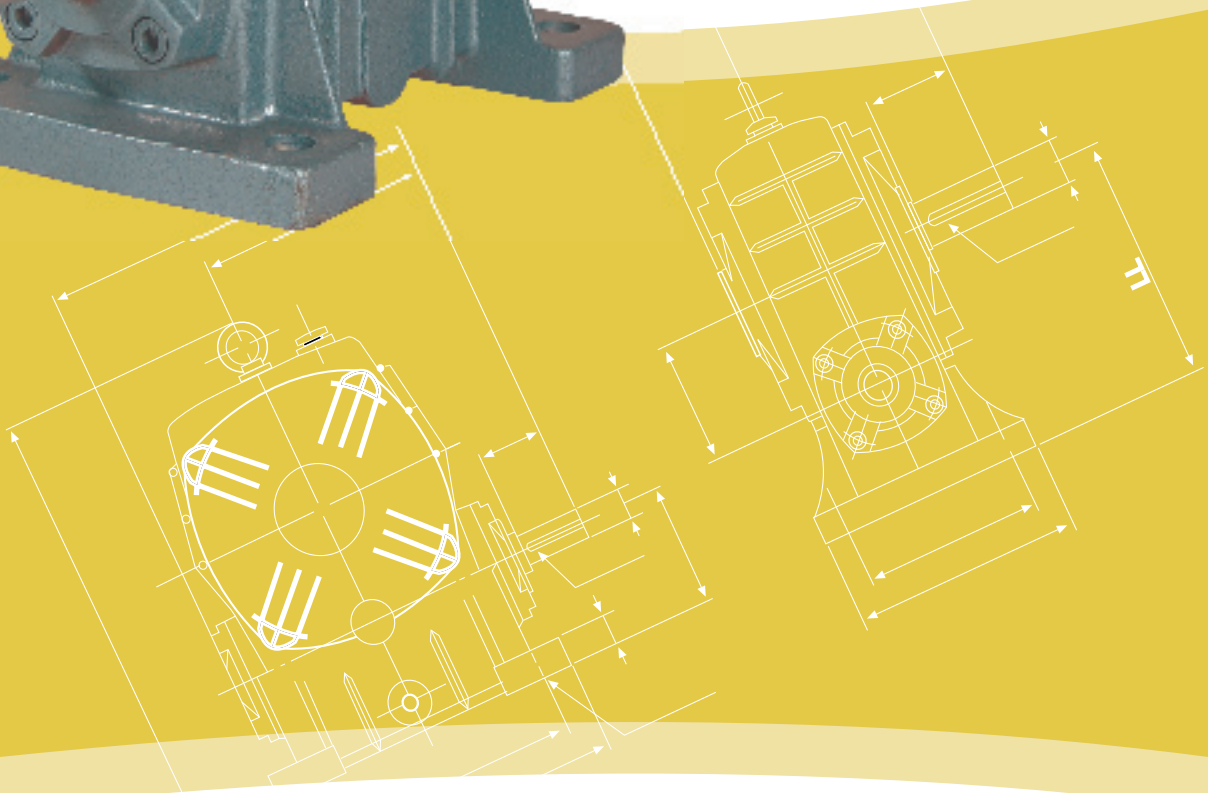
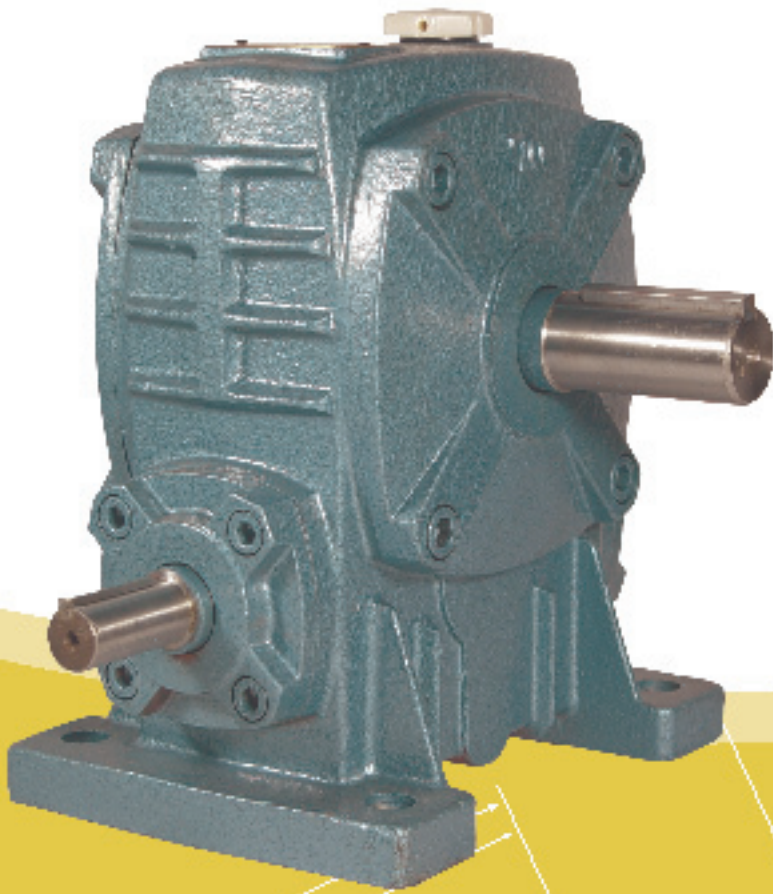


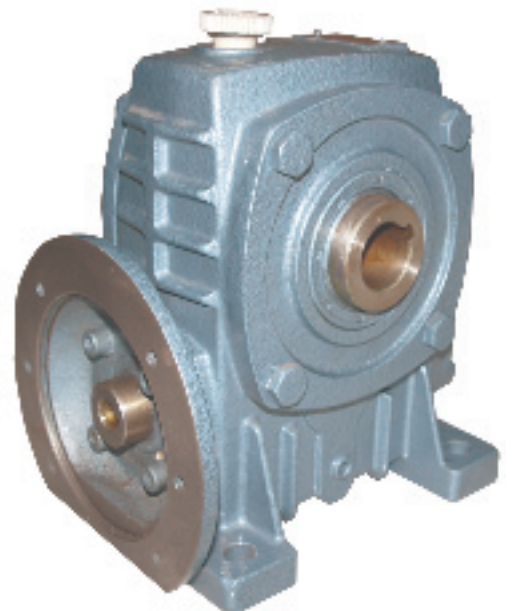
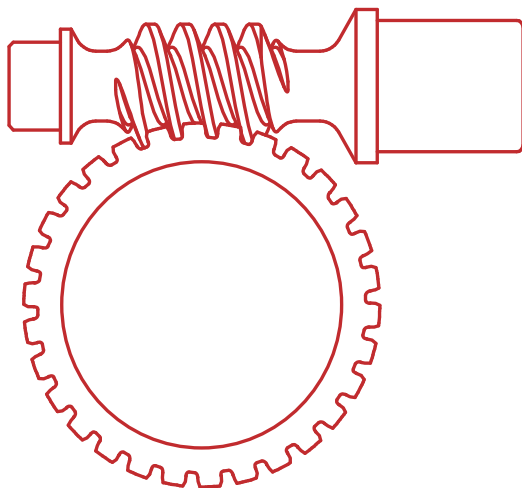
REVCO
WORM REDUCER

WGM
WORM REDUCER

G3
MINI HELICAL GEAR



Transmission Solution



Products Guide



WPA

**IEC
Standard**

**NEMA
Standard**

EFF 2

**Single Reducer
Ratio 1/5 ~ 1/60**

**Double Reducer
Ratio 1/80 ~ 1/3600**

WPS



WPX



WPO



WPDA



WPDX



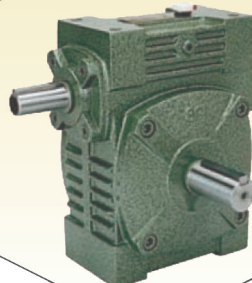
WPDO



WPDS



WPW



WPWA



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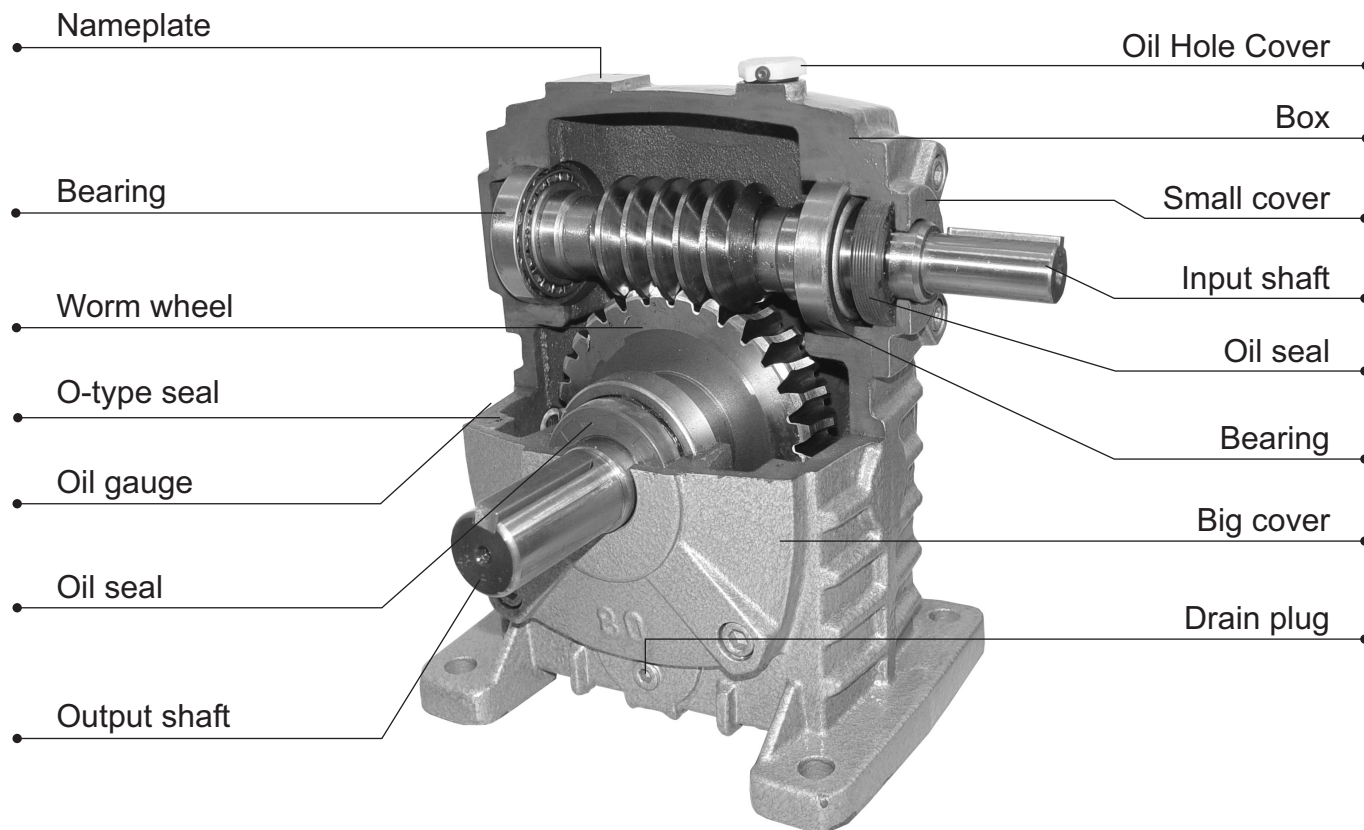
WP Worm Gear Reducer

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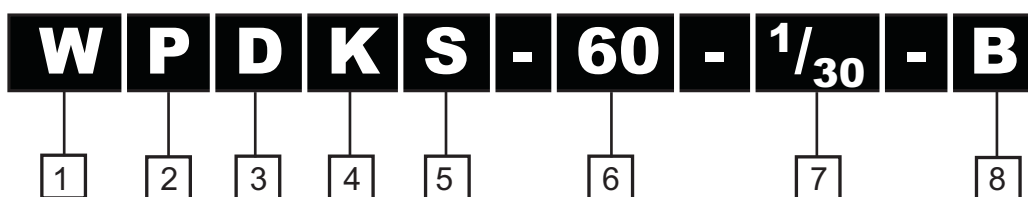
G3 Mini Helical Gear

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1. Product structure



2. Model Instructions



W = 1
Universal Code

P = 2
Box Structure

D = 3
Flange

K = 4
Output Shaft

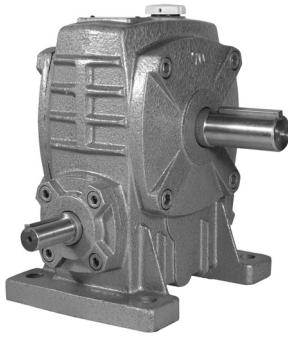
S = 5
Upper Input Shaft

60 = 6
Size & Central Distance

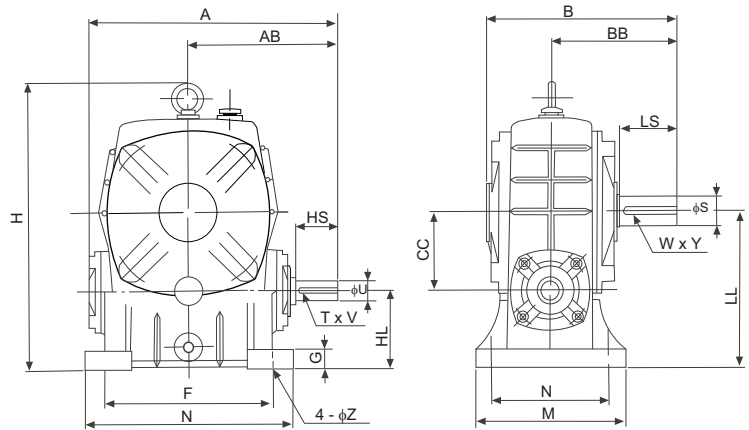
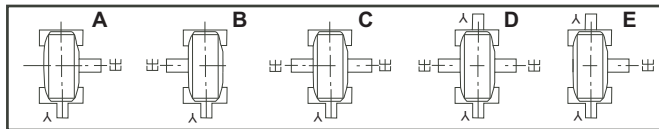
1/30 = 7
Reduction Ratio

B = 8
Shaft Direction

WPA



WPA Shaft Direction

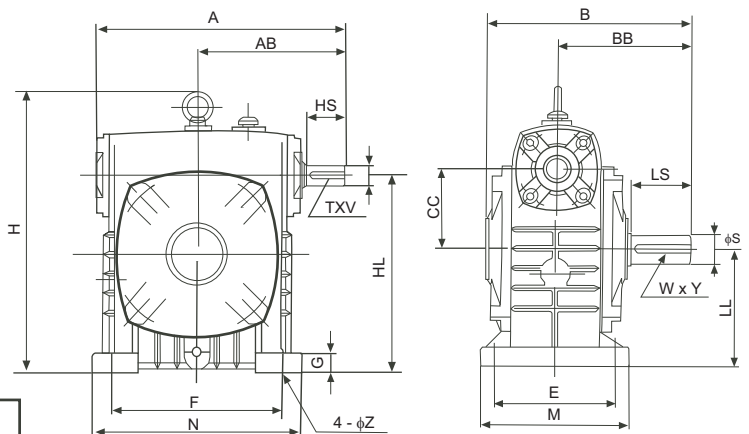
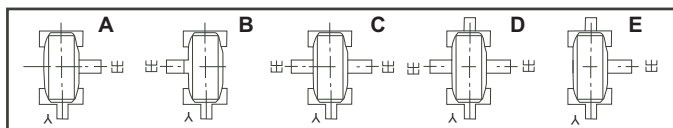


Size	Ratio	A	AB	B	BB	CC	E	F	H	HL	LL	M	N	G	Z	Input Shaft			Output Shaft			kg	I
																HS	U	T X V	LS	S	W X Y		
40	1/10	142	85	112	74	40	70	80	135	40	80	90	100	12	10	25	12	4 x 2.5	28	14	5 x 3	3.8	
50		175	105	145	95	50	95	110	180	50	100	120	140	15	11	30	12	4 x 2.5	40	17	5 x 3	7	0.17
60		195	120	165	110	60	105	120	210	60	120	130	150	20	11	40	15	5 x 3	50	22	7 x 4	10.5	0.23
70		234	140	195	130	70	115	150	243	70	140	150	190	20	15	40	18	5 x 3	60	28	7 x 4	14.5	0.5
80	1/20	264	160	210	140	80	135	180	273	80	160	170	220	20	15	50	22	7 x 4	65	32	10 x 4.5	22	0.7
100	1/30	322	190	260	170	100	155	220	340	100	200	190	270	25	15	50	25	7 x 4	75	38	10 x 4.5	36	1.6
120	1/40	385	230	290	190	120	180	260	405	120	240	230	320	30	18	65	30	7 x 4	85	45	12 x 4.5	63	3.0
135	1/50	435	260	320	210	135	200	290	455	135	270	250	350	30	18	75	35	10 x 4.5	95	55	15 x 5	80	3.5
155	1/60	507	302	387	252	155	220	320	490	135	290	280	390	38	20	85	40	10 x 4.5	110	60	15 x 5	114	3.6
175		550	325	407	262	175	250	350	565	160	335	310	430	40	20	85	45	12 x 4.5	110	65	18 x 6	150	4.5
200		670	350	480	305	200	290	390	625	175	375	360	480	42	22	95	50	12 x 4.5	125	70	20 x 7	218	6.4
250		810	420	560	360	250	380	480	730	200	450	460	560	42	27	110	60	15 x 5	155	90	24 x 8	363	8.5

WPS



WPS Shaft Direction

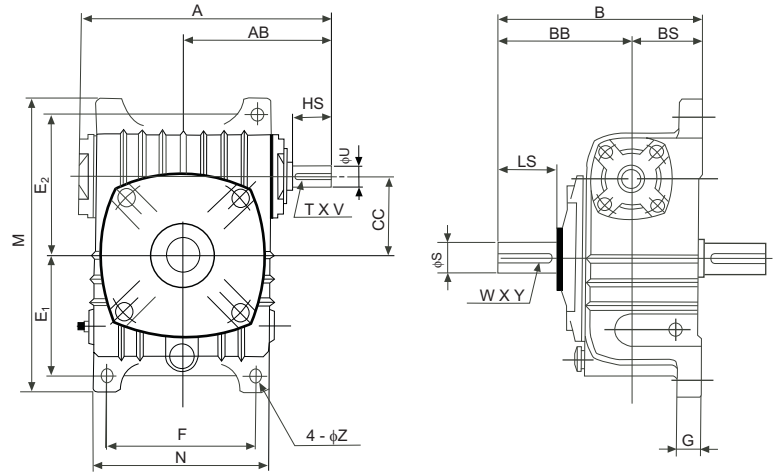


Size	Ratio	A	AB	B	BB	CC	E	F	H	HL	LL	M	N	G	Z	Input Shaft			Output Shaft			kg	I
																HS	U	T X V	LS	S	W X Y		
40	1/10	142	85	112	74	40	70	80	135	100	60	90	100	12	10	25	12	4 x 2.5	28	14	5 x 3	3.8	
50		175	105	145	95	50	95	110	180	130	80	120	140	18	11	30	12	4 x 2.5	40	17	5 x 3	7	0.4
60		195	120	165	110	60	105	120	205	150	90	130	150	20	11	40	15	5 x 3	50	22	7 x 4	10.5	0.5
70		234	140	195	130	70	115	150	235	175	105	150	190	25	15	40	18	5 x 3	60	28	7 x 4	14.5	0.7
80	1/20	264	160	210	140	80	135	180	265	200	120	170	220	25	15	50	22	7 x 4	65	32	10 x 4.5	22	1.1
100	1/30	322	190	260	170	100	155	220	327	250	150	190	270	25	15	50	25	7 x 4	75	38	10 x 4.5	36	2.3
120	1/40	385	230	290	190	120	180	260	388	300	180	230	320	30	18	65	30	7 x 4	85	45	12 x 4.5	63	4.5
135	1/50	435	260	320	210	135	200	290	445	350	215	250	350	30	18	75	35	10 x 4.5	95	55	15 x 5	80	6.0
155	1/60	507	302	387	252	155	220	320	483	390	235	280	390	38	20	85	40	10 x 4.5	110	60	15 x 5	114	6.2
175		550	325	407	262	175	250	350	540	435	260	310	430	40	20	85	45	12 x 4.5	110	65	18 x 6	150	8.0
200		670	350	480	305	200	290	390	610	490	290	360	480	42	22	95	50	12 x 4.5	125	70	20 x 7	218	9.0
250		810	420	560	360	250	380	480	755	600	350	460	560	48	27	110	60	15 x 5	155	90	24 x 8	363	17.0

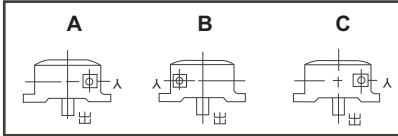
WPX



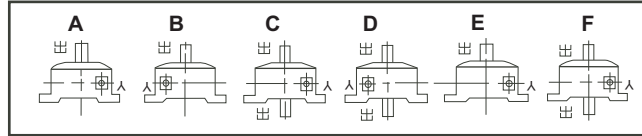
WPO



WPX Shaft Direction

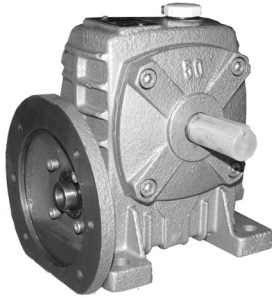


WPO Shaft Direction

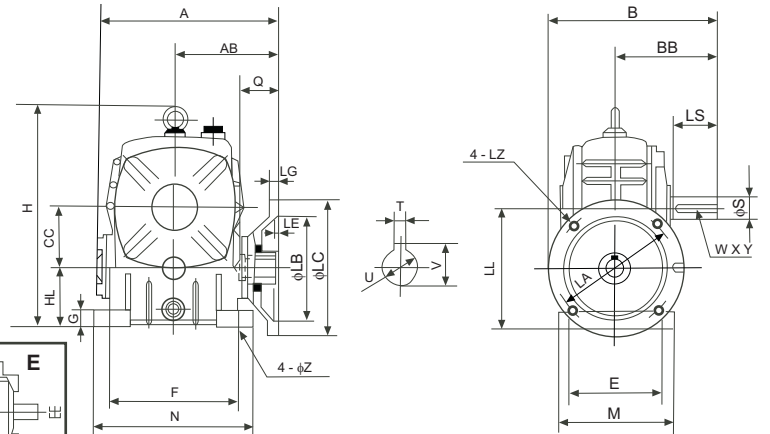
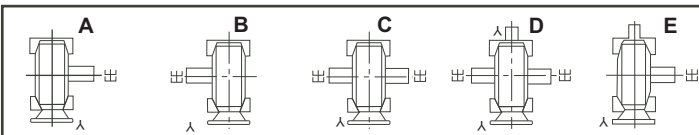


Size	Ratio	A	AB	B	BB	BC	CC	E ₁	E ₂	F	M	N	G	Z	Input Shaft			Output Shaft			kg	I
															HS	U	T X V	LS	S	W X Y		
50	1/10	175	105	145	95	50	50	93	102	90	220	116	14	11	30	12	4 x 2.5	40	17	5 x 3	6.5	0.5
60		195	120	165	110	55	60	105	120	100	260	126	15	11	40	15	5 x 3	50	22	7 x 4	9	0.6
70		234	140	195	130	65	70	120	135	120	295	156	20	15	40	18	5 x 3	60	28	7 x 4	14	1.1
80	1/20	264	160	210	140	70	80	130	150	140	320	176	20	15	50	22	7 x 4	65	32	10 x 4.5	21	1.44
100	1/30	322	190	260	170	90	100	155	180	190	375	226	30	15	50	25	7 x 4	75	38	10 x 4.5	33	3.0
120	1/40	385	230	290	190	100	120	185	215	220	450	266	30	18	65	30	7 x 4	85	45	12 x 4.5	51	5.1
135	1/50	435	260	320	210	110	135	210	235	260	495	306	35	18	75	35	10 x 4.5	95	55	15 x 5	75	7.2
155		507	302	392	252	140	155	245	295	290	590	350	45	20	85	40	10 x 4.5	110	60	15 x 5	115	9.0
175		550	325	412	262	150	175	267	323	320	640	394	45	20	85	45	12 x 4.5	110	65	18 x 6	143	10
200	1/60	590	350	480	305	175	200	290	360	370	710	440	42	22	95	50	12 x 4.5	125	70	20 x 7	200	12
250		710	420	560	360	200	250	350	440	440	860	510	46	27	110	60	15 x 5	155	90	24 x 8	345	22

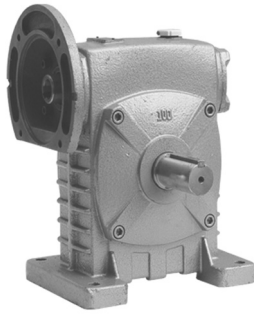
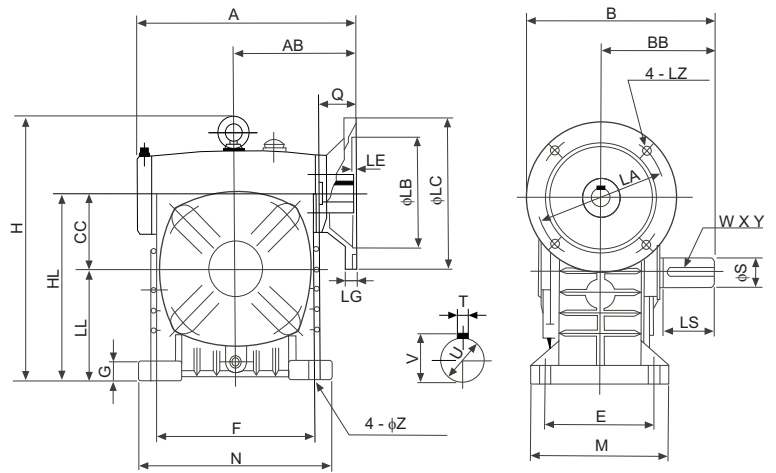
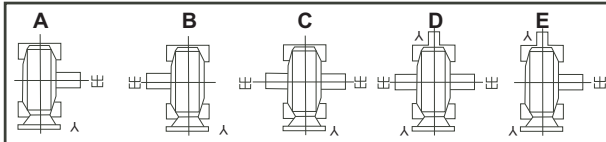
WPDA



WPDA Shaft Direction

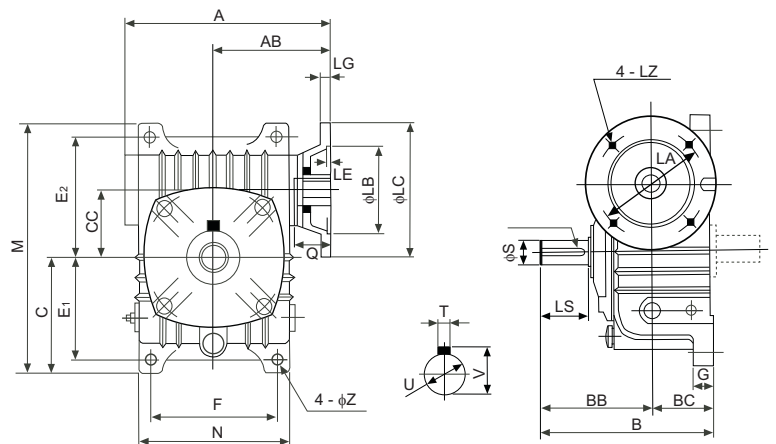
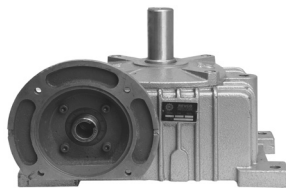


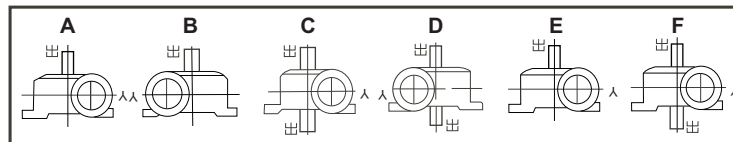
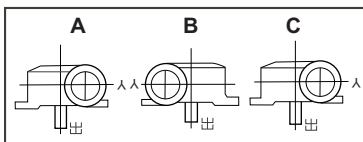
Size	kw	Ratio	A	AB	B	BB	CC	E	F	G	H	HL	LL	M	N	Z	Flange						Input Hole				Output Shaft			kg
																	LA	LB	LC	LE	LG	LZ	Q	U	T X V	LS	S	W X Y		
50	0.18	1/10	165	95	175	95	50	95	110	15	180	50	100	120	140	11	115	95	140	5	10	M8	25	11	4 x 12.5	40	17	5 x 3	7	
60	0.37		185	105	190	110	60	105	120	20	205	60	120	130	150	11	130	110	160	5	12	M8	35	14	5 x 16.3	50	22	7 x 4	11	
70	0.37		209	115	210	130	70	115	150	20	235	70	140	150	190	15	130	110	160		12	M8	35	14	5 x 16.3	60	28	7 x 4	15	
80	0.75	1/20	242	135	240	140	80	135	180	20	265	80	160	170	220	15	165	130	200	5	15	M10	45	19	6 x 21.8	65	32	10 x 4.5	23	
	0.75	165															130	200	5	15	M10	45	19	6 x 21.8						
	1.5	1/30																												
100	1.5	1/40	310	175	270	170	100	155	220	25	363	100	200	190	270	15	165	130	200	5	15	M10	55	24	8 x 27.3	75	38	10 x 4.5	38	
120	2.2	1/60	361	205	315	190	120	180	260	30	424	120	240	230	320	18	215	180	250	5	18	M12	65	28	8 x 31.3	85	45	12 x 4.5	65	
	3.0																													
135	3.0		412	235	335	210	135	200	290	30	481	135	270	250	350	18	215	180	250	5	18	M12	65	28	8 x 31.3	95	55	15 x 5	84	
	4.0																													
155	5.5		442	250	402	252	155	220	320	32	536	135	290	280	380	20	265	230	300	5	22	M12	85	38	10 x 41.3	110	60	15 x 5	120	

WPDS

WPDS
 Shaft Direction


Size	Kw	Ratio	A	AB	B	BB	CC	E	F	G	H	HL	LL	M	N	Z	Input Flange						Input Hole			Output Shaft			
																	LA	LB	LC	LE	LG	LZ	Q	U	TXV	LS	S	WXY	kg
50	0.18	1/10	165	95	175	95	50	95	110	15	180	130	80	120	140	11	115	95	140	5	10	M8	25	11	4 x 12.5	40	17	5 x 3	7
60	0.37		185	105	190	110	60	105	120	20	205	150	90	130	150	11	130	110	160	5	12	M8	35	14	5 x 16.3	50	22	7 x 4	11
70	0.37		209	115	210	130	70	115	150	20	235	175	105	150	190	15	130	110	160	5	12	M8	35	14	5 x 16.3	60	28	7 x 4	14
80	0.75	1/20	242	135	240	140	80	135	180	20	265	200	120	170	220	15	165	130	200	5	15	M10	45	19	6 x 21.8	65	32	10 x 4.5	23
	1.5	1/30																			55	24	8 x 27.3						
100	1.5	1/40	310	175	270	170	100	155	220	25	363	250	150	190	270	15	165	130	200	5	15	M10	55	24	8 x 27.3	75	38	10 x 4.5	38
120	2.2	1/50	361	205	315	190	120	180	260	30	424	300	180	230	320	18	215	180	250	5	18	M12	65	28	8 x 31.3	85	45	12 x 4.5	65
	3.0	1/60																											
135	3.0	1/60	412	235	335	210	135	200	290	30	481	350	215	250	350	18	215	180	250	5	18	M12	65	28	8 x 31.3	95	55	15 x 5	84
	4.0																												
155	5.5		442	250	402	252	155	220	320	32	536	390	235	280	380	20	265	230	300	5	22	M12	85	38	10 x 41.3	110	60	15 x 5	120

WPDX

WPDO

WPDX
 Shaft Direction

WPDO
 Shaft Direction


Size	kw	Ratio	A	AB	B	BB	BC	C	CC	E ₁	E ₂	F	G	M	N	Z	Input Flange						Input-Hole			Output Shaft			
																	LA	LB	LC	LE	LG	LZ	Q	U	T X V	LS	S	WXY	kg
50	0.18	1/10	165	95	145	95	50	106	50	93	102	90	14	220	116	11	115	95	140	5	10	M8	25	11	4 x 12.5	40	17	5 x 3	7
60	0.37		185	105	165	110	55	123	60	105	120	100	15	260	126	11	130	110	160	5	12	M8	35	14	5 x 16.3	50	22	7 x 4	10
70	0.37		209	115	195	130	65	140	70	120	135	120	20	295	156	15	130	110	160	5	12	M8	35	14	5 x 16.3	60	28	7 x 4	15
80	0.75	1/20	242	135	210	140	70	150	80	130	150	140	20	320	176	15	165	130	200	5	15	M10	45	19	6 x 21.8	65	32	10 x 4.5	23
	0.75	1/20																											
	1.5	1/30																											
100	1.5	1/40	310	175	260	170	90	175	100	155	180	190	30	375	226	15	165	130	200	5	15	M10	55	24	8 x 27.3	75	38	10 x 4.5	36
120	2.2	1/50	361	205	290	190	100	210	120	185	215	220	30	450	266	18	215	180	250	5	18	M12	65	28	8 x 31.3	85	45	12 x 4.5	55
	3.0	1/60																											
	4.0	1/60																											
135	3.0	1/60	412	235	320	210	110	235	135	210	235	260	35	495	306	18	215	180	250	5	18	M12	65	28	8 x 31.3	95	55	15 x 5	80
	4.0																												

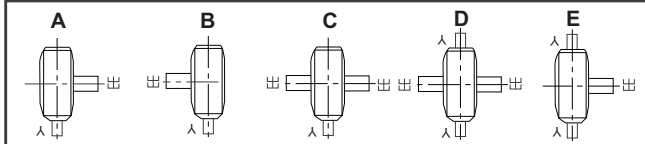
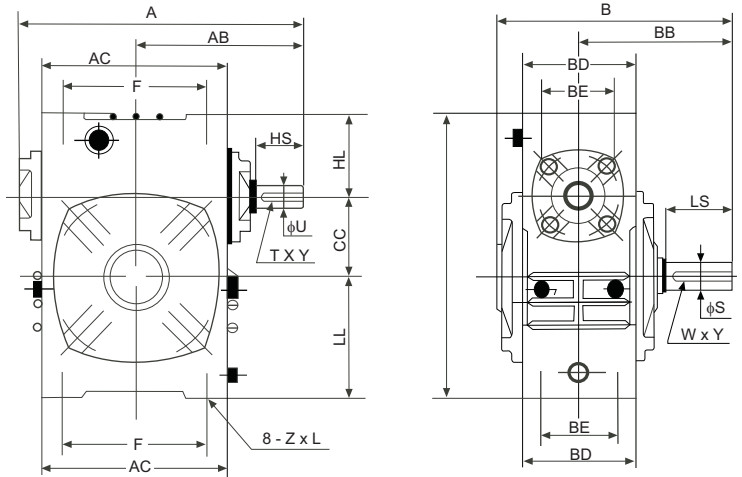
WPW



WPW

Shaft Direction

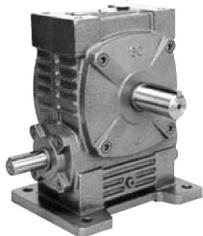
Input Shaft is upper output shaft



Size	Ratio	A	AB	AC	B	BB	BD	BE	CC	F	H	HL	LL	Z XL	Input Shaft			Output Shaft			kg
															HS	U	T X V	LS	S	W X Y	
40	1/10	148	91	96	122	78	60	42	40	78	125	35	50	M6 x 15	25	12	4 x 2.5	28	14	5 x 3	3.5
50		175	105	115	145	95	70	50	50	85	150	35	65	M6 x 18	30	12	4 x 2.5	40	17	5 x 3	6.0
60		195	120	126	165	110	80	55	60	105	177	42	75	M8 x 20	40	15	5 x 3	50	22	7 x 4	8.5
70	1/20	234	140	155	195	130	90	65	70	125	215	55	90	M10 x 25	40	18	5 x 3	60	28	7 x 4	12.5
80	1/30	264	160	174	210	140	100	70	80	140	250	65	105	M12 x 28	50	22	7 x 4	65	32	10 x 4.5	20
100	1/40	322	190	224	260	170	120	90	100	180	310	80	130	M12 x 30	50	25	7 x 4	75	38	10 x 4.5	33
120	1/50	385	230	264	290	190	140	100	120	220	370	95	155	M14 x 32	65	30	7 x 4	85	45	12 x 4.5	50
135	1/60	435	260	304	320	210	150	110	135	260	425	105	185	M16 x 35	75	35	10 x 4.5	95	55	15 x 5	77
155		494	302	330	387	252	160	120	155	280	461	103	203	M16 x 35	85	40	10 x 4.5	110	60	15 x 5	100
175		548	325	370	407	262	186	140	175	320	521	123	223	M16 x 35	85	45	12 x 4.5	110	65	18 x 6	140
200		688	350	420	480	305	200	150	200	360	575	130	245	M18 x 35	95	50	12 x 4.5	125	70	20 x 7	200

WPWA

WPWS

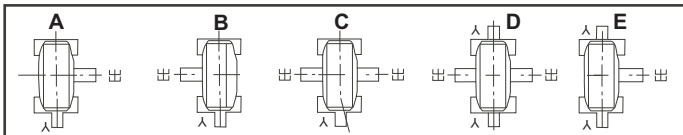
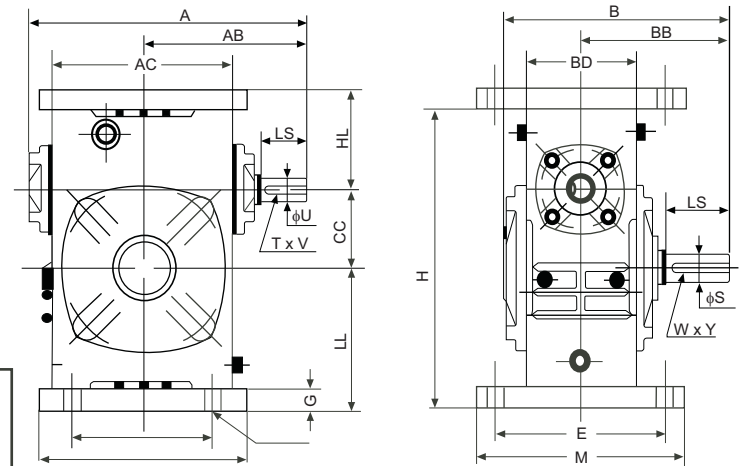


WPWA

Shaft Direction

WPWS

Shaft Direction

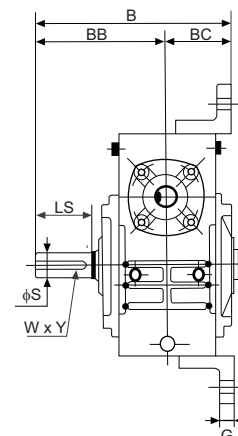
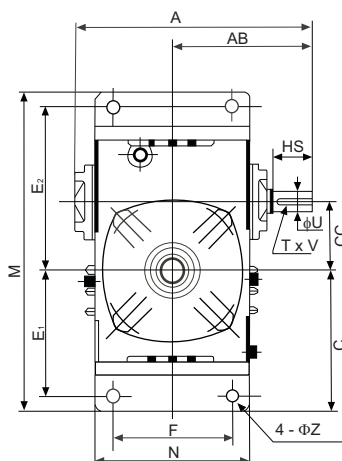
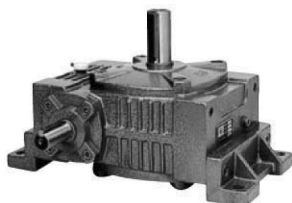


Size	Ratio	A	AB	AC	B	BB	BD	CC	E	F	H	HL	LL	M	N	G	Z	Input Shaft			Output Shaft			kg
																		HS	U	T X V	LS	S	W X Y	
40	1/10	148	91	96	122	78	60	40	80	110	135	45	60	100	130	10	9	25	12	4 x 2.5	28	14	5 x 3	4
50		175	105	115	145	95	70	50	95	110	165	50	80	120	140	15	11	30	12	4 x 2.5	40	17	5 x 3	7
60		195	120	126	165	110	80	60	105	120	195	60	93	130	150	18	11	40	15	5 x 3	50	22	7 x 4	11
70	1/20	234	140	155	195	130	90	70	115	150	233	70	105	150	190	18	15	40	18	5 x 3	60	28	7 x 4	15
80	1/30	264	160	174	210	140	100	80	135	180	268	80	120	170	220	18	15	50	22	7 x 4	65	32	10 x 4.5	23
100	1/40	322	190	224	260	170	120	100	155	220	330	100	150	190	270	20	15	50	25	7 x 4	75	38	10 x 4.5	38
120	1/50	385	230	264	290	190	140	120	180	260	395	120	180	230	320	25	18	65	30	7 x 4	85	45	12 x 4.5	65
135	1/60	435	260	304	320	210	150	135	200	290	455	135	215	250	350	30	18	75	35	10 x 4.5	95	55	15 x 5	84
155		494	302	330	387	252	160	155	220	320	493	135	203	280	380	32	20	85	40	10 x 4.5	110	60	15 x 5	114
175		548	325	370	407	262	186	175	250	350	558	160	223	310	410	37	20	85	45	12 x 4.5	110	65	18 x 6	150
200		688	350	420	480	305	200	200	290	350	620	175	245	360	435	45	22	95	50	12 x 4.5	125	70	20 x 7	218

WPWX

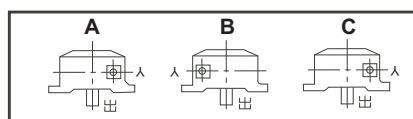


WPWO



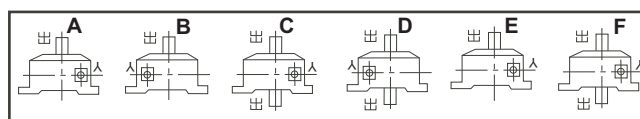
WPWX

Shaft Direction



WPWO

Shaft Direction



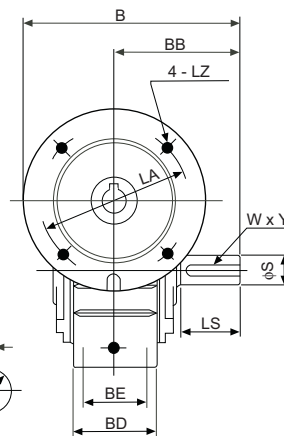
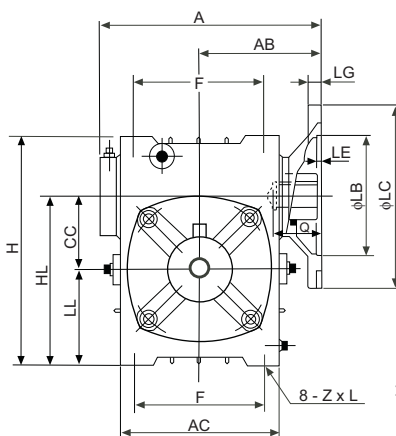
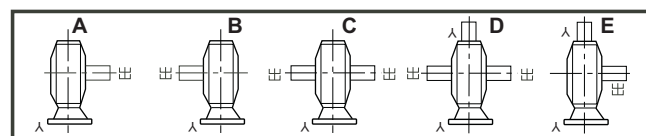
Size	Ratio	A	AB	B	BB	BC	C	CC	E ₁	E ₂	F	M	N	G	Z	Input Shaft			Output Shaft			kg
																HS	U	T x V	LS	S	W x Y	
40	1/10	148	91	123	78	45	85	40	72	97	70	195	96	10	9	25	12	4 x 2.5	28	14	5 x 3	4.2
50		175	105	145	95	50	110	50	90	110	90	225	115	14	11	30	12	4 x 2.5	40	17	5 x 3	6.5
60	1/20	195	120	165	110	55	120	60	102	129	100	257	126	15	11	40	15	5 x 3	50	22	7 x 4	9
70	1/30	234	140	195	130	65	135	70	120	155	120	305	155	20	15	40	18	5 x 3	60	28	7 x 4	14
80	1/40	264	160	210	140	70	155	80	140	180	140	350	174	20	15	50	22	7 x 4	65	32	10 x 4.5	21
100	1/50	322	190	260	170	90	180	100	165	215	190	410	224	20	15	50	25	7 x 4	75	38	10 x 4.5	33
120	1/60	385	230	290	190	100	217.5	120	195	255	220	495	264	25	18	65	30	7 x 4	85	45	12 x 4.5	51
135		435	260	320	210	110	252.5	135	230	285	260	560	304	30	18	75	35	10 x 4.5	95	55	15 x 5	75

WPWD



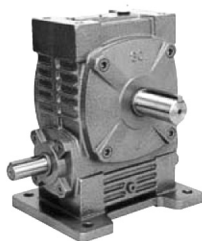
WPWD

Shaft Direction

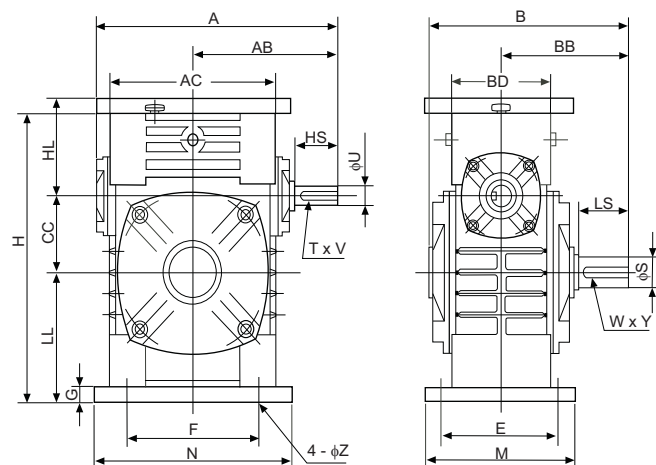


Size	kw	Ratio	A	AB	AC	B	BB	BD	BE	CC	F	H	HL	LL	Z X L	Flange						Input Hole			Output shaft			kg
																LA	LB	LC	LE	LG	LZ	O	U	T x V	LS	S	W x Y	
50	0.18		165	95	115	175	95	64	50	50	85	150	115	65	M6 x 20	115	95	140	5	10	M8	25	11	4 x 12.5	40	17	5 x 3	7
60	0.37		185	105	126	190	110	74	55	60	105	177	135	75	M8 x 20	130	110	160	5	12	M8	35	14	5 x 16.3	50	22	7 x 4	11
70	0.37	1/10	209	115	155	210	130	84	65	70	125	215	160	90	M10 x 25	130	110	160	5	12	M8	35	14	5 x 16.3	60	28	7 x 4	14
	0.75					230										165												
80	0.75	1/20	242	135	174	240	140	94	70	80	140	250	185	105	M12 x 28	165	130	200	5	15	M10	45	19	6 x 21.8	65	32	10 x 4.5	22
	1.5																											
100	1.5	1/40	310	175	224	270	170	114	90	100	180	310	230	130	M12 x 30	165	130	200	5	15	M10	55	24	8 x 27.3	75	38	10 x 4.5	36
120	2.2	1/50	361	205	264	315	190	134	100	120	220	370	275	155	M14 x 32	215	180	250	5	18	M12	65	28	8 x 31.5	85	45	12 x 4.5	63
	3.0																											
135	3.0	1/60	412	235	304	335	210	144	110	135	260	425	320	185	M16 x 35	215	180	250	5	18	M12	65	28	8 x 31.5	95	55	15 x 5	80
	4.0																											
155	5.5		442	250	330	402	252	160	120	155	280	461	358	203	M16 x 35	265	230	300	5	22	M12	85	38	10 x 41.30	110	60	15 x 5	114

WPWA - Y

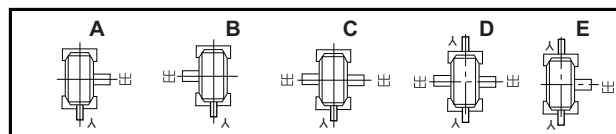


WPWS - Y



WPWA - Y / WPWS - Y

Shaft Direction

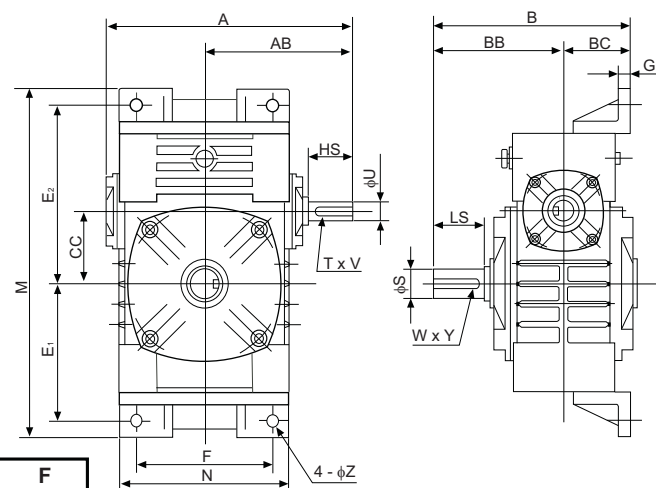
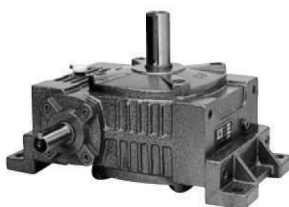


Size	Ratio	A	AB	AC	B	BB	BD	CC	E	F	H	HL	LL	M	N	G	Z	Input shaft			Output shaft			kg
																		HS	U	T x V	LS	S	N x Y	
40	1/5	152	90	96	122	78	60	40	80	110	135	45	60	100	130	10	9	25	12	4 x 2.5	28	14	5 x 3	4
50		175	105	115	145	95	70	50	95	110	165	50	80	120	140	15	11	30	12	4 x 2.5	40	17	5 x 3	7
60	1/10	195	120	126	165	110	76	60	105	120	195	60	93	130	150	18	11	40	15	5 x 3	50	22	7 x 4	11
70	1/15	234	140	155	195	130	84	70	115	150	233	73	108	150	190	18	15	40	18	5 x 3	60	28	7 x 4	15
80	1/20	264	160	170	210	140	100	80	135	180	268	83	123	170	220	18	15	50	22	7 x 4	65	32	10 x 4.5	23
100	1/25	300	178	204	245	163	114	100	155	220	330	100	150	190	270	20	15	50	25	7 x 4	75	38	10 x 4.5	38
120	1/30	385	230	260	285	185	128	120	180	260	395	120	180	230	320	25	18	65	30	7 x 4	85	45	12 x 4.5	65
135	1/40	435	260	296	320	210	150	135	200	290	455	135	215	250	350	30	18	75	35	10 x 4.5	95	55	15 x 5	84
155	1/50	494	300	330	387	252	170	155	220	320	493	135	235	280	380	32	20	85	40	10 x 4.5	110	60	15 x 5	114
175	1/60	548	325	370	407	262	186	175	250	350	558	160	260	310	410	37	20	85	45	12 x 4.5	110	65	18 x 6	150
200		594	350	420	480	305	230	200	290	350	620	175	290	360	435	45	22	95	50	12 x 4.5	125	70	20 x 7	218

WPWX - Y

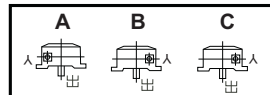


WPWO - Y



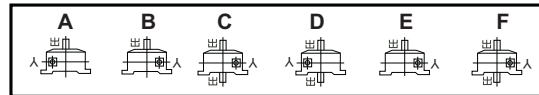
WPWX - Y

Shaft Direction

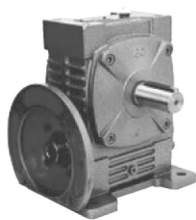


WPWO - Y

Shaft Direction

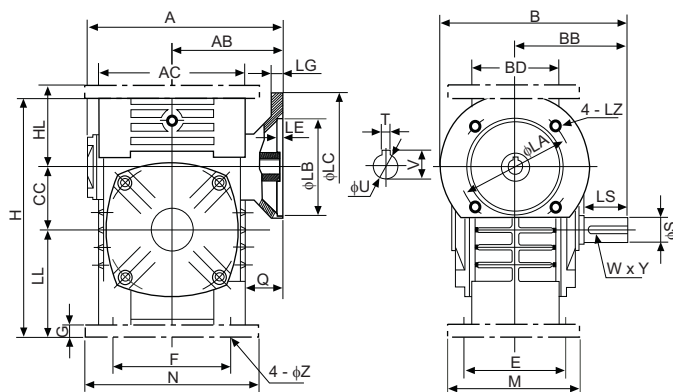
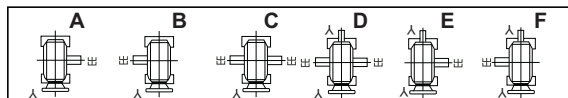


Size	Ratio	A	AB	B	BB	BC	CC	E ₁	E ₂	F	M	N	G	Z	Input Shaft			Output Shaft			kg
															HS	U	T x V	LS	S	W x Y	
40	1/5	152	90	123	78	45	40	72	97	70	195	96	10	9	25	12	4 x 2.5	28	14	5 x 3	4.2
50		175	105	145	95	50	50	90	110	90	225	115	14	11	30	12	4 x 2.5	40	17	5 x 3	6.5
60	1/10	195	120	165	110	55	60	102	129	100	257	126	15	11	40	15	5 x 3	50	22	7 x 4	9
70	1/15	234	140	195	130	65	70	120	155	120	305	155	20	15	40	18	5 x 3	60	28	7 x 4	14
80	1/20	214	160	210	140	70	80	140	180	140	350	174	20	15	50	22	7 x 4	65	32	10 x 4.5	21
100	1/25	300	178	253	163	90	100	165	215	190	410	224	20	15	50	25	7 x 4	75	38	10 x 4.5	33
120	1/30	385	230	285	185	100	120	195	255	220	495	264	25	18	65	30	7 x 4	85	45	12 x 4.5	51
135	1/40	435	260	320	210	110	135	230	285	260	560	304	30	18	75	35	10 x 4.5	95	55	15 x 5	75
155	1/50	494	300	392	252	140	155	250	305	280	605	330	35	20	85	40	10 x 4.5	110	60	15 x 5	115
175	1/60	548	325	412	262	150	175	273	348	320	675	370	40	20	85	45	12 x 4.5	110	65	18 x 6	152
200		594	350	480	305	175	200	305	390	370	749	424	42	22	95	50	12 x 4.5	125	70	20 x 7	226

WPWDA

WPWDS

WPWDA/WPWDS

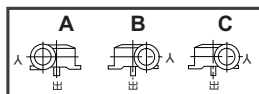
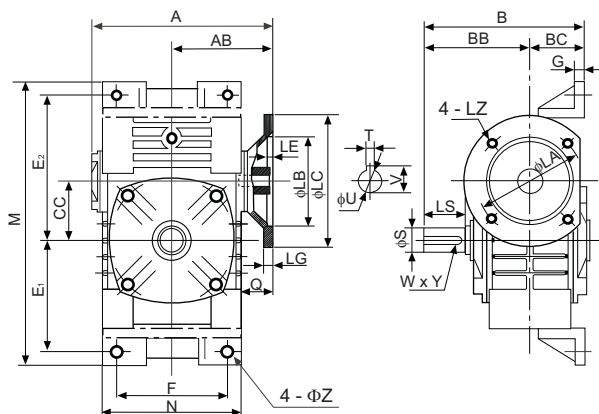
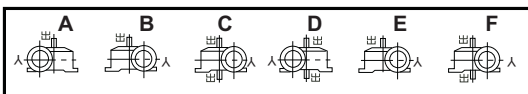
Shaft Direction



Size	kw	Ratio	A	AB	AC	B	BB	BD	CC	E	F	G	H	HL	LL	M	N	Z	Flange						Input Hole			Output Shaft			kg	
																			LA	LB	LC	LE	LG	LZ	Q	U	T X V	LS	S	W X Y		
40	0.12	1/5 1/10 1/15 1/20 1/25 1/30 1/40 1/50 1/60	138	76	96	148	78	60	40	80	110	10	135	45	60	100	130	9	115	95	140	5	10	M8	25	11	4 X 12.8	28	14	5 X 3	4.4	
50	0.18		155	84	115	165	95	70	50	95	110	15	165	50	80	120	140	11	115	95	140	5	10	M8	25	11	4 X 12.8	40	17	5 X 3	7	
60	0.37		170	92	126	190	110	76	60	105	120	18	195	60	93	130	150	11	130	110	160	5	12	M8	35	14	5 X 16.3	50	22	7 X 4	11	
70	0.37		206	110	155	210	130	84	70	115	150	18	233	73	108	150	190	15	130	110	160	5	12	M8	35	14	5 X 16.3	60	28	7 X 4	15	
	0.75			230															165	130	200		15	M10	45	19	6 X 21.8					
80	0.75		1/10	232	128	170	240	140	100	80	135	180	18	268	83	123	170	220	15	165	130	200	5	15	M10	45	19	6 X 21.8	65	32	10 X 4.5	23
	1.5																								55	24	8 X 27.3					
100	1.5		1/20	266	145	204	263	163	114	100	155	220	20	330	100	150	190	270	15	165	130	200	5	12	M10	52	24	8 X 27.3	75	38	10 X 4.5	38
	2.2			270	149															215	180	250		15	M12	62	28	8 X 31.3				
120	2.2		1/25	340	182	260	310	185	128	120	180	260	25	395	120	180	230	320	18	215	180	250	5	18	M12	65	28	8 X 31.3	85	45	12 X 4.5	65
	3.0																															
135	3.0	1/40	375	200	296	335	210	150	135	200	290	30	455	135	215	250	350	18	215	180	250	5	18	M12	65	28	8 X 31.3	95	55	15X5	8	
	4.0																															
155	5.5	1/60	442	236	330	402	252	170	155	220	320	32	493	135	235	280	380	20	265	230	300	5	20	M12	85	38	10 X 41.3	110	60	15 X 5	120	
175	7.5		465	240	370	412	262	186	175	250	350	37	558	160	260	310	410	20	265	230	300	6	18	M12	85	38	10 X 41.3	110	65	18 X 6	160	
200	7.5		508	270	420	455	305	230	200	290	350	45	620	175	290	360	435	22	265	230	300	6	18	M12	85	38	10 X 41.3	125	70	20 X 7	236	
	11		480																300	250	350		M16	115	42	12 X 45.3						

WPWDX

WPWDO

WPWDX
 Shaft Direction

WPWDO
 Shaft Direction


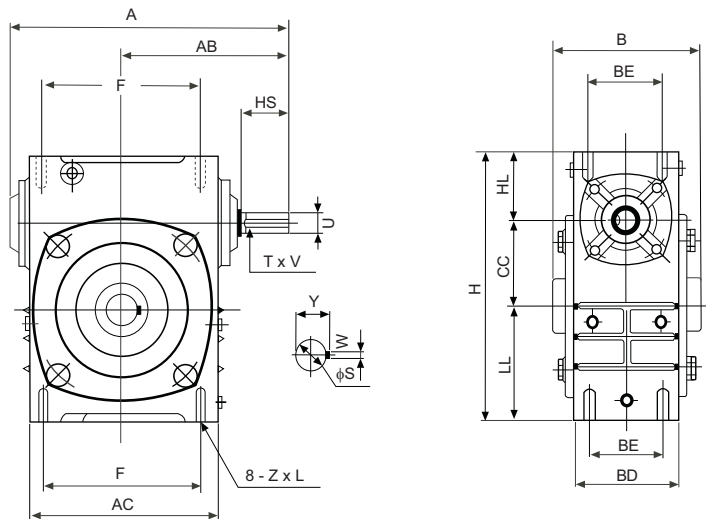
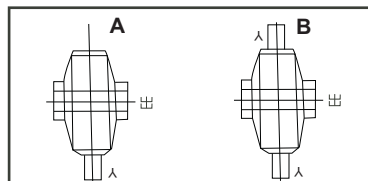
Size	kw	Ratio	A	AB	B	BB	BC	CC	E ₁	E ₂	F	G	M	N	Z	Flange						Input Hole			Output Shaft			KG
																LA	LB	LC	LE	LG	LZ	Q	U	T x V	LS	S	W x Y	
40	0.12	1/5	138	76	123	78	45	40	72	97	70	10	195	96	9	115	95	140	5	10	M8	25	11	4 x 12.8	28	14	5 x 3	4.6
50	0.18		155	84	145	95	50	50	90	110	90	14	225	115	11	115	95	140	5	10	M8	25	11	4 x 12.8	40	17	5 x 3	7
60	0.37		170	92	165	110	55	60	102	129	100	15	257	126	11	130	110	160	5	12	M8	35	14	5 x 16.3	50	22	7 x 4	10
70	0.37		206	110	195	130	65	70	120	155	120	20	305	155	15	130	110	160	5	12	M8	35	14	5 x 16.3	60	28	7 x 4	15
	0.75															165	130	200		15	M10	45	19	6 x 21.8				
80	0.75	1/10	232	128	210	140	70	80	140	180	140	20	350	174	15	165	130	200	5	15	M10	45	19	6 x 21.8	65	32	10 x 4.5	23
	1.5																				55	19	6 x 21.8					
100	1.5	1/20	266	145	253	163	90	100	165	215	190	20	410	224	15	165	130	200	5	12	M10	52	24	8 x 27.3	75	38	10 x 4.5	36
	2.2	1/25	270	149												215	180	250		15	M12	62	28	8 x 31.3				
120	2.2	1/30	340	182	285	185	100	120	195	255	220	25	495	264	18	215	180	250	5	18	M12	65	28	8 x 31.3	85	45	12 x 4.5	55
	3.0																											
135	3.0	1/50	375	200	320	210	110	135	230	285	260	30	560	304	18	215	180	250	5	18	M12	65	28	8 x 31.3	95	55	15 x 5	80
	4.0																											
155	5.5	1/60	442	236	392	252	140	155	250	305	280	35	560	330	20	265	230	300	5	20	M12	85	38	10 x 41.3	110	60	15 x 5	120
175	7.5		465	240	412	262	150	175	273	348	320	40	675	370	20	265	230	300	6	18	M12	85	38	10 x 41.3	110	65	18 x 6	158
200	7.5		508	270	480	305	175	200	305	390	370	42	749	424	22	265	230	300	6	18	M12	85	38	10 x 41.3	125	70	20 x 7	230
	11															300	250	350			M16	115	42	12 x 45.3				

WPWK



WPWK

Shaft Direction



Size	Ratio	A	AB	B	AC	F	BD	BE	CC	LL	HL	H	Z x L	Input Shaft			Output Shaft			kg
														HS	U	T x V	S	W	Y	
50	1/10	175	105	107	115	85	70	50	50	65	35	150	M6 x 18	30	12	4 x 2.5	20	6	22.8	6
60		195	120	117	126	105	80	55	60	75	42	177	M8 x 20	40	15	5 x 3	25	8	28.3	85
70		234	140	131	155	125	90	65	70	90	55	215	M10 x 25	40	18	5 x 3	30	8	33.3	12.5
80		264	160	144	174	140	100	70	80	105	65	250	M12 x 28	50	22	7 x 4	35	10	38.3	20
100	1/30	322	190	175	224	180	120	90	100	130	80	310	M12 x 30	50	25	7 x 4	40	12	43.3	33
120	1/40	385	230	200	264	220	140	100	120	155	95	370	M14 x 32	65	30	7 x 4	45	14	48.8	50
135	1/50	435	260	212	304	260	150	110	135	185	105	425	M16 x 35	75	35	10 x 4.5	60	18	64.4	77
155	1/60	494	302	312	330	280	160	120	155	203	103	461	M16 x 35	85	40	10 x 4.5	70	20	74.9	100
175		548	325	334	370	320	186	140	175	223	123	521	M16 x 35	85	45	12 x 4.5	80	22	85.4	140
200		688	350	346	420	360	200	150	200	245	130	575	M18 x 35	95	50	12 x 4.5	85	22	90.4	200

WPWKA

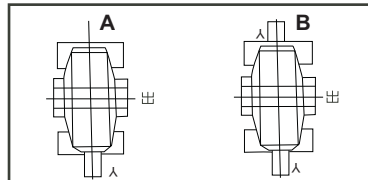


WPWKS



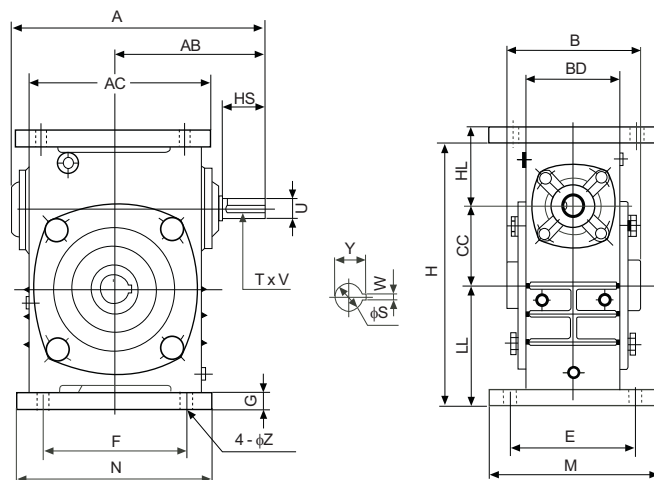
WPWK

Shaft Direction



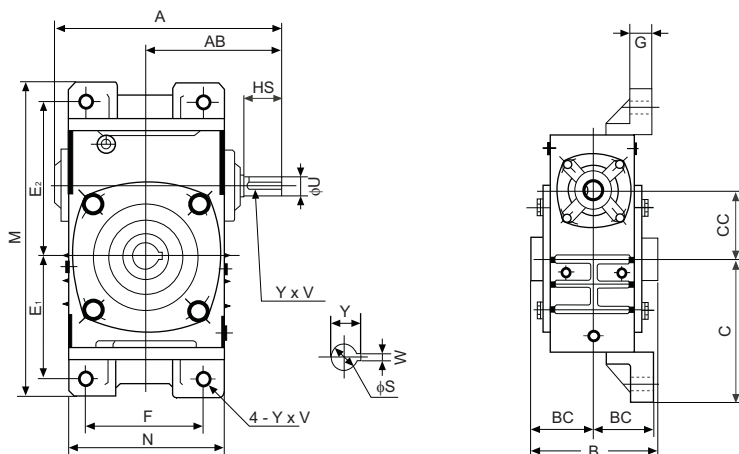
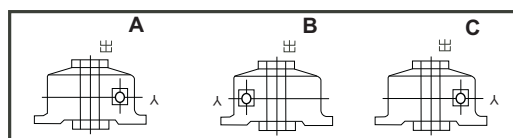
WPWKS

Shaft Direction

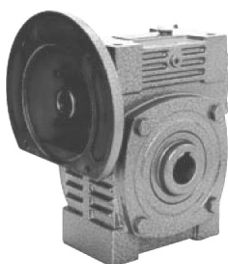
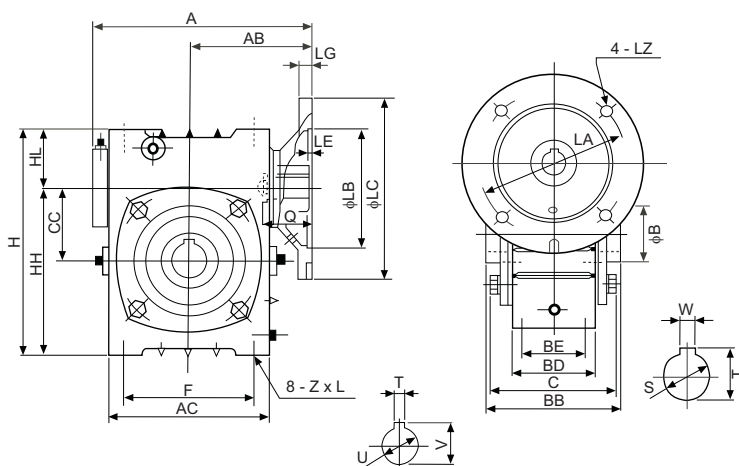
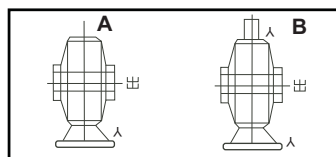


Size	Ratio	A	AB	AC	B	BD	CC	E	F	H	HL	LL	M	N	G	Z	Input Shaft			Output Shaft			kg
		HS	U	T x V	S	W	Y																
50	1/10	175	105	115	107	70	50	95	110	165	50	80	120	140	15	11	30	12	4 x 2.5	20	6	22.8	7
60		195	120	126	117	80	60	105	120	195	60	93	130	150	18	11	40	15	5 x 3	25	8	28.3	11
70		234	140	155	131	90	70	115	150	233	70	105	150	190	18	15	40	18	5 x 3	30	8	33.3	14
80		1/20	264	160	174	144	100	80	135	180	268	80	120	170	220	18	15	50	22	7 x 4	35	10	38.3
100	1/30	322	190	224	175	120	100	155	220	330	100	150	190	270	20	15	50	25	7 x 4	40	12	43.3	36
120	1/40	385	230	264	200	140	120	180	260	395	120	180	230	320	25	18	65	30	7 x 4	45	14	48.8	63
135	1/50	435	260	304	212	150	135	200	290	455	135	215	250	350	30	18	75	35	10 x 4.5	60	18	64.4	80
155	1/60	494	302	330	312	160	155	220	320	495	135	203	280	380	32	20	85	40	10 x 4.5	70	20	74.9	114
175		548	325	370	334	186	175	250	350	558	160	223	310	410	37	20	85	45	12 x 4.5	80	22	85.4	150
200		688	350	420	346	200	200	290	350	620	175	245	360	435	45	22	95	50	12 x 4.5	85	22	90.4	218

WPWKO

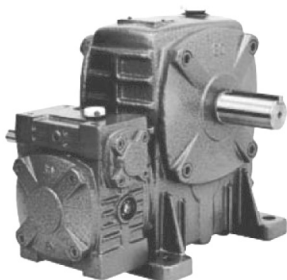
WPWKO
 Shaft Direction


Size	Ratio	A	AB	B	BB	BC	C	CC	E ₁	E ₂	F	M	N	G	Z	Input Shaft			Output Shaft			kg
																HS	U	T x V	S	W	Y	
50	1/10	175	105	107	53.5	50	110	50	90	110	90	225	115	14	11	30	12	4 x 2.5	20	6	22.8	6.5
60		195	120	117	58.5	55	120	60	102	129	100	259	126	15	11	40	15	5 x 3	25	8	28.3	9
70	1/20	234	140	131	65.5	65	135	70	120	155	120	305	155	20	15	40	18	5,3	30	8	33.3	14
80	1/30	264	160	144	72.0	70	155	80	140	180	140	350	174	20	15	50	22	7x4	35	10	38.3	21
100	1/40	322	190	175	87.5	90	180	100	165	215	190	410	224	20	15	50	25	7 x 4	40	12	43.3	33
120	1/50	385	230	200	100	100	217.5	120	195	255	220	495	264	25	18	65	30	7 x 4	45	14	48.8	51
135	1/60	435	260	212	106	110	252.5	135	230	285	260	560	304	30	18	75	35	10,4,5	60	18	64.4	75

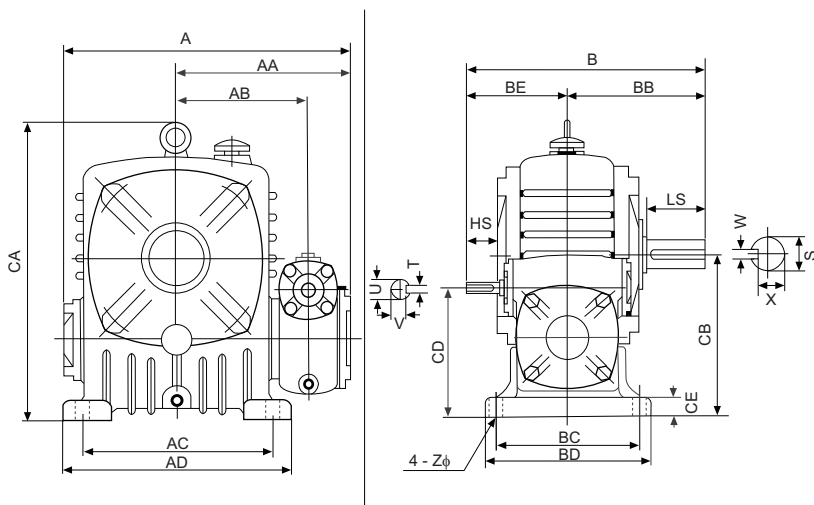
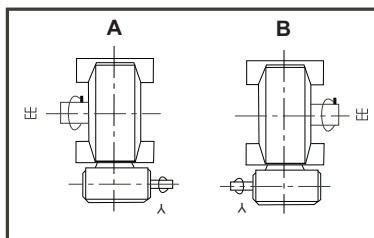
WPWDK

WPWDK
 Shaft Direction


Size	kw	Ratio	A	AB	AC	B	BB	BD	BE	C	CC	F	H	HH	HL	Z x L	Flange						Input Hole			Output Shaft		kg
																	LA	LB	LC	LE	LG	LZ	Q	U	T x V	S	W x Y	
50	0.18	1/10	165	95	115	40	107	64	50	101	50	85	150	115	35	M6 x 20	115	95	140	5	10	M8	25	11	4 x 12.5	20	6 x 22.8	7
60	0.37		185	105	126	45	117	74	55	111	60	105	177	135	42	M8 x 20	130	110	160	5	12	M8	35	14	5 x 16.3	25	8 x 28.3	11
70	0.37	1/20	209	115	155	50	131	84	65	125	70	125	215	160	55	M10 x 25	130	110	160	5	12	M8	35	14	5 x 16.3	30	8 x 33.3	14
80	0.75		242	135	174	60	144	94	70	138	80	140	250	185	65	M12 x 28	165	130	200	5	15	M10	45	19	6 x 21.8	35	10 x 38.3	22
100	1.5	1/40	310	175	224	70	175	114	90	165	100	180	310	230	80	M12 x 30	165	130	200	5	15	M10	55	24	8 x 27.3	40	12 x 43.3	36
120	2.2	1/50	361	205	264	75	200	134	100	190	120	220	370	275	95	M14 x 32	215	180	250	5	18	M12	65	28	8 x 31.3	45	14 x 48.8	63
135	3.0		412	235	304	95	212	144	110	202	135	260	425	320	105	M16 x 35	215	180	250	5	18	M12	65	28	8 x 31.3	60	18 x 64.4	80
155	5.5	1/60	442	250	330	110	312	160	120	285	155	280	461	358	103	M16 x 35	265	230	300	5	22	M12	85	38	10 x 41.3	70	20 x 74.9	114

WPEA

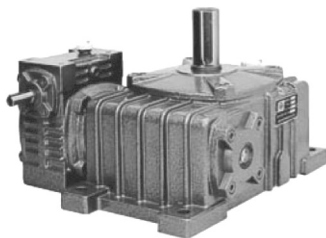


WPEA Shaft Direction

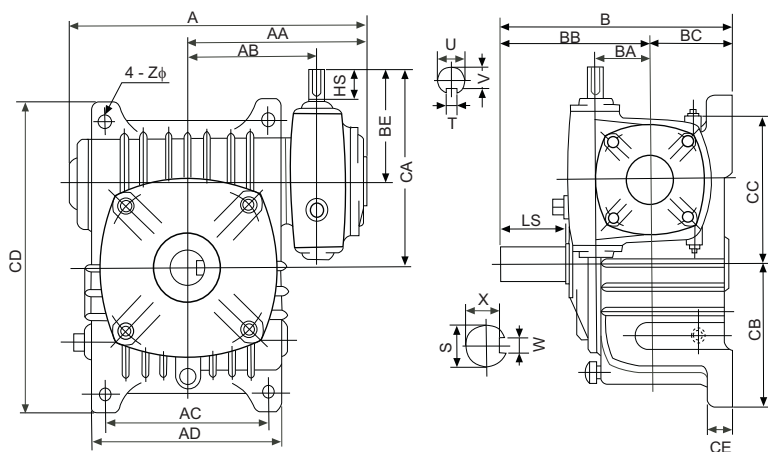
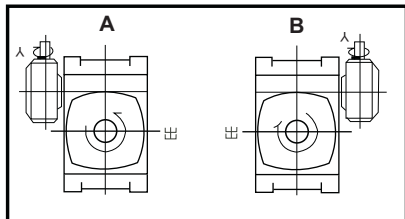


Size	Ratio	A	AA	AB	AC	AD	B	BB	BC	BD	BE	CA	CB	CD	CE	Z	Input Shaft				Output Shaft			
																	HS	U	T	V	LS	S	W	X
50 - 80	1/200	289	184	132	180	220	247	140	135	170	105	278	160	130	20	15	30	12	4	9.5	65	32	10	27.5
60 - 100	1/300	352	219	161	220	270	294	170	155	190	120	372	200	160	25	15	40	15	5	12	75	38	10	33.5
70 - 120	1/400	417	258	192	260	320	330	190	180	230	140	430	240	190	30	18	40	18	5	15	85	45	12	40.5
80 - 135	1/500	462	287	211	290	350	370	210	200	250	160	491	270	215	30	18	50	22	7	18	95	55	15	50
100 - 155	1/600	542	349	257	320	390	442	252	220	280	190	526	290	235	38	20	50	25	7	21	110	60	15	55
120 - 175	1/900	585	376	275	350	430	492	262	250	310	230	536	335	280	40	20	65	30	7	26	110	65	18	59

WPEO



WPEO Shaft Direction



Size	Ratio	A	AA	AB	AC	AD	B	BA	BB	BC	BE	CA	CB	CC	CD	CE	Z	Input Shaft				Output Shaft			
																		HS	U	T	V	LS	S	W	X
50 - 80	1/200	289	184	132	140	176	210	50	140	70	105	185	130	150	320	20	15	30	12	4	9.5	65	32	10	27.5
60 - 100	1/300	352	219	161	190	226	260	60	170	90	120	220	155	180	375	30	15	40	15	5	12	75	38	10	33.5
70 - 120	1/400	417	258	192	220	266	290	70	190	100	140	260	185	215	450	30	18	40	18	5	15	85	45	12	40.5
80 - 135	1/500	462	287	211	260	306	320	80	210	110	160	295	210	235	495	35	18	50	22	7	18	95	55	15	50
100 - 155	1/600	542	349	257	290	350	392	100	252	140	190	345	245	295	590	40	20	50	25	7	21	110	60	15	55
120 - 175	1/900	585	376	275	320	394	412	120	262	150	230	405	267	323	640	45	20	65	30	7	26	110	65	18	59

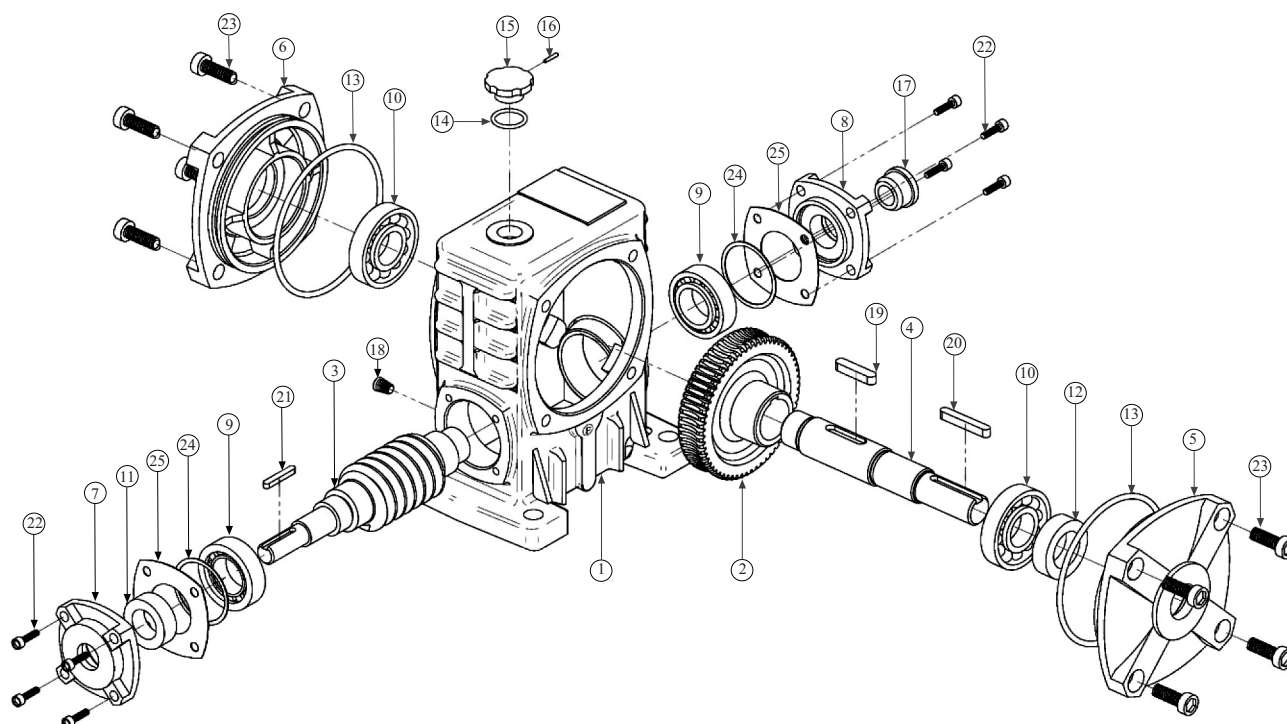
Single Standard Series

Main specification					
Shaft center distance(mm)					
40	50	60	70	80	100
120	135	155	175	200	250
Gear ratio range					
1/5	1/10	1/15	1/20	1/25	1/30
1/40	1/50	1/60			

NO.	Parts
1.	Frame
2.	Worm wheel
3.	Worm shaft
4.	Output shaft
5.	Output shaft cover
6.	Output shaft cover
7.	Input shaft cover
8.	Input shaft cover
9.	Bearing
10.	Bearing
11.	Oil seal
12.	Oil seal
13.	O ring

NO.	Parts
14.	O ring
15.	Oil hole cover
16.	Pin
17.	Oil gauge
18.	Oil plug
19.	Key
20.	Key
21.	Key
22.	Intl.hex screw
23.	Intl.hex screw
24.	Shim
25.	Gasket

WPA

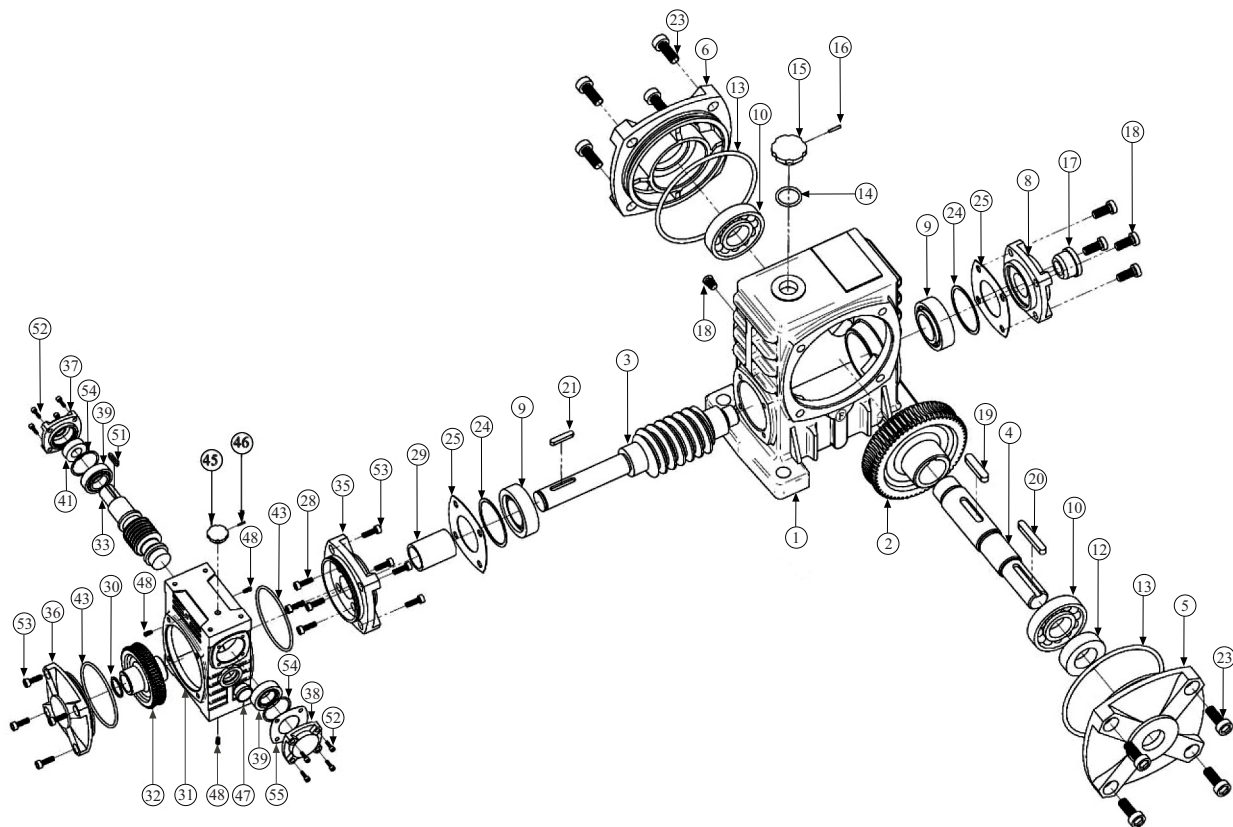


Double Standard Series

Main specification					
Shaft center distance(mm)					
40-60	50-80	60-100	70-120	80-135	100-155
120-175	135-200				
Gear ratio range					
1/100	1/150	1/200	1/250	1/300	1/400
1/500	1/600	1/800	1/900	1/1000	1/1200
1/1500	1/1600	1/1800	1/2000	1/2400	1/2500
1/3000	1/3600				

NO.	Parts
1.	Frame
2.	Worm wheel
3.	Worm shaft
4.	Output shaft
5.	Output shaft cover
6.	Output shaft cover
8.	Input shaft cover
9.	Bearing
10.	Bearing
12.	Oil seal
13.	O ring
14.	O ring
15.	Oil hole cover
16.	Pin
17.	Oil gauge
18.	Oil plug

NO.	Parts
19.	Key
20.	Key
21.	Key
22.	Intl.hex screw
23.	Intl.hex screw
24.	Shim
25.	Gasket
28.	Intl.hex screw
29.	Shaft sleeve
30.	Snap ring
31.	Frame
32.	Worm wheel
33.	Worm shaft
35.	Connecting cover
36.	Output shaft cover
37.	Input shaft cover
38.	Input shaft cover
39.	Bearing
41.	Oil seal
43.	O ring
45.	Oil hole cover
46.	Pin
47.	Oil gauge
48.	Oil plug
51.	Key
52.	Intl. hex screw
53.	Intl.hex screw
54.	Shim
55.	Gasket



Type WP Without Flange Input Power & Output Torque

Size	Ratio	(r/min)	1800	1500	1200	900
40	1/10	Input Shaft power (kw)	0.62	0.58	0.50	0.42
		Output Shaft Torque (N.m)	26	28	31	34
	1/20	Input Shaft power (kw)	0.29	0.26	0.23	0.20
		Output Shaft Torque (N.m)	21	23	25	28
	1/30	Input Shaft power (kw)	0.32	0.30	0.26	0.20
		Output Shaft Torque (N.m)	33	35	38	38
	1/40	Input Shaft power (kw)	0.20	0.18	0.16	0.14
		Output Shaft Torque (N.m)	25	26	28	31
	1/50	Input Shaft power (kw)	0.19	0.17	0.15	0.13
		Output Shaft Torque (N.m)	28	30	32	35
	1/60	Input Shaft power (kw)	0.15	0.14	0.12	0.11
		Output Shaft Torque (N.m)	24	26	27	30

50	1/5	Input Shaft power (kw)	1.62	1.47	1.30	1.00
		Output Shaft Torque (N.m)	31	32	35	36
	1/10	Input Shaft power (kw)	1.08	0.98	0.87	0.67
		Output Shaft Torque (N.m)	45	48	53	53
	1/15	Input Shaft power (kw)	0.80	0.73	0.62	0.47
		Output Shaft Torque (N.m)	47	51	53	53
	1/20	Input Shaft power (kw)	0.49	0.44	0.38	0.32
		Output Shaft Torque (N.m)	38	41	44	48
	1/30	Input Shaft power (kw)	0.51	0.44	0.36	0.28
		Output Shaft Torque (N.m)	53	53	53	53
	1/40	Input Shaft power (kw)	0.33	0.30	0.26	0.21
		Output Shaft Torque (N.m)	44	47	50	53
	1/50	Input Shaft power (kw)	0.29	0.26	0.23	0.18
		Output Shaft Torque (N.m)	45	48	51	53
	1/60	Input Shaft power (kw)	0.23	0.21	0.18	0.16
		Output Shaft Torque (N.m)	43	45	47	53

60	1/5	Input Shaft power (kw)	2.60	2.34	2.10	1.77
		Output Shaft Torque (N.m)	51	55	60	67
	1/10	Input Shaft power (kw)	1.74	1.56	1.41	1.18
		Output Shaft Torque (N.m)	73	78	86	94
	1/15	Input Shaft power (kw)	1.29	1.16	1.02	0.88
		Output Shaft Torque (N.m)	77	82	88	99
	1/20	Input Shaft power (kw)	0.91	0.83	0.74	0.62
		Output Shaft Torque (N.m)	70	75	81	90
	1/30	Input Shaft power (kw)	0.86	0.79	0.69	0.59
		Output Shaft Torque (N.m)	91	98	104	114
	1/40	Input Shaft power (kw)	0.62	0.56	0.50	0.44
		Output Shaft Torque (N.m)	80	86	92	102
	1/50	Input Shaft power (kw)	0.58	0.53	0.47	0.30
		Output Shaft Torque (N.m)	95	100	108	90
	1/60	Input Shaft power (kw)	0.48	0.44	0.38	0.32
		Output Shaft Torque (N.m)	90	95	102	111

70	1/5	Input Shaft power (kw)	3.91	3.49	3.12	2.35
		Output Shaft Torque (N.m)	78	82	90	90
	1/10	Input Shaft power (kw)	2.61	2.33	2.08	1.57
		Output Shaft Torque (N.m)	110	117	128	141
	1/15	Input Shaft power (kw)	1.89	1.72	1.52	1.30
		Output Shaft Torque (N.m)	114	123	133	148
	1/20	Input Shaft power (kw)	1.45	1.31	1.16	0.98
		Output Shaft Torque (N.m)	115	123	134	141
	1/30	Input Shaft power (kw)	1.27	1.16	1.02	0.89
		Output Shaft Torque (N.m)	136	147	158	173
	1/40	Input Shaft power (kw)	0.93	0.85	0.76	0.65
		Output Shaft Torque (N.m)	128	137	147	162
	1/50	Input Shaft power (kw)	0.84	0.77	0.68	0.58
		Output Shaft Torque (N.m)	140	149	160	174
	1/60	Input Shaft power (kw)	0.71	0.65	0.57	0.49
		Output Shaft Torque (N.m)	137	143	153	166

Type WP Without Flange

Input Power & Output Torque

Size	Ratio	(r/min)	1800	1500	1200	900
80	1/5	Input Shaft power (kw)	5.50	4.98	4.38	3.72
		Output Shaft Torque (N.m)	113	118	128	145
	1/10	Input Shaft power (kw)	3.70	3.32	2.92	2.48
		Output Shaft Torque (N.m)	156	167	182	202
	1/15	Input Shaft power (kw)	2.68	2.41	2.12	1.83
		Output Shaft Torque (N.m)	163	174	190	212
	1/20	Input Shaft power (kw)	1.90	1.73	1.53	1.28
		Output Shaft Torque (N.m)	148	160	174	191
	1/30	Input Shaft power (kw)	1.79	1.61	1.43	1.24
		Output Shaft Torque (N.m)	194	207	225	248
	1/40	Input Shaft power (kw)	1.28	1.16	1.04	0.89
		Output Shaft Torque (N.m)	172	184	200	218
100	1/5	Input Shaft power (kw)	1.18	1.07	0.96	0.82
		Output Shaft Torque (N.m)	197	212	227	247
	1/60	Input Shaft power (kw)	0.97	0.89	0.79	0.68
		Output Shaft Torque (N.m)	185	200	212	233
	1/5	Input Shaft power (kw)	9.80	8.90	7.80	6.60
		Output Shaft Torque (N.m)	202	218	235	265
	1/10	Input Shaft power (kw)	6.55	5.95	5.20	4.40
		Output Shaft Torque (N.m)	280	302	328	370
	1/15	Input Shaft power (kw)	4.75	4.25	3.82	3.25
		Output Shaft Torque (N.m)	292	310	345	385
	1/20	Input Shaft power (kw)	3.77	3.43	3.02	2.55
		Output Shaft Torque (N.m)	306	332	362	395
120	1/30	Input Shaft power (kw)	3.15	2.86	2.51	2.17
		Output Shaft Torque (N.m)	351	375	403	451
	1/40	Input Shaft power (kw)	2.38	2.15	1.91	1.52
		Output Shaft Torque (N.m)	334	368	401	451
	1/50	Input Shaft power (kw)	1.79	1.63	1.45	1.25
		Output Shaft Torque (N.m)	312	334	363	398
	1/60	Input Shaft power (kw)	1.47	1.34	1.19	1.03
		Output Shaft Torque (N.m)	298	323	343	374
	1/5	Input Shaft power (kw)	15.6	14.10	12.37	10.56
		Output Shaft Torque (N.m)	326	350	378	425
	1/10	Input Shaft power (kw)	10.4	9.45	8.25	7.04
		Output Shaft Torque (N.m)	448	491	528	588
135	1/15	Input Shaft power (kw)	7.50	6.77	6.06	5.12
		Output Shaft Torque (N.m)	470	501	553	615
	1/20	Input Shaft power (kw)	5.37	4.87	4.29	3.64
		Output Shaft Torque (N.m)	432	470	503	568
	1/30	Input Shaft power (kw)	5.00	4.50	3.98	3.41
		Output Shaft Torque (N.m)	561	601	650	725
	1/40	Input Shaft power (kw)	3.51	3.14	2.83	2.43
		Output Shaft Torque (N.m)	497	526	573	636
	1/50	Input Shaft power (kw)	2.95	2.66	2.36	2.02
		Output Shaft Torque (N.m)	534	567	622	673
	1/60	Input Shaft power (kw)	2.36	2.13	1.89	1.63
		Output Shaft Torque (N.m)	480	509	550	600
150	1/5	Input Shaft power (kw)	22.2	20.2	17.8	14.9
		Output Shaft Torque (N.m)	476	514	559	616
	1/10	Input Shaft power (kw)	14.8	13.5	11.9	9.98
		Output Shaft Torque (N.m)	648	713	762	851
	1/15	Input Shaft power (kw)	11.0	9.83	8.85	7.46
		Output Shaft Torque (N.m)	699	745	823	914
	1/20	Input Shaft power (kw)	8.48	7.73	6.73	5.77
		Output Shaft Torque (N.m)	710	768	822	924
	1/30	Input Shaft power (kw)	7.26	6.53	5.78	4.94
		Output Shaft Torque (N.m)	843	900	970	1078
	1/40	Input Shaft power (kw)	5.24	4.78	4.20	3.60
		Output Shaft Torque (N.m)	792	851	918	1020
160	1/50	Input Shaft power (kw)	3.96	3.57	3.17	2.70
		Output Shaft Torque (N.m)	728	771	841	918
	1/60	Input Shaft power (kw)	3.11	2.81	2.48	2.13
		Output Shaft Torque (N.m)	658	698	755	825

Type WP Without Flange

Input Power & Output Torque

Size	Ratio	(r/min)	1800	1500	1200	900
155	1/5	Input Shaft power (kw)	29.6	26.88	23.76	20.00
		Output Shaft Torque (N.m)	592	748	702	760
	1/10	Input Shaft power (kw)	19.74	17.92	15.84	13.36
		Output Shaft Torque (N.m)	823	893	980	1100
	1/15	Input Shaft power (kw)	15.48	13.86	12.24	10.44
		Output Shaft Torque (N.m)	935	1005	1095	1090
	1/20	Input Shaft power (kw)	11.2	10.1	8.93	7.50
		Output Shaft Torque (N.m)	926	1000	1078	1196
	1/30	Input Shaft power (kw)	9.98	9.08	7.80	6.81
		Output Shaft Torque (N.m)	1098	1196	1274	1431
	1/40	Input Shaft power (kw)	6.99	6.20	5.55	4.71
		Output Shaft Torque (N.m)	1039	1098	1196	1315
	1/50	Input Shaft power (kw)	5.35	4.82	4.32	3.67
		Output Shaft Torque (N.m)	969	1029	1118	1235
	1/60	Input Shaft power (kw)	4.39	4.03	3.54	2.96
		Output Shaft Torque (N.m)	934	1000	1068	1156

175	1/10	Input Shaft power (kw)	26.32	23.92	22.64	19.04
		Output Shaft Torque (N.m)	1105	1248	1412	1568
	1/15	Input Shaft power (kw)	19.84	17.76	15.52	13.28
		Output Shaft Torque (N.m)	1210	1294	1412	1585
	1/20	Input Shaft power (kw)	15.39	13.76	12.15	11.4
		Output Shaft Torque (N.m)	1245	1332	1455	1784
	1/30	Input Shaft power (kw)	12.87	11.61	11.3	9.68
		Output Shaft Torque (N.m)	1440	1552	1862	2078
	1/40	Input Shaft power (kw)	8.91	8.04	7.80	6.72
		Output Shaft Torque (N.m)	1314	1410	1676	1862
	1/50	Input Shaft power (kw)	7.34	6.56	5.99	4.98
		Output Shaft Torque (N.m)	1324	1412	1568	1676
	1/60	Input Shaft power (kw)	6.17	5.81	4.97	4.17
		Output Shaft Torque (N.m)	1294	1440	1490	1622

200	1/10	Input Shaft power (kw)	31.60	28.60	25.12	21.36
		Output Shaft Torque (N.m))	1420	1536	1686	2368
	1/20	Input Shaft power (kw)	20.43	18.27	17.9	15.1
		Output Shaft Torque (N.m)	1703	1818	2215	2450
	1/30	Input Shaft power (kw)	16.92	15.29	13.41	12.7
		Output Shaft Torque (N.m)	2050	2196	2646	2940
	1/40	Input Shaft power (kw)	12.33	11.16	10.7	9.23
		Output Shaft Torque (N.m)	1878	2030	2420	2686
	1/50	Input Shaft power (kw)	10.4	9.23	8.40	6.97
		Output Shaft Torque (N.m)	1911	2030	2264	2420
	1/60	Input Shaft power (kw))	8.63	7.73	7.23	5.82
		Output Shaft Torque (N.m)	1842	1960	2234	2322

250	1/10	Input Shaft power (kw)	54.38	49.65	44.10	36.82
		Output Shaft Torque (N.m)	2530	2602	3074	3325
	1/20	Input Shaft power (kw)	33.22	29.50	26.00	21.84
		Output Shaft Torque (N.m)	2880	3066	3320	3715
	1/30	Input Shaft power (kw)	26.55	23.77	22.24	18.64
		Output Shaft Torque (N.m)	3138	3360	3912	4320
	1/40	Input Shaft power (kw)	19.76	17.92	15.52	13.68
		Output Shaft Torque (N.m)	3144	3410	3670	4215
	1/50	Input Shaft power (kw)	14.24	12.72	11.9	10.12
		Output Shaft Torque (N.m)	2865	3008	3482	3815
	1/60	Input Shaft power (kw)	12.16	10.8	10.71	8.58
		Output Shaft Torque (N.m)	2744	2910	3550	3660

Type WP With Flange

Input Power & Output Torque

Size	(r/min)	Ratio	1/5	1/10	1/15	1/20	1/25	1/30	1/40	1/50	1/60
40	1500	Input Shaft power (kw)	0.18	0.18		0.18		0.18	0.12	0.12	0.12
		Output Shaft Torque (N.m)	5	8		15		19	16	21	23
50	1500	Input Shaft power (kw)	0.18	0.18		0.18		0.18	0.18	0.18	0.18
		Output Shaft Torque (N.m)	5	8		16		20	24	31	35
60	1500	Input Shaft power (kw)	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
		Output Shaft Torque (N.m)	9.5	18	26	34	40	42	50	61	73
	1000	Input Shaft power (kw)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
		Output Shaft Torque (N.m)	9.5	18	25	33	40	40	48	60	72
70	1500	Input Shaft power (kw)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.37	0.37
		Output Shaft Torque (N.m)	20	38	56	70	80	95	122	59	70
	1000	Input Shaft power (kw)	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.25	0.25
		Output Shaft Torque (N.m)	22	40	60	75	88	100	130	58	70
80	1500	Input Shaft power (kw)	1.5	.5	1.5	1.5	1.5	1.5	0.75	0.75	0.75
		Output Shaft Torque (N.m)	40	76	110	142	176	188	137	150	154
	1000	Input Shaft power (kw)	1.1	1.1	1.1	1.1	1.1	1.1	0.55	0.55	0.55
		Output Shaft Torque (N.m)	42	80	120	150	188	200	148	160	160
100	1500	Input Shaft power (kw)	2.2	2.2	2.2	2.2	2.2	2.2	1.5	1.5	1.5
		Output Shaft Torque (N.m)	58	110	162	205	256	290	256	307	320
	1000	Input Shaft power (kw)	1.5	1.5	1.5	1.5	1.5	1.5	1.1	1.1	1.1
		Output Shaft Torque (N.m)	57	109	166	205	253	286	275	330	340
120	1500	Input Shaft power (kw)	3.0	3.0	3.0	3.0	3.0	3.0			2.2
		Output Shaft Torque (N.m)	78	149	226	278	360	403	376	480	509
	1000	Input Shaft power (kw)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
		Output Shaft Torque (N.m)	58	110	70	205	270	300	380	485	520
135	1500	Input Shaft power (kw)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0
		Output Shaft Torque (N.m)	105	195	290	375	480	529	510	625	650
	1000	Input Shaft power (kw)	2.2	2.2	2.2	2.2	2.2	2.2	1.5	1.5	1.5
		Output Shaft Torque (N.m)	88	162	240	310	390	435	380	460	485
155	1500	Input Shaft power (kw)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
		Output Shaft Torque (N.m)	128	240	385	480	620	670	997	1029	1098
	1000	Input Shaft power (kw)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0
		Output Shaft Torque (N.m)	145	270	420	520	670	720	1050	1100	1180
175	1500	Input Shaft power (kw)	7.5	7.5	7.5	7.5	7.5	7.5	5.5	5.5	5.5
		Output Shaft Torque (N.m)	200	380	570	720	845	1070	1010	1150	1100
	1000	Input Shaft power (kw)	5.5	5.5	5.5	5.5	5.5	5.5	4.0	4.0	4.0
		Output Shaft Torque (N.m)	220	418	620	790	930	1150	1100	1230	1180
200	1500	Input Shaft power (kw)		11	11	11	11	11	7.5	7.5	7.5
		Output Shaft Torque (N.m)		570	860	1100	1260	1600	1400	1650	1600
	1000	Input Shaft power (kw)		11	11	11	7.5	7.5	7.5	7.5	7.5
		Output Shaft Torque (N.m)		850	1250	1600	1250	1550	2050	2400	2300

Double Type WPE

Input Power & Output Torque

Size	Ratio	(r/min)	1800	1500	1200	900
40-60	1/200	Input Shaft power (kw)	0.24	0.20	0.16	0.12
		Output Shaft Torque (N.m)	112	112	112	112
	1/300	Input Shaft power (kw)	0.17	0.15	0.12	0.09
		Output Shaft Torque (N.m)	112	112	112	112
	1/400	Input Shaft power (kw)	0.14	0.12	0.09	0.07
		Output Shaft Torque (N.m)	112	112	112	112
	1/500	Input Shaft power (kw)	0.12	0.10	0.09	0.07
		Output Shaft Torque (N.m)	112	112	112	112
	1/600	Input Shaft power (kw)	0.10	0.09	0.08	0.06
		Output Shaft Torque (N.m)	112	112	112	112
	1/800	Input Shaft power (kw)	0.09	0.08	0.08	0.06
		Output Shaft Torque (N.m)	112	112	112	112
	1/900	Input Shaft power (kw)	0.08	0.07	0.07	0.05
		Output Shaft Torque (N.m)	112	112	112	112

50-80	1/200	Input Shaft power (kw)	0.68	0.66	0.57	0.46
		Output Shaft Torque (N.m)	350	350	350	350
	1/300	Input Shaft power (kw)	0.59	0.52	0.42	0.32
		Output Shaft Torque (N.m)	350	350	350	350
	1/400	Input Shaft power (kw)	0.52	0.43	0.35	0.29
		Output Shaft Torque (N.m)	350	350	350	350
	1/500	Input Shaft power (kw)	0.43	0.37	0.33	0.25
		Output Shaft Torque (N.m)	350	350	350	350
	1/600	Input Shaft power (kw)	0.35	0.30	0.27	0.20
		Output Shaft Torque (N.m)	350	350	350	350
	1/800	Input Shaft power (kw)	0.32	0.28	0.21	0.16
		Output Shaft Torque (N.m)	350	350	350	350
	1/900	Input Shaft power (kw)	0.29	0.24	0.18	0.16
		Output Shaft Torque (N.m)	350	350	350	350

60-100	1/200	Input Shaft power (kw)	1.13	0.96	0.79	0.59
		Output Shaft Torque (N.m)	500	500	500	500
	1/300	Input Shaft power (kw)	0.76	0.68	0.56	0.43
		Output Shaft Torque (N.m)	500	500	500	500
	1/400	Input Shaft power (kw)	0.62	0.53	0.44	0.35
		Output Shaft Torque (N.m)	500	500	500	500
	1/500	Input Shaft power (kw)	0.53	0.45	0.38	0.28
		Output Shaft Torque (N.m)	500	500	500	500
	1/600	Input Shaft power (kw)	0.46	0.39	0.34	0.25
		Output Shaft Torque (N.m)	500	500	500	500
	1/800	Input Shaft power (kw)	0.39	0.34	0.28	0.22
		Output Shaft Torque (N.m)	500	500	500	500
	1/900	Input Shaft power (kw)	0.38	0.32	0.26	0.21
		Output Shaft Torque (N.m)	500	500	500	500

70-120	1/200	Input Shaft power (kw)	1.94	1.66	1.37	1.06
		Output Shaft Torque (N.m)	840	840	840	840
	1/300	Input Shaft power (kw)	1.40	1.20	1.00	0.76
		Output Shaft Torque (N.m)	840	840	840	840
	1/400	Input Shaft power (kw)	1.10	0.93	0.76	0.59
		Output Shaft Torque (N.m)	840	840	840	840
	1/500	Input Shaft power (kw)	0.97	0.83	0.70	0.53
		Output Shaft Torque (N.m)	840	840	840	840
	1/600	Input Shaft power (kw)	0.81	0.69	0.57	0.44
		Output Shaft Torque (N.m)	840	840	840	840
	1/800	Input Shaft power (kw)	0.63	0.56	0.44	0.36
		Output Shaft Torque (N.m)	840	840	840	840
	1/900	Input Shaft power (kw)	0.62	0.52	0.44	0.36
		Output Shaft Torque (N.m)	840	840	840	840

Double Type WPE

Input Power & Output Torque

Size	Ratio	(r/min)	1800	1500	1200	900
80-135	1/200	Input Shaft power (kw)	2.98	2.52	2.05	1.58
		Output Shaft Torque (N.m)	1400	1400	1401	1400
	1/300	Input Shaft power (kw)	2.09	1.77	1.48	1.16
		Output Shaft Torque (N.m)	1400	1400	1400	1400
	1/400	Input Shaft power (kw)	1.64	1.41	1.16	0.89
		Output Shaft Torque (N.m)	1400	1400	1400	1400
	1/500	Input Shaft power (kw)	1.40	1.20	0.97	0.79
		Output Shaft Torque (N.m)	1400	1400	1400	1400
	1/600	Input Shaft power (kw)	1.20	1.06	0.34	0.67
		Output Shaft Torque (N.m)	1400	1400	1400	1400
	1/800	Input Shaft power (kw)	1.10	0.96	0.81	0.66
		Output Shaft Torque (N.m)	1400	1400	1400	1400
	1/900	Input Shaft power (kw)	0.95	0.83	0.70	0.55
		Output Shaft Torque (N.m)	1400	1400	1400	1400

100-155	1/200	Input Shaft power (kw)	4.25	3.72	3.25	2.67
		Output Shaft Torque (N.m)	2100	2100	2100	2100
	1/300	Input Shaft power (kw)	3.32	2.95	2.58	2.10
		Output Shaft Torque (N.m)	2100	2100	2100	2100
	1/400	Input Shaft power (kw)	2.71	2.44	2.06	1.58
		Output Shaft Torque (N.m)	2100	2100	2100	2100
	1/500	Input Shaft power (kw)	2.36	2.06	1.68	1.32
		Output Shaft Torque (N.m)	2100	2100	2100	2100
	1/600	Input Shaft power (kw)	2.19	1.86	1.55	1.19
		Output Shaft Torque (N.m)	2100	2100	2100	2100
	1/800	Input Shaft power (kw)	2.13	1.86	1.50	1.13
		Output Shaft Torque (N.m)	2100	2100	2100	2100
	1/900	Input Shaft power (kw)	1.63	1.46	1.21	0.95
		Output Shaft Torque (N.m)	2100	2100	2100	2100

120-175	1/200	Input Shaft power (kw)	5.66	5.12	4.35	3.56
		Output Shaft Torque (N.m)	3050	3050	3050	3050
	1/300	Input Shaft power (kw)	4.44	3.94	3.43	2.76
		Output Shaft Torque (N.m)	3050	3050	3050	3050
	1/400	Input Shaft power (kw)	3.73	3.30	2.80	2.18
		Output Shaft Torque (N.m)	3050	3050	3050	3050
	1/500	Input Shaft power (kw)	3.14	2.73	2.26	1.75
		Output Shaft Torque (N.m)	3050	3050	3050	3050
	1/600	Input Shaft power (kw)	2.91	2.50	2.05	1.60
		Output Shaft Torque (N.m)	3050	3050	3050	3050
	1/800	Input Shaft power (kw)	2.89	2.46	2.03	1.60
		Output Shaft Torque (N.m)	3050	3050	3050	3050
	1/900	Input Shaft power (kw)	2.35	2.01	1.67	1.31
		Output Shaft Torque (N.m)	3050	3050	3050	3050

135-200	1/200	Input Shaft power (kw)	8.18	7.26	6.29	5.17
		Output Shaft Torque (N.m)	3950	3950	3950	3950
	1/300	Input Shaft power (kw)	6.16	5.45	4.74	3.84
		Output Shaft Torque (N.m)	3950	3950	3950	3950
	1/400	Input Shaft power (kw)	5.06	4.50	3.83	2.96
		Output Shaft Torque (N.m)	3950	3950	3950	3950
	1/500	Input Shaft power (kw)	4.37	3.82	3.14	2.46
		Output Shaft Torque (N.m)	3950	3950	3950	3950
	1/600	Input Shaft power (kw)	4.10	3.42	2.83	2.18
		Output Shaft Torque (N.m)	3950	3950	3950	3950
	1/800	Input Shaft power (kw)	3.32	2.87	2.36	1.85
		Output Shaft Torque (N.m)	3950	3950	3950	3950
	1/900	Input Shaft power (kw)	3.13	2.67	2.19	1.72
		Output Shaft Torque (N.m)	3950	3950	3950	3950

Output Shaft

Output Shaft O.H.L

Size	Input Speed (r/min)	Output Shaft O.H.L.(N)							
		Ratio							
		1/5	1/10	1/15	1/20	1/30	1/40	1/50	1/60
40	1800	680	680		680	680	680	680	680
	1500	680	680		680	680	680	680	680
	1200	680	680		680	680	680	680	680
	900	680	680		680	680	680	680	680
50	1800	880	980	1100	1100	1100	1100	1100	1100
	1500	880	1050	1100	1100	1100	1100	1100	1100
	1200	980	1100	1100	1100	1100	1100	1100	1100
	900	1100	1100	1100	1100	1100	1100	1100	1100
60	1800	980	980	1100	1300	1480	1730	1960	1960
	1500	980	1000	1200	1420	1550	1840	1960	1960
	1200	1000	1100	1300	1530	1690	1960	1960	1960
	900	1000	1180	1420	1680	1850	1960	1960	1960
70	1800	1070	1240	1500	1750	1930	2290	2600	2800
	1500	1100	1330	1570	1830	2030	2420	2760	2930
	1200	1150	1420	1700	1970	2200	2600	2930	2930
	900	1150	1550	1860	2170	2420	2870	2940	2940
80	1800	1550	1750	2100	2460	2710	3190	3550	3910
	1500	1660	1860	2230	2610	2860	3390	3780	3910
	1200	1820	2000	2380	2820	3090	3640	3910	3910
	900	1820	2190	2610	3090	3380	3920	3920	3920
100	1800	1690	1750	2000	2340	2600	3100	3560	3910
	1500	1690	1750	2120	2460	2750	3300	3790	4160
	1200	1770	1850	2260	2630	2950	3510	4070	4490
	900	1770	2020	2450	2910	3230	3890	4480	4930
120	1800	1690	1750	2130	2650	2790	3490	3950	4440
	1500	1770	1810	2260	2800	2950	3720	4200	4710
	1200	1860	1930	2380	2990	3180	3980	4500	5080
	900	1860	2090	2610	3280	3460	4370	4970	5590
135	1800	2680	2980	3510	4170	4580	5510	6360	7070
	1500	2800	3110	3750	4400	4840	5870	6760	7510
	1200	2980	3330	3980	4740	5200	6310	7260	8090
	900	3260	3640	4360	5170	5710	6920	8020	8930
155	1800	6600	7350	8000	12000	13500	14000	14600	14600
	1500	7500	8420	10500	12500	14000	14600	14600	14600
	1200	7900	8800	11000	13500	14600	14600	14600	14600
	900	8700	9700	12500	14600	14600	14600	14600	14600
175	1800	7500	8300	10200	12500	14000	16300	17600	17600
	1500	8600	9600	11700	13200	15400	17000	17600	17600
	1200	9100	10200	12700	14000	16000	17600	17600	17600
	900	9800	11000	13900	15600	17600	17600	17600	17600
200	1800		9800	11700	11760	13700	17100	19600	21500
	1500		11270	13200	14200	16100	18100	21500	21500
	1200		11760	14000	15500	17600	21500	21500	21500
	900		12700	14800	16800	21500	21500	21500	21500
250	1800		10800	13300	15600	18600	21560	26400	26400
	1500		11700	13700	16600	19600	24500	26400	26400
	1200		14700	17600	22500	24000	26400	26400	26400
	900		15600	19600	25000	26400	26400	26400	26400

Specification For Select Type

The correct selection is necessary to use **REVCOIWGM** worm speed reducer efficiently. therefore please refer to the following specification before ordering.

Input Shaft Speed

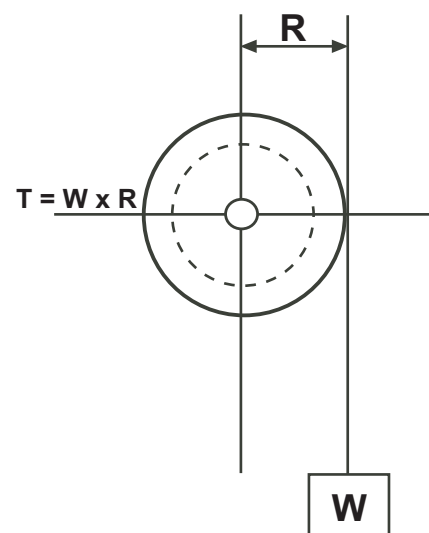
The general input shaft speed is 600-1500r/min, the maximum is 1800r/min. too low input shaft speed could affect efficiency and lubrication.

Output Shaft Speed

Depends upon the input shaft speed and reduction ratio.

Output Torque T

The transmission torque of reducer depends upon the force that causes the output shaft rotate and the rotary radius. see fig.1:



Load Factor f

The rating input power and output torque of reducer is established on the basis of an ideal condition that the reducer are operating continuously 8 hours per day under a constant load. if the load or operating condition changes, the output torque changes also. so select suitable type must according to the flowing table 1.

Overhung Load Coefficient f_1

It is due to the O.H.L. that the shaft of the speed reducer bent or its casing cracked. according to table 2, the selected reducer type must meet the following Formula:

$$\text{O.H.L} = \frac{\text{Output torque T}}{\text{Rotary radius}} \times \text{O.H.L. Coefficient } f_1$$

Table 1: Load Factor f

Prime Mover	Duration Of Service Per Day	Load Factor f		
		Uniform Load	Moderate Shock	Heavy Shock
Electric Motor	Occasional 1/2h	0.80	0.90	1.00
	Intermittent 2h	0.90	1.00	1.25
	8-10h	1.00	1.25	1.50
	24h	1.25	1.50	1.75

Note: For frequent starts and stops multiply the values listed in the above table

Table 2 : Overhung Load (O.H.L) Coefficient f_1

Transmission Method	Sprocket	Gear	V-belt	Flat Belt
O.H.L. Coefficient f_1	1.00	1.25	1.50	2.50

Example :

One conveying machine needs to select a worm speed reducer (input shaft is lower). its input shaft speed is 1500r/min, Its output speed is 30 r/min Chain pulley transmission, the tensile force is 5000N on full load. The diameter of sprocket,s reference circle is 400mm.Operating 10 hours continuously per day. Moderate shook.

Selecting As Follows:

$$\text{Ratio } i = 30 = 1500 = 1/50$$

Refer to table 1 , $f = 1.25$

$$\text{Load torque } T = W \times R \times f = 5000 \times 0.4/2 \times 1.25 = 1250\text{N.m}$$

Refer to table 2, $f_1 = 1$

$$\text{O.H.L.} = W \times f_1 = 5000 \times 1 = 5000\text{N}$$

Select Type 175(1/50). Its max. allowed torque is 1412N.m and its max. allowed O.H.L. Is 17600N. **Thus, WPA175 -1/50 is selected.**

Choice of lubricants

The reducer should be filled with the appropriate oil to the center of the oil gauge before putting in operation. Excessive oil levels result in higher operating temperatures and are as undesirable as using too little oil. After approximately 85 hours of operation the reducer must be drained,flushed thoroughly with light oil,and refilled with fresh recommended oil.this flushing and Refilling should be repeated every 2500 hours.

Lubricant	Mineral Oil		Compounded Oil		Extreme Pressure Oil	
Ambient Temperature	15 to 60F -9 TO 16c	50 to 125F 10 to 50C	15 to 60F -9 TO 16c	50 to 125F 10 to 50C	15 to 60F -9 TO 16c	50 to 125F 10 to 50C
AGMA	5	6	7	8	7EP	8 EP
Shell	Turbo oil 220	Turbo oil 320	Valvata J460	Valvata J680	Omala 460	Omala 680
MOBIL	DTE oil BB	DTE oil AA	Mobil 600w cylinder oil	Mobil 600w super cylinder oil	Mobil gear 634	Mobil gear 636
TEXACO	Regal oil R & O 220	Regal oil R & O 320	Vanguard cylinder oil 460	Honor Cylinder oil 680	Meropa 460	Meropa 680
Esso	Teresstic 220	Teresstic 320	Cylesstic Tk460	Cylesstic Tk680	SPARTAN EP460	SPARTAN EP680
Union oil co.of CA	Union Turbine oil 220	Union Turbine oil 320	Union steaval A	Union worm gear tube 140	Extra duty NL gear lube 7EP	Extra duty NL gear tube 8EP
GB			L-CKE/320	L-CKE/460	L-CKE/P320	L-CKE/P460

Solutions and reason for the general faults of reducers

FAULT DESCRIPTION	REASONS	SOLUTIONS
Overheating	Overloading. Insufficient or excess lubricant oil. Inferior or improper lubricant oil. Oil seal is over-rubbed. Improper connection between output shaft and transmitting device	Adjust to proper loading or select large unit. Fill in adequate lubricant oil as indication. Fill in proper lubricant oil after draining out oil. Drop lubricante oil on oil seal. Adjust to proper positior.
Noise	Poor fit between worm wheel and worm shaft. Bearing damaged or clearance too large. Insufficient lubricant oil. Invaded by foreign objects.	Finish contact surfaces of gears, Replace bearing. Fill in proper adequate lubricant oil as indication. Remove foreign objects and replace lubricant oil.
Abnormal vibration	Transmitting device is not fixed. Worm wheel worn or damaged. Bearing worn or damaged. Bolt loosed. Invaded by foreign objects.	Fix transmitting device. Replace worm wheel. Replace bearing. Tighten bolt. Remove foreign objects and replace lubricant oil.
Oil leakage	Oil seal damaged. Gasket damaged. Excess oil. Oil drain plug loosed. Oil gauge damaged.	Replace oil seal. Replace gasket. Fill in adequate lubricant oil as indication. Tighten oil drain plug. Replace oil gauge.
Input or output shaft doesn't work	Worm wheel and worm shaft overheating. Bearing damaged. Invaded by foreign objects. Excess wear of worm wheel and worn shaft	Replace or replace. Replace bearing. Remove foreign object and replace lubricant oil. Replace worm wheel or worm shaft.
Worm wheel over-worm	Overloading. Inferior or improper lubricant oil. Insufficient lubricant oil. Bearing damaged. Operating temperature too high.	Adjust to proper loading. Replace proper lubricant oil. Fill in adequate lubricant oil as indicattion Replace bearing. Improve ventilation conditions.