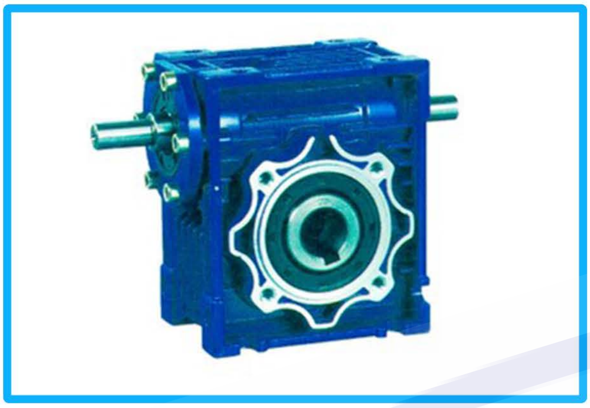
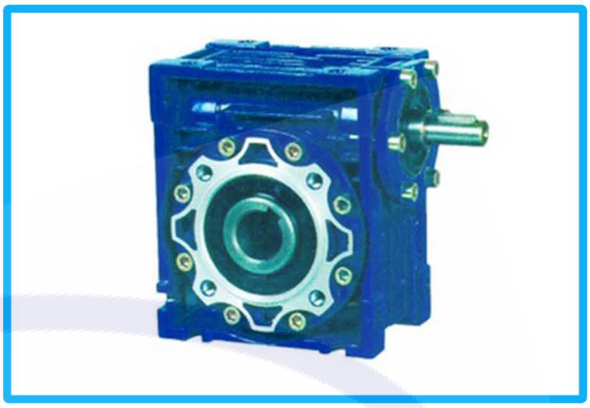
WTEX POWER TRANSMISSION

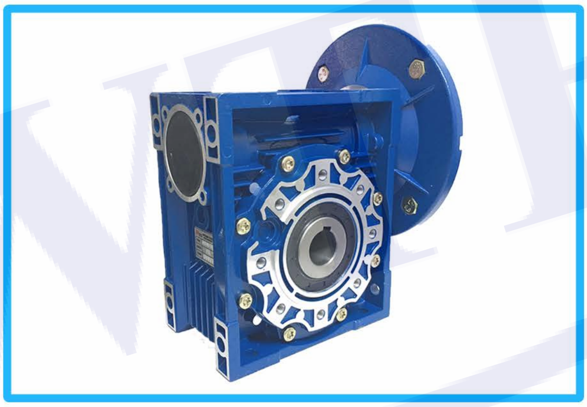
MRV-SERIES
WORM GEAR REDUCERS



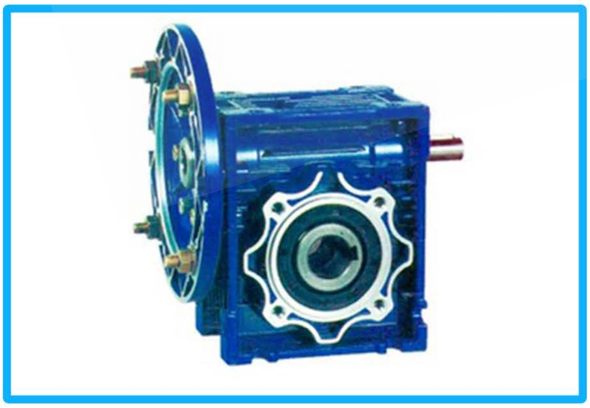
RV-E



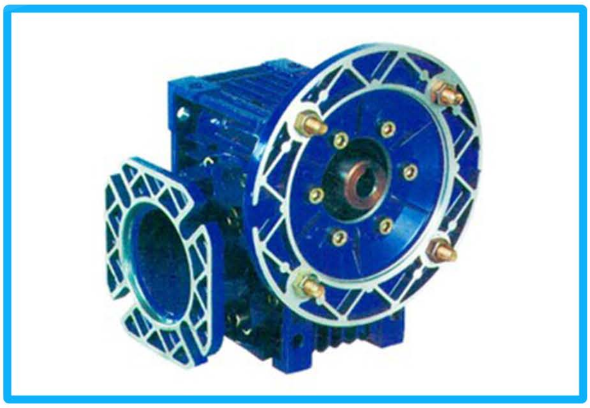
RV



MRV

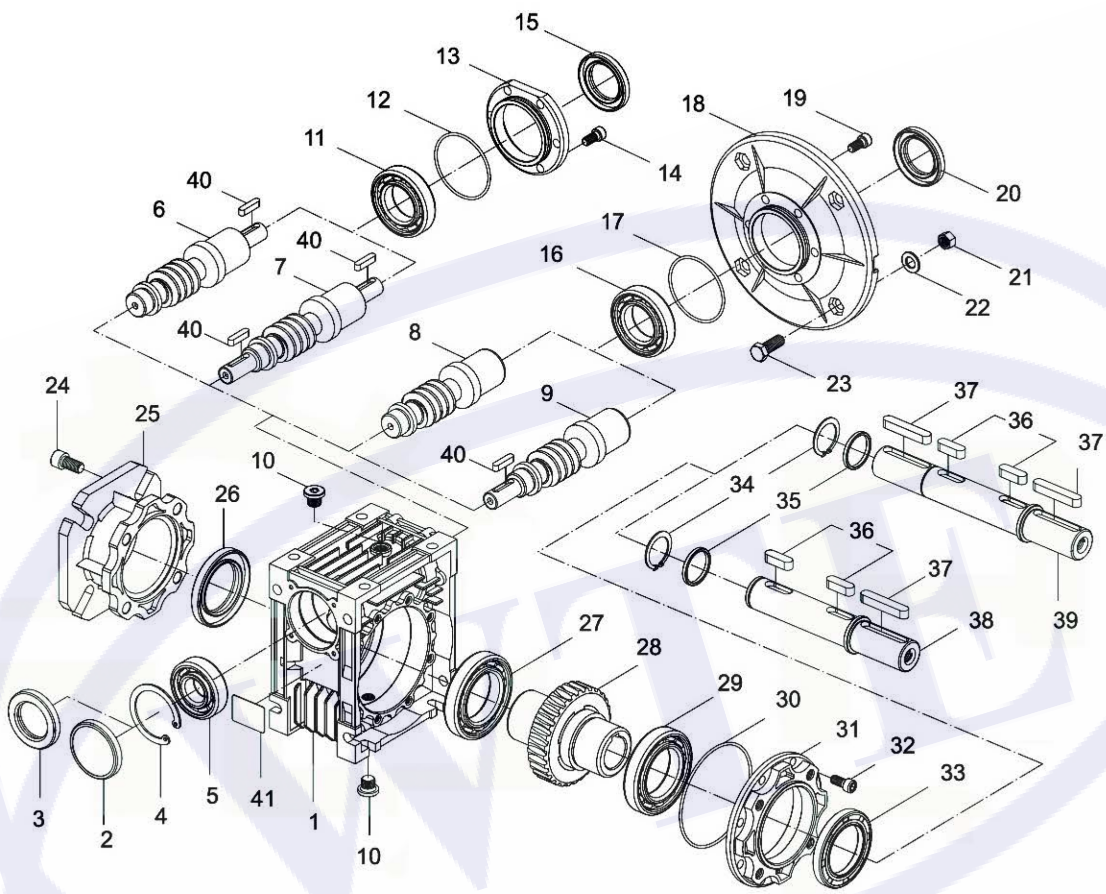


MRV-E



MRV-F

STRUCTURE DIAGRAM



1	Cablint	22	Washer
2	Closing cap	23	Six hexagon bolt
3	Oil seal	24	Inner hex screw
4	Hole-circlip	25	Output flange
5	Bearing	26	Oil seal
6	Input shaft worm	27	Bearing
7	Double input worm	28	Worm gear
8	Input hole worm	29	Bearing
9	Input shaft and hole worm	30	O-ring
10	Oil plug	31	Bearing support cover
11	Bearing	32	Inner hex screw
12	O-ring	33	Oil seal
13	Bearing block	34	Shaft-circlip
14	Inner hex screw	35	Washer
15	Oil seal	36	Key
16	Bearing	37	Key
17	O-ring	38	Single output shaft
18	Intput flange	39	Double output shaft
19	Inner hex screw	40	Key
20	Oil seal	41	Nameplate
21	Six hexagon nut		

SUMMARIZE

Structure Features

1. high quality die casting aluminum alloy housing ,suitable for universal mounting .
2. Heat sink design for cooling provides great surface area and higher thermal capacity than the casting iron housings
3. MRV 025 to 150,with power scope from 60W to 15kW.
4. Larger speed ratio range .each single frame size has 12 ratios from 5:1 to 100:1
5. Hardened worm with fine grinding has the features of higher efficiency and big output torque .
6. Low noise and stably running ,can adapt long term work condition in terrible environments
7. Light weight ,high mechanical strength .
8. Modularization combination DRV extend the ration of MRV reducers from i=5:1 to 5000:1.

Main Materials

1. Housing: die-cast aluminum alloy(frame size 025 to 090);cast iron(frame size:110 to 150);
2. Worm: 20Cr, carbonize&quencher heat treatment make the hardness of gear's surface up to 58-62HRC,retain carburized layer's thickness between 0.3 and 0.5mm after accurate grinding.
3. Worm wheel:wearable nickel bronze alloy.

Surface Painting

Aluminum alloy housing:

1. Shot blasting and special antiseptic treat-ment on the aluminum alloy surface.
2. After phosphating, paint with RAL5010 blue or RAL7035 grey paint.

Cast iron housing: First paint with red antirust paint, then paint white RAL5010 blue or RAL7035 grey paint.

MODEL ILLUMINATE

Gear unit

MRV 075 / 50 / E / FA1 / SS1 / 71B5 / B3

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

NO.	Comments
1	Code for gear units series： 1. MRV:Hole input with flange 2. RV：Shaft input without flange
2	Central distance of worm gear units(spec) MRV:025,030,040,050,063,075,090,110,130,150
3	Speed ratio of reducer 1.MRV:i=5,7.5,10,15,20,25,30,40,50,60,80,100
4	1.No mark means single extension worm shaft 2.E:Double extension worm shaft
5	1.No mark means without output flange 2.FA、FB、FC、FD、FE(1/2):output Flange and position
6	1.No mark means hole output 2.SS(1/2):Single output shaft and position 3.DS:Double output shaft
7	Normal from of input flange (without motor) 1.71B5:IEC input flange code
8	Installation position code

WTE

RELEVANT PARAMETER

POWER P

$P_1 = P_2 / \eta$ (kW)
$P_{1n} \geqslant P_1 \cdot fs$(kW)

P_1 Input power
P_{1n} Rated input motor power
η Transmission efficiency
P_2 Output power
fs Service factor

The parameter can be found in the MRV gear-box rating charts and P_{1n} represents the kW that can be safely transmitted to the gearbox, based on input speed n_1 and service factor fs=1.
Values of η are calculated for gearboxes after a sufficiently in oreration reduces and finally stabilizes. After the running-in process in motion,surface temperature of gearbox drops and eventually gets stable. It must be worth high lighting that values of rated torque M_{2n} given in the catalogue take the transmission efficiency η into consideration.

Rotation speed n

n_1 Gear units input speed
n_2 Gear units output speed
If driven by the external gearing, 1400r/min or lower rotation speed is suggested so as to optimize the working conditions and prolong the service life.

Transmission ratio i

$i = n_1 / n_2$

Torque m

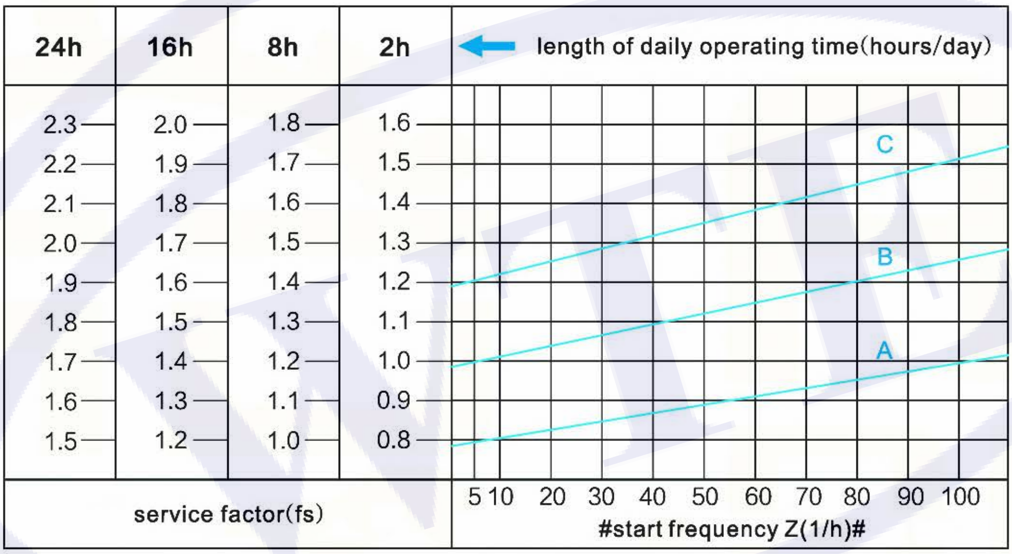
$M_2 = 9550 \cdot P_1 \cdot \eta / n_2$(Nm)
$M_{2n} \geqslant M_2 \cdot fs$(Nm)

M_2 Output torque
M_{2n} Rated output torque
P_1 Input power
η Transmission efficiency
fs Service factor

RELEVANT PARAMETER

Service factor fs

The effect of the driven machine on the gear unit is taken into account to a sufficient level of accuracy using the service factor fs.The service factor is determined according to the daily operating time and the starting frequency Z.Three load classifications are considered depending on the mass acceleration factor .You can read off the service factor applicable to your application in following figure. The service factor selected using this diagram must be less than or equal to the service factor as given in the performance parameter table.



- Starting frequency Z:The cycles include all starting and braking procedures as well as change overs from low to high speed.

Load classifications

Type of load:

A. Uniform ,permitted mass acceleration factor Fa≤0.3

B. Moderate shock load,permitted mass acceleration factor Fa≤3

C. Heavy shock load,permitted mass acceleration factor Fa≤10

RELEVANT PARAMETER

Load Classifications:

Screw feeders for light materials,fans,assermbly lines,conveyor belts for light materials,small mixers,lifts,cleaning 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.

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

Mass acceleration factor

The mass acceleration factor is calculated as follows:

Fa=Jc/Jm

Fa Mass acceleration factor

Jc All external mass moments of inertia(kgm2)

Jm Mass moment of inertia on the motor end(kgm2)

If mass acceleration factors fa>10,please call our Technical Service.

Service factor fs should be adjusted as followings:

1. Ambient temperature is 30 ~ 40℃ : fs× (1.1 ~ 1.2)
2. Ambient temperature is 40 ~ 50℃ : fs× (1.3 ~ 1.4)
3. Ambient temperature is 50 ~ 60℃ : fs× (1.5 ~ 1.6)
4. Ambient temperature is >60℃ ,please call our Technical Service.

To keep the service-life of gear units,use factor fs selected from the catalogue must be equal or slightly higher than the calculated use factor fs.

Radial loads Fr

When determining the resulting radial loads,the type of transmission elements,mounted on the shaft end must be considered,varous transmission elements are corresponding with following transmission element factors fz.

RELEVANT PARAMETER

Transmission element	Transmission element factor fz	Comments
Gears	1.00	≥17 teeth
	1.15	<17 teeth
Chain sprockets	1.00	≥20 teeth
	1.25	<20 teeth
	1.40	<13 teeth
Narrow V-belt pulleys	1.75	Influence of the tensile force
Flat belt pulleys	2.50	Influence of the tensile force
Toothed belt pulleys	2.50	Influence of the tensile force

The overhung loads exerted on the motor or gear shaft is calculated as follows.

$$Fr = \frac{M \cdot 2000 \cdot fz}{d_0} \text{ (N)}$$

Fr Resultingradial load (N)

M Torque on the shaft (Nm)

d_0 Mean diameter of the mounted transmis sion element in (mm)

fz Transmission element factor

The allowed radial load force on the shaft is calculated with the following formula:

$$F \times L = \frac{F_{r2} \cdot a}{(b+x)} \text{ (N)}$$

F_{r2} Permitted overhung load(X=L/2)for foot-mounted gear units according to the selection tables in(N)

a,b Gear unit constant for overhung load conversion(mm)

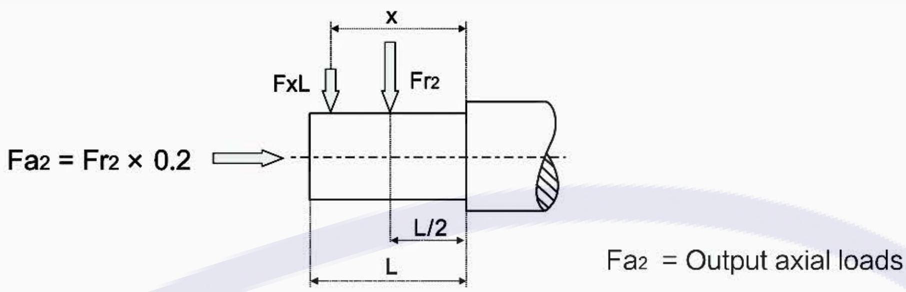
x Distance from the shaft shoulder to the force application point in(mm)

The values of a,b,F_{r2} are biven in the following tables:

The maxium admissible axial loads are 1/5 of the value of the given radial load when they are applied in combination with the radial load.The tables relating to the output shafts give the maximum admissible value.

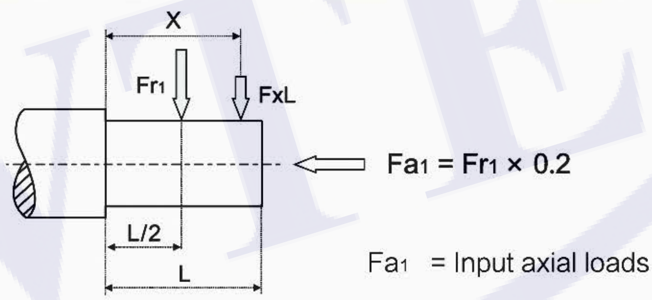
RELEVANT PARAMETER

Output shafts radial loads



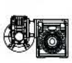
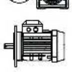
MRV	025	030	040	050	063	075	090	110	130	150
a	50	65	84	101	120	131	162	176	188	215
b	38	50	64	76	95	101	122	136	148	174
$F_{r2\,max}$	1350	1830	3490	4840	6270	7380	8180	12000	13500	18000

Input shafts radial loads



RV	030	040	050	063	075	090	110	130	150
a	86	106	129	159	192	227	266	314	350
b	76	94.5	114	139	167	202	236	274	310
$F_{r1\,max}$	210	350	490	700	980	1270	1700	2100	2800

Selection tables comments

P_{1n}	Rated power driving motor (kW)
n_2	Output speed (r/min)
M_{2n}	Rated output torque (Nm)
$M_{2\,max}$	Permissible output torque (Nm)
i	Gear unit ratio
fs	Service factor
	RV Gear unit type
	DRV gear unit type
	Motor type

RELEVANT PARAMETER

Selection example

GEAR MOTOR

Exampie:The input power of driver machine is 0.5kW,n_1= 1400r/min,uniform,start up frequency 20(1/h),continuous running for 24hours,the ambient temperature is 32℃, n_2= 93. 3r/min, B3 mounted so:

$$i=\frac{n_1}{n_2}=\frac{1400}{93.3}=15$$

Check mash table on P12,estimate when the i=15,η_d=0.82. Check and adjust the service factor,will get fs=1.53 × 1.12 =1.714.$P_{1n} \geqslant P_2/\eta_d \cdot fs$=0.5/0.82 × 1.714=1.045(kW).
Choose type:**MRV075/15/B3/1.1−4P**

$$M_2=\frac{9550 \cdot P_2}{n_2}=\frac{9550 \times 0.5}{93.3}=51.18\ (Nm)$$

$$M_{2n}=95 \geq M_2 \cdot fs=51.18 \times 1.714=87.72\ (Nm)$$

GEAR UNITS

Example:Required torque 300Nm on driven machine,continuous running for 8 hours,uniform loda,the ambient temperature is 30℃,then choose service factor fs=1.2 × 1.1= 1.32,n_1=900r/min,n_2=22.5r/min.

$$M_{2n} \geq M_2 \cdot fs=300 \times 1.32=396\ (Nm)$$

$$i=\frac{n_1}{n_2}=\frac{900}{22.5}=40$$

Choose type: **MRV090/40**

Efficiency & irreversibility character

Efficiency is an important parmeter of reducer,efficiency η depends on the following parameters:1.helix angle of gearing;2.driving speed;3.running−in of gearing;4.The performance of oil,oil seal and bearing,the mesh date table on page 12 shows dynamic efficiency (n_1=1400) and static efficiency values.Remember that these values are only achieved after the unit has been run in.Torque values M_{2n} indicated in the catalogue are calculated by considering the steady−state performance of the gearboxes.The actual values mentioned above may be have deflection.

RELEVANT PARAMETER

Dynamic irreversibilty

Dynamic irreversibility achieved when the output shaft stops instantly when drive is no longer transmitted through the worm shaft.this condition requires a dynamic efficiency of ηd<0.4(see table on page 12).

Static irreversibilty

Static irreversibility is achieved when the gear reducer at a standstill.The application of aload to the output shaft can't drive the worm shaft.This condition requires a static efficiency of η_s<0.5(see table on page 12).

η_d	>0.6	0.5~0.6	0.4~0.5	<0.4
Dynamic irreversibility	Dynamic reversibility	Low dynamic reversibility	Good dynamic irreversibility	Dynamic irreversibility

η_s	>0.55	0.5~0.55	<0.5
Dynamic irreversibility	Static reversibility	Low static reversibility	Static irreversibility

The table shows approximate irreversibility classes.Vibrations and shocks can affect a gear reducer's irreversibility.As it is virtually impossible to provide and guarantee total non reversing,we recommend the use of an external brake with sufficient capability to prevent vibrations in duced starting,where these circumstances are required.For the irreversibility conditions of a combined geared unit one must consider that the efficiency of the group is given by the product of the efficiencies of each single reducer: $\eta_{tot}=\eta_1 \times \eta_2$.

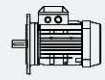
MRV MESH DATA

MRV	i	5	7.5	10	15	20	25	30	40	50	60	80	100
025	Z1	6	4	3	2	2	–	1	1	1	1	–	–
	m	1.1	1.18	1.23	1.27	0.98	–	1.29	0.99	0.80	0.67	–	–
	γ	30° 58′	21° 48′	16° 42′	11° 19′	10° 53′	–	5° 29′	5° 29′	4° 34′	3° 23′	–	–
	η_d(1400)	0.87	0.85	0.83	0.79	0.75	–	0.67	0.62	0.58	0.55	–	–
	η_s	0.72	0.71	0.68	0.61	0.56	–	0.46	0.41	0.36	0.34	–	–
030	Z1	6	4	3	2	2	1	1.5	1	1	1	1	–
	m	1.3	1.36	1.39	1.42	1.09	1.69	1.43	1.10	0.89	0.74	0.56	–
	γ	29° 03′	20° 19′	15° 31′	10° 29′	5° 42′	6° 10′	5° 17′	2° 52′	3° 26′	2° 52′	1° 58′	–
	η_d(1400)	0.87	0.85	0.82	0.77	0.73	0.68	0.65	0.59	0.55	0.51	0.44	–
	η_s	0.72	0.67	0.63	0.55	0.5	0.43	0.39	0.35	0.31	0.27	0.23	–
040	Z1	6	4	3	2	2	2	1	1	1	1	1	1
	m	1.65	1.87	1.95	2.00	1.54	1.26	2.04	1.55	1.27	1.06	0.80	0.65
	γ	30° 58′	21° 48′	16° 42′	11° 19′	11° 19′	8° 08′	5° 43′	5° 43′	4° 05′	2° 52′	2° 52′	2° 29′
	η_d(1400)	0.89	0.87	0.85	0.82	0.78	0.75	0.7	0.65	0.62	0.58	0.52	0.47
	η_s	0.74	0.71	0.67	0.6	0.55	0.51	0.45	0.4	0.36	0.32	0.28	0.24
050	Z1	6	4	3	2	2	2	1	1	1	1	1	1
	m	2.25	2.34	2.43	2.50	1.92	1.56	2.54	1.94	1.58	1.32	1.00	0.80
	γ	30° 58′	21° 48′	16° 42′	11° 19′	11° 19′	9° 05′	5° 43′	5° 43′	4° 21′	2° 52′	2° 52′	2° 17′
	η_d(1400)	0.89	0.88	0.86	0.82	0.79	0.76	0.72	0.67	0.63	0.59	0.53	0.49
	η_s	0.74	0.7	0.66	0.59	0.55	0.51	0.44	0.39	0.35	0.32	0.27	0.23
063	Z1	–	4	3	2	2	2	1	1	1	1	1	1
	m	–	2.96	3.08	3.17	2.44	1.98	3.23	2.47	1.99	1.68	1.27	1.02
	γ	–	24° 31′	18° 53′	12° 51′	11° 19′	8° 45′	6° 30′	5° 43′	4° 24′	3° 03′	2° 52′	2° 12′
	η_d(1400)	–	0.88	0.87	0.83	0.81	0.78	0.72	0.7	0.66	0.62	0.57	0.51
	η_s	–	0.71	0.67	0.6	0.55	0.51	0.45	0.4	0.36	0.33	0.28	0.24
075	Z1	–	4	3	2	2	2	1	1	1	1	1	1
	m	–	3.53	3.70	3.83	2.94	2.39	3.92	2.99	2.41	2.02	1.54	1.24
	γ	–	28° 04′	21° 48′	14° 56′	11° 19′	11° 19′	7° 36′	5° 43′	5° 43′	3° 49′	4° 21′	2° 52′
	η_d(1400)	–	0.89	0.88	0.85	0.82	0.80	0.76	0.72	0.69	0.65	0.60	0.55
	η_s	–	0.71	0.68	0.61	0.57	0.53	0.46	0.42	0.38	0.35	0.29	0.26
090	Z1	–	4	3	2	2	2	1	1	1	1	1	1
	m	–	4.23	4.47	4.66	3.60	2.93	4.79	3.67	2.97	2.49	1.89	1.52
	γ	–	33° 41′	26° 34′	18° 26′	14° 02′	11° 19′	9° 28′	7° 08′	5° 43′	4° 46′	3° 53′	2° 52′
	η_d(1400)	–	0.9	0.89	0.86	0.84	0.82	0.78	0.75	0.72	0.69	0.63	0.59
	η_s	–	0.73	0.7	0.64	0.6	0.56	0.49	0.45	0.41	0.38	0.32	0.28
110	Z1	–	4	3	2	2	2	1	1	1	1	1	1
	m	–	5.18	5.45	5.67	4.47	3.64	5.82	4.58	3.71	3.12	2.36	1.91
	γ	–	28° 46′	22° 22′	15° 21′	14° 20′	14° 02′	7° 49′	7° 17′	7° 08′	5° 48′	4° 54′	3° 37′
	η_d(1400)	–	0.9	0.89	0.86	0.85	0.84	0.79	0.78	0.75	0.72	0.67	0.63
	η_s	–	0.72	0.69	0.63	0.62	0.59	0.48	0.48	0.44	0.41	0.36	0.32
130	Z1	–	4	3	2	2	2	1	1	1	1	1	1
	m	–	6.11	6.45	6.72	5.24	4.28	6.91	5.36	4.35	3.65	2.76	2.23
	γ	–	29° 15′	22° 47′	15° 39′	13° 47′	12° 24′	7° 58′	7° 00′	6° 17′	6° 07′	3° 56′	3° 41′
	η_d(1400)	–	0.91	0.89	0.87	0.86	0.84	0.8	0.78	0.75	0.72	0.68	0.64
	η_s	–	0.72	0.69	0.63	0.61	0.58	0.49	0.46	0.43	0.39	0.34	0.3
150	Z1	–	6	4	3	2	2	2	1	1	1	1	1
	m	–	5.55	6.155	5.55	6.155	5	4.19	6.155	5	4.19	3.16	2.55
	γ	–	29° 37′	24° 41′	15° 32′	12° 56′	11° 19′	9° 56′	6° 34′	5° 43′	5° 00′	3° 45′	2° 52′
	η_d(1400)	–	0.91	0.9	0.88	0.86	0.84	0.83	0.78	0.76	0.73	0.68	0.64
	η_s	–	0.73	0.71	0.66	0.6	0.57	0.54	0.45	0.42	0.39	0.33	0.29

NOTE：i–ratio，Z1–number of teeth，γ–helical angle，m–modulus，η_d–dynamic efficiency，η_s–static efficiency。

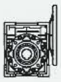
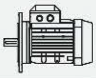
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.06	280	5	1.8	439	6.2	MRV025 56B14	5614
	186.7	7.5	2.6	503	4.2		
	140	10	3.4	553	3.5		
	93.3	15	4.9	633	2.5		
	70	20	6.2	697	1.9		
	46.7	30	8.3	798	1.6		
	35	40	10	878	1.2		
	28	50	12	946	0.9		
	23.3	60	14	1006	0.7		
	186.7	7.5	2.6	683	7.0	MRV030 56B5/B14	5614
	140	10	3.4	752	5.4		
	93.3	15	4.7	861	3.9		
	70	20	6	948	3.1		
	56	25	7	1021	3.1		
	46.7	30	8	1085	2.5		
	35	40	9.7	1194	1.9		
	28	50	11	1286	1.5		
	23.3	60	13	1367	1.3		
	17.5	80	14	1504	0.9		
0.09	373.3	7.5	2.0	399	3.9	MRV025 56B14	5612
	280	10	2.6	439	3.4		
	186.7	15	3.8	503	2.4		
	140	20	4.9	553	1.8		
	93.3	30	6.7	633	1.3		
	70	40	8.5	697	1.1		
	56	50	10	751	0.9		
	186.7	7.5	3.9	503	2.8	MRV025 56B14	5624
	140	10	5.1	553	2.4		
	93.3	15	7.3	633	1.6		
	70	20	9.3	697	1.3		
	46.7	30	13	798	1.0		
	35	40	16	878	0.8		
	373.3	7.5	2.0	542	6.5	MRV030 56B5/B14	5612
	280	10	2.6	597	5.0		
	186.7	15	3.7	683	3.5		
	140	20	4.7	752	2.5		
	112	25	5.5	810	2.9		
	93.3	30	6.4	861	2.3		

MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.09	70	40	8.0	948	1.8	**MRV030 56B5/B14**	**5612**
	56	50	9.4	1021	1.4		
	46.7	60	10	1085	1.1		
	35	80	13	1194	0.9		
	186.7	7.5	3.9	683	4.7	**MRV030 56B5/B14**	**5624**
	140	10	5.0	752	3.6		
	93.3	15	7.0	861	2.6		
	70	20	8.8	948	2.0		
	56	25	10	1021	2.1		
	46.7	30	12	1085	1.7		
	35	40	14	1194	1.2		
	28	50	17	1286	1.0		
	23.3	60	18	1367	0.9		
	28	50	19	2475	2.1	**MRV040 56B5**	**5624**
	23.3	60	21	2630	1.7		
	17.5	80	25	2895	1.3		
	14	100	29	3118	1.0		
0.12	373.3	7.5	2.7	399	3.0	**MRV025 56B14**	**5622**
	280	10	3.5	439	2.6		
	186.7	15	5.1	503	1.8		
	140	20	6.5	553	1.4		
	93.3	30	9.0	633	1.0		
	70	40	11	697	0.8		
	186.7	7.5	5.2	683	3.5	**MRV030 63B5/B14**	**6314**
	140	10	6.6	752	2.7		
	93.3	15	9.3	861	1.9		
	70	20	12	948	1.5		
	56	25	14	1021	1.6		
	46.7	30	16	1085	1.3		
	35	40	19	1194	0.9		
	28	50	22	1286	0.8		
	46.7	30	17	2087	2.7	**MRV040 63B5/B14**	**6314**
	35	40	21	2298	1.9		
	28	50	25	2475	1.6		
	23.3	60	28	2630	1.3		
	17.5	80	33	2895	1.0		
	14	100	38	3118	0.8		
	23.3	60	29	3610	2.3		
	17.5	80	35	3973	1.9		

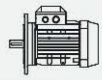
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.12	14	100	39	4280	1.4	MRV050 63B5	6314
0.18	373.3	7.5	4.0	542	3.2	MRV030 63B5/B14	6312
	280	10	5.2	597	2.5		
	186.7	15	7.4	683	1.8		
	140	20	9.5	752	1.3		
	112	25	11	810	1.4		
	93.3	30	13	861	1.2		
	70	40	16	948	0.9		
	186.7	7.5	7.7	683	2.3	MRV030 63B5/B14	6324
	140	10	10	752	1.8		
	93.3	15	14	861	1.3		
	70	20	18	948	1.0		
	56	25	20	1021	1.0		
	46.7	30	24	1085	0.8		
	93.3	30	14	1657	2.5	MRV040 63B5/B14	6312
	70	40	17	1824	1.8		
	56	50	21	1964	1.4		
	70	20	19	1824	2.1	MRV040 63B5/B14	6324
	56	25	23	1964	1.7		
	46.7	30	25	2087	1.8		
	35	40	32	2298	1.3		
	28	50	37	2475	1.0		
	23.3	60	42	2630	0.9		
	45	20	28	2113	1.6	MRV040 71B5/B14	7116
	36	25	34	2276	1.3		
	30	30	38	2419	1.3		
	22.5	40	47	2662	1.0		
	46.7	60	24	2865	2.1	MRV050 63B5	6312
	35	80	30	3153	1.5		
	28	100	34	3397	1.2		
	35	40	33	3153	2.3	MRV050 63B5	6324
	28	50	39	3397	1.9		
	23.3	60	43	3610	1.6		
	17.5	80	52	3973	1.2		
	14	100	59	4280	0.9		
	18	50	56	3936	1.4	MRV050 71B5/B14	7116
	15	60	63	4183	1.1		
	11.3	80	75	4604	0.9		
	15	60	66	5467	2.1	MRV063 71B5/B14	7116

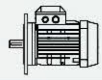
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.18	11.3	80	79	6018	1.6	**MRV063 71B5/B14**	**7116**
	9	100	90	6270	1.4		
0.25	373.3	7.5	5.6	542	2.3	**MRV030 63B5/B14**	**6322**
	280	10	7.2	597	1.8		
	186.7	15	10	683	1.3		
	140	20	13	752	0.9		
	112	25	15	810	1.0		
	93.3	30	18	861	0.8		
	186.7	7.5	11	1315	3.6	**MRV040 71B5/B14**	**7114**
	140	10	14	1447	2.8		
	93.3	15	20	1657	2.0		
	70	20	26	1824	1.5		
	56	25	32	1964	1.2		
	46.7	30	35	2087	1.3		
	35	40	44	2298	0.9		
	120	7.5	17	1524	2.6	**MRV040 71B5/B14**	**7126**
	90	10	22	1677	2.0		
	60	15	31	1920	1.4		
	45	20	39	2113	1.1		
	36	25	48	2276	0.9		
	30	30	53	2419	0.9		
	35	80	42	3153	1.1	**MRV050 63B5/B14**	**6322**
	28	100	48	3397	0.8		
	70	20	27	2503	2.7	**MRV050 71B5/B14**	**7114**
	56	25	32	2696	2.2		
	46.7	30	36	2865	2.3		
	35	40	46	3153	1.7		
	28	50	54	3397	1.4		
	23.3	60	60	3610	1.1		
	17.5	80	72	3973	0.9		
	45	20	40	2900	1.9	**MRV050 71B5/B14**	**7126**
	36	25	48	3124	1.5		
	30	30	54	3320	1.7		
	22.5	40	67	3654	1.2		
	18	50	78	3936	1.0		
	15	60	88	4183	0.8		
	28	50	55	4440	2.4	**MRV063 71B5/B14**	**7114**
	23.3	60	63	4719	2.0		
	17.5	80	76	5193	1.6		

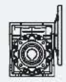
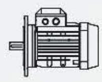
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.25	14	100	87	5595	1.4	**MRV063 71B5/B14**	**7114**
	18	50	81	5145	1.8	**MRV063 71B5/B14**	**7126**
	15	60	92	5467	1.5		
	11.3	80	110	6018	1.2		
	9	100	125	6270	1.0		
	17.5	80	80	6130	2.4	**MRV075 71B5**	**7114**
	14	100	94	6603	1.9		
	11.3	80	117	7103	1.7	**MRV075 71B5**	**7126**
	9	100	133	7380	1.4		
0.37	373.3	7.5	8.3	1044	3.4	**MRV040 71B5/B14**	**7112**
	280	10	11	1149	2.6		
	186.7	15	16	1315	1.9		
	140	20	20	1447	1.4		
	112	25	25	1559	1.1		
	186.7	7.5	16	1315	2.5	**MRV040 71B5/B14**	**7124**
	140	10	21	1447	1.9		
	93.3	15	30	1657	1.3		
	70	20	39	1824	1.0		
	56	25	47	1964	0.8		
	46.7	30	52	2087	0.9		
	112	25	25	2140	2.0	**MRV050 71B5/B14**	**7112**
	93.3	30	29	2274	2.2		
	70	40	37	2503	1.6		
	56	50	44	2696	1.2		
	46.7	60	50	2865	1.0		
	35	80	62	3153	0.7		
	140	10	21	1987	3.4	**MRV050 71B5/B14**	**7124**
	93.3	15	31	2274	2.4		
	70	20	39	2503	1.9		
	56	25	47	2696	1.5		
	46.7	30	54	2865	1.6		
	35	40	68	3153	1.1		
	28	50	80	3397	0.9		
	23.3	60	89	3610	0.8		
	120	7.5	25	2091	3.4	**MRV050 80B5/B14**	**8016**
	90	10	33	2302	2.6		
	60	15	47	2635	1.8		
	45	20	59	2900	1.3		
	36	25	72	3124	1.0		

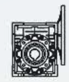
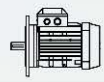
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.37	30	30	80	3320	1.1	MRV050 80B5/B14	8016
	35	40	70	4122	2.1	MRV063 71B5/B14	7124
	28	50	82	4440	1.6		
	23.3	60	94	4719	1.4		
	17.5	80	113	5193	1.1		
	14	100	129	5595	0.9		
	45	20	60	3791	2.4	MRV063 80B5/B14	8016
	36	25	73	4084	1.9		
	30	30	82	4339	2.1		
	22.5	40	102	4776	1.6		
	18	50	120	5145	1.2		
	15	60	137	5467	1.0		
	23.3	60	97	5569	2.1	MRV075 71B5	7124
	17.5	80	119	6130	1.6		
	14	100	139	6603	1.3		
	18	50	124	6073	1.8	MRV075 80B5/B14	8016
	15	60	141	6453	1.5		
	11.3	80	173	7103	1.2		
	9	100	196	7380	1.0		
	11.3	80	185	7859	1.7	MRV090 80B5/B14	8016
	9	100	212	8180	1.3		
0.55	373.3	7.5	12	1044	2.3	MRV040 71B5/B14	7122
	280	10	16	1149	1.8		
	186.7	15	24	1315	1.3		
	140	20	30	1447	1.0		
	112	25	37	1559	0.8		
	140	20	31	1987	1.7	MRV050 71B5/B14	7122
	112	25	38	2140	1.4		
	93.3	30	43	2274	1.5		
	70	40	55	2503	1.1		
	56	50	65	2696	0.8		
	46.7	60	74	2865	0.7		
	186.7	7.5	24	1805	2.9	MRV050 80B5/B14	8014
	140	10	32	1987	2.3		
	93.3	15	46	2274	1.6		
	70	20	59	2503	1.2		
	56	25	70	2696	1.0		
	46.7	30	80	2865	1.1		

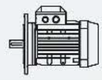
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.55	120	7.5	37	2091	2.3	**MRV050 80B5/B14**	**8026**
	90	10	48	2302	1.7		
	60	15	69	2635	1.2		
	45	20	88	2900	0.9		
	70	40	56	3272	1.9	**MRV063 71B5/B14**	**7122**
	56	50	68	3524	1.5		
	46.7	60	78	3745	1.2		
	35	80	96	4122	0.9		
	28	100	111	4440	0.7		
	70	20	60	3272	2.2	**MRV063 80B5/B14**	**8014**
	56	25	72	3524	1.8		
	46.7	30	82	3745	1.9		
	35	40	104	4122	1.4		
	28	50	122	4440	1.1		
	23.3	60	140	4719	0.9		
	60	15	70	3444	2.2	**MRV063 80B5/B14**	**8026**
	45	20	90	3791	1.6		
	36	25	108	4084	1.3		
	30	30	123	4339	1.4		
	22.5	40	152	4776	1.1		
	35	80	99	4865	1.3	**MRV075 71B5**	**7122**
	28	100	116	5241	1.0		
	35	40	108	4865	2.0	**MRV075 80B5/B14**	**8014**
	28	50	128	5241	1.6		
	23.3	60	144	5569	1.4		
	17.5	80	177	6130	1.1		
	14	100	206	6603	0.9		
	30	30	124	5122	2.1	**MRV075 80B5/B14**	**8026**
	22.5	40	156	5637	1.5		
	18	50	184	6073	1.2		
	15	60	210	6453	1.0		
	.17.5	80	189	6783	1.5	**MRV090 80B5/B14**	**8014**
	14	100	221	7306	1.2		
	18	50	196	6719	2.0	**MRV090 80B5/B14**	**8026**
	15	60	224	7140	1.6		
	11.3	80	275	7859	1.1		
	9	100	315	8180	0.9		
	17.5	80	201	8571	2.6	**MRV110 80B5**	**8014**
	14	100	236	9232	2.0		

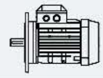
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.55	11.3	80	294	9931	1.9	**MRV110 80B5**	**8026**
	9	100	344	10320	1.5		
0.75	373.3	7.5	17	1433	3.0	**MRV050 80B5/B14**	**8012**
	280	10	22	1577	2.4		
	186.7	15	31	1805	1.7		
	140	20	41	1987	1.3		
	112	25	49	2140	1.0		
	93.3	30	56	2274	1.1		
	280	5	23	1577	2.7	**MRV050 80B5/B14**	**8024**
	186.7	7.5	33	1805	2.1		
	140	10	43	1987	1.7		
	93.3	15	62	2274	1.2		
	70	20	80	2503	0.9		
	140	20	43	2597	2.3	**MRV063 80B5/B14**	**8012**
	112	25	52	2797	1.8		
	93.3	30	60	2973	2.0		
	70	40	77	3272	1.4		
	56	50	92	3524	1.1		
	46.7	60	106	3745	0.9		
	93.3	15	63	2973	2.2	**MRV063 80B5/B14**	**8024**
	70	20	82	3272	1.6		
	56	25	98	3524	1.3		
	46.7	30	112	3745	1.4		
	35	40	141	4122	1.0		
	120	7.5	51	2734	2.9	**MRV063 90B5/B14**	**90S6**
	90	10	67	3009	2.3		
	60	15	96	3444	1.6		
	45	20	123	3791	1.2		
	36	25	147	4084	0.9		
	30	30	167	4339	1.0		
	46.7	60	107	4421	1.3	**MRV075 90B5/B14**	**8012**
	35	80	135	4865	1.0		
	28	100	159	5241	0.8		
	56	25	101	4160	2.0	**MRV075 90B5/B14**	**8024**
	46.7	30	117	4421	2.0		
	35	40	147	4865	1.5		
	28	50	174	5241	1.2		
	23.3	60	196	5569	1.0		
	60	15	97	4065	2.4	**MRV075 90B5/B14**	**90S6**

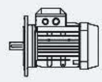
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
0.75	45	20	124	4474	1.9	**MRV075 90B5/B14**	**90S6**
	36	25	149	4820	1.4		
	30	30	170	5122	1.5		
	22.5	40	213	5637	1.1		
	35	80	143	5383	1.6	**MRV090 80B5/B14**	**8012**
	28	100	169	5799	1.2		
	28	50	182	5799	1.9	**MRV090 80B5/B14**	**8024**
	23.3	60	209	6163	1.5		
	17.5	80	258	6783	1.1		
	14	100	302	7306	0.9		
	30	30	179	5667	2.6	**MRV090 80B5/B14**	**90S6**
	22.5	40	226	6238	1.8		
	18	50	267	6719	1.5		
	15	60	306	7140	1.1		
	17.5	80	274	8571	1.9	**MRV110 80B5**	**8024**
	14	100	322	9232	1.5		
	15	60	325	9023	2.1	**MRV110 90B5**	**90S6**
	11.3	80	401	9931	1.4		
	9	100	470	10320	1.1		
	11.3	80	401	12989	2.1	**MRV130 90B5**	**90S6**
	9	100	470	13500	1.7		
1.1	373.3	7.5	25	1433	2.1	**MRV050 80B5/B14**	**8022**
	280	10	33	1577	1.7		
	186.7	15	48	1805	1.2		
	140	20	62	1987	0.9		
	186.7	15	46	2359	2.1	**MRV063 80B5/B14**	**8022**
	140	20	60	2597	1.6		
	112	25	72	2797	1.2		
	93.3	30	82	2973	1.4		
	70	40	104	3272	1.0		
	120	7.5	75	2734	2.0	**MRV063 90B5/B14**	**90L6**
	90	10	98	3009	1.6		
	60	15	140	3444	1.1		
	45	20	180	3791	0.8		
	186.7	7.5	50	2359	2.6	**MRV063 90B5/B14**	**90S4**
	140	10	65	2597	2.0		
	93.3	15	92	2973	1.5		
	70	20	120	3272	1.1		
	56	25	144	3524	0.9		

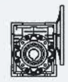
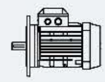
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
1.1	46.7	30	164	3745	1.0	**MRV063 90B5/B14**	**90S4**
	112	25	77	3302	2.0	**MRV075 80B5/B14**	**8022**
	93.3	30	89	3509	1.9		
	70	40	114	3862	1.4		
	56	50	137	4160	1.1		
	46.7	60	158	4421	0.9		
	90	10	98	3551	2.3	**MRV075 90B5/B14**	**90L6**
	60	15	142	4065	1.7		
	45	20	182	4474	1.3		
	36	25	19	4820	1.0		
	30	30	249	5122	1.0		
	93.3	15	95	3509	2.1	**MRV075 90B5/B14**	**90S4**
	70	20	122	3862	1.7		
	56	25	148	4160	1.3		
	46.7	30	171	4421	1.3		
	35	40	216	4865	1.0		
	35	80	210	5383	1.1	**MRV090 80B5/B14**	**8022**
	28	100	248	5799	0.8		
	36	25	228	5333	1.6	**MRV090 90B5/B14**	**90L6**
	30	30	263	5667	1.8		
	22.5	40	331	6238	1.2		
	18	50	391	6719	1.0		
	15	60	448	7140	0.8		
	35	40	222	5383	1.6	**MRV090 90B5/B14**	**90S4**
	28	50	266	5799	1.3		
	23.3	60	306	6163	1.0		
	22.5	40	345	7882	2.3	**MRV110 90B5**	**90L6**
	18	50	414	8491	1.8		
	15	60	476	9023	1.4		
	11.3	80	588	9931	1.0		
	28	50	278	7328	2.4	**MRV110 90B5**	**90S4**
	23.3	60	324	7787	1.9		
	17.5	80	402	8571	1.3		
	14	100	473	9232	1.0		
	11.3	80	588	12989	1.5	**MRV130 90B5**	**90L6**
	9	100	689	13500	1.1		
	17.5	80	408	11210	2.1	**MRV130 90B5**	**90S4**
	14	100	480	12076	1.5		

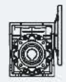
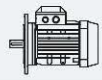
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
	373.3	7.5	34	1433	1.5	MRV050 80B5/B14	8032
	280	10	45	1577	1.2		
	186.7	15	65	1805	0.9		
	186.7	7.5	68	2359	1.9	MRV063 90B5/B14	90L4
	140	10	88	2597	1.5		
	93.3	15	126	2973	1.1		
	70	20	164	3272	0.8		
	373.3	7.5	35	1873	2.7	MRV063 90B5/B14	90S2
	280	10	45	2061	2.2		
	186.7	15	66	2359	1.6	MRV063 90B5/B14	90S2
	140	20	86	2597	1.2		
	112	25	105	2797	0.9		
	93.3	30	120	2973	1.0		
	120	7.5	103	3227	2.1	MRV075 100B5/B14	100L6
	90	10	134	3551	1.7		
	60	15	193	4065	1.2		
	56	50	187	4160	1.3	MRV075 90B5/B14	90S2
	46.7	60	215	4421	1.1		
	140	10	89	3065	2.2	MRV075 90B5/B14	90L4
1.5	93.3	15	129	3509	1.6		
	70	20	166	3862	1.3		
	56	25	202	4160	1.0		
	46.7	30	233	4421	1.0		
	280	10	45	2433	3.2	MRV075 90B5/B14	90S2
	186.7	15	66	2785	2.3		
	140	20	86	3065	1.9		
	112	25	105	3302	1.4		
	93.3	30	121	3509	1.4		
	70	40	156	3862	1.1		
	90	10	137	3929	2.7	MRV090 100B5/B14	100L6
	60	15	198	4498	2.1		
	45	20	258	4951	1.5		
	36	25	310	5333	1.2		
	30	30	358	5667	1.3		
	70	20	170	4273	2.1	MRV090 90B5/B14	90L4
	56	25	207	4603	1.6		
	46.7	30	239	4891	1.7		
	35	40	303	5383	1.2		
	28	50	363	5799	0.9		

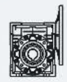
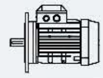
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
1.5	23.3	60	417	6163	0.8	**MRV090 90B5/B14**	**90L4**
	56	50	197	4603	1.3	**MRV090 90B5/B14**	**90S2**
	46.7	60	227	4891	1.1		
	45	20	264	6256	2.7	**MRV110 100B5/B14**	**100L6**
	36	25	322	6739	2.4		
	30	30	363	7161	2.3		
	22.5	40	471	7882	1.7		
	18	50	565	8491	1.3		
	15	60	649	9023	1.1		
	35	40	315	6803	2.2	**MRV110 90B5**	**90L4**
	28	50	379	7328	1.7		
	23.3	60	442	7787	1.4		
	17.5	80	548	8571	0.9		
	46.7	60	236	6181	2.0	**MRV110 90B5**	**90S2**
	35	80	299	6803	1.3		
	28	100	358	7328	1.0		
	22.5	40	471	10309	2.3	**MRV130 100B5**	**100L6**
	18	50	565	11105	1.9		
	15	60	659	11801	1.4		
	11.3	80	802	12989	1.1		
	17.5	80	557	11210	1.5	**MRV130 90B5**	**90L4**
	14	100	655	12076	1.1		
2.2	373.3	7.5	51	1873	1.8	**MRV063 90B5/B14**	**90L2**
	280	10	66	2061	1.5		
	186.7	15	97	2359	1.1		
	186.7	7.5	99	2785	1.9	**MRV075 100B5/B14**	**100L1-4**
	140	10	131	3065	1.5		
	93.3	15	189	3509	1.1		
	373.3	7.5	50	2210	2.6	**MRV075 90B5/B14**	**90L2**
	280	10	66	2433	2.2		
	186.7	15	97	2785	1.5		
	140	20	126	3065	1.3		
	112	25	154	3302	1.0	**MRV075 100B5/B14**	**90L2**
	93.3	30	178	3509	1.0		
	186.7	7.5	100	3081	2.9	**MRV090 100B5/B14**	**100L1-4**
	140	10	132	3391	2.3		
	93.3	15	191	3882	1.9		
	70	20	249	4273	1.4		

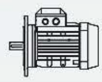
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
2.2	56	25	304	4603	1.1	**MRV090 100B5/B14**	**100L1-4**
	46.7	30	351	4891	1.2		
	120	7.5	154	3570	2.2	**MRV090 112B5/B14**	**112M6**
	90	10	201	3929	1.8		
	60	15	291	4498	1.4		
	45	20	378	4951	1.0		
	140	20	129	3391	2.0	**MRV090 90B5/B14**	**90L2**
	112	25	159	3653	1.6		
	93.3	30	185	3882	1.7		
	70	40	237	4273	1.2		
	56	50	289	4603	0.9		
	70	20	255	5399	2.5	**MRV110 100B5**	**100L1-4**
	56	25	311	5816	2.2		
	46.7	30	356	6181	2.0		
	35	40	462	6803	1.5		
	28	50	555	7328	1.2		
	23.3	60	648	7787	1.0		
	90	10	203	4965	3.5	**MRV110 112B5**	**112M6**
	60	15	294	5684	2.6		
	45	20	388	6256	1.9		
	36	25	473	6739	1.6		
	30	30	532	7161	1.6		
	112	25	161	4616	3.1	**MRV110 90B5**	**90L2**
	93.3	30	187	4905	3.0		
	70	40	243	5399	2.2		
	56	50	296	5816	1.7		
	46.7	60	347	6181	1.4		
	35	40	468	8897	2.2	**MRV130 100B5**	**100L1-4**
	28	50	563	9584	1.7		
	23.3	60	657	10185	1.4		
	17.5	80	816	11210	1.0		
	36	25	473	8814	2.2	**MRV130 112B5**	**112M6**
	30	30	539	9366	2.2		
	22.5	40	691	10309	1.6		
	18	50	829	11105	1.3		
	15	60	966	11801	1.0		
	35	80	444	8897	1.3	**MRV130 90B5**	**90L2**
	28	100	525	9584	1.0		
	28	50	570	13103	2.5	**MRV150 100B5**	**100L1-4**

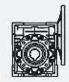
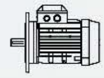
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
2.2	23.3	60	657	13924	1.9	NMRV150 100B5	100L1-4
	17.5	80	816	15325	1.4		
	14	100	960	16508	1.0		
3.0	373.3	7.5	68	2210	1.9	NMRV075 100B5/B14	100L2
	280	10	90	2433	1.6		
	186.7	7.5	135	2785	1.4	NMRV075 100B5/B14	100L2-4
	140	10	178	3065	1.1		
	93.3	15	258	3509	0.8		
	373.3	7.5	70	2446	3.0	NMRV090 100B5/B14	100L2
	280	10	92	2692	2.6		
	186.7	7.5	137	3081	2.1	NMRV090 100B5/B14	100L2-4
	140	10	180	3391	1.7		
	93.3	15	261	3882	1.4		
	70	20	340	4273	1.0		
	56	25	414	4603	0.8		
	46.7	30	479	4891	0.9		
	93.3	15	264	4905	2.5	NMRV110 100B5	100L2-4
	70	20	348	5399	1.9		
	56	25	425	5816	1.6		
	46.7	30	485	6181	1.5		
	35	40	630	6803	1.1		
	28	50	757	7328	0.9		
	120	7.5	210	4511	3.1	NMRV110 100B5	132S6
	90	10	277	4965	2.6		
	60	15	401	5684	1.9		
	45	20	528	6256	1.4		
	56	25	430	7607	2.2	NMRV130 100B5	100L2-4
	46.7	30	491	8084	2.1		
	35	40	638	8897	1.6		
	28	50	767	9584	1.3		
	23.3	60	896	10185	1.0		
	17.5	80	1113	11210	0.8		
	90	10	277	6494	3.5	NMRV130 132B5	132S6
	60	15	406	7434	2.6		
	45	20	528	8182	2.0		
	36	25	645	8814	1.6		
	30	30	735	9366	1.6		
	22.5	40	942	10309	1.2		

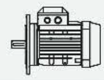
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
3.0	28	50	778	13103	1.8	**MRV150 100B5**	**100L2-4**
	23.3	60	896	13924	1.4		
	17.5	80	1113	15325	1.0		
	14.0	100	1310	16508	0.8		
4.0	373.3	7.5	91	2210	1.4	**MRV075 112B5/B14**	**112M2**
	280	10	120	2433	1.2		
	186.7	7.5	180	2785	1.0	**MRV075 112B5/B14**	**112M4**
	140	10	237	3065	0.8		
	373.3	7.5	93	2446	2.3	**MRV090 112B5/B14**	**112M2**
	280	10	123	2692	1.9		
	186.7	7.5	182	3081	1.6	**MRV090 112B5**	**112M4**
	140	10	240	3391	1.3		
	93.3	15	348	3882	1.0		
	70	20	453	4273	0.8		
	140	10	240	4285	2.5	**MRV110 112B5**	**112M4**
	93.3	15	352	4905	1.9		
	70	20	464	5399	1.4		
	56	25	566	5816	1.2		
	46.7	30	647	6181	1.1		
	120	7.5	280	4511	2.3	**MRV110 132B5**	**132M1-6**
	90	10	369	4965	1.9		
	60	15	535	5684	1.4		
	56	25	573	7607	1.6	**MRV130 112B5**	**112M4**
	46.7	30	655	8084	1.6		
	35	40	851	8897	1.2		
	28	50	1023	9584	1.0		
	23.3	60	1195	10185	0.8		
	120	7.5	283	5901	3.1	**MRV130 132B5**	**132M1-6**
	90	10	369	6494	2.6		
	60	15	541	7434	2.0		
	45	20	705	8182	1.5		
	36	25	860	8814	1.2		
	28	50	1037	13103	1.4	**MRV150 112B5**	**112M4**
	23.3	60	1195	13924	1.1		
	17.5	80	1484	15325	0.8		
5.5	186.7	7.5	250	3893	2.2	**MRV110 132B5**	**132S4**
	140	10	330	4285	1.8		
	93.3	15	484	4905	1.4		
	70	20	638	5399	1.0		

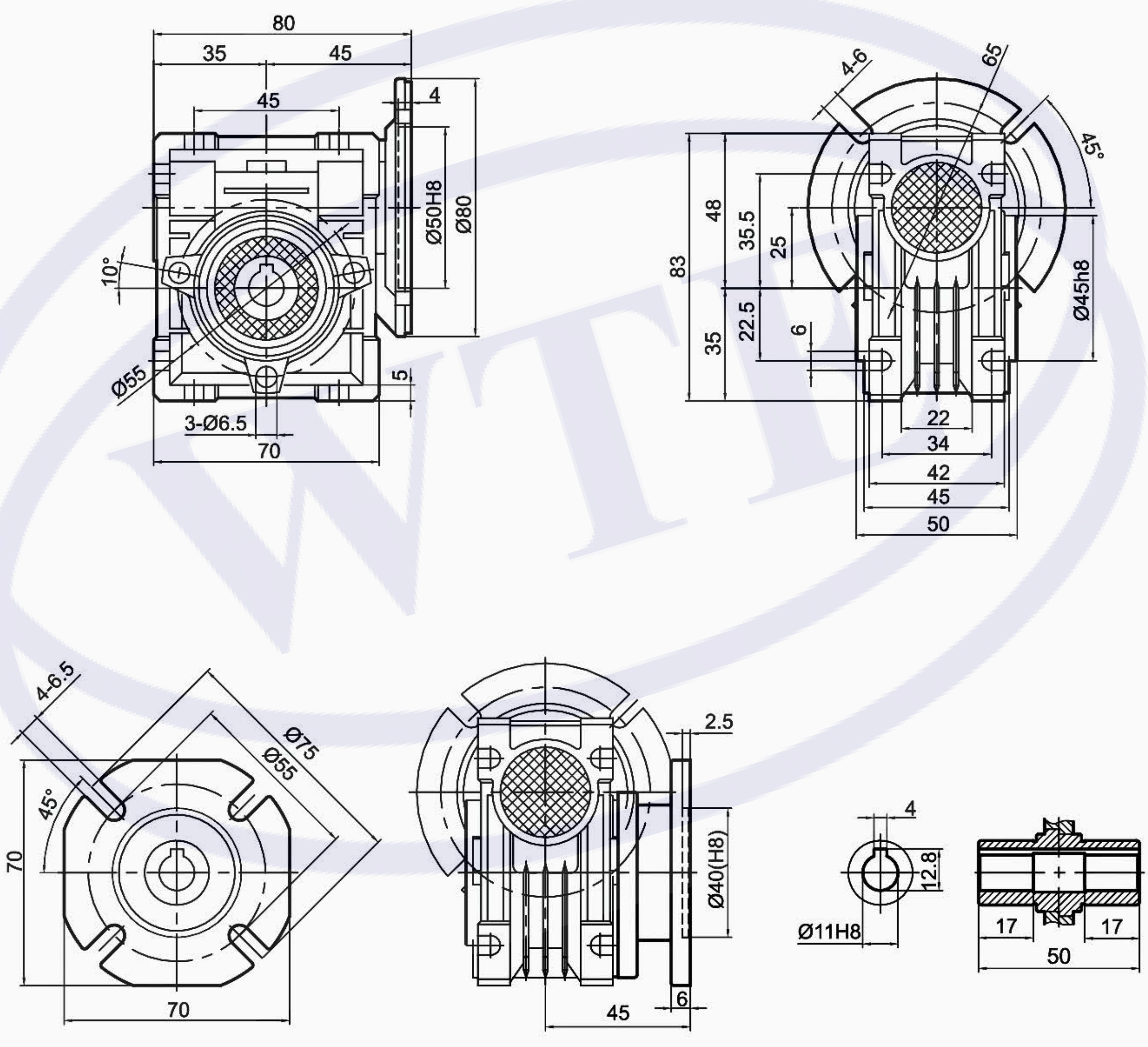
MRV PERFORMANCE PARAMETER

MRV...IEC...Performance parameter

P_{1n} (kW)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs		
5.5	140	10	334	5605	2.5	MRV130 132B5	132S4
	93.3	15	490	6416	1.9		
	70	20	638	7062	1.4		
	56	25	788	7607	1.2		
	46.7	30	900	8084	1.2		
	35	40	1171	8897	0.9		
	70	20	645	9654	2.0	MRV150 132B5	132S4
	56	25	788	10400	1.5		
	46.7	30	934	11051	1.3		
	35.0	40	1171	12163	1.3		
	28.0	50	1426	13103	1.0		
	23.3	60	1643	13924	0.8		
7.5	186.7	7.5	341	3893	1.6	MRV110 132B5	132M4
	140	10	450	4285	1.3		
	93.3	15	660	4905	1.0		
	186.7	7.5	345	5092	2.2	MRV130 132B5	132M4
	140	10	455	5605	1.8		
	93.3	15	668	6416	1.4		
	70	20	870	7062	1.0		
	56	25	1074	7607	0.9		
	46.7	30	1228	8084	0.8		
	35	40	1596	8897	0.7		
	70	20	880	9654	1.5	MRV150 132B5	132M4
	56	25	1074	10400	1.1		
	46.7	30	1274	11051	0.9		
	35	40	1596	12163	1.0		
11	186.7	7.5	512	6962	2.3	MRV150 160B5	160M4
	140	10	675	7663	1.8		
	93.3	15	990	8771	1.3		
	70	20	1291	9654	1.0		
	56	25	1576	10400	0.8		
15	186.7	7.5	698	6962	1.7	MRV150 160B5	160L4
	140	10	921	7663	1.3		
	93.3	15	1351	8771	0.9		
	70	20	1760	9654	0.7		

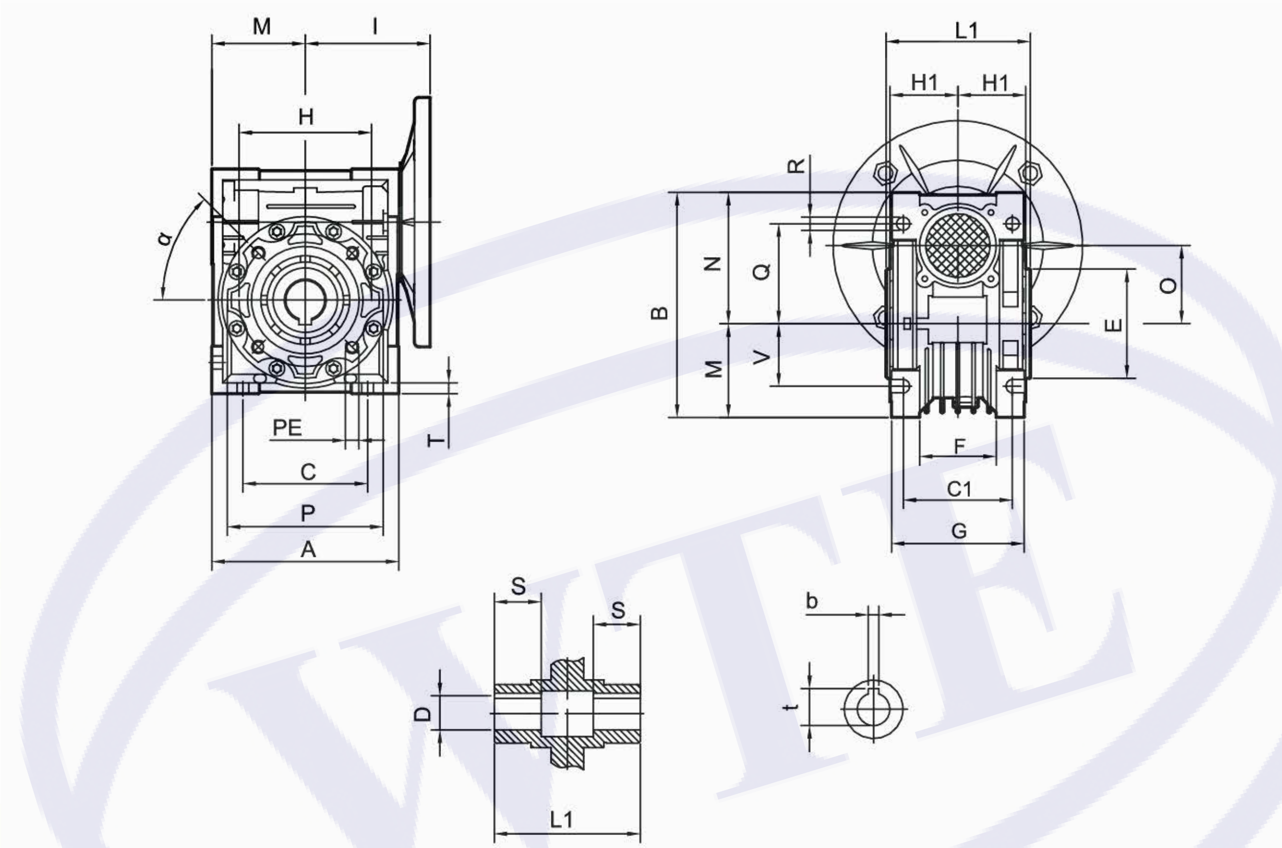
MRV OUTLINE DIMENSION SHEET

MRV 025 Outline Dimension



MRV OUTLINE DIMENSION SHEET

MRV Outline Dimension



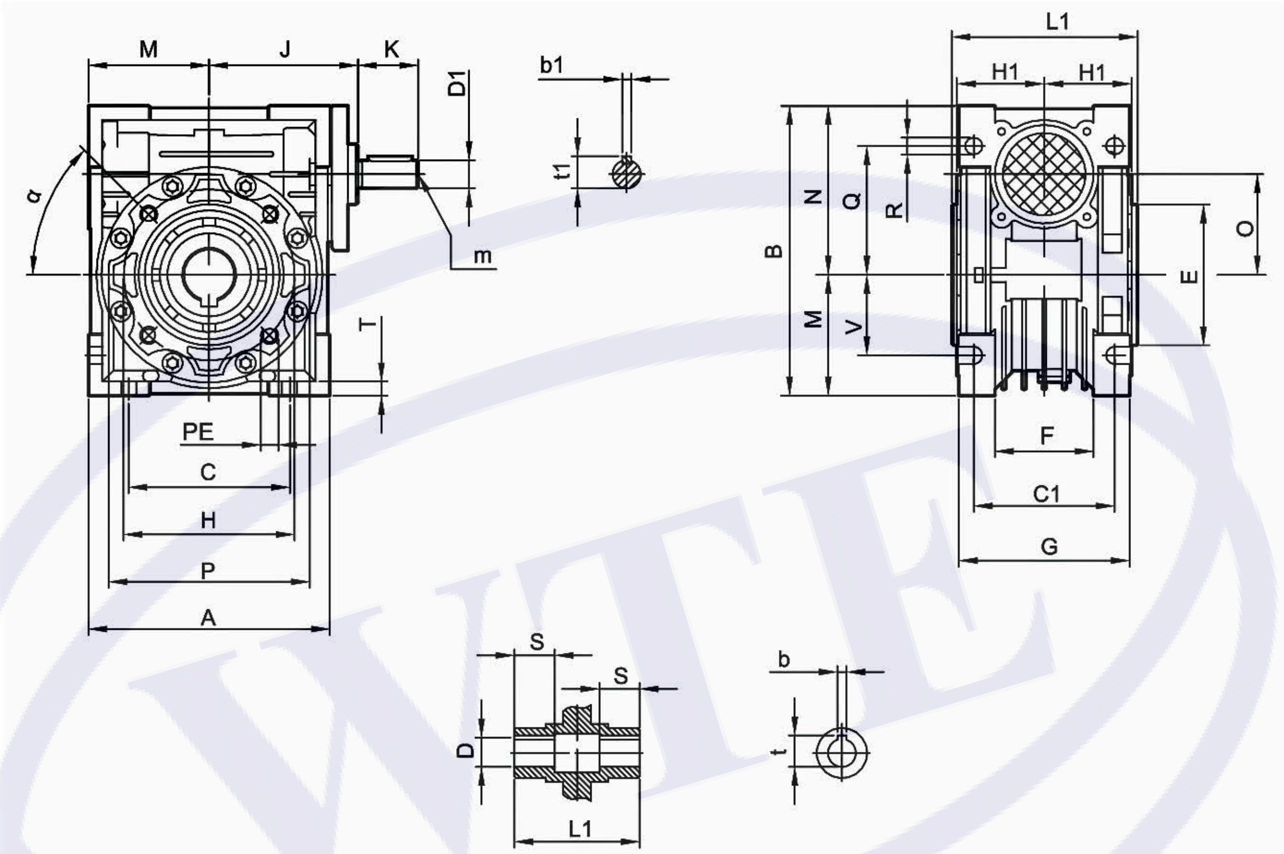
MRV	A	B	C	C1	D(H7)	E(h7)	F	G	H	H1	I	L1	M	N	O
030	80	97	54	44	14	55	32	56	65	29	55	63	40	57	30
040	100	121.5	70	60	18(19)	60	43	71	75	36.5	70	78	50	71.5	40
050	120	144	80	70	25(24)	70	49	85	85	43.5	80	92	60	84	50
063	144	174	100	85	25(28)	80	67	103	95	53	95	112	72	102	63
075	172	205	120	90	28(35)	95	72	112	115	57	112.5	120	86	119	75
090	206	238	140	100	35(38)	110	74	130	130	67	129.5	140	103	135	90
110	255	295	170	115	42	130	-	144	165	74	160	155	127.5	167.5	110
130	293	335	200	120	45	180	-	155	215	81	179	170	146.5	187.5	130
150	340	400	240	145	50	180	-	185	215	96	210	200	170	230	150

MRV	P	Q	R	S	T	V	PE	b	t	α	Kg
030	75	44	6.5	21	5.5	27	M6×11(n=4)	5	16.3	0°	1.2
040	87	55	6.5	26	6.5	35	M6×8(n=4)	6	20.8(21.8)	45°	2.3
050	100	64	8.5	30	7	40	M8×10(n=4)	8	28.3(27.3)	45°	3.8
063	110	80	8.5	36	8	50	M8×14(n=8)	8	28.3(31.3)	45°	6.2
075	140	93	11	40	10	60	M8×14(n=8)	8(10)	31.3(38.3)	45°	9
090	160	102	13	45	11	70	M10×18(n=8)	10	38.3(41.3)	45°	13
110	200	125	14	50	14	85	M10×18(n=8)	12	45.3	45°	42.5
130	250	140	16	60	15	100	M12×21(n=8)	14	48.8	45°	59
150	250	180	18	72.5	18	120	M12×21(n=8)	14	53.8	45°	87

NOTE：Weight (Kg) without the weight of motor.

OUTLINE DIMENSION SHEET

RV Outline Dimension



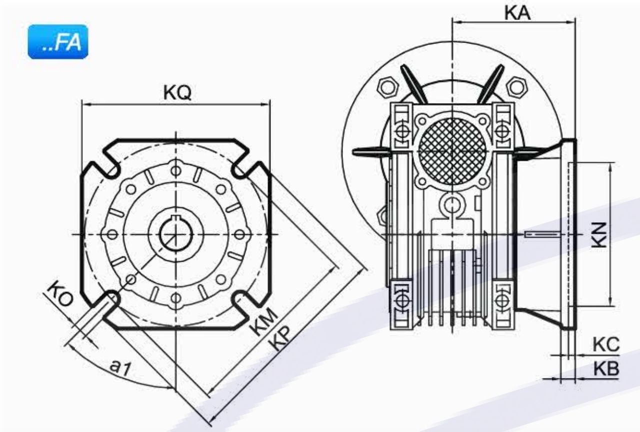
RV	A	B	C	C1	D(H7)	D1(j6)	E(H8)	F	G	H	H1	J	K	L1	M	N	O
030	80	97	54	44	14	9	55	32	56	65	29	51	20	63	40	57	30
040	100	121.5	70	60	18(19)	11	60	43	71	75	36.5	60	23	78	50	71.5	40
050	120	144	80	70	25(24)	14	70	49	85	85	43.5	74	30	92	60	84	50
063	144	174	100	85	25(28)	19	80	67	103	95	53	90	40	112	72	102	63
075	172	205	120	90	28(35)	24	95	72	112	115	57	105	50	120	86	119	75
090	206	238	140	100	35(38)	24	110	74	130	130	67	125	50	140	103	135	90
110	255	295	170	115	42	28	130	-	144	165	74	142	60	155	127.5	167.5	110
130	293	335	200	120	45	30	180	-	155	215	81	162	80	170	146.5	187.5	130
150	340	400	240	145	50	35	180	-	185	215	96	195	80	200	170	230	150

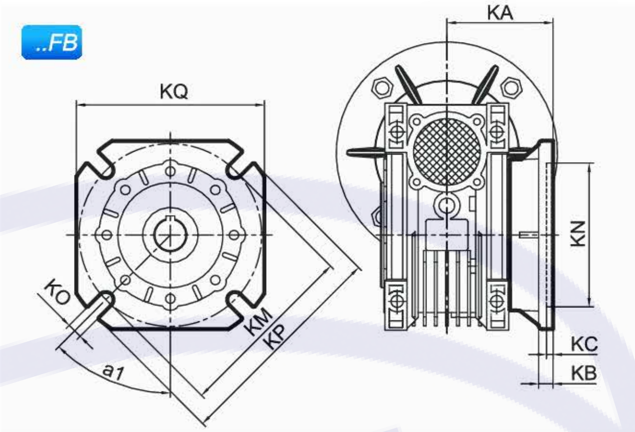
RV	P	Q	R	S	T	V	PE	b	b1	t	t1	m	α	Kg
030	75	44	6.5	21	5.5	27	M6×11(n=4)	5	3	16.3	10.2	-	0°	1.2
040	87	55	6.5	26	6.5	35	M6×8(n=4)	6	4	20.8(21.8)	12.5	-	45°	2.3
050	100	64	8.5	30	7	40	M8×10(n=4)	8	5	28.3(27.3)	16.0	M6	45°	3.8
063	110	80	8.5	36	8	50	M8×14(n=8)	8	6	28.3(31.3)	21.5	M6	45°	6.2
075	140	93	11	40	10	60	M8×14(n=8)	8(10)	8	31.3(38.3)	27.0	M8	45°	9
090	160	102	13	45	11	70	M10×18(n=8)	10	8	38.3(41.3)	27.0	M8	45°	13
110	200	125	14	50	14	85	M10×18(n=8)	12	8	45.3	31.0	M10	45°	42.5
130	250	140	16	60	15	100	M12×21(n=8)	14	8	48.8	33.0	M10	45°	59
150	250	180	18	72.5	18	120	M12×21(n=8)	14	10	53.8	38	M12	45°	87

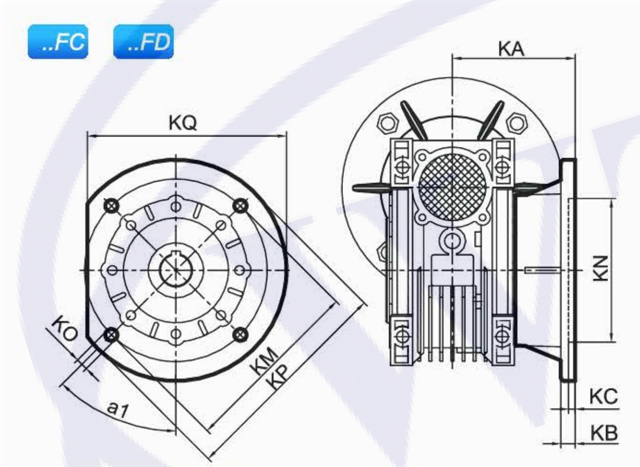
NOTE : Weight (Kg) without the weight of motor.

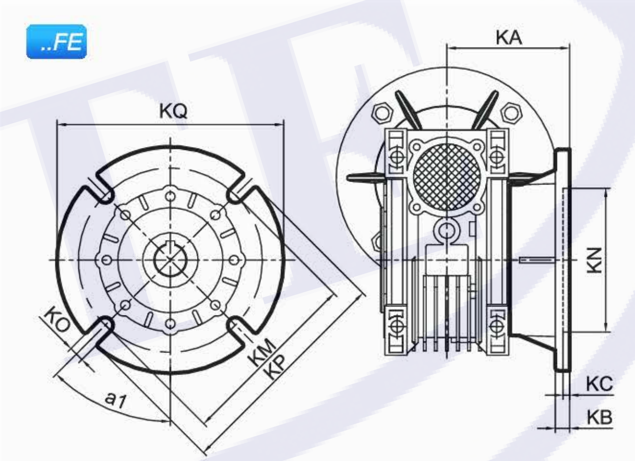
MRV CONNECTING DIMENSION SHEET

MRV Output Flange Dimension









MRV	FA								
	a1	KA	KB	KC	KM	KN_{H8}	KO	KP	KQ
030	45°	54.5	6	4	68	50	6.5(n=4)	80	70
040	45°	67	7	4	75	60	9 (n=4)	110	95
050	45°	90	9	5	85	70	11(n=4)	125	110
063	45°	82	10	6	150	115	11(n=4)	180	142
075	45°	111	13	6	165	130	14(n=4)	200	170
090	45°	111	13	6	175	152	14(n=4)	210	200
110	45°	139	15	6	230	170	14(n=8)	280	260
130	45°	140	15	6	255	180	16(n=8)	320	290
150	22.5°	155	15	6	255	180	16(n=8)	320	290

MRV	FB								
	a1	KA	KB	KC	KM	KN_{H8}	KO	KP	KQ
030	-	-	-	-	-	-	-	-	-
040	45°	97	7	4	75	60	9 (n=4)	110	95
050	45°	120	9	5	85	70	11(n=4)	125	110
063	45°	112	10	6	150	115	11(n=4)	180	142
075	45°	90	13	6	130	110	11(n=4)	160	-
090	45°	122	18	6	215	180	14(n=4)	250	-
110	-	-	-	-	-	-	-	-	-
130	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-

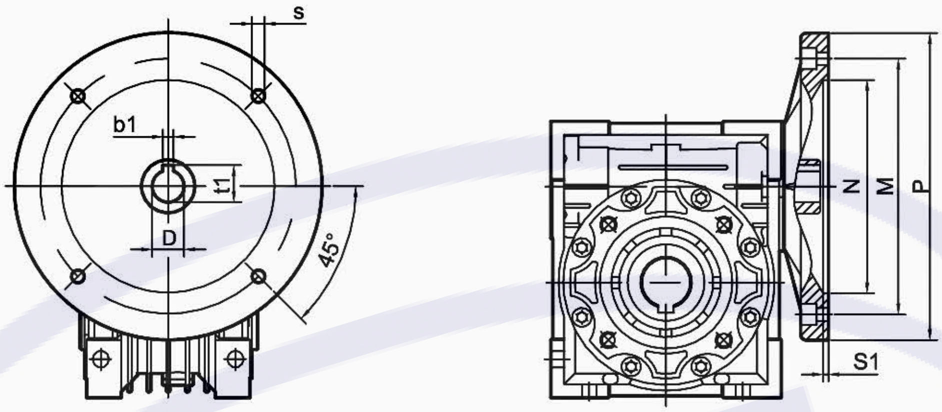
MRV	FC								
	a1	KA	KB	KC	KM	KN_{H8}	KO	KP	KQ
040	45°	80	9	5	115	95	9.5(n=4)	140	-
050	45°	89	10	5	130	110	9.5(n=4)	160	-
063	45°	98	10	5	165	130	11(n=4)	200	-
090	45°	110	17	6	165	130	11(n=4)	200	-

MRV	FD								
	a1	KA	KB	KC	KM	KN_{H8}	KO	KP	KQ
040	45°	58	12	5	100	80	9(n=4)	120	-
050	45°	72	14.5	5	115	95	11(n=4)	140	-
063	45°	107	10	5	165	130	11(n=4)	200	-
090	45°	151	13	6	175	152	14(n=4)	210	-

MRV	FE								
	a1	KA	KB	KC	KM	KN_{H8}	KO	KP	KQ
040	-	-	-	-	-	-	-	-	-
050	-	-	-	-	-	-	-	-	-
063	45°	80.5	16.5	5	130	110	11(n=4)	160	-
090	-	-	-	-	-	-	-	-	-

MRV CONNECTING DIMENSION SHEET

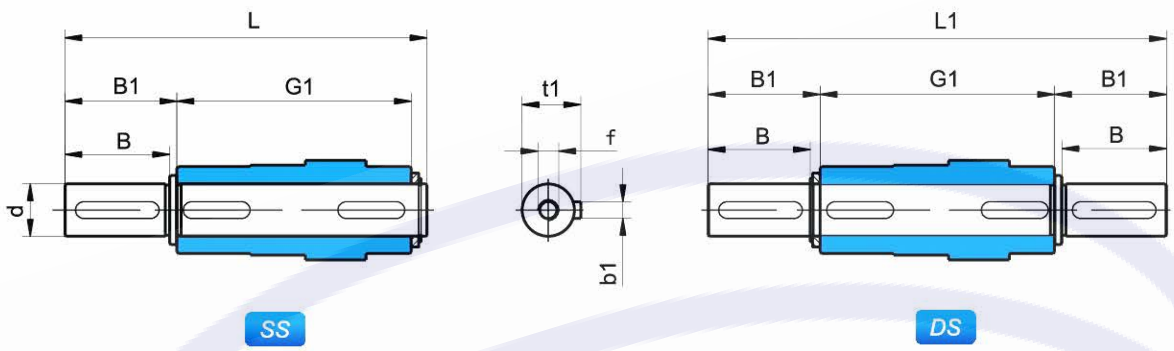
MRV..IEC Input Flange Dimension



MRV	PAM-IEC	N		M		P		S		b1	t1	s1	i(ratio)											
													5	7.5	10	15	20	25	30	40	50	60	80	100
		B5	B14	B5	B14	B5	B14	B5	B14				D											
025	56B14	—	50	—	65	—	80	—	6	3	10.4	4	9	9	9	9	9	9	9	9	9	9	—	—
030	56B5/B14	80	50	100	65	120	80	6.5	5.5	3	10.4	4	9	9	9	9	9	9	9	9	9	9	9	—
	63B5/B14	95	60	115	75	140	90	9	5.5	4	12.8	4	11	11	11	11	11	11	11	11	11	—	—	—
040	56B5/B14	80	50	100	65	120	80	6.5	5.5	3	10.4	4	—	—	—	—	—	—	—	—	9	9	9	9
	63B5/B14	95	60	115	75	140	90	9	5.5	4	12.8	4	11	11	11	11	11	11	11	11	11	11	11	11
	71B5/B14	110	70	130	85	160	105	9	7	5	16.3	5	14	14	14	14	14	14	14	14	—	—	—	—
050	63B5/B14	95	60	115	75	140	90	9	5.5	4	12.8	5	—	—	—	—	—	—	—	11	11	11	11	11
	71B5/B14	110	70	130	85	160	105	9	7	5	16.3	5	14	14	14	14	14	14	14	14	14	14	14	
	80B5/B14	130	80	165	100	200	120	11	7	6	21.8	5	19	19	19	19	19	19	19	19	—	—	—	—
063	71B5/B14	110	70	130	85	160	105	9	7	5	16.3	5	—	—	—	—	—	—	—	14	14	14	14	14
	80B5/B14	130	80	165	100	200	120	11	7	6	21.8	5	—	19	19	19	19	19	19	19	19	19	19	19
	90B5/B14	130	95	165	115	200	140	11	9	8	27.3	5	—	24	24	24	24	24	24	—	—	—	—	—
075	71B5	110	—	130	—	160	—	9	7	5	16.3	5	—	—	—	—	—	—	—	—	14	14	14	14
	80B5/B14	130	80	165	100	200	120	11	7	6	21.8	5	—	—	—	—	—	—	19	19	19	19	19	19
	90B5/B14	130	95	165	115	200	140	11	9	8	27.3	5	—	24	24	24	24	24	24	24	—	—	—	—
	100B5/B14	180	110	215	130	250	160	13	9	8	31.3	5.5	—	28	28	28	—	—	—	—	—	—	—	—
	112B5/B14	180	110	215	130	250	160	13	9	8	31.3	5.5	—	28	—	—	—	—	—	—	—	—	—	—
090	80B5/B14	130	80	165	100	200	120	11	7	6	21.8	5	—	—	—	—	—	—	—		19	19	19	19
	90B5/B14	130	95	165	115	200	140	11	9	8	27.3	5	—	—	—	—	—	24	24	24	24	24	—	—
	100B5/B14	180	110	215	130	250	160	13	9	8	31.3	5.5	—	28	28	28	28	28	28	—	—	—	—	—
	112B5/B14	180	110	215	130	250	160	13	9	8	31.3	5.5	—	28	28	28	28	—	—	—	—	—	—	—
110	80B5	130	—	165	—	200	—	11	7	6	21.8	6	—	—	—	—	—	—	—	—	—	—	19	19
	90B5	130	—	165	—	200	—	11	9	8	27.3	6	—	—	—	—	—	—	24	24	24	24	24	24
	100B5	180	—	215	—	250	—	13	9	8	27.3	6	—	28	28	28	28	28	28	28	28	28	—	—
	112B5	180	—	215	—	250	—	13	9	8	31.3	6	—	28	28	28	28	28	28	—	—	—	—	—
	132B5	230	—	265	—	300	—	13	—	10	41.3	6	—	38	38	38	38	—	—	—	—	—	—	—
130	90B5	130	—	165	—	200	—	11	9	8	27.3	6	—	—	—	—	—	—	—	—	—	—	24	24
	100B5	180	—	215	—	250	—	13	9	8	31.3	6	—	—	—	—	—	—	—	28	28	28	28	28
	112B5	180	—	215	—	250	—	13	9	8	31.3	6	—	28	28	28	28	28	28	28	28	28	—	—
	132B5	230	—	265	—	300	—	13	—	10	41.3	6	—	38	38	38	38	38	38	38	—	—	—	—
150	100/112B5	180	—	215	—	250	—	13	9	8	31.3	6	—	—	—	—	—	—	—	—	28	28	28	28
	132B5	230	—	265	—	300	—	13	—	10	41.3	6	—	—	—	—	38	38	38	38	38	38	—	—
	160B5	250	—	300	—	350	—	19	—	12	45.3	6	—	42	42	42	42	42	—	—	—	—	—	—

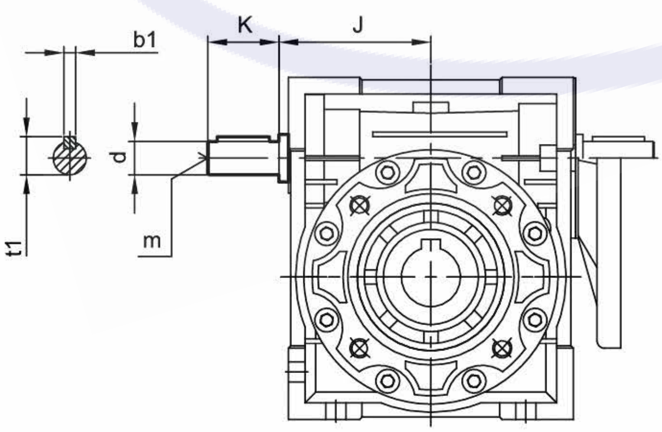
ACCESSORIES OUTLINE DIMENSION SHEET

Output Shafts



MRV	dh6	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*17	5	16
040	18	40	43	78	128	164	M6*17	6	20.5
050	25	50	53.5	92	153	199	M10*27	8	28
063	25	50	53.5	112	173	219	M10*27	8	28
075	28	60	63.5	120	192	247	M10*27	8	31
090	35	80	84.5	140	234	309	M12*34	10	38
110	42	80	84.5	155	249	324	M16*42	12	45
130	45	80	85	170	265	340	M16*42	14	48.5
150	50	82	87	200	297	374	M16*42	14	53.5

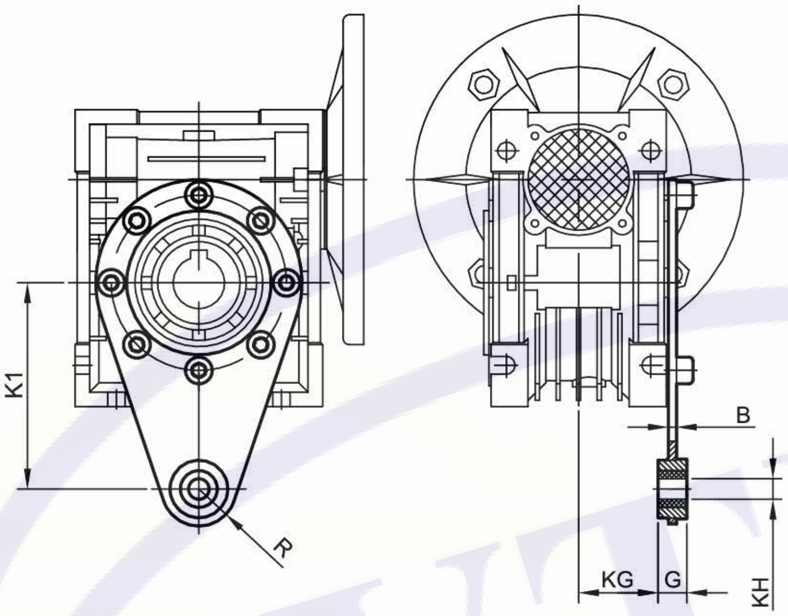
Extension worm shaft(E)



MRV	J	d(j6)	K	m	b1	t1
025	37	9	20	-	3	10.2
030	45	9	20	-	3	10.2
040	53	11	23	-	4	12.5
050	64	14	30	M6	5	16
063	75	19	40	M6	6	21.5
075	90	24	50	M8	8	27
090	108	24	50	M8	8	27
110	135	28	60	M10	8	31
130	155	30	80	M10	8	33
150	175	35	80	M12	10	38

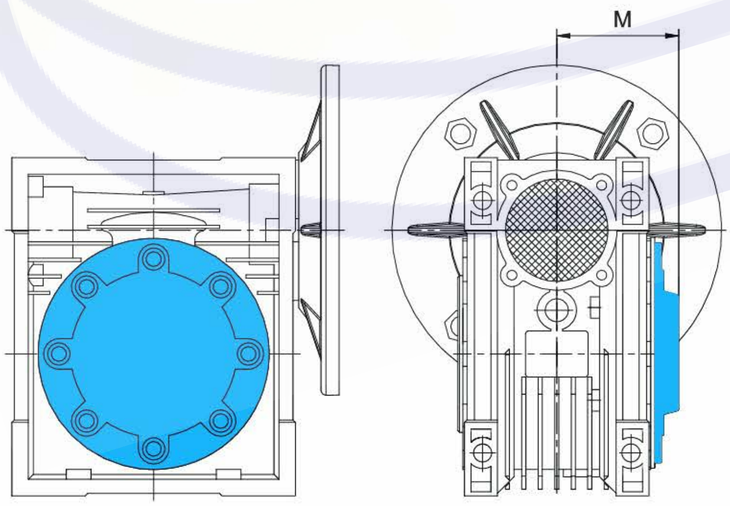
ACCESSORIES OUTLINE DIMENSION SHEET

Torque Arm



MRV	K1	G	KG	KH	R	B
025	70	14	17.5	8	15	4
030	85	14	24	8	15	4
040	100	14	31.5	10	18	4
050	100	14	38.5	10	18	4
063	150	14	49	10	18	6
075	200	25	47.5	20	30	6
090	200	25	57.5	20	30	6
110	250	30	62	25	35	6
130	250	30	69	25	35	6
150	250	30	84	25	35	8

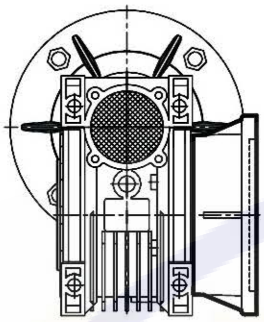
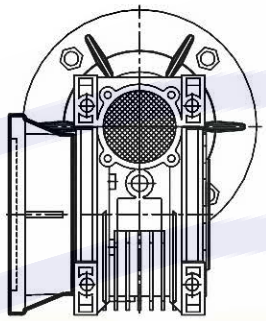
Cover



MRV	M
030	42
040	50
050	58
063	69
075	74
090	85
110	94
130	102
150	117

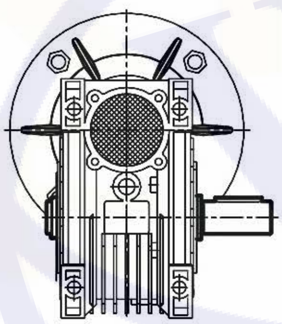
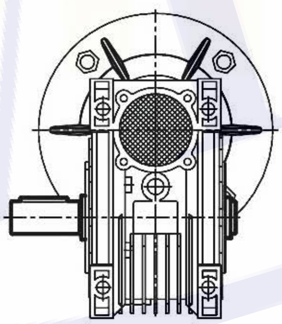
INSTALLATION POSITIONS DIAGRAM

Position diagram for output flange

FA1,FB1,FC1,FD1,FE1	FA2,FB2,FC2,FD2,FE2
	

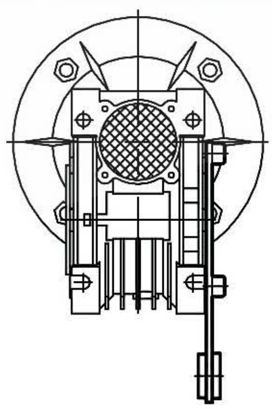
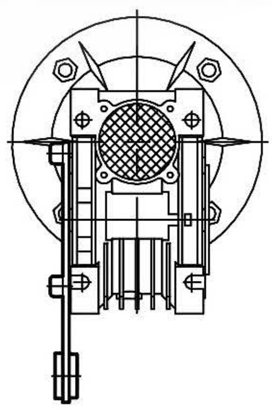
Unless specified otherwise, the gear units is supplied with the flange in pos. **F..1** referred to position **B3**.

Position diagram for single output shaft

SS1	SS2
	

Unless specified otherwise, the gear units is supplied with the flange in pos. **SS1** referred to position **B3**.

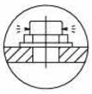
Torque arm (A) position

A1	A2
	

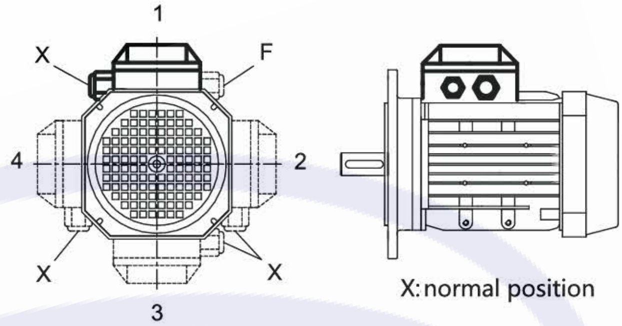
Unless specified otherwise, the gear units is supplied with the flange in pos. **A1** referred to position **B3**.

INSTALLATION POSITIONS DIAGRAM

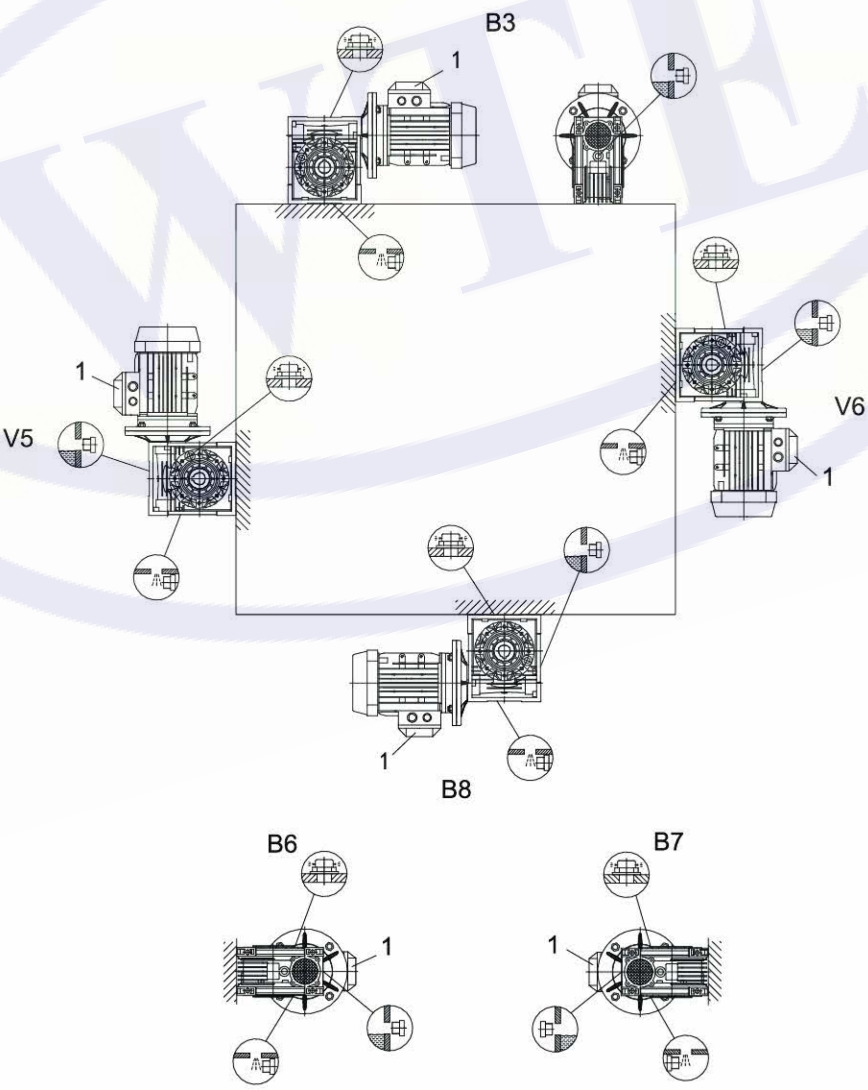
Symbols Meaning

Symbol	Meaning
	Breather valve
	Oil level plug
	Oil drain plug

Position of motor terminal box

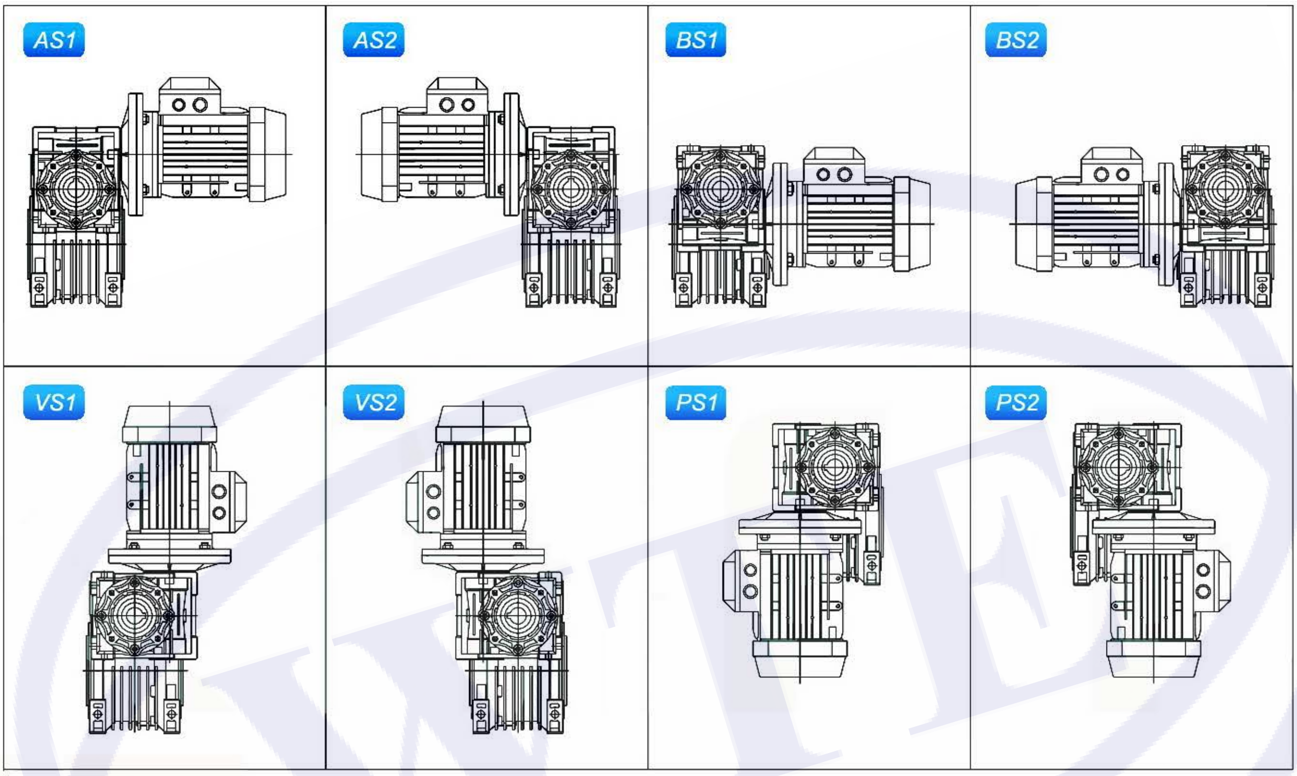


MRV..Mounting Positions



INSTALLATION POSITIONS DIAGRAM

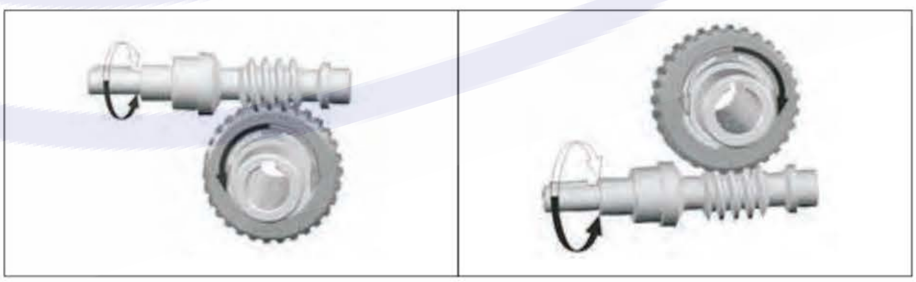
DRV..Mounting Positions



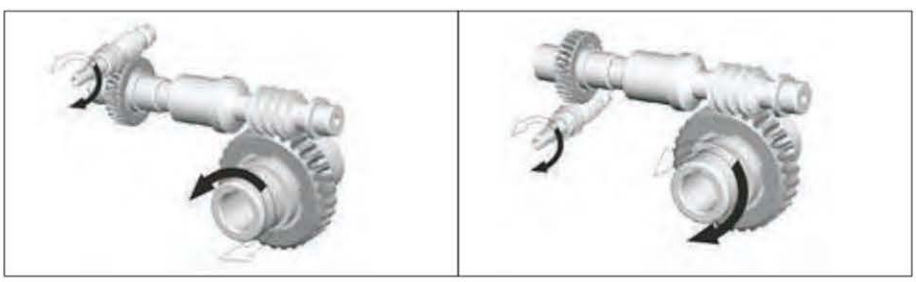
Unless specified otherwise, the gear units is supplied with the flange in pos. AS2 referred to position B3.

Direction of rotation

RV



DRV

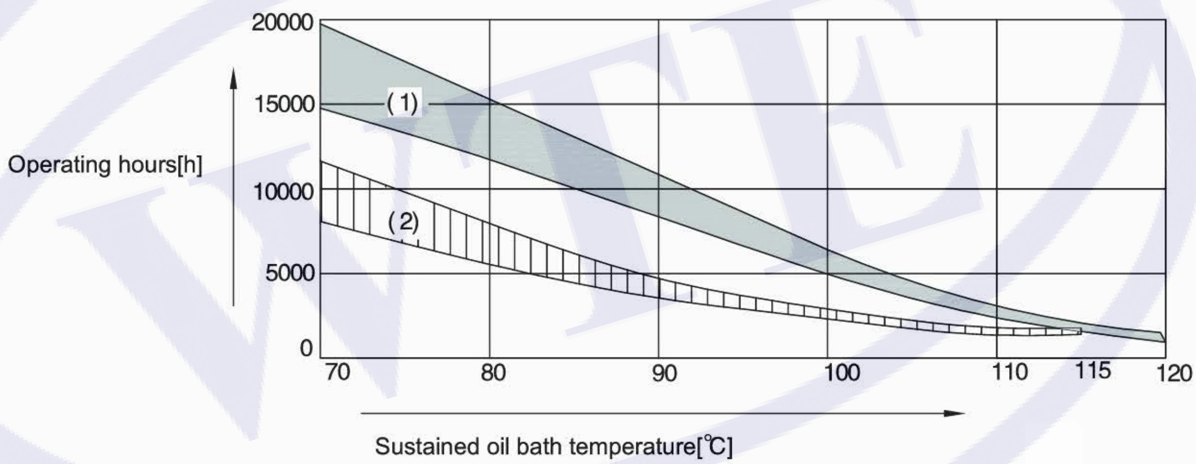


LUBRICATION

Types of lubrication

	Ambient Tempreatur(℃) ℃ -50 0 50 +100	ISO Viscosity Class	SHELL	AGIP	ESSO	MOBIL	CASTROL	BP	Lubrication type
MRV025 - 090	-25 +50	VG320	Tivela OIL S320	Telium VSF 320	S320	Glygoyle 30	Alphasyn Pg320	Energol SG-XP 320	Synthetic oil
MRV110 - 150	-5 +40	VG460	Omala OIL 460	Blasia 460	Spartan Ep460	Mobilear 634	Alpha MAX 460	Energol GR-XP 460	Mineral oil
	-15 +25	VG220	Omala OIL 220	Blasia 220	Spartan Ep220	Mobilear 630	Alpha MAX 220	Energol SG-XP 220	

Oil change intervals for standard gear units under normal environmental conditions

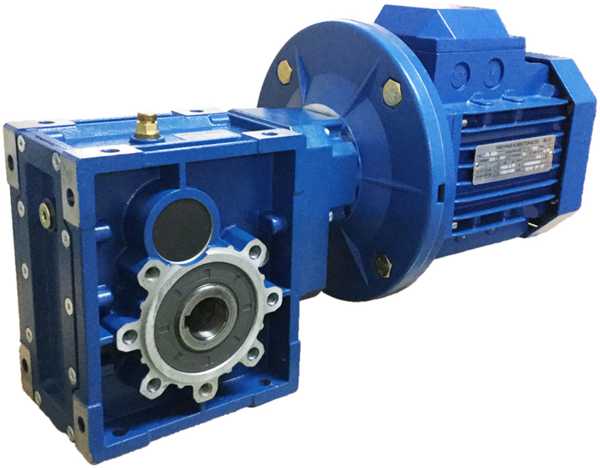


- Average value per oil type at 70℃
  (1) Synthetic oil (2) Mineral oil

Lubricant fill quantity

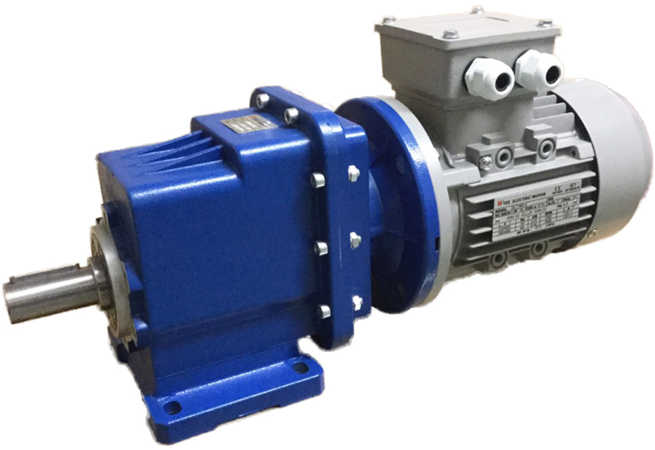
Gear units		Fill quantity in liters (L) B3	B6	B7	B8	V5	V6
MRV	MRV025	0.02					
	MRV030	0.042					
	MRV040	0.081					
	MRV050	0.153					
	MRV063	0.30					
	MRV075	0.58					
	MRV090	1.02					
	MRV110	3.02	2.55		2.25	3.02	
	MRV130	4.55	3.55		3.35	4.55	
	MRV150	7	5.4		5.1	5.4	

WTEX POWER TRANSMISSION

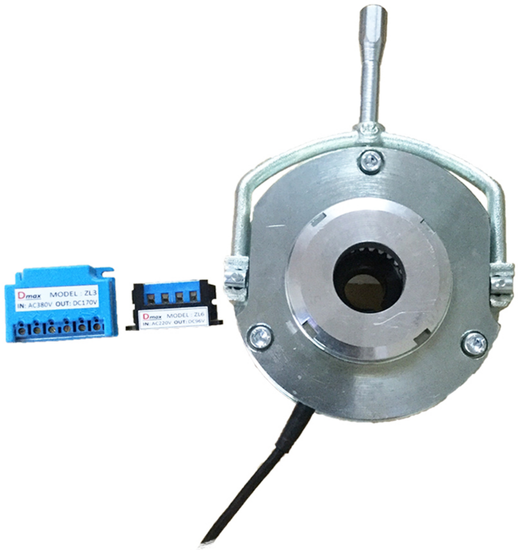


Hypoid Gear Motor

Worm Gear Motor



Helical Gear Motor



Electromagnetic Brake

WTE

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