



SPEED REDUCER



Machining equipment

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NMRV025~150



NRV030~150



NMRV-NMRV...



NRV-NMRV...



UDL.B3



UDL-NMRV...



NMRV025~150



NRV030~150

STRUCTURE FEATURES

- 1、 Made of high-quality aluminum alloy, light in weight and non-rusting.
- 2、 Large in output torque.
- 3、 Smooth in running and low in noise, can work long time in dreadful conditions.
- 4、 High in radiating efficiency.
- 5、 Good-looking in appearance, durable in service life and small in volume.
- 6、 Suitable for omnibearing installation.

MAIN MATERIALS

- 1、 Housing: die-cast aluminum alloy (frame size: 025 to 090); cast iron (frame size: 110 to 150).
- 2、 Worm: 20CrMnTi, carbonize heat treatment make the hardness of gear's surface up to 56-62 HRC, retain carburization layer's thickness between 0.3 and 0.5mm after precise grinding.
- 3、 Worm wheel: wearable stannum bronze alloy.

SURFACE PAINTING

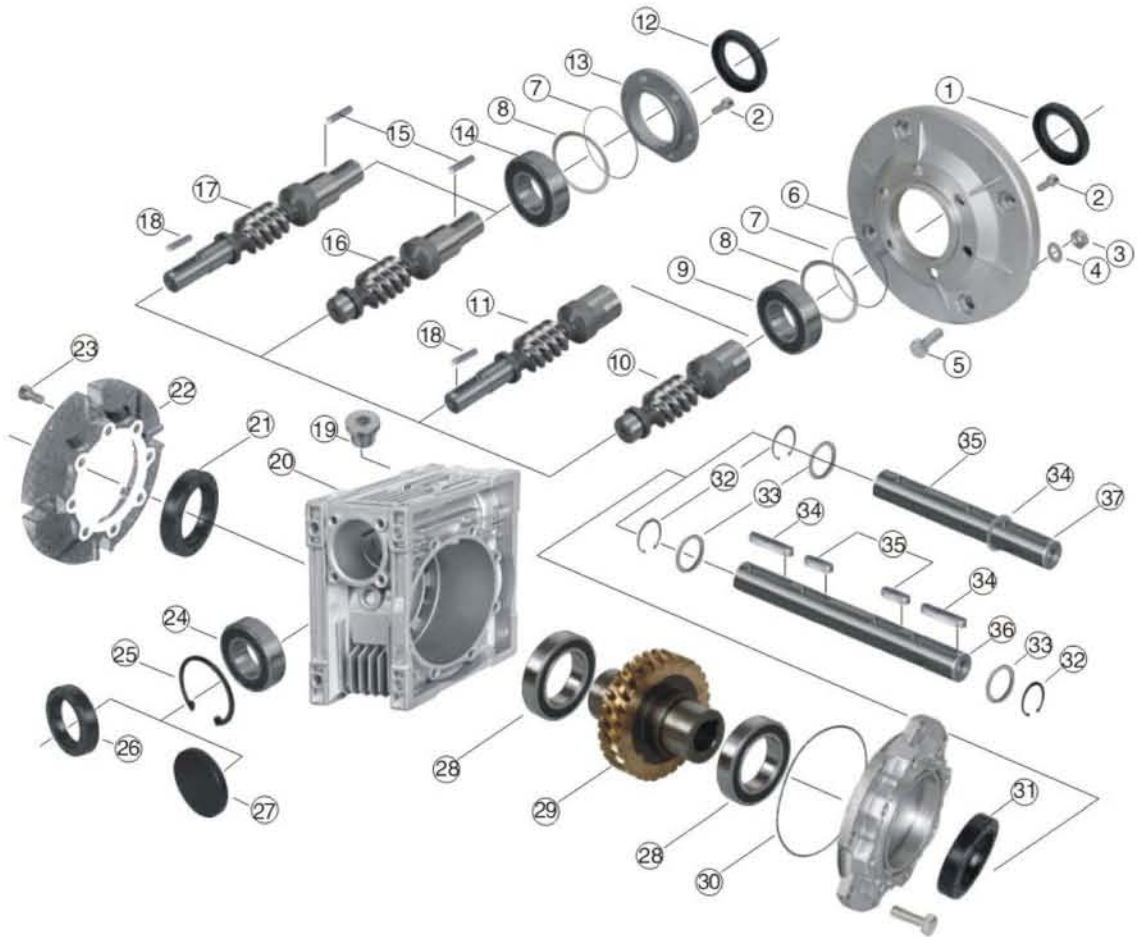
Aluminum alloy housing:

- 1、 Shot blasting and special antiseptic treatment on the aluminum alloy surface.
- 2、 After phosphating, paint with RAL5010 blue or silvery white paint.

Cast iron housing:

First paint with red antirust paint, then paint with RAL5010 blue or silvery white paint.

SPEED REDUCER



- 1、 Oil seal
- 2、 Inner hex screw
- 3、 Nut
- 4、 Spring washer
- 5、 Hex screw
- 6、 Input flange
- 7、 O-Ring
- 8、 Adjust spacer
- 9、 Bearing
- 10、 Hole input worm
- 11、 Hole input and shaft output worm
- 12、 Oil seal
- 13、 Input cover
- 14、 Bearing
- 15、 Key
- 16、 Shaft input worm
- 17、 Shaft input and shaft output worm
- 18、 Key

- 19、 Oil plug
- 20、 Casing
- 21、 Oil seal
- 22、 Output flange
- 23、 Inner hex screw
- 24、 Bearing
- 25、 Hole-circlip
- 26、 Oil seal
- 27、 Cover
- 28、 Bearing
- 29、 Worm wheel
- 30、 O-Ring
- 31、 Output cover
- 32、 Shaft-circlip
- 33、 Spacer
- 34、 Key
- 35、 Key
- 36、 Double output shaft
- 37、 Single output shaft

NMRV 063-40-E-FA1-AS1 71B5 B3-7124 /or0.37-4/1

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

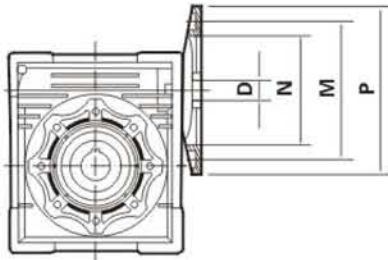
NO	Comments
1	Model code 1). NMRV :Hole input with flange 2). NRV :Shaft input without flange
2	Central distance of worm gear units(spec)
3	Speed ratio of reducer (I=7.5;10;15;20;25;30;40;50;60;80;100)
4	1) .No mark means single extension worm shaft 2) .E : Double extension worm shaft
5	1) .No mark means without output flange 2) .FA,FB,FC,FD,FE(1/2) :output flange and position
6	1) .No mark means hole output 2) .AS (1/2) : Single output shaft and position 3) .AB : 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 default position 1 can be no mention



NMRV



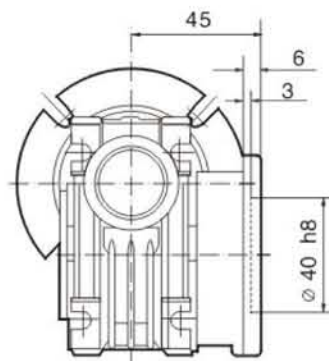
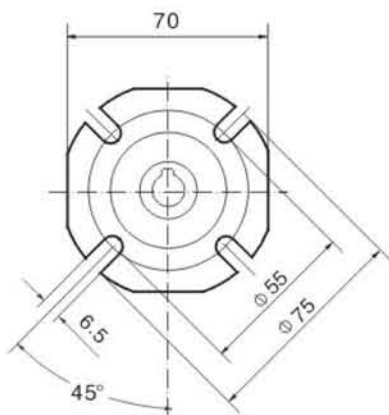
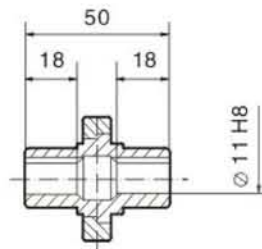
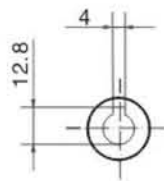
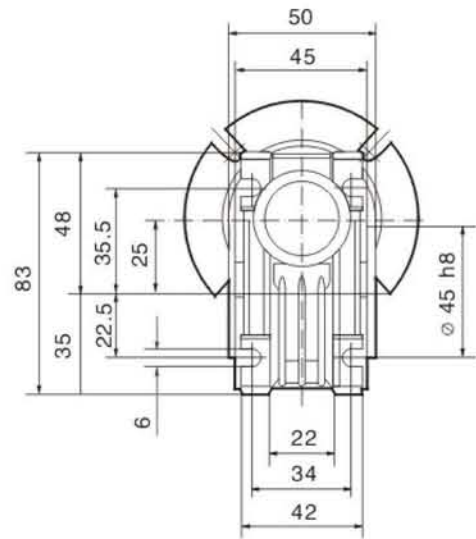
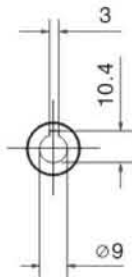
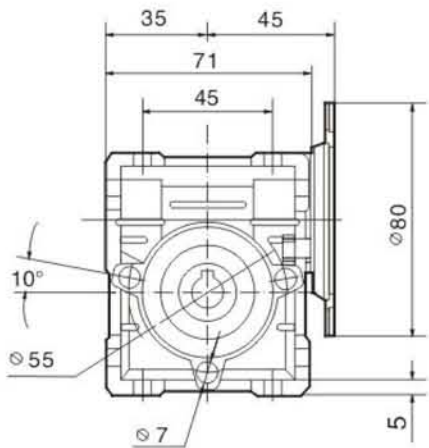
NRV



*If you want special key , please call our Technical Service

	Motor flange				D The hole diameter of input shaft												
	PAM IEC	P	M	N	Transmission ratio												
					7.5	10	15	20	25	30	40	50	60	80	100		
NMRV025	56B14	80	65	50	9	9	9	9	9	9	9	9	9				
NMRV030	63B5	140	115	95	11	11	11	11	11	11	11	11					
	63B14	90	75	60													
	56B5	120	100	80	9	9	9	9	9	9	9	9	9	9	9		
	56B14	80	65	50													
NMRV040	71B5	160	130	110	14	14	14	14	14	14	14						
	71B14	105	85	70													
	63B5	140	115	95	11	11	11	11	11	11	11	11	11	11	11	11	11
	63B14	90	75	60													
	56B5	120	100	80									9	9	9	9	9
NMRV050	80B5	200	165	130	19	19	19	19	19	19							
	80B14	120	100	80													
	71B5	160	130	110	14	14	14	14	14	14	14	14	14	14	14		
	71B14	105	85	70													
	63B5	140	115	95									11	11	11	11	11
NMRV063	90B5	200	165	130	24	24	24	24	24	24	24						
	90B14	140	115	95													
	80B5	200	165	130	19	19	19	19	19	19	19	19	19	19	19		
	80B14	120	100	80													
	71B5	160	130	110								14	14	14	14	14	14
	71B14	105	85	70													
NMRV075	100/112B5	250	215	180	28	28	28										
	110/112B14	160	130	110													
	90B5	200	165	130	24	24	24	24	24	24	24						
	90B14	140	115	95													
	80B5	200	165	130				19	19	19	19	19	19	19	19	19	19
	80B14	120	100	80													
	71B5	160	130	110								14	14	14	14	14	14
NMRV090	100/112B5	250	215	180	28	28	28	28	28	28							
	110/112B14	160	130	110													
	90B5	200	165	130	24	24	24	24	24	24	24	24	24				
	90B14	140	115	95													
	80B5	200	165	130							19	19	19	19	19	19	19
	80B14	120	100	80													
NMRV110	132B5	300	265	230	38*	38*	38*	38*									
	110/112B5	250	215	180	28	28	28	28	28	28	28	28	28				
	90B5	200	165	130					24	24	24	24	24	24	24	24	24
	80B5	200	165	130												19	19
NMRV130	132B5	300	265	230	38*	38*	38*	38*	38*	38*	38*						
	100/112B5	250	215	180					28	28	28	28	28	28	28	28	28
	90B5	200	165	130											24	24	24
NMRV150	160B5	350	320	250	42	42	42	42	42								
	132B5	300	265	230				38	38	38	38	38	38	38			
	100/112B5	250	215	180									28	28	28	28	28

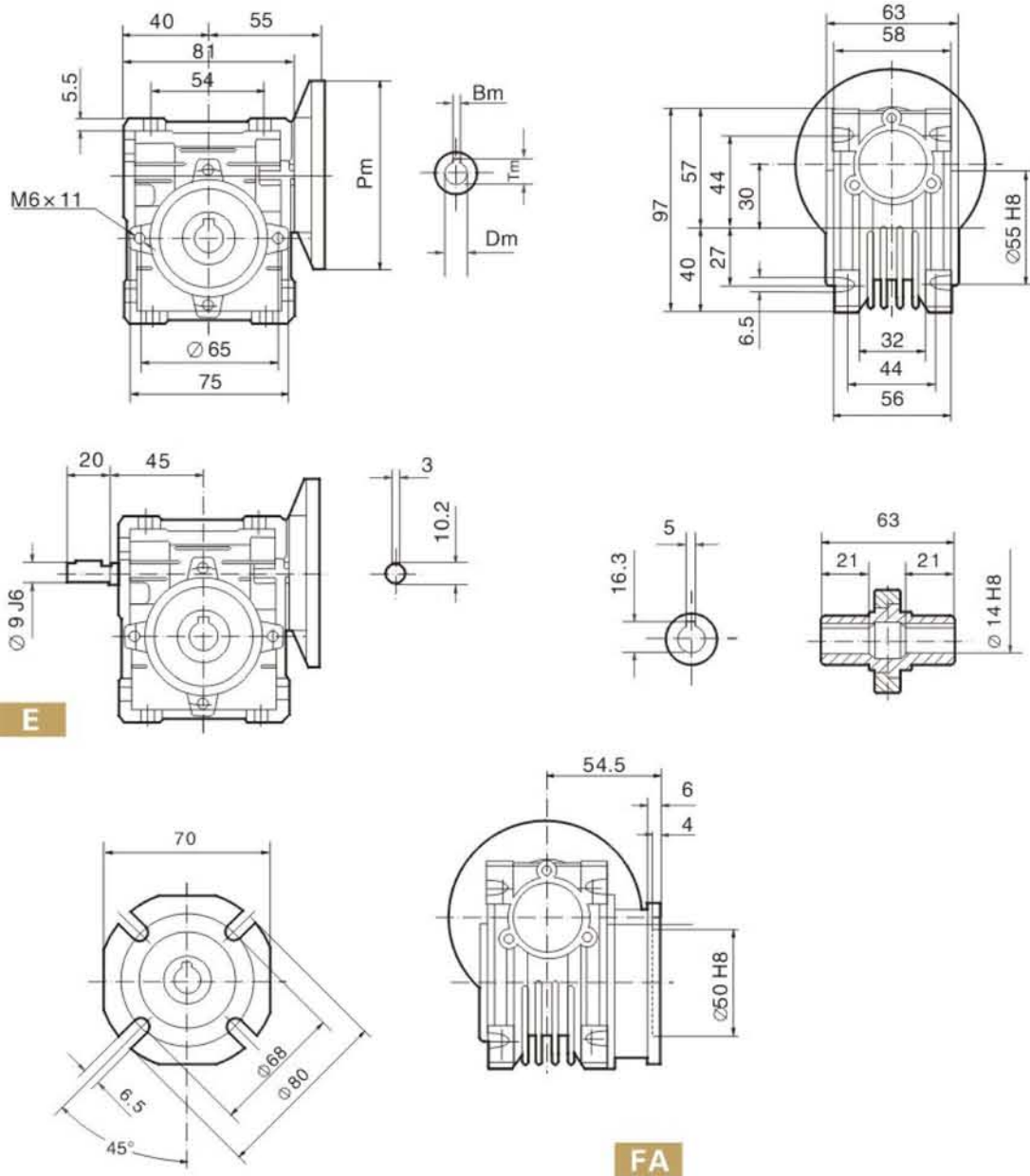
NMRV025



FA

Weight without motor ≈ 0.7kg

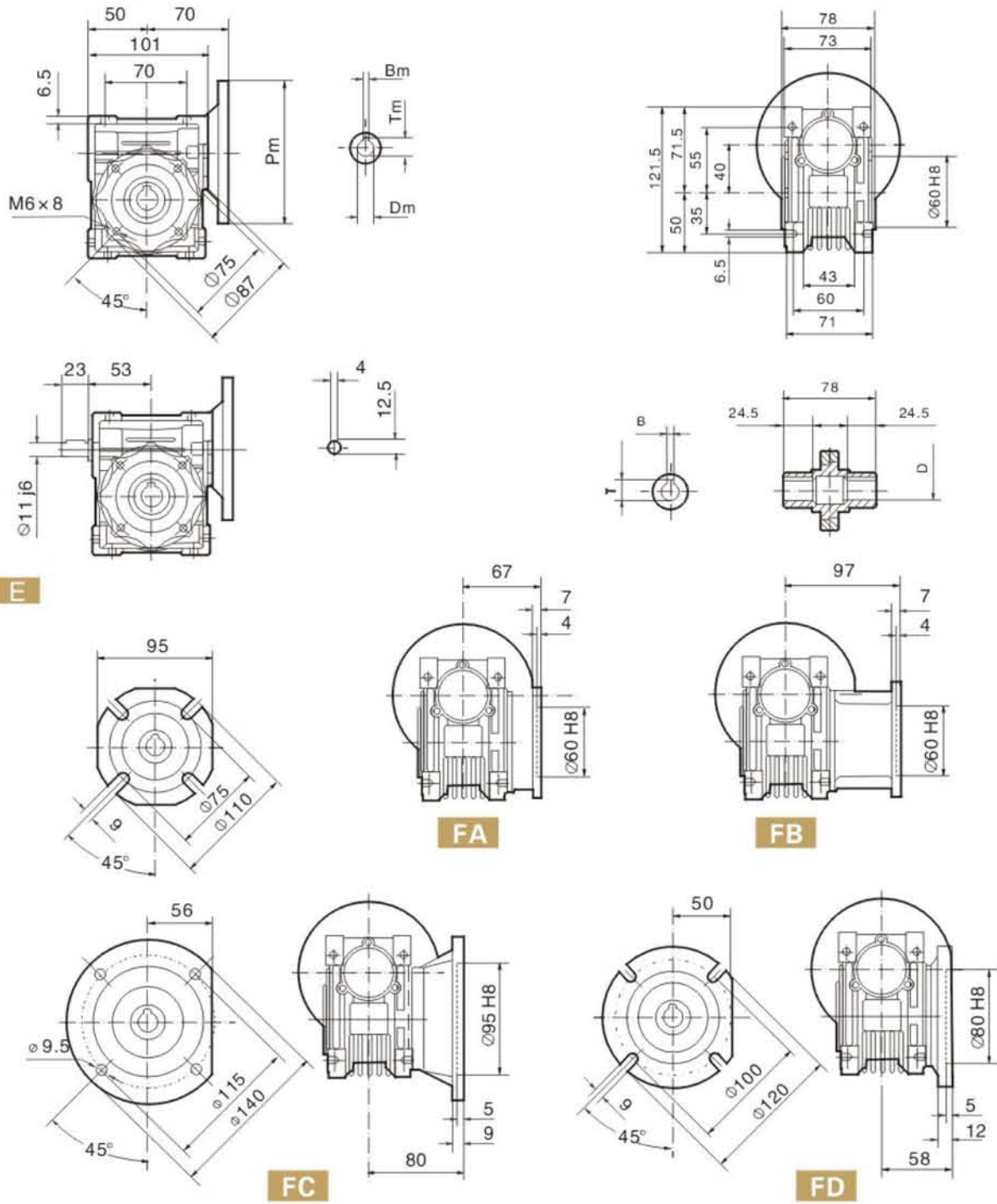
NMRV030



PAM IEC	Pm	DmE8	Bm	Tm
63B5	140	11	4	12.8
56B5	120	9	3	10.4
63B14	90	11	4	12.8
56B14	80	9	3	10.4

Weight without motor $\approx 1.2\text{kg}$

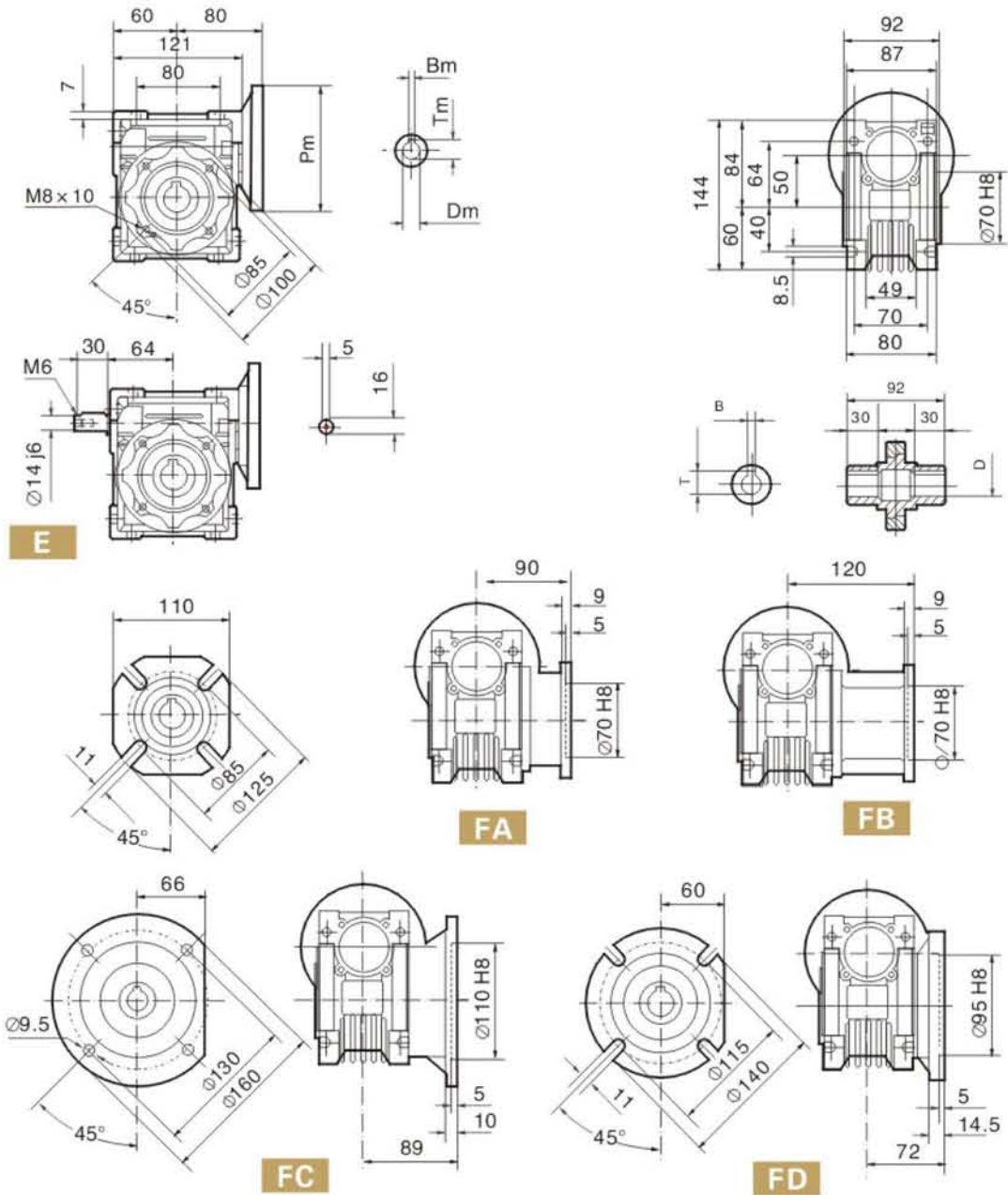
NMRV040



PAM IEC	Pm	DmE8	Bm	Tm	DH8	B	T
71B5	160	14	5	16.3	18	6	20.8
63B5	140	11	4	12.8	19	6*	21.8*
56B5	120	9	3	10.4	*Only on request		
71B14	105	14	5	16.3			
63B14	90	11	4	12.8			

Weight without motor \approx 2.3kg

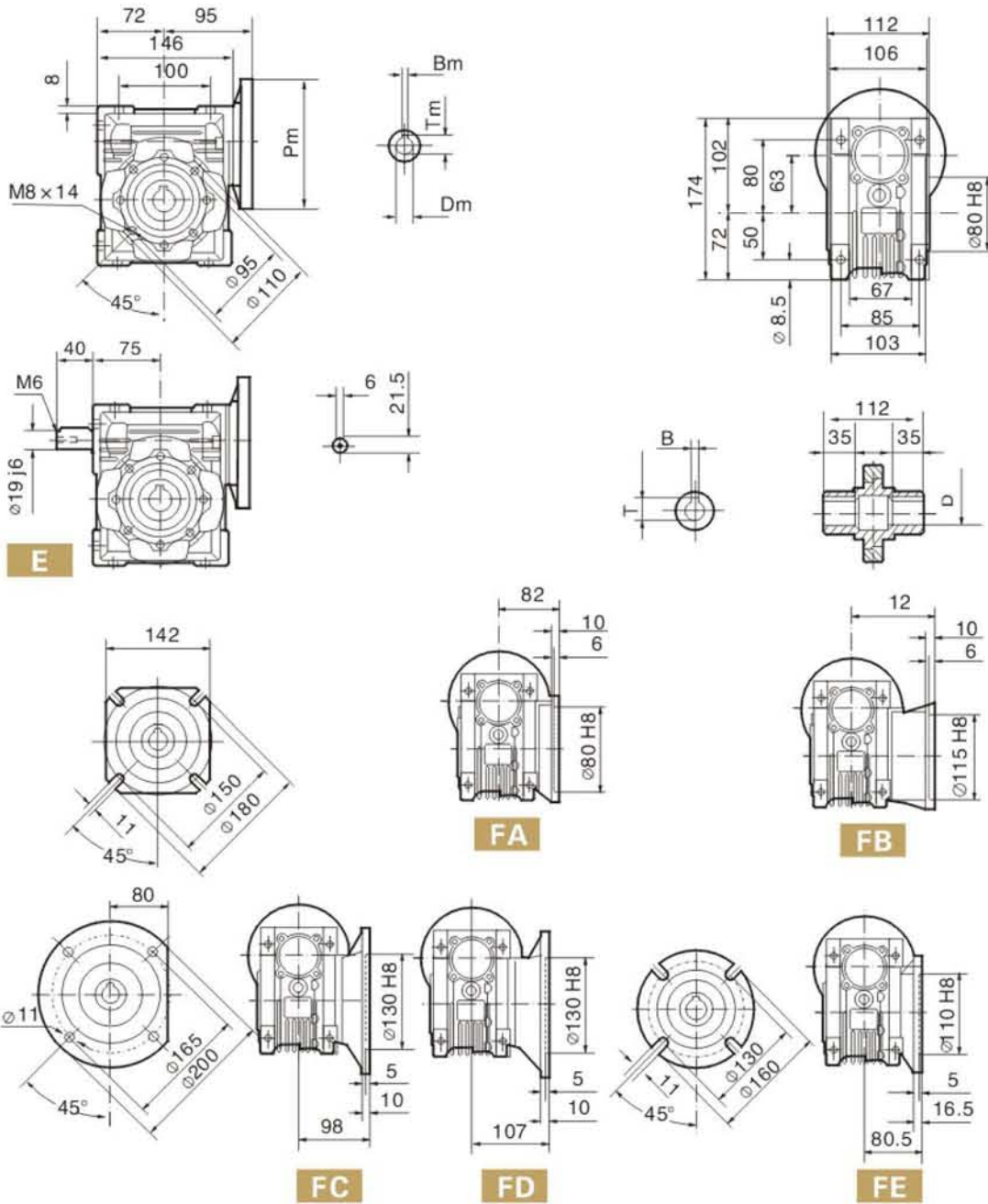
NMRV050



PAM IEC	Pm	DmE8	Bm	Tm	DH8	B	T
80B5	200	19	6	21.8	25	8	28.3
71B5	160	14	5	16.3	24*	8*	27.3*
63B5	140	11	4	12.8	*Only on request		
80B14	120	19	6	21.8			
71B14	105	14	5	16.3			

Weight without motor \approx 3.5kg

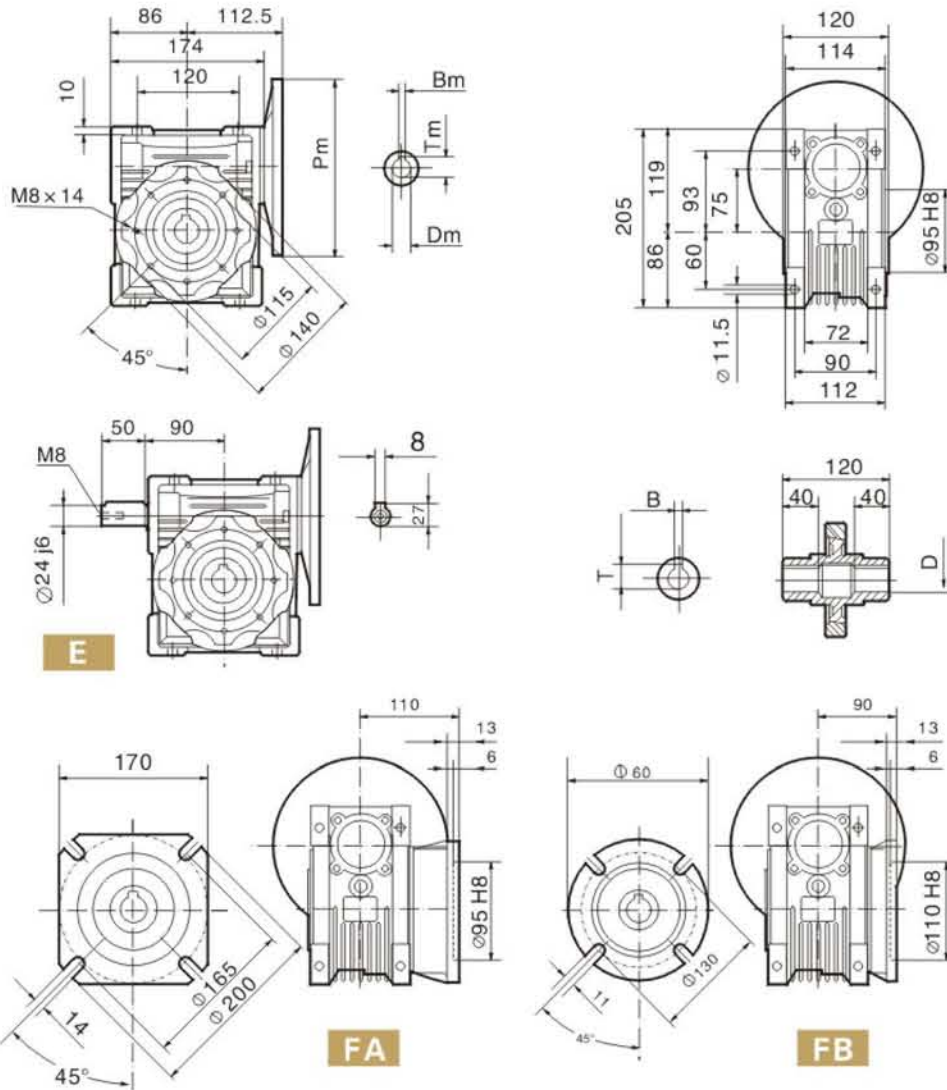
NMRV063



PAMIEC	Pm	DmE8	Bm	Tm	DH8	B	T
90B5	200	24	8	27.3	25	8	28.3
80B5	200	19	6	21.8	28*	8*	31.3*
71B5	160	14	5	16.3	*Only on request		
90B14	140	24	8	27.3			
80B14	120	19	6	21.8			
71B14	105	14	5	16.3			

Weight without motor = 6.2kg

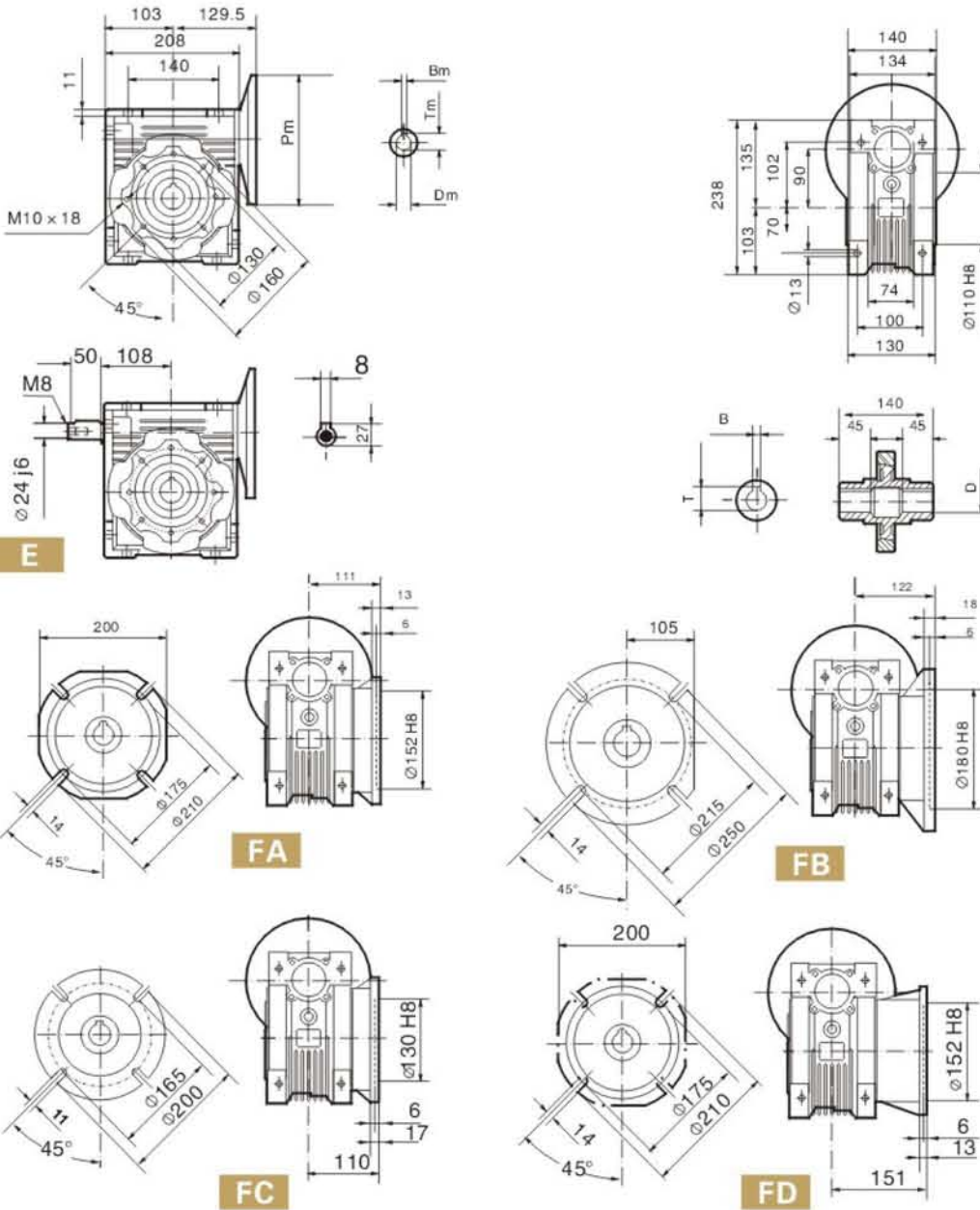
NMRV075



PAM IEC	Pm	DmE8	Bm	Tm	DH8	B	T
100/112B5	250	28	8	31.3	28	8	31.3
90B5	200	24	8	27.3	35*	10*	38.3*
80B5	200	19	6	21.8	*Only on request		
71B5	160	14	5	16.3			
100/112B14	160	28	8	31.3			
90B14	140	24	8	27.3			
80B14	120	19	6	21.8			

Weight without motor ≈ 9kg

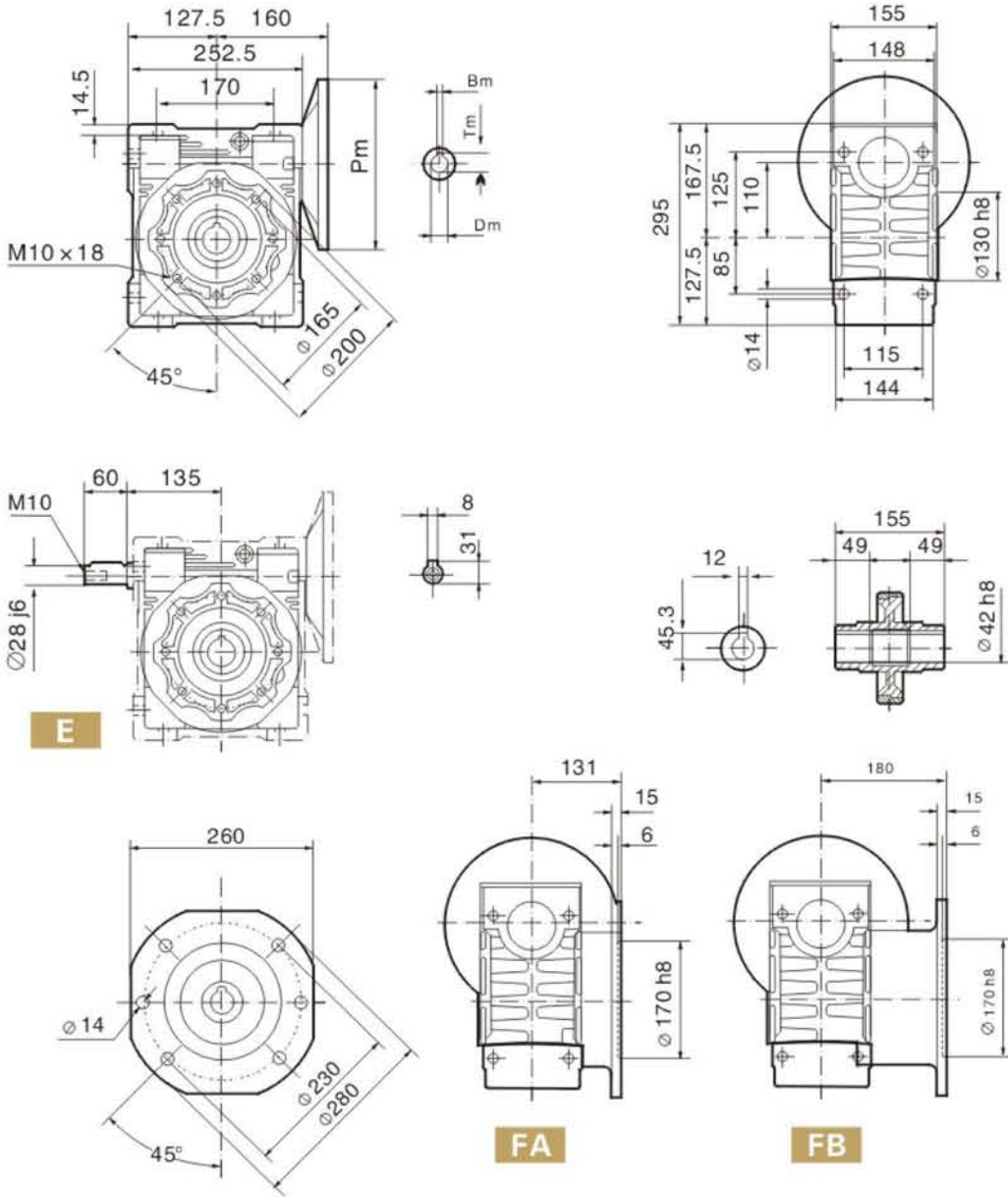
NMRV090



PAM IEC	Pm	DmE8	Bm	Tm	DH8	B	T
100/112B5	250	28	8	31.3	35	10	38.3
90B5	200	24	8	27.3	38*	10*	41.3*
80B5	200	19	6	21.8	*Only on request		
100/112B14	160	28	8	31.3			
90B14	140	24	8	27.3			
80B14	120	19	6	21.8			

Weight without motor ≈ 13 kg

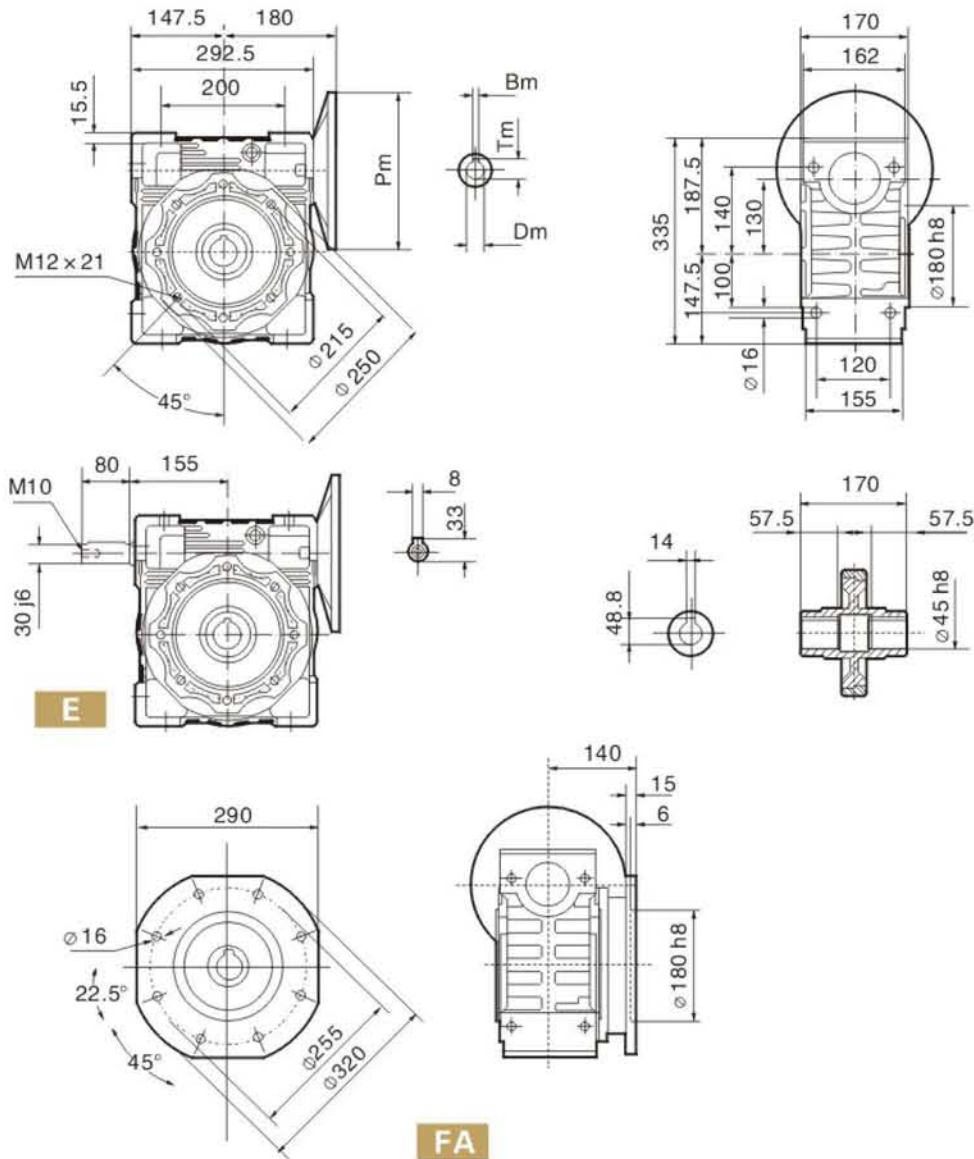
NMRV110



PAM IEC	Pm	DmE8	Bm	Tm
132B5	300	38	10	41.3
112B5	250	28	8	31.3
100B5	250	28	8	31.3
90B5	200	24	8	27.3
80B5	200	19	6	21.8

Weight without motor \approx 35kg

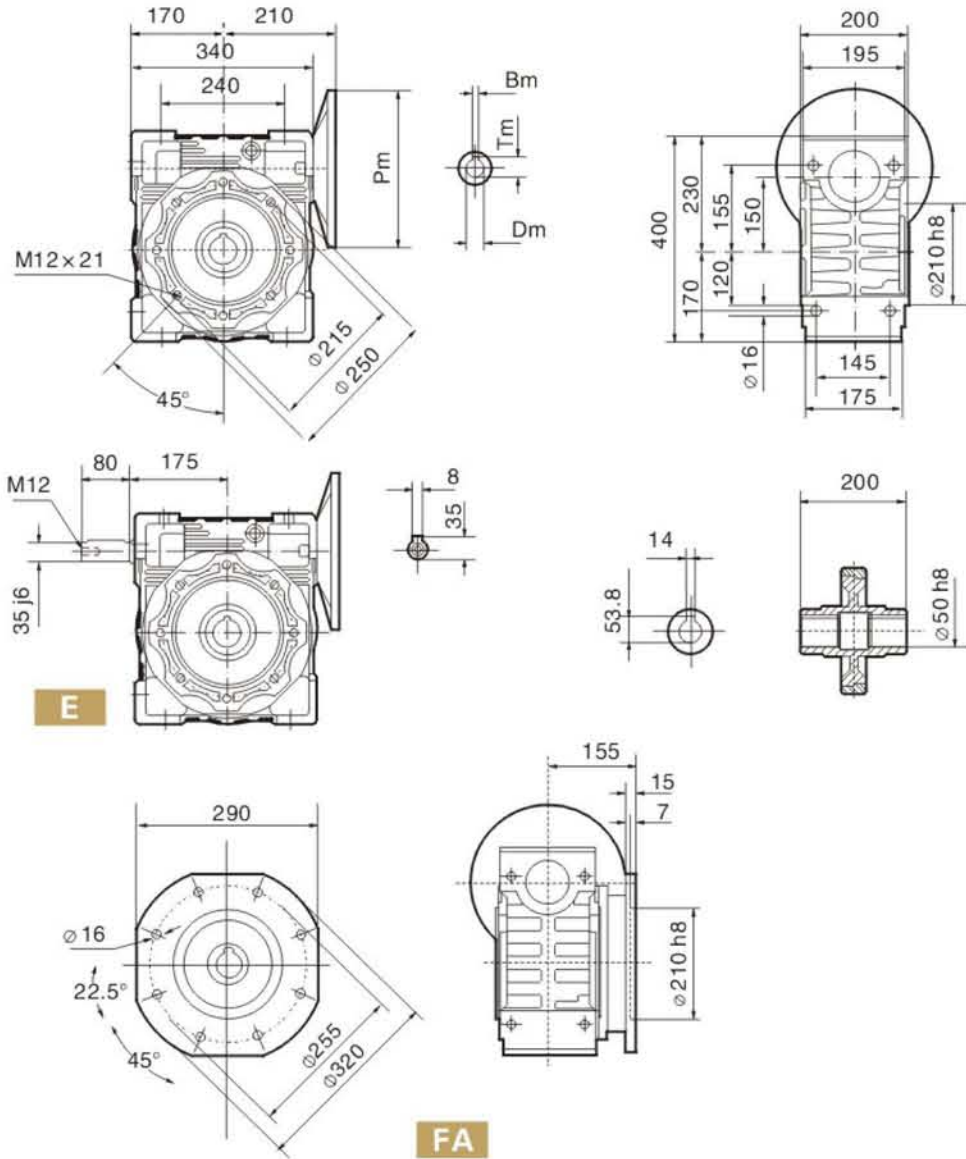
NMRV130



PAM IEC	Pm	DmE8	Bm	Tm
132B5	300	38	10	41.3
112B5	250	28	8	31.3
100B5	250	28	8	31.3
90B5	200	24	8	27.3

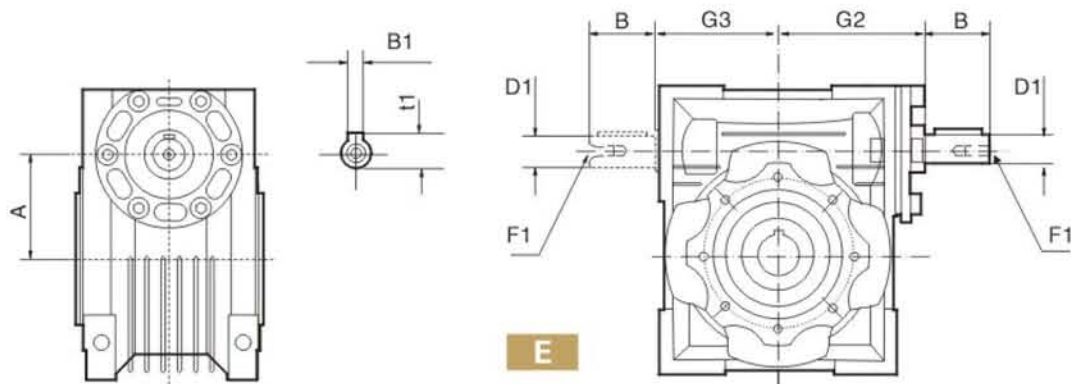
Weight without motor ≈ 48kg

NMRV150



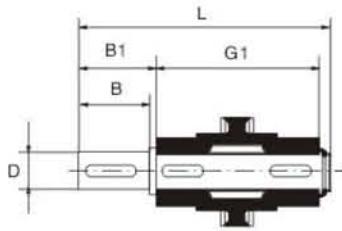
PAM IEC	Pm	DmE8	Bm	Tm
160B5	350	42	12	45.3
132B5	300	38	10	41.3
112B5	250	28	8	31.3
100B5	250	28	8	31.3

Weight without motor ≈ 84kg

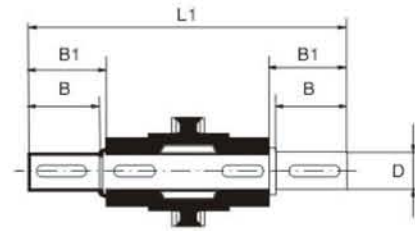
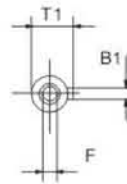


NRV	030	040	050	063	075	090	110	130	150
B	20	23	30	40	50	50	60	80	80
D1j6	9	11	14	19	24	24	28	30	35
G2	51	60	74	90	105	125	142	162	195
G3	45	53	64	75	90	108	135	155	175
A	30	40	50	63	75	90	110	130	150
B1	3	4	5	6	8	8	8	8	10
F1	-	-	M6	M6	M8	M8	M10	M10	M12
TI	10.2	12.5	16	21.5	27	27	31	33	38

For the missing dimensions, please refer to page 06-15

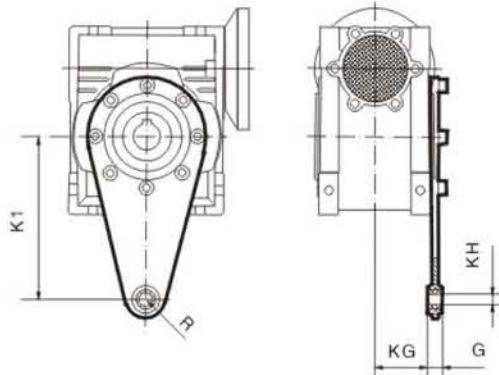
OUTPUT SHAFT


Single Output Shaft

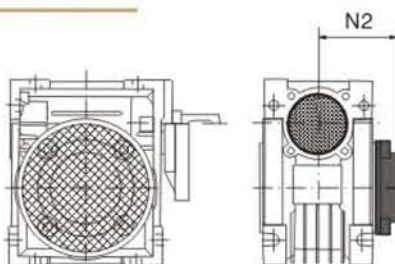


Double Output Shaft

	Dh6	B	B1	G1	L	L1	F	B1	T1
NMRV025	11	23	25.5	50	81	101	-	4	12.5
	9*	25*	30	50	85.5*	101	-	3*	10.2*
NMRV030	14	30	32.5	63	102	128	M6	5	16
NMRV040	18	40	43	78	128	164	M6	6	20.5
NMRV050	25	50	53.5	92	153	199	M10	8	28
NMRV063	25	50	53.5	112	173	219	M10	8	28
NMRV075	28	60	63.5	120	192	247	M10	8	31
NMRV090	35	80	84.5	140	234	309	M12	10	38
NMRV110	42	80	84.5	155	249	324	M16	12	45
NMRV130	45	80	85	170	265	340	M16	14	48.5
NMRV150	50	82	87	200	297	374	M16	14	53.5

TORQUE ARM


	K1	G	KG	KH	R
NMRV025	70	14	17.5	8	15
NMRV030	85	14	24	8	15
NMRV040	100	14	31.5	10	18
NMRV050	100	14	38.5	10	18
NMRV063	150	14	49	10	18
NMRV075	200	25	47.5	20	30
NMRV090	200	25	57.5	20	30
NMRV110	250	30	62	25	35
NMRV130	250	30	69	25	35
NMRV150	250	30	84	25	35

COVER


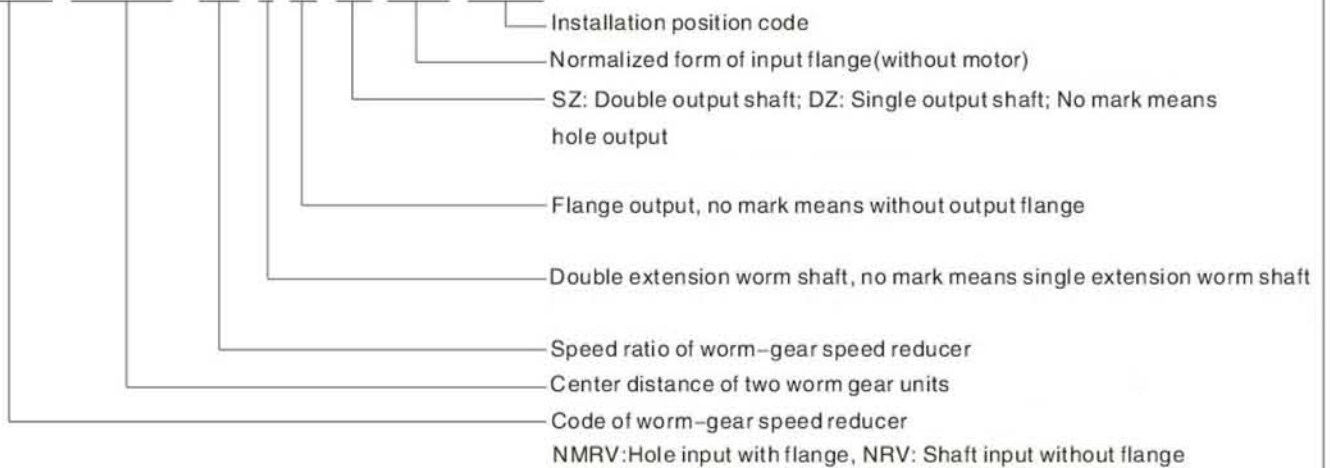
	N2		N2
NMRV030	47	NMRV090	94
NMRV040	55	NMRV110	102
NMRV050	63	NMRV130	117
NMRV063	73	NMRV150	122
NMRV075	79		

It is combined by two single step reducers and has all the virtues of them, with larger ratio.

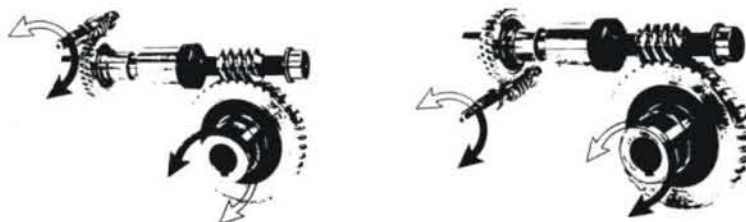


Model & mark

NMRV 050/110-900 E F1 SZ 71B5 B3.56

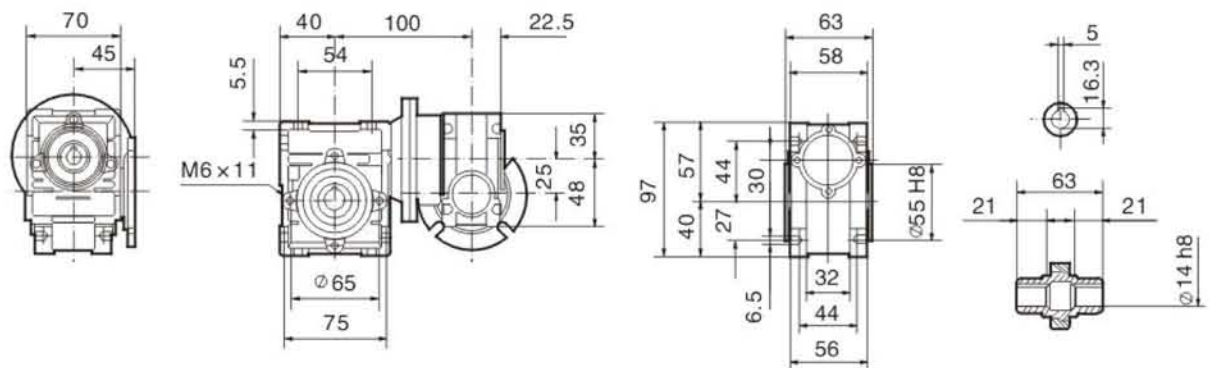


Direction of Rotation

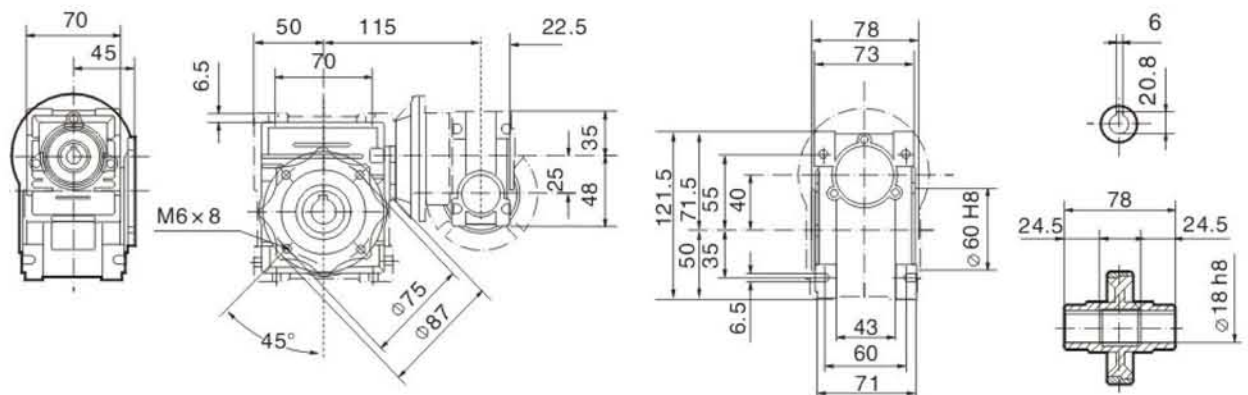


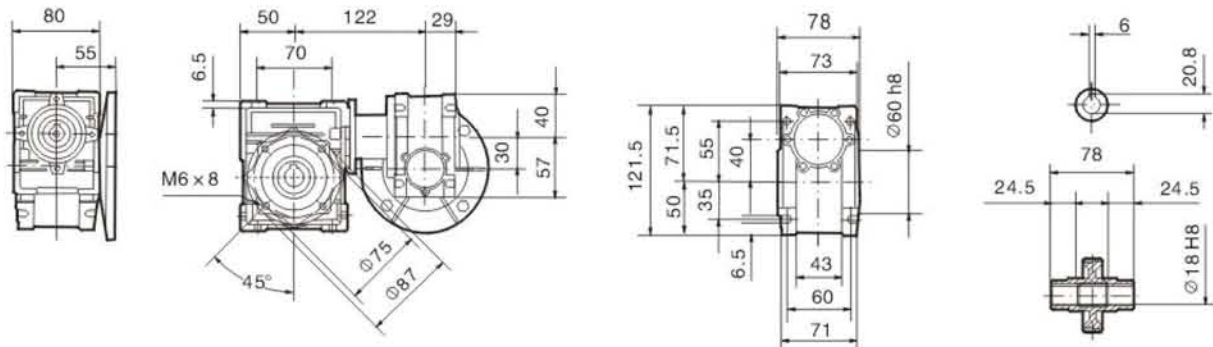
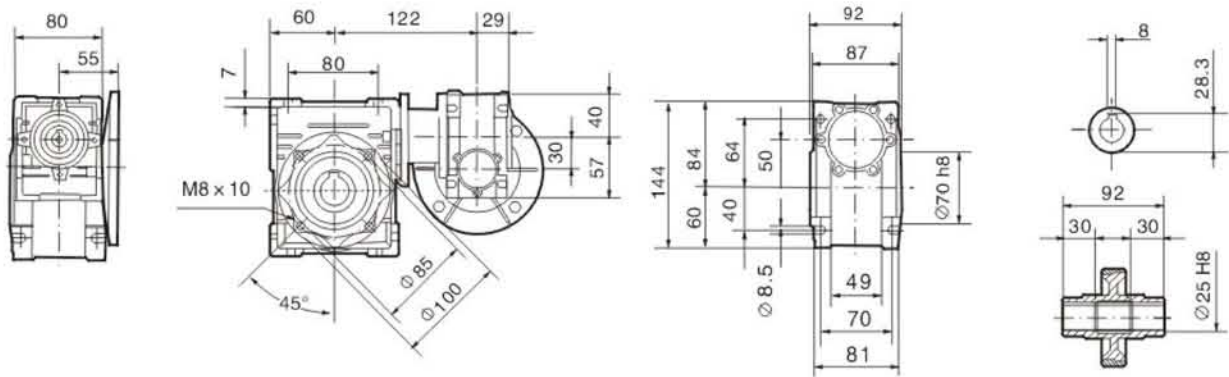
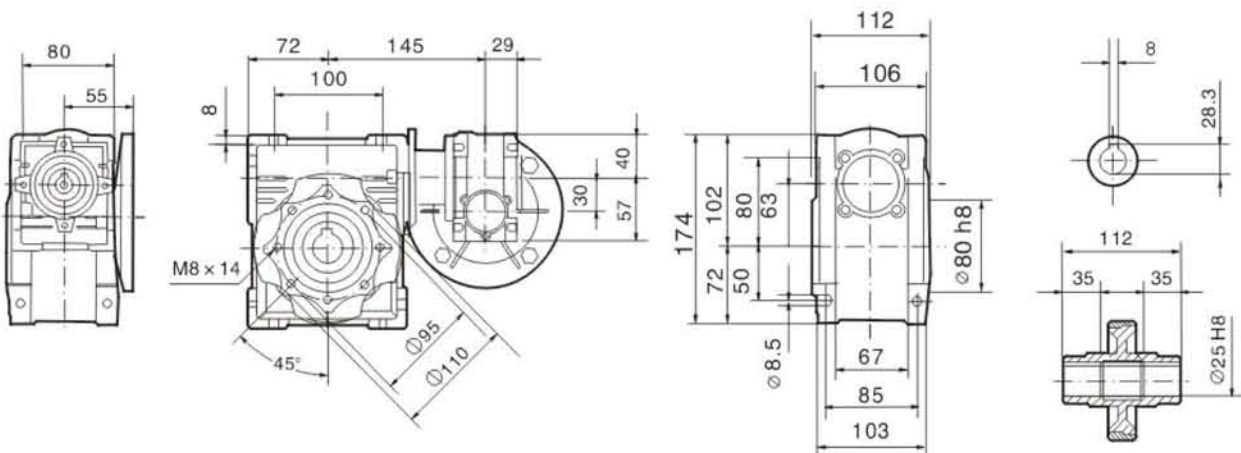
- ◇ For the dimensions of the output flanges , please refer to page 06-15
- ◇ For the dimensions of the hollow shafts , please refer to page 06-15
- ◇ For the dimensions of the double extension worm shafts please refer to page 17

NMRV025/030

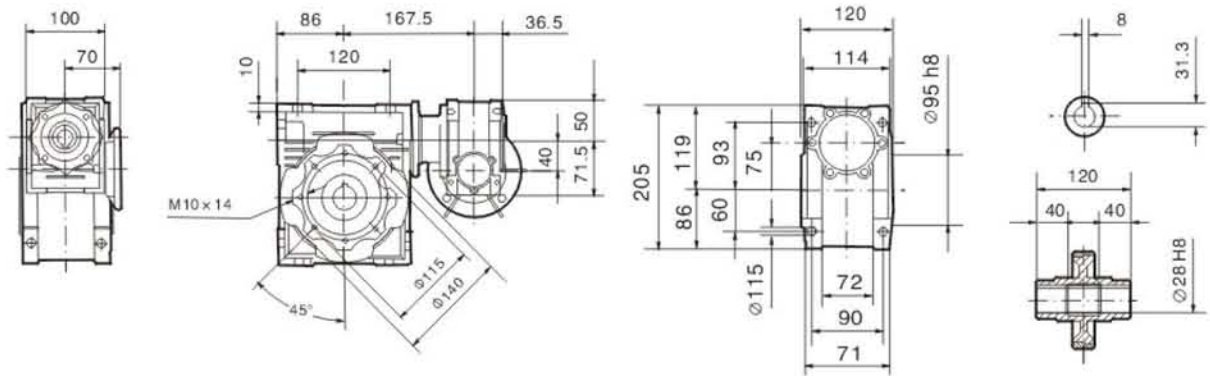


NMRV025/040

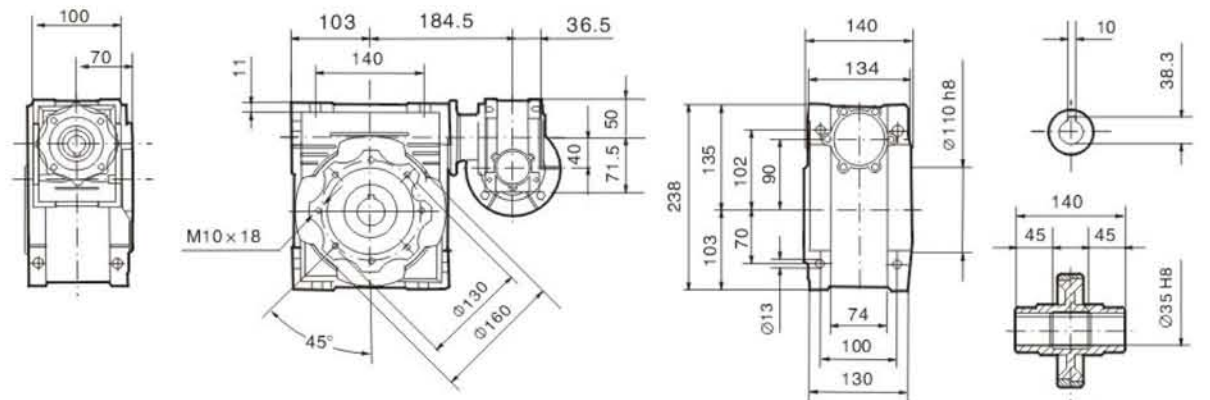


NMRV030/040

NMRV030/050

NMRV030/063


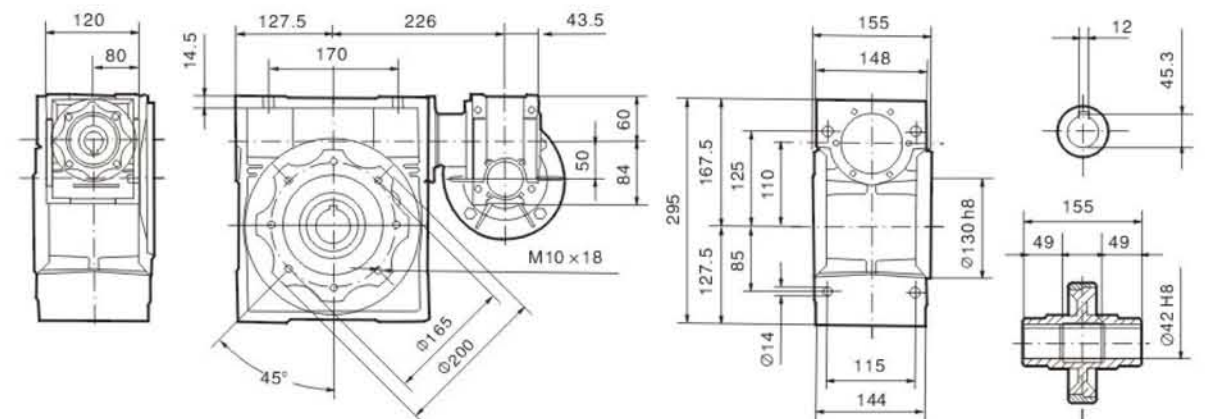
NMRV040/075

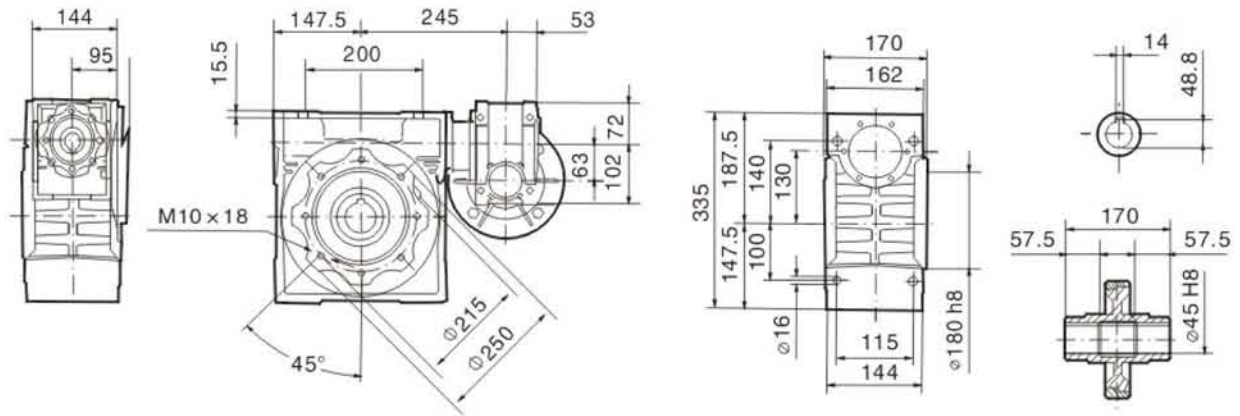
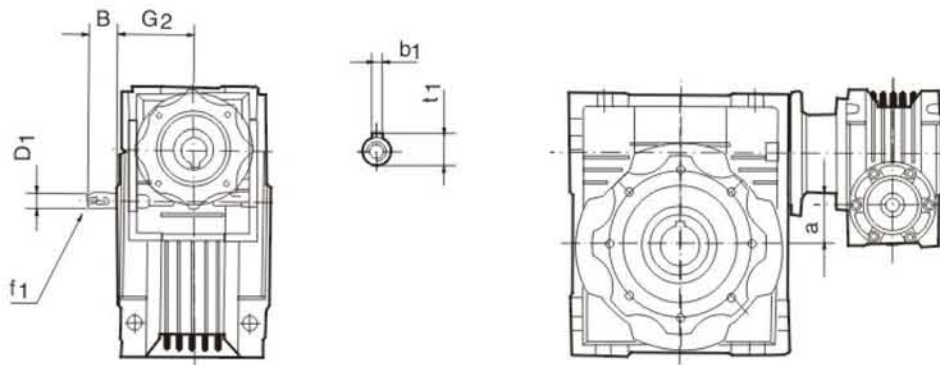


NMRV040/090



NMRV050/110

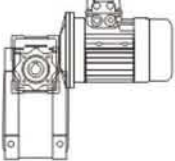
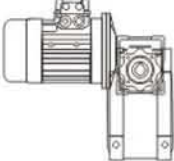
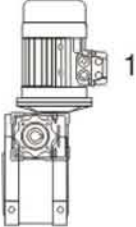
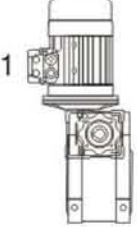

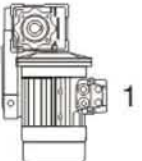
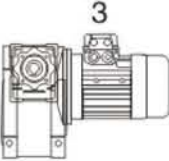
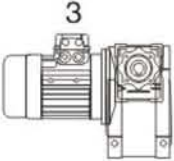


NMRV063/130

NRV-NMRV COMBINATION WORM GEAR UNITS OF NRV-NMRV


NRV-nmrv	030/040	030/050	030/063	040/073	040/093	050/110	063/130
B	20	20	20	23	23	30	40
D1j6	9	9	9	11	11	14	19
G2	51	51	51	60	60	74	90
A	10	20	33	35	50	60	67
B1	3	3	3	4	4	5	6
F1	-	-	-	-	-	M6	M6
T1	10.2	10.2	10.2	12.5	12.5	16	21.5

◆ For the missing dimensions, please refer to page 06-15

NMRV...-NMRV... / NRV...-NMRV...

AS1	SA2	VS1	VS2
1 	1 		1 
PS1	PS2	BS1	BS2
1 		3 	3 

The position of the 1st reducer with respect to the 2nd gear reducer depends on the versions . Unless specified at the time of order , combination groups are supplied in version Bs2. The specified mounting position refers to the 1nd gear reducer , see page 06-15 for the possible mounting positions.

n1=1400r/min		NMRV025/030			NMRV025/040			NMRV030/040			NMRV030/050			NMRV030/063		
i	n2	P1 (kw)	i025	i030	P1 (kw)	i025	i040	P1 (kw)	i030	i040	P1 (kw)	i030	i050	P1 (kw)	i030	i060
100	14	0.09	10	10	—	—	—	—	—	—	—	—	—	—	—	—
150	9.3	0.06	10	15	—	—	—	—	—	—	—	—	—	—	—	—
200	7	0.06	10	20	—	—	—	—	—	—	—	—	—	—	—	—
250	5.6	0.06	10	25	—	—	—	—	—	—	—	—	—	—	—	—
300	4.7	0.06	10	30	0.06	10	30	0.09	10	30	0.18	10	30	0.22	10	30
400	3.5	0.06	20	20	0.06	10	40	0.06	10	40	0.12	10	40	0.18	10	40
500	2.8	0.06	20	25	0.06	20	25	0.06	20	25	0.09	10	50	0.18	10	50
600	2.3	0.06	20	30	0.06	20	30	0.06	20	30	0.09	20	30	0.12	20	30
750	1.9	0.06	30	25	0.06	25	30	0.06	25	30	0.09	25	30	0.12	25	30
900	1.6	0.06	30	30	0.06	30	30	0.06	30	30	0.06	30	30	0.09	30	30
1200	1.2	0.06	40	30	0.06	40	30	0.06	40	30	0.06	40	30	0.09	40	30
1500	0.93	0.06	50	30	0.06	50	30	0.06	50	30	0.06	50	30	0.06	50	30
1800	0.78	0.06	60	30	0.06	60	30	0.06	60	30	0.06	60	30	0.06	60	30
2400	0.58	0.06	60	40	0.06	60	40	0.06	60	40	0.06	60	40	0.06	60	40
3000	0.47	0.06	60	50	0.06	60	50	0.06	—	—	0.06	60	50	0.06	60	50
3200	0.44	—	—	—	—	—	—	—	80	40	—	—	—	—	—	—
4000	0.35	—	—	—	0.06	50	80	0.06	80	50	0.06	80	50	0.06	80	50
4800	0.29	—	—	—	—	—	—	—	—	—	0.06	80	60	—	—	—
5000	0.28	—	—	—	0.06	50	100	0.06	50	100	—	—	—	0.06	100	50

N1=1400r/min		NMRV040/075			NMRV040/090			NMRV050/110			NMRV063/130		
i	n2	P1 (kw)	i040	i075	P1 (kw)	i040	i090	P1 (kw)	i050	i0110	P1 (kw)	i063	i030
300	4.7	0.37	10	30	0.37	10	30	0.75	10	30	1.5	10	30
400	3.5	0.25	10	40	0.37	10	40	0.75	10	40	1	10	40
500	2.8	0.25	10	50	0.37	10	50	0.55	20	25	1	10	50
600	2.3	0.18	20	30	0.37	20	30	0.55	20	30	0.75	15	40
750	1.9	0.18	25	30	0.25	25	30	0.55	25	30	0.75	25	30
900	1.6	0.12	30	30	0.25	30	30	0.37	30	30	0.75	30	30
1200	1.2	0.12	40	30	0.18	40	30	0.25	40	30	0.55	40	30
1500	0.93	0.09	50	30	0.18	50	30	0.25	50	30	0.37	50	30
1800	0.78	0.09	60	30	0.12	60	30	0.25	60	30	0.37	60	30
2400	0.58	0.06	60	40	0.12	60	40	0.18	60	40	0.25	60	40
3000	0.47	0.06	60	50	0.09	60	50	0.12	60	50	0.25	60	50
4000	0.35	0.06	80	50	0.06	80	50	0.12	80	50	0.25	80	50
5000	0.28	0.06	100	50	0.06	100	50	0.12	100	50	0.25	100	50

You can choose 025, 030, 040, 050, 063, 075, 090, 110, 130, 150 as combination unit to combine according to the fact your special needs.



UDL...B3



UDL...B5

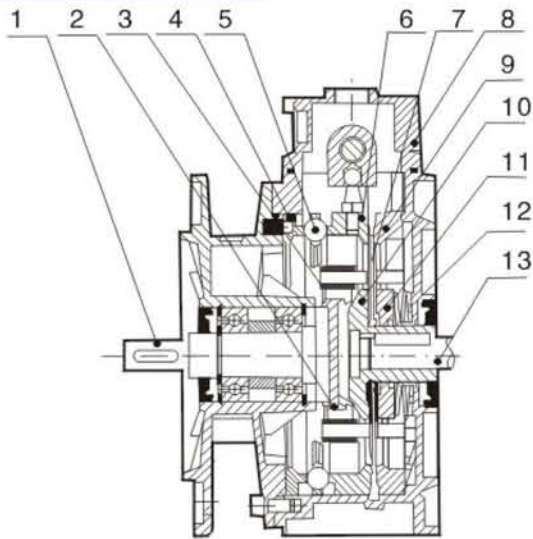
BRIEF INTRODUCTION TO STEPLESS SPEED VARIATOR

The design of UDL series stepless speed variator comprises the advanced technology both at home and abroad. The products include the following main characteristics:

- 1、 High speed-regulating precision : up to 0.5-1 rotation.
- 2、 Large speed-changing range: The speed ratio ranges from 1:1.4 to 1:7 freely.
- 3、 High in strength and long in service life.
- 4、 Convenient to regulate the speed.
- 5、 Continuous in running , front-to-back in running direction , smooth in driving , stable in performance and low in noise.
- 6、 Full in sealing and suitable for any environment.
- 7、 Compact in structure and small in volume.
- 8、 Made in high-quality aluminium alloy diecast into forming , good-looking in appearance , light in weight and it never gets rusty.
- 9、 Good in adaptation: UDL series stepless speed variators can be combined with all kinds of speed reducers, as to achieve low stepless speed-changing.

UDL series stepless speed variators are widely used for foodstuffs, ceramics, packing, chemicals, pharmacy, plastics , paper-making, machine-tools, communications, and all kinds of automatic lines, pipelines and assembly lines which need speed-regulation, it is a good companion for your production.

STRUCTURE



- 1、 Output shaft
- 2、 Planet carrier
- 3、 Friction bearing-planet disk
- 4、 Cam ring
- 5、 Ball ring
- 6、 Adjustable annulus ring
- 7、 Planet disk
- 8、 Control cover
- 9、 Fixed annulus ring
- 10、 Fixed sun race
- 11、 Adjustable sun race
- 12、 Belleville spring
- 13、 Motor shaft

UDL MODEL MARK

UD-L-0.75 B5 B5

① ② ③ ④ ⑤

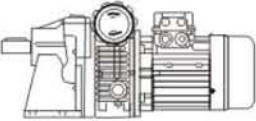
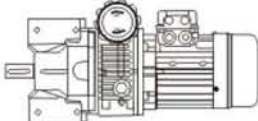
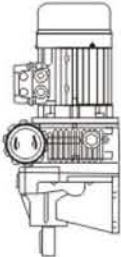
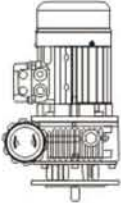
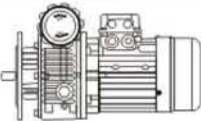
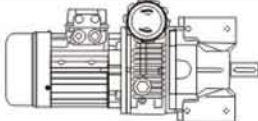
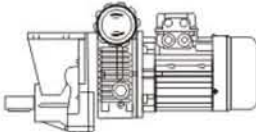
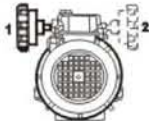
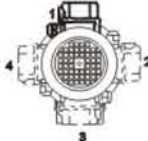
NO	Comments
1	Code of step less speed variator
2	1)L:Aluminium alloy casing 2)No mark means iron casting
3	Motor power
4	1)B3:Foot-mounted model 2)B5:Flange-mounted model
5	Code of installation position

UDL PERFORMANCE TABLE FOR UDL SERIES SPEED VARIATOR

 N₁=1400 r/min

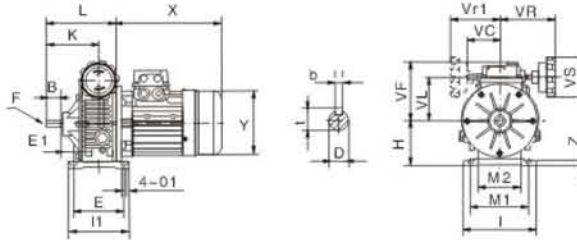
B	Model	I	N ₂ [r/min]	M ₂ [Nm]
0.18KW	UDL0.18	1.6~8.2	880~170	1.5~3
0.37KW	UDL0.37	1.4~7	1000~200	3~6
0.55KW	UDL0.55	1.4~7	1000~200	4~8
0.75KW	UDL0.75	1.4~7	1000~200	6~12
1.1KW	UD1.1	1.4~7	1000~200	9~18
1.5KW	UD1.5	1.4~7	1000~200	12~24
2.2KW	UD2.2	1.4~7	1000~200	18~36
3.0KW	UD3.0	1.4~7	1000~200	24~48
4.0KW	UD4.0	1.4~7	1000~200	32~64
5.5KW	UD5.5	1.4~7	1000~200	45~90
7.5KW	UD7.5	1.4~7	1000~200	59~118

INSTALLATION POSITION DIAGRAM

B3	B6S	V5	V1
			
			
	Position of hand wheel	Position of terminal box	
			

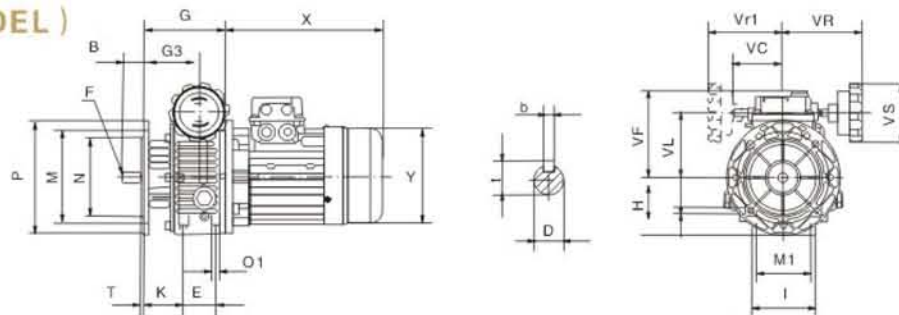
- For special requirements, orders must specify the position of the terminal box with reference to the diagram. Unless otherwise specified the terminal box, the position of that will be mounted as shown in the diagram for the mounting position.
- Unless specified otherwise, the standard positions are B3 or B5.
- For positions not envisaged, it is necessary to call our Technical Service.

B (MODEL)

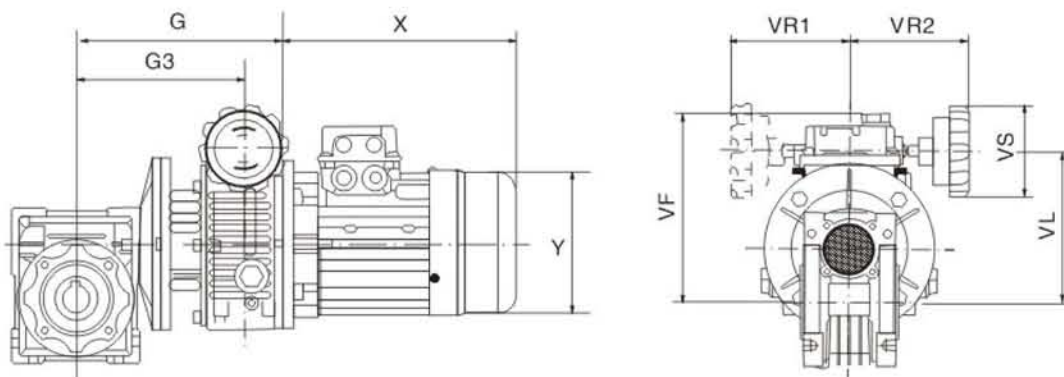


	B	Dp	E	E1	H	I	I1	K	L	M1	M2	O1	VC	VF	VL	VR	VR1	VS	B	F	T	X	Y	Z
UDL0.18B3	23	11	105	18	80	145	120	88	136	110	71	9	71	111	78	110	110	85	4	-	12.5	200	120	10
UDL0.37B3	30	14	104	20	93	149	125	104	140	120	96	9	71	123	90	110	110	85	5	M6	16	227	141	10
UDL0.75B3	40	19	125	26	113	190	150	126	179	160	135	11	79	140	107	120	120	110	6	M6	21.5	268	160	15
UD1.1B3	40	24	105	35	100	207	130	136	187	160	115	13	-	124	102	150	-	110	8	M8	27	265	195	15
UD1.5B3	50	30	115	54	123	241	150	165	238	190	143	13	-	144	122	150	-	110	8	M8	27	290	195	18
UD2.2B3	60	30	230	25	150	300	270	191	268	245	190	14	-	188	150	150	-	110	8	M8	33	320	215	25
UD3.0B3	60	30	230	25	150	300	270	191	268	245	190	14	-	188	150	150	-	110	8	M8	33	320	215	25
UD4.0B3	60	30	230	25	150	300	270	191	268	245	190	14	-	188	150	150	-	110	8	M8	33	340	240	25
UD5.5B3	70	35	250	33	200	365	290	201	319	315	245	18	-	-	192	192	-	110	10	M10	38	395	275	30
UD7.5B3	70	35	250	33	200	365	290	201	319	315	245	18	-	-	192	192	-	110	10	M10	38	435	275	30

B5 (MODEL)

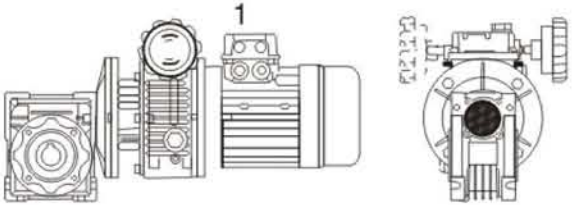
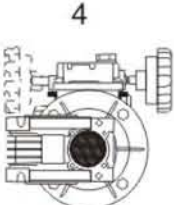
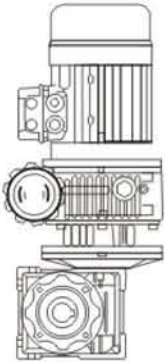
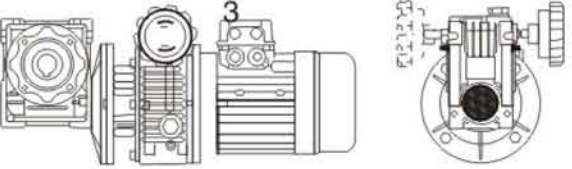
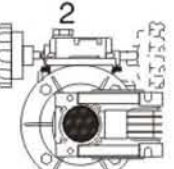


	B	Dp	E	G	G3	H	I	M	M1	N	D	D1	P	T	K	VC	VF	VL	VR	Vr1	VS	B	F	T	X	Y
UDL0.18B3	23	11	50	113	64.5	70	72	115	60	95	9	M6	140	3.5	46	71	111	78	110	110	85	4	-	13	200	120
UDL0.37B3	30	14	40	110	74	80	90	130	77	110	9	M8	160	3.5	53	71	123	90	100	110	85	5	M6	16	227	141
UDL0.75B3	40	19	58	139	85.5	100	98	165	84	130	11	M8	200	3.5	60	79	140	107	120	120	110	6	M6	22	268	160
UD1.1B3	40	24	-	147	95	98	207	165	-	130	11	-	200	3.5	-	-	124	102	150	-	110	8	M8	27	265	195
UD1.5B3	50	24	-	188	115	126	241	165	-	130	11	-	200	3.5	-	-	144	122	150	-	110	8	M8	27	290	195
UD2.2B3	60	30	-	208	131	150	270	165	-	230	15	-	300	4	-	-	188	150	160	-	100	8	M8	33	320	215
UD3.0B3	60	30	-	208	131	150	270	265	-	230	15	-	300	4	-	-	188	150	160	-	100	8	M8	33	320	215
UD4.0B3	60	30	-	208	131	150	270	265	-	230	15	-	300	4	-	-	188	150	160	-	110	8	M8	33	320	240
UD5.5B3	70	35	-	244	131	200	-	300	-	250	19	-	350	5	-	-	192	194	-	110	10	M10	38	395	275	
UD7.5B3	70	35	-	244	131	200	-	300	-	250	19	-	350	5	-	-	192	194	-	110	10	M10	38	435	275	



Model	G	G3	VF	VL	VS	VR	VR1	Base No.4P n1=1400r/min	X	Y
UDL0.18-NMRV040	183	135	151	118	85	110	110	63	200	120
UDL0.18-NMRV050	193	145	161	128	85	110	110			
UDL0.37-NMRV050	190	154	173	140	85	110	110	71	227	141
UDL0.37-NMRV063	205	169	186	153	85	110	110			
UDL0.55-NMRV063	234	181	203	170	110	120	120	80	268	160
UDL0.75-NMRV063	234	181	203	170	110	120	120			
UDL0.37-NMRV0.75	223	187	198	165	85	110	110	71	227	141
UDL0.55-NMRV075	252	198	215	182	110	120	120			
UDL0.75-NMRV075	252	198	215	182	110	120	120	80	268	160
UD1.1-NMRV075	259.5	207.5	199	177	110	150	-			
UD1.5-NMRV075	300.5	227.5	219	197	110	150	-	90L	290	195
UDL0.55-NMRV090	269	215	230	197	110	120	120	80	268	160
UDL0.75-NMRV090	269	215	230	197	110	120	120			
UD1.1-NMRV090	276.5	224.5	214	192	110	150	-	90S	265	195
UD1.5-NMRV090	317.5	244.5	234	212	110	150	-	90L	290	195
UD1.1-NMRV110	307	255	234	212	110	120	-	90S	265	195
UD1.5-NMRV110	348	275	254	232	110	150	-	90L	290	195
UD2.2-NMRV110	368	291	298	260	110	160	-	100L	320	215
UD3.0-NMRV110	368	291	298	260	110	160	-			
UD4.0-NMRV110	368	291	298	260	110	160	-	112M	340	240
UD1.5-NMRV130	368	295	274	252	110	150	-	90L	290	195
UD2.2-NMRV130	388	311	318	280	110	160	-	100L	320	215
UD3.0-NMRV130	388	311	318	280	110	160	-			
UD4.0-NMRV130	388	311	318	280	110	160	-			

◆ For the missing dimensions, please refer to page06-15

NMRV..U.B3	B6	V5
		
<p>B8</p>	<p>B7</p>	
		

- 1、 The shapes of shaft extension are all cylindrical. It is subject to GB 1569–1990 Cylindrical shaft extension. The key joint refers to GE1095–2003 Ordinary flat key.
- 2、 The shaft lines should be kept concentric when the coupling is connected with a motor . The installation error should be no more than the tolerance value of the coupling.
- 3、 When the output shaft is installed with the coupling or belt wheel , they should be pressed into the screw hole on shaft end or assembled by heating.No hammering on it.
- 4、 The mechinal stepless speed variator is not used in such an occasion where overload or running–blockage happene to occur.
- 5、 Speed–regulation should be effected in running . Do not turn the hand wheel of speed–regulation when the machine stops!
- 6、 The limit screws of speed–regulation on two ends under the operating box are well adjusted , Please don't touch them!
- 7、 This set is not suited to work in the environment over 40 temperature , especially no more than 45 temperature when the temperature rises . In regard to its temperature rise , please read the explanation as follows.
If a 4–pole motor is used for the speed variatcr , the temperature under running–in(empty running)is 40–50temperature higher than that of normal working environment . After running–in up to 60–80 hours , the temperature rise will go down gradually . From that time on , it is 20 temperature higher than of environment ; and the temperatuer will keep on rising stably . The high temperature rise in running will affect normal permissive working condition , but it won 't bring any bad effects to the service life of parts.
- 8、 The liquid lubricating oil is used for the speed variator . Its trade mark is Ub–3x , Please check up the oil level before use.
- 9、 The machine is filled with lubricating oil before leaving factory. When it starts to work up to 2000 hours for the first time , its lubricating oil should be replaced , changing the lubricating oil every 5000 hours later.
- 10、 The lubricating oil level inside the speed variator should be kept at the height of tow–third in the oil scale Users should usually check the height of oil level . It is strictly prohibited to operate it when short of lubricating oil . The air screw nut on the operating box is screwed up for preventing from oil leakage in moving before leaving factory . It should be loosed when it starts to run . It is strictly forbidden to use it before loosing!

4, 1 Model selections

4.1.1 Symbols and units of measure

- P: Power (KW)
- P₁: Input power
- P₂: Output power
- P_{1n}: Select motor power
- η_d: Dynamic efficiency

The dynamic efficiency is the relationship of power delivered at output shaft P2 to power applied at input shaft P1. Value of η_d are calculated for gearboxes after a sufficiently long running-in period. After the running-in period the surface temperature in operation reduces and finally stabilises.

$$\eta_d = \frac{P_2}{P_1} \cdot 100\%$$

$$P_{1n} \geq P_1 \cdot f_s$$

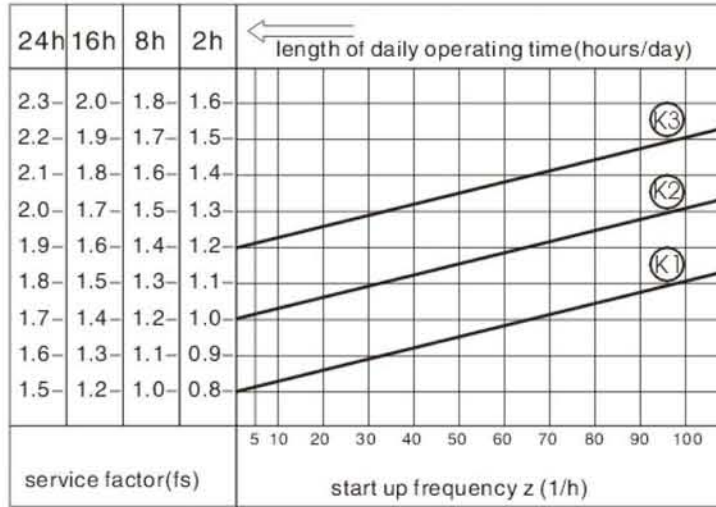
η_s: Static efficient

Efficiency applicable at start-up of the gearbox. It is critical when selecting worm gearbox operating under intermittent duty.

f_s: Service factor

This factor is the numeric value describing reducer service duty. It takes into consideration, with unavoidable approximation, daily operating condition, load variations and overloads connected with reducer application. In the graph below, after selecting proper "daily working hours" column, the service factor is given by intersecting the number of starts per hour and one of the K1, K2 or K3 curves. K_s curves are linked with the service nature (approximately: uniform, medium and heavy) through the acceleration factor of masses K, connected to the ratio between driven masses and motor inertia values.

F_s **K-CURVES**



A. 30-40°C: $f_s \times (1.1-1.2)$

B. 40-50°C: $f_s \times (1.3-1.4)$

C. 50-60°C: $f_s \times (1.5-1.6)$

Service factor should be adjusted as followings:

A, ambient temperature is 30-40°C, $f_s \times (1.1-1.2)$

B, ambient temperature is 40-50°C, $f_s \times (1.3-1.4)$

C, ambient temperature is 50-60°C, $f_s \times (1.5-1.6)$

● n_1 : (r/min) Gear unit input speed(r/min)

n_2 : (r/min) Gear unit output speed(r/min)

I: Ratio

$$I = \frac{n_1}{n_2}$$

● Fr1: Input shaft radial loads

● Fr2: Output shaft radial loads

● M_2 : (Nm) Output Torque (Nm)

M_{2n} : Selected output torque

$$M_2 = \frac{9550 \cdot P_1 \cdot \eta_d}{n_2}$$

$$M_{2n} \geq M_2 \cdot f_s$$



4.1.2: Understanding the following when select the gearbox

- Load condition
- Speed scope or ratio in application
- Working condition and environment
- Installation space



4.1.3 Examples for model chosen

- Required torque 150 Nm on driven machine, $n_1=1400\text{r/min}$, $n_2=70\text{ r/min}$, medium load, running for 8 hours per day ,start 20 times per hours,the ambient temperature is 30°C ,B3 mounted.
 - (1) $i=n_1/n_2=1400/70=20$
 - (2)Get the $f_s=1.25$ from turning time and start frequency on Curve K2,
 - (3)Get the $f_s=1.25 \times 1.1=1.38$ from the working condition
 - (4)Choose the $M_{2n} \geq M_2 \cdot f_s= 150 \times 1.43=214.5\text{ Nm}$
 - (5)To get the $i=20$, $M_{2n} \geq 214.5\text{ Nm}$, $f_s \geq 1.38$ from the performance parameter, choose NMRV 90-20-B3-2.2-4



- The input power of the driver machine is 1.5kw, $n_1=900\text{ r/min}$, $n_2=60\text{r/min}$, heavy load, running 16 hours per day, starts 100 times for hour, ambient temperature is 20°C
 - (1) $i=n_1/n_2=900/60=15$
 - (2)Get the $f_s=1.9$ from turning time and start frequency on Curve K3,
 - (3)Get the $f_s=1.9 \times 1.0=1.9$ from the working condition
 - (4)Choose the $P_{2n} \geq P_2 \cdot f_s= 1.5 \times 1.9=2.85\text{ KW}$
 - (5)To get the $i=15$, $P_{2n} \geq 2.85\text{ KW}$, $f_s \geq 1.9$ from the performance parameter, choose NMRV 110-15-132S6.

P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page
0.06 (5614)	186.7	2.6	7.5	503	4.2	NMRV025	5614	06
	140	3.4	10	553	3.5			
	93.3	4.9	15	633	2.5			
	70	6.2	20	697	2			
	56	7.5	25	751	1.8			
	46.7	8.3	30	798	1.6			
	35	10	40	878	1.3			
	28	12	50	946	0.9			
	23.3	14	60	1006	0.7			
	186.7	2.6	7.5	683	6.9	NMRV030	5614	07
	140	3.4	10	752	5.4			
	93.3	4.7	15	861	3.8			
	70	6	20	948	3			
	56	7	25	1021	3			
	46.7	8	30	1085	2.5			
	35	9.7	40	1194	1.9			
	28	11.3	50	1286	1.5			
	23.3	12.5	60	1367	1.3			
	17.5	12.5	80	1504	0.9			
	14	25	100	1620	1.3	NMRV025/030	5614	19
	9.3	33	150	1830	0.9			
	7	41	200	1830	0.7			
	5.6	45	250	1830	0.8	NMRV025/040	5614	19
	4.7	56	300	3490	1.2			
	3.5	69	400	3490	0.9			
	2.8	94	500	3490	0.7			
	2.3	100	600	3490	0.6			
	1.9	115	750	3490	0.5			
	1.6	125	900	3490	0.5			
	1.2	153	1200	3490	0.4			
	0.93	185	1500	3490	0.3			
	0.78	198	1800	3490	0.3			
	0.58	247	2400	3490	0.2			
	0.47	280	3000	3490	0.2			
	0.35	295	4000	3490	0.1			
	0.28	348	5000	3490	0.1			
	4.7	55	300	3490	1.3			
	3.5	67	400	3490	0.9			
	2.8	88	500	3490	0.6			
	2.3	95	600	3490	0.7			
	1.9	103	750	3490	0.6			
	1.6	118	900	3490	0.5			
1.2	143	1200	3490	0.4				
0.93	166	1500	3490	0.4				
0.78	184	1800	3490	0.3				
0.58	217	2400	3490	0.2				
0.44	247	3200	3490	0.2				
0.35	278	4000	3490	0.1				
0.28	327	5000	3490	0.1				
1.6	118	900	4840	1	NMRV030/050	5614	20	
1.2	143	1200	4840	0.7				
0.93	166	1500	4840	0.7				
0.78	184	1800	4840	0.7				
0.58	227	2400	4840	0.5				
0.47	256	3000	4840	0.4				
0.35	278	4000	4840	0.3				
0.29	316	4800	4840	0.3				



N1=1400
N1=2800
N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page				
0.06 (5614)	0.93	173	1500	6270	1.1	NMRV030/063	5614	20				
	0.78	191	1800	6270	0.9							
	0.58	227	2400	6270	0.8							
	0.47	256	3000	6270	0.7							
	0.35	295	4000	6270	0.6							
	0.28	327	5000	6270	0.4							
	0.06 (5614)	0.58	267	2400	7380	1.1	NMRV040/075	5614	21			
		0.47	305	3000	7380	0.8						
		0.35	360	4000	7380	0.7						
		0.28	409	5000	7380	0.5						
		0.47	329	3000	8180	1.4				NMRV040/090	5614	21
		0.35	393	4000	8180	1.3						
0.28	430	5000	8180	1								
0.09 (5612) (5624)	373.3	2.0	7.5	399	3.9	NMRV025	5612	06				
	280	2.6	10	439	3.4							
	186.7	3.8	15	503	2.4							
	140	4.9	20	553	1.9							
	112	5.9	25	590	1.5							
	93.3	6.7	30	633	1.3							
	70	8.5	40	697	1.1							
	56	10.0	50	751	0.9							
	0.09 (5612) (5624)	186.7	3.9	7.5	503	2.8	NMRV025	5624	06			
		140	5.1	10	553	2.4						
		93.3	7.3	15	633	1.6						
		70	9.3	20	697	1.3						
		56	11	25	751	1.2						
		46.7	13	30	798	1.1						
		35	16	40	878	0.9						
		0.09 (5612) (5624)	373.3	2.0	7.5	542				6.5	NMRV030	5612
	280		2.6	10	597	5						
	186.7		3.7	15	683	3.5						
	140		4.7	20	752	2.5						
	112		5.5	25	810	2.8						
	93.3		6.4	30	861	2.3						
	70		8.0	40	948	1.7						
	56		9.4	50	1021	1.4						
	46.7		10	60	1085	1.1						
	35		13	80	1194	0.9						
	0.09 (5612) (5624)	186.7	3.9	7.5	683	4.6	NMRV030	5624	07			
		140	5.0	10	752	3.6						
		93.3	7.0	15	861	2.5						
		70	8.8	20	948	2						
		56	10	25	1021	1.9						
		46.7	12	30	1085	1.7						
		35	14	40	1194	1.2						
		28	17	50	1286	1						
		23.3	18	60	1367	0.9						
		0.09 (5612) (5624)	28	18	100	1286				1.6	NMRV025/030	5612
	18.7		25	150	1472	1.1						
14	31		200	1620	0.9							
0.09 (5612) (5624)	14	37	100	1620	0.8	NMRV025/030	5624	19				
	9.3	50	150	1830	0.6							
	7	61	200	1830	0.5							
	5.6	68	250	1830	0.5							
	4.7	77	300	1830	0.4							
	3.5	106	400	1830	0.3							
	2.8	117	500	1830	0.3							



	N1=1400
	N1=2800
	N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page
0.09 (5612) (5624)	2.3	135	600	1830	0.2	NMRV025/030	5624	19
	1.9	149	750	1830	0.2			
	1.6	167	900	1830	0.2			
	1.2	201	1200	1830	0.1			
	0.93	231	1500	1830	0.1			
	0.78	264	1800	1830	0.1			
	0.58	311	2400	1830	0.1			
	0.47	347	3000	1830	0.1			
	28	19	50	2475	2	NMRV040	5624	8
	23.3	21	60	2630	1.7			
	17.5	25	80	2895	1.3			
	14	29	100	3118	1			
	9.3	43	300	3490	1.6	NMRV025/040	5612	19
	7	52	400	3490	1.2			
	5.6	71	500	3490	0.8			
	4.7	82	300	3490	0.8	NMRV030/040	5624	20
	3.5	103	400	4840	1.2	NMRV030/050	5624	20
	2.8	120	500	4840	1			
	2.3	146	600	4840	0.9	NMRV030/063	5624	20
	1.9	158	750	4840	0.8			
	1.6	177	900	4840	0.7			
	1.6	188	900	6270	1			
	1.2	222	1200	6270	0.9	NMRV040/075	5624	21
	0.93	259	1500	6270	0.7			
	0.93	305	1500	7380	1.1	NMRV040/090	5624	21
	0.78	331	1800	7380	1			
	0.58	400	2400	7380	0.7			
	0.47	494	3000	8180	0.9	NMRV025	5622	06
0.35	589	4000	8180	0.8				
373.3	2.7	7.5	399	3	NMRV030	6314	07	
280	3.5	10	439	2.6				
186.7	5.1	15	503	1.8				
140	6.5	20	553	1.4				
112	7.9	25	590	1.1				
93.3	9.0	30	633	1				
70	11	40	697	0.8				
186.7	5.2	7.5	683	3.4				NMRV040
140	6.6	10	752	2.7				
93.3	9.3	15	861	1.9				
70	12	20	948	1.5				
56	14	25	1021	1.5				
46.7	16	30	1085	1.3				
35	19	40	1194	0.9				
28	22	50	1286	0.8				
46.7	17	30	2087	2.6	NMRV050	6314	09	
35	21	40	2298	1.9				
28	25	50	2475	1.5				
23.3	28	60	2630	1.3				
17.5	33	80	2895	1				
14	38	100	3118	0.8	NMRV030/050	6314	20	
23.3	29	60	3610	2.3				
17.5	35	80	3973	1.9				
14	39	100	4280	1.4				
4.7	112	300	4840	1.2	NMRV030/063	6314	20	
3.5	138	400	4840	0.9				
2.8	160	500	4840	0.7				
2.8	168	500	6270	1.3	NMRV030/063	6314	20	



	N1=1400
	N1=2800
	N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page
0.12 (5622) (5614)	2.3	199	600	6270	1.1	NMRV030/063	6314	20
	1.9	217	750	6270	0.9			
	1.6	279	900	7380	1.2	NMRV040/075	6314	21
	1.2	344	1200	7380	0.9			
	0.78	470	1800	8180	0.9	NMRV040/090	6314	21
	0.58	593	2400	8180	0.9			
	0.47	731	3000	10320	1.2	NMRV050/110	6314	21
0.35	884	4000	10320	1				
0.28	1023	5000	10320	0.8				
0.18 (6312) (6324) (7116)	373.3	4	7.5	542	3.2	NMRV030	6312	07
	280	5.2	10	597	2.5			
	186.7	7.4	15	683	1.7			
	140	9.5	20	752	1.3			
	112	11	25	810	1.4			
	93.3	13	30	861	1.1			
	70	16	40	948	0.9			
	186.7	7.7	7.5	683	2.3	NMRV030	6324	07
	140	10	10	752	1.8			
	93.3	14	15	861	1.3			
	70	18	20	948	1			
	56	20	25	1021	0.9			
	46.7	24	30	1085	0.8			
	93.3	14	30	1657	2.4	NMRV040	6312	08
	70	17	40	1824	1.8			
	56	21	50	1964	1.4			
	70	19	20	1824	2	NMRV040	6324	08
	56	23	25	1964	1.7			
	46.7	25	30	2087	1.7			
	35	32	40	2298	1.3			
	28	37	50	2475	1			
	23.3	42	60	2630	0.8			
	45	28	20	2113	1.5			
	36	34	25	2276	1.3			
	30	38	30	2419	1.3			
	22.5	47	40	2662	1			
	46.7	24	60	2865	2.1	NMRV050	6312	09
	35	30	80	3153	1.5			
	28	34	100	3397	1.2			
	35	33	40	3153	2.3	NMRV050	6324	09
	28	39	50	3397	1.9			
	23.3	44	60	3610	1.6			
	17.5	52	80	3973	1.2			
14	59	100	4280	0.9				
18	56	50	3936	1.4				
15	63	60	4183	1.1				
11.3	75	80	4604	0.9				
15	66	60	5467	2.1	NMRV063	7116	10	
11.3	79	80	6018	1.6				
9	90	100	6270	1.4				
3.5	216	400	6270	1	NMRV030/063	6324	20	
2.8	252	500	6270	0.8				
2.3	336	600	7380	1.1	NMRV040/075	6324	21	
1.9	371	750	7380	0.9				
1.6	419	900	7380	0.8				
1.2	544	1200	8180	1				
0.93	647	1500	8180	0.8	NMRV040/090	6324	21	
0.78	727	1800	10320	1.5				
0.58	948	2400	10320	1.1				



	N1=1400
	N1=2800
	N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page
0.25 (6322) (7114) (7126)	373.3	5.6	7.5	542	2.3	NMRV030	6322	07
	280	7.2	10	597	1.8			
	186.7	10	15	683	1.3			
	140	13	20	752	0.9			
	112	15	25	810	1			
	93.3	18	30	861	0.8	NMRV040	7114	08
	186.7	11	7.5	1315	3.6			
	140	14	10	1447	2.8			
	93.3	20	15	1657	1.9			
	70	26	20	1824	1.5			
	56	32	25	1964	1.2			
	46.7	35	30	2087	1.3			
	35	44	40	2298	0.9	NMRV040	7126	08
	120	17	7.5	1524	2.6			
	90	22	10	1677	2			
	60	31	15	1920	1.4			
	45	39	20	2113	1.1			
	36	48	25	2276	0.9			
	30	53	30	2419	0.9	NMRV050	6322	09
	35	42	80	3153	1.1			
	28	48	100	3397	0.8	NMRV050	7114	09
	70	27	20	2503	2.7			
	56	32	25	2696	2.2			
	46.7	36	30	2865	2.3			
	35	46	40	3153	1.7			
	28	54	50	3397	1.4			
	23.3	60	60	3610	1.1			
	17.5	72	80	3973	0.9	NMRV050	7126	09
	45	40	20	2900	1.9			
	36	48	25	3124	1.5			
	30	54	30	3320	1.7			
	22.5	67	40	3654	1.2			
	18	78	50	3936	1	NMRV063	7114	10
	15	88	60	4183	0.8			
	28	55	50	4440	2.4			
	23.3	64	60	4719	2	NMRV063	7126	10
	17.5	76	80	5193	1.6			
	14	87	100	5595	1.4			
	18	81	50	5145	1.8	NMRV030/063	6322	20
	15	92	60	5467	1.5			
	11.3	110	80	6018	1.2			
	9	125	100	6270	1			
	7	150	400	6270	1.4	NMRV075	7114	11
	5.6	175	500	6270	1.2			
	17.5	80	80	6130	2.3	NMRV075	7126	11
14	94	100	6603	1.9				
11.3	116	80	7103	1.7	NMRV040/075	7114	21	
9	133	100	7380	1.4				
3.5	321	400	7380	1.1	NMRV040/090	7114	21	
2.8	375	500	7380	0.8				
2.3	488	600	8180	1.2	NMRV050/110	7114	21	
1.9	553	750	8180	0.9				
1.6	612	900	8180	0.8				
1.2	776	1200	10320	1.3	NMRV063/130	7114	20	
0.93	924	1500	10320	1.2				
0.78	1010	1800	10320	1.1				
0.58	1358	2400	13500	1				
0.47	1626	3000	13500	0.8				



	N1=1400
	N1=2800
	N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page	
	0.35	1910	4000	13500	0.6	NMRV063/130	7114	22	
	0.28	2132	5000	13500	0.5				
		0.8	1199	1800	18000	1.8	NMRV063/150	7114	15
		0.6	1446	2400	18000	1.8			
		0.5	1713	3000	18000	1.4			
		0.4	2026	4000	18000	0.9			
	0.3	2251	5000	18000	0.7				
0.37 (7112) (7124) (8026)	373.3	8.3	7.5	1044	3.3	NMRV040	7112	08	
	280	11	10	1149	2.6				
	186.7	16	15	1315	1.9				
	140	20	20	1447	1.4				
	112	25	25	1559	1.1				
		186.7	16	7.5	1315	24	NMRV040	7124	08
		140	21	10	1447	1.9			
		93.3	30	15	1657	1.3			
		70	39	20	1824	1			
		56	47	25	1964	0.8			
	46.7	52	30	2087	0.8				
		112	25	25	2140	2	NMRV050	7112	09
		93.3	29	30	2274	2.2			
		70	37	40	2503	1.6			
		56	44	50	2696	1.2			
		46.7	50	60	2865	1			
	35	62	80	3153	0.7				
		140	21	10	1987	3.3	NMRV050	7124	09
		93.3	31	15	2274	2.4			
		70	39	20	2503	1.8			
		56	47	25	2696	1.5			
		46.7	54	30	2865	1.5			
		35	68	40	3153	1.1			
		28	80	50	3397	0.9			
		23.3	89	60	3610	0.8			
		120	25	7.5	2091	3.3	NMRV050	8016	09
		90	33	10	2302	2.5			
		60	47	15	2635	1.8			
		45	59	20	2900	1.3			
		36	72	25	3124	1			
30		80	30	3320	1.1				
	35	70	40	4122	2.1	NMRV063	7124	10	
	28	82	50	4440	1.6				
	23.3	94	60	4719	1.4				
	17.5	113	80	5193	1.1				
	14	129	100	5595	0.9				
	45	60	20	3791	2.4	NMRV063	8016	10	
	36	73	25	4084	1.9				
	30	82	30	4339	2.1				
	22.5	102	40	4776	1.6				
	18	120	50	5145	1.2				
	15	137	60	5467	1				
	9.3	182	300	6270	1.3				
7	222	400	6270	1	NMRV030/063	7112	20		
	23.3	97	60	5569	2	NMRV075	7124	11	
	17.5	119	80	6130	1.6				
	14	139	100	6603	1.3				
	18	124	50	6073	1.8	NMRV075	8016	11	
	15	141	60	6453	1.5				
	11.3	172	80	7103	1.2				
	9	196	100	7380	1				



	N1=1400
	N1=2800
	N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page
0.37 (7112) (7124) (8016)	4.7	383	300	7380	1	NMRV040/075	7124	21
	3.5	474	400	7380	0.7			
	11.3	184	80	7859	1.7	NMRV090	8016	12
	9	212	100	8180	1.3			
	4.7	406	300	8180	1.5	NMRV040/090	7124	21
	3.5	505	400	8180	1.2			
	2.8	593	500	8180	0.9	NMRV040/090	7124	21
	2.3	722	600	8180	0.8			
	1.9	837	750	10320	1.3	NMRV050/110	7124	21
	1.6	928	900	10320	1.2			
	1.2	1148	1200	10320	0.8			
	0.93	1444	1500	13500	1.1	NMRV063/130	7124	22
	0.78	1586	1800	13500	0.9			
	0.8	1774	1800	18000	1.2	NMRV063/150	7124	15
0.6	2141	2400	18000	1.2				
0.5	2535	3000	18000	0.9				
0.55 (7122) (8014) (8026)	373.3	12	7.5	1044	2.2	NMRV040	7122	08
	280	16	10	1149	1.8			
	186.7	24	15	1315	1.3			
	140	30	20	1447	0.9			
	112	37	25	1559	0.8			
	140	31	20	1987	1.7	NMRV050	7122	09
	112	38	25	2140	1.4			
	93.3	43	30	2274	1.5			
	70	55	40	2503	1.1			
	56	65	50	2696	0.8			
	46.7	74	60	2865	0.7	NMRV050	8014	09
	186.7	24	7.5	1805	2.9			
	140	32	10	1987	2.2			
	93.3	46	15	2274	1.6			
	70	59	20	2503	1.2			
	56	70	25	2696	1	NMRV050	8026	09
	46.7	80	30	2865	1			
	120	37	7.5	2091	2.2	NMRV050	8026	09
	90	48	10	2302	1.7			
	60	69	15	2635	1.2			
	45	88	20	2900	0.9			
	70	56	40	3272	1.9	NMRV063	7122	10
	56	68	50	3524	1.5			
	46.7	78	60	3745	1.2			
	35	96	80	4122	0.9			
	28	111	100	4440	0.7			
	70	60	20	3272	2.2	NMRV063	8014	10
	56	72	25	3524	1.8			
	46.7	82	30	3745	1.9			
	35	104	40	4122	1.4			
	28	122	50	4440	1.1			
	23.3	140	60	4719	0.9			
	60	70	15	3444	2.2			
	45	90	20	3791	1.6			
36	108	25	4084	1.3				
30	123	30	4339	1.4				
22.5	152	40	4776	1.1				
35	99	80	4865	1.3	NMRV075	7122	11	
28	116	100	5241	1				
35	108	40	4865	2	NMRV075	8014	11	
28	128	50	5241	1.6				



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P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page
0.55 (7112) (8014) (8026)	23.3	144	60	5569	1.4	NMRV075	8014	11
	17.5	177	80	6130	1.1			
	14	206	100	6603	0.9			
	30	124	30	5122	2	NMRV075	8026	11
	22.5	156	40	5637	1.5			
	18	184	50	6073	1.2			
	15	210	60	6453	1			
	17.5	189	80	6783	1.5	NMRV090	8014	12
	14	221	100	7306	1.2			
	18	196	50	6719	2	NMRV090	8026	12
	15	224	60	7140	1.6			
	11.3	274	80	7859	1.1			
	9	315	100	8180	0.9			
	9.3	305	300	8180	2	NMRV040/090	7122	21
	7	375	400	8180	1.5			
	5.6	441	500	8180	1.2			
	17.5	201	80	8571	2.6	NMRV110	8014	13
	14	236	100	9232	2			
	11.3	293	80	9931	1.9	NMRV110	8026	13
	9	344	100	10320	1.5			
4.7	615	300	10320	2	NMRV050/110	8014	21	
3.5	810	400	10320	1.4				
2.8	938	500	10320	1.1				
2.3	1096	600	10320	1				
1.9	1244	750	10320	0.9				
2.8	957	500	13500	1.6	NMRV063/130	8014	22	
1.9	1382	750	13500	1.2				
1.2	2057	1200	13500	0.8				
0.8	2637	1800	1800	0.8	NMRV063/150	8014	15	
0.6	3182	2400	2400	0.8				
0.75 (8012) (8024) (90S6)	373.3	17	7.5	1433	3	NMRV050	8012	09
	280	22	10	1577	2.4			
	186.7	31	15	1805	1.7			
	140	41	20	1987	1.3			
	112	49	25	2140	1			
	93.3	56	30	2274	1.1			
	186.7	33	7.5	1805	2.1	NMRV050	8024	09
	140	43	10	1987	1.6			
	93.3	62	15	2274	1.2			
	70	80	20	2503	0.9			
	140	43	20	2597	2.3	NMRV063	8012	10
	112	52	25	2797	1.8			
	93.3	60	30	2973	2			
	70	77	40	3272	1.4			
	56	92	50	3524	1.1			
	46.7	106	60	3745	0.9			
	93.3	63	15	2973	2.2	NMRV063	8024	10
	70	82	20	3272	1.6			
	56	98	25	3524	1.3			
	46.7	112	30	3745	1.4			
35	141	40	4122	1				
120	51	7.5	2734	2.9	NMRV063	90S6	10	
90	67	10	3009	2.3				
60	96	15	3444	1.6				
45	123	20	3791	1.2				
36	147	25	4084	0.9				
30	167	30	4339	1				



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P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page
0.75 (8012) (8024) (90S6)	46.7	107	60	4421	1.3	NMRV075	8012	11
	28	159	100	5241	0.8			
	56	101	25	4160	2	NMRV075	8024	11
	46.7	117	30	4421	2			
	35	147	40	4865	1.5			
	28	174	50	5241	1.2			
	23.3	197	60	5569	1			
	60	97	15	4065	2.4	NMRV075	90S6	11
	45	124	20	4474	1.9			
	36	149	25	4820	1.4			
	30	170	30	5122	1.5			
	22.5	213	40	5637	1.1	NMRV090	8012	12
	35	143	80	5383	1.6			
	28	169	100	5799	1.2	NMRV090	8024	12
	28	182	50	5799	1.8			
	23.3	209	60	6163	1.5			
	17.5	258	80	6783	1.1			
	14	302	100	7306	0.9			
	30	179	30	5667	2.6	NMRV090	90S6	12
	22.5	226	40	6238	1.8			
	18	267	50	6719	1.4			
	15	306	50	7140	1.4			
	7	512	400	8180	1.1	NMRV040/090	8012	21
	5.6	601	500	8180	0.9			
	17.5	274	80	8571	1.9	NMRV110	8024	13
	14	322	100	9232	1.5			
	15	325	60	9023	2.1	NMRV110	90S6	13
	11.3	399	80	9931	1.4			
	9	470	100	10320	1.1	NMRV050/110	8012	21
	9.3	424	300	10320	2.8			
7	553	400	10320	2.1				
5.6	640	500	10320	1.6				
4.7	838	300	10320	1.5				
3.5	1105	400	10320	1.1	NMRV050/110	8024	21	
11.3	399	80	12989	2.1				
9	470	100	13500	1.7	NMRV130	90S6	07	
2.8	1305	500	13500	1.1				
2.3	1557	600	13500	1				
1.9	1772	750	13500	0.9				
1.6	2014	900	13500	0.8				
2.8	1290	500	18000	1.8	NMRV063/150	90L6	15	
2.3	1529	600	18000	1.7				
1.9	1783	750	18000	1.3				
1.6	2215	900	18000	0.9				
1.2	2680	1200	18000	1				
1.1 (8022) (90L6) (90S4)	373.3	25	7.5	1433	2.1	NMRV050	8022	09
	280	33	10	1577	1.6			
	186.7	48	15	1805	1.2			
	140	62	20	1987	0.9			
	186.7	46	15	2359	2.1	NMRV063	8022	10
	140	60	20	2597	1.6			
	112	72	25	2797	1.2			
	93.3	82	30	2973	1.1			
	70	104	40	3272	1			
	120	75	7.5	2734	2	NMRV063	90L6	10
	90	98	10	3009	1.5			
	60	140	15	3444	1.1			
	45	180	20	3791	0.8			



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1.1 (8022) (90L6) (90S4)	186.7	50	7.5	2359	2.6	NMRV063	90S4	10
	140	65	10	2597	2			
	93.3	92	15	2973	1.5			
	70	120	20	3272	1.1			
	56	144	25	3524	0.9			
	46.7	164	30	3745	1	NMRV075	8022	11
	112	77	25	3302	1.9			
	93.3	89	30	3509	1.9			
	70	114	40	3862	1.4			
	56	137	50	4160	1.1			
	46.7	157	60	4421	0.9	NMRV075	90L6	11
	90	98	10	3551	2.3			
	60	142	15	4065	1.6			
	45	182	20	4474	1.3			
	36	219	25	4820	1			
	30	249	30	5122	1	NMRV075	90S4	11
	93.3	95	15	3509	2.1			
	70	122	20	3862	1.7			
	56	148	25	4160	1.3			
	46.7	171	30	4421	1.3			
	35	216	40	4865	1	NMRV090	8022	12
	35	210	80	5383	1.1			
	28	248	100	5799	0.8	NMRV090	90L6	12
	36	228	25	5333	1.6			
	30	263	30	5667	1.8			
	22.5	331	40	6238	1.2			
	18	391	50	6719	1			
	15	448	60	7140	0.8	NMRV090	90S4	12
	35	222	40	5383	1.6			
	28	266	50	5799	1.3			
23.3	307	60	6163	1	NMRV110	90L6	13	
22.5	345	40	7882	2.3				
18	414	50	8491	1.8				
15	476	60	9023	1.4				
11.3	586	80	9931	1				
28	278	50	7328	2.3	NMRV110	90S4	13	
23.3	325	60	7787	1.9				
17.5	402	80	8571	1.3				
14	473	100	9232	1				
9.3	621	300	10320	1.9	NMRV050/110	8022	21	
7	810	400	10320	1.4				
5.6	938	500	10320	1.1				
11.3	586	80	12989	1.4	NMRV130	90L6	07	
9	689	100	13500	1.1				
17.5	408	80	11210	2.1	NMRV130	90S4	07	
14	480	100	12076	1.5				
4.7	1274	300	13500	1.3	NMRV063/130	90S4	22	
3.5	1621	400	13500	1				
2.8	1913	500	13500	0.8				
9.3	752	150	18000	3.1	NMRV063/150	90S4	15	
7	966	200	18000	2.4				
5.6	1175	250	18000	1.7				
4.7	1364	300	18000	1.7				
3.5	1619	400	18000	1.6				
2.8	1893	500	18000	1.2				
2.3	2242	600	18000	1.2				
1.9	2616	750	18000	0.9				



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P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page		
1.5 (90S2) (90L4) (100L6)	373.3	34	7.5	1433	1.5	NMRV050	90S2	09		
	280	45	10	1577	1.2					
	186.7	65	15	1805	0.9					
	186.7	68	7.5	2359	1.9	NMRV063	90L4	10		
	140	88	10	2597	1.5					
	93.3	126	15	2973	1.1					
	70	164	20	3272	0.8					
	373.3	35	7.5	1873	2.7	NMRV063	90S2	10		
	280	45	10	2061	2.1					
	186.7	66	15	2359	1.6					
	140	86	20	2597	1.2					
	112	105	25	2797	0.9					
	93.3	120	30	2973	1					
	120	103	7.5	3227	2	NMRV075	100L6	11		
	90	134	10	3551	1.7					
	60	193	15	4065	1.2					
	140	89	10	3065	2.2	NMRV075	90L4	11		
	93.3	129	15	3509	1.5					
	70	166	20	3862	1.3					
	56	202	25	4160	1					
	46.7	233	30	4421	1					
	280	45	10	2433	3.1				NMRV075	90S2
	186.7	66	15	2785	2.2					
	140	86	20	3065	1.8					
	112	105	25	3302	1.4					
	93.3	121	30	3509	1.4					
	70	156	40	3862	1					
	56	187	50	4160	0.8					
	46.7	215	60	4421	0.7					
	90	137	10	3929	2.7	NMRV090	100L6	12		
60	198	15	4498	2.1						
45	258	20	4951	1.5						
36	310	25	5333	1.2						
30	358	30	5667	1.3						
70	170	20	4273	2.1	NMRV090	90L4	12			
56	207	25	4603	1.6						
46.7	239	30	4891	1.7						
35	303	40	5383	1.2						
28	363	50	5799	0.9						
23.3	418	60	6163	0.8						
56	197	50	4603	1.4				NMRV090	90S4	12
46.7	227	60	4891	1.1						
45	264	20	6256	2.7	NMRV110	100L6	13			
36	322	25	6739	2.4						
30	363	30	7161	2.3						
22.5	471	40	7882	1.7						
18	565	50	8491	1.3						
15	649	60	9023	1.1						
35	315	40	6803	2.2				NMRV110	90L4	13
28	379	50	7328	1.7						
23.3	443	60	7787	1.4						
17.5	548	80	8571	0.9						
46.7	236	60	6181	2	NMRV110	90S2	13			
35	299	80	6803	1.3						
28	358	100	7328	1						
9.3	847	300	10320	1.4	NMRV050/110	90S2	21			
7	1105	400	10320	1						
5.6	1279	500	10320	0.8						



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P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page
1.5 (90S2) (90L4) (100L6)	22.5	471	40	10309	2.3	NMRV130	100L6	14
	18	565	50	11105	1.8			
	15	659	60	11801	1.4			
	11.3	799	80	12989	1.1			
	17.5	557	80	11210	1.5	NMRV130	90L4	14
	14	655	100	12076	1.1			
	9.3	878	300	13500	1.9	NMRV063/130	90S2	22
	7	1105	400	13500	1.4			
	5.6	1305	500	13500	1.1			
	4.7	1737	300	13500	1	NMRV063/130	90L4	22
	3.5	2210	400	13500	0.7			
	9.3	1026	150	18000	2.3	NMRV063/150	90L4	15
	7	1317	200	18000	1.8			
	5.6	1602	250	18000	1.3			
	4.7	1860	300	18000	1.3			
	3.5	2208	400	18000	1.2			
	2.8	2582	500	18000	0.9			
	2.3	3057	600	18000	0.9			
373.3	51	7.5	1873	1.8	NMRV063			
280	66	10	2061	1.5				
186.7	97	15	2359	1.1				
186.7	99	7.5	2785	1.8	NMRV075	100LA4	11	
140	131	10	3065	1.5				
93.3	189	15	3509	1				
2.2 (90L2) (100LA4) (112M6)	373.3	50	7.5	2210	2.5	NMRV075	90L2	11
	280	66	10	2433	2.1			
	186.7	97	15	2785	1.5			
	140	126	20	3065	1.3			
	112	154	25	3302	1			
	93.3	178	30	3509	0.9			
	186.7	100	7.5	3081	2.9	NMRV090	100LA4	12
	140	132	10	3391	2.3			
	93.3	191	15	3882	1.9			
	70	249	20	4273	1.4			
	56	304	25	4603	1.1			
	46.7	351	30	4891	1.2			
	120	154	7.5	3570	2.2	NMRV090	112M6	12
	90	201	10	3929	1.8			
	60	291	15	4498	1.4			
	45	378	20	4951	1			
	140	129	20	3391	2	NMRV090	90L2	12
	112	159	25	3653	1.6			
	93.3	185	30	3882	1.7			
	70	237	40	4273	1.2			
	56	289	50	4603	0.9			
	70	255	20	5399	2.5			
	56	311	25	5816	2.2			
	46.7	355	30	6181	2			
35	462	40	6803	1.5				
28	555	50	7328	1.2				
23.3	649	60	7787	1				
90	203	10	4965	3.5	NMRV110	112M6	13	
60	294	15	5684	2.6				
45	388	20	6256	1.9				
36	473	25	6739	1.6				
30	532	30	7161	1.6				
112	161	25	4616	3.1	NMRV110	90L2	13	
93.3	187	30	4905	3				



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P1n [Kw]	n2 [1/min]	M2n [Nm]	i	Fr2 [N]	fs			Page		
2.2 (90L2) (100LA4) (112M6)	70	243	40	5399	2.1	NMRV110	90L2	13		
	56	296	50	5816	1.7					
	46.7	346	60	6181	1.4					
	2.2 (90L2) (100LA4) (112M6)	35	468	40	8897	2.2	NMRV130	100LA4	14	
		28	563	50	9584	1.7				
		23.3	658	60	10185	1.4				
		2.2 (90L2) (100LA4) (112M6)	17.5	816	80	11210	1	NMRV130	112M6	14
			36	473	25	8814	2.2			
			30	539	30	9366	2.1			
			22.5	691	40	10309	1.6			
			18	829	50	11105	1.2			
			15	966	60	11801	1			
		2.2 (90L2) (100LA4) (112M6)	35	444	80	8897	1.3	NMRV130	90L2	14
			28	525	100	9584	1			
			28	570	50	13100	2.5			
23.3	657	60	13920	1.9						
17.5	816	80	15320	1.4						
14	960	100	16500	1						
3.0 (100L2) (100LB4) (132S6)	373.3	68	7.5	2210	1.9	NMRV075	100L2	11		
	280	90	10	2433	1.6					
	3.0 (100L2) (100LB4) (132S6)	186.7	135	7.5	2785	1.4	NMRV075	100LB4	11	
		140	178	10	3065	1.1				
		93.3	258	15	3509	0.8				
	3.0 (100L2) (100LB4) (132S6)	373.3	70	7.5	2446	3	NMRV090	100L2	12	
		280	92	10	2692	2.6				
	3.0 (100L2) (100LB4) (132S6)	186.7	137	7.5	3081	2.1	NMRV090	100LB4	12	
		140	180	10	3391	1.7				
		93.3	261	15	3882	1.4				
		70	340	20	4273	1				
		56	414	25	4603	0.8				
		46.7	479	30	4891	0.9				
		93.3	264	15	4905	2.5				NMRV110
	70	348	20	5399	1.9					
	56	425	25	5816	1.6					
	46.7	485	30	6181	1.5					
	3.0 (100L2) (100LB4) (132S6)	35	630	40	6803	1.1	NMRV110	132S6	13	
		28	757	50	7328	0.9				
		120	210	7.5	4511	3.1				
		90	277	10	4965	2.5				
		60	401	15	5684	1.9				
	3.0 (100L2) (100LB4) (132S6)	45	528	20	6256	1.4	NMRV130	100LB4	14	
		56	430	25	7607	2.2				
46.7		491	30	8084	2.1					
35		638	40	8897	1.6					
28		767	50	9584	1.3					
23.3		898	60	10185	1					
17.5		1113	80	11210	0.8					
90		277	10	6494	3.4	NMRV130				132S6
60	406	15	7434	2.6						
45	528	20	8182	1.9						
36	645	25	8814	1.6						
30	735	30	9366	1.6						
22.5	942	40	10309	1.2						


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

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3.0 (100L2) (100LB4) (132S6)	28	777	50	13100	1.8	NMRV150	100LB4	15
	23.3	896	60	13920	1.4			
	17.5	1113	80	15320	1			
	14	1310	100	16500	0.8			
4.0 (112M2) (112M4) (132MA6)	373.3	91	7.5	2210	1.4	NMRV075	112M2	11
	280	120	10	2433	1.2			
	186.7	180	7.5	2785	1	NMRV075	112M4	11
	140	237	10	3065	0.8			
	373.3	93	7.5	2446	2.2	NMRV090	112M2	12
	280	123	10	2692	1.9			
	186.7	182	7.5	3081	1.6	NMRV090	112M4	12
	140	240	10	3391	1.3			
	93.3	348	15	3882	1			
	70	453	20	4273	0.8			
	140	240	10	4285	2.5	NMRV110	112M4	13
	93.3	352	15	4905	1.9			
	70	464	20	5399	1.4			
	56	566	25	5816	1.2			
	46.7	646	30	6181	1.1			
	120	280	7.5	4511	2.3	NMRV110	132MA6	13
	90	369	10	4965	1.9			
	60	535	15	5684	1.4			
	56	573	25	7607	1.6	NMRV130	112M4	14
	46.7	654	30	8084	1.6			
	35	851	40	8897	1.2			
	28	1023	50	9584	1			
	23.3	1197	60	10185	0.8			
	120	283	7.5	5901	3.1	NMRV130	132MA6	14
90	369	10	6494	2.6				
60	541	15	7434	2				
45	705	20	8182	1.5				
36	860	25	8814	1.2				
28	1036	50	13100	1.4	NMRV150	112M4	15	
23.3	1195	60	13920	1.1				
17.5	1484	80	15320	0.8				
5.5 (132S4)	186.7	250	7.5	3893	2.2	NMRV110	132S4	13
	140	330	10	4285	1.8			
	93.3	484	15	4905	1.4			
	70	638	20	5399	1			
	140	334	10	5605	2.5	NMRV130	132S4	14
	93.3	490	15	6416	1.9			
	70	638	20	7062	1.4			
	56	788	25	7607	1.2			
	46.7	900	30	8084	1.2			
	35	1171	40	8897	0.9			
	70	645	20	9650	2	NMRV150	132S4	15
	56	788	25	10400	1.5			
	46.7	934	30	11050	1.3			
	35	1171	40	12160	1.3			
28	1426	50	13100	1				
23.3	1643	60	13920	0.8				


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7.5 (132M4)	186.7	341	7.5	3893	1.6	NMRV110	132M4	13
	140	450	10	4285	1.3			
	93.3	660	15	4905	1			
	186.7	345	7.5	5092	2.1	NMRV130	132M4	14
	140	455	10	5605	1.8			
	93.3	668	15	6416	1.4			
	70	870	20	7062	1			
	56	1074	25	7607	0.9			
	46.7	1227	30	8084	0.8			
	35	1596	40	8897	0.7			
	70	880	20	9650	1.5	NMRV150	132S4	15
	56	1074	25	10400	1.1			
	46.7	1274	30	11050	0.9			
	35	4596	40	12160	1			
	186.7	512	7.5	6960	2.3	NMRV150	132M4	11
	140	675	10	7660	1.8			
	93.3	990	15	8770	1.3			
	70	1291	20	9650	1			
	56	1576	25	10400	0.8			
	186.7	698	7.5	6960	1.7	NMRV150	132M4	15
	140	921	10	7660	1.3			
93.3	1351	15	8770	0.9				
70	1760	20	9650	0.7				


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


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13	10	0.45	280	597	140		
13	15	0.31	186.7	683	140		
12	20	0.23	140	752	146		
15	25	0.25	112	810	210		
15	30	0.21	93.3	861	210		
14	40	0.16	70	948	127		
12	50	0.12	56	1021	128		
12	60	0.1	46.7	1085	126		
11	80	0.08	35	1194	130		
27	7.5	1.2	373.3	1044	233	NRV040	16
30	10	1.0	280	1149	272		
31	15	0.72	186.7	1315	291		
29	20	0.52	140	1447	204		
28	25	0.42	112	1559	236		
34	30	0.44	93.3	1657	350		
31	40	0.32	70	1824	350		
30	50	0.26	56	1964	350		
27	60	0.21	46.7	2087	350		
25	80	0.16	35	2298	350		
22	100	0.12	28	2475	350		
52	7.5	2.3	373.3	1433	324		
53	10	1.8	280	1577	378		
57	15	1.3	186.7	1805	399		
53	20	0.95	140	1987	417		
51	25	0.75	112	2140	482		
65	30	0.82	93.3	2274	490		
59	40	0.59	70	2503	490		
53	50	0.45	56	2696	490		
50	60	0.37	46.7	2865	490		
45	80	0.27	35	3153	490		
40	100	0.21	28	3397	490		
92	7.5	4.0	373.3	1873	395	NRV063	16
96	10	3.2	280	2061	463		
101	15	2.3	186.7	2359	492		
97	20	1.7	140	2597	538		
91	25	1.3	112	2797	593		
120	30	1.5	93.3	2973	700		
113	40	1.1	70	3272	700		
102	50	0.83	56	3524	700		
96	60	0.68	46.7	3745	700		
86	80	0.49	35	4122	700		
74	100	0.37	28	4440	700		


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141	10	4.7	280	2433	703				
150	15	3.4	186.7	2785	727				
160	20	2.8	140	3065	872				
147	25	2.1	112	3302	980				
170	30	2.1	93.3	3509	980				
166	40	1.6	70	3862	980				
149	50	1.2	56	4160	980				
143	60	1.0	46.7	4421	980				
130	80	0.72	35	4865	980				
123	100	0.58	28	5241	980				
207	7.5	8.9	373.3	2446	715	NRV090	16		
236	10	7.7	280	2692	900				
270	15	6.0	186.7	3081	1034				
258	20	4.4	140	3391	1120				
246	25	3.4	112	3653	1270				
311	30	3.7	93.3	3882	1270				
280	40	2.6	70	4273	1270				
263	50	2.0	56	4603	1270				
242	60	1.6	46.7	4891	1270				
229	80	1.2	35	5383	1270				
203	100	0.9	28	5799	1270				
386	7.5	16.6	373.3	3090	950			NRV110	16
433	10	14.1	280	3401	1194				
482	15	10.7	186.7	3893	1337				
475	20	8.0	140	4285	1485				
499	25	6.8	112	4616	1700				
552	30	6.4	93.3	4905	1700				
519	40	4.7	70	5399	1700				
498	50	3.7	56	5816	1700				
472	60	3.0	46.7	6181	1700				
398	80	2.0	35	6803	1700				
382	100	1.6	28	7328	1700				
514	7.5	22.1	373.3	4042	1190	NRV130	16		
574	10	18.7	280	4449	1493				
669	15	14.7	186.7	5092	1725				
660	20	11	140	5605	1912				
660	25	9.0	112	6038	2100				
774	30	9.0	93.3	6416	2100				
727	40	6.5	70	7062	2100				
696	50	5.1	56	7607	2100				
638	60	4.0	46.7	8084	2100				
606	80	3.0	35	8897	2100				
525	100	2.2	28	9584	2100				


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18	10	0.32	140	752	169		
18	15	0.23	93.3	861	169		
18	20	0.18	70	948	190		
20	25	0.18	56	1021	210		
20	30	0.15	46.7	1085	210		
18	40	0.11	35	1194	210		
17	50	0.09	28	1286	210		
16	60	0.08	23.3	1367	210		
12	80	0.05	17.5	1504	210		
40	7.5	0.9	186.7	1315	294	NRV040	16
40	10	0.69	140	1447	331		
39	15	0.48	93.3	1657	331		
39	20	0.37	70	1824	350		
38	25	0.3	56	1964	350		
44	30	0.31	46.7	2087	350		
41	40	0.23	35	2298	350		
37	50	0.18	28	2475	350		
35	60	0.15	23.3	2630	350		
33	80	0.12	17.5	2895	350		
29	100	0.09	14	3118	350		
71	7.5	1.6	186.7	1805	401	NRV050	16
70	10	1.2	140	1987	490		
73	15	0.88	93.3	2274	490		
72	20	0.68	70	2503	490		
69	25	0.54	56	2696	490		
83	30	0.57	46.7	2865	490		
77	40	0.42	35	3153	490		
73	50	0.34	28	3397	490		
68	60	0.28	23.3	3610	490		
64	80	0.22	17.5	3973	490		
52	100	0.16	14	4280	490		
126	7.5	2.8	186.7	2359	500	NRV063	16
129	10	2.2	140	2597	571		
134	15	1.6	93.3	2973	615		
131	20	1.2	70	3272	667		
131	25	1.0	56	3524	700		
164	30	1.1	46.7	3745	700		
143	40	0.76	35	4122	700		
133	50	0.6	28	4440	700		
130	60	0.51	23.3	4719	700		
119	80	0.39	17.5	5193	700		
118	100	0.34	14	5592	700		


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190	10	3.2	140	3065	830		
198	15	23	93.3	3509	851		
210	20	1.9	70	3862	980		
202	25	1.5	56	4160	980		
233	30	1.5	46.7	4421	980		
216	40	1.1	35	4865	980		
206	50	0.89	28	5241	980		
197	60	0.75	23.3	5569	980		
187	80	0.58	17.5	6130	980		
180	100	0.48	14	6603	980		
287	7.5	6.3	186.7	3081	900	NRV090	16
306	10	5.1	140	3391	1082		
357	15	4.1	93.3	3882	1257		
351	20	3.1	70	4273	1270		
332	25	2.4	56	4603	1270		
415	30	2.6	46.7	4891	1270		
363	40	1.8	35	5383	1270		
339	50	1.4	28	5799	1270		
307	60	1.1	23.3	6163	1270		
285	80	0.83	17.5	6783	1270		
270	100	0.67	14	7306	1270		
546	7.5	12	186.7	3893	1200	NRV110	16
588	10	9.8	140	4285	1463		
660	15	7.5	93.3	4905	1604		
649	20	5.6	70	5399	1700		
665	25	4.7	56	5816	1700		
727	30	4.5	46.7	6181	1700		
693	40	3.3	35	6803	1700		
656	50	2.6	28	7328	1700		
620	60	2.1	23.3	7787	1700		
512	80	1.4	17.5	8571	1700		
473	100	1.1	14	9232	1700		
741	7.5	16.1	186.7	5092	1500	NRV130	16
820	10	13.5	140	5605	1845		
917	15	10.3	93.3	6416	2070		
905	20	7.8	70	7062	2100		
931	25	6.5	56	7607	2100		
1047	30	6.4	46.7	8084	2100		
1043	40	4.9	35	8897	2100		
972	50	3.8	28	9584	2100		
928	60	3.1	23.3	10185	2100		
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742	100	1.7	14	12076	2100		


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


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20	15	0.17	60	997	197				
19	20	0.13	45	1098	210				
23	25	0.14	36	1183	210				
21	30	0.11	30	1257	210				
21	40	0.09	22.5	1383	210				
19	50	0.07	18	1490	210				
18	60	0.06	15	1583	210				
14	80	0.04	11.3	1743	210				
43	7.5	0.65	120	1524	319	NRV040	16		
44	10	0.5	90	1677	350				
45	15	0.36	60	1920	350				
44	20	0.28	45	2113	350				
44	25	0.23	36	2276	350				
48	30	0.23	30	2419	350				
44	40	0.17	22.5	2662	350				
43	50	0.14	18	2868	350				
38	60	0.11	15	3047	350				
37	80	0.09	11.3	3354	350				
33	100	0.07	9	3490	350				
81	7.5	1.2	120	2091	448			NRV050	16
83	10	0.94	90	2302	490				
84	15	0.67	60	2635	490				
76	20	0.48	45	2900	490				
76	25	0.39	36	3124	490				
91	30	0.42	30	3320	490				
83	40	0.31	22.5	3654	490				
78	50	0.25	18	3936	490				
74	60	0.21	15	4183	490				
66	80	0.16	11.3	4604	490				
56	100	0.12	9	4840	490				
151	7.5	2.2	120	2734	580	NRV063	16		
152	10	1.7	90	3009	661				
153	15	1.2	60	3444	670				
149	20	0.91	45	3791	700				
135	25	0.69	36	4084	700				
176	30	0.79	30	4339	700				
160	40	0.058	22.5	4776	700				
146	50	0.45	18	5145	700				
137	60	0.37	15	5467	700				
127	80	0.29	11.3	6018	700				
125	100	0.25	9	6270	700				


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223	10	2.5	90	3551	975				
232	15	1.8	60	4065	980				
232	20	1.4	45	4474	980				
219	25	1.1	36	4820	980				
249	30	1.1	30	5122	980				
236	40	0.83	22.5	5637	980				
217	50	0.64	18	6073	980				
206	60	0.54	15	6453	980				
200	80	0.43	11.3	7103	980				
191	100	0.36	9	7380	980				
336	7.5	4.8	120	3570	1040	NRV090	16		
365	10	4.0	90	3929	1270				
410	15	3.0	60	4498	1270				
395	20	2.3	45	4951	1270				
372	25	1.8	36	5333	1270				
454	30	1.9	30	5667	1270				
422	40	1.4	22.5	6238	1270				
391	50	1.1	18	6719	1270				
350	60	0.86	15	7140	1270				
314	80	0.63	11.3	7859	1270				
281	100	0.49	9	8180	1270				
644	7.5	9.2	120	4511	1390			NRV110	16
702	10	7.6	90	4965	1700				
749	15	5.6	60	5684	1700				
722	20	4.1	45	6256	1700				
752	25	3.5	36	6739	1700				
847	30	3.5	30	7161	1700				
785	40	2.5	22.5	7882	1700				
753	50	2.0	18	8491	1700				
693	60	1.6	15	9023	1700				
586	80	1.1	11.3	9931	1700				
526	100	0.84	9	10320	1700				
871	7.5	12.3	120	5901	1740	NRV130	16		
951	10	10.3	90	6494	2100				
1055	15	7.8	60	7434	2100				
1022	20	5.8	45	8182	2100				
1031	25	4.8	36	8814	2100				
1152	30	4.7	30	9366	2100				
1099	40	3.5	22.5	10309	2100				
1017	50	2.7	18	11105	2100				
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852	80	1.6	11.3	12989	2100				
751	100	1.2	9	13500	2100				

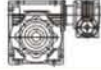
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24	15	0.12	33.3	1213	210		
23	20	0.09	25	1336	210		
29	25	0.1	20	1439	210		
26	30	0.08	16.7	1529	210		
24	40	0.06	12.5	1683	210		
22	50	0.05	10	1813	210		
20	60	0.04	8.3	1830	210		
17	80	0.03	6.3	1830	210		
53	7.5	0.45	66.7	1853	350	NRV040	16
53	10	0.35	50	2040	350		
56	15	0.26	33.3	2335	350		
52	20	0.19	25	2570	350		
49	25	0.15	20	2769	350		
58	30	0.16	16.7	2942	350		
53	40	0.12	12.5	3238	350		
52	50	0.1	10	3488	350		
46	60	0.08	8.3	3490	350		
40	80	0.06	6.3	3490	350		
38	100	0.05	5	3490	350		
102	7.5	0.86	66.7	2544	490	NRV050	16
104	10	0.67	50	2800	490		
102	15	0.47	33.3	3205	490		
92	20	0.33	25	3528	490		
94	25	0.28	20	3800	490		
106	30	0.29	16.7	4038	490		
99	40	0.22	12.5	4445	490		
89	50	0.17	10	4788	490		
82	60	0.14	8.3	4840	490		
75	80	0.11	6.3	4840	490		
69	100	0.09	5	4840	490		
180	7.5	1.5	66.7	3325	700	NRV063	16
188	10	1.2	50	3660	700		
188	15	0.85	33.3	4190	700		
178	20	0.63	25	4611	700		
163	25	0.48	20	4967	700		
204	30	0.54	16.7	4967	700		
186	40	0.4	12.5	5279	700		
174	50	0.32	10	5810	700		
162	60	0.26	8.3	6259	700		
138	80	0.19	6.3	6270	700		
131	100	0.16	5	6270	700		


	N1=500
	N1=1400
	N1=2800
	N1=900




M2n [Kw]	I	P1n [Kw]	n2 [1/min]	Fr2 [N]	Fr1 [N]		Page
253	7.5	2.1	66.7	3925	980	NRV075	16
266	10	1.7	50	4320	980		
268	15	1.2	33.3	4945	980		
281	20	0.98	25	5443	980		
251	25	0.73	20	5863	980		
299	30	0.77	16.7	6231	980		
279	40	0.58	12.5	6858	980		
248	50	0.44	1	7380	980		
234	60	0.37	8.3	7380	980		
220	80	0.29	6.3	7380	980		
206	100	0.24	5	7380	980		
406	7.5	3.3	66.7	4343	1270		
433	10	2.7	50	4780	1270		
488	15	2.1	33.3	5472	1270		
477	20	1.6	25	6022	1270		
430	25	1.2	20	6487	1270		
568	30	1.4	16.7	6894	1270		
486	40	0.95	12.5	7588	1270		
451	50	0.75	10	8174	1270		
407	60	0.59	8.3	8180	1270		
368	80	0.45	6.3	8180	1270		
328	100	0.35	5	8180	1270		
788	7.5	6.4	66.7	5488	1700	NRV110	16
844	10	5.2	50	6040	1700		
906	15	3.9	33.3	6914	1700		
856	20	2.8	25	7610	1700		
894	25	2.4	20	8198	1700		
988	30	2.4	16.7	8711	1700		
909	40	1.7	12.5	9588	1700		
882	50	1.4	10	10320	1700		
810	60	1.1	8.3	10320	1700		
668	80	0.76	6.3	10320	1700		
609	100	0.59	5	10320	1700		
1071	7.5	8.6	66.7	7178	2100		
1153	10	7.1	50	7900	2100		
1293	15	5.5	33.3	9043	2100		
1222	20	4.0	25	9953	2100		
1192	25	3.2	20	10722	2100		
1378	30	3.3	16.7	11394	2100		
1284	40	2.4	12.5	12540	2100		
1216	50	1.9	10	13500	2100		
1105	60	1.5	8.3	13500	2100		
967	80	1.1	6.3	13500	2100		
877	100	0.85	5	13500	2100		

	N1=500
	N1=1400
	N1=2800
	N1=900

M2n [Kw]	i	P1n [Kw]	n2 [1/min]	Fr2 [N]	Fr1 [N]		Page
73	300	0.08	4.7	3490	210	NRV030/040	20
67	400	0.06	3.5	3490	210		
59	500	0.04	2.8	3490	210		
63	600	0.04	2.3	3490	210		
68	750	0.04	1.9	3490	210		
59	900	0.03	1.6	3490	210		
48	1200	0.02	1.2	3490	210		
57	1500	0.02	0.9	3490	210		
60	1800	0.02	0.8	3490	210		
36	2400	0.01	0.58	3490	210		
45	3200	0.01	0.4	3490	210		
33	4000	0.01	0.4	3490	210		
29	5000	0.01	0.28	3490	210		
140	300	0.15	4.4	4840	210		
115	400	0.1	3.5	4840	210		
120	500	0.09	2.8	4840	210		
130	600	0.08	2.3	4840	210		
123	750	0.07	1.9	4840	210		
118	900	0.06	1.6	4840	210		
96	1200	0.04	1.2	4840	210		
111	1500	0.04	0.93	4840	210		
122	1800	0.04	0.78	4840	210		
110	2400	0.06	0.6	4840	210		
80	3000	0.02	0.5	4840	210		
82	4000	0.02	0.35	4840	210		
82	4800	0.02	0.29	4840	210		
234	300	0.24	4.7	6270	210	NRV030/063	20
228	400	0.19	3.5	6270	210		
210	500	0.15	2.8	6270	210		
216	600	0.13	2.3	6270	210		
199	750	0.11	1.9	6270	210		
188	900	0.09	1.6	6270	210		
197	1200	0.08	1.2	6270	210		
173	1500	0.06	0.93	6270	210		
159	1800	0.05	0.78	6270	210		
189	2400	0.05	0.58	6270	210		
171	3000	0.04	0.47	6270	210		
147	4000	0.03	0.35	6270	210		
109	5000	0.02	0.28	6270	210		
373	300	0.36	4.7	7380	350		
346	400	0.27	3.5	7380	350		
315	500	0.21	2.8	7380	350		
355	600	0.19	2.3	7380	350		
330	750	0.16	1.9	7380	350		
326	900	0.14	1.6	7380	350		







	N1=1400
	N1=2800
	N1=900

M2n [Kw]	i	P1n [Kw]	n2 [1/min]	Fr2 [N]	Fr1 [N]		Page		
315	1200	0.11	1.2	7380	350	NRV040/075	21		
339	1500	0.1	0.93	7380	350				
331	1800	0.09	0.78	7380	350				
311	2400	0.07	0.58	7380	350				
254	3000	0.05	0.47	7380	350				
240	4000	0.04	0.35	7380	350				
205	5000	0.03	0.28	7380	350				
614	300	0.56	4.7	8180	350			NRV040/090	21
587	400	0.43	3.5	8180	350				
545	500	0.34	2.8	8180	350				
585	600	0.3	2.3	8180	350				
509	750	0.23	1.9	8180	350				
465	900	0.19	1.6	8180	350				
514	1200	0.17	1.2	8180	350				
503	1500	0.14	0.93	8180	350				
431	1800	0.11	0.78	8180	350				
543	2400	0.11	0.58	8180	350				
439	3000	0.08	0.47	8180	350				
460	4000	0.08	0.35	8180	350				
410	5000	0.06	0.28	8180	350				
1229	300	1.1	4.7	10320	490	NRV050/110	21		
1164	400	0.79	3.5	10320	490				
1248	500	0.61	2.8	10320	490				
1096	600	0.55	2.3	10320	490				
1108	750	0.49	1.9	10320	490				
1078	900	0.43	1.6	10320	490				
962	1200	0.31	1.2	10320	490				
1109	1500	0.3	0.93	10320	490				
1051	1800	0.26	0.78	10320	490				
1001	2400	0.19	0.58	10320	490				
914	3000	0.15	0.47	10320	490				
819	4000	0.13	0.35	10320	490				
746	5000	0.1	0.28	10320	490				
1737	300	1.5	4.7	13500	700			NRV063/130	22
1621	400	1.1	3.5	13500	700				
1496	500	0.86	2.8	13500	700				
1578	600	0.76	2.3	13500	700				
1559	750	0.66	1.9	13500	700				
1558	900	0.58	1.6	13500	700				
1403	1200	0.43	1.2	13500	700				
1522	1500	0.39	0.93	13500	700				
1500	1800	0.35	0.78	13500	700				
1358	2400	0.25	0.58	13500	700				
1300	3000	0.2	0.47	13500	700				
1146	4000	0.15	0.35	13500	700				
938	5000	0.11	0.28	13500	700				



	N1=1400
	N1=2800
	N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i			Page			
0.18	117-22.5	9-18	12-61.5	UDL0.18-NMRV040	6324	29			
	88-17	12-23	16-82						
	58.7-11.3	17-32	24-123						
	44-8.5	22-40	32-164						
	35.2-6.8	27-47	40-205						
	29.3-5.7	30-51	48-246						
	22-4.3	37-62	64-328						
	17.6-3.4	43-60	80-410						
	22-4.3	38-63	64-328				UDL0.18-NMRV050	6324	29
	17.6-3.4	44-73	80-410						
14.7-2.8	50-80	96-492							
11-2.1	59-82	128-656							
0.37	133-26.7	19-36	10.5-52.5	UDL0.37-NMRV050	7124	29			
	100-20	25-47	14-70						
	66.7-13.3	36-65	21-105						
	50-10	46-82	28-140						
	40-8	55-97	35-175						
	33.3-6.7	61-107	42-210						
	25-5	76-124	56-280						
	20-4	89-120	70-350						
	25-5	79-134	56-280				UDL0.37-NMRV063	7124	29
	20-4	92-155	70-350						
16.7-3.3	104-173	84-420							
12.5-2.5	125-173	112-560							
0.55	133-26.7	26-49	10.5-52.5	UDL0.55-NMRV063	8014	29			
	100-20	34-63	14-70						
	66.7-13.3	48-88	21-105						
	50-10	62-112	28-140						
	40-80	75-133	35-175						
	33.3-6.7	81-146	42-210						
	25-5	105-179	56-280						
	20-4	123-207	70-350						
	20-4	129-216	70-350				UDL0.55-NMRV075	8014	29
	16.7-3.3	146-242	84-420						
12.5-2.5	176-250	112-560							
12.5-2.5	189-309	112-560							
0.75	133-26.7	39-73	10.5-52.5	UDL0.75-NMRV063	8024	29			
	100-20	51-94	14-70						
	66.7-13.3	72-132	21-105						
	50-10	92-168	28-140						
	40-8	112-199	35-175						
	33.3-6.7	126-219	42-210						
	25-5	156-232	56-280						
	20-4	185-310	70-350						
	20-4	192-320	70-350				UDL0.75-NMRV075	8024	29
	16.7-3.3	219-300	84-420						
16.7-3.3	230-389	84-420							
125-2.5	265-428	112-560							
0.75	10-2	303-410	140-700	UDL0.75-NMRV090	8024	29			
	125-2.5	302-503	112-560						
	10-2	348-575	140-700						

	N1=1400
	N1=2800
	N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i			Page
1.1	133-26.7	59-111	10.5-52.5			29
	100-20	77-144	14-70			
	66.7-13.3	110-203	21-105			
	50-10	142-258	28-140			
	40-8	172-308	35-175			
	33.3-6.7	195-340	42-210			
	25-5	245-360	56-280			
	100-20	78-146	14-70			
	66.7-13.3	113-208	21-105			
	50-10	146-266	28-140			
	40-8	177-320	35-175			
	33.3-6.7	202-356	42-210			
	25-5	256-442	56-280			
	20-4	304-517	70-350			
	20-4	320-550	70-350			
16.7-3.3	368-625	84-420				
12.5-2.5	455-754	112-560				
10-2	522-710	140-700				
16.7-3.3	373-623	84-420	UD1.1-NMRV130	90S4	29	
12.5-2.5	460-749	112-560				
10-2	531-868	140-700				
1.5	133-26.7	78-148	10.5-52.5			29
	100-20	102-192	14-70			
	66.7-13.3	147-270	21-105			
	50-10	190-344	28-140			
	40-8	229-330	35-175			
	33.3-6.7	260-390	42-210			
	25-5	327-360	56-280			
	133-26.7	77-150	10.5-52.5			
	100-20	104-195	14-70			
	66.7-13.3	150-277	21-105			
	50-10	194-355	28-140			
	40-8	236-427	35-175			
	33.3-6.7	270-474	42-210			
	25-5	341-589	56-280			
	20-4	406-560	70-350			
20-4	426-733	70-350	UD1.5-NMRV110	90L4	29	
16.7-3.3	490-833	84-420				
16.7-3.3	498-831	84-420	UD1.5-NMRV130	90L4	29	
12.5-2.5	614-999	112-560				
10-2	696-1100	140-700				

	N1=1400
	N1=2800
	N1=900

P1n [Kw]	n2 [1/min]	M2n [Nm]	i			Page				
2.2	133-26.7	120-226	10.5-52.5	UD2.2-NMRV110	100LA4	29				
	100-20	157-294	14-70							
	66.7-13.3	228-418	21-105							
	50-10	298-549	28-140							
	40-8	364-664	35-175							
	33.3-6.7	413-717	42-210							
	25-5	533-931	56-280							
	25-5	542-932	56-280							
	20-4	648-1097	70-350							
	16.7-3.3	746-1246	84-420							
	125-2.5	921-1499	112-560							
	10-2	1040-1690	140-700							
	3.0	133-26.7	160-302				10.5-52.5	UD3.0-NMRV110	100LB4	29
		100-20	210-392				14-70			
66.7-13.3		304-558	21-105							
50-10		398-732	28-140							
40-8		485-885	35-175							
33.3-6.7		547-956	42-210							
25-5		711-1030	56-280							
133-26.7		160-301	10.5-52.5	UD3.0-NMRV130	100LB4	29				
100-20		211-395	14-70							
66.7-13.3		307-563	21-105							
50-10		402-733	28-140							
40-8		490-885	35-175							
33.3-6.7		562-973	42-210							
25-5		720-1242	56-280							
20-4	864-1463	70-350								
4.0	133-26.7	213-402	10.5-52.5				UD4.0-NMRV110	124M4	29	
	100-20	279-523	14-70							
	66.7-13.3	405-744	21-105							
	50-10	530-975	28-140							
	40-8	647-1020	35-175							
	133-26.7	214-401	10.5-52.5							UD4.0-NMRV130
	100-20	281-527	14-70							
	66.7-13.3	410-751	21-105							
	50-10	536-978	28-140							
	40-8	653-1180	35-175							
	33.3-6.7	749-1298	42-210							
	25-5	960-1650	56-280							

NOTES OF INSTALLATION

To install the reduction unit it is necessary to note the following recommendations;

- 1、 Check the correct direction of rotation of the reduction unit output shaft before fitting the unit to the machine.
- 2、 Before mount with the prime mover and device , please check the reducer's every axial diameter, aperture , key and key slot, to be sure their dimensions are not deviation, and avoid assembling too tight or too loose, unless it will influence the reducer's performance.
- 3、 The mounting on the machine must be stable to avoid any vibration.
- 4、 Drives such as sprocket wheel and gear must be fitted close to bearing in order to reduce bending stress of hanging shaft
- 5、 While assembling motor to the reducer, it is necessary to add butters to the worm shaft input hole and keyway, so as to avoid tightly assembling and rusting when it is used for a long time .
- 6、 Supporting unit is required when reducers directly match with motors whose weight is bigger than normal types.

NOTES OF OPERATING

- 1、 Before using, please check carefully whether the reducer model, distance size , ratio , input connecting method, output shaft structure, input and output shaft direction and revolving direction are tight according to requirement. It is better for the input speed of worm shaft not more than 1500r/min.
- 2、 The load should be added step by step when using the machine. Never running it with full load.
- 3、 All the reduction units are fitted with breather. Please replace the closed plug used for transportation with the breather plug supplied with the unit after installation.
- 4、 Please check the correct level of the lubricant through the indicator or open the plug.
- 5、 Whenever possible, protect the reduction unit against solar radiation and bad weather. Ensure the motor cools correctly by assuring good passage of air from the fan side.
- 6、 In the case of particularly lengthy periods of storage(4–6 months),if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity.
- 7、 In the case of ambient temperatures $< -5^{\circ}\text{C}$ or $> +40^{\circ}\text{C}$ call the Technical Service.

LUBRICANTS OIL CHOSEN TABLE

	 TEMPERATURE		 ISO	 SHELL	 AGIP	 ESSO	 MOBIL	 CASTROL	 BP	 GEMER	
NMRV 025-090	-25	+50	VG320	Tivela Oil460	Telium VSF320	S220	Glygoyle 30	Alphasyn Pg320	Emrthpl SGXP320		Synthetic oil
NMRV 025-090	-5	+40	VG460	Omala Oil460	Blasia 460	Spartaun Ep450	Mobilgear 634	Alpha MAX 450	Energol GAXP460	CKE460	Mineral oil
	-15	+25	VG220	Omala Oil220	Blasia 220	Spartaun Ep220	Mobilgear 630	Alpha MAX 220	Energol GAXP220		
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	Mineral oil

LUBRICANT FILL QUANTITY(L)

	B3	B6	B7	B8	V5	V6
NMRV025	0.023					
NMRV030	0.05					
NMRV040	0.1					
NMRV050	0.15					
NMRV063	0.3					
NMRV075	0.5					
NMRV090	1					
NMRV110	3	2.5	2.5	2.2	3	2.2
NMRV130	4.5	3.5	3.5	3.3	4.5	3.3
NMRV150	7	5.1	5.1	5.4	7	5.1
UDL0.18	0.13				0.2	
UDL0.37	0.15				0.25	
UDL0.55	0.33				0.45	
UDL0.75	0.33				0.45	
UD1.1	0.8				1	
UD1.5	0.8				1	
UD2.2	1.2				1.2	
UD3.0	1.2				1.2	
UD4.0	1.2				1.2	

LUBRICATION

◆ In case of ambient temperatures not envisaged in the table , call our technical service .

In the case of temperature under -30°C or over 60°C it is necessary to use oil seals with special material.

◆ For operating ranges with temperatures under 0°C it is necessary to consider the following;

→ The motors need to be suitable for operation at the envisaged ambient temperature.

→ The power of the electric motor needs to be adequate for exceeding the higher starting torques required.

→ In the case of reduction units with a cast-iron case , pay attention to impact loads since cast iron may have problems of fragility at temperatures under -15°C .

→ During the early stages of service , problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

◆ The oil needs to be changed after approximately 5000 hours. This period depends on the type of service and the environment where the reduction unit works. The synthetic oil and the mineral oil can not be combined used in the reduction units.

◆ The reduction units size 025-030-040-050-063-075-090 are supplied complete with lubricant for life , synthetic oil (SHELL TEVELA OIL 320), and can therefore be mounted in any position envisaged in the catalogue. V5/V6 for which you should call our technical service to assess the condition of use.

◆ The reduction units size 110 , 130 and 150 are supplied complete with lubricant , mineral oil , (SHELL TEVELA OIL 320)

◆ The variator speed are supplied complete with lubricant , mineral oil (GUANGYAN Ub-3x).

◆ For size 110 , 130 and 150 it is necessary to specify the position , otherwise the reduction units are supplied with the quantity of oil relating to pos.B3.

	Possible cause	The way of settlement
The motor does not run in case of no load	Power off	Check power, consult with power company
	Connecting wire break	Check wire
	The switch does not contact well	Repair or replace
	The motor coil break	Repair it in special factor
	3 phase motor connect single phase voltage	Confirm voltage and connecting ways
	Single phase motor does not connect condenser	Connect condenser
	Single motor's starter does work well	Repair it at special factory
	Gear, axis and bearing are damaged	Repair it at special factory
The motor does not run in case of loading	Voltage is too low	Check to see if the wire is too long or too thin
	Gear is damaged	Repair it in special factory
	Work with overload	Discharge load
Very hot	Work with overload	Discharge load
	Start and stop too many	Reduce using frequency
	Bearing is damaged	Repair or replace
	Voltage is too high or too low	Confirm to see if the voltage is normal
Loud noise	If the noise is loud and continuous,the bearing is damaged or the gear damaged	Repair it in special factory
	If the noise is loud and continuous,the gear must be damaged or something else block	Contact with the service institution
Severe vibration	Gear or bearing is worn out	Repair it in special factory
	Screw is loose	Re-lock
Abnormal, unsteady, running noise	The oil is contaminated or short of	Check the color, density and level of oil
Leakage at flange and gasket	The screw is loose	Re-lock
	The gasket is damaged	Replace it and contact service institution
Leakage at ventilating plug	The oil is too much	Correct the oil amount
	The plug is not well installed	Install it properly
	Cold start too often(the oil produce foam) oil level is too high	Change the plug with ventilating valve
The output shaft does not move when the motor work	The connection between shaft and key is damaged	Repair it in special factory

