Mach Motion Products

NMRV Series Worm Drives

Product Overview

Main Materials

Housing:
- Die-cast aluminum alloy (frame size 025 to 090)
- Cast iron (frame size 110 to 150)

Worm:
- 20 Cr
- Carbonized and quencher heat treatment
- Gear surface hardness up to 56 - 62 HRC
- Retains carburation layer thickness between 0.3 and 0.5 mm after precise grinding

Worm Wheel:
- Wearable stannum bronze alloy

Surface Painting

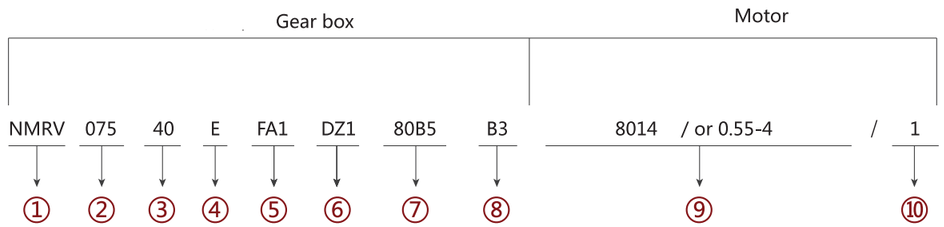
Aluminum Alloy Housing:
- Shot blasting and special antiseptic treatment on the alloy surface
- After phosphating, painted with RAL5010 blue or silvery white paint

Cast Iron Housing:
- Painted with red anti-rust paint base with RAL5010 blue or silvery white paint

7509 S. 5th Street, Suite, 110, Ridgefield, WA 98642 - Email: info@machmo.com - Phone: 360.601.0666

Model Information

NMRV / NRV Worm Geared Motors and Worm Gear Units



Model Number	Model Notes
1	1. RV: Hole input with flange 2. NRV: Shaft input with flange
2	Central distrance of worm gear units (spec)
3	Speed ratio of reducer r (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 unit without output flange 2. FA, FB, FC, FD, 1/2) Output flange and position
6	1. No mark means hole output 2. DZ (1/2): Single output shaft and position 3. SZ: Double output shaft
7	Normalized form of input flange (without motor)
8	Installation position code
9	1. No mark means without motor 2. Model motors (poles of power)
10	Position diagram for motor terminal box is default position 1

Relevant Parameters

Power = P

The parameters can be found in the NMRV gear box rating charts and represent the kw that can be safely transmitted to the gear box, based on input speed (**n1**) and service factor (**fs=1**).

$P_1 = P_2 / \eta$ (kw)

$P_{1n} \geq P_1 * fs$ (kw)

P_1 = Input Power

P_2 = Output Power

P_{1n} = Rated Input Motor Power

fs = Service Factor

η = Transmission Efficiency

Values of η are calculated for gear boxes after a sufficient warm up time to allow for stability of operation. Values of rated torque M_2n listed in this catalog take Transmission Efficiency (η) into consideration.

Transmission Ratio = i

$$i = n_1 / n_2$$

Torque = M

$$M_2 = 9550 \cdot P_1 \cdot \eta / n_2 \text{ (Nm)}$$

$$M_{2n} \geq M_2 \cdot fs \text{ (Nm)}$$

M_2 = Torque

M_{2n} = Rated Output Torque

P_1 = Input Power

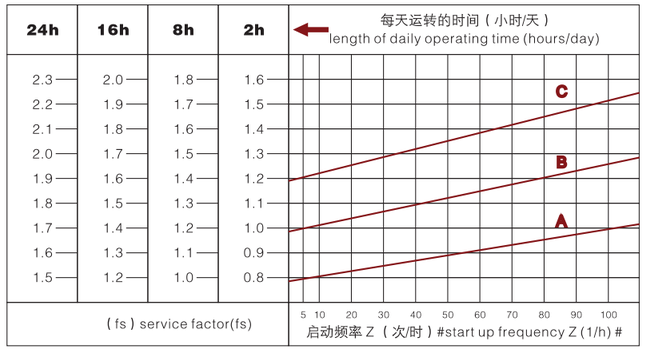
η = Transmission Efficiency

fs = Service Factor

Relevant Parameters

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

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 heavy 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

Relevant Parameters

Mass Acceleration Factors

The mass acceleration factor is calculated as follows :

Fa=Jc/Jm

Fa Mass acceleration factor
Jc All external mass moments of inertia (kgm^2)
Jm Mass moment of inertia on the motor end (kgm^2)
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,the 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. Various transmission elements correspond with the following transmission element factors (fz):

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 then calculated as follows.

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

Fr Resulting radial load（N）
M Torque on the shaft（Nm）
d_0 Mean diameter of the mounted transmis sion element in (mm)
fz Transmission element factor

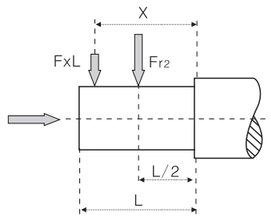
Relevant Parameters

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

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

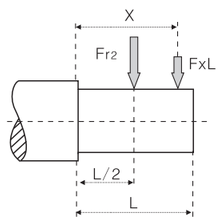
F_{r2} Permitted overhung load(x=L/2)for foot-mounted gear units according to the selection tables in (N)
A,b Gear unit constant for overhung load conversion(mm)
X Distance form the shaft shouldert to the force application point in(mm)
The values of a, b F_{r2} are biven in the following tables:

Out put shafts radial loads



NMRV	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



NMRV	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_{r2} max	210	350	490	700	980	1270	1700	2100	2800

Relevant Parameters

Selection Table

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
	Gear unit type
	Motor type

Selection Example

Gear Motor

Example:The input power of driver machine is 0.5kw, n_1 =1400r/min, uniform, start up frequency 20(1/h),continuous running for 24 hous, the ambient temperature is 32℃,n_2 =93.3r/min,B3 mounted so:

$$i = \frac{n1}{n2} = \frac{1400}{93.3} = 15$$

Check mash table on P19 ,estimate when the i=15, η_d =0.82
Check and adjust the service factor,will get fs=1.53×1.12=1.714
$P_{1n} \geqslant P_2 / \eta_d \cdot fs = 0.5/0.82 \times 1.714 = 1.045(kw)$
Choose type:
NMRV075-15-B3-1.1-4

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

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

Gear Units

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

$$M2n \geqslant M2 \cdot fs = 300 \times 1.32 = 396(Nm)$$

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

Choose type:
NMRV090-40

Relevant Parameters

Effiency & Irreversibility Character

Efficiency is an important parameter of the reducer. Efficiency (η) depends on the following parameters:

1. Helix angle of gearing
2. Driving Speed
3. Breaking in/running in of gearing
4. Performance of oil, oil seal and bearing

The mesh data table on page 21 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 listed in the catalog are calculated by considering the steady state performance of the gear boxes. The actual values mentioned above may vary.

Dynamic Irreversibility

Dynamic irreversibility is achieved when the output shaft stops instantly when the drive is no longer transmitted through the worm shaft. This condition requires a dynamic efficiency of $\eta_d < 0.5$ (see table on page 40).

Static Irreversibility

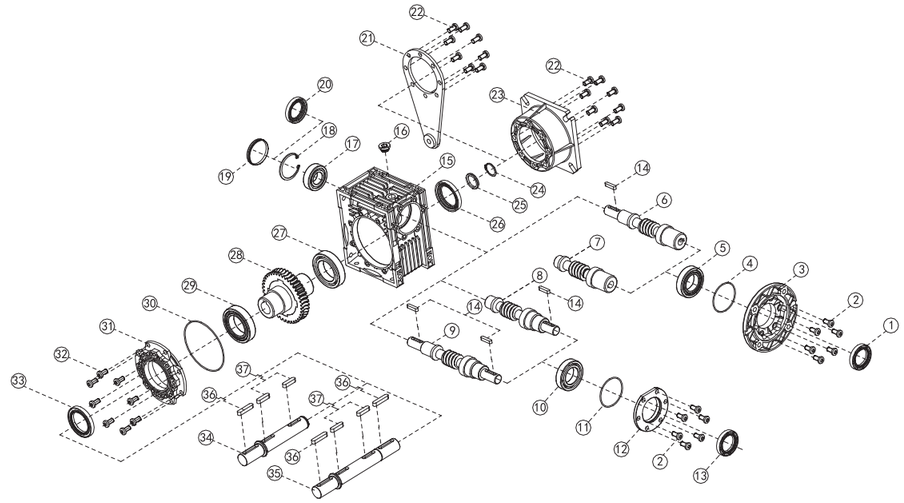
Static irreversibility is achieved when the gear reducer is at a standstill. The application of a load to the output shaft can't drive the worm shaft. This condition requires a static efficiency of $\eta_s < 0.5$ (see table on page 40).

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
Static irreversibility	Static reversibility	Low static reversibility	Static irreversibility

This table shows approximate irreversibility classes. Vibrations and shocks can affect a gear reducer's irreversibility. Because it is virtually impossible to guarantee non-reversing, we recommend the use of an external brake with sufficient capability to prevent vibration induced starting. For the irreversibility conditions of a combined gear unit, one must consider the efficiency of the group is given by the product of the efficiencies of each single reducer: ηtol = η1 X η2 .

NMRV Structure Diagram

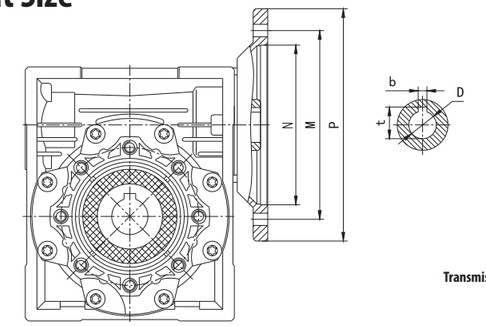


1	Oil seal	11	O-ring	21	Torque arm	31	Bearing support cover
2	Hexgon socket head cap screw	12	Bearing block	22	Hexgon socket head cap screw	32	Hexgon socket head cap screw
3	Flange PAM	13	Oil seal	23	Output flange	33	Oil seal
4	O-ring	14	Parallel key	24	Circlip for shaft	34	Single output shaft
5	Bearing	15	Cablint	25	Washer	35	Double output shaft
6	Double ext. RV Worm	16	Plug cock	26	Oil seal	36	Parallel key
7	PAM worm	17	Bearing	27	Bearing	37	Parallel key
8	RV worm	18	Circlip for hole	28	Worm wheel		
9	Double ext. RV worm	19	Oil seal	29	Bearing		
10	Bearing	20	Oil seal	30	O-ring		

Mesh Data

NRV	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	—	—
	γ	30° 58′	21° 48′	16° 42′	11° 19′	10° 53′	—	5° 43′	5° 29′	4° 34′	3° 23′	—	—
	m	1.25	1.25	1.25	1.25	1	—	1.25	1	0.8	0.65	—	—
	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	1	1	1	1	—
	γ	29° 03′	20° 19′	15° 31′	10° 29′	5° 42′	6° 10′	5° 17′	2° 52′	3° 26′	2° 52′	1° 58′	—
	m	1.5	1.5	1.5	1.5	1	1.75	1.5	1	0.9	0.75	0.55	—
	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
	γ	30° 58′	21° 48′	16° 42′	11° 19′	11° 19′	8° 08′	5° 43′	5° 43′	4° 0.5′	2° 52′	2° 52′	2° 29′
	m	2	2	2	2	1.6	1.25	2	1.6	1.25	1	0.8	0.65
	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	4	4	3	2	2	2	1	1	1	1	1	1
	γ	23° 49′	21° 48′	16° 42′	11° 19′	11° 19′	9° 05′	5° 43′	5° 43′	4° 21′	2° 52′	2° 52′	2° 17′
	m	3.4	2.5	2.5	2.5	2	1.6	2.5	2	1.6	1.25	1	0.8
	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
	γ	—	24° 31′	18° 53′	12° 51′	11° 19′	8° 45′	6° 30′	5° 43′	4° 24′	3° 03′	2° 52′	2° 12′
	m	—	3.25	3.25	3.25	2.5	2	3.25	2.5	2	1.6	1.25	1
	η_d (1400)	—	0.88	0.87	0.83	0.81	0.78	0.74	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
	γ	—	28° 4′	21° 48′	14° 56′	11° 19′	11° 19′	7° 36′	5° 43′	5° 43′	3° 49′	4° 21′	2° 52′
	m	—	4	4	4	3	2.5	4	3	2.5	2	1.6	1.25
	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
	γ	—	28° 04′	26° 34′	18° 26′	14° 02′	11° 19′	9° 28′	7° 08′	5° 43′	4° 46′	3° 53′	2° 52′
	m	—	4.8	5	5	3.75	3	5	3.75	3	2.5	1.9	1.5
	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
	γ	—	28° 46′	22° 22′	15° 21′	14° 20′	14° 02′	7° 49′	7° 17′	7° 08′	5° 48′	4° 54′	3° 37′
	m	—	5.9	5.9	5.9	4.6	3.75	5.9	4.6	3.75	3.15	2.4	1.9
	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
	γ	—	29° 15′	22° 47′	15° 39′	13° 47′	12° 24′	7° 58′	7° 00′	6° 17′	6° 07′	3° 56′	3° 41′
	m	—	7	7	7	5.4	4.4	7	5.4	4.4	3.75	2.75	2.25
	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
	γ	—	29° 37′	24° 41′	15° 52′	12° 56′	11° 19′	9° 56′	6° 34′	5° 43′	5° 00′	3° 45′	2° 52′
	m	—	5.4	6.16	5.4	6.16	5	4.2	6.16	5	4.2	3.15	2.5
	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

NMRV Reducer Input Size

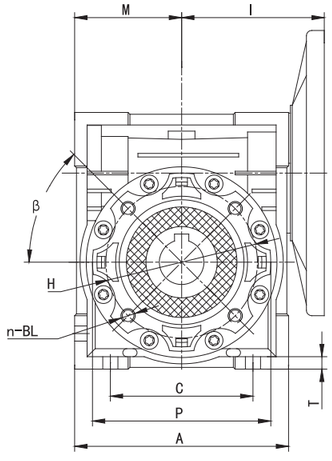


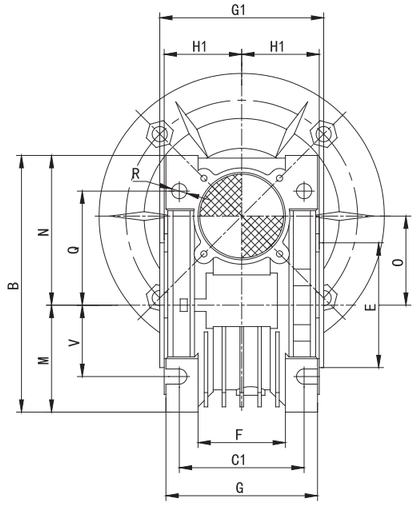
Transmission

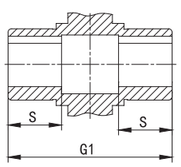
NMRV	IEC Interface				Keyway		Transmission Gear Ratio (i)											
	PAM–IEC	N	M	P	b	t	5	7.5	10	15	20	25	30	40	50	60	80	100
							Aperature (D)											
025	56B14	50	65	80	3	10.4	9	9	9	9	9	/	9	9	9	9	/	/
030	56B14	50	65	80	3	10.4	9	9	9	9	9	9	9	9	9	9	9	/
	56B5	80	100	120														
	63B14	60	75	90	4	12.8	11	11	11	11	11	11	11	11	11	/	/	/
	63B5	95	115	140														
040	56B5	80	100	120	3	10.4	/	/	/	/	/	/	/	/	9	9	9	9
	63B14	60	75	90	4	12.8	11	11	11	11	11	11	11	11	11	11	11	11
	63B5	95	115	140														
	71B14	70	85	105	5	16.3	14	14	14	14	14	14	14	14	/	/	/	/
	71B5	110	130	160														
050	63B5	95	115	140	4	12.8	/	/	/	/	/	/	/	11	11	11	11	11
	71B14	70	85	105	5	16.3	14	14	14	14	14	14	14	14	14	14	14	/
	71B5	110	130	160														
	80B14	80	100	120	6	21.8	19	19	19	19	19	19	19	/	/	/	/	/
	80B5	130	165	200														
063	71B14	70	85	105	5	16.3	/	/	/	/	/	/	/	14	14	14	14	14
	71B5	110	130	160														
	80B14	80	100	120	6	21.8	/	19	19	19	19	19	19	19	19	19	19	19
	80B5	130	165	200														
	90B14	95	115	140	8	27.3	/	24	24	24	24	24	24	/	/	/	/	/
	90B5	130	165	200														
075	71B5	110	130	160	5	16.3	/	/	/	/	/	/	/	/	14	14	14	14
	80B14	80	100	120	6	21.8	/	/	/	/	19	19	19	19	19	19	19	19
	80B5	130	165	200														
	90B14	95	115	140	8	27.3	/	24	24	24	24	24	24	24	/	/	/	/
	90B5	130	165	200														
	100/112B14	110	130	160	8	31.3	/	28	28	28	/	/	/	/	/	/	/	/
	100/112B5	180	215	250														
090	80B14	80	100	120	6	21.8	/	/	/	/	/	/	19	19	19	19	19	19
	80B5	130	165	200														
	90B14	95	115	140	8	27.3	/	/	/	/	/	24	24	24	24	24	/	/
	90B5	130	165	200														
	100/112B14	110	130	160	8	31.3	/	28	28	28	28	28	28	/	/	/	/	/
	100/112B5	180	215	250														
110	80B5	130	165	200	8	21.8	/	/	/	/	/	/	/	/	/	/	19	19
	90B5	130	165	200	8	27.3	/	/	/	/	/	/	24	24	24	24	24	24
	100/112B5	180	215	250	8	31.3	/	28	28	28	28	28	28	28	28	28	/	/
	132B5	230	265	300	10	41.3	/	38	38	38	38	/	/	/	/	/	/	/
130	90B5	130	165	200	8	27.3	/	/	/	/	/	/	/	/	/	/	24	24
	100/112B5	180	215	250	8	31.3	/	/	/	/	/	28	28	28	28	28	28	28
	132B5	230	265	300	10	41.3	/	38	38	38	38	38	38	38	/	/	/	/
150	100/112B5	180	215	250	8	31.3	/	/	/	/	/	/	/	/	28	28	28	28
	132B5	230	265	300	10	41.3	/	/	/	/	38	38	38	38	38	38	/	/
	160B5	250	300	350	12	45.3	/	42	42	42	42	42	/	/	/	/	/	/

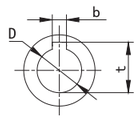
NMRV

RV Size





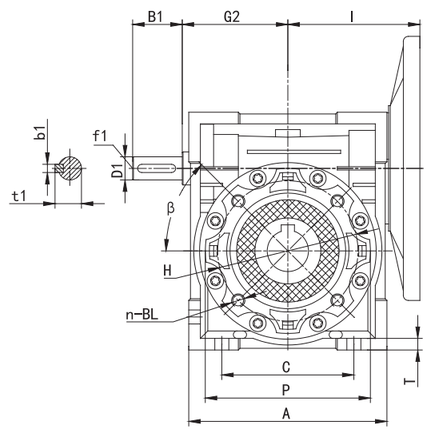


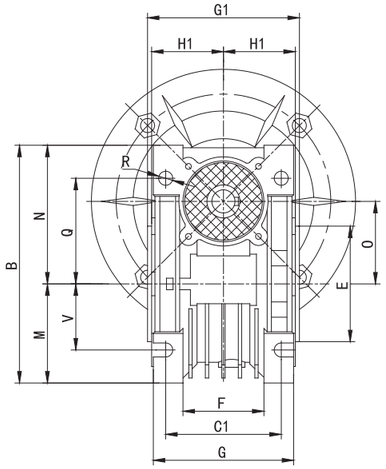


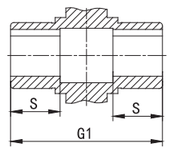
RV	A	B	C	C1	D (F8)	E (h8)	F	G	G1	H	H1	I	M	N	O	P	Q	R	S	T	BL	β	b	t	V
030	80	97	54	44	14	55	32	56	63	65	29	55	40	57	30	75	44	6. 5	21	5. 5	M6X10 (n=4)	0°	5	16. 3	27
040	100	121. 5	70	60	18 (19)	60	43	71	78	75	36. 5	70	50	71. 5	40	87	55	6. 5	26	6. 5	M6X10 (n=4)	45°	6	20. 8 (21. 8)	35
050	120	144	80	70	25 (24)	70	49	85	92	85	43. 5	80	60	84	50	100	64	8. 5	30	7	M8X12 (n=4)	45°	8	28. 3 (27. 3)	40
063	144	174	100	85	25 (28)	80	67	103	112	95	53	95	72	102	63	110	80	8. 5	36	8	M8X12 (n=8)	45°	8	28. 3 (31. 3)	50
075	172	205	120	90	28 (35)	95	72	112	120	115	57	112. 5	86	119	75	140	93	11	40	10	M8X14 (n=8)	45°	8 (10)	31. 3 (38. 3)	60
090	206	238	140	100	35 (38)	110	74	130	140	130	67	129. 5	103	135	90	160	102	13	45	11	M10X16 (n=8)	45°	10	38. 3 (41. 3)	70
110	255	295	170	115	42	130	–	144	155	165	74	160	127. 5	167. 5	110	200	125	14	50	14	M10X18 (n=8)	45°	12	45. 3	85
130	293	335	200	120	45	180	–	155	170	215	81	179	146. 5	188. 5	130	250	140	16	60	15	M12X20 (n=8)	45°	14	48. 8	100
150	340	400	240	145	50	180	–	185	200	215	96	210	170	230	150	250	180	18	72. 5	18	M12X22 (n=8)	45°	14	53. 8	120

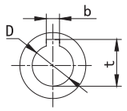
NMRV

RV-E Size





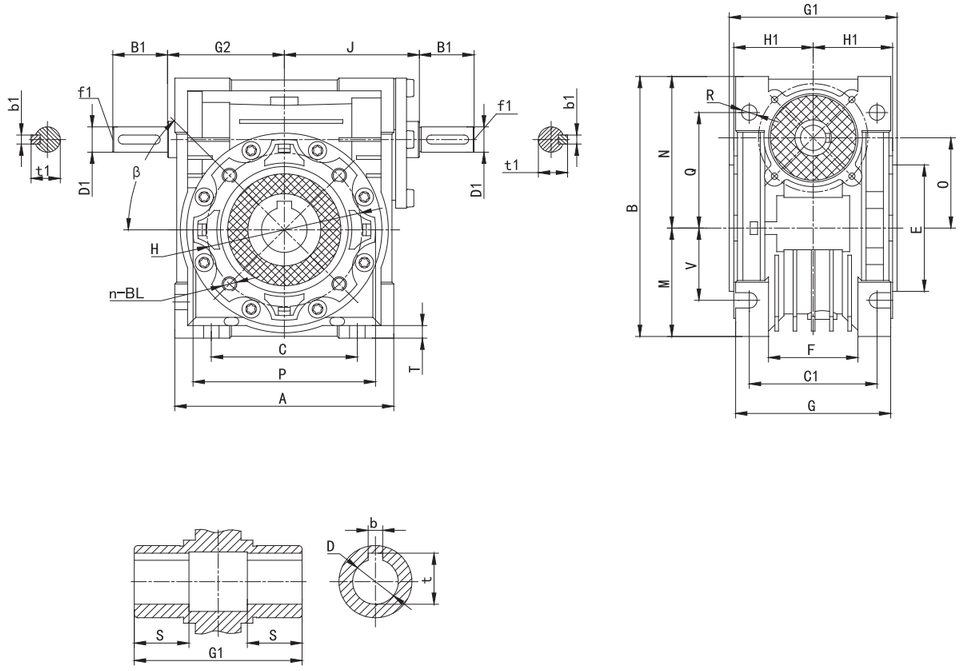




RV-E	A	B	B1	C	C1	D (F8)	D1 (h6)	E (h8)	F	G	G1	G2	H	H1	I	M	N	O	P	Q	R	S	T	BL	β	b	b1	t	t1	f1	V
030	80	97	20	54	44	14	9	55	32	56	63	45	65	29	55	40	57	30	75	44	6. 5	21	5. 5	M6X10 (n=4)	0°	5	3	16. 3	10. 2	–	27
040	100	121. 5	23	70	60	18 (19)	11	60	43	71	78	53	75	36. 5	70	50	71. 5	40	87	55	6. 5	26	6. 5	M6X10 (n=4)	45°	6	4	20. 8 (21. 8)	12. 5	–	35
050	120	144	30	80	70	25 (24)	14	70	49	85	92	64	85	43. 5	80	60	84	50	100	64	8. 5	30	7	M8X12 (n=4)	45°	8	5	28. 3 (27. 3)	16	M6	40
063	144	174	40	100	85	25 (28)	19	80	67	103	112	75	95	53	95	72	102	63	110	80	8. 5	36	8	M8X12 (n=8)	45°	8	6	28. 3 (31. 3)	21. 5	M6	50
075	172	205	50	120	90	28 (35)	24	95	72	112	120	90	115	57	112. 5	86	119	75	140	93	11	40	10	M8X14 (n=8)	45°	8 (10)	8	31. 3 (38. 3)	27	M8	60
090	206	238	50	140	100	35 (38)	24	110	74	130	140	108	130	67	129. 5	103	135	90	160	102	13	45	11	M10X16 (n=8)	45°	10	8	38. 3 (41. 3)	27	M8	70
110	255	295	60	170	115	42	28	130	–	144	155	135	165	74	160	127. 5	167. 5	110	200	125	14	50	14	M10X18 (n=8)	45°	12	8	45. 3	31	M10	85
130	293	335	80	200	120	45	30	180	–	155	170	155	215	81	179	146. 5	188. 5	130	250	140	16	60	15	M12X20 (n=8)	45°	14	8	48. 8	33	M10	100
150	340	400	80	240	145	50	35	180	–	185	200	175	215	96	210	170	230	150	250	180	18	72. 5	18	M12X22 (n=8)	45°	14	10	53. 8	38	M12	120

NMRV

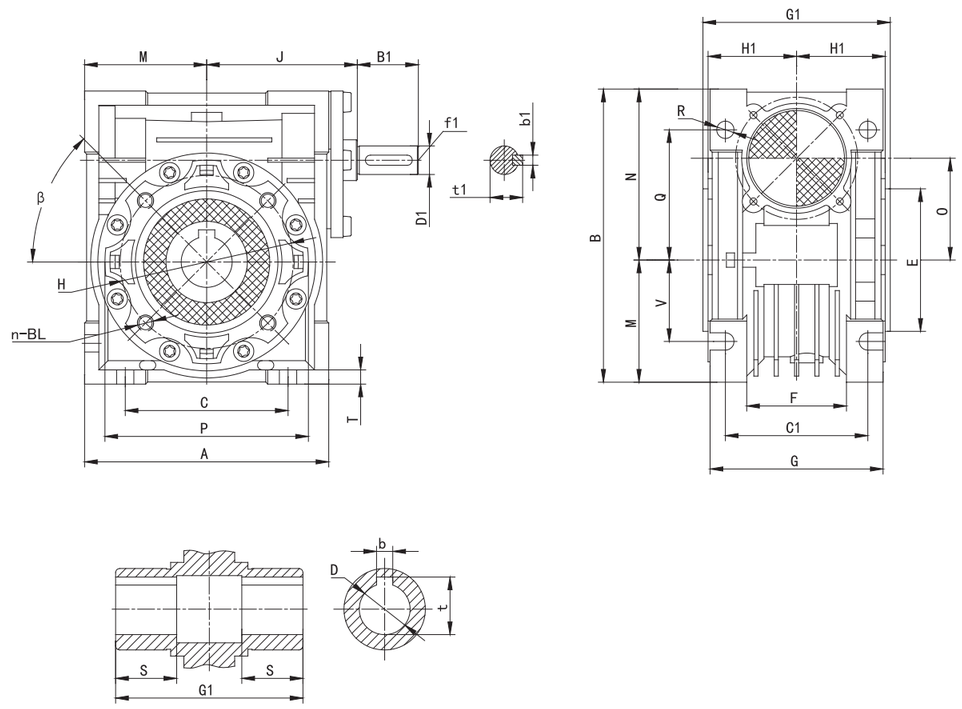
NRV - E Size



NRV-E	A	B	B1	C	C1	D(F8)	D1(h6)	E(h8)	F	G	G1	G2	H	H1	J	M	N	O	P	Q	R	S	T	BL	β	b	b1	t	t1	f1	V
030	80	97	20	54	44	14	9	55	32	56	63	45	65	29	51	40	57	30	75	44	6.5	21	5.5	M6X10(n=4)	0°	5	3	16.3	10.2	–	27
040	100	121.5	23	70	60	18(19)	11	60	43	71	78	53	75	36.5	60	50	71.5	40	87	55	6.5	26	6.5	M6X10(n=4)	45°	6	4	20.8(21.8)	12.5	–	35
050	120	144	30	80	70	25(24)	14	70	49	85	92	64	85	43.5	74	60	84	50	100	64	8.5	30	7	M8X12(n=4)	45°	8	5	28.3(27.3)	16	M6	40
063	144	174	40	100	85	25(28)	19	80	67	103	112	75	95	53	90	72	102	63	110	80	8.5	36	8	M8X12(n=8)	45°	8	6	28.3(31.3)	21.5	M6	50
075	172	205	50	120	90	28(35)	24	95	72	112	120	90	115	57	105	86	119	75	140	93	11	40	10	M8X14(n=8)	45°	8(10)	8	31.3(38.3)	27	M8	60
090	206	238	50	140	100	35(38)	24	110	74	130	140	108	130	67	125	103	135	90	160	102	13	45	11	M10X16(n=8)	45°	10	8	38.3(41.3)	27	M8	70
110	255	295	60	170	115	42	28	130	–	144	155	135	165	74	142	127.5	167.5	110	200	125	14	50	14	M10X18(n=8)	45°	12	8	45.3	31	M10	85
130	293	335	80	200	120	45	30	180	–	155	170	155	215	81	162	146.5	188.5	130	250	140	16	60	15	M12X20(n=8)	45°	14	8	48.8	33	M10	100
150	340	400	80	240	145	50	35	180	–	185	200	175	215	96	195	170	230	150	250	180	18	72.5	18	M12X22(n=8)	45°	14	10	53.8	38	M12	120

NMRV

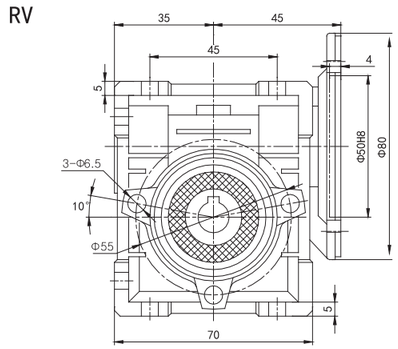
NRV Size



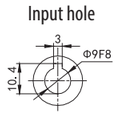
NRV	A	B	B1	C	C1	D(F8)	D1(h6)	E(h8)	F	G	G1	H	H1	J	M	N	O	P	Q	R	S	T	BL	β	b	b1	t	t1	f1	V
030	80	97	20	54	44	14	9	55	32	56	63	65	29	51	40	57	30	75	44	6.5	21	5.5	M6X10(n=4)	0°	5	3	16.3	10.2	–	27
040	100	121.5	23	70	60	18(19)	11	60	43	71	78	75	36.5	60	50	71.5	40	87	55	6.5	26	6.5	M6X10(n=4)	45°	6	4	20.8(21.8)	12.5	–	35
050	120	144	30	80	70	25(24)	14	70	49	85	92	85	43.5	74	60	84	50	100	64	8.5	30	7	M8X12(n=4)	45°	8	5	28.3(27.3)	16	M6	40
063	144	174	40	100	85	25(28)	19	80	67	103	112	95	53	90	72	102	63	110	80	8.5	36	8	M8X12(n=8)	45°	8	6	28.3(31.3)	21.5	M6	50
075	172	205	50	120	90	28(35)	24	95	72	112	120	115	57	105	86	119	75	140	93	11	40	10	M8X14(n=8)	45°	8(10)	8	31.3(38.3)	27	M8	60
090	206	238	50	140	100	35(38)	24	110	74	130	140	130	67	125	103	135	90	160	102	13	45	11	M10X16(n=8)	45°	10	8	38.3(41.3)	27	M8	70
110	255	295	60	170	115	42	28	130	–	144	155	165	74	142	127.5	167.5	110	200	125	14	50	14	M10X18(n=8)	45°	12	8	45.3	31	M10	85
130	293	335	80	200	120	45	30	180	–	155	170	215	81	162	146.5	188.5	130	250	140	16	60	15	M12X20(n=8)	45°	14	8	48.8	33	M10	100
150	340	400	80	240	145	50	35	180	–	185	200	215	96	195	170	230	150	250	180	18	72.5	18	M12X22(n=8)	45°	14	10	53.8	38	M12	120

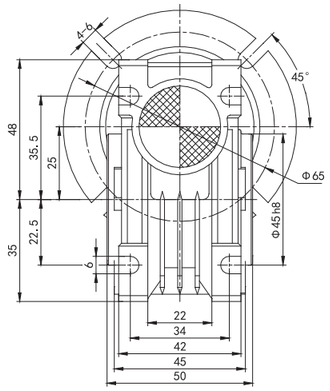
NMRV025 Small Model

RV

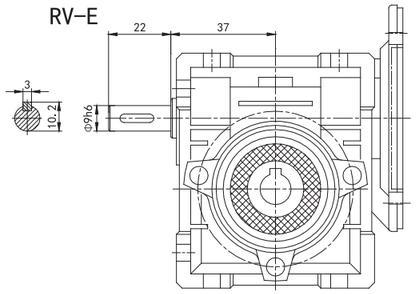


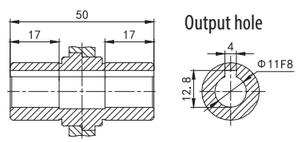
Input hole





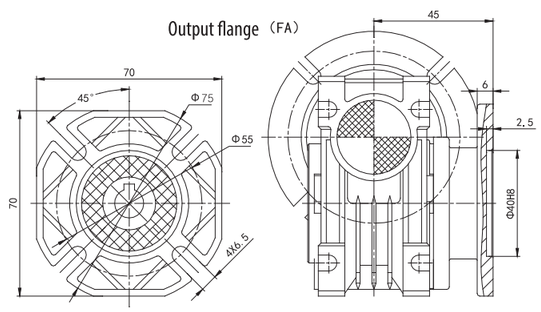
RV-E



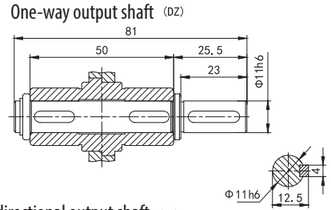


Output hole

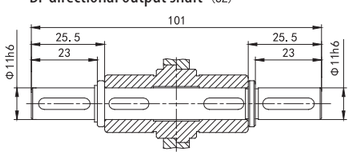
Output flange (FA)



One-way output shaft (DZ)



Bi-directional output shaft (SZ)



Gear Unit Selection Tables

NMRV...IEC Performance Parameters

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
0.06	280	5	1.8	439	6.2	NMRV025 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	NMRV030 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	NMRV025 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	NMRV025 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	NMRV030 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		
	70	40	8.0	948	1.8		
	56	50	9.4	1021	1.4		
	46.7	60	10	1085	1.1		
	35	80	13	1194	0.9		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
0.09	186.7	7.5	3.9	683	4.7	NMRV030 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	NMRV040 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	NMRV025 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	NMRV030 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	NMRV040 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	NMRV050 63B5	6314
	17.5	80	35	3973	1.9		
	14	100	39	4280	1.4		
0.18	373.3	7.5	4.0	542	3.2	NMRV030 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	NMRV030 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		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
0.18	93.3	30	14	1657	2.5	NMRV040 63B5/B14	6312
	70	40	17	1824	1.8		
	56	50	21	1964	1.4		
	70	20	19	1824	2.1	NMRV040 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	NMRV040 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	NMRV050 63B5	6312
	35	80	30	3153	1.5		
	28	100	34	3397	1.2		
	35	40	33	3153	2.3	NMRV050 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	NMRV050 71B5/B14	7116
	15	60	63	4183	1.1		
	11.3	80	75	4604	0.9		
	15	60	66	5467	2.1	NMRV063 71B5/B14	7116
	11.3	80	79	6018	1.6		
	9	100	90	6270	1.4		
0.25	373.3	7.5	5.6	542	2.3	NMRV030 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	NMRV040 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	NMRV040 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		

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
0.25	35	80	42	3153	1.1	NMRV050 63B5/B14	6322
	28	100	48	3397	0.8		
	70	20	27	2503	2.7	NMRV050 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	NMRV050 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	NMRV063 71B5/B14	7114
	23.3	60	63	4719	2.0		
	17.5	80	76	5193	1.6		
	14	100	87	5595	1.4		
	18	50	81	5145	1.8	NMRV063 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	NMRV075 71B5	7114
	14	100	94	6603	1.9		
	11.3	80	117	7103	1.7	NMRV075 71B5	7126
	9	100	133	7380	1.4		
0.37	373.3	7.5	8.3	1044	3.4	NMRV040 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	NMRV040 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	NMRV050 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	NMRV050 71B5/B14	7124
	93.3	15	31	2274	2.4		
	70	20	39	2503	1.9		

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
0.37	56	25	47	2696	1.5	NMRV050 71B5/B14	7124
	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	NMRV050 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		
	30	30	80	3320	1.1		
	35	40	70	4122	2.1	NMRV063 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	NMRV063 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	NMRV075 71B5	7124
	17.5	80	119	6130	1.6		
	14	100	139	6603	1.3		
	18	50	124	6073	1.8	NMRV075 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	NMRV090 80B5/B14	8016
	9	100	212	8180	1.3		
0.55	373.3	7.5	12	1044	2.3	NMRV040 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	NMRV050 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	NMRV050 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		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
0.55	120	7.5	37	2091	2.3	NMRV050 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	NMRV063 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	NMRV063 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	NMRV063 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	NMRV075 71B5	7122
	28	100	116	5241	1.0		
	35	40	108	4865	2.0	NMRV075 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	NMRV075 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	NMRV090 80B5/B14	8014
	14	100	221	7306	1.2		
	18	50	196	6719	2.0	NMRV090 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	NMRV110 80B5	8014
	14	100	236	9232	2.0		
	11.3	80	294	9931	1.9	NMRV110 80B5	8026
	9	100	344	10320	1.5		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
0.75	373.3	7.5	17	1433	3.0	NMRV050 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	NMRV050 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	NMRV063 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	NMRV063 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	NMRV063 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	NMRV075 80B5/B14	8012
	35	80	135	4865	1.0		
	28	100	159	5241	0.8		
	56	25	101	4160	2.0	NMRV075 80B5/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	NMRV075 90B5/B14	90S6
	45	20	124	4474	1.9		
	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	NMRV090 80B5/B14	8012
	28	100	169	5799	1.2		
	28	50	182	5799	1.9	NMRV090 80B5/B14	8024
	23.3	60	209	6163	1.5		
	17.5	80	258	6783	1.1		
	14	100	302	7306	0.9		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
0.75	30	30	179	5667	2.6	NMRV090 90B5B14	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	NMRV110 80B5	8024
	14	100	322	9232	1.5		
	15	60	325	9023	2.1	NMRV110 90B5/B14	90S6
	11.3	80	401	9931	1.4		
	9	100	470	10320	1.1		
	11.3	80	401	12989	2.1	NMRV130 90B5	90S6
	9	100	470	13500	1.7		
1. 1	373.3	7.5	25	1433	2.1	NMRV050 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	NMRV063 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	NMRV063 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	NMRV063 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		
	46.7	30	164	3745	1.0		
	112	25	77	3302	2.0	NMRV075 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	NMRV075 90B5/B14	90L6
	60	15	142	4065	1.7		
	45	20	182	4474	1.3		
	36	25	219	4820	1.0		
	30	30	249	5122	1.0		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
1.1	93.3	15	95	3509	2.1	NMRV075 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	NMRV090 80B5/B14	8022
	28	100	248	5799	0.8		
	36	25	228	5333	1.6	NMRV090 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	NMRV090 90B5/B14	90S4
	28	50	266	5799	1.3		
	23.3	60	306	6163	1.0		
	22.5	40	345	7882	2.3	NMRV110 90B5/B14	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	NMRV110 90B5/B14	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	NMRV130 90B5	90L6
	9	100	689	13500	1.1		
	17.5	80	408	11210	2.1	NMRV130 90B5	90S4
	14	100	480	12076	1.5		
1.5	373.3	7.5	34	1433	1. 5	NMRV050 80B5/B14	8032
	280	10	45	1577	1.2		
	186.7	15	65	1805	0.9		
	186.7	7.5	68	2359	1.9	NMRV063 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	NMRV063 90B5/B14	90S2
	280	10	45	2061	2.2		
	186.7	15	66	2359	1.6	NMRV063 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	NMRV075 100B5/B14	100L6
	90	10	134	3551	1.7		
	60	15	193	4065	1.2		
	56	50	187	4160	1.3	NMRV075 90B5/B14	90S2
	46.7	60	215	4421	1.1		
	140	10	89	3065	2.2	NMRV075 90B5/B14	90L4
	93.3	15	129	3509	1.6		
	70	20	166	3862	1.3		
	56	25	202	4160	1.0		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
1.5	46.7	30	233	4421	1.0	NMRV075 90B5/B14	90L4
	280	10	45	2433	3.2	NMRV075 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	NMRV090 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	NMRV090 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		
	23.3	60	417	6163	0.8		
	56	50	197	4603	1.3	NMRV090 90B5/B14	90S2
	46.7	60	227	4891	1.1		
	45	20	264	6256	2.7	NMRV110 100B5	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	NMRV110 90B5/B14	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	NMRV110 90B5/B14	90S2
	35	80	299	6803	1.3		
	28	100	358	7328	1.0		
	22.5	40	471	10309	2.3	NMRV130 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	NMRV130 90B5	90L4
	14	100	655	12076	1.1		
2. 2	373.3	7.5	51	1873	1.8	NMRV063 90B5/B14	90L2
	280	10	66	2061	1.5		
	186.7	15	97	2359	1.1		
	186.7	7.5	99	2785	1.9	NMRV075 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	NMRV075 90B5/B14	90L2
	280	10	66	2433	2.2		
	186.7	15	97	2785	1.5		
	140	20	126	3065	1.3		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
2. 2	112	25	154	3302	1.0	NMRV075 100B5/B14	90L2
	93.3	30	178	3509	1.0		
	186.7	7.5	100	3081	2.9	NMRV090 100B5/B14	100L1-4
	140	10	132	3391	2.3		
	93.3	15	191	3882	1.9		
	70	20	249	4273	1.4		
	56	25	304	4603	1.1		
	46.7	30	351	4891	1.2		
	120	7.5	154	3570	2.2	NMRV090 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	NMRV090 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	NMRV110 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	NMRV110 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	NMRV110 90B5/B14	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	NMRV130 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	NMRV130 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	NMRV130 90B5	90L2
	28	100	525	9584	1.0		
	28	50	570	13103	2.5	NMRV150 100B5	100L1-4
	23.3	60	657	13924	1.9		
	17.5	80	816	15325	1.4		
	14	100	960	16508	1.0		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (Nm)	fs	Gearbox	Motor
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 132B5	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		
	28	50	778	13103	1.8	NMRV150 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	NMRV075 112B5/B14	112M2
	280	10	120	2433	1.2		
	186.7	7.5	180	2785	1.0	NMRV075 112B5/B14	112M4
	140	10	237	3065	0.8		
	373.3	7.5	93	2446	2.3	NMRV090 112B5/B14	112M2
	280	10	123	2692	1.9		
	186.7	7.5	182	3081	1.6	NMRV090 112B5	112M4
	140	10	240	3391	1.3		
	93.3	15	348	3882	1.0		
	70	20	453	4273	0.8		

Gear Unit Selection Tables

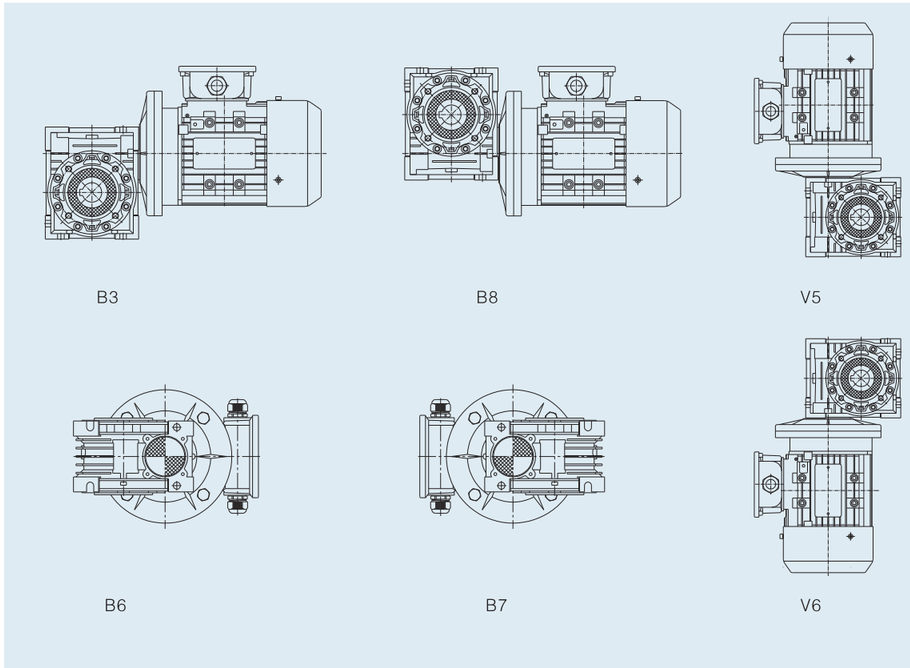
P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox	Motor
4.0	140	10	240	4285	2.5	NMRV110 112B5	112M4
	93.3	15	352	4905	1.9		
	70	20	464	5399	1.4		
	56	25	566	5816	1.2		
	46.7	30	647	6181	1.1		
	120	7.5	280	4511	2.3	NMRV110 132B5	132M1-6
	90	10	369	4965	1.9		
	60	15	535	5684	1.4		
	56	25	573	7607	1.6	NMRV130 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	NMRV130 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	NMRV150 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	NMRV110 132B5	132S4
	140	10	330	4285	1.8		
	93.3	15	484	4905	1.4		
	70	20	638	5399	1.0		
	140	10	334	5605	2.5	NMRV130 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	NMRV150 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	NMRV110 132B5	132M4
	140	10	450	4285	1.3		
	93.3	15	660	4905	1.0		
	186.7	7.5	345	5092	2.2	NMRV130 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	NMRV150 132B5	132M4
	56	25	1074	10400	1.1		

Gear Unit Selection Tables

P_{1n} (kw)	n_2 (r/min)	i	M_{2n} (Nm)	F_{r2} (N)	fs	Gearbox		Motor
7.5	46.7	30	1274	11051	0.9	NMRV150	132B5	132M4
	35	40	1596	12163	1.0			
11	186.7	7.5	512	6962	2.3	NMRV150	160B5	160M4
	140	10	675	7663	1.8			
	93.3	15	990	8771	1.3			
	70.0	20	1291	9654	1.0			
	56.0	25	1576	10400	0.8			
15	186.7	7.5	698	6962	1.7	NMRV150	160B5	160L4
	140	10	921	7663	1.3			
	93.3	15	1351	8771	0.9			
	70.0	20	1760	9654	0.7			

Gear Box Installation Position

NMRV Motor Mounting Position

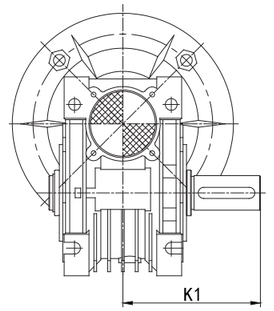


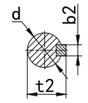
Note: If there are no special instructions, use B3 above for standard installation.

NMRV Accessories Series

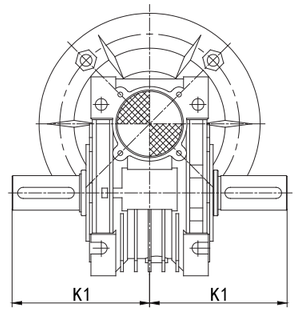
Output Shaft Size

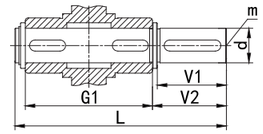
single output shaft

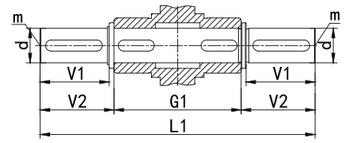




dual output shaft







NMRV	G1	K1	L	L1	b2	t2	d(h6)	m	V1	V2
030	63	64	102	128	5	16	14	M6	30	32.5
040	78	82	128	164	6	20.5	18	M6	40	43
050	92	99.5	153	199	8	28	25	M10	50	53.5
063	112	109.5	173	219	8	28	25	M10	50	53.5
075	120	123.5	192	247	8	31	28	M10	60	63.5
090	140	154.5	234	309	10	38	35	M12	80	84.5
110	155	162	249	324	12	45	42	M16	80	84.5
130	170	170	265	340	14	48.5	45	M16	80	85
150	200	187	297	374	14	53.5	50	M16	82	87

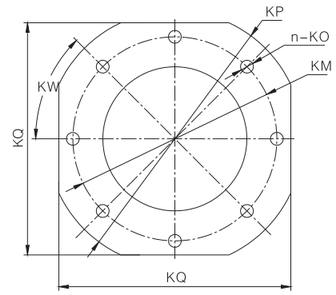
NMRV Accessories Series

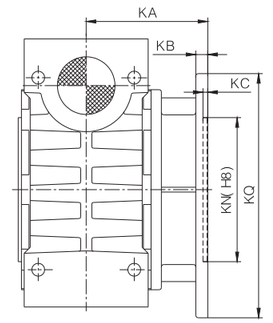
Output Flange Dimensions (F)

NMRV

NMRV Accessories Series

Output Flange Dimensions (F)

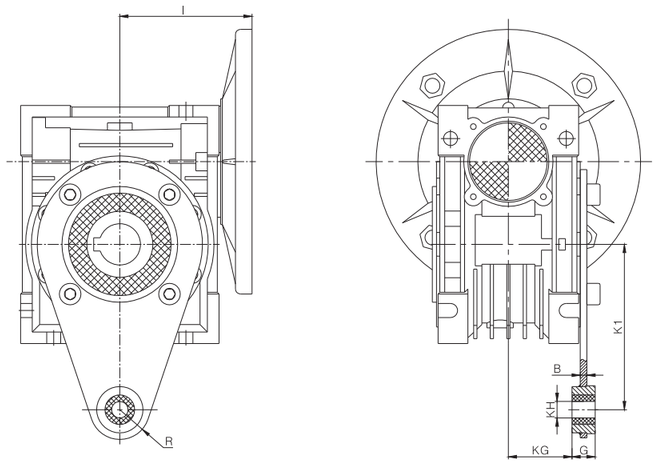




NMRV		030	040	050	063	075	090	110	130	150
FA	KA	54.5	67	90	82	111	111	139	152	155
	KB	6	7	9	10	13	13	15	15	15
	KC	4	4	5	6	6	6	6	6	6
	KN	50	60	70	115	130	152	170	180	180
	KM	68	75	85	150	165	175	230	255	255
	KO	6.5(n=4)	9(n=4)	11(n=4)	11(n=4)	14(n=4)	14(n=4)	14(n=8)	16(n=8)	16(n=8)
	KP	80	110	125	180	200	210	280	320	320
	KQ	70	95	110	142	170	200	260	290	290
	KW	45°	45°	45°	45°	45°	45°	45°	45°	22.5°
FB	KA	–	97	120	112	–	122	–	–	–
	KB	–	7	9	10	–	18	–	–	–
	KC	–	4	5	6	–	6	–	–	–
	KN	–	60	70	115	–	180	–	–	–
	KM	–	75	85	150	–	215	–	–	–
	KO	–	9(n=4)	11(n=4)	11(n=4)	–	14(n=4)	–	–	–
	KP	–	110	125	180	–	250	–	–	–
	KQ	–	95	110	142	–	–	–	–	–
	KW	–	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°	–	–	–
FD	KA	–	58	72	107	–	151	–	–	–
	KB	–	12	14.5	10	–	13	–	–	–
	KC	–	5	5	5	–	6	–	–	–
	KN	–	80	95	130	–	152	–	–	–
	KM	–	100	115	165	–	175	–	–	–
	KO	–	9(n=4)	11(n=4)	11(n=4)	–	14(n=4)	–	–	–
	KP	–	120	140	200	–	210	–	–	–
	KW	–	45°	45°	45°	–	45°	–	–	–
FE	KA	–	–	–	80.5	–	–	–	–	–
	KB	–	–	–	16.5	–	–	–	–	–
	KC	–	–	–	5	–	–	–	–	–
	KN	–	–	–	110	–	–	–	–	–
	KM	–	–	–	130	–	–	–	–	–
	KO	–	–	–	11(n=4)	–	–	–	–	–
	KP	–	–	–	160	–	–	–	–	–
	KW	–	–	–	45°	–	–	–	–	–

NMRV Accessories Series

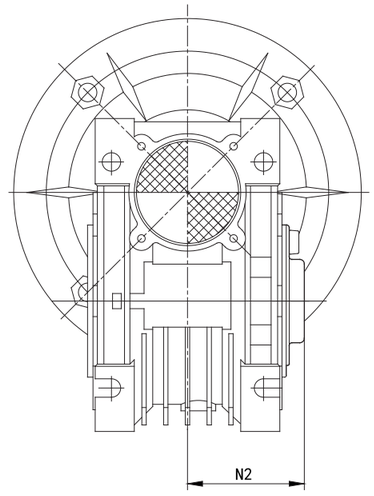
Torque Arm (A) Size



NMRV	B	I	K1	G	KG	KH	R
025	4	45	70	14	17.5	8	15
030	4	55	85	14	24	8	15
040	4	70	100	14	31.5	10	18
050	4	80	100	14	38.5	10	18
063	6	95	150	14	49	10	18
075	6	112.5	200	25	47.5	20	30
090	6	129.5	200	25	57.5	20	30
110	6	160	250	30	62	25	35
130	6	179	250	30	69	25	35
150	8	210	250	30	84	25	35

NMRV Accessories Series

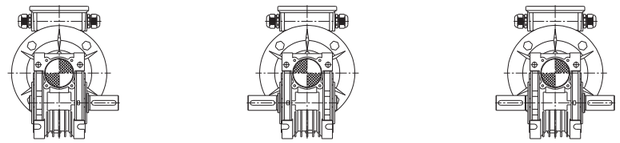
Dust Cover Size



NMRV	N2
030	42
040	50
050	58
063	69
075	74
090	85
110	94
130	102
150	117

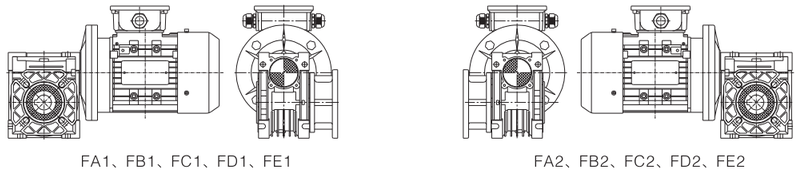
Accessories Installation Positions

Output Shaft Position



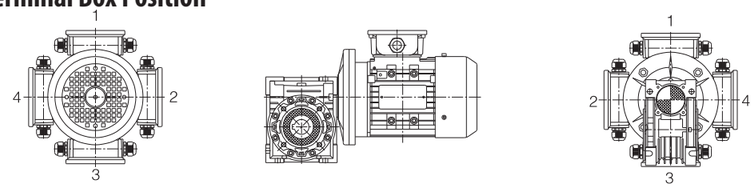
Note: If there are no special instructions, default position will be as shown in figure DZ1 and B3, mounted with respect to the combination of available styles.

Output Flange Position



Note: If there are no special instructions, default position will be as shown in figure F...1 and B3, mounted with respect to the combination of available styles.

Motor Terminal Box Position

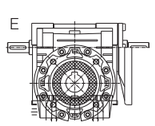


Note: If the motor terminal box position has special requirements, position charts for terminal box or junction box range are provided at the time of order for reference.

Torque Arm (A) Position

Note: If there are no special instructions, default position will be as shown in figure A1 and B3, mounted with respect to the combination of available styles.

Tail Shaft (E) Position



Installation

Critical Applications

The performances listed in the catalog correspond to mounting position B3 or similar, which means the first stage is not entirely immersed in oil. For other mounting positions and particular input speeds, refer to the tables that highlight different critical situations for each size of reduction unit. Contact our technical service if using product in the following scenarios:

1. Speed increases.
2. Applications with especially high inertia.
3. Use at a lifting winch (Note: think about irreversibility).
4. Use in environments that could become hazardous if reduction unit fails.
5. Applications with high dynamic strain on the reduction unit's case.
6. In places with temperatures under -5º C (23º F) and over 40º C (104º F).
7. Use in salty, chemically aggressive or radioactive environments.
8. Use in pressurized environments (other than atmospheric pressure).
9. Mounting positions not listed in catalog.

Avoid applications where even partial immersion of the reduction unit is required. The maximum torque that the gear reducer can support must not exceed two times the nominal torque (fs=1) stated in the performance tables. Intended for temporary overloads due to starting at full load, braking, shocks or other causes, particularly those that are dynamic.

Recommendations for Reduction Unit Installation:

1. Check the correct direction of the reduction unit output shaft before fitting unit to the machine.
2. Before mounting with the primary mover and device, check that the reducer's axial diameters, aperature, keys and key slots are adjusted correctly.
3. Avoid assembling the unit too tightly or loosely, as doing so will lower the reducer's perfomance.
4. Protect the reduction unit from solar radiation and bad weather, whenever possible.
5. In case of lengthy storage times (4-6 months), make sure that the oil seal is immersed in the lubricant inside the unit. It is recommended to change out the lubricant to avoid loss of elasticity in the rubber that is needed for the unit to function properly and avoid sticking to the shaft.
6. Do not paint over any rubber parts or holes on the breather plugs.
7. When connecting with a hollow or solid shaft, make sure to grease the joint to avoid locking or oxidation.
8. Check the level of lubricant through the indicator on part, if model has one.
9. Begin work gradually, without immediately applying maximum load.
10. Supporting the unit is required when using reducer matched with motor directly with enough air ventilation from fan side.
11. Good ventilation must be maintained near the motor's fan to maintain adequate cooling.
12. Contact our technical service for use in environments with temperatures under -5º C (23º F) and over 40º C (104º F).

UDL Installation Usage & Maintenance

1. Shaft extensions are all cylindrical in shape, subject to GB1569-1990, cylindrical shaft extension. The key joint refers to GB1095-2003, ordinary flat key.
2. Shaft lines should be kept concentric when the coupling is connected with a motor. Installation errors should be no more than the tolerance value of the coupling.
3. Output shaft and coupling (or belt wheel) should be installed by pressing into the screw hole on the shaft's end, or assembled by heating. Do not hammer on unit!
4. Do not use mechanical stepless variator in situations where wheel overload or running blockage could occur.
5. Speed is regulated by product use - do not turn the hand wheel of speed regulation when machine stops!
6. Speed regulation limit screws are already adjusted and located under the ends of the operating box - do not touch them!
7. This set is not suitable to work in environments over 40° C (104° F), particularly anything over 45° C (113° F) when the environment's temperature rises.

   NOTE: If a 4-pole motor is used for the speed variator, the temperature under running-in (empty running) at 40-50° C (104-122° F) is higher than that of normal working conditions. After running-in up to 60-80 hours, the temperature increase will gradually decrease. From that time on, temperature will be 20° C (68°F) higher than the environment and temperature will continue to rise gradually. High temperatures rising as a result of running the unit will affect normal working conditions but will not affect the service life of the unit.
8. Liquid lubricating oil is used for the speed variator. It's trademark is Ub-3x. Check oil level prior to every use.
9. Machine is filled with lubricating oil upon leaving the factory. After the first 2000 work hours, lubricating oil should be replaced and then changed every 5000 hours of subsequent use.
10. Lubricating oil level inside speed variator should be kept at at least 2/3 full and oil levels checked on a regular basis. Do not operate unit when it is low on lubricating oil! The air screw nut on the operating box is installed to prevent loss of oil while packaging and should be loosened when unit is operating. Do not operate machine before loosening screw!

Lubrication

1. In case of ambient temperatures not listed in the below table, contact our Technical Service for assistance. In cases of temperatures of -30° C (-22° F) or over 60° C (140° F), it is necessary to use oil seals with special material.
2. For operating ranges with temperatures under 0° C (32° F), proceed as follows:
   a. Motors need to be suitable for operation at the working temperature.
   b. In case of reduction units with a cast iron case, monitor input loads as cast iron may become fragine at temperatures under -15° C (5° F).
   c. Be sure to run unit under no load when it is early in the part's service life. This will help decrease any lubrication problems that occur due to the oil's high viscosity.
3. Oil needs to be changed after approximately 10,000 hours, depending on the type of service and environment in use.
4. Reduction unit sizes NMRV025, 030, 040, 050, 063, 075 and 090 are supplied with lubricant and can be mounted in any position shown in this catalog. Please call our Technical Service for assistance with size V5/V6 to assess the conditions of use.
5. Reduction unit sizes 110 and 130 are supplied complete with lubricant and mineral oil (Shell Tevala Oil 320).
6. The variator speeds are supplied complete with lubricant and mineral oil (Ub-3x).
7. For sizes 110 and 130, be sure to specify the position used, otherwise the reduction units are supplied with the quantity of oil as shown in position B3.
8. The NMRV series worm gear box should mount an optional breather plug under special working conditions.
9. PC is supplied complete with lift-long lubricant, synthetic oil (Shell Tevela Oil 320) and can therefore be mounted in all positions.

Lubricants / Oils Chosen Table

	°C −50 0 50 +100	ISO	SHELL	AGIP	ESSO	MOBIL	CASTROL	BP	广研	
NMRV025~090 PC063~090	−25 +50	VG320	Tivela OIL S320	Telium VSF320	S220	Glygoyle 30	Alphasyn Pg320	Energol SG-XP320		合成油 Synthetic oil
NMRV110~150	−5 +40	VG460	Omala OIL460	Blasia 460	Spartan Ep460	Mobilgear 634	Alpha MAX 460	Energol GR-XP460	CKE460	矿物油 Mineral oil
	−15 +25	VG220	Omala OIL220	Blasia 220	Spartan Ep220	Mobilgear 630	Alpha MAX 220	Energol GR-XP220		
UDL	−25 +40	Vg32	A.T.F.DXRON	A.T.F.DXRON	A.T.F.DXRON	A.T.F.220	TQ.DXRONⅡ	Autran DX	Ub-3x	矿物油 Mineral oil

Lubricant Fill Quantity

Model/Installation Orientation	B3	BB	B6, B7	V5, VB
NMRV025	0.02			
NMRV030	0.04			
NMRV040	0.075			
NMRV050	0.15			
NMRV063	0.30			
NMRV075	0.6			
NMRV090	1			
NMRV110	2.5	2	2	2.5 2
NMRV130	3.5	3	3	3.5 3
NMRV150	7	5.1	5.4	7 5
PC063	0.05			
PC071	0.07			
PC080	0.15			
PC090	0.16			

Model/Installation Orientation	B3, B5	V3, VB	V1, V5
UDL002	0.13		0.4
UDL005	0.23		0.45
UDL010	0.33	0.43	1
UD020	0.8		1
UD030S/L	1.2		1.2

Fill quantity in table is the exact value relating to the ratio and mounting positions.

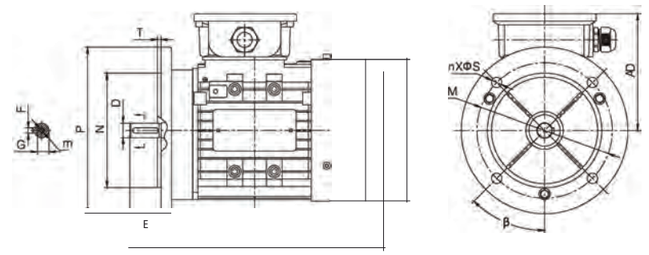
Notice For Ordering

Please refer to enclosed performance parameters, NMRV series dimensions, mounting and operation position diagrams to help choose the appropriate model for your project. After determining which model to use, have the following information available when ordering:

- Model and required revolution scope/speed range
- Output torque and structural form
- Specify if there is a motor you will be using when placing your order

The installation orientation selected when ordering should be consistent with the cosen installation method to avoid oil leakage and affect service life of the unit. If you have special requirements or use other motors other than what is listed in this catalog, make sure to note them.

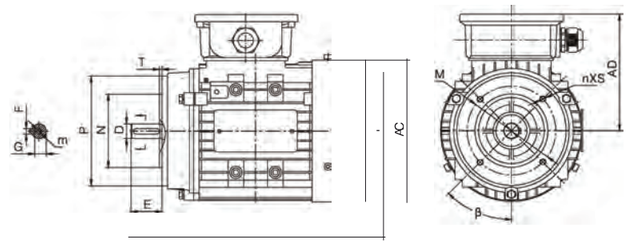
Standard Motor External Reference Dimensions



B5 Mounting Position

Frame Size	Motor Power 2P	4P	6P (Motor Poles (KW))	Dimensions AC	AD	L	p	Mounted Size N	T	M	S	β	Shaft Extension E	F	D	G	m
56	0.09 0.12	0.06 0.09		113	96	199	120	80	3.0	100	7(n=4)	45°	20	3	9	7.2	M4X12
63	0.18 0.25	0.12 0.18	0.09 0.12	120	102	217	140	95		115	10(n=4)		23	4	11	8.5	
71	0.37 0.55	0.25 0.37	0.18 0.25	136	109	245	160	110		130			30	5	14	11	M5X12
80	0.75 1.10	0.55 0.75	0.37 0.55	155	124	287	200	130	3.5	165	12(n=4)		40	6	19	15.5	M6X16
90S	1.5	1.1	0.75	175	137	310							50	8	24	20	M8X19
90L	2.2	1.5	1.1			335											
100L	3	2.2 3.0	1.5	195	151	383	250	180	4.0	215	15(n=4)		60		28	24	M10X22
112M	4	4.0	2.2	219	169	401											
132S	5.5 7.5	5.5	3.0	258	188	475	300	230		265			80	10	38	33	M12X28
132M		7.5	4.0 5.5			513											
160M	11 15	11	7.5	315	242	609	350	250	5.0	300	19(n=4)		110	12	42	37	M16X36
160L	18.5	15	11			653											

Lorem ipsum



B14 Mounting Position

Frame Size	Motor Power 2P	4P	6P (Motor Poles (KW))	Dimensions AC	AD	L	p	Mounted Size N	T	M	S	β	Shaft Extension E	F	D	G	m
56	0.09 0.12	0.06 0.09		113	96	199	80	50	2.5	65	M5(n=4)	45°	20	3	9	7.2	M4X12
63	0.18 0.25	0.12 0.18	0.9 0.12	120	102	217	90	60		75			23	4	11	8.5	
71	0.37 0.55	0.25 0.37	0.18 0.25	136	109	245	105	70		85	M6(n=4)		30	5	14	11	M5X12
80	0.75 1.10	0.55 0.75	0.3 0.55	155	124	287	120	80	3.0	100			40	6	19	15.5	M6X16
90S	1.5	1.1	0.75	175	137	310	140	95		115	M8(n=4)		50	8	24	20	M8X19
90L	2.2	1.5	1.1			335											
100L	3	2.2 3.0	1.5	195	151	383	160	110	3.5	130			60		28	24	M10X22
112M	4	4.0	2.2	219	169	401											
132S	5.5 7.5	5.5	3.0	258	188	475	200	130		165	M10(n=4)		80	10	38	33	M12X28
132M		7.5	4.0 5.5			513											
160M	11 15	11	7.5	315	242	609	250	180	4.0	215	M12(n=4)		110	12	42	37	M16X36
160L	18.5	15	11			653											