-A62
063	140	/	55	/
071	160	105	55	/
080	200	120	86	87.5
090	200	140	86	87.5
100 - 112	250	160	/	87.5

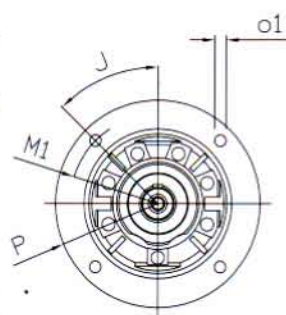
(...) Only on request

- For the dimension X, please check with the catalogue of electric motor

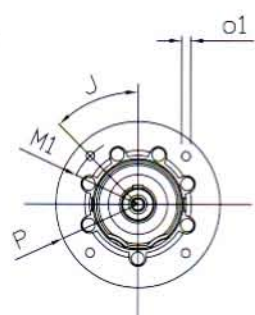
H...1 DIMENSIONS



FA

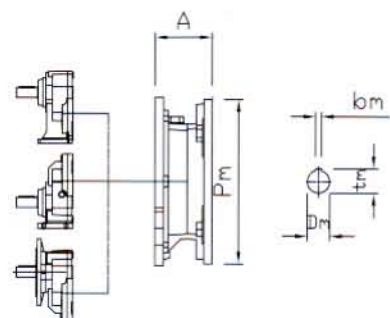


FB



FC

H	A			Pm
	041 051 061	081	101 121	
071	69	/	/	160
080-090	90	70	/	200
100-112	105	85	75.5	250
132	/	110	100.5	300
160-180	/	/	148	350
200	/	/	185	400

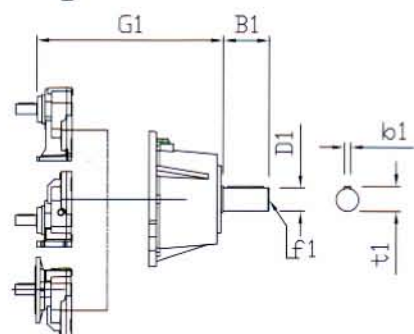


IH	G1	B1	D1	b1	t1	f1
041	190	40	16 j6	5	18	M6
051	200	50	24 j6	8	27	M8
061	215	50	24 j6	8	27	M8
081	248	60	28 j6	8	31	M10
101	306.5	80	38 k6	10	41	M12
121	336.5	80	38 k6	10	41	M12

IH

IH...M

IH...F



- For the dimensions concerning the motor connection area (Pm, Dm, bm, tm) please refer to the table as shown on page 26
- For the dimension X, please check with the catalogue of electric motor

H...1 DIMENSIONS

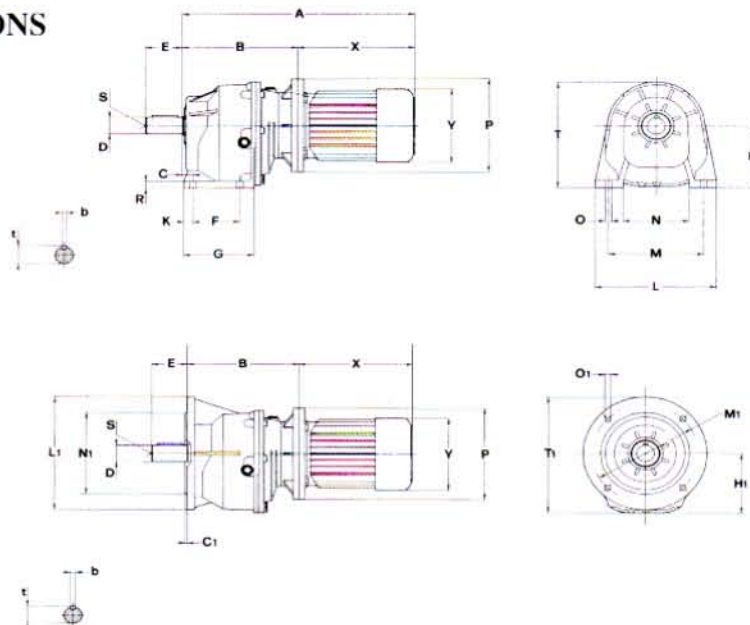
H...

	B	C	D	E	F	F1	G	H	H1	I	K	M	
041	40	13	19 j6	45	168.5	168	100	120	50	42	12	105	
051	50	13	24 j6	70	183.5	189	110	130	63	50	12	150	
061	60	16	28 j6	70	231	216	125	165	80	60	14	165	
081	80	25	38 k6	85	277	284	135	195	100	80	23	185	
101	110	19	48 k6	130	355	376.5	180	252	125	100	17	240	
121	110	25	55 m6	150	422	426.5	210	300	160	115	22	280	
	N	N1	O	Q	Q1	R	R1	S	S1	V	b	t	f
041	130	127	9	74	57	86.5	98	9.5	8	118	6	21.5	M6
051	178	178	11	100	121.5	106	109	11.5	14	126	8	27	M8
061	195	195	11	110	135.5	120	123	15	16	136	8	31	M10
081	230	232	14	123	151	130	135	15	20	184	10	41	M12
101	295	295	18	162	185.5	173	178	19	22	251.5	14	51.5	M16
121	340	340	18	183	224	202	207	22	25	266.5	16	59	M20

H...F

		J	M1	N	O1	P	P1	S	T
041	FA	45	165	130 f8	11	160	200	9	3.5
	FB	45	130	110 f8	9	160	/	9	3.5
	FC	45	115	95 f8	9	140	/	9	3
061	FA	45	215	180 f8	14	200	250	12	4
	FB	45	165	130 f8	11	200	/	12	3.5
	FC	/	/	/	/	/	/	/	/
081 101	FA	45	265	230 f8	14	250	300	15	4
	FB	45	215	180 f8	14	250	/	15	4
	FC	/	/	/	/	/	/	/	/
121	FA	45	300	250 f8	18	300	350	16	5
	FB	45	265	230 f8	14	300	/	16	4
	FC	45	215	180 f8	14	250	/	16	4

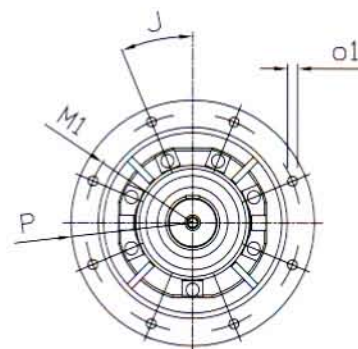
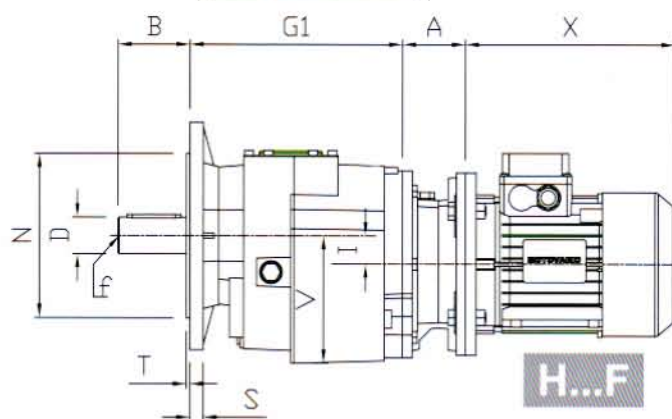
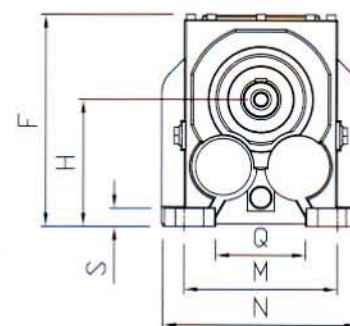
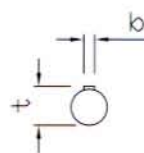
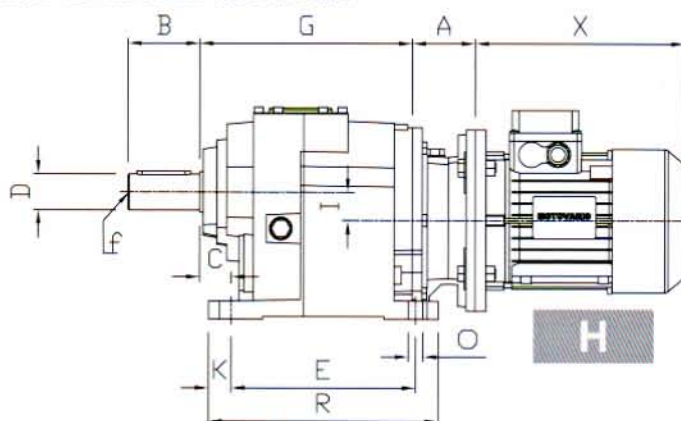
RT/RF2-40 DIMENSIONS



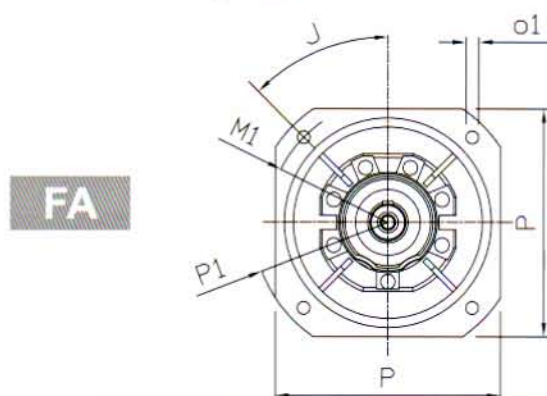
Gear Type	Motor Type	A	B	C	C1	D	E	F	G	H	H1	K	L	L1	M	M1
RT2/40 RF2/40	63-B5	331	146	14.5	3.5	19	38	55	88	90	85	12.5	150	160	120	130
	71-B5	361	151													
	80-B5	393	163													

Gear Type	Motor Type	N	N1	O	O1	P	R	S	T	T1	X	Y	b	t	Weight Kg
RT2/40 RF2/40	63-B5	78	110	9	9	140	10	M6	170	165	185	122	6	21.5	7
	71-B5					160					210	137			7.6
	80-B5					200					230	158			

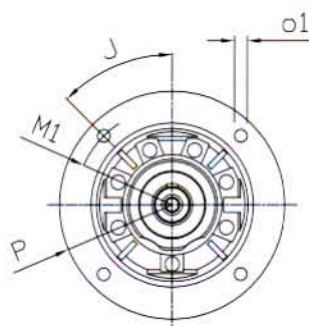
H...2/3 DIMENSIONS



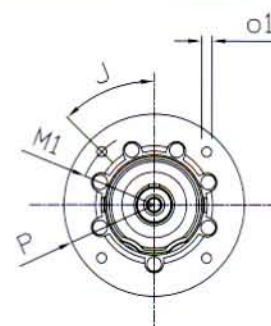
FB (H142/3)



FA



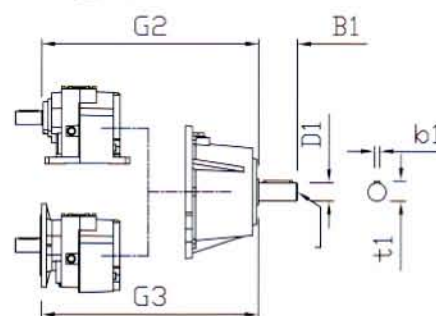
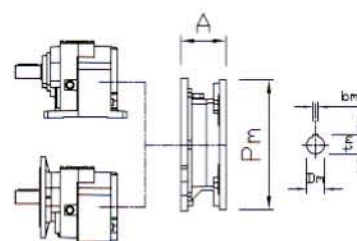
FB



FC

H	A				Pm
	032/3 042/3 052/3	062/3 082/3	102/3 122/3	142/3	
063	57	/	/	/	140
071	69	49	/	/	160
080-090	90	70	60.5	/	200
100-112	105	85	75.5	/	250
132	/	110	100.5	76	300
160-180	/	157.5	148	123.5	350
200	/	/	185	160.5	400
225	/	/	/	160.5	450

IH	G2	G3	B1	D1	b1	t1	f1
032/3	231	240	50	24 j6	8	27	M8
042/3	242	242	50	24 j6	8	27	M8
052/3	277	277	50	24 j6	8	27	M8
062/3	349	349	60	28 j6	8	31	M10
082/3	385.5	385.5	60	28 j6	8	31	M10
102/3	442.5	442.5	80	38 k6	10	41	M12
122/3	503	503	80	38 k6	10	41	M12
142/3	570	570	110	42 k6	12	45	M16



IH...

IH...F

- For the dimensions concerning the motor connection area (Pm, Dm, bm, tm) please refer to the table as shown on page 26
 - For the dimension X, please check with the catalogue of electric motor

H...2/3 DIMENSIONS

H...

	B	C	D	E	F	G	G1	H	I	K
032/3	50	25	25 j6	130	169	141	150	90	9.2	15
042/3	60	30	30 j6	165	189	152	152	115	18	15
052/3	70	30	35 k6	165	192	187	187	115	25.5	18
062/3	80	35	40 k6	205	234	236	236	140	31	25
082/3	100	40	50 k6	260	292	272.5	272.5	180	31	27.5
092/3	(120)	(25)	(60 j6)	(165)	(322)	(272.5)	(272.5)	(210)	(26)	(23)
102/3	120	40	60 m6	310	364	316	316	225	35.5	27.5
	(140)	(33)	(80 j6)	(210)	(389)			(250)		
122/3	140	45	70 m6	370	399	376.5	376.5	250	47.5	35
	(170)	(40)	(90 j6)	(250)	(449)			(300)		
142/3	170	50	90 m6	410	490	430	430	315	45	40
	M	N	O	Q	R	S	V	b	t	f
032/3	110	140	11	61	160	15	92	8	28	M10
042/3	135	170	14	86	195	15	115	8	33	M10
052/3	135	185	14	82	201	18	116	10	38	M12
062/3	170	220	16	100	255	20	140	12	43	M16
082/3	215	280	18	143	315	25	180	14	53.5	M16
092/3	(300)	(350)	(22)	(170)	(221)	(27)	(180)	(18)	(64)	(M20)
102/3	250	330	22	166	365	30	227	18	64	M20
	(370)	(440)	(26)	(200)	(276)			(22)	(85)	
122/3	290	406	26	193	440	35	253	20	74.5	M20
	(440)	(520)	(33)	(230)	(333)			(25)	(95)	
142/3	340	450	26	236	490	35	320	25	95	M20

(..) Only on request in SH series

H...F

		J	M1	N	O1	P	P1	S	T
032/3	FA	45	165	130 f8	11	160	200	9	3.5
	FB	45	130	110 f8	9	160	/	9	3.5
	FC	45	115	95 f8	9	140	/	9	3
052/3	FA	45	215	180 f8	14	200	250	12	4
	FB	45	165	130 f8	11	200	/	12	3.5
	FC	/	/	/	/	/	/	/	/
062/3	FA	45	265	230 f8	14	250	300	15	4
	FB	45	215	180 f8	14	250	/	15	4
	FC	/	/	/	/	/	/	/	/
082/3	FA	45	300	250 f8	18	300	350	16	5
	FB	45	265	230 f8	14	300	/	16	4
	FC	45	215	180 f8	14	250	/	16	4
102/3	FA	/	/	/	/	/	/	/	/
	FB	45	300	250 f8	18	350	/	18	5
	FC	45	265	230 f8	14	300	/	18	4
122/3	FA	/	/	/	/	/	/	/	/
	FB	45	350	300 f8	18	400	/	18	5
	FC	/	/	/	/	/	/	/	/
142/3	FA	/	/	/	/	/	/	/	/
	FB	22.5	400	350 f8	18	450	/	25	5
	FC	45	350	300 f8	18	400	/	25	5

WORM GEAR UNITS



NRV 030-150



NMRV 030-150



NMRV-NMRV...

Ratio 200 - 10000



SW 030-105

PERFORMANCE - NRV/ISW

I	n2	n1 = 2800										
			030	040	050	063	075	090	105	110	130	150
5	560	kW1	0.79	1.56	2.90	-	-	-	-	-	-	-
		M2	12	24	45	-	-	-	-	-	-	-
7.5	373.3	kW1	0.58	1.23	2.26	4.0	5.6	8.9	14.4	16.6	22.1	35.7
		M2	13	28	52	93	130	210	340	391	520	840
10	280	kW1	0.45	0.97	1.8	3.2	4.7	7.7	12.2	14.1	18.7	28.4
		M2	13	29	54	97	145	235	380	437	580	890
15	186.7	kW1	0.31	0.72	1.31	2.3	3.4	6	9.3	10.7	14.7	19.8
		M2	13	31	57	103	150	270	425	489	670	910
20	140	kW1	0.23	0.52	0.95	1.7	2.8	4.4	7.0	8	11	16.1
		M2	12	29	53	100	160	260	420	483	660	980
25	112	kW1	0.25	0.42	0.75	1.3	2.1	3.4	5.9	6.8	9	12
		M2	16	28	51	92	150	250	440	506	670	890
30	93.3	kW1	0.21	0.44	0.82	1.5	2.1	3.7	5.7	6.5	9	10.5
		M2	15	34	64	120	170	310	480	552	770	920
40	70	kW1	0.16	0.32	0.59	1.1	1.6	2.6	4.1	4.7	6.5	10.6
		M2	14	31	59	108	165	275	460	529	730	1200
50	56	kW1	0.12	0.26	0.45	0.83	1.2	2	3.3	3.7	5.1	8.1
		M2	13	30	53	100	150	265	450	495	700	1100
60	46.7	kW1	0.1	0.21	0.37	0.68	1	1.6	2.7	3	4	6.2
		M2	12	28	50	95	145	245	430	473	640	990
80	35	kW1	0.08	0.16	0.27	0.49	0.72	1.2	1.9	2	3	4.6
		M2	11	25	45	85	130	225	380	399	590	920
100	28	kW1	-	0.12	0.21	0.37	0.58	0.9	1.5	1.6	2.2	3.3
		M2	-	23	40	74	120	200	350	368	520	810

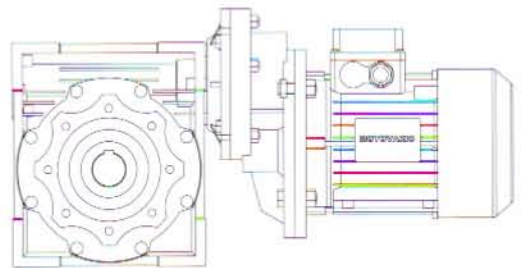
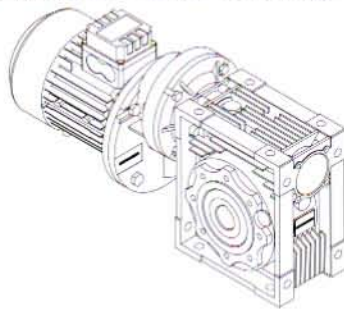
I	n2	n1 = 900										
			030	040	050	063	075	090	105	110	130	150
5	180	kW1	0.44	0.87	1.61	-	-	-	-	-	-	-
		M2	20	40	75	-	-	-	-	-	-	-
7.5	120	kW1	0.3	0.65	1.23	2.2	3.1	4.8	8.0	9.2	12.3	19.5
		M2	20	44	84	151	215	340	565	650	880	1400
10	90	kW1	0.24	0.5	0.94	1.7	2.5	4	6.6	7.6	10.3	15.7
		M2	20	44	84	153	230	370	620	713	960	1480
15	60	kW1	0.17	0.36	0.67	1.2	1.8	3.1	4.9	5.6	7.8	10.5
		M2	20	45	84	155	235	420	660	759	1060	1450
20	45	kW1	0.13	0.28	0.48	0.91	1.4	2.3	3.6	4.1	5.8	8.4
		M2	20	44	77	148	235	390	630	725	1040	1500
25	36	kW1	0.14	0.23	0.39	0.69	1.1	1.8	3.1	3.5	4.8	6.3
		M2	23	43	75	137	215	370	660	759	1050	1380
30	30	kW1	0.11	0.23	0.42	0.79	1.1	1.9	3.0	3.5	4.7	5.4
		M2	21	49	90	175	260	460	730	840	1170	1400
40	22.5	kW1	0.09	0.17	0.31	0.58	0.83	1.4	2.2	2.5	3.5	5.7
		M2	20	45	82	160	240	410	690	794	1100	1800
50	18	kW1	0.07	0.14	0.25	0.45	0.65	1.1	1.8	2	2.7	4.1
		M2	18	42	77	145	220	390	680	748	1050	1600
60	15	kW1	0.06	0.11	0.21	0.37	0.54	0.86	1.4	1.6	2.1	3.2
		M2	17	39	72	138	210	350	620	682	940	1440
80	11.3	kW1	0.04	0.09	0.16	0.29	0.43	0.63	1.0	1.1	1.6	2.4
		M2	15	35	68	128	200	315	540	567	860	1300
100	9	kW1	-	0.07	0.12	0.25	0.36	0.49	0.8	0.84	1.2	1.8
		M2	-	32	56	124	190	280	490	515	780	1150

- I = Ratio (อัตราทด)
n1 = Input Speed (ความเร็วรอบด้านเพลานำเข้า)
n2 = Output Speed (ความเร็วรอบด้านเพลานำออก)
kW1, P1 = Input power (กำลังที่ป้อนเข้า)
M2 = Output Torque (แรงบิดที่ด้านเพลานำออก)

I	n2	n1 = 1400										
			030	040	050	063	075	090	105	110	130	150
5	280	kW1	0.61	1.12	2.04	-	-	-	-	-	-	-
		M2	18	34	62	-	-	-	-	-	-	-
7.5	186.7	kW1	0.41	0.9	1.58	2.8	4.1	6.3	10.4	12	16.1	25.8
		M2	18	40	71	128	185	290	480	552	750	1200
10	140	kW1	0.32	0.69	1.23	2.2	3.2	5.1	8.6	9.8	13.5	20.2
		M2	18	40	72	130	195	310	520	598	820	1240
15	93.3	kW1	0.23	0.48	0.88	1.6	2.3	4.1	6.5	7.5	10.3	13.9
		M2	18	40	74	140	200	360	570	656	920	1250
20	70	kW1	0.18	0.37	0.68	1.2	1.9	3.1	4.8	5.6	7.8	11.1
		M2	18	39	73	135	210	355	560	644	910	1300
25	56	kW1	0.18	0.3	0.54	1	1.5	2.4	4.1	4.7	6.5	8.4
		M2	21	38	70	130	200	340	590	679	930	1200
30	46.7	kW1	0.15	0.31	0.57	1.1	1.5	2.6	3.9	4.5	6.4	7.1
		M2	20	45	84	160	230	410	630	725	1040	1200
40	35	kW1	0.11	0.23	0.42	0.76	1.1	1.8	2.9	3.3	4.9	7.3
		M2	18	41	76	145	220	360	610	702	1050	1550
50	28	kW1	0.09	0.18	0.34	0.6	0.89	1.4	2.3	2.6	3.8	5.4
		M2	17	39	73	135	210	340	600	660	980	1400
60	23.3	kW1	0.08	0.15	0.28	0.51	0.75	1.1	1.9	2.1	3.1	4.2
		M2	16	36	68	130	200	320	560	616	900	1260
80	17.5	kW1	0.05	0.12	0.22	0.39	0.58	0.83	1.3	1.4	2.3	3.1
		M2	13	33	65	122	190	285	490	515	840	1150
100	14	kW1	-	0.09	0.16	0.34	0.48	0.67	1.1	1.1	1.7	2.3
		M2	-	29	55	118	180	270	460	483	740	1000

I	n2	n1 = 500										
			030	040	050	063	075	090	105	110	130	150
5	100	kW1	0.3	0.6	1.12	-	-	-	-	-	-	-
		M2	24	49	92	-	-	-	-	-	-	-
7.5	66.7	kW1	0.21	0.45	0.86	1.5	2.1	3.3	5.5	6.4	8.6	13.5
		M2	24	54	103	184	260	410	690	794	1080	1700
10	50	kW1	0.16	0.35	0.67	1.2	1.7	2.7	4.6	5.2	7.1	10.7
		M2	24	54	103	185	270	435	740	851	1160	1780
15	33.3	kW1	0.12	0.26	0.47	0.85	1.2	2.1	3.4	3.9	5.5	7.2
		M2	24	55	103	187	280	490	790	909	1300	1730
20	25	kW1	0.09	0.19	0.33	0.63	1	1.6	2.5	2.8	4	5.9
		M2	23	52	93	178	285	470	750	863	1230	1820
25	20	kW1	0.1	0.15	0.28	0.48	0.73	1.2	2.1	2.4	3.2	4.3
		M2	29	49	91	164	255	440	790	909	1200	1630
30	16.7	kW1	0.08	0.16	0.29	0.54	0.77	1.4	2.1	2.4	3.3	3.8
		M2	26	58	108	200	300	550	870	1000	1400	1670
40	12.5	kW1	0.06	0.12	0.22	0.4	0.58	0.95	1.5	1.7	2.4	3.9
		M2	23	53	98	185	280	480	810	932	1300	2120
50	10	kW1	0.05	0.1	0.17	0.32	0.44	0.75	1.3	1.4	1.9	2.9
		M2	21	49	91	173	250	450	800	880	1220	1870
60	8.3	kW1	0.04	0.08	0.14	0.26	0.37	0.59	0.98	1.1	1.5	2.3
		M2	19	46	83	160	240	400	710	781	1070	1680
80	6.3	kW1	0.03	0.06	0.11	0.19	0.29	0.45	0.72	0.8	1.1	1.7
		M2	17	40	75	137	215	365	630	662	970	1530
100	5	kW1	-	0.05	0.09	0.16	0.24	0.35	0.56	0.6	0.8	1.3
		M2	-	36	65	128	210	330	570	599	860	1350

HELICAL WORM GEARED MOTORS

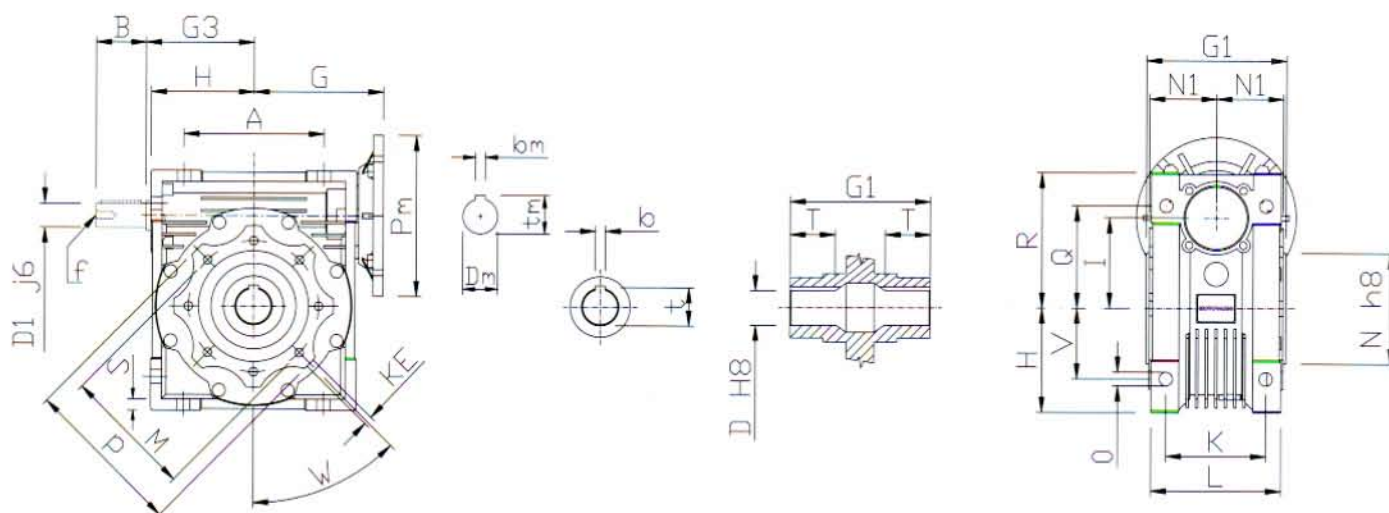


PC-NMRV Performance

n1 = 1400		Geared motors			
I	n2 1/min	Size	P1 (kW)	M2 (Nm)	SF
75	18.7	PC063+NMRV040	0.18	64	0.8
90	15.6		0.18	70	0.8
120	11.7		0.18	85	0.6
150	9.3		0.12	66	0.7
180	7.8		0.12	74	0.6
240	5.8		0.12	86	0.5
75	18.7	PC063+NMRV050	0.18	64	1.4
90	15.6		0.18	71	1.5
120	11.7		0.18	87	1.1
150	9.3		0.18	101	0.9
180	7.8		0.18	113	0.7
240	5.8		0.18	133	0.6
300	4.7		0.12	98	0.7
120	11.7	PC063+NMRV063	0.25	125	1.5
150	9.3		0.25	143	1.2
180	7.8		0.18	117	1.4
240	5.8		0.18	139	1.0
300	4.7		0.18	155	0.8
75	18.7	PC071+NMRV050	0.25	88	1.0
90	15.6		0.25	98	1.1
120	11.7		0.25	121	0.8
150	9.3		0.25	141	0.6
75	18.7	PC071+NMRV063	0.25	91	1.8
90	15.6		0.55	219	0.9
120	11.7		0.37	185	1.0
150	9.3		0.37	212	0.8
180	7.8		0.25	163	1.0
240	5.8		0.25	192	0.7
300	4.7		0.25	215	0.6
75	18.7	PC071+NMRV075	0.55	205	1.2
90	15.6		0.55	230	1.3
120	11.7		0.55	284	1.0
150	9.3		0.37	223	1.1
180	7.8		0.37	254	0.9
240	5.8		0.25	201	1.1
300	4.7		0.25	230	0.9
120	11.7	PC071+NMRV090	0.55	297	1.6
150	9.3		0.55	355	1.3
180	7.8		0.55	398	1.0
240	5.8		0.37	321	1.1
300	4.7		0.37	371	0.9
75	18.7	PC080+NMRV075	0.75	280	0.9
90	15.6		0.75	313	1.0
120	11.7		0.55	284	1.0
150	9.3		0.55	332	0.8
180	7.8		0.55	378	0.6

n1 = 1400		Geared motors			
I	n2 1/min	Size	P1 (kW)	M2 (Nm)	SF
75	18.7	PC080+NMRV090	1.1	422	1.0
90	15.6		1.1	479	1.2
120	11.7		0.75	405	1.2
150	9.3		0.75	484	0.9
180	7.8		0.75	543	0.7
75	18.7	PC080+NMRV105	1.1	439	1.8
90	15.6		1.1	486	1.8
120	11.7		1.1	630	1.3
150	9.3		1.1	743	1.1
180	7.8		0.75	580	1.2
240	5.8		0.75	700	0.9
300	4.7		0.55	597	1.0
75	18.7	PC080+NMRV110	1.1	439	2.1
90	15.6		1.1	486	2.1
120	11.7		1.1	630	1.5
150	9.3		1.1	743	1.2
180	7.8		0.75	580	1.3
240	5.8		0.75	700	0.9
300	4.7		0.55	597	1.0
75	18.7	PC080+NMRV130	1.1	439	2.7
90	15.6		1.1	493	2.8
120	11.7		1.1	630	2.1
150	9.3		1.1	754	1.6
180	7.8		1.1	851	1.3
240	5.8		1.1	1045	0.9
300	4.7		0.75	813	1.1
60.5	23.1	PC090+NMRV105	2.2	708	1.1
72.6	19.3		2.2	785	1.1
96.8	14.5		1.5	694	1.2
121	11.6		1.5	817	1.0
145.2	9.6		1.5	936	0.8
193.6	7.2		1.1	828	0.8
242	5.8		1.1	962	0.6
60.5	23.1	PC090+NMRV110	2.2	708	1.3
72.6	19.3		2.2	785	1.3
96.8	14.5		1.5	694	1.3
121	11.6		1.5	817	1.1
145.2	9.6		1.5	936	0.8
193.6	7.2		1.1	828	0.8
242	5.8		1.1	962	0.6
60.5	23.1	PC090+NMRV130	2.2	708	1.7
72.6	19.3		2.2	796	1.8
96.8	14.5		2.2	1017	1.3
121	11.6		2.2	1217	1.0
145.2	9.6		2.2	1373	0.8
193.6	7.2		1.5	1149	0.8
242	5.8		1.1	962	0.9

NMRV - NRV DIMENSIONS



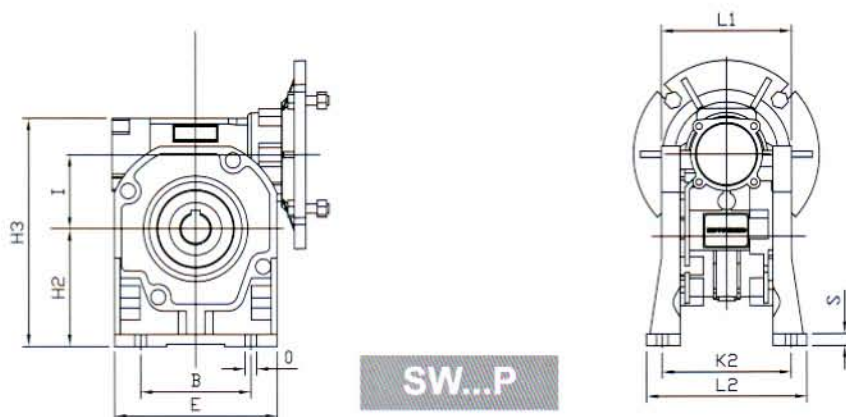
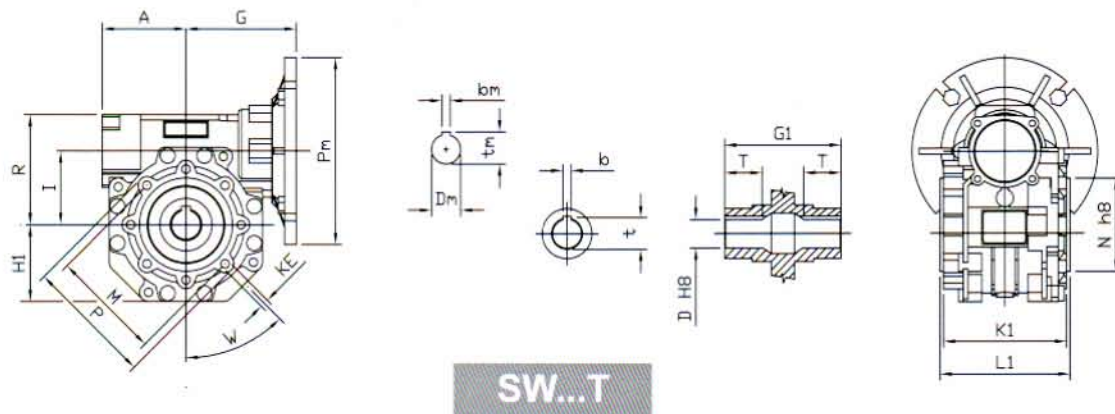
(..) Only on request

	030	040	050	063	075	090	105	110	130	150
A	54	70	80	100	120	140	170	170	200	240
B	20	23	30	40	50	50	60	60	80	80
D	14	18 (19)	25 (24)	25 (28)	28 (35)	35(38)	42	42	45	50
D1	9	11	14	19	24	24	28	28	30	35
G	55	70	80	95	112.5	129.5	160	160	180	210
G1	63	78	92	112	120	140	155	155	170	200
G3	45	53	64	75	90	108	135	135	155	175
H	40	50	60	72	86	103	127.5	127.5	147.5	170
I	30	40	50	63	75	90	110	110	130	150
K	44	60	70	85	90	100	115	115	120	145
KE	M6*11 (4)	M6*10 (4)	M8*10 (4)	M8*14 (8)	M8*14 (8)	M10*18 (8)	M10*18 (8)	M10*18 (8)	M12*21 (8)	M12*21 (8)
L	56	71	85	103	112	130	144	144	155	185
M	65	75	85	95	115	130	165	165	215	215
N	55	60	70	80	95	110	130	130	180	180
N1	29	36.5	43.5	53	57	67	74	74	81	96
O	6.5	6.5	8.5	8.5	11.5	13	14	14	16	18
P	75	87	100	110	140	160	200	200	250	250
Q	44	55	64	80	93	102	125	125	140	180
R	57	71.5	84	102	119	135	167.5	167.5	187.5	230
S	5.5	6.5	7	8	10	11	16	14.5	15.5	18
T	21	26	30	36	40	45	50	50	60	72.5
V	27	35	40	50	60	70	85	85	100	120
W	0°	45°	45°	45°	45°	45°	45°	45°	45°	45°
b	5	6	8	8	8 (10)	10	12	12	14	14
t	16.3	20.8 (21.8)	28.3(27.3)	28.3 (31.3)	31.3 (38.3)	38.3 (41.3)	45.3	45.3	48.8	53.8
b1	3	4	5	6	8	8	8	8	8	10
t1	10.2	12.5	16	21.5	27	27	31	31	33	38
f	-	-	M6	M6	M8	M8	M10	M10	M10	M12
~Kg	1.2	2.3	3.5	6.2	9	13	21	35	48	84

- Weight without motor

- For the dimensions concerning the motor connection area (Pm, Dm, bm, tm) please refer to the table as shown on page 26

SW...T- SW...P DIMENSIONS

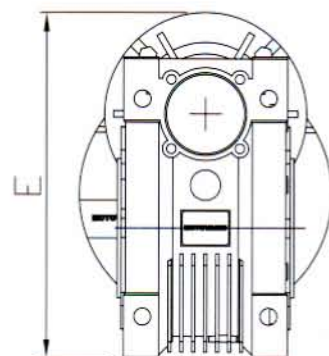
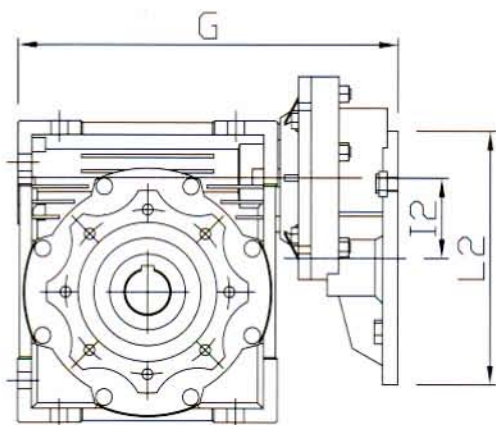


(..) Only on request

	030	040	050	063	075	090	105
A	40	50	60	72	86	103	127.5
B	50	52	63	95	120	140	200
D	14	18 (19)	25 (24)	25 (28)	28 (35)	35 (38)	42
E	80	90	110	140	160	200	250
G	55	70	80	95	112.5	129.5	160
G1	63	78	92	112	120	140	155
H1	37.5	42	52	66	80	97	115
H2	55	72	82	100	115	142	172
H3	112	142	166	202	232	275	338
I	30	40	50	63	75	90	110
K1	58	73	87	106	114	134	148
K2	66	81	98.5	111	115	146/140	181/160
KE	M6*11 (4)	M6*10 (4)	M8*10 (4)	M8*14 (8)	M8*16 (8)	M10*18 (8)	M10*18 (8)
L1	63	78	92	112	120	140	155
L2	80	98	124	138	142	180	208
M	65	75	85	95	115	130	165
N	55	60	70	80	95	110	130
O	7	9	9	12	12	13	13
P	75	87	97.6	110	130	148	200
R	57	70	84	102	117	133	166
S	7	9	10	10	12	14	18
T	21	26	30	36	40	45	50
W	0°	45°	45°	45°	45°	45°	45°
b	5	6	8	8	8 (10)	10	12
t	16.3	20.8 (21.8)	28.3 (27.3)	28.3 (31.3)	31.3 (38.3)	38.3 (41.3)	45.3

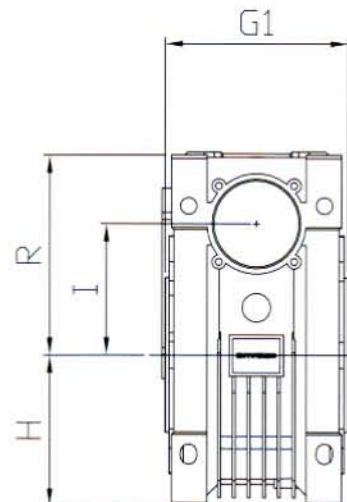
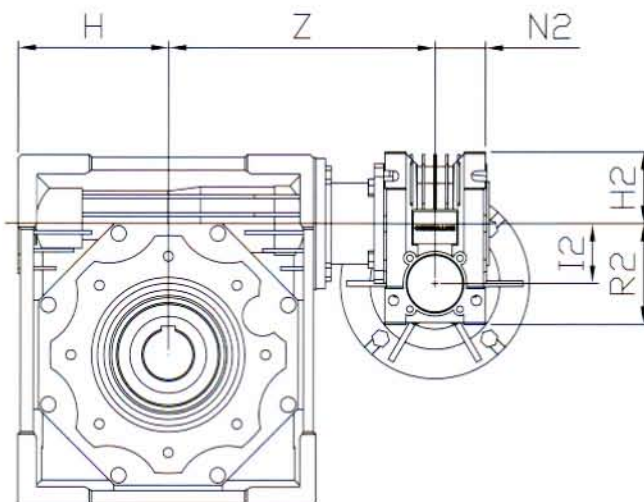
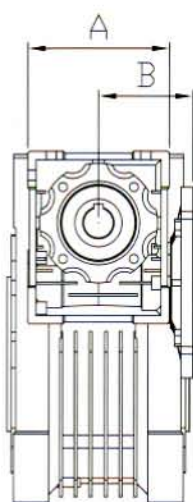
- For the dimensions concerning the motor connection area (Pm, Dm, bm, tm) please refer to the table as shown on page 26

PC + NMRV (Helical worm gear units)



	PC063+NMRV			PC071+NMRV				PC080 / PC090+NMRV				
	040	050	063	050	063	075	090	075	090	105	110	130
E	147	167	192	177.5	202.5	228.5	260.5	241	273	317.5	317.5	357.5
G	165	185	212	193	220	251.5	285.5	267.5	301.5	356.5	356.5	396.5
I2	40	40	40	50	50	50	50	63	63	63	63	63
L	140	140	140	160	160	160	160	200	200	200	200	200
~Kg	3.4	4.6	7.3	5.1	7.8	10.6	14.6	12.4	16.4	24.4	38.4	51.4

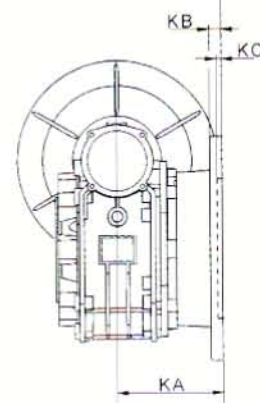
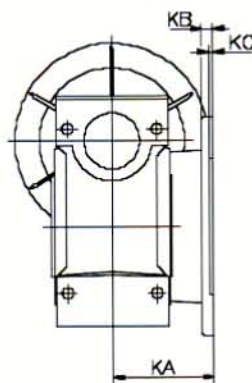
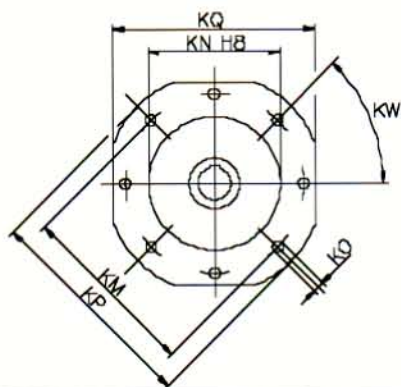
NMRV + NMRV (Double worm gear units)



NMRV-NMRV											
	025-030	025-040	030-040	030-050	030-063	040-075	040-090	050-105	050-110	063-130	063-150
A	70	70	80	80	80	100	100	120	120	144	144
B	45	45	55	55	55	70	70	80	80	95	95
G1	63	78	78	92	112	120	140	155	155	170	200
H	40	50	50	60	72	86	103	127.5	127.5	147.5	170
I	30	40	40	50	63	75	90	110	110	130	150
R	57	71.5	71.5	84	102	119	135	167.5	167.5	187.5	230
H2	35	35	40	40	40	50	50	60	60	72	72
I2	25	25	30	30	30	40	40	50	50	63	63
N2	22.5	22.5	29	29	29	36.5	36.5	43.5	43.5	53	53
R2	48	48	57	57	57	71.5	71.5	84	84	102	102
Z	100	115	122	132	145	167.5	184.5	226	226	245	275
~Kg	1.9	3	3.5	4.7	7.4	11.3	15.3	24.5	38.5	54.2	90.2

- Weight without motor

NMRV (NRV)...F - SW...F DIMENSIONS

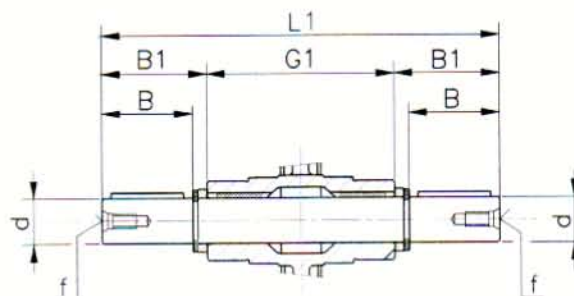
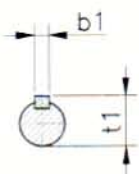
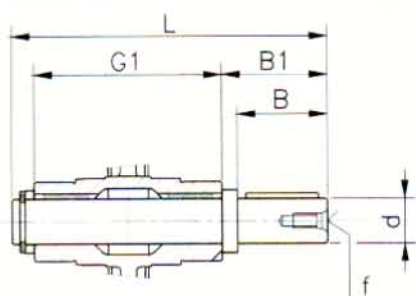


NMRV (NRV)...F

SW...F

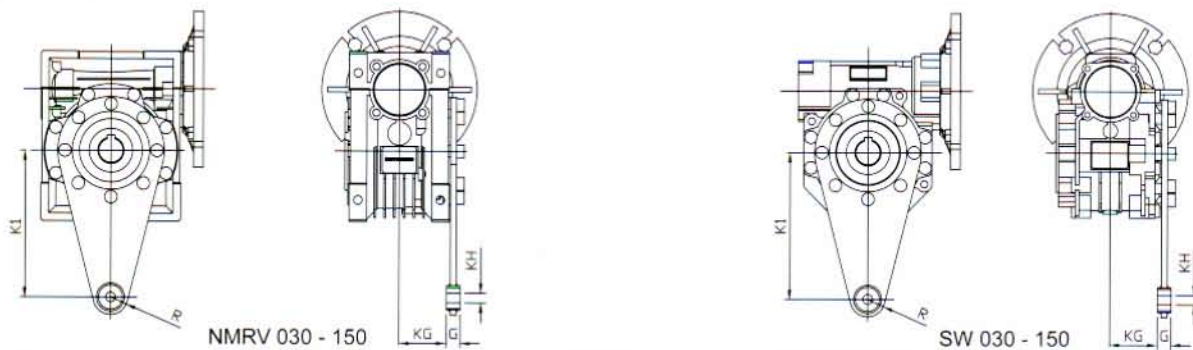
		030	040	050	063	075	090	105	110	130	150
FA	KA	54.5	67	90	82	111	111	131	131	140	155
	KB	6	7	9	10	13	13	15	15	15	15
	KC	4	4	5	6	6	6	6	6	6	6
	KN	50	60	70	115	130	152	170	170	180	180
	KM	68	75	85	150	165	175	230	230	255	255
	KO	6.5 (n°4)	9 (n°4)	11 (n°4)	11 (n°4)	14 (n°4)	14 (n°4)	14 (n°8)	14 (n°8)	16 (n°8)	16 (n°8)
	KP	80	110	125	180	200	210	280	280	320	320
	KQ	70	95	110	142	170	200	260	260	290	290
	KW	45°	45°	45°	45°	45°	45°	45°	45°	22.5°	22.5°
FB	KA	-	97	120	112	90	122	180	180	-	-
	KB	-	7	9	10	13	18	15	15	-	-
	KC	-	4	5	6	6	6	6	6	-	-
	KN	-	60	70	115	110	180	170	170	-	-
	KM	-	75	85	150	130	215	230	230	-	-
	KO	-	9 (n°4)	11 (n°4)	11 (n°4)	14 (n°4)	14 (n°4)	14 (n°8)	14 (n°8)	-	-
	KP	-	110	125	180	160	250	280	280	-	-
	KQ	-	95	110	142	-	-	260	260	-	-
	KW	-	45°	45°	45°	45°	45°	45°	45°	-	-
FC	KA	-	80	89	98	-	110	-	-	-	-
	KB	-	9	10	10	-	17	-	-	-	-
	KC	-	5	5	5	-	6	-	-	-	-
	KN	-	95	110	130	-	130	-	-	-	-
	KM	-	115	130	165	-	165	-	-	-	-
	KO	-	9.5 (n°4)	9.5 (n°4)	11 (n°4)	-	11 (n°4)	-	-	-	-
	KP	-	140	160	200	-	200	-	-	-	-
	KW	-	45°	45°	45°	-	45°	-	-	-	-

LOW SPEED SHAFTS



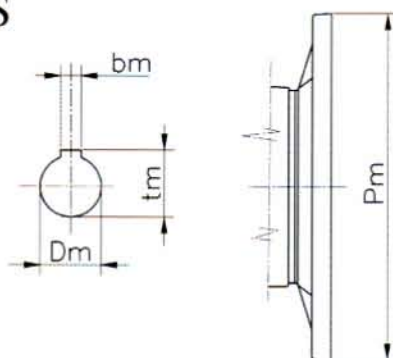
	d	B	B1	G1	L	L1	f	b1	t1
030	14 g6	30	32,5	63	102	128	M6	5	16
040	18 h6	40	43	78	128	164	M6	6	20,5
050	25 h6	50	53,5	92	153	199	M10	8	28
063	25 h6	50	53,5	112	173	219	M10	8	28
075	28 h6	60	63,5	120	192	247	M10	8	31
090	35 h6	80	84,5	140	234	309	M12	10	38
105	42 h6	80	84,5	155	249	324	M16	12	45
110	42 h6	80	84,5	155	249	324	M16	12	45
130	45 h6	80	85	170	265	340	M16	14	48,5
150	50 h6	82	87	200	297	374	M16	14	53,5

TORQUE ARM



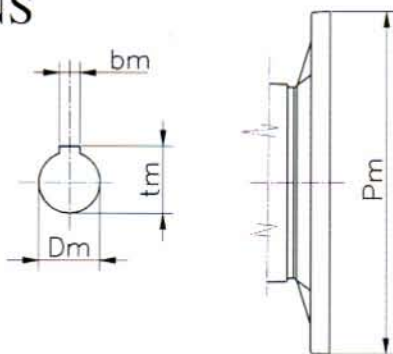
	K1	G	KG	KH	R
030	85	14	24	8	15
040	100	14	31,5	10	18
050	100	14	38,5	10	18
063	150	14	49	10	18
075	200	25	47,5	20	30
090	200	25	57,5	20	30
105	250	30	62	25	35
110	250	30	62	25	35
130	250	30	69	25	35
150	250	30	84	25	35

PAM.B5 DIMENSIONS



B5	IEC											
	056	063	071	080	090	100	112	132	160	180	200	225
Pm	120	140	160	200	200	250	250	300	350	350	400	450
Dm	9	11	14	19	24	28	28	38	42	48	55	60
bm	3	4	5	6	8	8	8	10	12	14	16	18
tm	10,4	12,8	16,3	21,8	27,3	31,3	31,3	41,3	45,3	51,8	59,3	64,4

PAM.B14 DIMENSIONS



B14	IEC							
	056	063	071	080	090	100	112	132
Pm	80	90	105	120	140	160	160	200
Dm	9	11	14	19	24	28	28	38
bm	3	4	5	6	8	8	8	10
tm	10,4	12,8	16,3	21,8	27,3	31,3	31,3	41,3

T SERIES THREE - PHASE ASYNCHRONOUS MOTORS

TECHNICAL CHARACTERISTICS

- Rated outputs and frame sizes in accordance with IEC 72-1 standards, where applicable.
- Continuous duty (S1) with sufficient thermal margins, to withstand short overloads.
- Motors designed according to the rules given by IEC 34 group and the CEE's harmonised ones.
- Protection degree IP 55.
- Insulation class F.
- Temperature rise compatible with class B.
- Ambient temperature + 40°C
- Installation ≤ 1000 m a.s.l.

4 Poles (1500 min⁻¹)

P _n [kW]		n _n [min ⁻¹]	I _n 400V [Nm]	M _n [Nm]	η _n %	COSφ _n	M _s M _n	I _s I _n	M _{max} M _n	Mass [Kg]
0.12	63 A 4	1350	0.47	0.85	57	0.64	2.2	6	2.4	3.9
0.18	63 B 4	1350	0.68	1.27	59	0.65	2.2	6	2.4	4.3
0.25	63 C 4	1350	0.91	1.77	60	0.66	2.2	6	2.4	4.8
0.25	71 A 4	1350	0.84	1.77	60	0.72	2.2	6	2.4	5.4
0.37	71 B 4	1370	1.11	2.58	65	0.74	2.2	6	2.4	6.2
0.55	71 C 4	1380	1.60	3.81	66	0.75	2.2	6	2.4	7.3
0.55	80 A 4	1370	1.58	3.83	67	0.75	2.2	6	2.4	9
0.75	80 B 4	1380	1.93	5.19	72	0.78	2.2	6	2.4	10
1.1	80 C 4	1390	2.67	7.56	76.2	0.78	2.2	6	2.4	12.3
1.1	90 S 4	1400	2.64	7.50	76.2	0.79	2.2	6	2.4	12.1
1.5	90 L 4	1400	3.45	10.23	78.5	0.8	2.2	6	2.4	14.6
2.2	90 LL 4	1400	4.90	15.01	81	0.8	2.2	7	2.4	18.3
2.2	100 LA 4	1420	4.84	14.80	81	0.81	2.2	7	2.3	21
3	100 LB 4	1420	6.47	20.18	82.6	0.81	2.2	7	2.3	24.7
4	112 M 4	1430	8.26	26.71	84.2	0.83	2.2	7	2.2	30.5
5.5	112 MS 4	1440	11.16	36.48	85.7	0.83	2.2	7	2.2	34.8
5.5	132 S 4	1450	11.03	36.22	85.7	0.84	2.2	7	2.2	40.4
7.5	132 L 4	1450	14.64	49.40	87	0.85	2.2	7	2.2	49.6
11	132 MB 4	1460	20.88	71.95	88.4	0.86	2.2	7.5	2.2	64
11	160 MA 4	1460	20.64	71.95	88.4	0.87	2.2	7	2.2	78
15	160 L 4	1460	28.15	98.12	88.4	0.87	2.2	7.5	2.2	98

P_n nominal power [kW]

I_n nominal current [A]

η nominal efficiency in %

$\frac{M_s}{M_n}$ starting torque / nominal torque ratio

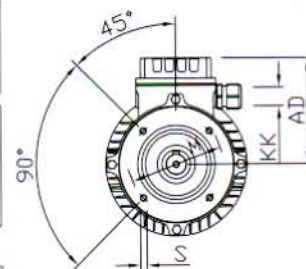
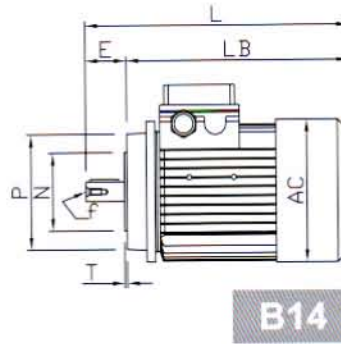
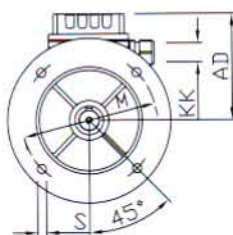
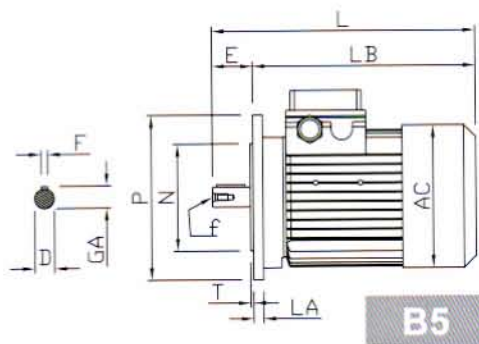
$\frac{I_s}{I_n}$ starting current / nominal current ratio

n_n nominal speed [min⁻¹]

M_n nominal torque [Nm]

COSφ_n nominal power factor

$\frac{M_{max}}{M_n}$ maximum torque / nominal torque ratio

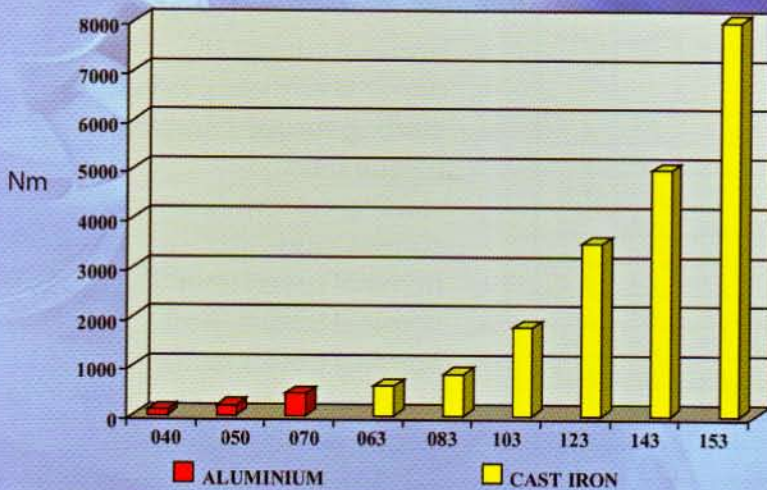


Motor type	Overall dimension					Flange B 5					Flange B 14					Shaft				
	AC	AD	L	LB	KK	M	Nj6	P	S Ø	T	M	Nj6	P	S Ø	T	D Ø	E	F	GA	f
63	130	102	215	192	M16 x 1.5	115	95	140	10	3	75	60	90	M5	2.5	11 j6	23	4	12.5	M4 x 10
71	145	109	240	210	M20 x 1.5	130	110	160	10	3.5	85	70	105	M6	2.5	14 j6	30	5	16	M5 x 12
71C	145	109	254	224	M20 x 1.5	130	110	160	10	3.5	85	70	105	M6	2.5	14 j6	30	5	16	M5 x 12
80	165	137	290	250	M20 x 1.5	165	130	200	12	3.5	100	80	120	M6	3	19 j6	40	6	21.5	M6 x 16
90S	185	145	310	260	M20 x 1.5	165	130	200	12	3.5	115	95	140	M8	3	24 j6	50	8	27	M8 x 20
90L	185	145	335	285	M20 x 1.5	165	130	200	12	3.5	115	95	140	M8	3	24 j6	50	8	27	M8 x 20
90LL	185	145	365	315	M20 x 1.5	165	130	200	12	3.5	115	95	140	M8	3	24 j6	50	8	27	M8 x 20
100	205	152	368	308	M20 x 1.5	215	180	250	15	4.0	130	110	160	M8	3.5	28 j6	60	8	31	M10 x 22
112	230	180	395	335	M25 x 1.5	215	180	250	15	4.0	130	110	160	M8	3.5	28 j6	60	8	31	M10 x 22
132S	270	193	436	356	M25 x 1.5	265	230	300	15	4.0	165	130	200	M10	3.5	38 k6	80	10	41	M12 x 28
132L	270	193	474	394	M25 x 1.5	265	230	300	15	4.0	165	130	200	M10	3.5	38 k6	80	10	41	M12 x 28
132MB	270	193	500	420	M25 x 1.5	265	230	300	15	4.0	165	130	200	M10	3.5	38 k6	80	10	41	M12 x 28
160	320	230	640	530	M32 x 1.5	300	250	350	19	5.0	-	-	-	-	-	42 k6	110	12	45	M16 x 35

SMARTBOX ... Extra choices

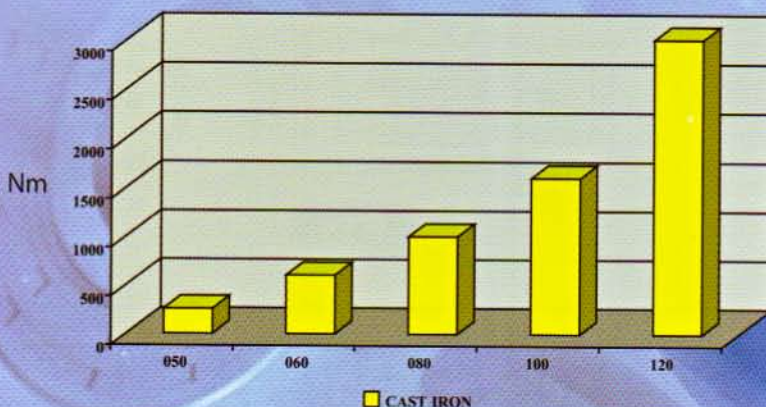
B / BA Series

Helical bevel geared motors



S Series

Shaft mounted geared motors



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