



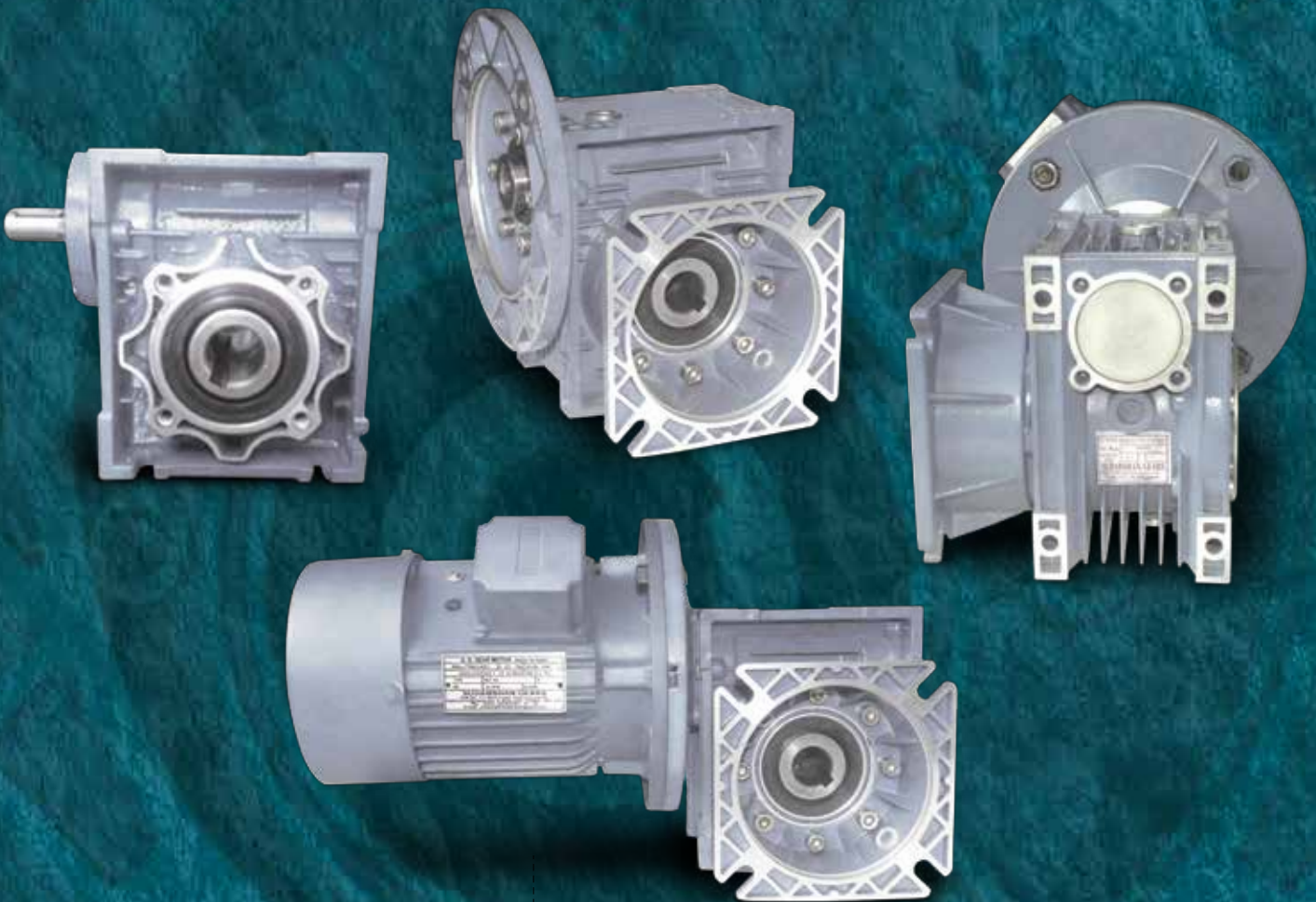
# SUDARSHAN GEARS

## ALUMINIUM WORM GEAR BOXES

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**MADE IN INDIA**



**ISO 9001 - 2008 CERTIFIED COMPANY**

Sudarshan Gears is in the field of manufacturing of gear boxes since 1985. Over the years we have developed a very compact but robust design of Helical Inline Geared Motors which are successfully running across various applications all over the country and even exported. Other successfully running product ranges are Mechanical Power Screw Jacks and Crane Duty Helical Gearboxes. We are fully equipped with the necessary infrastructure required for the manufacturing of high quality gears and gearboxes of economical rates. We now present to you our range of Aluminum series Worm Gear boxes.

## **ABOUT THE PRODUCT**

### **1) HOUSINGS:-**

The housings are made of pressure die casted aluminum alloy up to size W90. Size W110 is made of high strength Graded Cast Iron.

The pressure die casted housings are designed for high strength to withstand bending and torsional stresses in the areas subjected to highest running stresses, offering at the same time wide areas for heat dissipation.

### **2) TOOTH PROFILES:-**

Tooth Profiles of worm shaft and worm wheel are of ZI (involute profile) which results in gradual, constant and shockless matching of the gear pair.

### **3) WORM SHAFTS:-**

Worm Shafts are made from high quality case steel hardened to 48-52 HRC and profile ground to ensure smooth and noiseless running of the gearboxes.

### **4) WORM WHEEL:-**

Worm Wheel is Phosphor Bronze (PB2) casted and fitted into EN8 Steel Hub for low friction and long life.

### **5) BEARINGS:-**

All bearings are of reputed make and are oversized to ensure optimum load carrying capacity.

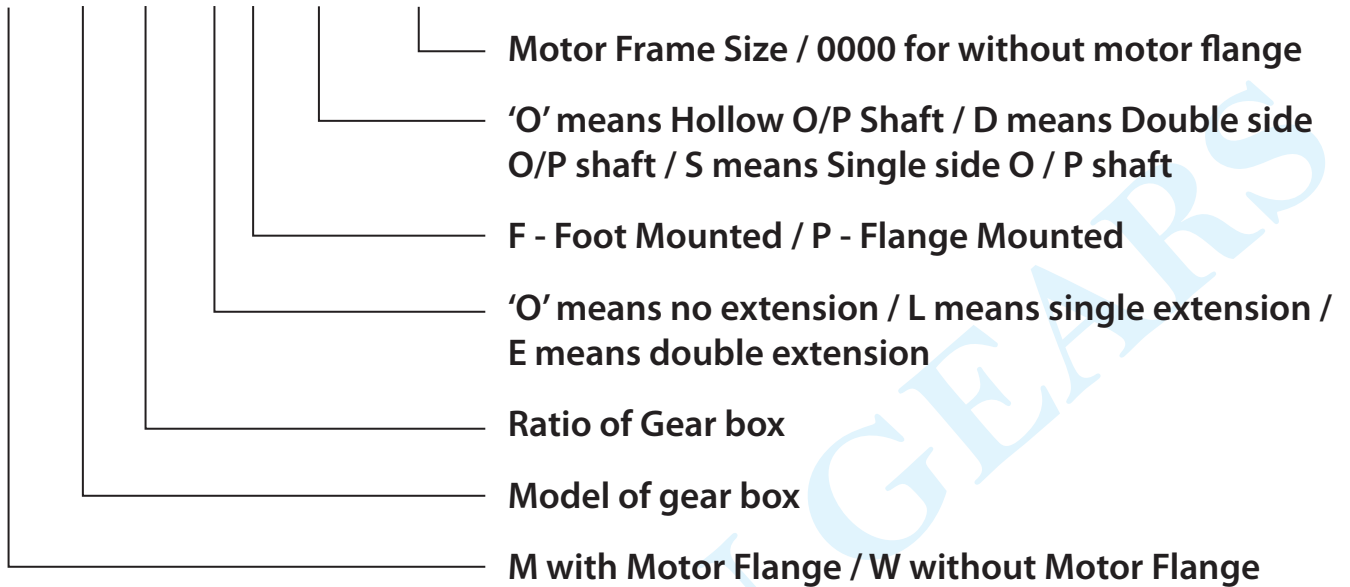
### **6) COVER AND FLANGES:-**

Covers and Flanges are made from high strength aluminum alloy and pressure die casted.



## DETAILS WHILE ORDERING OF GEARBOX MODEL AND LABELLING

W M 50 30 O F O 71B5



**STANDARD RATIOS FOR THE GEARBOXES**  
7, 10, 15, 20, 25, 30,35, 40,45, 50, 60,70, 80  
Non - Standard ratios available on request

### SERVICE FACTOR SELECTION

SERVICE FACTOR (FS)										
PRIME MOVER	hr/d	UNIFORM LOAD					MODERATE SHOCK LOAD		HEAVY SHOCK LOAD	
		No. of start-up per hr.					No. of start-up per hr.		No. of start-up per hr.	
		4	16	32	125	500	16	500	16	500
HYDRAULIC /	4	0.8	0.9	1.0	1.25	1.5	1.6	1.8	2.0	2.5
ELECTRIC MOTOR	8	1	1.1	1.3	1.5	1.7	1.8	2.0	2.2	2.5
	16	1.3	1.3	1.5	1.5	1.7	1.8	2.0	2.2	2.5
	24	1.5	1.5	1.8	1.8	1.8	1.8	2.2	2.2	2.5

## GEARBOX SELECTION CHART

0.18kW 1400rpm Input 63Fr					0.18kW 2800rpm 63Fr				0.18kW 960rpm Input 71Fr			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W30	8	2.1	400	W30	3.8	3.2				
10	140	W30	11	1.5	280	W30	5	2.2				
10	140	W40	11	2.7	280							
15	93	W30	14	1.3	186	W30	7.4	1.7				
15	93	W40	14	2	186	W40	7.4	2.9				
20	66	W30	19	1	132	W30	9.5	1.4				
20	66	W40	19	1.9	132	W40	9.5	2.5				
25	56	W30	21	0.9	112	W30	11	1.3				
25	56	W40	23	1.7	112	W40	11	2				
30	46.7	W40	25	1.5					32	W40	38	1.3
30	46.7	W50	25	2.9					32	W50	38	2.5
35	40	W40	31	1.3					28	W40	45	1.1
35	40	W50	31	2.5					28	W50	45	2.3
40	35	W40	32	1.2					24	W40	47	1
40	35	W50	33	2.3					24	W50	47	2
45	31	W40	38	1.1					21	W50	54	1.5
45	31	W50	38	1.7					21	W63	54	2.9
50	28	W40	40	1					18	W50	56	1.4
50	28	W50	40	1.5					18	W63	56	2.3
60	23	W50	44	1.3					16	W50	64	1.1
									16	W63	64	1.8
70	19	W50	49	1.1					14	W63	71	1.5
80									11	W63	79	1.4

## GEARBOX SELECTION CHART

0.25kW 1400rpm Input 71Fr					0.25kW 2800rpm 63Fr				0.25kW 960rpm Input 71Fr			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W40	11	2.7	400	W30	6	2.2				
10	140	W40	14	2.8	280	W30	8	1.8	96	W40	22	1.8
									96	W50	22	2.9
15	93	W40	20	1.9	186	W30	11	1.3	64	W50	29	2.5
15	93	W50	20	2.9								
20	66	W40	28	1.5	132	W30	14	1	48	W40	39	1.1
20	66	W50	28	2.7	132	W40	14	1.9	48	W50	39	1.9
25	56	W40	32	1.2	112	W40	17	1.5	38	W40	48	1
25	56	W50	32	2.3	112	W50	17	2.8	38	W50	48	1.5
30	46.7	W40	36	1.1					32	W40	50	1
30	46.7	W50	36	2.1					32	W50	50	1.3
35	40	W50	44	1.6								
40	35	W50	46	1.7					24	W50	67	1.2
									24	W63	67	2.3
45	31	W50	51	1.5					21	W50	70	1
45	31	W63	51	2.5					21	W63	70	2.1
50	28	W50	54	1.4					18	W50	78	1
50	28	W63	54	2.3					18	W63	78	2
60	23	W63	64	2					16	W63	93	1.7
70	19	W63	77	1.7					14	W63	112	1.3
									14	W75	112	3
80									11	W75	143	2.7

# GEARBOX SELECTION CHART

0.37kW 1400rpm 71Fr					0.37kW 2800rpm 71Fr				0.37kW 960rpm 80Fr			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W40	16	2	400	W40	8	3	137	W50	25	3.3
	200	W50	16	3.5								
10	140	W40	21	1.9	280	W40	11	2.6	96	W50	33	2.5
	140	W50	21	3.3								
15	93	W40	30	1.3	186	W40	16	1.9	64	W50	47	1.8
	93	W50	30	2.7								
20	70	W40	39	1.2	132	W40	20	1.4	48	W50	59	1.3
	70	W50	39	2	132	W50	20	2.3	48	W63	59	2.4
25	56	W50	47	1.8	112	W40	24	1.2	38	W50	72	1.1
					112	W50	24	2	38	W63	72	1.9
30	46.7	W50	54	1.5	93	W50	29	2	32	W50	80	1
	46.7	W63	54	2.8					32	W63	80	1.7
35	40	W50	60	1.3	80	W50	34	1.7	28	W63	93	1.5
	40	W63	60	2.5								
40	35	W50	68	1.1	70	W50	38	1.6	24	W63	102	1.4
	35	W63	68	2.1								
45	31	W50	76.5	1	62	W50	40	1.4	21	W63	111	1.3
	31	W63	76.5	1.9								
50	28	W63	82	1.6	56	W50	47	1.1	18	W63	120	1.2
60	23	W63	94	1.4					16	W63	137	1
70	19	W63	110	1.2					14	W75	160	1.5
80	17.5	W63	113	1.1					11	W75	172	1.2
		W75	113	1.6								
100	14	W75	139	1.3					9	W75	196	1

# GEARBOX SELECTION CHART

0.55kW 1400rpm 80Fr					0.55kW 2800rpm 71Fr				0.55kW 960rpm Input 80Fr			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W50	24	2.9	400	W40	12	2.2	120	W50	37	2.2
10	140	W50	32	2.2	280	W40	16	1.8	96	W50	48	1.7
15	93	W50	46	1.6	186	W40	24	1.3	64	W50	69	1.2
									64	W63	69	2.3
20	70	W50	59	1.2	132	W40	30	1	48	W50	88	1
20	70	W63	60	2.2	132	W50	30	1.7	48	W63	90	1.7
25	56	W50	70	1	112	W50	38	1.4	38	W63	108	1.4
25	56	W63	71	1.9					38	W75	108	2.3
30	46.7	W50	80	1	93	W50	43	1.3	32	W63	123	1.3
30	46.7	W63	83	1.8					32	W75	123	2
35	40	W63	97	1.7	80	W50	50	1.1	28	W63	140	1.2
					80	W63	50	2.1	28	W75	140	1.7
40	35	W63	104	1.4	70	W63	56	1.9	24	W63	152	1.1
									24	W75	152	1.5
45	31	W63	115	1.3	62	W63	62	1.7	21	W63	162	1
	31	W75	115	2.2					21	W75	165	1.3
50	28	W63	122	1.1	56	W63	68	1.5	18	W75	184	1.2
	28	W75	122	1.7					18	W90	190	2
60	23	W63	140	1	46	W63	78	1.2	16	W75	210	1
	23	W75	144	1.4					16	W90	220	1.7
70	19	W75	167	1.2	38	W63	90	1	14	W90	255	1.5
80	17.5	W75	180	1.1					11	W90	274	1.1
	17.5	W90	180	1.6					11	W110	280	1.9
100	14	W90	230	1.3					9	W110	344	1.5
	14	W110	236	2								

# GEARBOX SELECTION CHART

0.75kW 1400rpm 80Fr					0.75kW 2800rpm 80Fr				0.75kW 960rpm 90S			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W50	33	2.1	400	W50	17	3	120	W63	52	3
10	140	W50	43	1.6	280	W50	22	2.5	96	W63	66	2.4
15	93	W50	63	1.3	186	W50	31	1.7	64	W63	96	1.6
15	93	W63	64	2.4					64	W75	96	2.4
20	70	W50	80	1	132	W50	41	1.3	48	W63	125	1.2
20	70	W63	80	1.9	132	W63	41	2.2	48	W75	125	2.1
25	56	W63	98	1.3	112	W50	49	1.1	38	W63	147	1
25	56	W75	100	2.3	112	W63	49	1.9	38	W75	148	1.6
30	46.7	W63	112	1.2	93	W50	56	1	32	W63	165	1
30	46.7	W75	115	2	93	W63	58	1.8	32	W75	170	1.5
35	40	W63	130	1.1	80	W63	65	1.5	28	W75	196	1.3
35	40	W75	130	1.8					28	W90	196	2
40	35	W63	142	1	70	W63	77	1.3	24	W75	215	1.1
40	35	W75	147	1.7					24	W90	220	1.8
45	31	W75	165	1.6	62	W63	82	1.2	21	W75	240	1
45	31	W90	165	2					21	W90	242	1.6
50	28	W75	175	1.4	56	W63	89	1	18	W90	267	1.4
50	28	W90	180	1.8								
60	23	W75	197	1.2	46				16	W90	310	1.2
60	23	W90	200	1.5					16	W110	320	2.1
70	19	W75	225	1	38				14	W90	345	1
70	19	W90	230	1.3					14	W110	345	1.8
80	17.5	W90	260	1.1					11	W110	395	1.4
80	17.5	W110	270	1.9								
100	14	W110	325	1.5					9	W110	470	1.1



# GEARBOX SELECTION CHART

1.1kW 1400rpm 90S Fr					1.1kW 2800rpm 80Fr				1.1kW 960rpm Input 90L Fr			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W63	46	2.6	400	W50	23	1.8	120	W63	67	2.2
10	140	W63	77	1.8	280	W50	33	1.5	96	W63	97	1.8
						W63	33	3.5				
15	93	W63	93	1.5	186	W50	48	1.2	64	W63	140	1.2
	93	W75	95	2.1	186	W63	48	2.1	64	W75	140	1.6
20	70	W63	120	1.3	132	W50	62	1	48	W63	180	1
20	70	W75	122	2		W63	62	1.6	48	W75	180	1.3
25	56	W63	150	1.1	112	W63	72	1.2	38	W75	219	1.1
		W75	150	1.7		W75	72	1.9	38	W90	225	2
30	46.7	W63	165	1	93	W63	82	1.1	32	W75	250	1
		W75	170	1.3	93	W75	82	1.8	32	W90	260	1.8
35	40	W75	207	1.1	80	W75	96	1.6	28	W90	300	1.5
	40	W90	207	1.7					28	W110	300	2
40	35	W75	240	1	70	W75	120	1.6	24	W90	330	1.3
		W90	240	1.6					24	W110	340	2.3
45	31	W90	265	1.3	62	W75	135	1.2	21	W90	380	1.1
		W110	265	2.3						W110	380	2
50	28	W90	295	1.1	56	W90	150	1	18	W110	415	1.8
		W110	295	2								
60	23	W90	305	1	46				16	W110	476	1.4
		W110	310	1.9								
70	19	W110	355	1.6	38				14	W110	550	1.2
80	17.5	W110	400	1.3					11	W110	590	1
		W130	405	2.1						W130	590	1.4
100	14	W110	470	1					9	W130	690	1.1
		W130	470	1.5								

## GEARBOX SELECTION CHART

1.5kW 1400rpm 90L					1.5kW 2800rpm 90S				1.5kW 960rpm Input 100L			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W63	68	1.9	400	W63	35	2.7	120	W75	103	2
7	200	W75	68	3								
10	140	W63	89	1.5	280	W63	45	2.1	96	W75	135	1.8
10	140	W75	89	2.6								
15	93	W63	126	1.1	186	W63	66	1.6	64	W75	193	1.5
15	93	W75	126	2.1					64	W90	195	2.1
20	70	W63	165	1	132	W63	86	1.2	48	W75	255	1.3
20	70	W75	166	1.7					48	W90	260	1.5
25	56	W75	202	1.3	112	W75	105	1.4	38	W75	295	1
25	56	W90	205	1.7					38	W90	290	1.3
30	46.7	W75	230	1.1	93	W75	125	1.1	32	W90	358	1.2
30	46.7	W90	235	1.6					32	W110	363	2.3
35	40	W90	273	1.3	80	W75	143	1	28	W90	425	1
35	40	W110	275	2.3					28	W110	430	2
40	35	W90	305	1.2	70	W75	156	1	24	W110	471	1.7
40	35	W110	305	2.2					24	W130	471	2.3
45	31	W90	340	1.1	62	W90	175	1.6	21	W110	530	1.5
45	31	W110	345	2					21	W130	530	2
50	28	W90	370	1	56	W90	195	1.4	18	W110	565	1.3
50	28	W110	375	1.5					18	W130	565	1.8
60	23	W110	445	1.4	46				16	W110	650	1.1
60	23	W130	445	2					16	W130	650	1.6
70	19	W110	520	1.2	38				14	W110	780	1
70	19	W130	520	1.6					14	W130	780	1.4
80	17.5	W110	550	1					11	W130	800	1.1
80	17.5	W130	550	1.5								
100	14	W130	650	1.2								

## GEARBOX SELECTION CHART

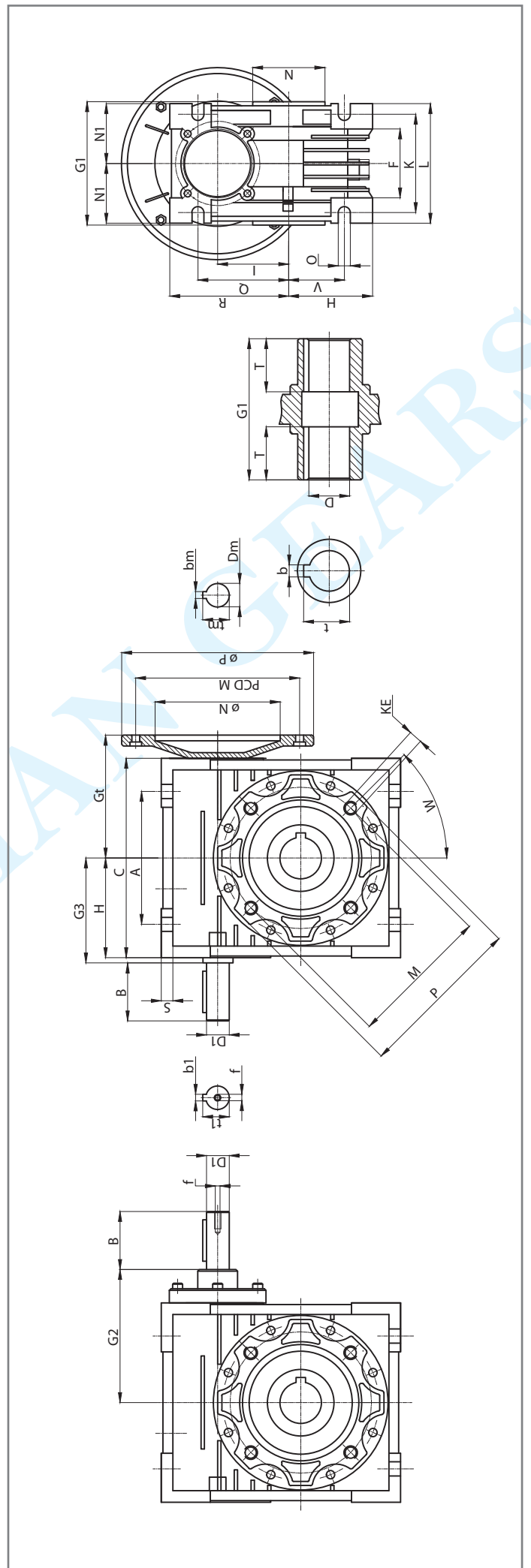
2.2kW 1400rpm 100L					2.2kW 2800rpm 90L				2.2kW 960rpm Input 112L			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W75	94	2	400	W63	51	1.8	137	W75	139	1.5
										W90	139	1.9
10	140	W75	131	1.5	280	W63	66	1.5	96	W90	201	1.8
		W90	131	2.1								
15	93	W75	189	1	186	W63	97	1.1	64	W90	291	1.4
	93	W90	191	1.9	186				64	W110	295	2.6
20	70	W90	250	1.5	132	W75	125	1.3	48	W90	378	1
20	70	W110	255	2.5					48	W110	380	1.9
25	56	W90	305	1.2	112	W75	154	1.1	38	W110	475	1.6
		W110	310	2.2	112	W90	155	1.6	38	W130	475	2.2
30	46.7	W90	351	1.1	93	W75	175	1	32	W110	532	1.5
		W110	355	2		W90	180	1.5	32	W130	535	2.1
35	40	W90	410	1	80	W90	216	1.3	28	W110	640	1.3
	40	W110	415	1.7		W110	216	2.5	28	W130	645	1.8
40	35	W110	462	1.5	70	W90	237	1.2	24	W110	690	1
		W130	465	2.2		W110	240	2.1	24	W130	695	1.6
45	31	W110	536	1.3	62	W110	270	1.9	21	W130	800	1.3
		W130	535	2								
50	28	W110	560	1.2	56	W110	285	1.5	18	W130	830	1.2
		W130	565	1.7								
60	23	W110	650	1	46	NA	NA	NA	16	W130	966	1
		W130	655	1.4								
70	19	W130	760	1.2	38	NA	NA	NA	14	NA	NA	NA
80	17.5	W130	820	1					11	NA	NA	NA
100	14	NA	NA	NA								

## GEARBOX SELECTION CHART

3.7kW 1400rpm 112Fr					3.7kW 2800rpm 100L				3.7kW 960rpm Input 132S			
Ratio	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact	N2 rpm	Model	O/P Torque	Ser Fact
7	200	W90	170	1.6	400	W90	85	2.2	137	W110	255	2.3
10	140	W90	220	1.3	280	W90	110	1.6	96	W110	340	1.9
		W110	220	2.5								
15	93	W90	310	1.1	186	W90	160	1.3	64	W110	490	1.6
	93	W110	330	1.9	186				64	W130	510	2
20	70	W110	425	1.5	132	W90	210	1.1	48	W110	650	1.2
20	70								48	W130	660	1.7
25	56	W110	515	1.3	112	W110	260	2.1	38	W130	780	1.3
		W130	515	1.8	112							
30	46.7	W110	600	1.1	93	W110	300	1.8	32	W130	930	1.1
		W130	600	1.6								
35	40	W130	710	1.3	80	W110	360	1.5				
40	35	W130	780	1.2	70	W110	400	1.3				
45	31	W130	875	1	62	W110	445	1.1				
50	28	W130	950	1								

# DIMENSIONAL TABLES - General Data

TYPE														OUTPUT						MB/MF											
	A	C	G	H	I	K	KE	L	M	N(h8)	N1	O	P	Q	R	S	V	W	T	G1	D(H7)	b	t	B	(D1(j6))	G2	G3	b1	t1	f	Kgs.
W040	70	101	70	50	40	60	M6x10(n°4)	71	75	60	36.5	6.5	87	55	71.5	6.5	35	45°	23	78	18(19)	6	20.8(21.8)	23	11	60	53	4	12.5	-	2.7
W050	80	121.5	80	60	50	70	M6x10(n°4)	85	85	70	43.5	8.5	100	64	84	7	40	45°	30	92	25(24)	8	28.3(27.3)	30	14	74	64	5	16	M6	3.6
W063	100	147.5	95	72	63	85	M6x14(n°8)	103	95	80	53	8.5	110	80	102	8	50	45°	40	112	25(28)	8	28.3(31.3)	40	19	90	75	6	21.5	M6	7.8
W075	120	174	112.5	86	75	90	M6x14(n°8)	113	115	95	57	11	140	93	119	10	60	45°	50	120	28(35)	8(10)	31.3(38.3)	50	24	105	90	8	27	M8	9
W090	140	208	129.5	103	90	100	M10x18(n°8)	130	130	110	67	13	160	102	135	11	70	45°	50	140	35(38)	10	38.3(41.3)	50	24	125	108	8	27	M8	14
W110	170	252.5	160	127.5	110	115	M10x18(n°8)	144	165	130	74	14	200	125	167.5	14.5	85	45°	60	155	42	12	45.3	60	28	145	135	8	31	M10	35
W130	200	292.5	180	147	130	120	M12x21(n°8)	155	215	180	81	16	250	140	187.5	15.5	100	45°	60	170	45	14	48.8	80	30	155	155	8	33	M10	48

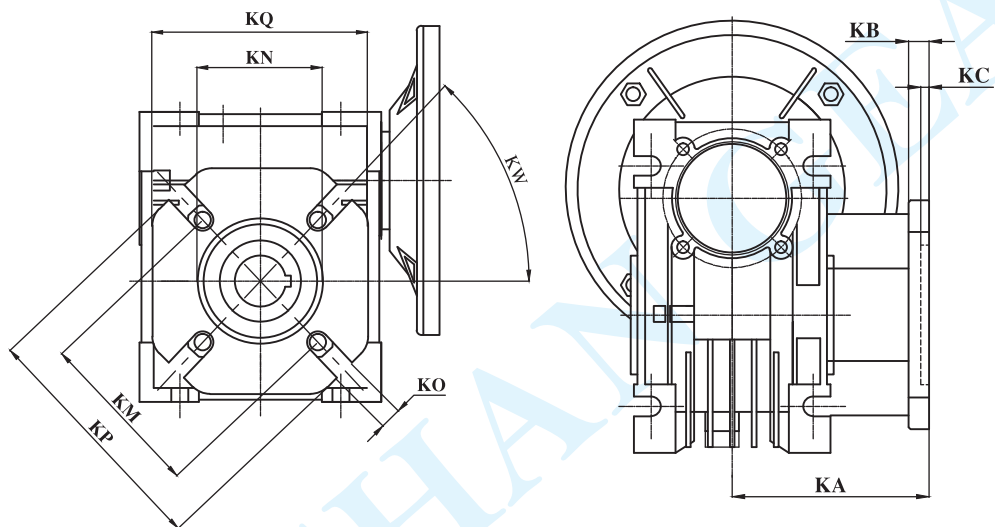




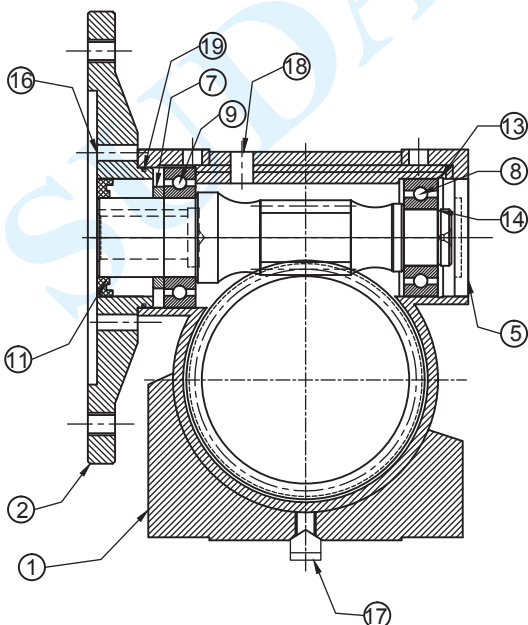
# OUTLINE DIMENSIONAL TABLES - OUTPUT SIDE

## OUTPUT FLANGE 'F'

TYPE	KA	KB	KC	KM	KN(H8)	KO	KP	KQ	KW
W 040	67	7	4	75	60	9(n°4)	110	95	45°
W 050	90	9	5	85	70	11(n°4)	125	110	45°
W 063	82	10	6	150	115	11(n°4)	180	142	45°
W 075	111	13	6	165	130	14(n°4)	200	170	45°
W 090	111	13	6	175	152	14(n°4)	210	200	45°



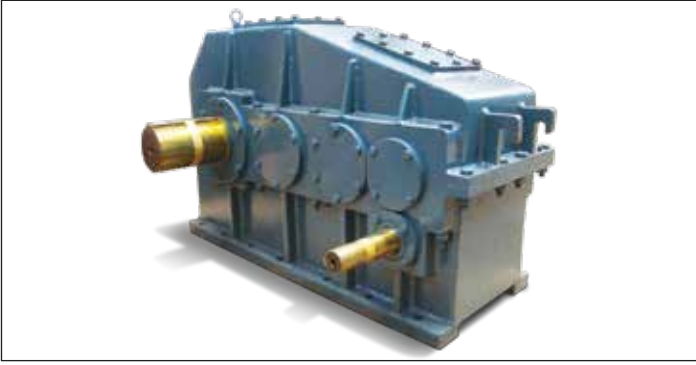
## SECTIONAL DRAWING OF GEARBOX



## BILL OF MATERIAL

Sr. No.	PARTS	QTY.
1	Housing	1
2	In Put Flange.	1
3	Out Put Cover.	1
4	Worm Shaft	1
5	Close Cover For Worm Shaft	1
6	Worm Gear With HUB	1
7	Spacer	1
8	Bearing	1
9	Bearing	1
10	Bearing	2
11	Oil Seal	1
12	Oil Seal	2
13	Internal Circlip	1
14	External Circlip	2
15	Allen Bolt	6
16	Allen Bolt	8
17	Drain Plug.	1
18	Oil Indicator.	1
19	O Ring	

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