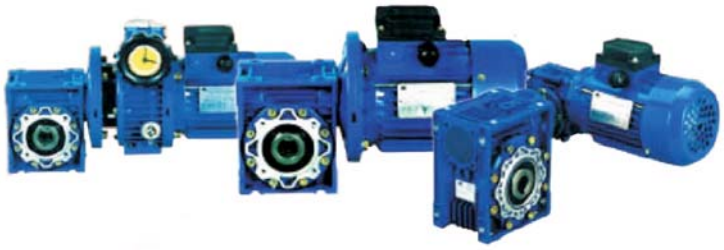
WORM GEARBOXES



TWB ΤΕΧΝΙΚΗ & ΕΜΠΟΡΙΚΗ ΜΟΝΟΠΡΟΣΩΠΗ ΕΠΕ

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WGM SERIES WORM GEARED MOTORS

BRIEF INTRODUCTION

Our worm gear speed reducers range WG and WGM are characterized by a kinematic motion made of a casehardened and tempered steel worm with a ground thread and a wheel made out of a spheroidal graphite cast iron hub with addition of bronze.

There are 9 sizes with ratios from 1:7.5 until 1:100, manufactured in die-cast aluminum frame up to size 90 and in grey cast for sizes 110 and 130.

As an extension range there are available 3 sizes of pre-stage helical units, combination of double worm gearmotors, single and double output shafts and torque arms.

DESIGNATION

WGM 063 FA - 30 DI SO Φ25 PAM80B14 B3

063: Size 025 – 030 – 040 -050 – 063 – 075 – 090 – 110 – 130

FA - FB - FC - FD - FE: Output flange versions

30: Reduction ratio

DI: Double input shaft

SO: SO=Single Output Shaft, DO=Double Output Shaft, TA=Torque Arm

Φ25: Φ Output shaft bore (only for 040 – 050 – 063 – 075 – 090)

PAM80B14: Motor Coupling

B3: Mounting position

OPERATION AND MAINTENANCE

To install the reduction unit the following instructions must be complied:

- Ensure correct alignment between the motor and the gear unit and between the gear unit and the driven machine.
- Mount the gear unit so that it is not subject to vibrations while operating.
- Machine the parts which are keyed into the shafts with the correct tolerance, to avoid forcing the gear unit during mounting.
- If shock, impact or seizure are expected, safety couplings must be fitted.
- If additional paint is applied you must protect the outer edges of the oil seals to prevent the rubber from drying and causing oil leaks.
- Clean the mating surfaces thoroughly and coat with suitable protective substances before assembly to prevent oxidation leading to seizing.
- When starting up, check that the electrics are equipped with overload cut-out to prevent damage to the motor.
- Check that the supply voltage punched on the electric motor nameplate is the same as the main voltage.

While the gear unit is working:

- For units supplied without oil plugs, lubrication is permanent so they need no servicing.
- The oil needs to be changed for 110 and 130 models after approximately 5.000 hours or after long inactivity period. It is necessary to check the quantity of oil needed following the mounting position tables (on page 34).
- In the case of ambient temperatures under -20°C or over 40°C please contact with our technical department.
- During the early stages of service the gear unit temperature could be slightly higher than usual.

RADIAL AND AXIAL LOADS

Transmission movement can produce radial or axial Loads on shaft ends, it is necessary to make sure that resulting values, in most unfavorable conditions, do not exceed the maximum allowed values.

In the following table permissible radial Loads **Fr1** for input shaft are listed. Contemporary permissible axial load is obtained:

Fa1=0.2 x Fr1

nv rpm	Fr1 (daN) WG							
	030	040	050	063	075	090	110	130
1400	6	22	32	42	50	70	100	160
900	6	25	35	46	53	80	120	180
700	7	28	40	50	57	90	130	200
500	7	31	45	53	60	100	145	220

Admissible radial loads **Fr2** for output shaft are listed in the next table. Contemporary permissible axial load is obtained:

Fa2=0.2 x Fr2

nl rpm	Fr2 (daN) WG - WGM							
	030	040	050	063	075	090	110	130
187	65	128	177	233	275	305	386	506
140	73	141	195	256	301	336	424	556
93	84	162	224	295	346	384	486	638
70	91	178	247	325	383	424	536	702
56	100	194	266	349	414	456	577	756
47	105	205	284	370	439	486	614	804
35	115	225	313	408	484	534	677	885
28	125	244	336	441	520	576	729	954
23	134	259	357	467	554	612	774	1015
17	146	286	394	515	610	674	853	1117
14		308	425	555	656	727	920	1202

*** Values given in the tables are relating at loads in the shafts center line.

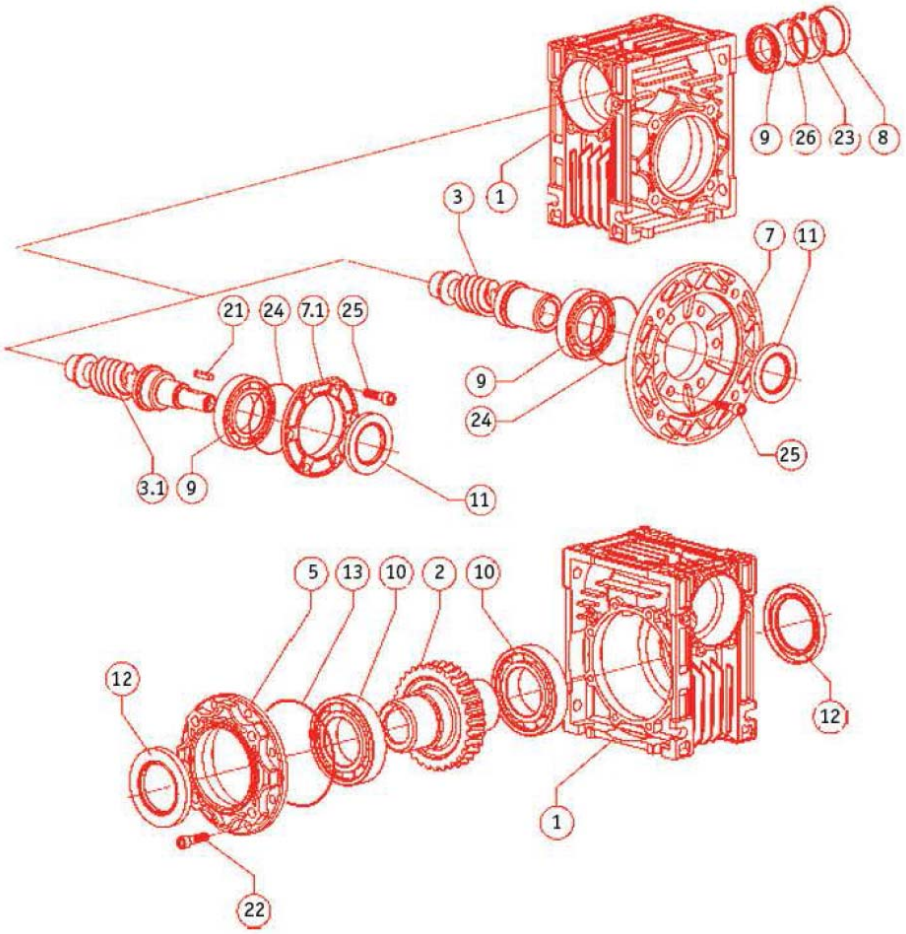
IRREVERSIBILITY

Irreversibility is a characteristic of some worm gear reducers, it cannot be operated from the output shaft. As orientation we show you the following table.

	7.5/1	10/1	15/1	20/1	25/1	30/1	40/1	50/1	60/1	80/1	100/1
030											
040											
050											
063											
075											
090											
110											
130											

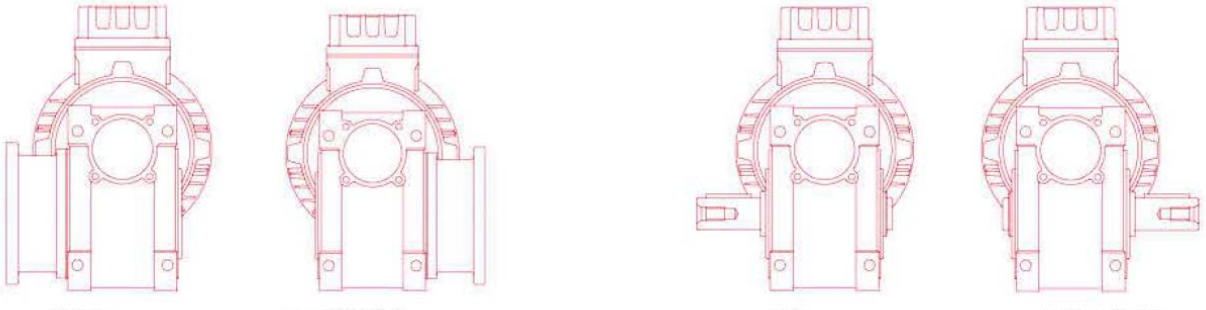
REVERSIBLES — NEUTRAL — IRREVERSIBLES

SPARE PARTS



1	Frame
2	Wheel
3	Worm WGM
3.1	Worm WG
5	Output shaft cover
7	Flange PAM
7.1	Input cover WG
8	Seal cover
9	Bearing
10	Bearing
11	Oil seal DIN 3760
12	Oil seal DIN 3760
13	0-Ring
21	Key DIN 8885
22	Screw DIN 912
23	Snap ring DIN 472
24	0-Ring
25	Screw Din 912
26	Ring Din 888

POSITION DIAGRAM FOR OUTPUT FLANGE AND SINGLE SHAFT



STANDARD *OPPOSITE SIDE* *STANDARD* *OPPOSITE SIDE*

WORM GEARED MOTORS PERFORMANCES

Motor Kw		n2 rpm	i	M2 Nm	f.s	WGM Type
0.06	4P n1=1400	186	7.5	2.6	4.2	025
		140	10	3.4	3.5	
		94	15	4.9	2.5	
		70	20	6.1	2.0	
		47	30	8.2	1.6	
		35	40	10.2	1.3	
		28	50	11.3	0.9	
		24	60	11	0.7	
		24	60	12.5	1.3	030
		18	80	13.5	0.9	
0.09	2P n1=2800	374	7.5	2.0	3.9	025
		280	10	2.6	3.4	
		186	15	3.8	2.4	
	4P n1=1400	186	7.5	3.9	2.8	025
		140	10	5.1	2.4	
		94	15	7.3	1.6	
		70	20	9.2	1.3	
		47	30	12.3	1.1	
		35	40	13	0.9	
		186	7.5	3.9	4.6	030
		140	10	5.0	3.6	
		94	15	7.1	2.5	
		70	20	9.0	2.0	
		56	25	10.4	2.8	
		47	30	12	1.1	
		35	40	14.5	1.2	
		28	50	16.9	1.0	
		24	60	16.9	0.9	
		28	50	19	2.0	040
		24	60	21.4	1.7	
		18	80	25.5	1.3	
		14	100	28.9	1.0	
	6P n1=900	120	7.5	5.9	3.4	030
		11	80	37	1.0	040
		9	100	41	0.8	
		11	80	37	1.8	050
		9	100	42	1.3	
0.12	2P n1=2800	373	7.5	2.7	3.0	025
		280	10	3.5	2.6	
		186	15	5.0	1.8	
	4P n1=1400	186	7.5	5.2	3.4	030
		140	10	6.7	2.7	
		94	15	9.5	1.9	
		70	20	12	1.5	
		56	25	13.9	1.5	
		47	30	16	1.3	
		35	40	17	0.9	
		47	30	17.2	2.6	040
		35	40	21.3	1.9	
		28	50	25.4	1.5	
		24	60	28.5	1.3	
		18	80	34.1	1.0	
		14	100	38	0.8	
		24	60	29	2.3	050
		18	80	34.7	1.9	
		14	100	40.1	1.4	
	6P n1=900	120	7.5	7.9	2.5	030
		60	15	14	1.4	
		15	60	42	1.7	050
		11	80	50	1.4	
		9	100	56	1.0	

Motor Kw		n2 rpm	i	M2 Nm	f.s	WGM Type
0.18	2P n1=2800	374	7.5	4.0	3.2	030
		280	10	5.2	2.5	
		186	15	7.5	1.7	
	4P n1=1400	186	7.5	8.0	2.3	030
		140	10	10	1.8	
		94	15	14	1.3	
		70	20	18	1.0	
		56	25	20	1.0	
		70	20	19	2.0	040
		56	25	23	1.7	
		47	30	26	1.7	
		35	40	32	1.3	
		28	50	38	1.0	
		24	60	43	0.8	
		35	40	32	2.3	050
		28	50	38	1.9	
		24	60	43	1.6	
		18	80	53	1.2	
		14	100	55	0.9	
	6P n1=900	18	50	56	1.4	050
		15	60	63	1.1	
		11	80	75	0.9	
		11	80	79	1.6	063
		9	100	90	1.4	
0.25	2P n1=2800	374	7.5	5.6	2.3	030
		280	10	7.2	1.8	
		186	15	10	1.3	
	4P n1=1400	186	7.5	11	3.6	040
		140	10	14	2.8	
		94	15	20	1.9	
		70	20	26	1.5	
		56	25	31	1.2	
		47	30	36	1.3	
		35	40	44	0.9	
		70	20	26	2.7	050
		56	25	32	2.2	
		47	30	36	2.3	
		35	40	45	1.7	
		28	50	53	1.4	
		24	60	60	1.1	
		18	80	65	0.9	
		24	60	63	2.0	063
		18	80	77	1.6	
		14	100	85	1.4	
	6P n1=900	120	7.5	17	2.6	040
		15	60	92	1.5	
		11	80	110	1.2	063
		9	100	125	1.0	
0.37	2P n1=2800	373	7.5	8.4	3.3	040
		280	10	11	2.6	
		186	15	16	1.9	
	4P n1=1400	186	7.5	16	2.4	040
		140	10	21	1.9	
		94	15	30	1.3	
		70	20	39	1.0	
		56	25	47	0.8	
		94	15	31	2.4	050
		70	20	39	1.8	
		56	25	47	1.5	
		47	30	54	1.5	
		35	40	66	1.1	

WORM GEARED MOTORS PERFORMANCES

Motor Kw		n2 rpm	i	M2 Nm	f.s	WGM Type
0.37	4P n1=1400	28	50	73	0.9	050
		24	60	89	0.8	
		35	40	70	2.1	063
		28	50	83	1.6	
		24	60	95	1.4	
		18	80	114	1.1	
		14	100	118	0.9	
		24	60	98	2.0	075
		18	80	121	1.6	
		14	100	139	1.3	
	6P n1=900	120	7.5	25	3.3	050
		15	60	137	1.0	063
		15	60	144	1.5	075
		11	80	173	1.2	
		9	100	196	1.0	
0.55	2P n1=2800	374	7.5	13	2.2	040
		280	10	17	1.8	
		186	15	24	1.5	
	4P n1=1400	186	7.5	25	2.9	050
		140	10	32	2.2	
		94	15	46	1.6	
		70	20	60	1.2	
		56	25	71	1.0	
		47	30	81	1.0	
		70	20	60	2.2	063
		56	25	72	1.8	
		47	30	80	1.9	
		35	40	104	1.4	
		28	50	123	1.1	
		24	60	140	0.9	
		35	40	108	2.0	075
		28	50	129	1.6	
		24	60	146	1.4	
		18	80	180	1.1	
		14	100	206	0.9	
		18	80	189	1.5	090
		14	100	221	1.2	
		18	80	201	2.4	110
		14	100	236	1.9	
	6P n1=900	120	7.5	38	2.2	050
		18	50	187	1.2	075
		15	60	214	1.0	
		15	60	224	1.6	090
		11	80	275	1.1	
		9	100	315	0.9	
		11	80	294	1.8	110
		9	100	338	1.4	
0.75	2P n1=2800	373	7.5	17	3.0	050
		280	10	23	2.4	
		186	15	33	1.7	
	4P n1=1400	186	7.5	34	2.1	050
		140	10	44	1.6	
		94	15	63	1.2	
		70	20	81	0.9	
		94	15	63	2.2	063
		70	20	82	1.6	
		56	25	99	1.3	
		47	30	109	1.4	
		35	40	143	1.0	
		47	30	116	2.0	075
		35	40	147	1.4	
		28	50	176	1.2	
		24	60	200	1.0	

Motor Kw		n2 rpm	i	M2 Nm	f.s	WGM Type
0.75	4P n1=1400	28	50	184	1.8	090
		24	60	212	1.5	
		18	80	257	1.1	
		14	100	270	0.9	
		18	80	274	1.8	110
		14	100	322	1.4	
	6P n1=900	120	7.5	52	2.9	063
		18	50	271	1.4	090
		15	60	306	1.1	
		15	60	325	1.9	110
		11	80	401	1.3	
		9	100	462	1.1	
1.10	2P n1=2800	374	7.5	25	2.1	050
		280	10	33	1.6	
		186	15	48	1.2	
	4P n1=1400	186	7.5	49	2.6	063
		140	10	65	2.0	
		94	15	93	1.5	
		70	20	121	1.1	
		56	25	149	0.9	
		47	30	167	1.0	
		70	20	122	1.7	075
		56	25	149	1.3	
		47	30	170	1.3	
		35	40	216	1.0	
		35	40	225	1.6	090
		28	50	271	1.3	
		24	60	311	1.0	
		24	60	324	1.7	110
		18	80	410	1.2	
		14	100	460	1.0	
		18	80	408	2.1	130
		14	100	480	1.5	
	6P n1=900	120	7.5	76	2.0	063
		18	50	414	1.6	110
		15	60	476	1.3	
		11	80	588	0.9	
		11	80	598	1.4	130
		9	100	689	1.1	
1.50	2P n1=2800	374	7.5	35	2.7	063
		280	10	46	2.1	
		186	15	66	1.6	
	4P n1=1400	186	7.5	68	1.9	063
		140	10	89	1.5	
		94	15	127	1.1	
		70	20	166	0.8	
		140	10	90	2.2	075
		94	15	130	1.5	
		70	20	167	1.3	
		56	25	200	1.0	
		47	30	230	1.0	
		56	25	209	1.6	090
		47	30	236	1.7	
		35	40	306	1.2	
		28	50	369	0.9	
		24	60	424	0.8	
		28	50	375	1.6	110
		24	60	442	1.3	
		18	80	490	0.9	
		24	60	450	1.9	130
		18	80	547	1.5	
		14	100	652	1.1	

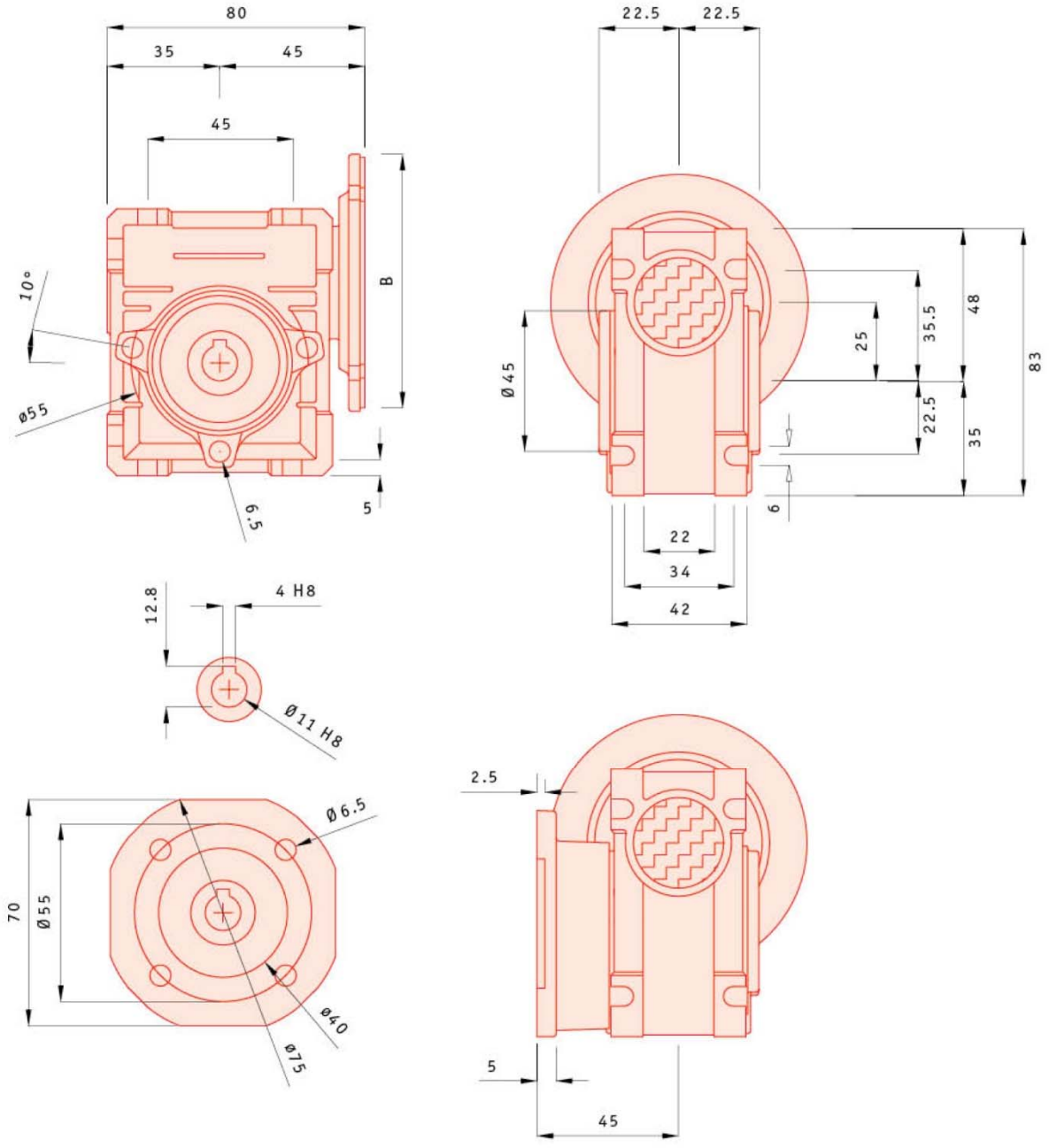
WORM GEARED MOTORS PERFORMANCES

Motor Kw		n2 rpm	i	M2 Nm	f.s	WGM Type
1.50	6P n1=900	120	7.5	105	2.0	075
		15	60	649	1.0	110
		15	60	659	1.4	130
		11	80	815	1.1	
2.20	2P n1=2800	374	7.5	51	1.8	063
		280	10	67	1.5	
		186	15	97	1.1	
	4P n1=1400	186	7.5	100	1.8	075
		140	10	132	1.5	
		94	15	191	1.0	
		186	7.5	101	2.9	090
		140	10	133	2.3	
		94	15	193	1.9	
		70	20	251	1.4	
		56	25	307	1.1	
		47	30	346	1.2	
		70	20	256	2.2	110
		56	25	316	1.9	
		47	30	355	1.8	
		35	40	462	1.3	
		28	50	550	1.1	
		24	60	648	0.9	
		28	50	567	1.7	130
		24	60	660	1.4	
		18	80	803	1.0	
	6P n1=900	120	7.5	156	2.2	075
		18	50	840	1.2	130
		15	60	966	1.0	
3.00	2P n1=2800	373	7.5	70	1.9	075
		280	10	92	1.6	
		374	7.5	71	3.0	090
		280	10	92	2.6	
	4P n1=1400	186	7.5	138	2.1	090
		140	10	187	1.7	
		94	15	264	1.4	
		70	20	344	1.0	
		140	10	182	2.6	110
		94	15	263	2.2	
		70	20	350	1.6	
		56	25	431	1.4	
		47	30	484	1.3	
		35	40	462	1.0	
		28	50	767	0.8	
		35	40	631	1.6	130
		28	50	773	1.3	
		24	60	884	1.0	
		18	80	1113	0.8	
	6P n1=900	120	7.5	212	2.7	110
		30	30	745	1.6	130
		22	40	955	1.2	

Motor Kw		n2 rpm	i	M2 Nm	f.s	WGM Type
4.00	2P n1=2800	374	7.5	93	1.4	075
		280	10	123	1.2	
		374	7.5	94	2.2	090
		280	10	123	1.9	
	4P n1=1400	186	7.5	182	1.0	075
		140	10	240	0.8	
		186	7.5	184	1.6	090
		140	10	243	1.3	
		94	15	352	1.0	
		70	20	458	0.8	
		186	7.5	184	2.4	110
		140	10	243	2.1	
		94	15	352	1.6	
		70	20	464	1.2	
		56	25	573	1.0	
		47	30	646	1.0	
		56	25	572	1.6	130
		47	30	655	1.6	
		35	40	857	1.2	
		28	50	1023	1.0	
		24	60	1179	0.8	
	6P n1=900	120	7.5	283	2.0	110
		45	20	713	1.5	130
		36	25	870	1.2	
5.50	4P n1=1400	186	7.5	253	1.9	110
		140	10	334	1.6	
		94	15	484	1.2	
		70	20	638	0.9	
		186	7.5	256	3.0	130
		140	10	334	2.5	
		94	15	490	1.9	
		70	20	645	1.4	
		56	25	788	1.2	
		47	30	900	1.2	
		35	40	1171	0.9	
7.50	4P n1=1400	186	7.5	345	1.4	110
		140	10	455	1.1	
		94	15	660	0.9	
		186	7.5	349	2.1	130
		140	10	455	1.8	
		94	15	667	1.4	
		70	20	880	1.0	
		56	25	1074	0.9	
		47	30	1228	0.8	
		35	40	1596	0.7	
9.20	4P n1=1400	186	7.5	428	1.8	130
		140	10	559	1.5	
		94	15	819	1.1	
		70	20	1079	0.8	
		56	25	1318	0.7	

WORM GEARED MOTORS OVERALL DIMENSIONS

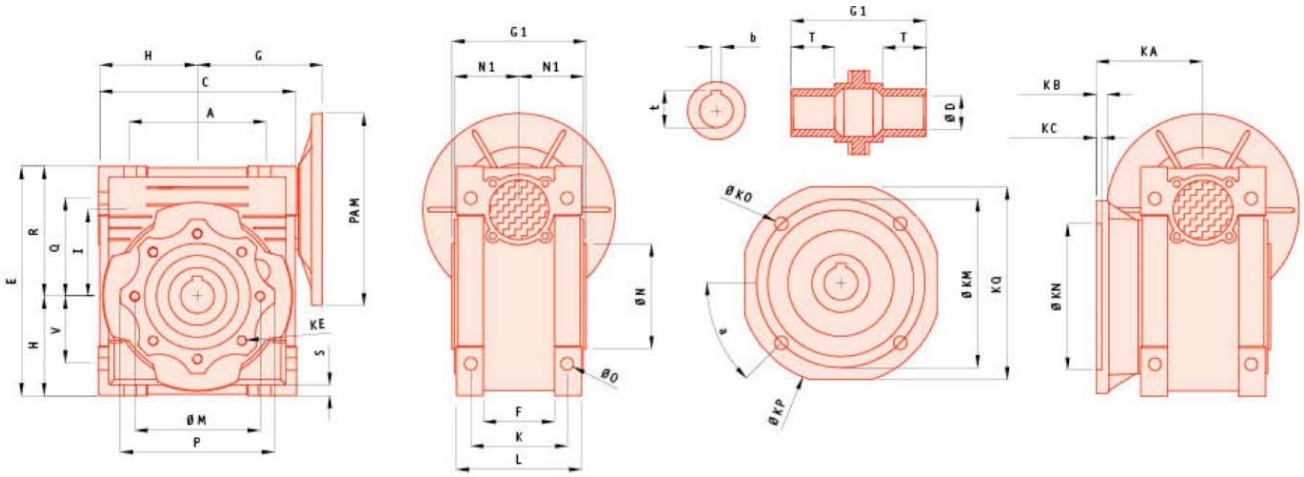
WGM 025



Weight without motor 0.7Kg.

For dimensions concerning the motor coupling (dimensions B) please refer to the table on page 11.

WGM 030 – 130

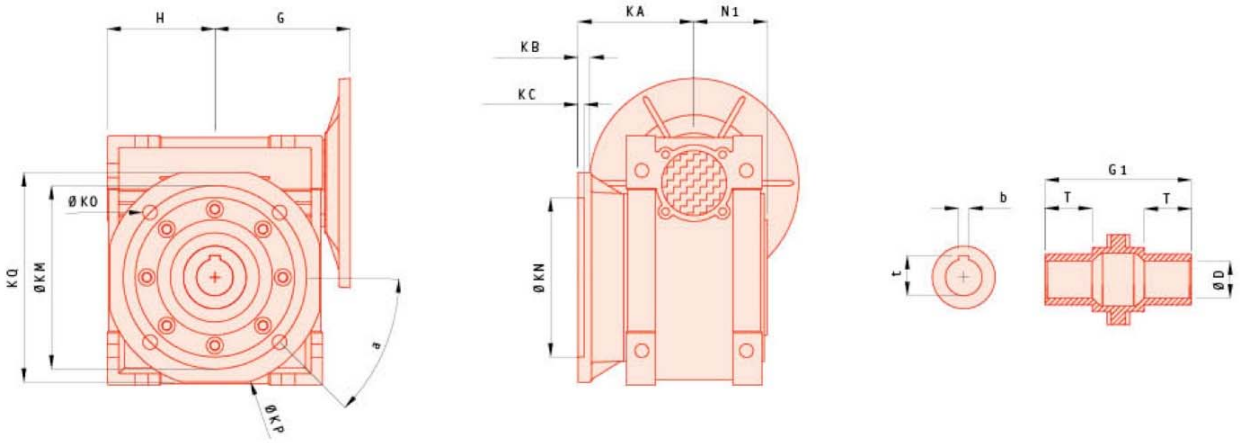


Size	A	B	C	D (H7)	E	F	G	G1	H	I	L	M	N (h8)	N1	O	P	Q	R
030	54	20	80	14	97	32	55	63	40	30	56	65	55	29	6.5	75	44	57
040	70	23	100	18 (19)	121.5	43	70	78	50	40	71	75	60	36.5	6.5	87	55	71.5
050	80	30	120	25 (24)	144	49	80	92	60	50	85	85	70	43.5	8.5	100	64	84
063	100	40	144	25 (28)	174	67	95	112	72	63	103	95	80	53	8.5	110	80	102
075	120	50	172	28 (35)	205	72	112.5	120	86	75	112	115	95	57	11	140	93	119
090	140	50	208	35 (28)	238	74	129.5	140	103	90	130	130	110	67	13	160	102	135
110	170	60	252.5	42	295	-	160	155	127.5	110	144	165	130	74	14	200	125	167.5
130	200	80	292.5	45	335	-	180	170	147.5	130	155	215	180	81	16	250	140	187.5

Size	S	T	V	K	KA	KB	KC	KE	a	KM	KN (H8)	KO	KP	KQ	b	t	kg
030	5.5	21	27	44	54.5	6	4	M6x11 (4)	45°	68	50	6.5	80	70	5	16.3	1.2
040	6.5	26	35	60	67	7	4	M6x11 (4)	45°	87	60	9	110	95	6 (6)	20.8 (21.8)	2.3
050	7	30	40	70	90	9	5	M8x10 (4)	45°	90	70	11	125	110	8 (8)	28.3 (27.3)	3.5
063	8	36	50	85	82	10	6	M8x14 (8)	45°	150	115	11	180	142	8 (8)	28.3 (31.3)	6.2
075	10	40	60	90	111	13	6	M8x14 (8)	45°	165	130	14	200	170	8 (10)	31.3 (38.3)	9
090	11	45	70	100	111	13	6	M10x18 (8)	45°	175	152	14	210	200	10 (10)	38.3 (41.3)	13
110	14	50	85	115	131	15	6	M10x18 (8)	45°	230	170	14	280	260	12	45.3	35
130	15	60	100	120	140	15	6	M12x21 (8)	22.5°	255	180	16	320	290	14	48.8	48

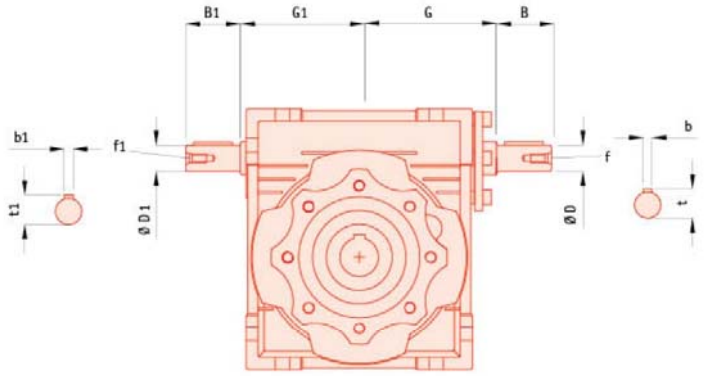
For dimensions concerning the motor coupling (dimension PAM) please refer to the table on page 11.

SPECIAL OUTPUT FLANGES



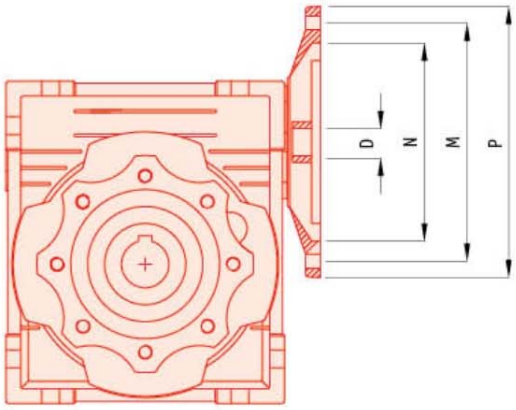
Size		D (H7)	G	G1	H	N1	T	KA	KB	KC	a	KM	KO	KN (H8)	KP	KQ	t	kg
040	FB	18	70	78	50	36.5	26	97	7	4	45°	87	60	9	110	95	6	20.8
	FC	(19)						80	9	5	45°	115	95	9.5	140	-	(6)	(21.8)
	FD							58	12	5	45°	100	80	9	120	-		
050	FB	25	80	92	60	43.5	30	120	9	5	45°	87	70	11	125	110	8	28.3
	FC	(24)						89	10	5	45°	130	110	9.5	160	-	(8)	(27.3)
	FD							72	14.5	5	45°	115	95	11	140	-		
063	FB	25	95	112	72	53	36	112	10	6	45°	150	115	11	180	142	8	28.3
	FC	(28)						98	10	5	45°	165	130	11	200	-	(8)	(31.3)
	FD							107	10	5	45°	165	130	11	200	-		
	FE							80.5	16.5	5	45°	130	110	11	160	-		
075	FB	28 (35)	112.5	120	86	57	40	90	13	6	45°	130	110	11	160	-	8 (10)	31.3 (38.3)
090	FB	35	129.5	140	103	67	45	122	18	6	45°	215	180	14	250	-	10	38.3
	FC	(38)						110	17	6	45°	165	130	11	200	-	(10)	(41.3)
	FD							151	13	6	45°	175	152	14	210	200		
110	FB	42	160	155	127.5	74	50	130	18	5	45°	215	180	15	250	-	12	45.3

SINGLE AND DOUBLE INPUT SHAFT MODEL



Size	B	G	D (j6)	f	b	t		B1	G1	D1 (j6)	f1	b1	t1
030	20	51	9	-	3	10.2		20	45	9	-	3	10.2
040	23	60	11	-	4	12.5		23	53	11	-	4	12.5
050	30	74	14	M6	5	16.0		30	64	14	M6	5	16.0
063	40	90	19	M6	6	21.5		40	75	19	M6	6	21.5
075	50	105	24	M8	8	27.0		50	90	24	M8	8	27.0
090	50	125	24	M8	8	27.0		50	108	24	M8	8	27.0
110	60	142	28	M10	8	31.0		60	135	28	M10	8	31.0
130	80	162	30	M10	8	33.0		80	155	30	M10	8	33.0

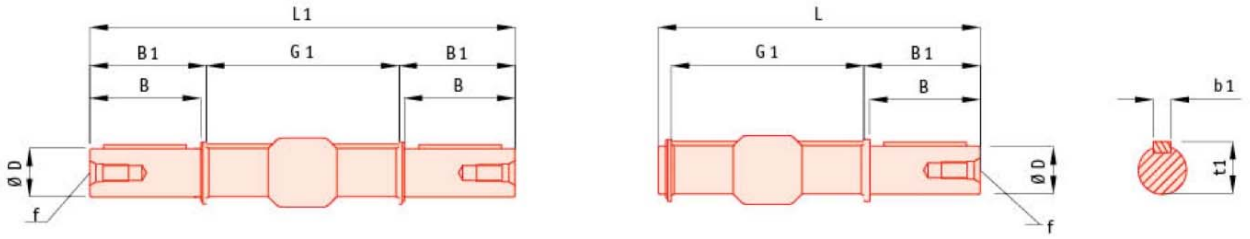
MOTOR COUPLING



WGM TYPE	PAM IEC	N	M	P	D 7.5	10	15	20	25	30	40	50	60	80	100
025	56 B14	50	65	80	9	9	9	9	-	9	9	9	9	-	-
030	63 B5 63 B14	95 60	115 75	140 90	11	11	11	11	11	11	11	-	-	-	-
	56 B5 56 B14	80 50	100 65	120 80	9	9	9	9	9	9	9	9	9	9	-
040	71 B5 71 B14	110 70	130 85	160 105	14	14	14	14	14	14	14	-	-	-	-
	63 B5 63 B14	95 60	115 75	140 90	11	11	11	11	11	11	11	11	11	11	11
	56 B5	80	100	120	-	-	-	-	-	-	-	9	9	9	9
050	80 B5 80 B14	130 80	165 100	200 120	19	19	19	19	19	19	-	-	-	-	-
	71 B5 71 B14	110 70	130 85	160 105	14	14	14	14	14	14	14	14	14	14	-
	63 B5	95	115	140	-	-	-	-	-	-	11	11	11	11	11
063	90 B5 90 B14	130 95	165 115	200 140	24	24	24	24	24	24	-	-	-	-	-
	80 B5 80 B14	130 80	165 100	200 120	19	19	19	19	19	19	19	19	19	-	-
	71 B5 71 B14	110 70	130 85	160 105	-	-	-	-	-	-	14	14	14	14	14
075	100/112 B5 100/112 B14	180 110	215 130	250 160	28	28	28	-	-	-	-	-	-	-	-
	90 B5 90 B14	130 95	165 115	200 140	24	24	24	24	24	24	24	-	-	-	-
	80 B5 80 B14	130 80	165 100	200 120	-	-	-	19	19	19	19	19	19	19	19
	71 B5	110	130	160	-	-	-	-	-	-	-	14	14	14	14
090	100/112 B5 100/112 B14	180 110	215 130	250 160	28	28	28	28	28	28	-	-	-	-	-
	90 B5 90 B14	130 95	165 115	200 140	24	24	24	24	24	24	24	24	24	-	-
	80 B5 80 B14	130 80	165 100	200 120	-	-	-	-	-	-	19	19	19	19	19
110	132 B5	230	265	300	38	38	38	38	-	-	-	-	-	-	-
	100/112 B5	180	215	250	28	28	28	28	28	28	28	28	28	-	-
	90 B5	130	165	200	-	-	-	-	24	24	24	24	24	24	24
	80 B5	130	165	200	-	-	-	-	-	-	-	-	-	19	19
130	132 B5	230	265	300	38	38	38	38	38	38	38	-	-	-	-
	100/112 B5	180	215	250	-	-	-	-	28	28	28	28	28	28	28
	90 B5	130	165	200	-	-	-	-	-	-	-	-	-	24	24

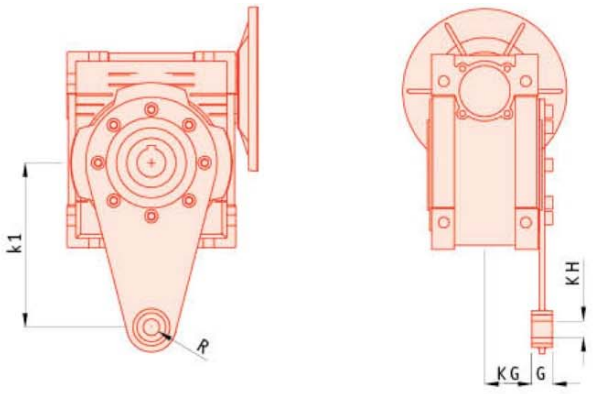
ACCESSORIES

SINGLE AND DOUBLE OUTPUT SHAFTS



	D h6	B	B1	G1	L	L1	f	b1	t1
025	11	23	25.5	50	81	101	-	4	12.5
030	14	30	32.5	63	102	128	M6	5	16
040	18	40	43	78	128	164	M6	6	20.5
050	25	50	53.5	92	153	199	M10	8	28
063	25	50	53.5	112	173	219	M10	8	28
075	28	60	63.5	120	192	247	M10	8	31
090	35	80	84.5	140	234	309	M12	10	38
110	42	80	84.5	155	249	324	M16	12	45
130	45	80	85	170	265	340	M16	14	48.5

TORQUE ARMS



	K1	G	KG	KH	R
025	70	14	17.5	8	15
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
110	250	30	62	25	35
130	250	30	69		

WGM/WGM COMBINED WORM GEARED MOTORS

DESIGNATION

WGM 050/110 FA - 900 DI SO Φ25 PAM80B14 B3

050/110: Size

FA - FB - FC - FD - FE: Output flange versions

900: Reduction ratio

DI: Double input shaft

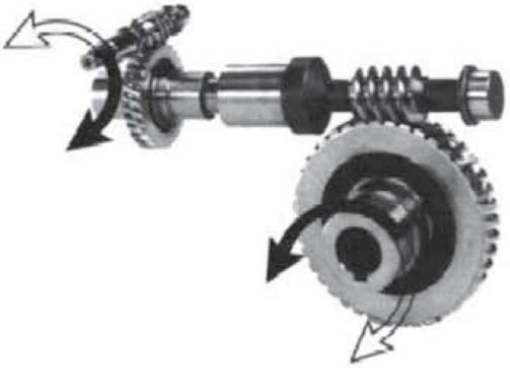
SO: SO=Single Output Shaft, DO=Double Output Shaft, TA=Torque Arm

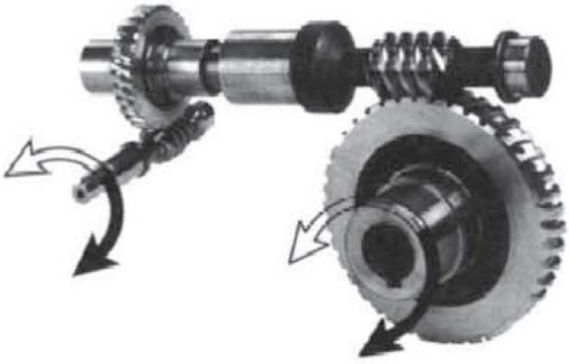
Φ25: Φ Output shaft bore

PAM80B14: Motor Coupling

B3: Mounting position

DIRECTION OR ROTATION



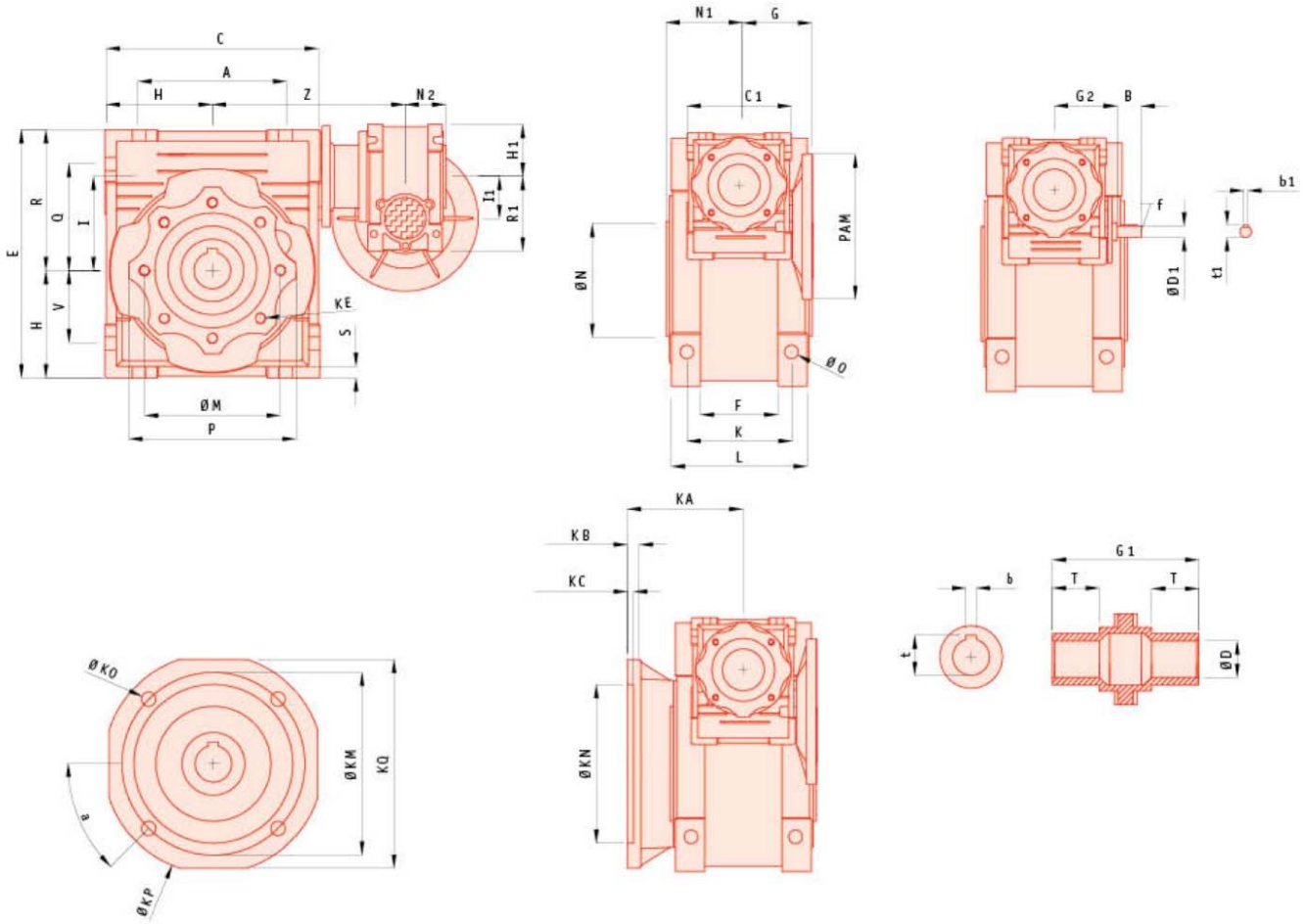


PERFORMANCE OF COMBINED WORM GEARED MOTORS

Motor Kw		n2 rpm	i	M2 Nm	f.s	WGM Type
0.06	4P n1=1400	4.7	300	57	1.3	030/040
		3.5	400	70	0.9	
		2.8	500	96	0.6	
		2.3	600	104	0.7	
		1.9	750	121	0.6	
		1.6	900	139	0.5	
		1.2	1200	166	0.4	
		0.9	1500	196	0.4	
		0.8	1800	218	0.3	
		0.58	2400	261	0.2	
		0.4	3200	300	0.2	
		1.6	900	141	1.0	030/050
		1.2	1200	169	0.7	
		0.93	1500	199	0.7	
		0.78	1800	222	0.7	
		0.6	2400	266	0.5	
		0.5	3000	307	0.4	
		0.35	4000	288	0.3	
		0.29	4800	311	0.3	
		0.93	1500	204	1.1	030/063
		0.78	1800	225	0.9	
		0.58	2400	276	0.8	
		0.47	3000	319	0.7	
		0.35	4000	306	0.6	
		0.28	5000	360	0.4	
		0.58	2400	330	1.1	040/075
		0.47	3000	377	0.8	
		0.35	4000	355	0.7	
		0.28	5000	419	0.5	
		0.47	3000	406	1.4	040/090
		0.35	4000	365	1.3	
		0.28	5000	431	1.0	
0.09	4P n1=1400	4.7	300	88	0.8	030/040
		3.5	400	65	0.7	
		3.5	400	107	1.2	030/050
		2.8	500	123	1.0	
		2.3	600	159	0.9	
		1.9	750	185	0.8	
		1.6	900	212	0.7	
		1.6	900	200	1.0	030/063
		1.2	1200	263	0.9	
		0.93	1500	305	0.7	
		0.93	1500	360	1.1	040/075
		0.78	1800	404	1.0	
		0.58	2400	496	0.7	
		0.47	3000	609	0.9	040/090
		0.35	4000	548	0.8	
0.12	4P n1=1400	4.7	300	119	1.2	030/050
		3.5	400	142	0.9	
		2.8	500	164	0.7	
		2.8	500	171	1.3	030/063
		2.3	600	208	1.1	
		1.9	750	241	0.9	
		1.6	900	325	1.2	040/075
		1.2	1200	399	0.9	
		0.78	1800	547	0.9	040/090
		0.58	2400	695	0.9	
		0.47	3000	884	1.1	050/110
		0.35	4000	784	1.0	
		0.28	5000	928	0.8	

Motor Kw		n2 rpm	i	M2 Nm	f.s	WGM Type
0.18	4P n1=1400	3.5	400	222	1.0	030/063
		2.8	500	257	0.8	
		2.3	600	362	1.1	040/075
		1.9	750	435	0.9	
		1.6	900	487	0.8	
		1.2	1200	629	1.0	040/090
		0.93	1500	735	0.8	
		0.78	1800	861	1.3	050/110
		0.58	2400	1113	0.9	
0.25	4P n1=1400	3.5	400	336	1.1	040/075
		2.8	500	384	0.8	
		2.3	600	512	1.2	040/090
		1.9	750	598	0.9	
		1.6	900	667	0.8	
		1.2	1200	943	1.1	050/110
		0.93	1500	1064	1.0	
		0.78	1800	1195	0.9	
		0.58	2400	1624	1.0	063/130
		0.47	3000	1935	0.8	
		0.35	4000	2046	0.6	
		0.28	5000	2430	0.5	
0.37	4P n1=1400	4.7	300	405	1.0	040/075
		3.5	400	498	0.7	
		4.7	300	402	1.5	040/090
		3.5	400	523	1.2	
		2.8	500	611	0.9	
		2.3	600	757	0.8	
		1.9	750	950	1.2	050/110
		1.6	900	1079	1.0	
		1.2	1200	1396	0.7	
		0.93	1500	1674	1.1	063/130
		0.78	1800	1887	0.9	
0.55	4P n1=1400	4.7	300	639	1.7	050/110
		3.5	400	826	1.2	
		2.8	500	984	1.0	
		2.3	600	1181	0.9	
		1.9	750	1411	0.8	
		2.8	500	996	1.6	063/130
		1.9	750	1471	1.2	
		1.2	1200	2132	0.8	
0.75	4P n1=1400	4.7	300	871	1.3	050/110
		3.5	400	1126	0.9	
		2.8	500	1358	1.1	063/130
		2.3	600	1631	1.0	
		1.9	750	2005	0.9	
		1.6	900	2283	0.8	
1.10	4P n1=1400	4.7	300	1312	1.3	063/130
		3.5	400	1671	1.0	
		2.8	500	1991	0.8	
1.50	4P n1=1400	4.7	300	1789	1.0	063/130
		3.5	400	2279	0.7	

COMBINED WORM GEARED MOTORS OVERALL DIMENSIONS

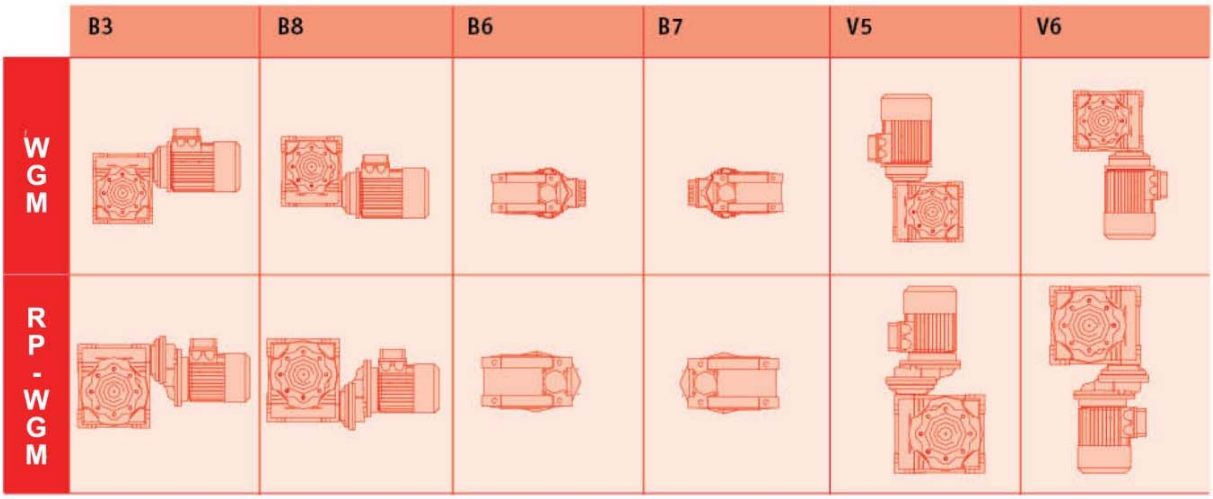


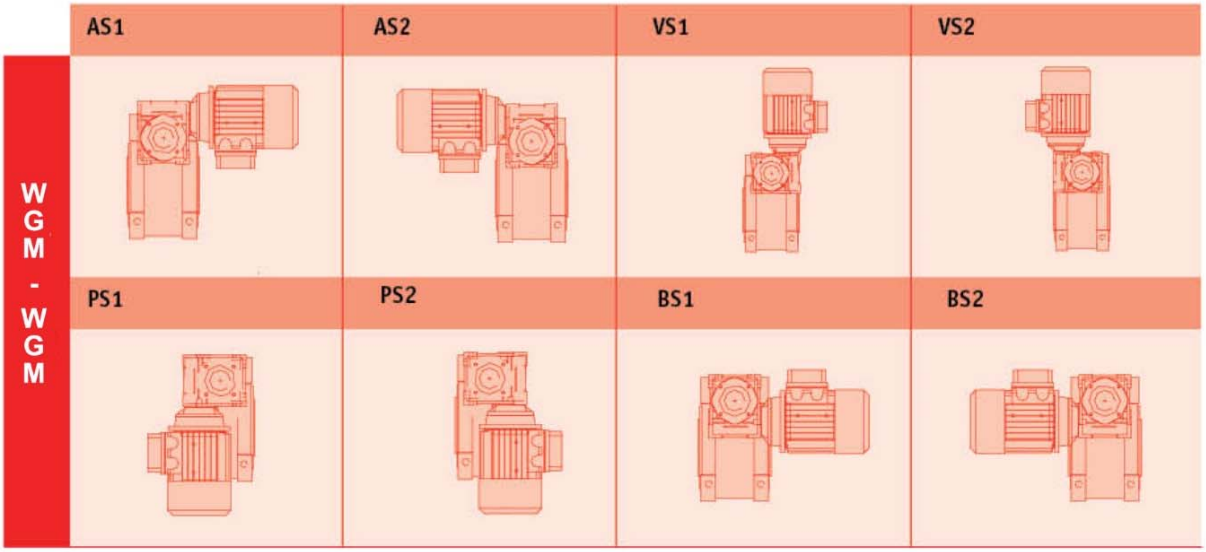
Size	A	B	C	C1	D (H7)	D1 (j6)	E	F	G	G1	G2	H	H1	I	I1	L	M	N (h8)	N1	N2	O	P	Q	R
030 / 040	70	20	100	80	18	9	121.5	43	55	78	51	50	40	40	30	71	75	60	36.5	29	6.5	87	55	71.5
030 / 050	80	20	120	80	25	9	144	49	55	92	51	60	40	50	30	85	85	70	43.5	29	8.5	100	64	84
030 / 063	100	20	144	80	25	9	174	67	55	112	51	72	40	63	30	103	95	80	53	29	8.5	110	80	102
040 / 075	120	23	172	100	28	11	205	72	70	120	60	86	50	75	40	112	115	95	57	36.5	11	140	93	119
040 / 090	140	23	208	100	35	11	238	74	70	140	60	103	50	90	40	130	130	110	67	36.5	13	160	102	135
050 /110	170	30	252.5	120	42	14	295	-	80	155	74	127.5	60	110	50	144	165	130	74	43.5	14	200	125	167.5
063 /130	200	40	292.5	144	45	19	335	-	95	170	90	147.5	72	130	63	155	215	180	81	53	16	250	140	187.5

Size	R1	S	T	V	Z	K	KA	KB	KC	KE	a	KM	KN (H8)	KO	KP	KQ	b	b1	f	t	t1	kg
030 / 040	57	6.5	26	35	120	60	67	7	4	M6 x 8 (4)	45°	87	60	9	110	95	6	3	-	20.8	10.2	3.9
030 / 050	57	7	30	40	130	70	90	9	5	M8 x 10 (4)	45°	90	70	11	125	110	8	3	-	28.3	10.2	5.0
030 / 063	57	8	36	50	145	85	82	10	6	M8 x 14 (8)	45°	150	115	11	180	142	8	3	-	28.3	10.2	7.8
040 / 075	71.5	10	40	60	165	90	111	13	6	M8 x 14 (8)	45°	165	130	14	200	170	8	4	-	31.3	12.5	12.0
040 / 090	71.5	11	45	70	182	100	111	13	6	M10 x 18 (8)	45°	175	152	14	210	200	10	4	-	38.3	12.5	16.0
050 /110	84	14	50	85	225	115	131	15	6	M10 x 18 (8)	45°	230	170	14	280	260	12	5	M6	45.3	16.0	39.2
063 /130	102	15	60	100	245	120	140	15	6	M12 x 21 (8)	45°	255	180	16	320	290	14	6	M6	48.8	21.5	55.0

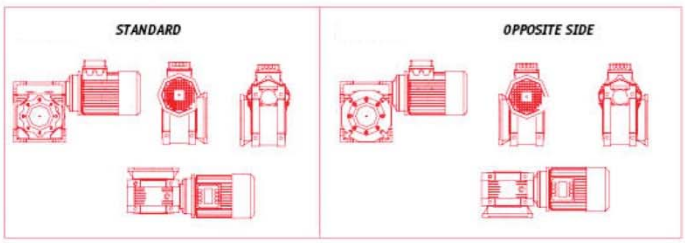
For dimensions concerning the motor coupling (dimension PAM) please refer to the table on page 11.

MOUNTING POSITIONS

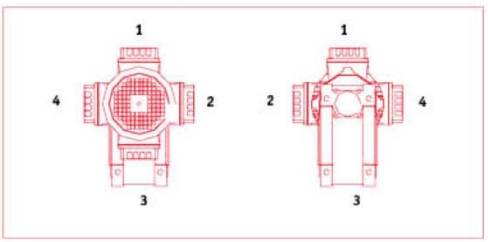


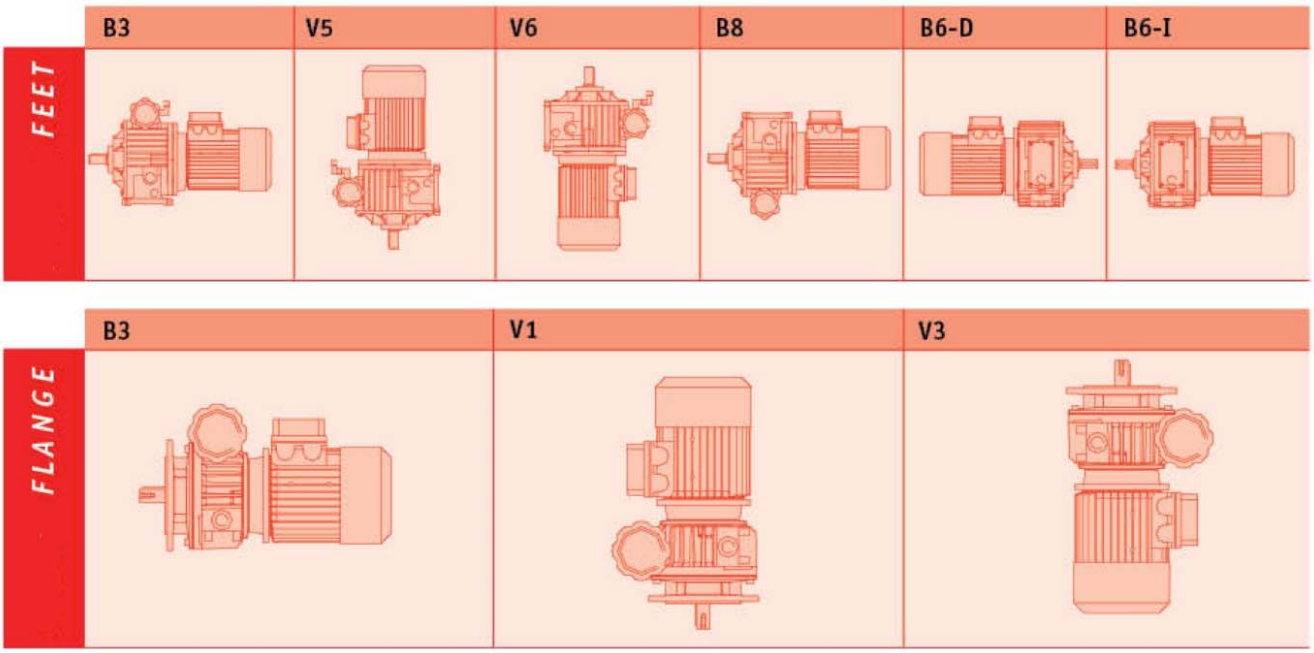


OUTPUT FLANGE



POS. TERMINAL BOX





LUBRICATION

Choice of Lubricants

	WGM *Worm-gear speed reducers*			
	WGM 025~090	***WGM*** 110~130		
Lubricant	*Synthetic*	*Synthetic*	Mineral	
Temp °C	-25°C ~ +50°C	-25°C ~ +40°C	-5°C ~ +40°C	-15°C ~ +25°C
ISO	VG 320	VG 320	VG 460	VG 220
IP	TELIUM VSF	MELLANA OIL 320	MELLANA OIL 460	MELLANA OIL 220
SHELL	TIVELA OIL SC320	OMALA OIL 320	OMALA OIL 460	OMALA OIL 220
AGIP	BLASIA S320	BLASIA 320	BLASIA 460	BLASIA 220
ESSO	S 220	S 220	SPARTAN EP 460	SPARTAN EP 220
MOBIL	GLYGOYLE 30	MOBIL GEAR 320	MOBIL GEAR 634	MOBIL GEAR 630
CASTROL	ALPHASYN PG 320	ALPHASYN PG 320	ALPHA MAX 460	ALPHA MAX 220
BP	ENERGOL SG-XP 320	ENERGOL SG-XP 320	ENERGOL SG-XP 460	ENERGOL SG-XP 220