

ELECON GEAR EMRV WORM REDUCER SERIES

Always A Step Ahead In Technology

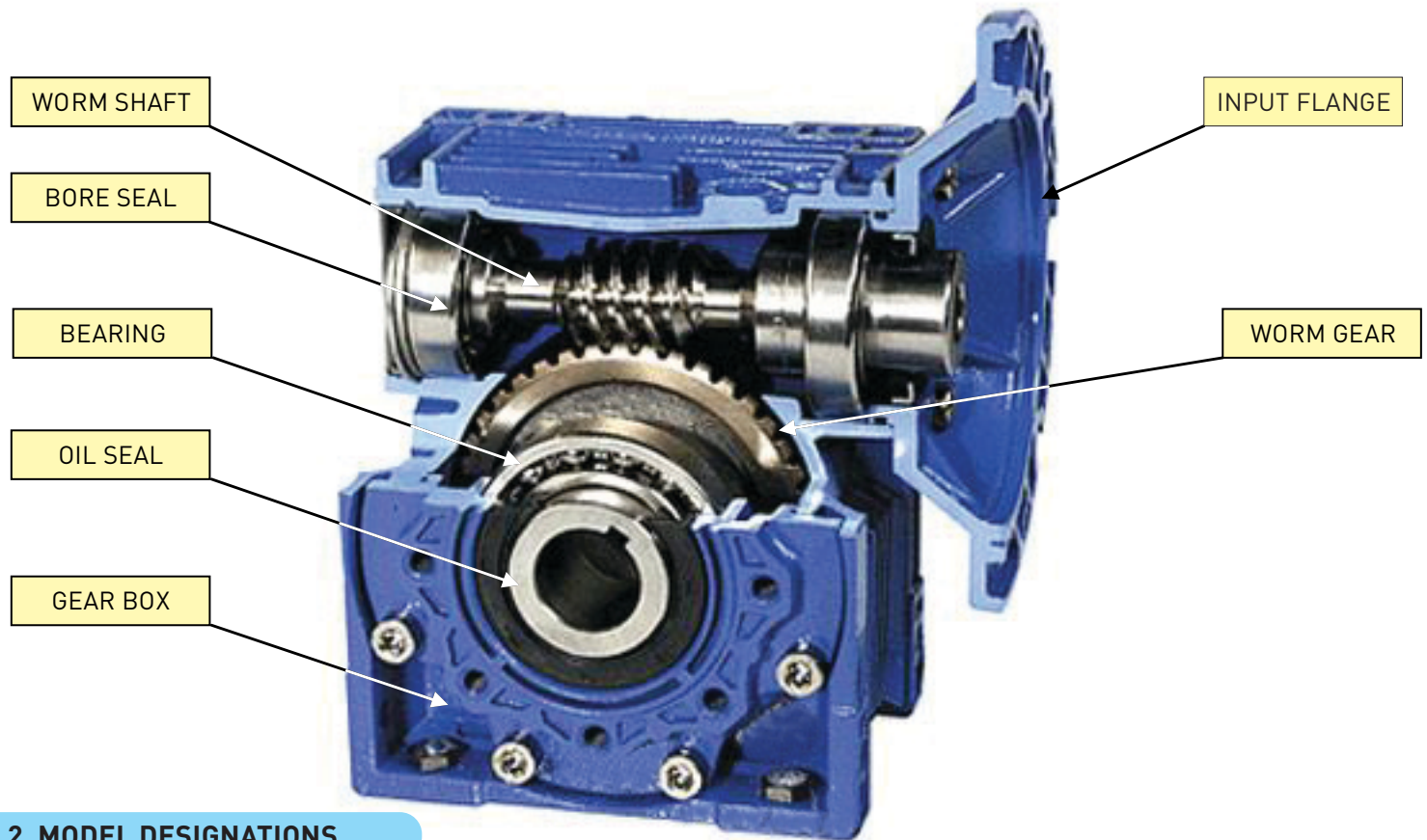


1. PRODUCT CHARACTERISTIC

EMRV series are New-Generation Worm Gear Units Developed on the basis of innovation, Quality and Advanced Technology both at home and abroad.

Its main features are as follows:

1. Made of High-Quality Materials , Compact in size, light in weight and Rust proof.
2. Designed For Optimum output torque.
3. Smooth in running and low in noise, Suitable For Maintenance Free Operations
4. Excellent Radiating Characteristics and Heat Dissipation.
5. Attractive Appearance, Durable and long service life.
6. Housing: Die Cast Aluminum Alloy (Frame Size :25 to 90) and Cast Iron (110 to 150) .
7. Worm Shafts are made of High Quality Steel With Hardness Levels of 58 to 62 HRC and Profile Ground.



2. MODEL DESIGNATIONS

Eg. : EMRV 075 FA1 40 E DZ P80 B5 B3

1.	EMRV	Gearbox Type (Worm Series)
2.	075	Gearbox Size (30, 40, 50, 63, 75, 90, 110, 130, 150)
3.	Fa1	a. U - Universal Mounting (Foot) b. FA, FB, FC, FD, FE (1/2): Output flange and position
4.	40	Speed Ratio (I = 7.5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100)
5.	E	a. No mark means single extension worm shaft. b. E:Double extension worm shaft
6.	DZ	a. No mark means hollow output b. DZ (1/2): Single output shaft and position c. SZ: Double output shaft position code
7.	P80	a. Gearbox Input Frame for motor Mounting-P56, P63, P71, P80, P90, P100, P112, P132, P160. b. SI – Solid Input Shaft (No Motor Mounting Flange)
8.	B5/B14	Motor Mounting Frame Size
9.	B3	Gearbox Mounting Position- B3, B6,B7,B8,V5,V6

3. SELECTION & PERFORMANCE TABLE

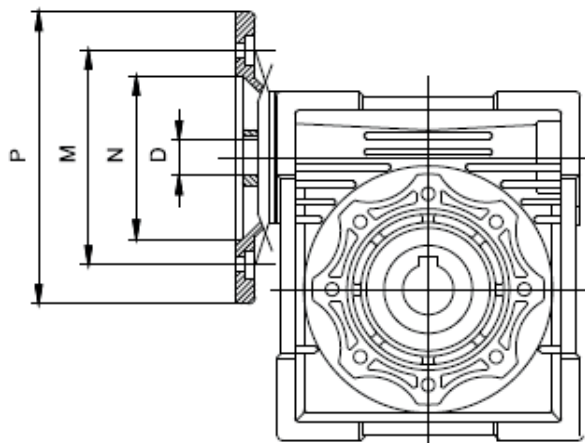
TABLE: 1 Output Torque

GEAR BOX			SPEED RATIO									
			7.5	15		20	25	30	40	50	60	80
BOX SIZE	FR. SIZE	N2 RPM (AT MOTOR SPEED N1 = 1400 RPM)										
		187	140	93	70	56	47	35	28	23	17.5	14
		OUT-PUT TORQUE M2 (N-M)										
025	56	2.6	3.4	4.9	6.2		8.3	10	12	14		
030		2.6	3.4	4.7	6	7	8	9.7	11	13	14	
025	56	3.9	5.1	7.3	9.3	-	13	16				
030		3.9	5	7	8.8	10	12	14	17			
030	63	5.2	6.6	9.3	12	14	16	19	22			
040							17	21	25	28	33	38
050										29	35	39
030	63	7.7	10	14	18	20	24	16				
040					19	23	25	32	37	42		
050								33	39	43	52	59
040	71	11	14	20	26	32	35	44				
050					27	32	36	46	54	60	72	
063									55	63	76	87
075											80	94
040	71	16	21	30	39	47	52					
050			21	31	39	47	54	68	80	89		
063								70	82	94	113	129
075										97	119	139
050	80	24	32	46	59	70	80					
063					60	72	82	104	122	140		
075								108	128	144	177	206
090											189	221
110											201	236
050	80	33	43	62	80							
063				63	82	98	112	141				
075						101	117	147	174	196		
090									182	209	258	302
110											274	322
063	90	50	65	92	120	144	164					
075				95	122	148	171	216				
090								222	266	306		
110									278	324	402	473
130											408	480
063	90	68	88	126	164							
075			89	129	166	202	233					
090					170	207	239	303	363	417		
110								315	379	442	548	
130											557	655
075	100	99	131	189								
090		100	132	191	249	304	351					
110					255	311	356	462	555	648		
130								468	563	657	816	
150									570	657	816	960
075	100	135	178	258								
090		137	180	261	340	414	479					
110				264	348	425	485	630	757			
130						430	491	638	767	896	1113	
150									778	896	1113	1310
075	112	180	237									
090		182	240	348	453							
110			240	352	463	566	647					
130						573	655	851	1023	1195		
150									1037	1195	1484	
110	132	250	330	484	638							
130			334	490	638	788	900	1171				
150					645	788	934	1171	1426	1643		
110	132	341	450	660								
130		345	455	668	870	1074	1228	1596				
150					880	1074	1274	1596				
150	160	512	675	990	1291	1576						
150	160	698	921	1351	1760							

SERVICE FACTOR Fs –

The **SERVICE FACTOR** , is the numeric value describing Gear Box Service duty . It takes into consideration start/stop Frequency,
Daily Operating Conditions , load Variations and Over load connected with Gear Box Application .
Table 2.0 (Service Factor or Factor of safety) –Fs

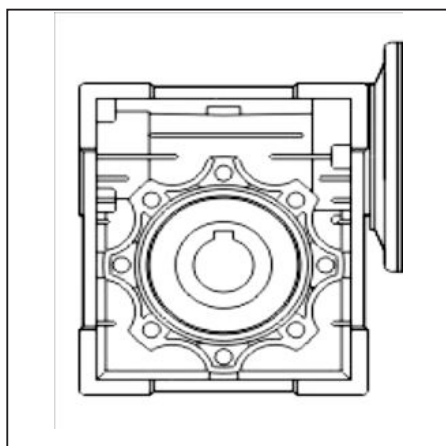
GEAR BOX			SPEED RATIO										
			7.5	10	15	20	25	30	40	50	60	80	100
BOX SIZE	FR. SIZE	K.W.	N2 RPM (AT MOTOR SPEED N1 = 1400 RPM)										
			187	140	93	70	56	47	35	28	23	17.5	14
Safety Factor- Fs													
025	56	0.06	4.2	3.5	2.5	1.9		1.6	1.2	0.9	0.7		
030			7.0	5.4	3.9	3.1	3.1	2.5	1.9	1.5	1.3	0.9	
025	56	0.09	2.8	2.4	1.6	1.3	-	1.0	0.8				
030			4.7	3.6	2.6	2.0	2.1	1.7	1.2	1.0			
030	63	0.12	3.5	2.7	1.9	1.5	1.6	1.3	0.9	0.8			
040								2.7	1.9	1.6	1.3	1.0	0.8
050											2.3	1.9	1.4
030	63	0.18	2.3	1.8	1.3	1.0	1.0	0.8					
040						2.1	1.7	1.8	1.3	1.0	0.9		
050									2.3	1.9	1.6	1.2	0.9
040	71	0.25	3.6	2.8	2.0	1.5	1.2	1.3	0.9				
050					2.7	2.2	2.3	1.7	1.4	1.1	0.9		
063									2.4	2.0	1.6	1.4	
075											2.4	1.9	
040	71	0.37	2.5	1.9	1.3	1.0	0.8	0.9					
050				3.4	2.4	1.9	1.5	1.6	1.1	0.9	0.8		
063									2.1	1.6	1.4	1.1	0.9
075											2.1	1.6	1.3
050	80	0.55	2.9	2.3	1.6	1.2	1.0	1.1					
063					2.2	1.8	1.9	1.4	1.1	0.9			
075								2.0	1.6	1.4	1.1	0.9	
090												1.5	1.2
110												2.6	2.0
050	80	0.75	2.1	1.7	1.2	0.9							
063					2.2	1.6	1.3	1.4	1.0				
075							2.0	2.0	1.5	1.2	1.0		
090										1.9	1.5	1.1	0.9
110												1.9	1.5
063	90	1.1	2.6	2.0	1.5	1.1	0.9	1.0					
075					2.1	1.7	1.3	1.3	1.0				
090									1.6	1.3	1.0		
110										2.4	1.9	1.3	1.0
130												2.1	1.5
063	90	1.5	1.9	1.5	1.1	0.8							
075				2.2	1.6	1.3	1.0	1.0					
090						2.1	1.6	1.7	1.2	0.9	0.8		
110									2.2	1.7	1.4	0.9	
130												1.5	1.1
075	100	2.2	1.9	1.5	1.1								
090			2.9	2.3	1.9	1.4	1.1	1.2					
110						2.5	2.2	2.0	1.5	1.2	1.0		
130									2.2	1.7	1.4	1.0	
150										2.5	1.9	1.4	1.0
075	100	3.0	1.4	1.1	0.8								
090			2.1	1.7	1.4	1.0	0.8	0.9					
110					2.5	1.9	1.6	1.5	1.1	0.9			
130							2.2	2.1	1.6	1.3	1.0	0.8	
150										1.8	1.4	1.0	0.8
075	112	4.0	1.0	0.8									
090			1.6	1.3	1.0	0.8							
110				2.5	1.9	1.4	1.2	1.1					
130							1.6	1.6	1.2	1.0	0.8		
150										1.4	1.0	0.8	
110	132	5.5	2.2	1.8	1.4	1.0							
130				2.5	1.9	1.4	1.2	1.2	0.9				
150						2.0	1.5	1.3	1.3	1.0	0.8		
110	132	7.5	1.6	1.3	1.0								
130			2.2	1.8	1.4	1.0	0.9	0.8	0.7				
150						1.5	1.1	1.0	1.0				
150	160	11.0	2.3	1.8	1.3	1.0	0.8						
150	160	15	1.7	1.3	0.9	0.7							

4. EMRV REDUCER INPUT SIZE


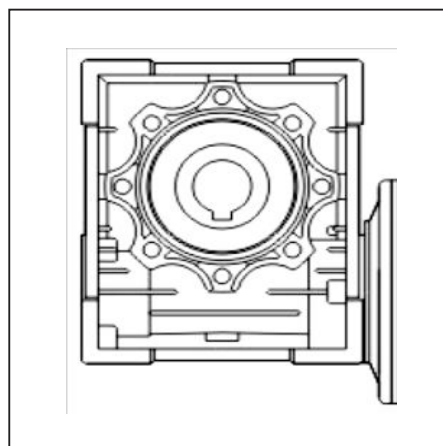
EMRV	IEC	N	M	P	RATIO										
					7.5	10	15	20	25	30	40	50	60	80	100
					D										
025	56B14	50	65	80	9	9	9	9	-	9	9	9	9	-	-
030	63B5	95	115	140	11	11	11	11	11	11	11	11	-	-	-
	80B14	60	75	90											
	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	-
	56B14	50	65	80											
040	71B5	110	130	160	14	14	14	14	14	14	14	-	-	-	-
	71B14	70	85	105											
	63B5	95	115	140											
	63B14	60	75	90	11	11	11	11	11	11	11	11	11	11	11
	56B5	80	100	120								9	9	9	9
050	80B5	130	165	200	19	19	19	19	19	19	-	-	-	-	-
	80B14	80	100	120											
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	-
	71B14	70	85	105											
	63B5	95	115	140	-	-	-	-	-	-	11	11	11	11	11
063	90B5	130	165	200	24	24	24	24	24	24	-	-	-	-	-
	90B14	95	115	140											
	80B5	130	165	200	19	19	19	19	19	19	19	19	19	-	-
	80B14	80	100	120	-	-	-	-	-	-	-	-	-	-	-
	71B5	110	130	160	-	-	-	-	-	-	14	14	14	14	14
	71B14	70	85	105	-	-	-	-	-	-	-	-	-	-	-
075	110/112B5	180	215	250	28	28	28	-	-	-	-	-	-	-	-
	110/112B14	110	130	160	-	-	-	-	-	-	-	-	-	-	-
	90B5	130	165	200	24	24	24	24	24	24	24	-	-	-	-
	90B14	95	115	140	-	-	-	-	-	-	-	-	-	-	-
	80B5	130	165	200	-	-	-	19	19	19	19	19	19	19	19
	80B14	80	100	120	-	-	-	-	-	-	-	-	-	-	-
	71B5	110	130	160	-	-	-	-	-	-	-	14	14	14	14
090	110/112B5	180	215	250	28	28	28	28	28	28	-	-	-	-	-
	110/112B14	110	130	160	-	-	-	-	-	-	-	-	-	-	-
	90B5	130	165	200	24	24	24	24	24	24	24	24	24	-	-
	90B14	95	115	140	-	-	-	-	-	-	-	-	-	-	-
	80B5	130	165	200	-	-	-	-	-	-	19	19	19	19	19
	80B14	80	100	120	-	-	-	-	-	-	-	-	-	-	-
110	132B5	230	265	300	38	38	38	38	-	-	-	-	-	-	-
	100/112B5	180	215	250	28	28	28	28	28	28	28	28	28	-	-
	90B5	130	165	200	-	-	-	-	24	24	24	24	24	24	24
	80B5	130	165	200	-	-	-	-	-	-	-	-	-	19	19
130	132B5	230	265	300	38	38	38	38	38	38	38	-	-	-	-
	100/112B5	180	215	250	-	-	-	-	28	28	28	28	28	28	28
	90B5	130	165	200	-	-	-	-	-	-	-	-	-	24	24
150	160B5	250	300	350	42	42	42	42	42	-	-	-	-	-	-
	132B5	230	265	300	-	-	-	38	38	38	38	38	38	38	-
	100/112B5	180	215	250	-	-	-	-	-	-	-	-	28	28	28

4. EMRV REDUCER INPUT SIZE

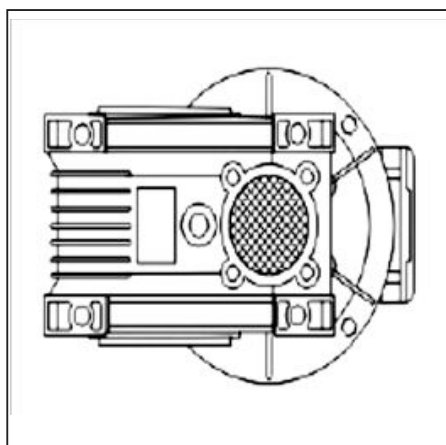
MOUNTING POSITIONS



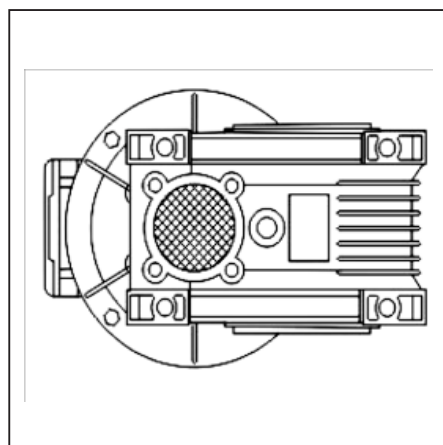
B3



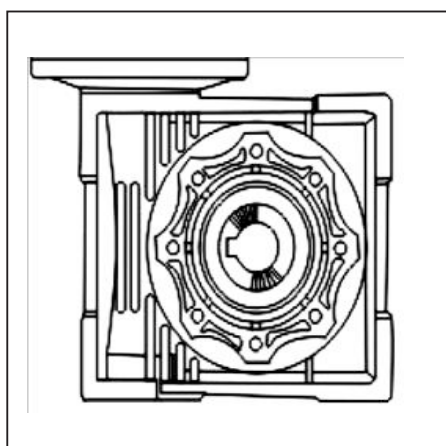
B8



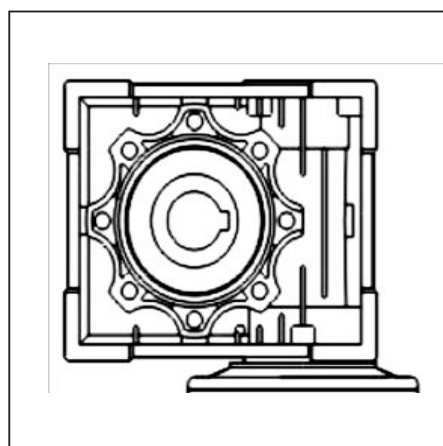
B6



B7

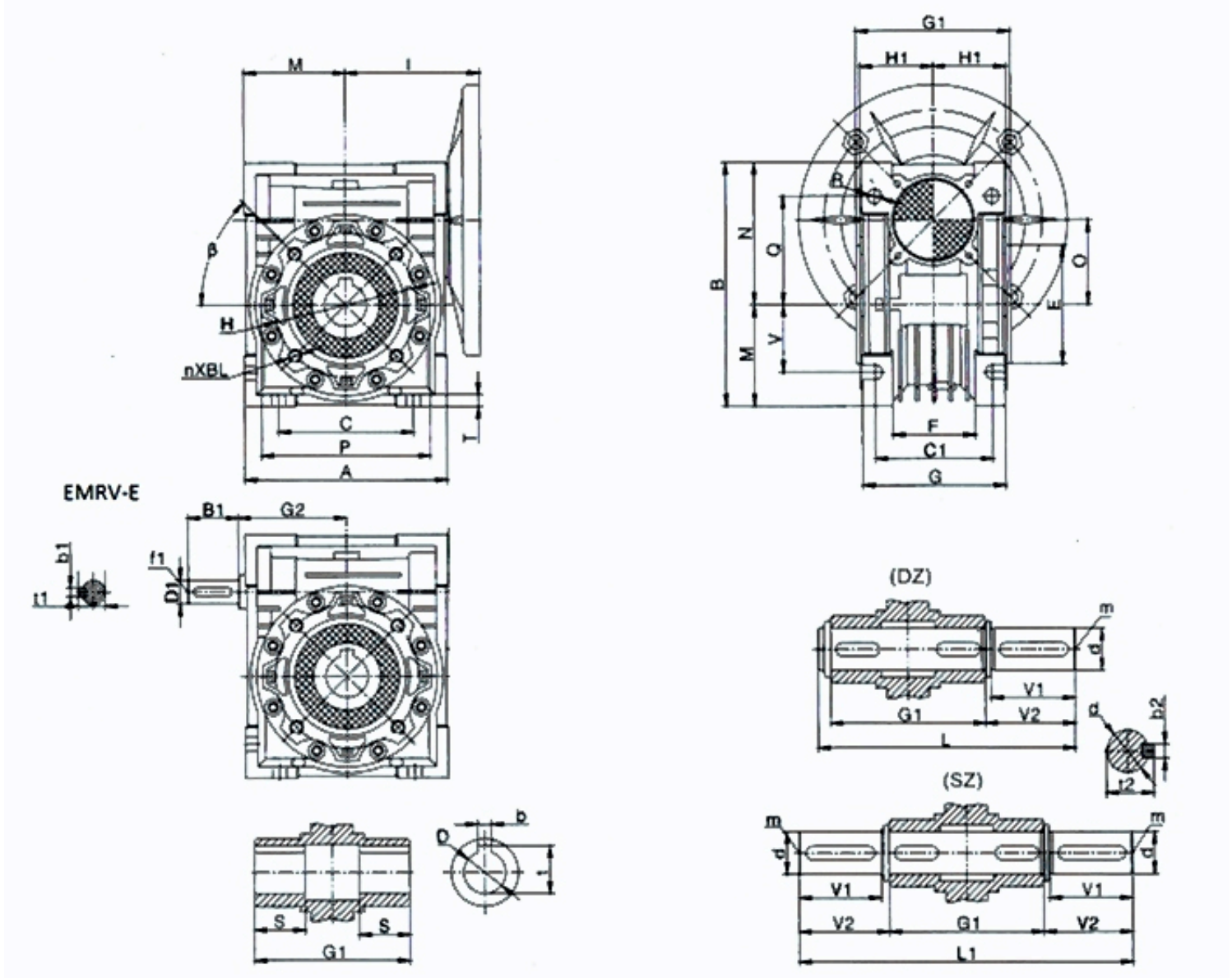


V5



V6

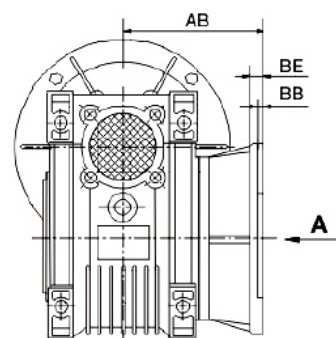
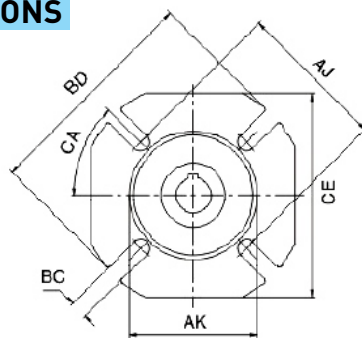
1. EMRV -DIMENSIONS WITH INPUT FLANGE & SOLID INPUT



EMRV	A	B	B1	C	C1	D(H7)	D1(j6)	Dm(j6)	E(h8)	F	G	G1	G2	H	H1	J	K	L	L1	M	N	O	P	Q
025	70	83	22	45	34	11	9	9	45	22	45	50	37	65	22.5	-	-	81	101	35	48	25	-	35.5
030	80	97	20	54	44	14	9	9	55	32	56	63	45	65	29	51	20	102	128	40	57	30	75	44
040	100	122	23	70	60	18(19)	11	11	60	43	71	78	53	75	36.5	60	23	128	164	50	71.5	40	87	55
050	120	144	30	80	70	25(24)	14	14	70	49	85	92	64	85	43.5	74	30	153	199	60	84	50	100	64
063	144	174	40	100	85	25(28)	19	19	80	67	103	112	75	95	53	90	40	173	219	72	102	63	110	80
075	172	205	50	120	90	28(35)	24	24	95	72	112	120	90	115	57	105	50	192	247	86	119	75	140	93
090	206	238	50	140	100	35(38)	24	24	110	74	130	140	108	130	67	125	50	234	309	103	135	90	160	102
110	255	295	60	170	115	42	28	28	130	-	144	155	135	165	74	142	60	149	324	128	167.5	110	200	125
130	293	335	80	200	120	45	30	30	180	-	155	170	155	215	81	162	80	165	340	147	187.5	130	250	140
150	340	400	80	240	145	50	35	35	180	-	185	200	175	215	96	195	80	197	374	170	230	150	250	180

EMRV	R	S	T	BL	β	b	bm	b1	b2	T	tm	t1	t2	d(h6)	f1	fm	m	V	V1	V2	Wt. in K.G.
025	6	17	5.0	-	10°	4	3	-	-	12.8	10.4	-	-	11	-	-	-	22.5	23	25.5	1.0
030	6.5	21	5.5	M6 x 11(n=1)	0°	5	3	3	5	16.3	10.2	10.2	16.0	14	-	-	M6	27	30	32.5	1.2
040	6.5	26	7	M6 x 8(n=4)	45°	6	4	4	6	20.8(21.8)	12.5	12.5	##	18	-	-	M6	35	40	43.0	2.3
050	8.5	30	7	M8 x 10(n=4)	45°	8	5	5	8	28.3(27.3)	16.0	16.0	##	25	M6	M6	M10	40	50	53.5	3.5
063	8.5	36	8	M8 x 14(n=8)	45°	8	6	6	8	28.3(31.3)	21.5	21.5	##	25	M6	M6	M10	50	50	53.5	6.2
075	11	40	10	M8 x 14(n=8)	45°	8(10)	8	8	8	31.3(38.3)	27.0	27.0	31.0	28	M8	M8	M10	60	60	63.5	9.0
090	13	45	11	M10 x 18(n=8)	45°	10	8	8	10	38.3(41.3)	27.0	27.0	##	35	M8	M8	M12	70	80	84.5	13.0
110	14	50	14	M10 x 18(n=8)	45°	12	8	8	12	45.3	31.0	31.0	##	42	M10	M10	M16	85	80	84.5	35.0
130	16	60	15	M12 x 21(n=8)	45°	14	8	8	14	48.8	33.0	33.0	49	45	M10	M10	M16	100	80	85.0	48.0
150	18	72.5	18	M12 x 21(n=8)	45°	14	10	10	14	53.8	38.0	38.0	54	50	M12	M12	M16	120	82	87.0	84.0

1.EMRV- OUTPUT FLANGE DIMENSIONS



EMRV		030	040	050	063	090		110	130	150
FA	AB	54.5	67	90	82	111	111	139	152	155
	BE	6	7	9	10	13	13	15	15	15
	BB	4	4	5	6	6	6	6	6	6
	AK	50	60	70	115	130	152	170	180	180
	AJ	68	75	85	150	165	175	230	255	255
	BC	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)
	BD	80	110	125	180	200	210	280	320	320
	CE	70	95	110	142	170	200	280	290	290
	CA	45°	45°	45°	45°	45°	45°	45°	45°	22.5°
FB	AB	-	97	120	112	-	122	-	-	-
	BE	-	7	9	10	-	18	-	-	-
	BB	-	4	5	6	-	6	-	-	-
	AK	-	60	70	115	-	180	-	-	-
	AJ	-	75	85	150	-	215	-	-	-
	BC	-	9(n=4)	11(n=4)	11(n=4)	-	14(n=4)	-	-	-
	BD	-	110	125	180	-	250	-	-	-
	CE	-	95	110	142	-	-	-	-	-
	CA	-	45°	45°	45°	-	45°	-	-	-
FC	AB	-	80	89	93	-	110	-	-	-
	BE	-	9	10	10	-	17	-	-	-
	BB	-	5	5	5	-	6	-	-	-
	AK	-	95	110	130	-	130	-	-	-
	AJ	-	115	130	165	-	165	-	-	-
	BC	-	9.5(n=4)	9.5(n=4)	11(n=4)	-	11(n=4)	-	-	-
	BD	-	140	160	200	-	200	-	-	-
	CE	-	45°	45°	45°	-	45°	-	-	-
	CA	-	45°	45°	45°	-	45°	-	-	-
FD	AB	-	58	72	107	-	151	-	-	-
	BE	-	12	14.5	10	-	13	-	-	-
	BB	-	5	5	5	-	6	-	-	-
	AK	-	80	95	130	-	152	-	-	-
	AJ	-	100	115	165	-	175	-	-	-
	BC	-	9(n=4)	11(n=4)	11(n=4)	-	14(n=4)	-	-	-
	BD	-	120	140	200	-	210	-	-	-
	CE	-	45°	45°	45°	-	45°	-	-	-
	CA	-	45°	45°	45°	-	45°	-	-	-
FE	AB	-	-	-	80.5	-	-	-	-	-
	BE	-	-	-	16.5	-	-	-	-	-
	BB	-	-	-	5	-	-	-	-	-
	AK	-	-	-	110	-	-	-	-	-
	AJ	-	-	-	130	-	-	-	-	-
	BC	-	-	-	11(n=4)	-	-	-	-	-
	BD	-	-	-	160	-	-	-	-	-
	CE	-	-	-	45°	-	-	-	-	-

6. OPERATING INSTRUCTIONS

1.1 Worm Reducer

- The reducer with model SIZE (025- 090) made of Aluminum Alloy Die-casting box, good looking in appearance.
- Rust proofing on surface and compact in structure to save on mounting space.

The Reducer model of SIZE (110 - 150) is made of cast iron. And is good looking and solid.

- Good radiating characteristic leads to safety and reliability with high efficiency during operation.
- The strong ability of loading ensures stable transmission, make less vibration and noise.
- Variety of connecting structure/ flanges for power input and torque, the design of box outline and the set of foot hole with good versatility is apt to many kinds of mounting.
- It is combined by two single step reducers and has all the virtues of them. And you can get bigger ratio with it.

1.2 Notes of Installation

- The base – plate must be plane and the base bolts be properly screwed down to make it shock proof.
- The connecting shafts of prime mover, reducer and operation device must be coaxial after installation.
- Drives such as sprocket wheel and gear must be fitted close to bearing in order to reduce bending stress of hanging shaft.
- While assembling motor to reducer, it is necessary to apply anti-seize compound to the worm shaft input-hole and key-way, to avoid tight assembling and rusting when it is used for a long time.
- Supporting structure is required when reducers directly match with motors whose weight is bigger than normal.

1.3 Operating Instructions

- Before using, please check carefully whether the reducer mode, centre distance size, ratio in put connecting method, output shaft structure, input and output shaft direction and revolving direction are in correct revolving direction meeting to requirement.
- The load should be added step by step when using the machine. Never start running it with full load.
- The reducer model from size 25-90 has the oil fill add hole only. It has been filled with synthetic lubrication oil ISO VG 320. User doesn't need to think about oil adding, after about 10000 hours cautious running please change new lubrication oil.
- The reducer mode 110-150 has oil add hole, oil out hole and oil gauge, mineral lubrication oil ISO VG 460 has been filled in required quantity. Before using, user must pull out the rubber ring of vent plug. After first 500 Hours of Running, clean the Box Internally and then change the Oil. Subsequent change can be done after 5000 hours of operation.

7. LUBRICANT

RECOMMENDED LUBRICANT OIL GRADE TABLE

	TEMPERATURE	OIL GRADE ISO	SHELL	MOBIL	CASTROL	BP	
EMRV 025-090	-25°C- 50°C	VG320	TRIVELA OIL S320	GLYGOYLE 30	Alphasyn Pg320	Engergo SG-XP32	Synthetic oil
EMRV 110-150	-5°C- 40°C	VG460	OMLA OIL320	MOBILGEAR 634	Alpha MAX 460	Energol GR-XP460	Mineral oil
	-15°C- 25°C	VG220	OMLA OIL220	MOBILGEAR 630	Alpha MAX 220	Energol GR-XP220	
NOTE : OR ANY OTHER EQUIVALENT REPUTED BRAND							

LUBRICATION OIL FILLED QUANTITY IN LITRES

TYPE / INSTALLATION	B3	B6	B7	B8	V5	V6
EMRV025	0.023					
EMRV030	0.05					
EMRV040	0.1					
EMRV050	0.15					
EMRV063	0.3					
EMRV075	0.5					
EMRV090	1					
EMRV110	3	2.5	2.5	2.2	3	2.2
EMRV130	4.5	3.5	3.5	3.3	4.5	3.3
EMRV150	7	5.4	5.4	5.1	7	5.1

Notes

Blank lined area for notes.

Marketed and Distributed by:



P.O. BOX NO. 43,
ANAND SOJITRA ROAD, VALLABH VIDYANAGAR-388120
ANAND, GUJARAT (INDIA)
Email: info@epal.elecon.com
Phone: +91 2692 227960, 227904, 227971