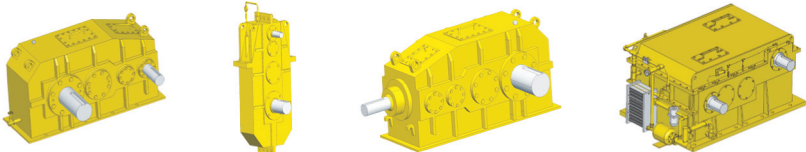
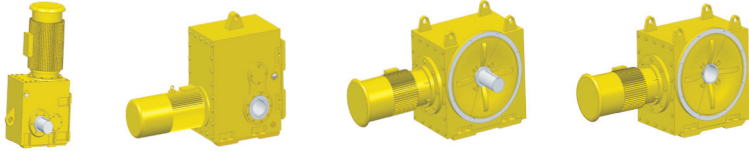
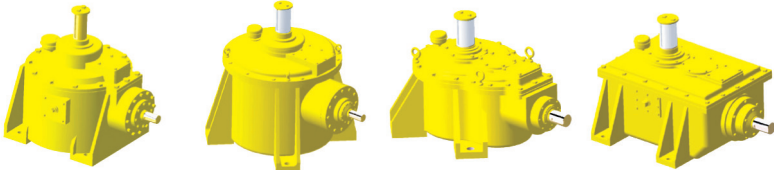
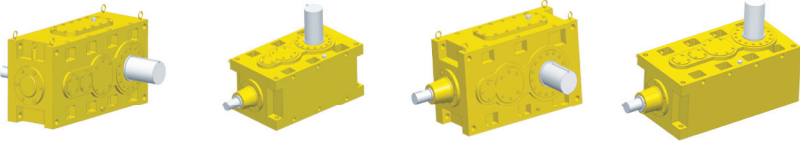
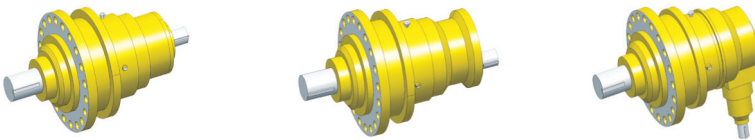
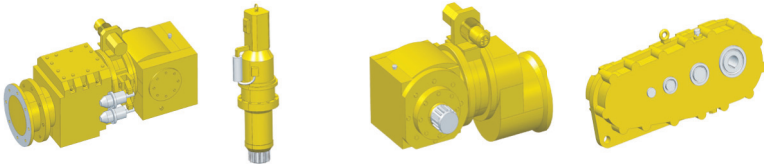
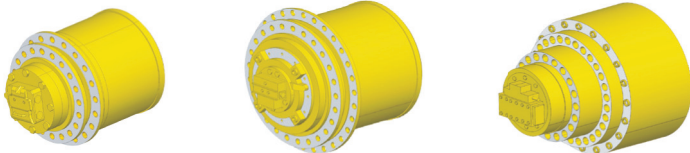
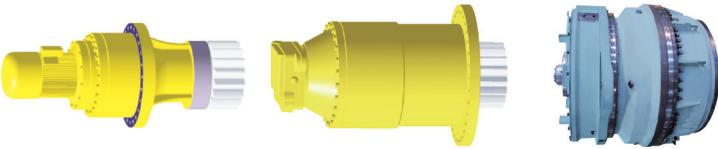


Contents

Jump! World Best **WECORIM MACHINERY**

SERIES	TYPE	PAGE	TYPE
WS	SPEED REDUCER	4	
WK	K-TYPE UNIT	26	
WC	COOLING TOWER UNIT	33	
WH	BEVEL- HELICAL UNIT	40	
WP	PLANETARY UNIT	54	
WT	TOWER CRANE UNIT	76	
WE	EXCAVATOR UNIT	82	
WW	WIND POWER UNIT	86	
—	OTHER PRODUCTS	88	
—	APPENDIX	94 95 96 103 107	1. Symbol nomenclature <부호설명> 2. Reference Data <참고자료> 3. Reducer Selection Process <감속기 선정 절차> 4. Technical Data <기술자료> 5. Quotation / Order Sheet <주문서>
—	RECORD	108	Reference Record

WS

WK

WC

WH

WP

WT

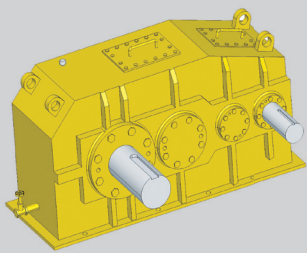
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WW

WO

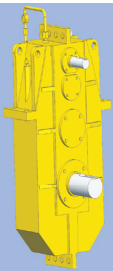
APPENDIX

WS-Series



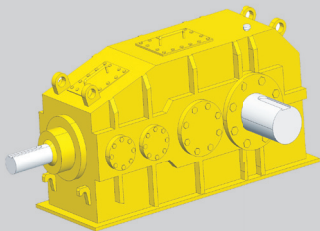
SH-TYPE

SH type Horizontal gear unit



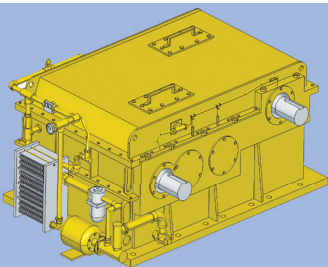
SV-TYPE

SV type Vertical gear unit



SB-TYPE

SB type Bevel gear unit



SS-TYPE

SS type Special gear unit

Type Classification <형식분류>

SH**TYPE**

SH : HORIZONTAL
SV : VERTICAL
SB : BEVEL

3**STAGE**

1 : SINGLE
2 : DOUBLE
3 : TRIPLE
4 : QUADRUPLE

S**OUTPUT SHAFT TYPE**

S : SOLID SHAFT
H : HOLLOW SHAFT

1240**UNIT SIZE**

0125 : 125
0160 : 160

⋮

1395 : 1395

0450**RATIO**

01.3 : 1/1.30
01.4 : 1/1.40

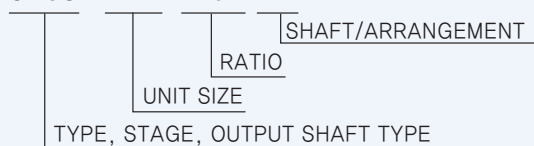
⋮

0450 : 1/450

LR**SHAFT ARRANGEMENT**

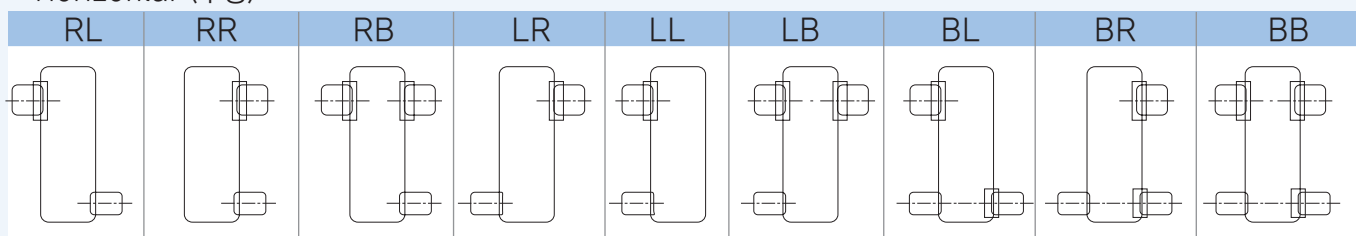
LR
LL
LD
RL
RR
RD
DD
BR
BL
BD

Example : SH3S-1240-0050-LR

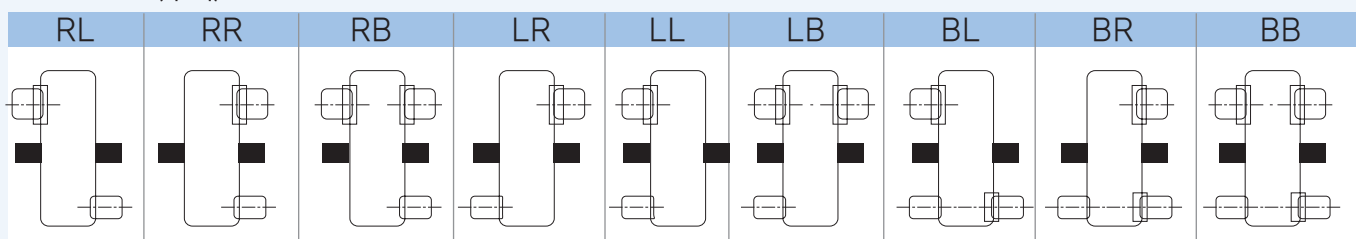


Shaft Arrangement <축의 배열>

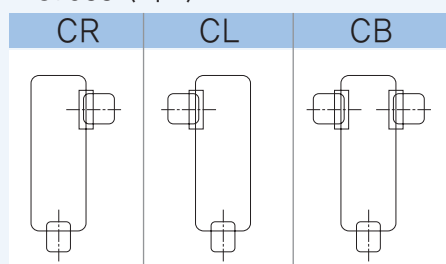
• Horizontal <수평>



• Vertical <수직>



• Cross <직교>

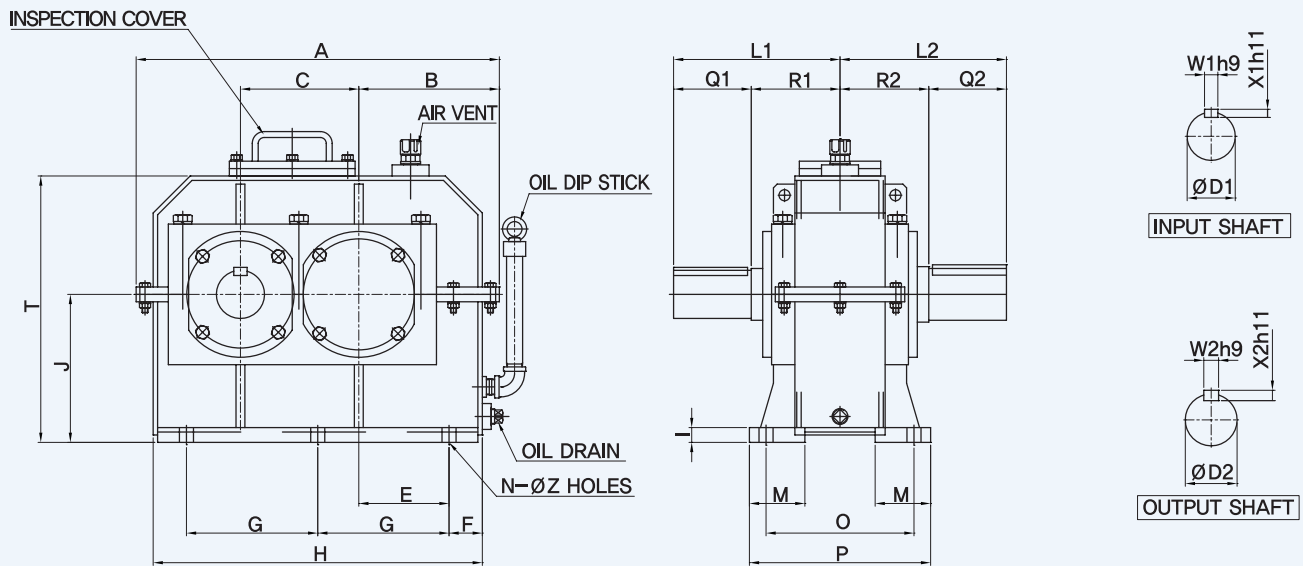


SH1

Nominal Ratio	Speed		Gear Unit Size											
	Input rpm	Model	125	160	200	250	280	315	355	400	450	500	560	630
		Torque Output (kg.m)	233	478	832	1631	2115	2697	3701	5389	7902	10284	14881	21580
			Mechanical Power Ratings (UNIT : kW)											
1.25	1800		271	549	979	1847	2277	—	—	—	—	—	—	—
	1200		189	366	661	1239	1528	—	—	—	—	—	—	—
	900		142	277	496	938	1157	—	—	—	—	—	—	—
	720		130	236	425	720	888	1109	—	—	—	—	—	—
1.4	1800		271	507	897	1770	2182	2728	—	—	—	—	—	—
	1200		183	342	602	1192	1469	1837	—	—	—	—	—	—
	900		136	260	448	903	1113	1391	—	—	—	—	—	—
	720		124	230	389	684	844	1055	1406	—	—	—	—	—
1.6	1800		248	460	826	1640	2065	2478	3304	—	—	—	—	—
	1200		177	319	555	1103	1428	1676	2419	—	—	—	—	—
	900		136	242	425	832	1097	1263	1900	—	—	—	—	—
	720		118	224	366	673	932	1133	1522	—	—	—	—	—
1.8	1800		248	431	755	1499	1841	2360	3139	—	—	—	—	—
	1200		165	301	507	1015	1333	1605	2183	—	—	—	—	—
	900		124	234	389	767	1050	1215	1676	2346	—	—	—	—
	720		116	218	330	625	873	1086	1428	1999	—	—	—	—
2	1800		212	407	708	1345	1758	2183	2985	4180	—	—	—	—
	1200		148	277	496	932	1204	1487	2030	2841	—	—	—	—
	900		118	212	378	720	909	1133	1534	2336	3339	—	—	—
	720		105	195	319	590	791	991	1322	1959	2891	—	—	—
2.24	1800		195	384	637	1286	1534	2006	2726	3816	5533	—	—	—
	1200		136	264	425	885	1038	1369	1888	2643	3833	—	—	—
	900		106	201	319	673	861	1038	1451	2100	3068	3882	—	—
	720		97	183	283	543	767	926	1227	1817	2702	3434	—	—
2.5	1800		177	354	566	1192	1428	1805	2549	3568	5174	6312	—	—
	1200		130	242	389	838	1003	1286	1770	2478	3593	4384	—	—
	900		100	183	295	637	779	991	1357	1982	2797	3705	—	—
	720		91	165	271	496	696	861	1133	1711	2454	3245	4130	—
2.8	1800		159	319	531	1109	1298	1664	2313	3238	4695	5728	7332	9531
	1200		112	222	360	755	920	1133	1593	2230	3234	3945	5208	6770
	900		85	165	271	572	708	873	1215	1758	2620	3422	4620	6006
	720		73	153	248	472	625	779	1027	1522	2313	3044	3835	4986
3.15	1800		133	295	507	1015	1239	1558	2053	2950	4177	5499	7478	10619
	1200		92	201	330	684	850	1062	1451	2053	3044	3929	5344	7588
	900		71	153	254	519	649	802	1133	1581	2395	3068	4059	5900
	720		60	136	224	413	602	720	956	1369	2112	2702	3634	5369
3.55	1800		127	257	460	920	1109	1440	1876	2690	3823	4873	6701	8510
	1200		87	179	313	625	767	979	1333	1912	2797	3540	4868	6182
	900		66	138	236	472	590	743	1038	1487	2207	2797	3965	5192
	720		57	118	212	378	519	649	885	1322	1971	2454	3540	4897
4	1800		106	224	425	873	1062	1322	1699	2466	3493	4437	6433	8363
	1200		73	153	301	578	732	897	1215	1746	2537	3174	4603	5983
	900		55	118	224	437	555	684	944	1357	1982	2478	3882	5074
	720		47	98	201	342	496	602	814	1180	1770	2218	3434	4578
4.5	1800		78	195	378	755	991	1274	1499	2218	3009	3776	5740	8150
	1200		54	135	260	507	696	850	1109	1487	2100	2820	4287	6087
	900		41	103	195	389	531	649	885	1133	1628	2242	3516	4993
	720		34	98	177	307	472	555	755	944	1381	1912	2950	4189
5	1800		70	175	313	637	838	1121	1416	2006	2879	3587	5452	8286
	1200		48	120	207	448	578	767	991	1404	2030	2620	3776	6018
	900		37	91	153	342	448	590	767	1086	1581	2077	2891	5074
	720		31	77	130	260	378	496	673	885	1322	1711	2549	3929
5.6	1800		60	148	277	566	696	1015	1215	1770	2443	3304	4720	7198
	1200		41	100	189	378	496	684	885	1239	1664	2218	3221	5369
	900		32	77	148	283	389	519	696	944	1263	1664	2431	4661
	720		27	65	124	212	319	425	590	791	1027	1369	2065	3658

* Please refer to p24 for thermal capacity. <열용량은 p24 참조>

Gear Unit Dimension



SH1 Dimension

(UNIT : mm)

Unit Size	High Speed Shaft												Low Speed Shaft				
	Ratio : 1.25 – 1.8				Ratio : 2 – 2.8				Ratio : 3.15 – 5.6				Ratio : 1.25 – 5.6				Hollow Shaft
	D1	Q1	L1	Key	D1	Q1	L1	Key	D1	Q1	L1	Key	D2	Q2	L2	Key	
125	50m6	80	210	14x9	45m6	70	200	14x9	35m6	60	190	10x8	55m6	90	220	16x10	Consult woorim Engineering Department
160	60m6	105	245	18x11	55m6	90	230	16x10	45m6	70	210	14x9	70m6	120	260	20x12	
200	75m6	120	290	20x12	70m6	120	290	20x12	60m6	105	275	18x11	85m6	140	310	22x14	
250	90m6	160	355	25x14	85m6	140	335	22x14	75m6	120	315	20x12	110n6	190	385	28x16	
280	100m6	180	400	28x16	95m6	160	380	25x14	75m6	120	340	20x12	120n6	210	430	32x18	
315	110n6	180	420	28x16	105m6	180	420	28x16	95m6	160	400	25x14	130n6	210	450	32x18	
355	120n6	210	465	32x18	115n6	200	455	32x18	105m6	180	435	28x16	145n6	240	500	36x20	
400	120n6	210	465	32x18	125n6	210	495	32x18	110n6	180	465	28x16	160n6	240	530	40x22	
450					145n6	240	550	36x20	125n6	210	520	32x18	190n6	310	630	45x25	
500					155n6	240	575	40x22	135n6	210	545	36x20	210n6	350	690	50x28	
560					160n6	260	620	40x22	160n6	260	620	40x22	235n6	390	760	56x32	
630					175n6	280	670	45x22	175n6	280	670	45x25	270n6	430	830	63x32	

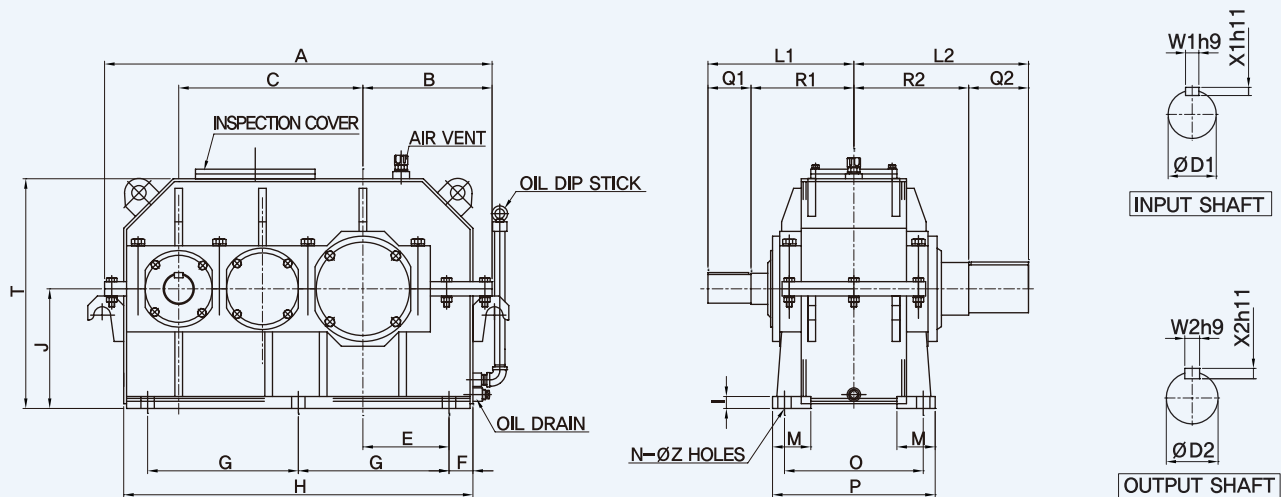
Unit Size	Dimensions																		
	A	B	C	E	F	G	H	I	J	T	M	O	P	N	Z	R1	R2	Weight (kg)	OIL(liter)
125	410	160	125	100	30	145	350	20	160	290	55	180	215	6	14	130	130	90	2.5
160	515	202	160	122	45	177.5	445	20	200	380	65	200	245	6	18	140	140	140	4
200	625	245	200	145	60	212.5	545	20	280	510	85	250	310	6	23	170	170	200	6.2
250	760	295	250	190	60	275	670	28	315	615	95	300	365	6	27	195	195	340	9.5
280	840	330	280	220	60	310	740	28	375	685	100	310	380	6	27	220	220	420	12.8
315	980	385	315	245	80	350	860	28	400	725	105	330	400	6	27	240	240	510	17.5
355	1050	410	355	270	80	385	930	28	475	865	110	350	430	6	33	255	260	780	23.6
400	1160	455	400	300	95	425	1040	30	520	920	120	380	480	6	39	285	290	965	36.2
450	1270	495	450	335	100	475	1150	35	560	1020	125	410	510	6	39	310	320	1520	48.4
500	1420	560	500	390	105	540	1290	35	630	1120	135	450	550	6	39	335	340	1690	67.5
560	1570	620	560	435	120	600	1440	40	700	1240	150	500	600	6	39	360	370	2240	102.6
630	1810	700	630	505	120	710	1660	40	770	1380	180	580	675	6	45	390	400	3075	152

SH2

Nominal Ratio	Speed		Gear Unit Size														
	Input rpm	Model	240	272	305	340	385	430	480	540	605	680	765	855	960	1080	1210
		Torque Output (kg.m)	314	462	685	954	1358	1869	2505	3534	4988	6863	10325	13031	18182	24237	31304
		Mechanical Power Ratings (UNIT : kW)															
6.3	1800	83	124	177	263	342	496	661	920	1,239	1,652	2,289	3,894	5,310	7,316	9,558	
	1200	58	85	118	183	243	342	460	649	897	1,239	1,652	2,714	3,658	5,192	7,316	
	900	46	64	100	132	189	260	354	496	708	979	1,298	2,124	2,950	4,012	5,546	
	720	37	51	80	110	158	224	295	413	590	838	1,074	1,770	2,419	3,328	4,602	
7.1	1800	74	111	171	236	342	448	590	814	1,180	1,416	2,006	3,540	4,956	6,372	8,378	
	1200	52	76	118	159	224	313	413	555	838	1,145	1,416	2,478	3,481	4,543	6,608	
	900	41	58	91	120	177	236	319	425	637	897	1,109	1,888	2,714	3,540	5,192	
	720	33	46	74	105	151	201	260	354	519	720	920	1,593	2,242	2,891	4,248	
8	1800	70	100	159	218	289	389	531	743	1,050	1,298	1,770	3,068	4,248	5,664	7,434	
	1200	47	72	106	148	201	283	378	519	743	1,003	1,180	2,124	3,009	4,012	5,782	
	900	37	53	81	111	156	224	283	401	566	779	968	1,652	2,360	3,127	4,484	
	720	31	42	67	93	120	177	236	330	460	637	802	1,357	1,888	2,537	3,658	
9	1800	64	92	148	189	271	372	484	708	991	1,239	1,711	2,950	4,130	5,428	7,080	
	1200	45	66	98	136	195	260	342	496	684	944	1,156	2,006	2,891	3,894	5,546	
	900	35	51	76	101	148	201	271	389	543	743	944	1,534	2,242	3,068	4,248	
	720	28	39	63	80	114	159	218	319	437	614	767	1,239	1,770	2,360	3,540	
10	1800	55	83	124	175	236	342	425	614	873	1,180	1,593	2,596	3,540	4,956	6,372	
	1200	39	58	83	118	171	224	295	437	614	861	1,121	1,770	2,537	3,587	4,956	
	900	31	46	64	92	127	177	230	342	484	673	885	1,416	1,947	2,832	3,894	
	720	25	34	53	76	104	148	195	271	389	555	720	1,156	1,534	2,242	3,186	
11.2	1800	50	73	113	149	207	307	389	555	791	1,050	1,357	2,242	3,068	4,307	5,428	
	1200	34	52	78	106	145	201	271	389	566	755	944	1,534	2,183	3,009	4,366	
	900	27	40	60	83	114	159	212	307	425	590	755	1,239	1,711	2,360	3,422	
	720	22	31	48	67	92	130	177	248	342	472	614	1,003	1,357	1,935	2,773	
12.5	1800	44	65	97	130	181	260	342	507	684	956	1,180	2,006	2,714	3,658	4,838	
	1200	31	45	64	91	129	183	236	342	484	673	8,260	1,416	1,947	2,537	3,776	
	900	24	35	48	70	101	142	189	271	372	519	673	1,074	1,534	2,006	2,950	
	720	19	27	41	58	80	118	153	218	295	425	543	885	1,239	1,652	2,419	
14	1800	39	59	87	118	177	236	319	472	625	850	1,168	1,888	2,596	3,540	4,720	
	1200	27	40	58	81	124	165	218	319	448	614	802	1,298	1,770	2,419	3,540	
	900	22	32	44	64	93	130	171	236	354	472	649	1,003	1,416	1,888	2,714	
	720	17	22	37	52	78	106	142	201	271	389	519	826	1,145	1,534	2,242	
16	1800	33	50	78	103	153	207	283	401	543	755	1,015	1,652	2,242	3,127	4,484	
	1200	23	35	52	73	109	142	201	260	389	543	708	1,180	1,593	2,183	3,186	
	900	18	28	39	58	81	112	153	212	307	425	555	885	1,180	1,652	2,478	
	720	15	21	21	46	68	92	118	171	248	342	448	732	1,003	1,357	2,006	
18	1800	31	48	71	98	136	189	260	366	496	684	944	1,416	2,006	2,773	4,012	
	1200	21	33	47	66	94	124	177	248	354	484	661	1,003	1,416	1,923	2,832	
	900	17	26	35	52	71	94	136	195	271	378	519	767	1,109	1,475	2,124	
	720	14	19	30	41	59	79	106	165	218	319	425	625	897	1,180	1,770	
20	1800	26	46	66	83	124	171	236	307	448	614	826	1,298	1,770	2,596	3,304	
	1200	19	31	44	59	87	112	165	218	313	425	566	885	1,239	1,770	2,360	
	900	15	25	33	44	66	89	124	171	236	342	448	684	991	1,357	1,888	
	720	12	17	27	35	54	73	100	130	201	283	378	566	802	1,121	1,534	

• Please refer to p24 for thermal capacity. <열용량은 p24 참조>

Gear Unit Dimension



SH2 Dimension

(UNIT : mm)

Unit Size	High Speed Shaft								Low Speed Shaft				Hollow Shaft
	Ratio : 6.3 – 11.2				Ratio : 12.5 – 20				Ratio : 6.3 – 20				
	D1	Q1	L1	Key	D1	Q1	L1	Key	D2	Q2	L2	Key	
240	35m6	60	225	10x8	30m6	50	215	8x7	65m6	105	270	18x11	Consult woorm Engineering Department
272	40m6	65	240	12x8	35m6	60	235	10x8	70m6	120	295	20x12	
305	45m6	70	265	14x9	35m6	60	255	10x8	85m6	140	345	22x14	
340	45m6	70	285	14x9	40m6	65	280	12x8	90m6	160	385	25x14	
385	55m6	90	310	16x10	45m6	70	290	14x9	100m6	180	410	28x16	
430	60m6	105	345	18x11	50m6	80	320	14x9	110n6	180	430	28x16	
480	70m6	110	390	20x12	55m6	90	370	16x10	130n6	200	490	32x18	
540	75m6	120	410	20x12	60m6	105	395	18x11	140n6	240	540	36x20	
605	85m6	150	470	22x14	70m6	120	440	20x12	160n6	270	600	40x22	
680	95m6	170	520	25x14	80m6	140	490	22x14	180n6	300	660	45x25	
765	100m6	180	570	28x16	90m6	160	550	25x14	210n6	350	750	50x28	
855	120n6	210	630	32x18	100m6	180	600	28x16	230n6	380	810	50x28	
960	130n6	210	680	32x18	110n6	180	650	28x16	250n6	420	900	56x32	
1080	150n6	240	760	36x20	120n6	210	730	32x18	280n6	450	980	63x32	
1210	170n6	270	850	40x22	140n6	240	820	36x20	310n6	500	1090	70x36	

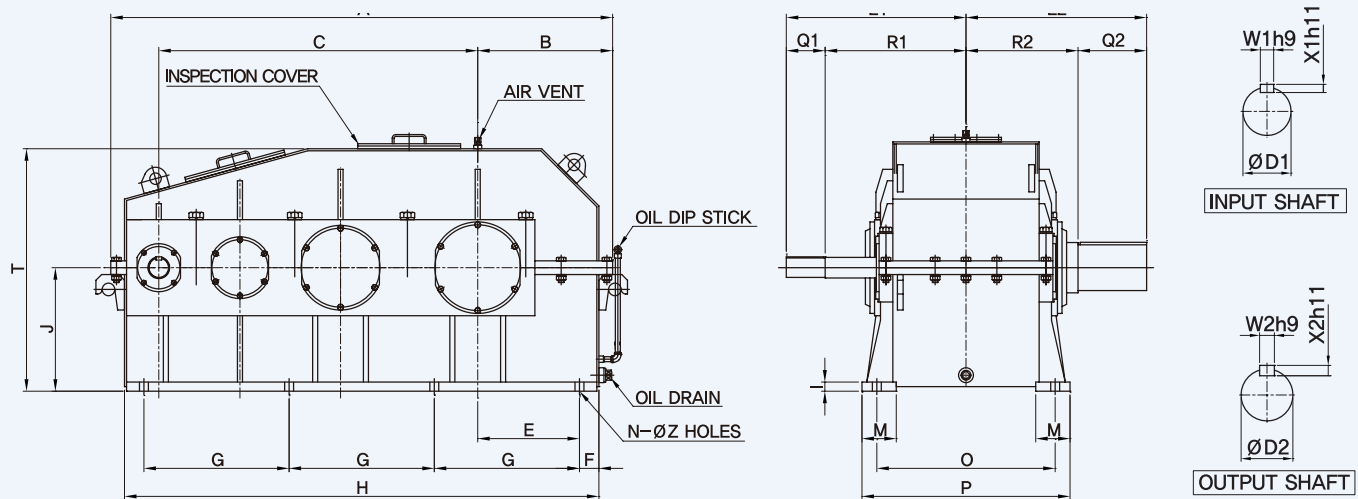
Unit Size	Dimensions																		Weight (kg)	OIL(liter)
	A	B	C	E	F	G	H	I	J	T	M	O	P	N	Z	R1	R2			
240	530	172	240	112	30	205	470	20	160	295	60	210	245	6	14	165	165	100	6	
272	600	195	272	120	45	225	540	20	180	335	70	240	280	6	18	175	175	135	8	
305	660	215	305	135	40	250	590	20	200	370	70	260	300	6	18	205	195	190	11	
340	730	240	340	155	45	280	650	20	225	415	80	280	335	6	23	215	225	255	15	
385	810	265	385	175	50	315	730	25	250	460	90	320	375	6	23	220	230	350	21	
430	890	290	430	200	50	355	810	25	280	520	90	360	430	6	27	240	250	470	30	
480	1010	330	480	225	50	400	900	30	315	585	90	390	455	6	27	280	290	580	39	
540	1110	365	540	240	70	430	1000	30	355	655	100	430	510	6	33	290	300	810	53	
605	1210	395	605	270	70	480	1100	30	400	740	100	470	550	6	33	320	330	1080	82	
680	1380	440	680	305	80	555	1270	35	450	840	120	520	610	6	39	350	360	1490	105	
765	1530	490	765	350	80	625	1410	35	500	940	150	580	670	6	39	390	400	2100	180	
855	1690	535	855	395	80	470	1570	35	560	1050	150	630	720	8	39	420	430	2890	215	
960	1860	590	960	440	90	520	1740	40	630	1170	150	700	790	8	39	470	480	3900	340	
1080	2080	660	1080	505	95	590	1960	45	720	1330	160	770	870	8	45	520	530	5600	450	
1210	2350	745	1210	575	95	670	2200	50	800	1480	180	850	950	8	45	580	590	7200	615	

SH3

Nominal Ratio	Speed		Gear Unit Size																					
	Input rpm	Model	400	440	497	555	620	700	785	880	990	1105	1240	1395	1565	1760	2100	2300	2500	2700	2900	3200	3500	
		Torque Output (kg.m)	747	963	1365	2009	2712	4092	6004	7798	10696	16445	22873	30130	43703	62409	74872	81869	126186	162666	212061	270914	337270	
		Mechanical Power Ratings (UNIT : kW)																						
22.4	1800	63	73	106	159	218	325	437	573	850	1,274	1,676	2,242	3,304	4,437	5,322	6,384	-	-	-	-	-		
	1200	41	55	74	109	153	212	319	425	561	897	1,227	1,617	2,407	3,363	4,036	4,850	-	-	-	-	-		
	900	32	44	59	84	114	168	236	319	454	684	909	1,192	1,699	2,384	2,860	3,434	-	-	-	-	-		
	720	26	35	48	71	92	132	207	266	384	578	767	1,003	1,440	2,077	2,492	3,009	-	-	-	-	-		
25	1800	55	65	94	136	189	289	393	513	755	1,121	1,522	2,041	2,938	4,130	4,956	5,947	-	-	-	-	-		
	1200	35	46	66	94	130	189	301	378	496	802	1,109	1,440	2,112	3,068	3,682	4,425	-	-	-	-	-		
	900	27	37	52	73	97	145	224	283	401	625	861	1,109	1,581	2,301	2,761	3,316	-	-	-	-	-		
	720	23	29	41	60	80	118	189	230	336	519	684	920	1,274	1,864	2,242	2,690	-	-	-	-	-		
28	1800	51	59	85	130	171	266	350	457	667	968	1,322	1,782	2,572	3,717	4,460	5,369	-	-	-	-	-		
	1200	33	42	59	86	118	171	257	319	454	673	974	1,251	1,912	2,808	3,375	4,071	-	-	-	-	-		
	900	25	33	46	67	89	132	201	248	354	525	743	944	1,381	2,018	2,419	2,903	-	-	-	-	-		
	720	21	26	37	55	72	109	153	201	283	437	602	779	1,145	1,652	1,982	2,384	-	-	-	-	-		
31.5	1800	41	51	74	112	153	236	313	425	602	891	1,215	1,628	2,325	3,410	4,095	4,921	6,249	-	-	-	-		
	1200	30	37	52	74	104	159	224	307	401	625	885	1,204	1,640	2,360	2,832	3,398	4,316	-	-	-	-		
	900	22	28	40	58	78	119	177	242	307	472	673	909	1,263	1,829	2,195	2,631	3,342	-	-	-	-		
	720	19	24	33	48	61	94	142	195	254	389	543	708	1,015	1,487	1,782	2,136	2,712	-	-	-	-		
35.5	1800	40	48	66	104	142	212	295	384	549	826	1,121	1,475	2,218	3,186	3,823	4,850	6,159	-	-	-	-		
	1200	27	33	46	70	97	142	201	266	372	578	814	1,086	1,522	2,159	2,584	3,103	3,941	5,005	-	-	-		
	900	20	26	35	54	72	106	165	212	289	431	602	791	1,145	1,628	1,954	2,348	2,982	3,787	-	-	-		
	720	17	21	30	44	58	85	136	171	236	354	484	637	932	1,310	1,572	1,888	2,398	3,045	-	-	-		
40	1800	35	45	60	93	130	189	254	342	496	743	1,003	1,322	1,982	2,808	3,363	4,036	5,125	6,509	-	-	-		
	1200	24	31	42	63	86	124	177	236	330	519	720	968	1,333	1,912	2,301	2,761	3,507	4,454	-	-	-		
	900	18	24	32	48	64	97	148	189	260	384	543	708	1,027	1,463	1,758	2,112	2,682	3,407	-	-	-		
	720	15	21	26	40	52	77	118	153	212	319	437	572	850	1,180	1,416	1,711	2,173	2,760	-	-	-		
45	1800	31	38	53	83	116	171	236	301	419	625	897	1,168	1,782	2,502	2,997	3,599	4,571	5,805	7,372	-	-		
	1200	21	27	37	55	77	109	165	212	295	437	661	861	1,274	1,864	2,242	2,690	3,417	4,339	5,511	6,999	-		
	900	15	22	28	44	57	85	132	168	230	336	484	625	944	1,310	1,572	1,841	2,338	2,969	3,771	4,789	-		
	720	13	17	24	35	47	71	109	136	189	283	395	519	755	1,062	1,274	1,534	1,948	2,474	3,142	3,991	-		
50	1800	27	33	48	74	103	153	212	266	389	590	755	1,027	1,581	2,289	2,749	3,304	4,196	5,329	6,768	8,595	10,916		
	1200	19	24	34	51	71	98	148	189	260	389	543	732	1,086	1,558	1,864	2,242	2,847	3,616	4,592	5,832	7,407		
	900	14	19	26	40	53	77	118	148	201	301	407	555	826	1,192	1,428	1,711	2,173	2,760	3,505	4,451	5,653		
	720	12	15	21	32	41	61	94	122	165	248	342	454	673	968	1,156	1,392	2,388	3,034	3,853	4,893	6,214		
56	1800	24	28	42	66	92	136	186	236	336	531	708	932	1,428	1,982	2,372	2,844	3,612	4,587	5,825	7,398	9,395		
	1200	17	21	30	45	63	89	130	165	224	366	519	673	944	1,369	1,640	1,971	2,503	3,178	4,037	5,126	6,511		
	900	12	17	22	35	46	68	106	132	177	277	389	507	743	1,062	1,274	1,451	1,843	2,341	2,973	3,776	4,795		
	720	10	14	19	28	38	55	86	109	142	224	313	419	602	838	1,003	1,204	2,132	2,708	3,441	4,370	5,550		
63	1800	21	25	37	53	74	124	159	224	307	466	637	826	1,274	1,782	2,136	2,572	3,267	4,149	5,269	6,692	8,499		
	1200	14	18	27	38	51	83	112	148	207	330	478	614	885	1,298	1,558	1,876	2,383	3,026	3,843	4,881	6,199		
	900	10	14	20	28	38	61	94	118	159	248	354	448	661	909	1,086	1,298	2,333	2,963	3,763	4,779	6,069		
	720	8	11	17	24	31	50	73	100	130	201	289	372	531	755	909	1,092	1,866	2,369	3,009	3,822	4,854		
71	1800	19	22	32	47	67	107	144	191	266	425	566	755	1,121	1,581	1,900	2,301	2,922	3,711	4,713	5,986	7,602		
	1200	12	16	24	33	46	72	104	135	177	295	425	555	779	1,145	1,369	1,652	2,098	2,665	3,384	4,298	5,458		
	900	9	12	19	25	34	53	83	106	136	218	307	413	578	826	991	1,192	2,074	2,635	3,346	4,250	5,397		
	720	7	10	15	21	27	42	66	89	112	177	248	330	472	661	791	950	1,659	2,107	2,677	3,401	4,421		
80	1800	17	20	30	42	61	97	130	183	242	372	496	661	979	1,428	1,711	2,053	2,608	3,312	4,206	5,341	6,783		
	1200	11	14	21	31	41	61	92	118	165	260	378	496	708	1,027	1,227	1,475	1,873	2,379	3,021	3,837	4,873		
	900	8	11	17	22	31	48	73	94	124	195	271	366	507	743	897	1,080	1,867	2,371	3,011	3,824	4,857		
	720	7	9	13	19	25	39	59	78	100	159	224	295	425	590	708	850	1,493	1,896	2,408	3,060	3,978		
90	1800	14	18	27	39	55	89	118	153	218	336	472	614	897	1,274	1,534	1,841	2,338	2,969	3,771	4,789	6,082		
	1200	10	13	19	28	37	55	83	109	148	224	330	425	608	861	1,038	1,246	1,583	2,010	2,552	3,242	4,117		
	900	7	10	15	20	27	44	65	85	112	177	248	330	460	649	779	944	1,659	2,107	2,676	3,400	4,317		
	720	6	8	12	17	22	35	53	68	89	142	201	266	366	531	637	767	1,280	1,626	2,066	2,636	3,428		

• Please refer to p24 for thermal capacity. <열용량은 p24 참조>

Gear Unit Dimension



SH3 Dimension

(UNIT : mm)

Unit Size	High Speed Shaft								Low Speed Shaft				Hollow Shaft
	Ratio : 22.4 – 56				Ratio : 63 – 90				Ratio : 22.4 – 90				
	D1	Q1	L1	Key	D1	Q1	L1	Key	D2	Q2	L2	Key	
400	28m6	50	245	8x7	22m6	35	230	6x6	85m6	140	345	22x14	Consult woorim Engineering Department
440	30m6	50	245	8x7	25m6	40	235	8x7	95m6	160	365	25x14	
497	35m6	60	265	10x8	28m6	50	255	8x7	100m6	180	395	28x16	
555	38m6	60	280	10x8	28m6	50	270	8x7	110n6	180	410	28x16	
620	40m6	70	320	12x8	30m6	50	300	8x7	130n6	210	470	32x18	
700	45m6	70	340	14x9	35m6	60	330	10x8	140n6	240	520	36x20	
785	50m6	80	380	14x9	40m6	70	370	12x8	170n6	270	580	40x22	
880	60m6	105	425	18x11	45m6	70	390	14x9	180n6	270	600	45x25	
990	65m6	105	485	18x11	50m6	80	460	14x9	210n6	350	740	50x28	
1105	75m6	120	530	20x12	60m6	105	515	18x11	230n6	400	820	50x28	
1240	85m6	150	570	22x14	70m6	130	550	20x12	250n6	420	850	56x32	
1395	100m6	180	650	28x16	80m6	140	610	22x14	270n6	450	930	63x32	
1565	110n6	180	700	28x16	90m6	160	680	25x14	310n6	500	1030	70x36	
1760	120n6	210	800	32x18	100m6	180	770	28x16	330n6	500	1100	70x36	
2100	140n6	240	900	36x20	120n6	210	870	32x18	360n6	550	1220	80x40	
2300	170n6	280	1030	40x22	140n6	240	990	36x20	400n6	600	1360	90x45	
2500	190n6	310	1110	45x25	160n6	270	1070	40x22	450n6	600	1410	100x50	
2700	210n6	350	1200	50x28	190n6	310	1160	45x25	510n6	650	1510	110x55	
2900	230n6	400	1300	56x32	210n6	360	1260	50x28	570n6	650	1560	120x60	
3200	250n6	460	1410	56x32	230n6	420	1370	56x32	640n6	700	1660	130x65	
3500	280n6	530	1530	63x32	260n6	490	1490	63x32	710n6	700	1710	140x70	

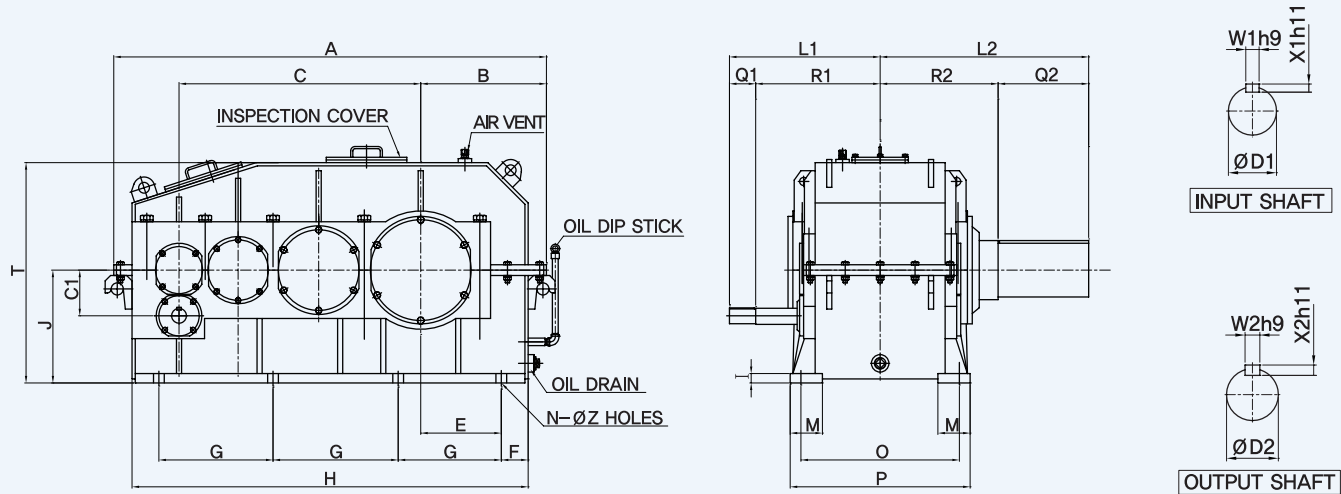
Unit Size	Dimensions																	Weight (kg)	OIL(liter)
	A	B	C	E	F	G	H	I	J	T	M	O	P	N	Z	R1	R2		
400	720	210	400	120	45	190	660	20	200	370	70	260	300	8	18	195	205	220	14
440	810	240	440	150	55	210	740	20	225	415	80	290	350	8	23	195	205	290	20
497	905	240	497	140	65	235	835	20	250	460	80	310	370	8	23	205	215	390	26
555	995	290	555	190	60	265	915	28	280	520	100	360	420	8	27	220	230	540	36
620	1080	300	620	195	65	290	1000	28	300	585	100	370	440	8	27	250	260	640	54
700	1200	325	700	205	75	320	1110	28	320	655	110	430	500	8	33	270	280	890	75
785	1320	355	785	235	75	360	1230	28	350	740	110	470	540	8	33	300	310	1190	115
880	1460	395	880	265	85	400	1370	35	390	840	150	520	600	8	39	320	330	1660	160
990	1660	445	990	305	85	460	1550	35	430	940	150	580	660	8	39	380	390	2250	210
1105	1805	490	1105	345	85	505	1685	35	470	1050	170	630	740	8	45	410	420	3210	285
1240	1985	540	1240	395	85	565	1865	40	520	1170	170	700	810	8	45	420	430	4340	450
1395	2205	595	1395	445	85	635	2075	45	570	1330	190	780	910	8	52	470	480	6120	520
1565	2460	665	1565	515	85	720	2330	50	650	1480	190	870	1000	8	52	520	530	7900	750
1760	2925	830	1760	650	100	855	2765	60	800	1550	220	1000	1130	8	52	590	600	10900	980
2100	3375	920	2100	730	110	745	3200	70	950	1850	200	1070	1200	10	52	660	670	14700	1160
2300	3695	1000	2300	820	120	820	3520	70	1050	2050	200	1130	1260	10	52	750	760	18600	1500
2500	4035	1100	2500	920	130	895	3840	80	1150	2250	230	1300	1340	10	56	800	810	24600	2100
2700	4415	1230	2700	1030	140	980	4200	80	1250	2450	250	1470	1410	10	56	850	860	33300	2850
2900	4785	1350	2900	1150	150	1075	4600	90	1350	2650	270	1550	1500	10	62	900	910	40500	3560
3200	5245	1450	3200	1270	160	1170	5000	90	1450	2850	290	1630	1580	10	62	950	960	51000	4320
3500	5765	1600	3500	1400	170	1265	5400	100	1550	2950	320	1710	1670	10	66	1000	1010	61800	5290

SH4

Nominal Ratio	Speed		Gear Unit Size												
	Input rpm	Model	440	497	555	620	700	785	880	990	1105	1240	1395	1565	1760
		Torque Output (kg.m)	940	1463	2161	2882	4252	6336	8132	11320	19240	28629	33480	43718	50319
			Mechanical Power Ratings (UNIT : kW)												
100	1800	17.7	24.8	38	50	73	106	142	201	304	425	590	767	885	
	1200	11.8	16.5	27	33	48	74	97	142	207	295	407	531	608	
	900	9.4	13.2	19	26	38	59	77	94	163	234	319	413	478	
	720	7.3	10.9	17	21	30	47	63	85	130	194	255	330	384	
112	1800	15.9	22.4	34	45	66	94	124	177	271	401	531	690	797	
	1200	10.9	15.3	24	31	45	66	87	130	189	266	360	472	537	
	900	8.4	11.8	18	24	35	52	68	97	144	212	283	366	425	
	720	6.4	9.4	15	19	28	42	55	73	112	175	231	301	348	
125	1800	13.0	20.1	31	40	58	86	112	159	248	354	472	614	708	
	1200	8.6	13.6	21	27	40	60	79	112	173	236	325	425	490	
	900	7.1	11.0	16	21	31	48	63	89	135	189	251	327	378	
	720	5.7	8.7	13	17	26	39	51	71	109	156	203	266	301	
140	1800	13.0	18.9	27	38	54	77	100	144	218	319	425	555	637	
	1200	8.1	12.4	20	25	37	53	68	100	153	218	289	378	437	
	900	6.4	9.7	15	19	28	42	54	77	118	172	224	295	330	
	720	5.2	7.9	12	16	22	34	44	64	99	137	179	236	271	
160	1800	11.3	17.1	23.6	33	48	68	89	130	195	283	389	507	584	
	1200	7.2	10.9	17.1	21	32	48	61	89	135	189	260	336	389	
	900	5.7	8.5	13	17	25	38	48	71	106	150	198	257	295	
	720	4.5	7.1	10	14	20	31	39	57	85	124	160	207	242	
180	1800	9.9	15.3	22.4	29.5	44	61	77	112	171	254	342	443	513	
	1200	6.3	9.8	15.9	20.1	30	42	53	78	118	171	224	295	336	
	900	5.0	7.7	11.8	15.3	22	34	42	60	90	132	177	230	266	
	720	3.9	6.1	9.6	12.6	18	28	33	50	77	109	146	189	224	
200	1800	8.9	14.2	18.3	26.0	39	55	71	100	156	230	267	348	401	
	1200	5.5	9.0	13.9	17.1	26	38	48	71	109	153	207	271	313	
	900	4.4	7.1	9.7	13.0	20	31	38	53	84	118	159	207	236	
	720	3.5	5.7	8.0	11.2	17	25	31	45	68	100	130	171	195	
224	1800	7.9	12.4	16.5	23.6	34.2	50	65	89	138	201	260	336	389	
	1200	5.0	7.8	12.4	15.9	23.6	34	42	61	97	135	189	248	283	
	900	3.9	6.1	8.9	11.8	17.7	27	34	47	74	110	142	183	212	
	720	3.2	5.0	7.1	10.1	14.5	22	27	38	61	87	112	148	171	
250	1800	7.2	11.2	14.9	20.7	30.7	45	59	77	124	177	236	307	354	
	1200	4.6	7.1	11.2	14.2	20.7	31	39	54	86	124	163	212	248	
	900	3.5	5.5	7.8	10.6	15.3	25	31	41	66	97	127	165	191	
	720	2.8	4.5	6.5	8.7	12.6	19	25	33	53	77	103	136	153	
280	1800	6.3	9.7	13.2	18.3	27.1	40	52	71	106	159	212	277	319	
	1200	3.9	6.3	9.4	12.4	18.3	28	35	50	76	109	145	189	218	
	900	3.0	4.8	6.8	9.4	14.2	21	27	38	59	85	113	148	170	
	720	2.5	3.9	5.7	7.8	11.6	18	22	31	47	66	87	112	130	
315	1800	5.5	8.9	11.8	16.5	25.4	35	47	65	100	142	189	248	283	
	1200	3.4	5.7	8.9	11.2	17.7	24	32	44	68	97	130	171	195	
	900	2.6	4.4	6.1	7.9	12.4	19	25	34	53	77	100	130	148	
	720	2.1	3.5	5.1	6.7	10.1	16	20	27	42	60	80	106	118	
355	1800	4.7	7.7	10.6	15.3	23.6	32	42	55	89	124	168	218	254	
	1200	3.0	5.1	7.7	10.6	15.3	22	28	39	61	86	116	153	177	
	900	2.2	3.9	5.7	7.6	11.2	17	22	31	47	66	92	118	142	
	720	1.8	3.1	4.6	6.5	9.7	14	18	24	38	53	71	94	106	
400	1800	4.2	7.1	9.4	13.6	20.1	30	39	50	77	109	153	201	230	
	1200	2.6	4.5	7.3	8.9	14.2	20	25	34	54	77	101	136	153	
	900	2.0	3.4	5.0	6.7	10.0	16	20	27	42	59	79	106	118	
	720	1.7	2.8	4.0	5.7	8.3	13	16	21	34	47	64	83	96	
450	1800	3.8	5.9	8.3	12.4	16.5	25	33	42	68	100	136	177	201	
	1200	3.7	3.9	5.9	7.8	11.2	17	22	30	50	68	78	100	118	
	900	1.8	3.1	4.5	5.9	8.9	13	17	24	39	54	73	94	112	
	720	1.4	2.4	3.5	5.1	7.1	11	14	18	30	42	57	77	89	

• Please refer to p24 for thermal capacity. <열용량은 p24 참조>

Gear Unit Dimension



SH4 Dimension

(UNIT : mm)

Unit Size	High Speed Shaft								Low Speed Shaft				
	Ratio : 100 – 280				Ratio : 315 – 450				Ratio : 100 – 450				Hollow Shaft
	D1	Q1	L1	Key	D1	Q1	L1	Key	D2	Q2	L2	Key	
440	20m6	35	225	6x6	18m6	35	225	6x6	95m6	160	350	28x16	Consult woorm Engineering Department
497	22m6	35	230	8x7	19m6	35	230	6x6	100m6	180	380	28x16	
555	25m6	40	260	8x7	20m6	35	255	6x6	110n6	180	410	28x16	
620	28m6	50	300	8x7	22m6	35	285	6x6	130n6	210	470	36x20	
700	32m6	60	330	10x8	28m6	50	320	8x7	140n6	240	520	36x20	
785	38m6	60	360	12x8	30m6	50	350	8x7	170n6	270	580	45x25	
880	42m6	70	390	12x8	35m6	60	380	10x8	180n6	270	600	45x25	
990	48m6	80	450	14x9	38m6	60	430	10x8	210n6	350	730	50x28	
1105	55m6	90	500	16x10	42m6	70	480	12x8	230n6	400	820	50x28	
1240	60m6	105	525	18x11	45m6	70	490	14x9	250n6	420	850	56x32	
1395	65m6	105	575	20x12	50m6	80	550	14x9	270n6	450	930	63x32	
1565	75m6	120	640	20x12	60m6	105	625	18x11	310n6	500	1030	70x36	
1760	80m6	140	730	22x14	65m6	105	695	18x11	330n6	500	1100	70x36	

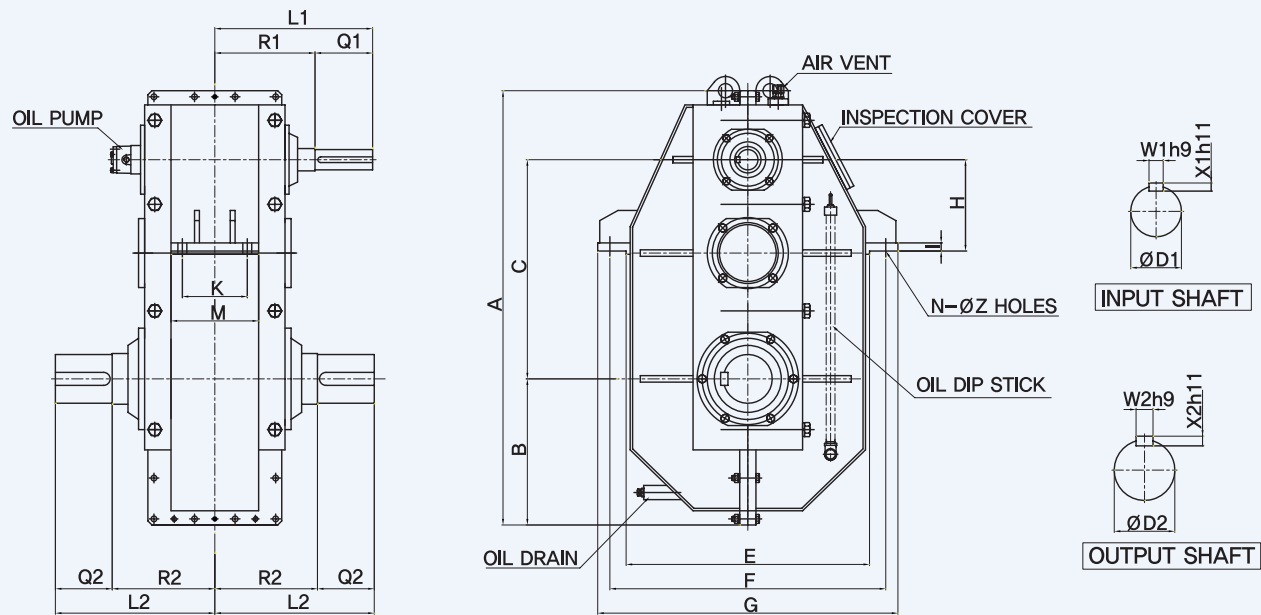
Unit Size	Dimensions																			OIL(liter)
	A	B	C	C1	E	F	G	H	I	J	T	M	O	P	N	Z	R1	R2	Weight (kg)	
440	810	240	440	70	150	55	210	740	20	225	415	80	290	350	8	23	190	190	330	15
497	905	265	497	80	165	65	235	835	20	250	460	80	310	370	8	23	195	200	450	20
555	995	290	555	90	190	60	265	915	28	280	520	100	360	420	8	27	220	230	620	27
620	1080	300	620	100	195	65	290	1000	28	315	585	100	370	440	8	27	250	260	730	42
700	1200	325	700	112	205	75	320	1110	28	355	655	110	430	500	8	33	270	280	1000	56
785	1320	355	785	125	235	75	360	1230	28	400	740	110	470	540	8	33	300	310	1330	86
880	1460	395	880	140	265	85	400	1370	35	450	840	150	520	600	8	39	320	330	1820	120
990	1660	445	990	160	305	85	460	1550	35	500	940	150	580	660	8	39	370	380	2410	160
1105	1805	490	1105	180	345	85	505	1685	35	560	1050	170	630	740	8	45	410	420	3380	220
1240	1985	540	1240	200	395	85	565	1865	40	630	1170	170	700	810	8	45	420	430	4610	340
1395	2205	595	1395	225	445	85	635	2075	45	720	1330	190	780	910	8	52	470	480	6580	400
1565	2500	705	1565	250	515	85	720	2330	50	800	1480	190	870	1000	8	52	520	530	8500	600
1760	2925	830	1760	280	650	100	855	2760	60	820	1550	220	1000	1130	8	52	590	600	11700	860

SV2

Nominal Ratio	Speed		Gear Unit Size														
	Input rpm	Model	240	270	305	340	385	430	480	540	605	680	765	855	960	1080	1210
		Torque Output (kg.m)	219	324	461	656	935	1289	1763	2489	3450	4826	6105	9808	13555	18692	27018
			Mechanical Power Ratings (UNIT : kW)														
6.3		1800	59	85	124	185	229	348	460	649	909	1,227	1,605	2,596	3,658	5,074	6,844
		1200	41	59	85	120	170	241	319	425	637	920	1,133	1,829	2,572	3,422	5,050
		900	32	47	70	93	131	191	248	330	496	708	873	1,392	1,982	2,773	3,953
		720	25	37	57	73	106	159	189	295	395	578	720	1,133	1,617	2,301	3,280
7.1		1800	53	78	116	158	229	307	401	566	802	1,133	1,381	2,360	3,363	4,484	6,136
		1200	37	53	80	107	159	212	283	389	566	779	968	1,593	2,277	3,127	4,567
		900	30	41	61	85	124	159	212	301	437	602	743	1,251	1,770	2,478	3,481
		720	22	33	50	71	99	136	183	248	354	496	614	1,038	1,451	1,923	2,903
8		1800	48	70	104	142	198	271	366	513	708	1,086	1,204	2,124	2,808	3,894	5,404
		1200	33	50	72	99	137	198	266	366	496	708	850	1,451	2,100	2,773	3,953
		900	26	37	54	78	104	156	195	283	389	531	649	1,121	1,534	2,183	3,092
		720	21	30	45	60	86	127	160	230	319	437	531	920	1,263	1,711	2,572
9		1800	45	66	96	131	189	248	354	507	673	920	1,180	1,947	2,749	3,776	5,286
		1200	31	45	68	92	131	175	248	354	496	673	826	1,392	1,982	2,690	3,835
		900	24	35	51	71	101	136	192	266	378	507	637	1,050	1,487	2,100	2,926
		720	20	28	40	57	81	113	156	224	307	437	519	850	1,204	1,652	2,419
10		1800	39	59	86	120	170	224	307	443	614	885	1,097	1,735	2,360	3,387	4,744
		1200	28	40	54	83	116	156	212	307	437	614	755	1,215	1,652	2,454	3,398
		900	21	31	42	64	89	120	165	236	330	472	590	944	1,298	1,864	2,679
		720	17	25	35	52	72	103	142	189	271	378	484	767	1,062	1,510	2,207
11.2		1800	35	52	73	106	149	212	283	407	531	755	920	1,534	2,100	2,926	4,095
		1200	24	37	52	74	103	142	198	283	378	531	649	944	1,416	1,982	2,655
		900	18	28	40	58	80	109	156	218	295	401	496	802	1,121	1,628	2,336
		720	16	22	32	47	65	85	124	177	236	330	401	661	909	1,263	1,864
12.5		1800	31	47	61	85	131	177	248	354	460	684	814	1,357	1,864	2,419	3,540
		1200	21	32	42	60	92	127	170	236	319	472	578	920	1,298	1,770	2,631
		900	17	24	32	47	71	101	135	191	248	354	448	696	1,003	1,298	2,006
		720	13	20	27	38	58	81	109	149	205	283	366	566	802	1,074	1,699
14		1800	28	41	57	80	118	158	219	307	448	614	791	1,274	1,723	2,325	3,422
		1200	20	27	38	58	83	116	156	212	307	425	555	885	1,180	1,617	2,454
		900	14	21	30	45	65	89	120	165	236	319	437	684	909	1,239	1,864
		720	12	17	24	35	51	73	99	136	189	271	354	578	743	1,015	1,510
16		1800	24	35	51	74	103	142	191	271	389	543	673	1,156	1,534	2,065	3,162
		1200	16	25	35	52	73	103	142	191	271	378	472	802	1,038	1,416	2,124
		900	13	20	27	40	57	80	109	149	208	295	366	578	802	1,097	1,652
		720	10	16	21	32	45	65	85	120	170	236	295	496	649	920	1,392
18		1800	21	33	45	66	92	120	177	262	354	496	661	1,003	1,369	1,841	2,773
		1200	15	21	31	46	64	85	120	184	248	330	460	684	944	1,263	1,864
		900	12	17	24	35	50	64	96	142	191	260	354	531	720	968	1,416
		720	10	14	20	28	40	54	76	113	149	212	283	425	590	802	1,162
20		1800	18	31	42	59	85	111	163	228	325	425	566	909	1,215	1,711	2,207
		1200	14	21	30	40	59	79	116	159	224	307	425	614	838	1,180	1,640
		900	10	16	22	31	45	60	89	124	170	236	319	472	649	920	1,274
		720	8	13	18	25	38	51	73	103	135	189	260	378	531	755	1,038

• Please refer to p24 for thermal capacity. <열용량은 p25 참조>

Gear Unit Dimension



SV2 Dimension

(UNIT : mm)

Unit Size	A	B	C	E	F	G	H	I	K	M	N	Z
240	530	172	240	290	330	370	User's decision	25	100	140	4	20
272	600	195	272	330	370	410		30	130	170	4	20
305	660	215	305	380	430	480		30	140	190	4	22
340	730	240	340	420	470	520		35	170	220	4	22
385	810	265	385	470	530	590		25	180	240	4	26
430	890	290	430	520	580	640		25	230	290	4	26
480	1010	330	480	570	640	710		30	240	310	4	33
540	1110	365	540	640	710	780		30	280	350	4	33
605	1210	395	605	700	770	840		30	310	380	4	33
680	1380	440	680	800	880	960		35	340	420	4	39
765	1530	490	765	890	980	1070		35	390	480	4	39
855	1690	535	855	980	1070	1160		35	430	520	4	39
960	1860	590	960	1090	1180	1270		35	500	590	4	39
1080	2080	660	1080	1230	1320	1410		40	570	660	4	39
1210	2350	745	1210	1460	1560	1660		40	620	720	4	45

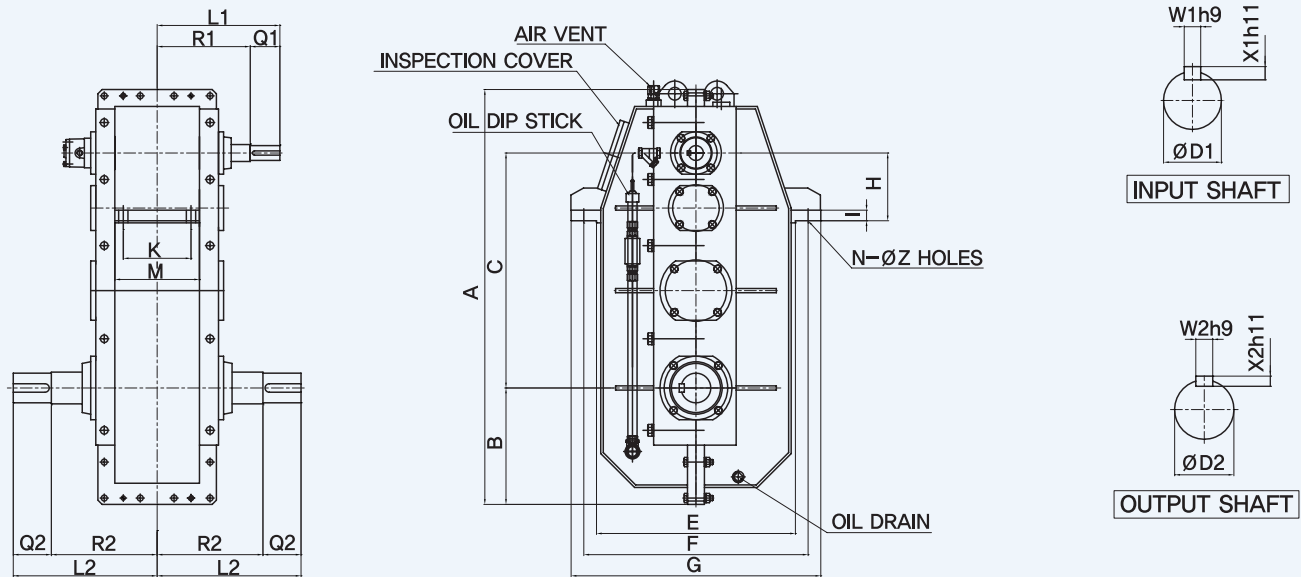
Unit Size	L1	Q1	R1	D1	W1	X1	Y1	L2	Q2	R2	D2	W2	X2	Y2	Weight (kg)	OIL(liter)
240	215	50	165	28m6	8	7	24	255	90	165	55m6	16	10	49	82	4.0
272	235	60	175	32m6	10	8	27	280	105	175	65m6	20	12	57.5	110	5.2
305	255	60	195	38m6	12	8	33	325	120	205	75m6	22	14	66	162	7.1
340	280	65	215	40m6	12	8	35	365	140	220	85m6	25	14	76	216	9.8
385	295	75	220	45m6	14	9	39.5	390	160	230	95m6	28	16	85	295	13.6
430	320	80	240	50m6	16	10	44	430	180	250	100m6	28	16	90	400	19.5
480	350	90	260	55m6	16	10	49	450	180	270	115n6	32	18	104	495	25.4
540	385	105	280	65m6	20	12	57.5	500	210	290	130n6	36	20	118	690	35
605	430	120	310	70m6	20	12	62.5	560	240	320	145n6	36	20	133	920	53
680	475	140	335	80m6	22	14	71	615	270	345	160n6	40	22	147	1270	68
765	540	160	380	90m6	25	14	81	700	310	390	180n6	45	25	165	1785	120
855	590	180	410	100m6	28	16	90	820	400	420	200n6	50	28	183	2460	140
960	635	180	455	115n6	32	18	104	865	400	465	230n6	56	32	210	3310	220
1080	710	210	500	125n6	32	18	114	950	440	510	260n6	63	32	240	4760	295
1210	800	240	560	140n6	36	20	128	1050	480	570	290n6	70	36	268	6120	400

SV3

Nominal Ratio	Speed		Gear Unit Size													
	Input rpm	Model	400	440	495	555	620	700	785	880	990	1105	1240	1395	1565	1760
		Torque Output (kg.m)	488	672	935	1295	1751	2745	3896	5221	6939	11188	15460	20602	29741	42925
			Mechanical Power Ratings (UNIT : kW)													
22.4	1800	39	53	74	104	142	212	290	404	566	897	1,180	1,534	2,242	3,068	
	1200	28	39	52	73	99	149	198	283	372	625	861	1,121	1,652	2,360	
	900	21	30	39	57	74	112	153	212	283	472	637	826	1,180	1,676	
	720	18	25	32	45	61	92	135	177	234	401	531	684	991	1,463	
25	1800	35	46	66	89	120	186	260	361	507	779	1,074	1,416	1,982	2,891	
	1200	25	33	46	64	85	132	186	255	325	555	779	1,003	1,404	2,124	
	900	19	25	35	47	65	99	142	191	248	437	602	779	1,050	1,605	
	720	15	9	28	39	53	81	124	156	217	366	472	637	861	1,298	
28	1800	31	42	58	81	110	170	234	319	425	673	920	1,251	1,746	2,596	
	1200	22	31	41	58	78	118	170	224	297	472	684	873	1,180	1,947	
	900	17	24	31	44	59	90	125	170	227	366	519	637	897	1,416	
	720	14	18	26	37	47	74	101	142	184	301	413	519	743	1,156	
31.5	1800	28	37	51	71	99	149	205	290	378	625	850	1,133	1,640	2,360	
	1200	20	26	35	50	68	107	148	205	269	425	614	838	1,133	1,652	
	900	15	20	27	38	52	83	113	156	198	325	472	625	885	1,239	
	720	12	17	22	31	44	66	93	127	163	271	378	496	708	979	
35.5	1800	25	34	47	66	92	135	198	262	342	578	779	1,027	1,475	2,183	
	1200	18	24	32	46	65	94	136	184	236	401	572	755	1,038	1,475	
	900	14	18	24	35	50	71	101	142	183	295	413	543	755	1,133	
	720	11	15	20	28	40	59	87	116	149	241	330	448	625	861	
40	1800	22	31	39	59	80	120	170	227	319	519	684	920	1,357	1,770	
	1200	15	23	28	42	57	85	120	163	224	366	496	661	920	1,263	
	900	12	17	21	32	42	65	92	124	170	266	378	496	720	1,003	
	720	10	14	18	26	35	52	78	101	138	212	307	389	590	826	
45	1800	19	28	35	52	71	109	156	198	283	425	625	802	1,180	1,652	
	1200	13	20	25	37	50	77	111	142	198	295	425	590	850	1,121	
	900	11	15	18	28	37	57	85	106	149	224	330	425	625	850	
	720	8	12	16	22	31	47	71	89	118	183	260	354	519	743	
50	1800	18	24	32	47	64	97	142	177	248	401	519	708	1,038	1,558	
	1200	13	17	23	33	45	68	99	127	170	266	366	507	696	1,086	
	900	10	13	17	25	34	51	77	97	127	212	283	389	531	838	
	720	8	11	14	21	28	42	61	79	106	168	236	319	437	673	
56	1800	15	21	30	42	57	87	120	156	212	366	484	637	979	1,381	
	1200	11	15	21	30	40	61	87	113	149	248	354	460	661	944	
	900	8	11	16	23	30	47	67	85	113	183	260	342	519	732	
	720	7	9	13	18	24	38	57	71	92	148	201	283	413	590	
63	1800	12	18	26	33	47	78	106	149	198	319	437	555	897	1,251	
	1200	8	13	18	24	34	54	76	106	146	212	319	419	614	909	
	900	6	10	14	18	25	42	59	80	104	159	236	307	448	637	
	720	5	8	12	15	21	33	47	66	85	142	183	248	366	531	
71	1800	11	16	24	30	42	68	94	127	182	301	389	519	791	1,109	
	1200	8	11	17	21	30	47	68	92	120	208	283	378	543	802	
	900	6	8	13	16	22	37	52	71	87	142	201	271	413	578	
	720	5	7	11	13	7	30	42	57	73	113	153	218	330	460	
80	1800	10	14	21	27	38	59	85	116	156	260	330	454	684	1,003	
	1200	7	10	15	19	27	42	59	83	106	177	248	330	484	720	
	900	5	7	11	14	20	33	45	61	79	130	177	242	354	519	
	720	4	6	9	12	17	26	37	51	64	106	142	195	295	413	
90	1800	9	13	19	24	34	57	78	104	142	224	307	431	637	861	
	1200	6	9	13	18	24	40	54	73	99	142	212	289	425	590	
	900	5	7	10	13	18	30	40	57	73	106	153	212	295	448	
	720	4	6	8	11	15	24	33	45	58	94	118	171	248	342	

• Please refer to p24 for thermal capacity. <열용량은 p25 참조>

Gear Unit Dimension



SV3 Dimension

(UNIT : mm)

Unit Size	A	B	C	E	F	G	H	I	K	M	N	Z
400	720	210	400	370	420	470	User's decision	32	130	180	4	22
440	810	240	440	400	450	500		40	160	210	4	22
497	905	265	497	440	490	540		40	180	230	4	22
555	995	290	555	470	530	590		50	230	280	4	26
620	1080	300	620	520	590	660		25	230	300	4	33
700	1200	325	700	580	650	720		30	270	340	4	33
785	1320	355	785	640	710	780		30	320	390	4	33
880	1460	395	880	720	810	900		35	350	430	4	39
990	1660	445	990	810	900	990		35	380	470	4	39
1105	1805	490	1105	890	980	1070		35	440	530	4	39
1240	1985	540	1240	990	1080	1170		35	500	590	4	39
1395	2205	595	1395	1090	1180	1270		35	560	650	4	39
1565	2460	665	1565	1230	1330	1430		40	640	740	4	45
1760	2925	830	1760	1380	1480	1580		40	760	860	4	45

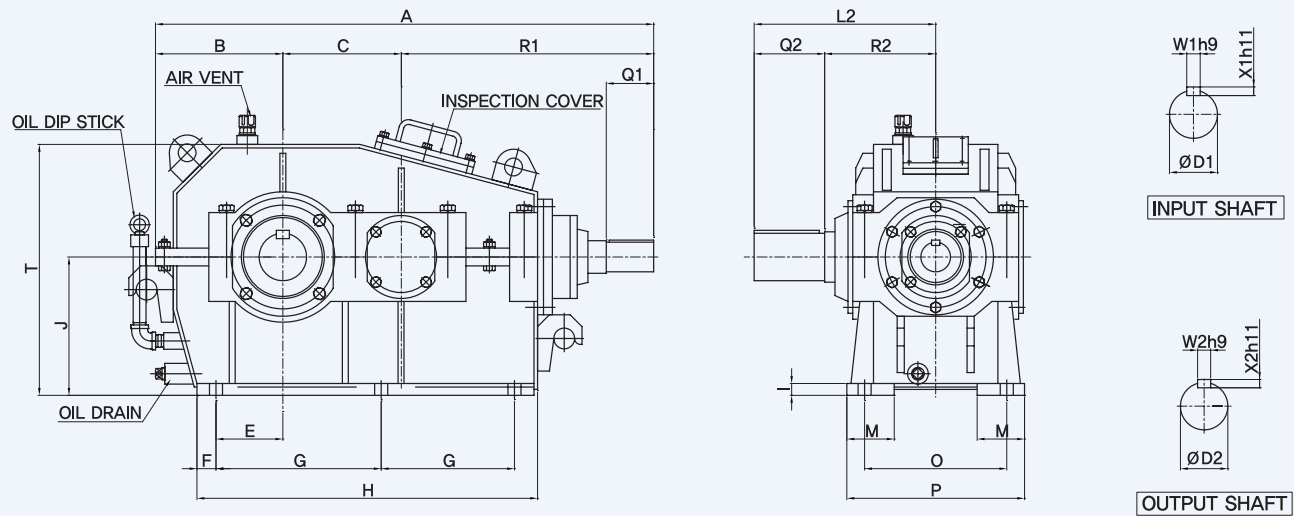
Unit Size	L1	Q1	R1	D1	W1	X1	Y1	L2	Q2	R2	D2	W2	X2	Y2	Weight (kg)	OIL(liter)
400	235	40	195	25m6	8	7	21	325	120	205	75m6	22	14	66	155	10
440	265	50	215	28m6	8	7	24	365	140	225	85m6	25	14	76	220	13
497	280	60	220	32m6	10	8	27	390	160	230	95m6	28	16	85	310	18
555	300	60	240	35m6	10	8	30	430	180	250	100m6	28	16	90	430	25
620	320	60	260	38m6	12	8	33	450	180	270	115n6	32	18	104	540	30
700	355	75	280	45m6	14	9	39.5	500	210	290	130n6	36	20	118	700	40
785	390	80	310	50m6	16	10	44	560	240	320	145n6	36	20	133	950	58
880	425	90	335	55m6	16	10	49	615	270	345	160n6	40	22	147	1300	80
990	485	105	380	60m6	16	10	54	700	310	390	180n6	40	25	165	1670	115
1105	530	120	410	70m6	20	12	62.5	820	400	420	200n6	50	28	183	2120	150
1240	595	140	455	80m6	22	14	71	865	400	465	230n6	56	32	210	3000	210
1395	660	160	500	90n6	25	14	81	950	440	510	260n6	63	32	240	3850	290
1565	740	180	560	100n6	28	16	90	1050	480	570	290n6	70	36	268	5250	420
1760	830	180	650	110n6	32	18	99	1180	520	660	330n6	80	40	305	7500	590

SB2

Nominal Ratio	Speed		Gear Unit Size								
	Input rpm	Model	160	200	250	280	315	355	400	450	500
		Torque Output (kg.m)	284	533	1130	1533	2046	2750	3699	4950	6521
			Mechanical Power Ratings (UNIT : kW)								
5	1800	77	136	277	354	472	661	1,003	1,428	1,699	
	1200	55	100	207	266	354	484	743	1,062	1,333	
	900	44	77	168	212	295	378	590	850	1,097	
	720	38	61	142	189	254	330	531	708	979	
5.6	1800	73	132	271	330	454	649	991	1,416	1,664	
	1200	53	97	201	260	342	474	720	1,044	1,310	
	900	41	74	165	207	289	366	572	838	1,086	
	720	34	59	136	189	242	313	519	696	956	
6.3	1800	73	132	271	330	454	649	991	1,416	1,664	
	1200	53	97	201	260	342	474	720	1,044	1,310	
	900	41	74	165	207	289	366	572	838	1,086	
	720	34	59	136	189	242	313	519	696	956	
7.1	1800	72	129	262	330	454	631	956	1,369	1,652	
	1200	47	94	197	254	342	466	696	1,027	1,310	
	900	36	72	158	207	283	366	561	820	1,086	
	720	34	58	127	171	229	301	490	661	944	
8	1800	65	120	248	330	454	590	897	1,310	1,628	
	1200	45	89	186	248	342	448	661	979	1,274	
	900	34	71	148	201	283	366	531	791	1,062	
	720	27	58	124	165	224	301	448	643	944	
9	1800	59	109	218	312	413	531	814	1,204	1,581	
	1200	41	80	171	230	313	395	602	885	1,180	
	900	31	64	138	183	254	325	478	702	944	
	720	26	53	118	153	212	283	413	578	814	
10	1800	54	101	201	271	372	472	720	1,109	1,510	
	1200	35	73	148	201	271	354	531	779	1,062	
	900	27	58	118	159	218	283	419	602	814	
	720	23	50	105	142	201	254	354	519	708	
11.2	1800	48	94	183	254	354	437	661	944	1,204	
	1200	33	66	135	189	254	330	484	684	885	
	900	25	52	106	148	201	260	389	543	696	
	720	21	45	89	124	165	236	319	460	590	
12.5	1800	41	83	169	224	277	384	543	749	1,086	
	1200	30	59	116	165	207	289	389	537	802	
	900	22	45	89	130	165	230	301	419	637	
	720	18	38	74	106	130	189	254	360	531	
14	1800	39	65	151	212	271	372	460	625	814	
	1200	26	44	100	142	183	248	330	413	543	
	900	19	33	77	106	139	189	248	313	413	
	720	16	25	65	89	112	159	201	266	342	
16	1800	33	60	118	165	212	330	425	531	814	
	1200	23	39	81	118	153	224	295	389	543	
	900	17	30	63	94	120	177	224	295	413	
	720	15	21	53	83	106	148	183	248	342	

• Please refer to p24 for thermal capacity. <열용량은 p25 참조>

Gear Unit Dimension



SB2 Dimension

(UNIT : mm)

Unit Size	High Speed Shaft										Low Speed Shaft						Hollow Shaft
	Ratio : 5 – 10					Ratio : 11,2 – 16					Ratio : 5 – 16						
	A	D1	Q1	R1	Key	A	D1	Q1	R1	Key	D2	Q2	R2	L2	Key		
160	740	35m6	60	380	10x8	730	28m6	50	370	8x7	70m6	120	175	295	20x12	Consult woorim Engineering Department	
200	890	45m6	70	450	14x9	880	35m6	60	440	10x8	90m6	160	225	385	25x14		
250	1110	60m6	105	570	18x11	1095	55m6	90	555	16x10	110m6	180	250	430	28x16		
280	1230	65m6	105	620	18x11	1230	60m6	105	620	18x11	130m6	200	290	490	32x18		
315	1370	75m6	120	690	20x12	1370	70m6	120	690	20x12	156m6	240	300	540	40x22		
355	1505	80m6	140	755	22x14	1485	75m6	120	735	20x12	160m6	270	330	600	40x22		
400	1730	95m6	170	890	25x14	1710	85m6	150	870	22x14	180m6	300	360	660	45x25		
450	1880	100m6	180	940	28x16	1860	90m6	160	920	25x14	200n6	350	400	750	45x25		
500	2100	110n6	180	1065	28x16	2100	100m6	180	1065	28x16	230n6	380	430	810	50x28		

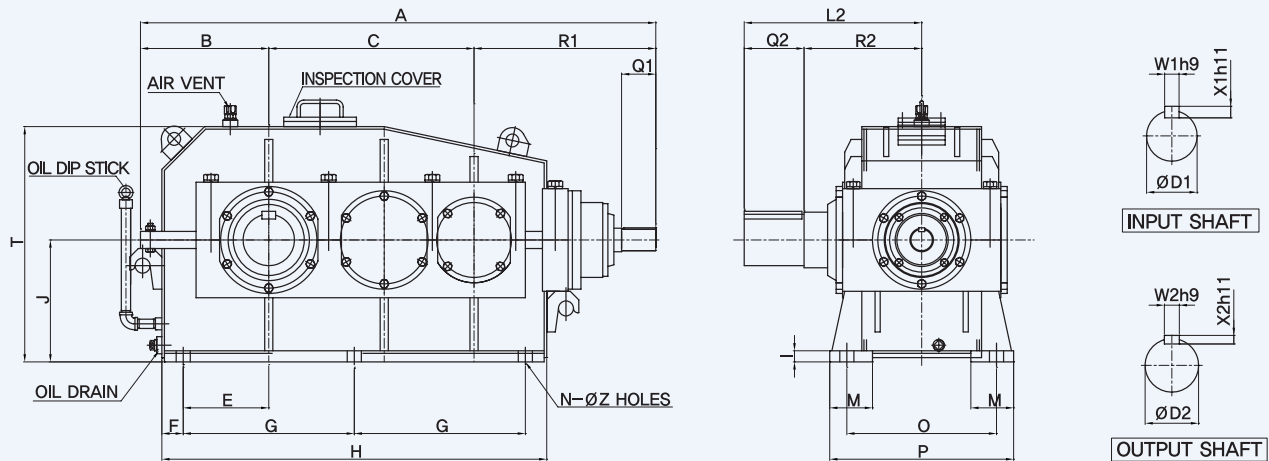
Unit Size	Dimensions																Weight (kg)	OIL(liter)
	B	C	E	F	G	H	I	J	T	M	O	P	N	Z				
160	200	160	125	35	210	490	20	180	335	70	240	280	6	18	165	12.8		
200	240	200	155	45	255	600	20	225	415	80	280	335	6	23	270	14		
250	290	250	200	50	330	760	25	280	520	90	360	430	6	26	480	23		
280	330	280	225	50	370	840	30	315	585	100	390	455	6	27	660	31		
315	365	315	240	70	405	950	30	355	655	100	430	510	6	33	915	38		
355	395	355	270	70	460	1060	30	400	740	100	470	550	6	33	1190	68		
400	440	400	305	80	515	1190	35	450	840	120	520	610	6	39	1620	93		
450	490	450	350	80	590	1340	35	500	940	150	580	670	6	39	2380	135		
500	535	500	385	90	435	1485	35	560	1050	150	630	720	8	39	2800	180		

SB3

Nominal Ratio	Speed		Gear Unit Size													
	Input rpm	Model	305	340	385	430	480	540	605	680	765	855	960	1080	1210	1360
		Torque Output (kg.m)	599	825	1215	1599	2243	3441	5158	6722	9630	15108	19875	24455	35200	40456
			Mechanical Power Ratings (UNIT : kW)													
18	1800	59	76	117	157	212	289	448	555	791	1,322	1,794	2,454	3,552	4,036	
	1200	40	53	78	106	153	212	330	413	578	968	1,333	1,794	2,596	2,950	
	900	31	41	58	80	118	165	260	330	460	767	1,062	1,416	1,947	2,242	
	720	27	34	51	66	94	142	212	283	401	637	932	1,180	1,652	2,006	
20	1800	54	68	106	142	195	271	425	543	767	1,298	1,770	2,419	2,572	3,009	
	1200	37	48	71	97	142	201	307	378	543	897	1,239	1,652	2,171	2,832	
	900	28	37	54	73	106	153	236	295	413	673	956	1,239	1,829	2,171	
	720	24	31	45	59	89	130	201	248	366	566	814	1,050	1,581	1,959	
22.4	1800	58	65	94	136	177	248	389	519	732	1,215	1,546	2,242	2,419	3,245	
	1200	34	45	65	92	127	177	283	354	507	802	1,086	1,487	1,982	2,478	
	900	26	34	50	68	99	142	212	271	378	602	838	1,097	1,605	1,982	
	720	21	30	41	57	78	118	177	224	319	496	708	932	1,381	1,888	
25	1800	45	63	85	122	165	224	354	472	673	1,050	1,428	1,947	2,395	3,127	
	1200	30	41	58	81	106	165	248	319	460	720	1,027	1,322	1,888	2,419	
	900	23	32	44	61	87	130	195	236	342	555	802	1,027	1,558	1,947	
	720	19	26	35	50	70	106	158	195	283	448	625	850	1,180	1,794	
28	1800	38	53	76	100	148	218	330	401	590	932	1,298	1,758	3,068	2,773	
	1200	25	35	52	68	98	148	224	283	413	637	897	1,204	1,711	2,242	
	900	19	27	40	52	73	112	171	212	319	484	684	909	1,333	1,888	
	720	16	22	32	41	59	93	142	177	260	389	555	720	1,097	1,546	
31.5	1800	35	46	70	92	130	203	296	389	566	838	1,204	1,546	2,301	2,478	
	1200	23	31	46	61	90	136	204	267	378	578	826	1,086	1,593	2,089	
	900	17	24	34	47	68	103	156	202	283	437	625	838	1,215	1,758	
	720	14	19	28	37	53	85	124	158	224	354	496	649	968	1,416	
35.5	1800	32	41	63	83	111	183	266	354	519	779	1,121	1,463	2,183	2,207	
	1200	21	27	42	54	74	122	184	236	342	531	732	991	1,463	1,853	
	900	16	21	32	41	55	91	142	177	260	401	543	743	1,109	1,558	
	720	13	17	26	33	45	73	112	144	207	313	448	590	897	1,239	
40	1800	28	37	55	72	99	159	242	307	460	696	1,009	1,322	1,982	2,053	
	1200	19	25	38	48	66	110	165	218	307	484	673	873	1,322	1,687	
	900	14	19	29	37	50	83	124	171	236	354	496	649	979	1,404	
	720	12	15	24	29	40	67	100	130	189	283	401	519	791	1,133	
45	1800	24	34	51	65	92	148	218	283	413	602	885	1,156	1,758	2,018	
	1200	16	22	33	44	61	98	146	189	271	437	602	791	1,204	1,522	
	900	12	17	25	33	46	73	110	142	201	342	460	602	909	1,215	
	720	10	14	21	26	37	60	90	118	171	260	366	484	708	1,027	
50	1800	22	32	42	59	81	132	189	248	366	555	791	1,074	1,569	2,018	
	1200	15	21	32	35	55	89	126	165	242	378	531	708	1,062	1,451	
	900	11	16	25	30	41	66	94	124	183	283	395	525	802	1,145	
	720	9	13	19	24	34	53	77	101	148	236	330	448	637	932	
56	1800	20	27	40	51	72	116	165	224	448	502	696	920	1,357	1,994	
	1200	13	18	27	35	50	78	114	148	218	342	484	637	932	1,357	
	900	10	14	21	27	38	59	89	112	159	260	372	484	708	1,027	
	720	8	11	17	21	30	47	71	92	135	207	289	389	561	802	
63	1800	17	24	35	45	64	100	150	203	289	443	620	814	1,274	1,546	
	1200	12	16	24	31	44	68	97	136	195	301	431	561	844	1,086	
	900	9	12	18	24	34	53	80	103	145	230	325	425	631	838	
	720	7	10	15	19	27	41	64	80	118	183	260	348	513	684	
71	1800	15	22	31	41	58	92	132	177	236	407	566	738	1,003	1,168	
	1200	10	15	21	28	38	63	89	124	159	271	384	502	690	861	
	900	8	11	16	21	29	47	65	94	122	201	289	384	525	684	
	720	6	9	13	17	24	38	53	74	97	159	230	307	419	561	
80	1800	12	20	30	38	51	74	116	159	218	354	472	726	879	1,121	
	1200	8	13	19	26	35	51	79	110	148	236	336	496	614	743	
	900	6	10	15	20	27	38	60	84	110	183	260	378	431	555	
	720	5	8	11	16	23	31	45	65	89	148	201	260	348	454	

• Please refer to p24 for thermal capacity. <열용량은 p25 참조>

Gear Unit Dimension



SB3 Dimension

(UNIT : mm)

Unit Size	High Speed Shaft										Low Speed Shaft						Hollow Shaft
	Ratio : 18 – 40					Ratio : 45 – 80					Ratio : 18 – 80						
	A	D1	Q1	R1	Key	A	D1	Q1	R1	Key	D2	Q2	R2	L2	Key		
305	860	28m6	50	330	8x7	845	22m6	35	315	6x6	85m6	140	205	345	22x14	Consult woorim Engineering Department	
340	935	32m6	60	355	10x8	935	28m6	50	355	8x7	95m6	160	205	365	25x14		
385	1030	35m6	60	380	10x8	1020	28m6	50	370	8x7	100m6	180	215	395	28x16		
430	1150	42m6	70	430	12x8	1140	35m6	60	420	10x8	110n6	180	230	410	28x16		
480	1250	45m6	70	440	14x9	1240	35m6	60	430	10x8	130n6	210	260	470	32x18		
540	1390	50m6	80	495	14x9	1380	50m6	70	485	14x9	140n6	240	280	520	36x20		
605	1555	60m6	105	555	18x11	1540	55m6	90	540	16x10	170n6	270	310	580	40x22		
680	1740	65m6	105	620	18x11	1740	60m6	105	620	18x11	180n6	270	330	600	45x25		
765	1945	75m6	120	690	20x12	1945	70m6	120	690	20x12	210n6	350	390	740	50x28		
855	2195	80m6	140	805	22x14	2175	75m6	120	785	20x12	230n6	400	420	820	50x28		
960	2400	95m6	170	850	25x14	2380	85m6	150	830	22x14	250n6	420	430	850	56x32		
1080	2680	100m6	180	940	28x16	2660	90m6	160	920	25x14	270n6	450	480	930	63x32		
1210	2965	110n6	180	1010	28x16	2965	100m6	180	1010	28x16	310n6	500	530	1030	70x36		
1360	3345	120n6	210	1160	32x18	3315	110n6	180	1130	28x16	330n6	500	600	1100	70x36		

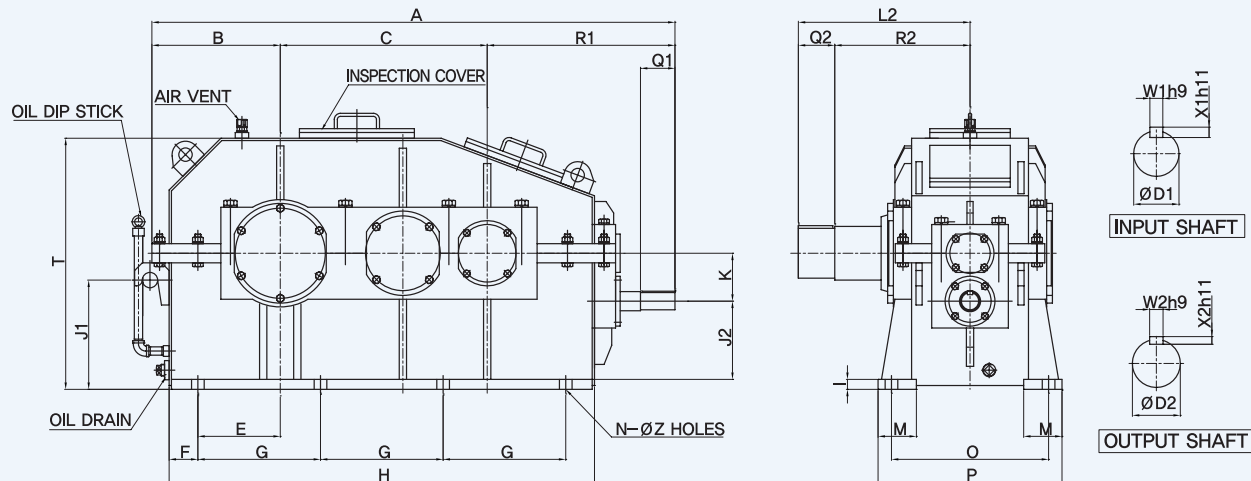
Unit Size	Dimensions															Weight (kg)	OIL(liter)
	B	C	E	F	G	H	I	J	T	M	O	P	N	Z			
305	225	305	135	45	265	620	20	200	370	70	260	300	6	18	198	14.5	
340	240	340	155	45	300	690	20	225	415	80	290	350	6	23	275	19	
385	265	385	175	50	340	780	20	250	460	80	310	370	6	23	370	28	
430	290	430	200	50	385	870	28	280	520	100	360	420	6	27	510	33	
480	330	480	225	50	425	950	28	315	585	100	370	440	6	27	680	41	
540	355	540	240	70	465	1070	28	355	655	110	430	500	6	33	930	58	
605	395	605	270	70	520	1180	28	400	740	110	470	540	6	33	1230	84	
680	440	680	305	80	590	1340	35	450	840	150	520	600	6	39	1670	110	
765	490	765	350	80	670	1500	35	500	940	150	580	660	6	39	2330	160	
855	535	855	395	80	515	1705	35	560	1050	170	630	740	8	39	2750	200	
960	590	960	440	90	560	1860	40	630	1170	170	700	810	8	39	3550	298	
1080	660	1080	505	95	640	2110	45	720	1330	190	780	910	8	45	4750	410	
1210	745	1210	575	95	725	2365	50	800	1480	190	870	1000	8	45	6090	460	
1360	825	1360	650	100	820	2660	60	820	1550	220	1000	1130	8	45	8590	560	

SB4

Nominal Ratio	Speed		Gear Unit Size												
	Input rpm	Model	340	385	430	480	540	605	680	765	855	960	1080	1210	1360
		Torque Output (kg.m)	915	1323	1796	2508	3825	5729	7344	10552	16563	23477	30922	44728	62234
			Mechanical Power Ratings (UNIT : kW)												
100	1800	15.3	23.6	31	44	70	106	136	195	307	425	566	826	1156	
	1200	10.4	15.8	21	30	47	71	93	130	207	283	384	555	785	
	900	7.8	11.9	16	22	35	53	71	100	153	215	283	413	596	
	720	6.3	9.8	13	18	30	44	57	79	124	175	230	330	478	
112	1800	14.2	21.8	29	40	63	91	118	177	271	384	507	726	968	
	1200	9.8	15.1	19	27	41	63	83	118	181	254	342	490	684	
	900	7.6	11.6	15	20	31	47	61	92	136	189	254	366	531	
	720	5.9	8.9	12	17	25	38	48	72	111	157	201	295	425	
125	1800	13.1	19.5	26	35	54	83	105	159	242	336	454	643	932	
	1200	9.0	8.4	17	24	37	57	71	106	163	224	301	431	614	
	900	6.8	9.9	13	18	28	42	53	79	124	171	224	325	460	
	720	5.4	7.7	11	14	22	35	42	64	97	136	183	260	365	
140	1800	12.2	17.1	24	31	50	74	94	142	216	313	401	578	850	
	1200	8.0	11.9	16	22	34	51	63	94	148	207	266	389	614	
	900	6.0	9.2	12	17	25	39	47	71	112	153	203	289	460	
	720	4.8	6.8	10	14	20	31	38	59	89	127	165	236	366	
160	1800	10.4	15.5	21	29	45	66	85	122	191	271	360	519	755	
	1200	7.3	10.1	14	19	30	45	58	81	127	183	236	348	502	
	900	5.7	7.6	11	15	22	33	44	61	94	139	177	260	378	
	720	4.2	6.3	9	12	18	27	35	50	78	114	144	212	307	
180	1800	9.6	13.8	18	26	40	60	77	105	171	236	313	466	667	
	1200	6.4	9.2	13	17	27	40	51	72	112	159	207	313	443	
	900	4.8	6.8	10	13	20	30	38	54	83	118	159	236	330	
	720	3.9	5.5	8	11	17	25	31	44	70	98	127	175	271	
200	1800	8.5	12.6	16	24	35	53	68	98	153	218	283	413	590	
	1200	5.8	8.5	11	16	24	35	45	65	103	142	189	277	401	
	900	4.4	6.4	8	12	18	27	34	48	77	106	142	207	301	
	720	3.5	5.1	7	10	14	22	27	39	61	89	114	170	236	
224	1800	7.4	11.1	15	20	32	48	60	89	137	195	254	378	525	
	1200	5.0	7.4	10	14	21	32	40	59	92	132	171	254	354	
	900	3.8	5.5	7	11	16	24	30	44	68	100	127	189	271	
	720	3.2	4.5	6	8	13	19	24	35	57	80	101	153	212	
250	1800	7.0	9.7	13	18	28	41	54	77	118	176	230	342	478	
	1200	4.7	6.5	9	13	19	28	35	51	81	117	153	224	319	
	900	3.5	4.8	7	10	14	21	27	39	61	87	116	171	236	
	720	2.8	3.9	5	8	11	17	22	31	50	71	94	136	191	
280	1800	5.8	8.5	12	17	25	38	48	68	106	153	207	295	413	
	1200	4.0	5.8	8	11	17	24	33	47	71	103	136	195	277	
	900	3.1	4.4	6	9	13	19	25	37	53	77	103	148	207	
	720	2.4	3.5	5	7	10	16	19	28	42	61	83	118	165	
315	1800	5.3	7.9	10	15	22	35	41	61	97	136	179	266	354	
	1200	3.7	5.2	7	10	15	23	28	41	65	92	120	177	242	
	900	2.7	3.9	5	7	11	17	21	31	48	68	91	130	183	
	720	2.1	3.2	4	6	9	14	17	25	39	55	73	106	148	
355	1800	4.8	7.0	9	13	19	25	38	48	89	122	163	223	290	
	1200	3.2	4.6	6	8	13	17	25	33	58	81	110	149	195	
	900	2.4	3.4	5	6	10	13	19	25	42	61	83	112	148	
	720	1.9	2.7	4	5	8	11	15	20	35	50	66	89	118	

• Please refer to p24 for thermal capacity. <열용량은 p25 참조>

Gear Unit Dimension



SB4 Dimension

(UNIT : mm)

Unit Size	High Speed Shaft						Low Speed Shaft					Hollow Shaft
	Ratio : 100 – 355						Ratio : 18 – 80					
	D1	Q1	R1	Key	J2	K	D2	Q2	R2	L2	Key	
340	20k6	35	315	6x6	145	80	95m6	160	205	365	28x16	Consult woorm Engineering Department
385	24k6	35	350	8x7	160	90	100m6	180	215	395	28x16	
430	28m6	50	400	8x7	180	100	110n6	180	230	410	28x16	
480	32m6	60	445	10x8	203	112	130n6	210	260	470	32x18	
540	32m6	60	490	10x8	230	125	140n6	240	280	520	36x20	
605	38m6	60	525	10x8	260	140	170n6	270	310	580	40x22	
680	42m6	70	570	12x8	290	160	180n6	270	330	600	45x25	
765	48m6	80	640	14x9	320	180	210n6	350	390	740	50x28	
855	55m6	90	710	16x10	360	200	230n6	400	420	820	50x28	
960	60m6	105	800	18x11	405	225	250n6	420	430	850	56x32	
1080	70m6	120	920	20x12	470	250	270n6	450	480	930	63x32	
1210	80m6	140	1030	22x14	520	280	310n6	500	530	1030	70x36	
1360	90n6	160	1150	25x14	500	320	330n6	500	600	1100	70x36	

Unit Size	Dimensions															Weight (kg)	OIL(liter)
	A	B	C	E	F	G	H	I	J1	T	M	O	P	N	Z		
340	900	245	340	150	55	210	740	20	225	415	80	280	335	8	23	260	21
385	1005	270	385	165	65	235	835	20	250	460	90	320	375	8	23	360	28
430	1125	295	430	195	60	270	930	28	280	520	100	360	420	8	27	485	36
480	1265	340	480	200	85	285	1025	28	315	585	100	370	440	8	27	653	52
540	1400	370	540	215	100	320	1160	28	355	655	110	430	500	8	33	870	72
605	1535	405	605	250	100	360	1280	28	400	740	110	470	540	8	33	1180	104
680	1690	440	680	275	110	400	1420	35	450	840	150	520	600	8	39	1665	141
765	1905	500	765	310	130	450	1610	35	500	940	150	580	660	8	39	2290	196
855	2105	540	855	335	145	500	1790	35	560	1050	170	630	740	8	39	3326	270
960	2355	595	960	370	165	560	2010	40	630	1170	170	700	810	8	39	4450	405
1080	2665	665	1080	420	185	630	2260	45	720	1330	190	780	910	8	45	6070	462
1210	2990	750	1210	470	205	710	2540	50	800	1480	190	870	1000	8	45	8220	713
1360	3340	830	1360	530	225	800	2850	60	820	1550	220	1000	1130	8	45	11790	1030

SH1	Nominal	Ratio	RPM	GEAR UNIT SIZE											
				125	160	200	250	280	315	355	400	450	500	560	630
with out cooling	1.25 ↓ 2.8	900	1,800	46	68	119	177	206	—	—	—	—	—	—	—
			1,200	44	67	112	170	199	—	—	—	—	—	—	—
			900	43	66	109	167	196	—	—	—	—	—	—	—
			720	39	65	106	162	191	272	340	425	544	—	—	—
	3.15 ↓ 6.3	900	1,800	45	72	108	168	215	277	353	443	557	—	—	—
			6.3	40	65	103	163	210	267	343	423	542	—	—	—
			900	37	62	100	161	201	260	333	413	532	676	846	—
			720	35	58	98	153	191	255	323	408	527	671	841	—
			720	35	58	98	153	191	255	323	408	527	671	841	—
with fan cooling	1.25 ↓ 2.8	900	1,800	89	133	222	336	427	542	680	—	—	—	—	—
			1,200	72	113	186	275	355	460	578	—	—	—	—	—
			900	64	105	172	245	321	416	523	651	861	1028	—	—
			720	60	97	148	238	306	391	493	420	816	977	—	—
	3.15 ↓ 6.3	900	1,800	82	132	198	314	405	516	658	822	1074	1292	1617	—
			1,200	64	106	167	263	343	435	566	690	880	1088	1362	—
			900	56	96	152	238	306	394	508	625	795	986	1234	1544
			720	52	85	140	225	280	374	467	595	765	935	1170	1464
			720	52	85	140	225	280	374	467	595	765	935	1170	1464

SH2	Nominal	Ratio	RPM	GEAR UNIT SIZE												
				240	272	305	340	385	430	480	540	605	680	765	855	960
with out cooling	6.3 ↓ 11.2	900	1,800	42	58	67	79	101	134	178	226	276	365	482	572	610
			1,200	36	47	59	75	95	139	176	224	273	356	482	586	600
			900	33	42	56	73	93	136	171	218	267	351	469	580	592
			720	31	40	52	68	89	132	165	210	259	339	455	566	587
	12.5 ↓ 20	900	1,800	38	49	64	78	98	126	166	210	257	338	441	523	605
			1,200	32	41	52	69	88	125	162	209	254	332	437	523	585
			900	29	37	47	64	83	120	155	193	245	318	421	509	580
			720	27	34	45	59	77	115	148	193	235	306	406	495	569
			720	27	34	45	59	77	115	148	193	235	306	406	495	569
with fan cooling	6.3 ↓ 11.2	900	1,800	73	104	119	135	174	232	295	370	456	602	795	942	1139
			1,200	56	75	94	120	149	230	291	368	455	599	795	967	986
			900	48	60	81	112	136	224	282	358	441	579	774	955	909
			720	44	56	73	98	123	218	272	347	427	560	751	934	841
	12.5 ↓ 20	900	1,800	67	85	111	134	168	210	273	347	423	557	728	863	1028
			1,200	57	71	90	110	138	206	271	335	418	548	721	863	926
			900	50	64	81	98	122	197	255	330	401	525	694	840	875
			720	48	59	78	85	111	189	245	317	387	505	671	816	808
			720	48	59	78	85	111	189	245	317	387	505	671	816	808

SH3	Nominal	Ratio	RPM	GEAR UNIT SIZE															
				400	440	497	555	620	700	785	880	990	1105	1240	1395	1565	1760	2100	2300
with out cooling	22.4 ↓ 56	900	1,800	49	63	72	86	112	140	186	238	312	378	390	480	540	680	850	1063
			1,200	44	61	68	85	106	135	181	230	304	356	320	391	460	560	700	875
			900	42	58	65	81	101	128	173	219	290	333	270	330	390	490	613	766
			720	39	55	61	78	96	123	167	210	279	318	240	290	350	425	531	664
	63 ↓ 90	900	1,800	46	59	64	80	100	126	168	214	288	362	390	480	540	680	850	1063
			1,200	40	54	59	76	93	118	159	201	273	340	320	391	460	560	700	875
			900	37	50	55	72	86	110	149	188	257	319	270	330	390	490	613	766
			720	35	48	51	68	81	104	142	179	246	304	240	290	350	425	531	664
			720	35	48	51	68	81	104	142	179	246	304	240	290	350	425	531	664
with fan cooling	22.4 ↓ 56	900	1,800	85	105	119	141	184	231	308	393	515	624	640	770	880	1020	1275	1594
			1,200	81	101	113	139	176	224	299	380	501	587	480	560	660	820	1025	1281
			900	76	95	106	134	166	212	285	361	479	550	400	460	550	640	800	1000
			720	72	91	102	129	159	204	275	347	461	524	350	410	480	545	681	852
	63 ↓ 90	900	1,800	77	95	105	132	165	207	278	354	476	598	640	770	880	1020	1275	1594
			1,200	71	89	98	126	153	194	261	332	451	561	480	560	660	820	1025	1281
			900	66	84	90	118	142	180	245	311	424	526	400	460	550	640	800	1000
			720	62	79	86	113	134	172	234	296	405	501	350	410	480	545	681	852
			720	62	79	86	113	134	172	234	296	405	501	350	410	480	545	681	852

SH4	Nominal	Ratio	RPM	GEAR UNIT SIZE									
				440	497	555	620	700	785	880	990	1105	1240
with out cooling	100 ↓ 280	900	1,800	37	49	54	76	95	132	165	221	279	265
			1,200	33	43	48	68	85	121	153	203	266	230
			900	30	40	44	62	78	112	143	188	251	200
			720	27	37	41	58	74	106	135	178	241	180
	315 ↓ 500	900	1,800	35	46	51	72	91	133	163	215	256	265
			1,200	32	41	46	65	83	122	150	197	235	230
			900	28	38	42	59	75	113	140	182	218	200
			720	26	35	39	55	71	106	132	172	206	180
			720	26	35	39	55	71	106	132	172	206	180
with fan cooling	100 ↓ 280	900	1,800	61	80	89	126	156	217	273	364	460	370
			1,200	54	72	80	113	141	200	253	334	438	310
			900	49	65	72	103	129	185	235	310	414	260
			720	45	60	67	96	120	174	222	293	397	235
	315 ↓ 500	900	1,800	59	76	85	119	150	219	269	355	423	370
			1,200	51	68	76	107	136	201	248	325	388	310
			900	46	61	68	97	124	186	230	300	359	260
			720	42	57	64	91	117	175	218	283	340	235
			720	42	57	64	91	117	175	218	283	340	235

SV2	Nominal	Ratio	RPM	GEAR UNIT SIZE													
				240	270	305	340	385	430	480	540	605	680	765	855	960	1080
	with out cooling	6.3 ↓ 20	1,800	41	55	68	88	110	138	176	220	286	374	473	594	759	990
			1,200	37	50	62	80	100	125	160	200	260	340	430	540	690	900
			900	34	46	56	73	91	114	146	182	237	309	391	491	628	819
			720	30	41	51	66	82	102	131	164	213	278	352	442	565	737

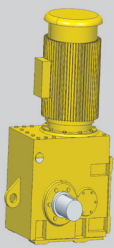
SV3	Nominal	Ratio	RPM	GEAR UNIT SIZE													
				400	440	495	555	620	700	785	880	990	1105	1240	1395	1565	1760
	with out cooling	22.4 ↓ 90	1,800	52	64	83	103	132	165	209	275	352	440	550	682	836	1056
			1,200	47	58	75	94	120	150	190	250	320	400	500	620	760	960
			900	43	53	68	86	109	137	173	228	291	364	455	564	692	874
			720	38	48	61	77	98	123	156	205	262	328	410	508	622	786

SB2	Nominal	Ratio	RPM	GEAR UNIT SIZE								
				160	200	250	280	315	355	400	450	500
with out cooling	5 ↓ 10	1,800	43	70	108	124	155	210	277	337	422	
		1,200	43	68	101	123	153	205	267	326	411	
		900	41	65	99	120	151	202	261	320	404	
		720	40	63	97	117	147	196	251	314	402	
	11.2 ↓ 16	1,800	39	65	95	118	142	208	272	328	422	
		1,200	38	64	90	116	138	199	256	318	411	
		900	36	61	88	113	133	193	248	312	404	
		720	34	59	85	110	128	191	246	306	402	
with fan cooling	5 ↓ 10	1,800	69	115	165	205	250	503	654	795	991	
		1,200	70	112	162	203	248	432	552	683	879	
		900	68	108	164	198	246	396	502	627	822	
		720	65	104	160	192	243	357	467	586	748	
	11.2 ↓ 16	1,800	64	107	149	195	232	500	632	791	1006	
		1,200	63	105	148	192	231	418	540	670	863	
		900	59	100	144	187	219	375	495	608	792	
		720	57	97	140	181	212	357	450	569	739	

SB2	Nominal	Ratio	RPM	GEAR UNIT SIZE												
				305	340	385	430	480	540	605	680	765	855	960	1080	1210
with out cooling	18 ↓ 80	1,800	48	58.1	73.4	92.3	120	150	179	218	272	337	422	524	639	779
		1,200	43.9	54.1	69.4	86.2	110	139	169	207	256	326	412	514	627	764
		900	41.8	52.1	67.3	83.1	105	134	164	202	248	320	405	508	620	755
		720	37.4	49.3	63.8	80.8	102	132	157	196	242	315	400	502	612	747
with fan cooling	18 ↓ 80	1,800	112	140	177	218	280	354	427	517	673	826	1064	1335	1628	1985
		1,200	92	115	146	182	230	292	355	435	550	704	890	1116	1361	1660
		900	82	102	131	164	204	262	320	395	490	642	805	1010	1231	1502
		720	68	89	119	149	187	242	289	365	460	595	757	950	1158	1412

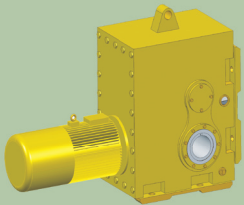
SB2	Nominal	Ratio	RPM	GEAR UNIT SIZE												
				340	385	430	480	540	605	680	765	855	960	1080	1210	1360
with out cooling	100 ↓ 355	1,800	26.2	32.1	41.7	53.2	71.4	90.8	114	140	174	213	272	338	433	
		1,200	22.2	29.1	36.6	47.1	61.2	77.5	99	124	158	201	256	317	406	
		900	20.1	27.5	34.3	44.0	56.1	70.9	91	116	151	193	249	309	396	
		720	20.0	25.5	32.3	40.8	53.6	67.2	89	111	140	179	242	300	384	
with fan cooling	100 ↓ 355	1,800	62.4	77.0	96.7	126.1	168.5	213.4	271	330	412	509	636	791	1013	
		1,200	46.4	62.0	78.0	99.9	132.2	166.6	215	262	335	420	550	688	869	
		900	39.4	53.4	68.3	87.1	109.4	141.1	178	226	293	382	491	609	784	
		720	36.6	47.7	59.8	74.7	100.8	126.3	167	203	258	333	457	549	710	

WK-Series



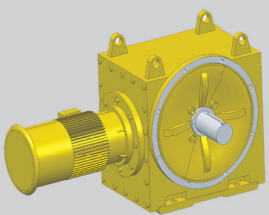
KR-TYPE

KR Right angle type / Solid shaft gear unit



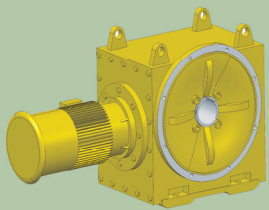
KH-TYPE

KH Right angle type / Hollow shaft gear unit



KF-TYPE

KF Flange type / Solid shaft gear unit



KW-TYPE

KW Flange type / Hollow shaft gear unit

▶ Type Classification <형식분류>

KF

TYPE

K R : RIGHT ANGLE / TYPE SOLID SHAFT
K H : RIGHT ANGLE / TYPE HOLLOW SHAFT
K F : FLANGE TYPE / SOLID SHAFT
K W : FLANGE TYPE / HOLLOW SHAFT

1000

OUTPUT TORQUE

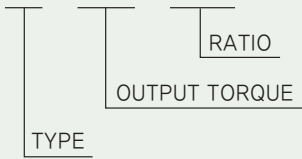
0030 : 30
0045 : 45
⋮
2900 : 2900

0120

RATIO

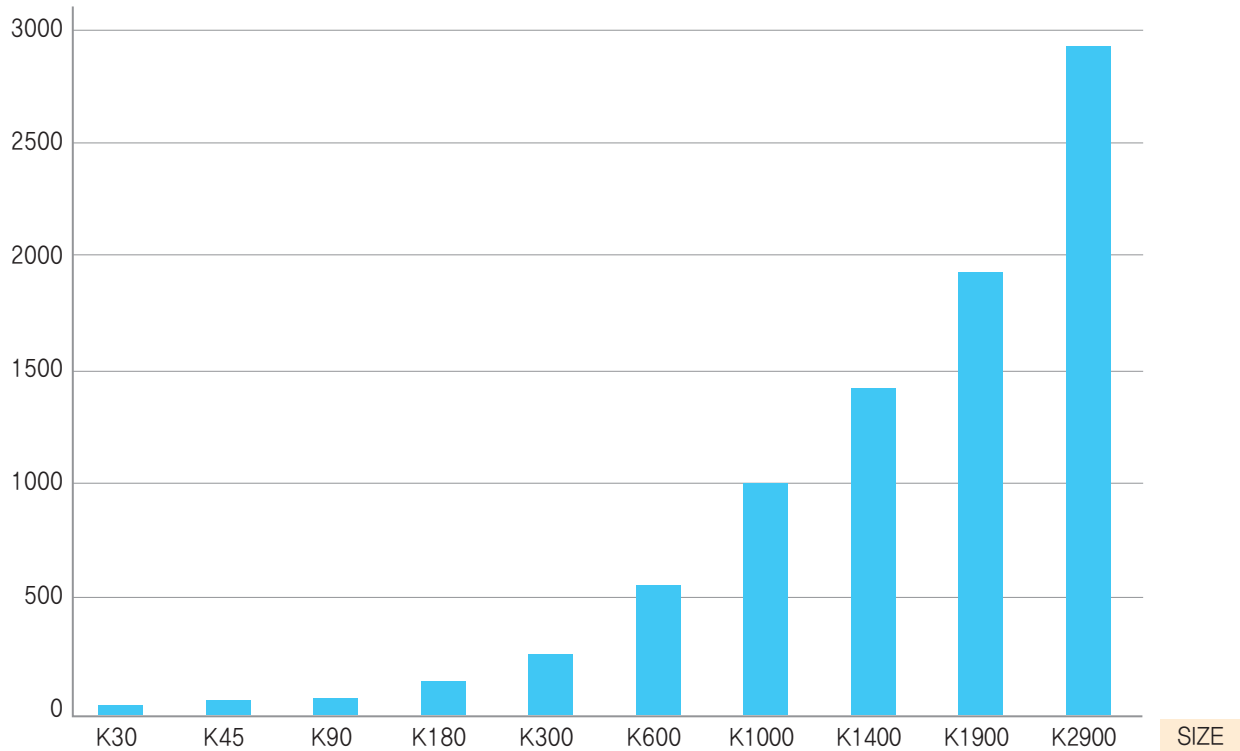
0010 : 1/10
0020 : 1/20
⋮
0120 : 1/120

Example : KF - 0045 - 0020

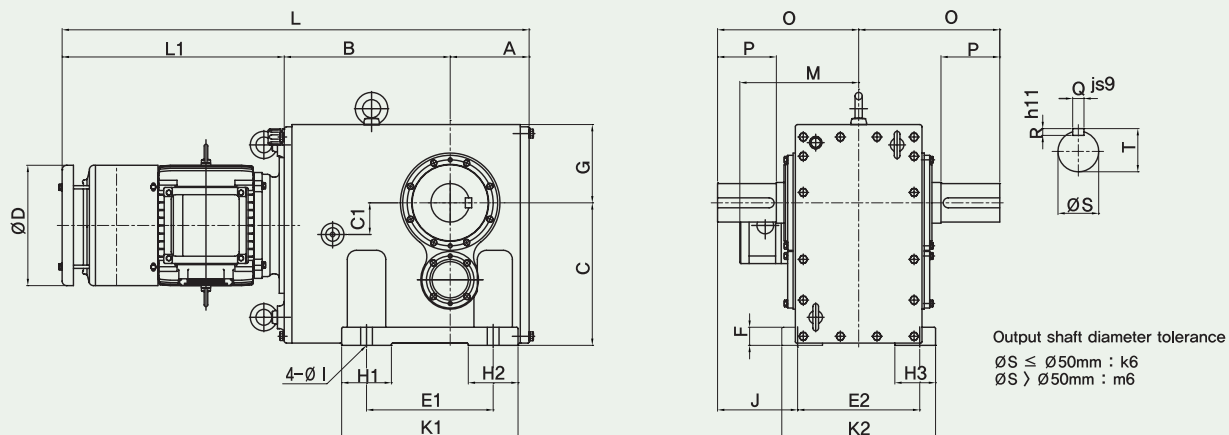


▶ Allowable torque for each size <SIZE별 허용 TORQUE>

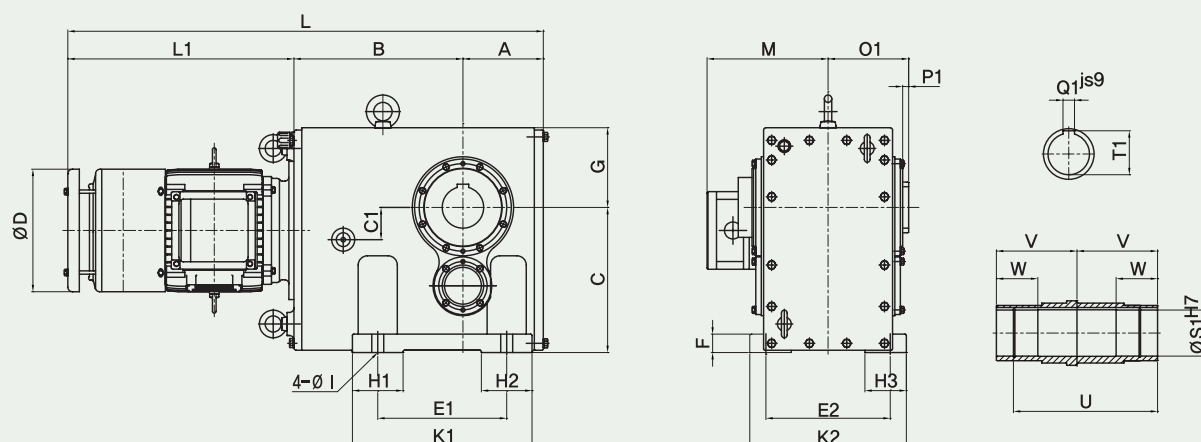
Output Torque
(kgf.m)



KR Series



KH Series



TYPE : KR / KH

SIZE	FRAME	A B	C C1	D	E1 E2	F G	H1 H2 H3	I J	K1 K2	L1	L	M	O P	Q R	S T	O1 P1	Q1 T1	S1 U	V W	Weight (kg)
KR30 KH30	80 90 100 112M	71 149	112 16.4	180 199 222 244	130 120	18 75	45 35 40	11 75	172 145	255 315 345 330	475 535 565 550	158 172 180 205	135 60	8 7	30 33	74 3	10 38.3	35 130	74 50	35 36 45 53
KR45 KH45	80 90 100 112M 132S	89 163	140 12.2	180 199 222 244 284	120 140	22 91	55 30 45	14 91	185 170	258 313 348 328 383	510 565 600 580 635	158 172 180 205 220	161 70	10 8	35 38	90 4	12 43.3	40 156	90 60	51 55 64 72 85
KR90 KH90	80 90 100 112M 132S 132M 160M	108 198	180 190	180 199 222 244 284 284 337	150 165	25 115	55 30 45	18 113.5	230 200	259 314 344 329 384 419 474	565 620 650 635 690 725 780	158 172 180 205 220 220 272	196 90	14 9	45 48.5	105 4.5	14 53.8	50 183	105 70	85 88 96 105 116 138 155
KR180 KH180	90 100 112M 132S 132M 160M 160L 180M	124 230	212 20.4	199 222 244 284 284 337 337 374	180 180	32 133	70 40 55	22 150	260 230	316 346 331 381 416 476 521 561	670 700 685 735 770 830 875 915	172 180 205 220 220 272 272 288	240 120	18 11	60 64	120 5.5	18 64.4	60 210	120 80	128 138 146 157 179 194 207 235
KR300 KH300	112M 132S 132M 160M 160L 180M 180L 200L 225S	150 280	265 28	244 284 284 337 337 374 374 414 456	240 240	38 158	80 55 55	26 171	330 290	300 380 420 475 520 560 595 650 675	760 810 850 905 950 990 1025 1080 1105	205 220 220 272 272 282 288 409 434	291 140	20 12	70 74.5	150 5.5	20 74.9	70 270	150 100	231 240 261 276 290 324 330 380 420
KR600 KH600	132S 132M 160M 160L 180M 180L 200L 225S 225M	190 321	315 50	284 284 337 337 374 374 414 456 456	280 270	42 188	100 75 70	33 212	390 340	384 419 474 519 559 594 654 674 704	895 930 985 1030 1070 1106 1165 1185 1215	220 220 272 272 282 288 409 434	347 170	25 14	90 95	175 6	22 85.4	80 313	175 120	321 340 360 373 401 411 462 578 619
KR1000 KH1000	160M 160L 180M 180L 200L 225S 225M	213 390	375 58	337 337 374 374 414 456 456	350 330	45 225	110 95 90	39 253	470 400	477 517 557 597 652 672 702	1080 1120 1160 1200 1255 1275 1305	272 272 282 288 409 434	418 210	28 16	110 116	205 8	28 106.4	100 373	205 140	551 567 599 604 657 770 810
KR1400 KH1400	160M 160L 180M 180L 200L 225S 225M 250M	250 430	450 65	337 337 374 374 414 456 456 507	380 420	50 255	130 110 100	39 290	530 500	480 520 560 600 655 675 705 745	1160 1200 1240 1280 1335 1355 1385 1425	317 317 327 333 454 479 479 485	460 220	32 18	120 127	250 9	32 122.4	115 460	250 160	820 837 862 870 919 1035 1076 1145
KR1900 KH1900	180M 180L 200L 225S 225M 250S 250M	266 480	460 70	374 374 414 456 456 507 507	420 400	55 280	120 115 90	42 320	580 470	557 597 652 672 702 796 834	1303 1343 1398 1418 1448 1542 1580	282 288 409 434 434 495 495	520 250	36 20	130 138	260 10	32 132.4	125 465	260 175	939 952 1025 1180 1240 1270 1330
KR2900 KH2900	200L 225S 225M 250S 250M 280S 280M	320 585	560 85	414 456 456 507 507 574 574	500 480	65 340	145 140 110	48 380	700 600	652 672 702 796 834 885 936	1557 1577 1607 1701 1739 1790 1841	409 434 434 495 495 491 491	620 280	40 22	150 159	310 12	36 148.4	140 560	310 210	1650 1780 1830 1870 1930 2120 2210

KF Series

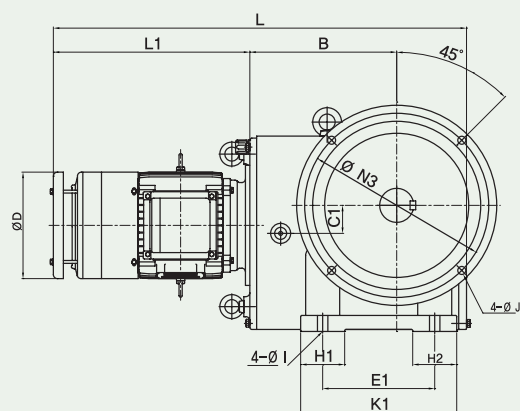


FIG. 1

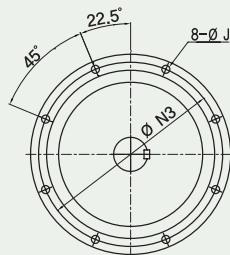
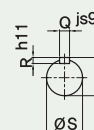
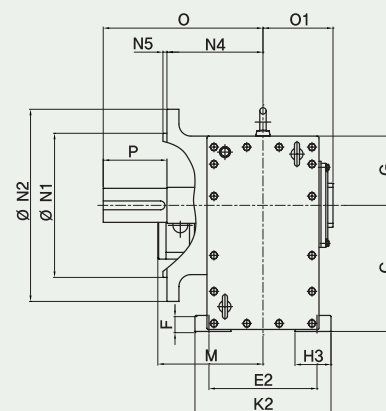


FIG. 2



Output shaft diameter tolerance
 $\text{ØS} \leq \text{Ø}50\text{mm} : \text{k6}$
 $\text{ØS} > \text{Ø}50\text{mm} : \text{m6}$

Flange diameter tolerance
 $\text{ØE} \leq \text{Ø}230\text{mm} : \text{j6}$
 $\text{ØE} > \text{Ø}230\text{mm} : \text{h6}$

KW Series

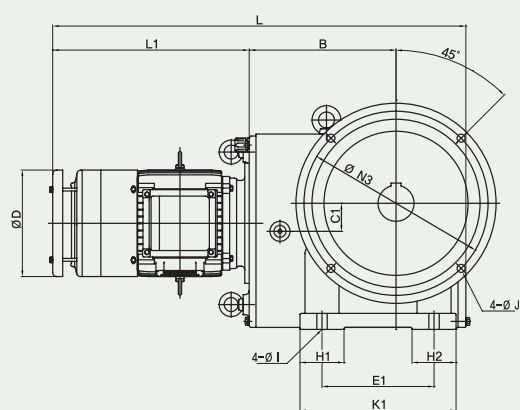


FIG. 1

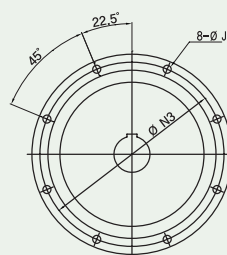
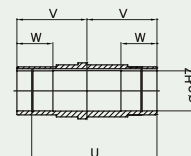
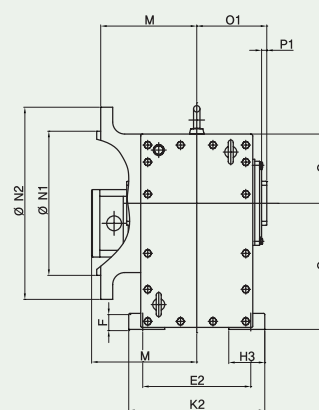


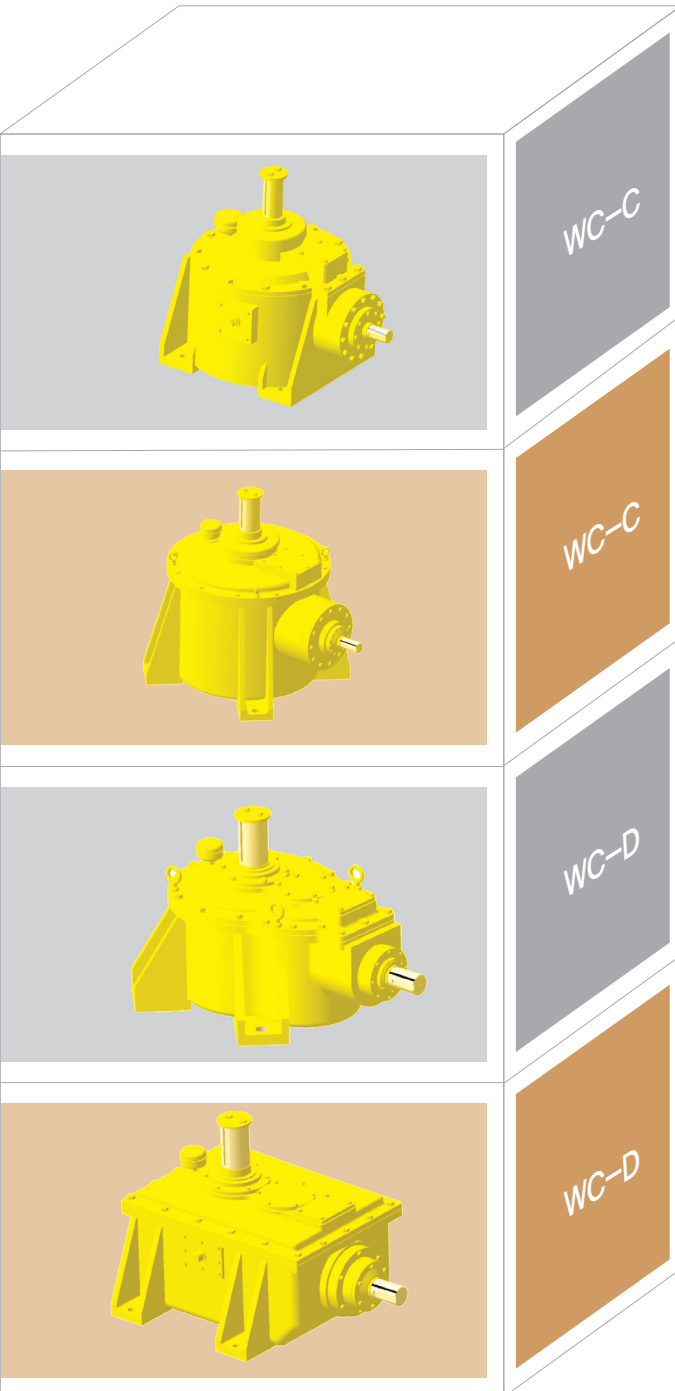
FIG. 2



TYPE : KF / KW

SIZE	FRAME	TYPE B	C C1	D	E1 E2	F G	H1 H2 H3	I J	K1 K2	L1	L	M	N1 N2 N3	N4 N5	O P	Q R	S T	O1 P1	Q1 T1	S1 U	V W	Weight (kg)
KF30 KW30	80 90 100 112M	FIG.1 149	112 16.4	180 199 222 244	130 120	18 75	45 35 40	11 11	172 145	255 315 345 330	475 535 565 550	158 172 180 205	130 200 165	94 3.5	154 60	8 7	30 33	74 3	10 38.3	35 130	74 50	35 36 45 53
KF45 KW45	80 90 100 112M 132S	FIG.1 163	140 12.2	180 199 222 244 284	120 140	22 91	55 30 45	14 14	185 170	258 313 348 328 383	510 565 600 580 635	158 172 180 205 220	180 250 210	113 4	183 70	10 8	35 38	90 4	12 43.3	40 156	90 60	51 55 64 72 85
KF90 KW90	80 90 100 112M 132S 132M 160M	FIG.1 198	180 190	180 199 222 244 284 284 337	150 165	25 115	55 30 45	18 14	230 200	259 314 344 329 384 419 474	565 620 650 635 690 725 780	158 172 180 205 220 220 272	180 250 215	142 4	232 90	14 9	45 48.5	105 4.5	14 53.8	50 183	105 70	85 88 96 105 116 138 155
KF180 KW180	90 100 112M 132S 132M 160M 160L 180M	FIG.1 230	212 20.4	199 222 244 284 284 337 337 374	180 180	32 133	70 40 55	22 18	260 230	316 346 331 381 416 476 521 561	670 700 685 735 770 830 875 915	172 180 205 220 220 272 272 288	250 350 300	147 5	267 120	18 11	60 64	120 5.5	18 64.4	60 210	120 80	128 138 146 157 179 194 207 235
KF300 KW300	112M 132S 132M 160M 160L 180M 180L 200L 225S	FIG.2 280	265 28	244 284 284 337 337 374 374 414 456	240 240	38 158	80 55 55	26 18	330 290	300 380 420 475 520 560 595 650 675	760 810 850 905 950 990 1025 1080 1105	205 220 220 272 272 282 288 409 434	350 450 400	192 5	332 140	20 12	70 74.5	150 5.5	20 74.9	70 270	150 100	231 240 261 276 290 324 330 380 420
KF600 KW600	132S 132M 160M 160L 180M 180L 200L 225S 225M	FIG.2 321	315 50	284 284 337 337 374 374 414 456 456	280 270	42 188	100 75 70	33 18	390 340	384 419 474 519 559 594 654 674 704	895 930 985 1030 1070 1106 1165 1185 1215	220 220 272 272 282 288 409 434	350 450 400	216 5	386 170	25 14	90 95	175 6	22 85.4	80 313	175 120	321 340 360 373 401 411 462 578 619
KF1000 KW1000	160M 160L 180M 180L 200L 225S 225M	FIG.2 390	375 58	337 337 374 374 414 456 456	350 330	45 225	110 95 90	39 18	470 400	477 517 557 597 652 672 702	1080 1120 1160 1200 1255 1275 1305	272 272 282 288 409 434	450 550 500	256 5	466 210	28 16	110 116	205 8	28 106.4	100 373	205 140	551 567 599 604 657 770 810
KF1400 KW1400	160M 160L 180M 180L 200L 225S 225M 250M	FIG.2 430	450 65	337 337 374 374 414 456 456 507	380 420	50 255	130 110 100	39 23	530 500	480 520 560 600 655 675 705 745	1160 1200 1240 1280 1335 1355 1385 1425	317 317 327 333 454 479 479 485	550 660 600	290 6	510 220	32 18	120 127	250 9	32 122.4	115 460	250 160	820 837 862 870 919 1035 1076 1145
KF1900 KW1900	180M 180L 200L 225S 225M 250S 250M	FIG.2 480	460 70	374 374 414 456 456 507 507	420 400	55 280	120 115 90	42 27	580 470	557 597 652 672 702 796 834	1303 1343 1398 1418 1448 1542 1580	282 288 409 434 434 495 495	560 685 620	330 7	580 250	36 20	130 138	260 10	32 132.4	125 465	260 175	939 952 1025 1180 1240 1270 1330
KF2900 KW2900	200L 225S 225M 250S 250M 280S 280M	FIG.2 585	560 85	414 456 456 507 507 574 574	500 480	65 340	145 140 110	48 27	700 600	652 672 702 796 834 885 936	1557 1577 1607 1701 1739 1790 1841	409 434 434 495 495	670 825 750	420 7	700 280	40 22	150 159	310 12	36 148.4	140 560	310 210	1650 1780 1830 1870 1930 2120 2210

WC-Series



WC-C

WC-C

WC-D

WC-D



Cooling Tower Unit

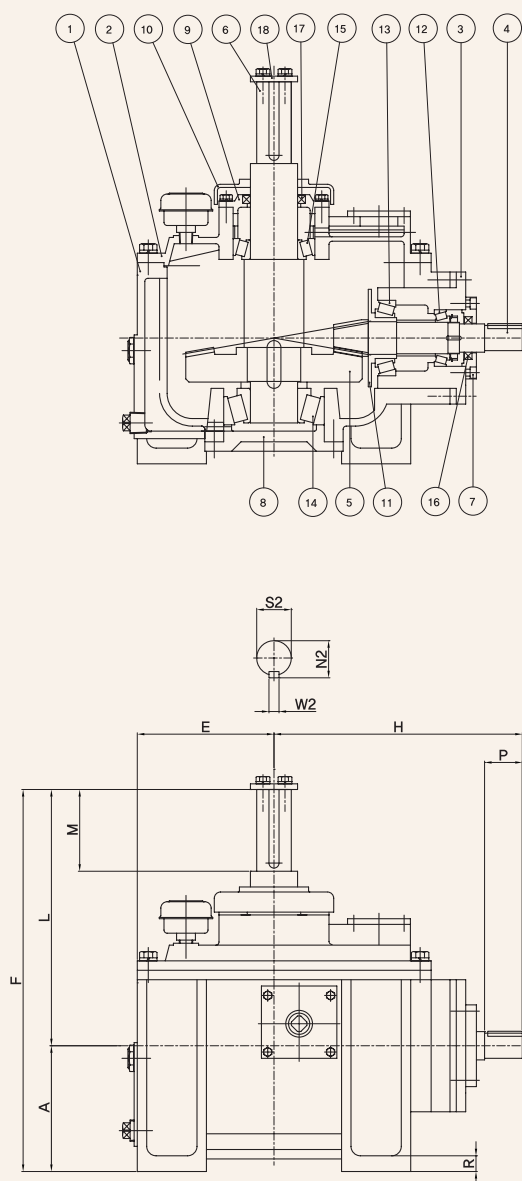
WC

RPM INPUT SHAFT SPEED	SIZE														thrust capacity	weight	oil
	RATIO	WC5C													Kgf	Kg	ℓ
		3.05	3.60	3.75	4.11	4.36	4.55	4.75	5.11	5.3	5.56	5.78	6.11	6.33			
960		55	42	35	31	31	27	24	22	20	19	18	17	16	500 (500N)	125	40
		41	31	26	23	23	20	18	16	15	14	13	12	12			
1160		67	55	42	37	37	32	29	27	25	23	22	20	19			
		50	41	31	27	27	24	21	20	18	17	16	15	14			
1450		77	64	52	45	45	40	36	33	30	28	27	25	23			
		57	48	39	33	33	30	27	24	22	21	20	18	17			
1750		94	77	62	54	54	48	43	40	38	35	33	30	28			
		70	57	46	40	40	36	32	30	28	26	24	22	21			
		WC7C													1000 (1000N)	170	40
		3.07	3.62	3.77	4.08	4.18	4.55	4.73	4.91	5.27	5.57	5.70	6.11	6.43			
960		70	60	58	57	56	54	52	51	47	40	38	35	33			
		52	45	43	42	42	40	39	38	35	30	28	26	24			
1160		82	71	68	67	66	64	62	61	57	48	46	42	39			
		61	53	51	50	49	48	46	45	42	36	34	31	29			
1450		95	89	86	84	82	79	77	75	70	59	57	52	48			
		71	66	64	63	61	59	57	56	52	44	42	39	36			
1750		110	107	104	100	98	94	91	89	83	71	68	62	58			
		82	80	78	75	73	70	68	66	62	53	51	46	43			
		WC8C5													1500 (1500N)	415	40
		3.64	3.90	4.09	4.58	4.83	5.13	5.55	5.67	6.10	6.29	6.50	6.70	6.89			
960		118	110	105	95	90	83	75	72	63	57	55	54	53			
		88	82	78	71	67	62	56	54	47	42	41	40	39			
1160		143	133	127	113	107	97	87	85	75	68	66	65	64			
		107	99	95	84	80	72	65	63	56	51	49	48	48			
1450		178	167	159	139	131	118	106	102	90	84	82	80	79			
		133	125	119	104	98	88	79	76	67	63	61	60	59			
1750		215	201	192	166	156	143	128	124	107	100	97	95	94			
		161	150	144	124	117	107	96	93	80	75	72	71	70			
		WC9C5													2000 (2000N)	570	40
		3.8	4.15	4.53	4.75	5.09	5.25	5.58	5.64	5.91	6.27	6.55	6.70	7.11			
960		152	152	152	152	146	141	132	130	119	114	99	95	86			
		114	114	114	114	109	105	99	97	89	85	74	71	64			
1160		184	184	184	184	176	171	159	156	142	136	119	114	105			
		138	138	138	138	132	128	119	117	106	102	89	85	78			
1450		230	230	230	230	220	214	190	187	174	167	146	139	127			
		172	172	172	172	165	160	142	140	130	125	109	104	95			
1750		287	278	278	278	266	253	227	222	207	199	174	166	154			
		208	208	208	208	199	189	170	166	155	149	130	124	115			
		WC10CN5													2500 (2500N)	755	50
		4.06	4.27	4.54	4.79	5.09	5.29	5.55	5.64	5.91	6.27	6.55	6.85	7.10			
960		229	229	229	229	229	229	223	220	210	198	185	172	162			
		171	171	171	171	171	171	167	165	157	148	138	129	121			
1160		277	277	277	277	277	277	270	266	253	236	220	202	189			
		207	207	207	207	207	207	202	199	189	177	165	151	141			
1450		346	346	346	346	346	346	338	332	317	290	271	250	233			
		259	259	259	259	259	259	253	249	237	217	203	187	174			
1750		418	418	418	418	418	418	407	401	383	344	322	297	280			
		313	313	313	313	313	313	305	300	287	258	241	222	210			
		WC12CN5													3000 (3000N)	1145	80
		4.24	4.52	4.81	5.07	5.27	5.53	5.71	6.01	6.23	6.58	6.73	7.33				
960		341	341	341	326	313	298	289	275	265	251	245	225				
		255	255	255	244	234	223	216	206	198	188	183	168				
1160		412	412	412	393	379	361	349	332	320	303	296	272				
		309	309	309	294	284	270	261	349	240	227	222	204				
1450		515	515	515	492	473	451	437	415	400	379	371	340				
		386	386	386	369	354	338	327	311	300	284	278	255				
1750		621	621	621	594	571	544	527	501	483	457	447	411				
		465	465	465	445	428	408	395	375	362	342	335	308				

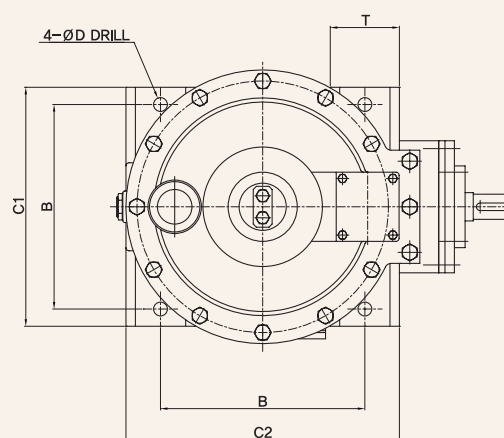
• Listed ratio expressed in black number will be short delivery

RPM INPUT SHAFT SPEED	SIZE														thrust capacity	weight	oil			
	RATIO	WC10D5													Kgf	Kg	ℓ			
960		6.29	6.5	7.00	7.50	8.19	8.72	9.58	9.75	10.00	10.25	10.50	11.12		2500 (2500N)	460	16			
		101	101	101	101	101	101	94	92	88	86	83	76							
1160		75	75	75	75	75	75	70	69	66	64	62	57							
		120	120	120	120	120	120	111	109	105	102	99	90							
1450		90	90	90	90	90	90	83	81	78	76	74	67							
		148	148	148	148	148	148	138	135	130	125	120	110							
1750		111	111	111	111	111	111	103	101	97	93	90	82							
		175	175	175	175	175	175	167	163	156	151	145	131							
		131	131	131	131	131	131	125	122	117	113	108	98							
		WC12D5													3000 (3000N)	910	50			
		6.25	6.50	7.00	7.50	8.19	8.72	9.58	9.75	10.00	10.25	10.50	11.14							
960		178	178	178	178	178	166	143	140	135	131	126	115							
		133	133	133	133	133	124	107	105	101	98	94	86							
1160		212	212	212	212	210	196	169	165	160	154	148	136							
		159	159	159	159	157	147	126	123	120	115	111	102							
1450		260	260	260	260	256	239	206	301	195	188	182	166							
		195	195	195	195	192	171	154	150	146	141	136	124							
1750		308	308	308	308	301	281	243	237	229	222	215	169							
		231	231	231	231	225	210	182	177	171	166	161	147							
		WC14D5													3500 (3500N)	1100	60			
		6.36	6.52	6.72	7.53	7.89	8.64	9.10	9.38	9.80	10.23	11.12								
960		297	291	281	250	239	218	204	201	192	185	169								
		222	218	210	187	179	163	153	150	144	138	126								
1160		354	348	339	303	289	264	246	243	232	223	205								
		265	261	254	227	216	198	184	182	174	167	153								
1450		436	428	421	378	361	330	308	304	291	279	256								
		327	321	315	283	270	247	231	228	218	209	192								
1750		520	511	501	457	436	398	372	367	351	337	309								
		390	383	375	342	327	298	279	275	263	252	231								
		WC15D5													4000 (4000N)	1200	58			
		6.36	6.52	6.72	7.53	7.89	8.64	9.10	9.38	9.80	10.23	11.12								
960		322	320	315	306	304	300	295	290	277	267	245								
		241	240	236	229	228	225	221	217	207	200	183								
1160		385	384	380	378	375	360	356	351	335	323	296								
		288	288	285	283	281	270	267	263	251	242	222								
1450		478	474	465	460	454	450	445	439	420	404	370								
		358	355	348	345	340	337	333	329	315	303	277								
1750		582	578	568	560	552	540	537	530	207	487	447								
		436	433	426	420	414	405	402	397	380	365	335								
		WC17D5													4500 (4500N)	2000	110			
		6.25	6.53	6.98	7.50	8.08	8.63	8.95	9.56	9.67	9.99	10.20	10.59	10.82						
960		580	580	580	580	580	580	580	580	577	551	540	515	496						
		435	435	435	435	435	435	435	435	432	413	405	386	372						
1160		689	689	689	689	689	689	689	689	678	650	634	603	585						
		516	516	516	516	516	516	516	516	508	487	475	452	438						
1450		842	842	842	842	842	842	842	842	830	795	776	730	711						
		631	631	631	631	631	631	631	631	622	596	582	547	533						
1750		996	996	996	996	996	996	996	996	978	940	914	860	836						
		747	747	747	747	747	747	747	747	733	705	685	645	627						
		WC19D5													5000 (5000N)	2700	180			
		6.32	6.47	7.02	7.49	7.92	8.51	9.03	9.49	9.68	9.98	10.19	10.52	11.12						
960		850	850	850	850	850	850	850	832	815	791	775	750	710						
		637	637	637	637	637	637	637	624	611	593	581	562	532						
1160		1008	1008	1008	1008	1008	1008	1008	990	971	942	922	893	845						
		756	756	756	756	756	756	756	742	728	706	691	669	633						
1450		1230	1230	1230	1230	1230	1230	1230	1218	1194	1158	1134	1099	1039						
		922	922	922	922	922	922	922	913	895	868	850	824	779						
1750		1454	1454	1454	1454	1454	1454	1454	1448	1420	1377	1349	1306	1236						
		1090	1090	1090	1090	1090	1090	1090	1086	1065	1032	1011	979	927						

• For higher ratio than listed above should be consulted. Ratio up 14.0 are available if desired.

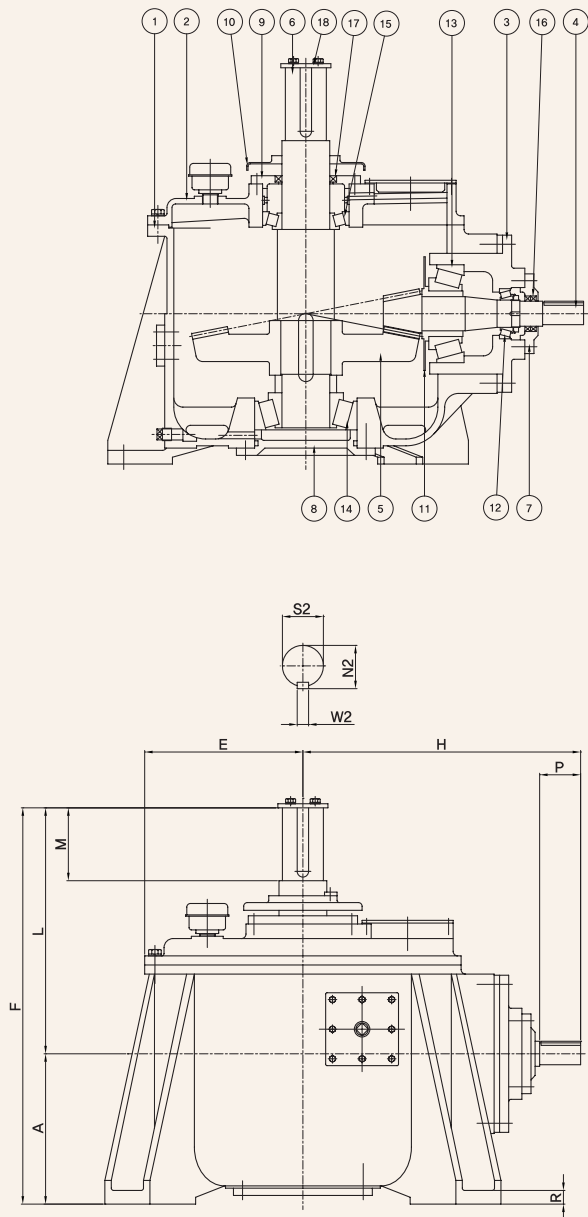


1. LOWER CASE
2. UPPER CASE
3. BEARING HOUSING
4. INPUT BEVEL PINION
5. 1ST BEVEL GEAR
6. OUTPUT SHAFT
7. BEARING COVER
8. BEARING COVER
9. BEARING COVER
10. DUST COVER
11. OIL SPLASH
12. BEARING
13. BEARING
14. BEARING
15. BEARING
16. OIL SEAL
17. OIL SEAL
18. END PLATE

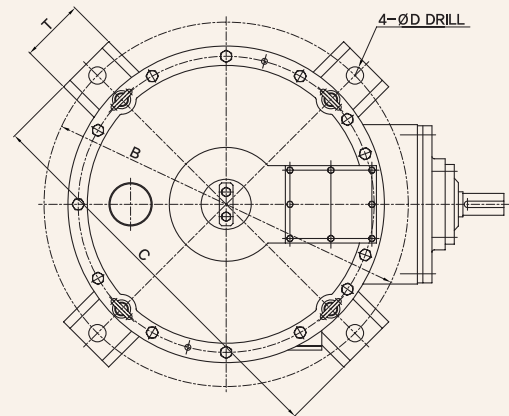


Dimension

SIZE	A	B	C1	C2	D	E	F	H	L	P	M	S1	V1	W1	S2	N2	W2	R	T
WC5C	200	283	340	378	22	180	600	360	400	55	150	35h6	38	10	55h6	59	16	20	110
WC7C	200	325.2	380	435	22	210	645	395	445	60	150	40h6	43	12	60h6	64	18	20	110
WC8C5	305	463.2	530	590	25	278	825	530	520	80	150	50h6	53	16	75h6	78.5	20	20	130

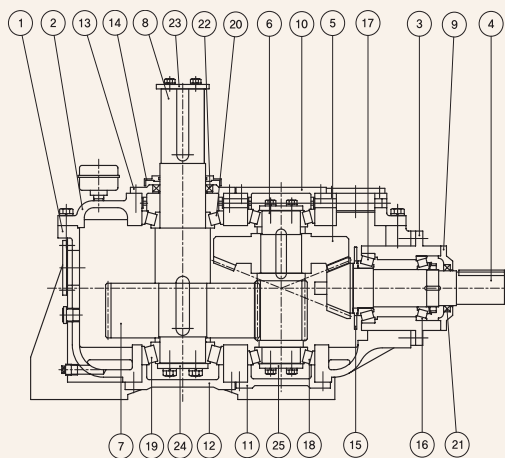


1. LOWER CASE
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9. BEARING COVER
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12. BEARING
13. BEARING
14. BEARING
15. BEARING
16. OIL SEAL
17. OIL SEAL
18. END PLATE

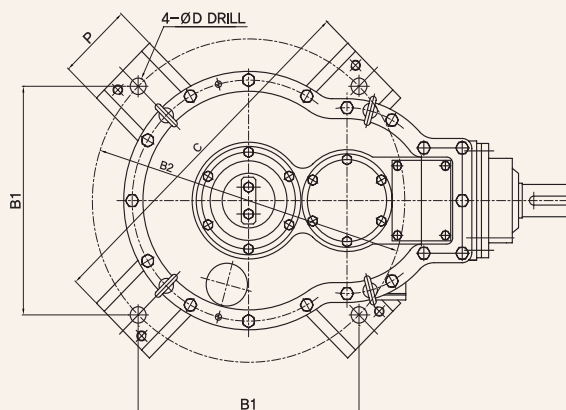
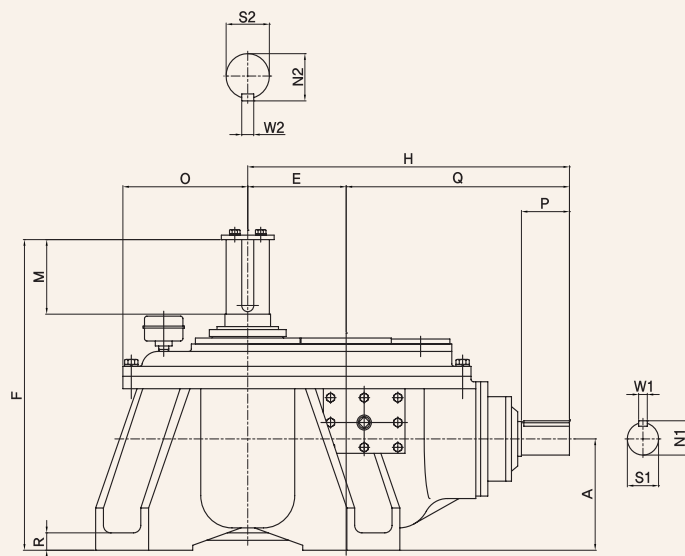


Dimension

SIZE	A	B	C	D	E	F	H	L	P	M	S1	V1	W1	S2	N2	W2	R	T
WC9C5	330	800	840	30	325	850	560	520	90	150	48m6	51.5	12	90h6	98	24	30	140
WC10CN5	380	920	1000	33	350	950	630	570	90	150	55m6	60	15	100h6	109	28	35	150
WC12C5	460	1100	1200	38	400	1180	810	720	120	240	65m6	71	18	110h6	119	28	38	200

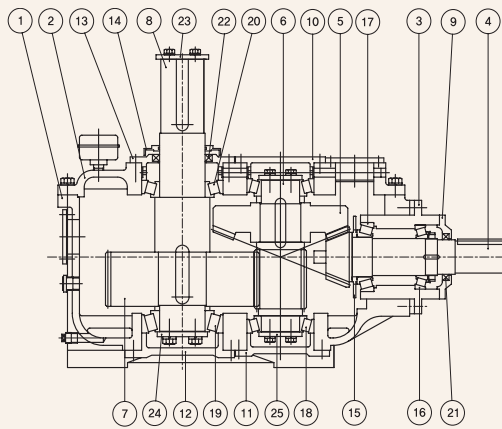


1. LOWER CASE
2. UPPER CASE
3. BEARING HOUSING
4. INPUT BEVEL PINION
5. 1ST BEVEL GEAR
6. 2ND PINION
7. 2ND GEAR
8. OUTPUT SHAFT
9. BEARING COVER
10. BEARING COVER
11. BEARING COVER
12. BEARING COVER
13. BEARING COVER
14. DUST COVER
15. OIL SPLASH
16. BEARING
17. BEARING
18. BEARING
19. BEARING
20. BEARING
21. OIL SEAL
22. OIL SEAL
23. END PLATE
24. END PLATE
25. END PLATE

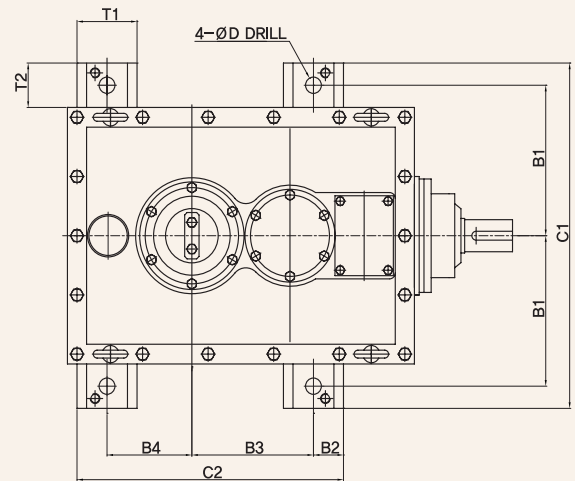
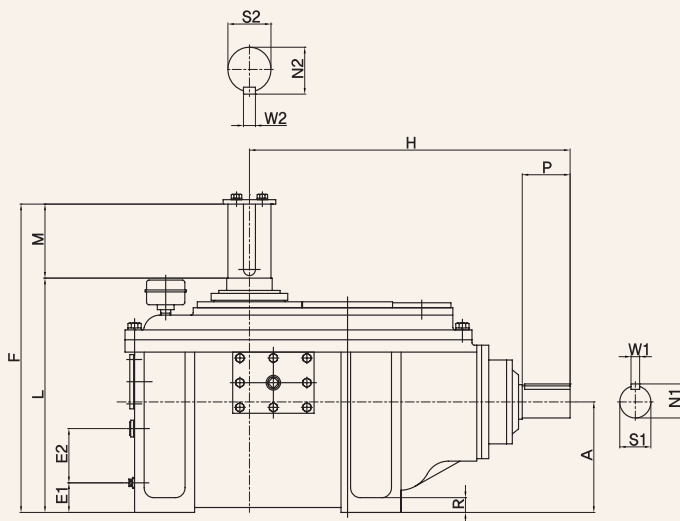


Dimension

SIZE	A	B1	B2	C	D	E	F	H	P	M	O	Q	S1	N1	W1	S2	N2	W2	R	T
WC10D5	224	460	650.5	740	33	205	610	650	80	150	260	445	45h6	48.5	14	90h6	95	25	35	150
WC12D5	280	520	735.4	840	35	254.5	855	950	130	230	300	695.5	60h6	64	18	110h6	116	28	35	150
WC14D5	320	620	876.8	1000	35	300	890	950	115	230	375	650	60h6	64	18	115h6	122	32	40	180
WC15D5	320	620	876.8	1000	35	300	890	950	115	230	375	650	60h6	64	18	132h6	140	36	40	180



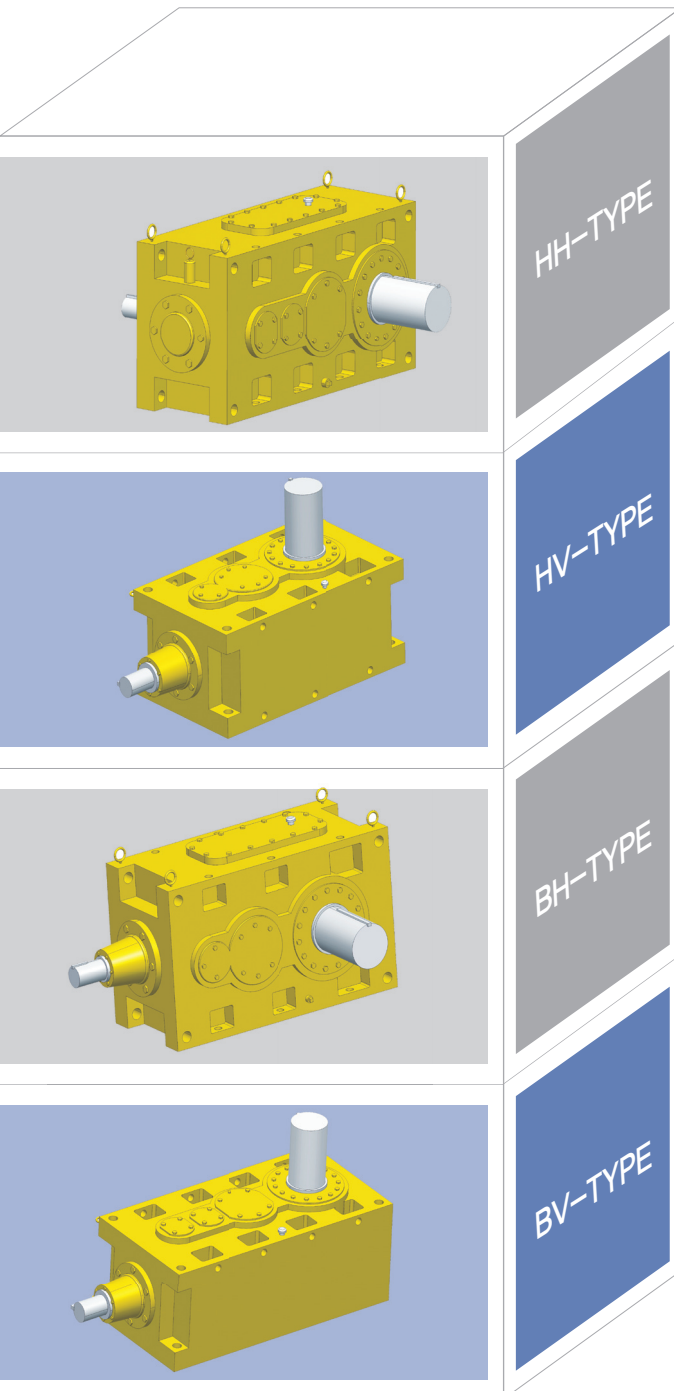
1. LOWER CASE
2. UPPER CASE
3. BEARING HOUSING
4. INPUT BEVEL PINION
5. 1ST BEVEL GEAR
6. 2ND PINION
7. 2ND GEAR
8. OUTPUT SHAFT
9. BEARING COVER
10. BEARING COVER
11. BEARING COVER
12. BEARING COVER
13. BEARING COVER
14. DUST COVER
15. OIL SPLASH
16. BEARING
17. BEARING
18. BEARING
19. BEARING
20. BEARING
21. OIL SEAL
22. OIL SEAL
23. END PLATE
24. END PLATE
25. END PLATE



Dimension

SIZE	A	B1	B2	B3	B4	C1	C2	D	E1	E2	F	H	L	P	M	S1	N1	W1	S2	N2	W2	R	T1	T2
WC17D5	355	450	100	580	250	1000	1030	35	100	300	1050	1100	800	120	250	80h6	85	22	165h6	174	40	50	200	160
WC19D5	400	500	120	680	350	1200	1270	45	120	300	1140	1350	840	150	300	90h6	95	25	190h6	200	45	50	240	180

WH-Series



HH Helical – Horizontal gear unit

HV Helical – Vertical gear unit

BH Bevel – Horizontal gear unit

BV Bevel – Vertical gear unit

▶ Type Classification <형식분류>

BH

TYPE

HH : HELICAL - HORIZONTAL
HV : HELICAL - VERTICAL
BH : BEVEL - HORIZONTAL
BV : BEVEL - VERTICAL

3

OUTPUT TORQUE

2 : DOUBLE
3 : TRIPLE

S

OUTPUT SHAFT TYPE

S : SOLID SHAFT
H : HOLLOW SHAFT

04

UNIT SIZE

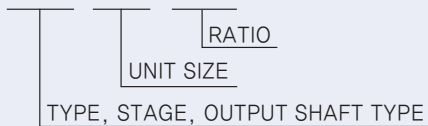
02
03
:
:
:
09

0112

RATIO

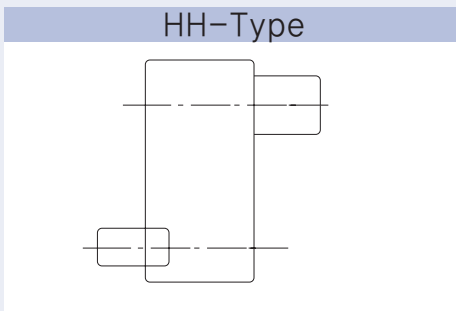
0010 : 1/10
0014 : 1/14
:
:
:
0112 : 1/112

Example : BH2S - 04 - 0014

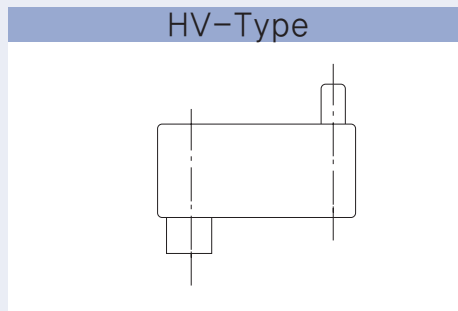


▶ Shaft Arrangement and Installation <축의 배열 및 설치>

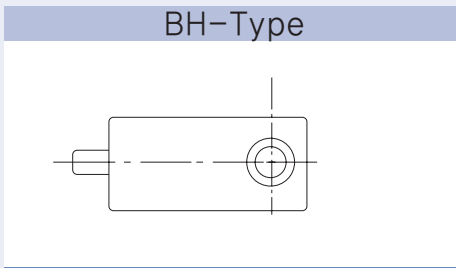
HH-Type



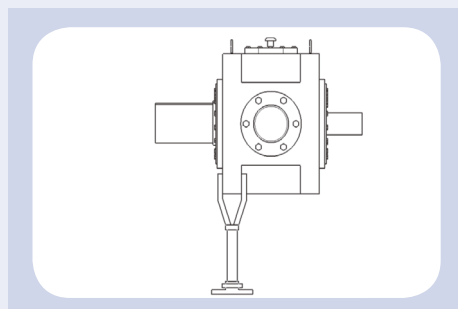
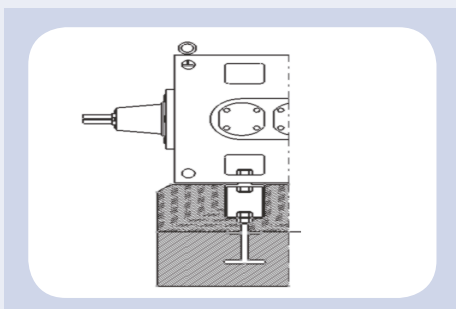
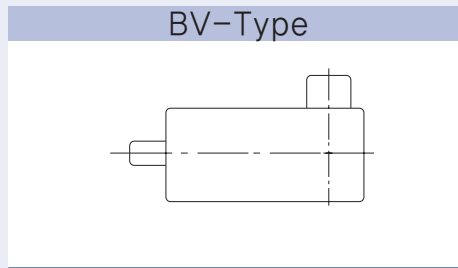
HV-Type



BH-Type



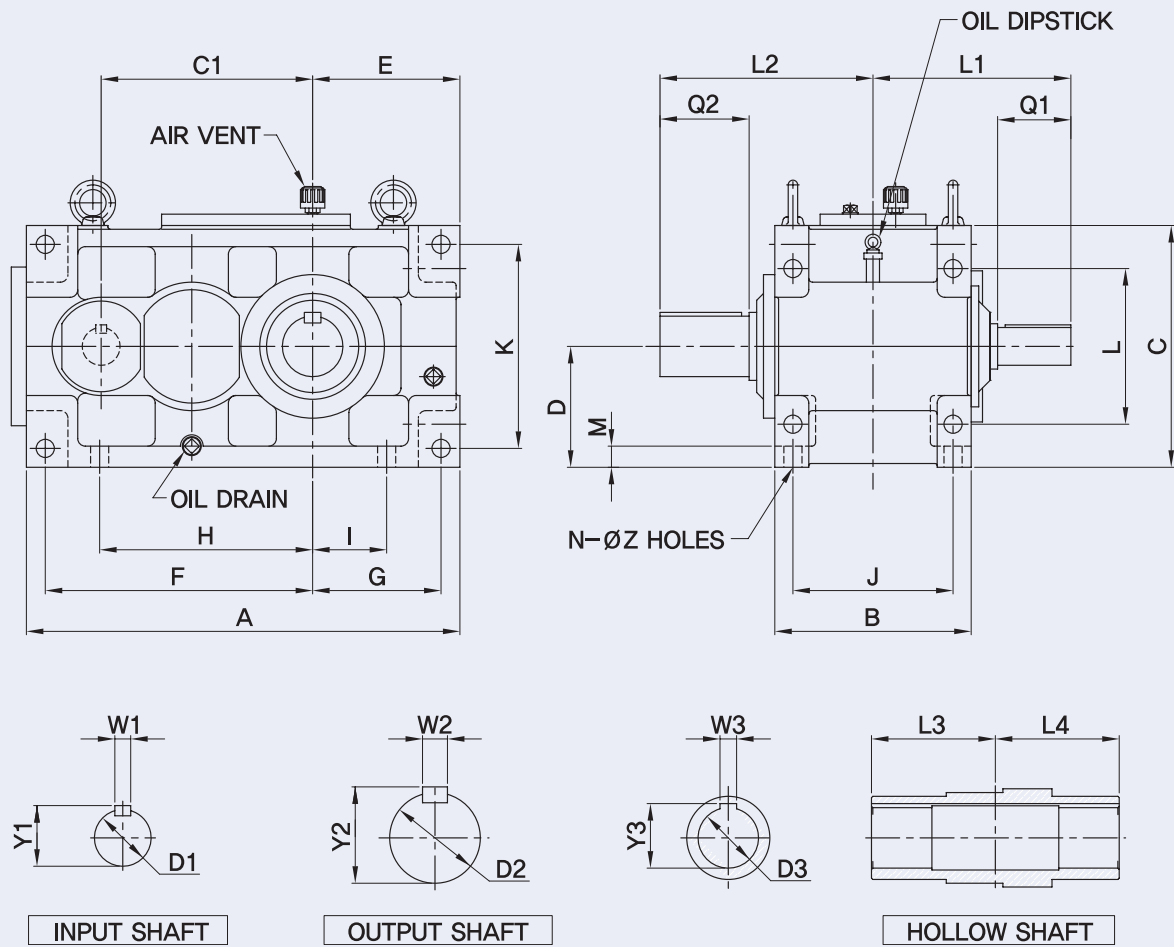
BV-Type



HH2 / HH3

Nominal Ratio	SPEED		GEAR UNIT SIZE								TYPE
	Input rpm	Model	02	03	04	05	06	07	08	09	
		Torque (kg.m)	877	1218	1652	2203	2773	3725	5067	6931	
		Mechanical Power Ratings (UNIT : KW)									
10.0		1800	148	191	243	343	393	509	646	841	HH2
		1500	130	168	215	302	346	448	568	740	
		1200	110	143	184	258	296	384	486	633	
		800	93	126	161	228	260	337	428	558	
14.0		1800	109	148	191	268	336	424	538	715	HH2
		1500	91	130	168	236	296	374	473	629	
		1200	73	105	143	194	252	319	404	538	
		800	61	88	121	162	211	279	356	474	
20.0		1800	67	95	142	186	236	318	423	597	HH2
		1500	56	79	119	156	197	268	355	501	
		1200	45	64	96	125	159	216	286	402	
		800	38	54	80	105	133	181	241	337	
25.0		1800	60	87	117	134	159	217	320	406	HH3
		1500	51	73	97	112	133	181	281	357	
		1200	41	59	78	89	106	145	225	306	
		800	34	50	65	74	88	121	187	256	
31.5		1800	49	69	93	120	145	195	277	357	HH3
		1500	41	58	78	100	121	162	244	314	
		1200	33	47	63	80	97	130	197	268	
		800	27	39	53	66	81	109	164	227	
40.0		1800	43	58	70	89	114	158	214	293	HH3
		1500	36	48	58	75	96	133	179	246	
		1200	29	39	46	60	78	107	145	198	
		800	24	32	39	50	65	90	122	165	
50.0		1800	29	42	58	81	95	130	185	252	HH3
		1500	25	35	48	68	79	108	155	211	
		1200	20	28	39	54	63	86	125	169	
		800	16.7	24	32	45	53	72	105	143	
63.0		1800	24	33	45	64	82	115	147	205	HH3
		1500	20	28	38	54	69	96	123	172	
		1200	16.0	22	30	43	56	77	99	139	
		800	13.5	19	25	36	47	64	83	117	
80.0		1800	19	27	36	51	66	94	119	165	HH3
		1500	15.8	22	30	42	55	78	100	139	
		1200	12.8	18.1	24	34	44	63	80	112	
		800	10.7	15.2	20	29	37	53	67	94	
90.0		1800	15.3	22	31	42	54	76	99	137	HH3
		1500	12.9	18.1	26	35	45	63	83	114	
		1200	10.4	14.7	21	28	36	51	67	91	
		800	8.7	12.3	17.4	24	31	43	56	76	
100.0		1800	15.9	21	30	38	53	63	92	134	HH3
		1500	13.4	18.0	25	32	44	52	77	111	
		1200	10.8	14.6	20	26	35	42	61	89	
		800	9.1	12.3	16.5	21	29	35	51	74	
112.0		1800	13.0	17.3	26	34	45	59	81	111	HH3
		1500	10.9	14.6	22	29	38	50	68	93	
		1200	8.8	11.7	17.4	23	30	40	55	74	
		800	7.4	9.9	14.7	20	25	34	46	62	

HH2

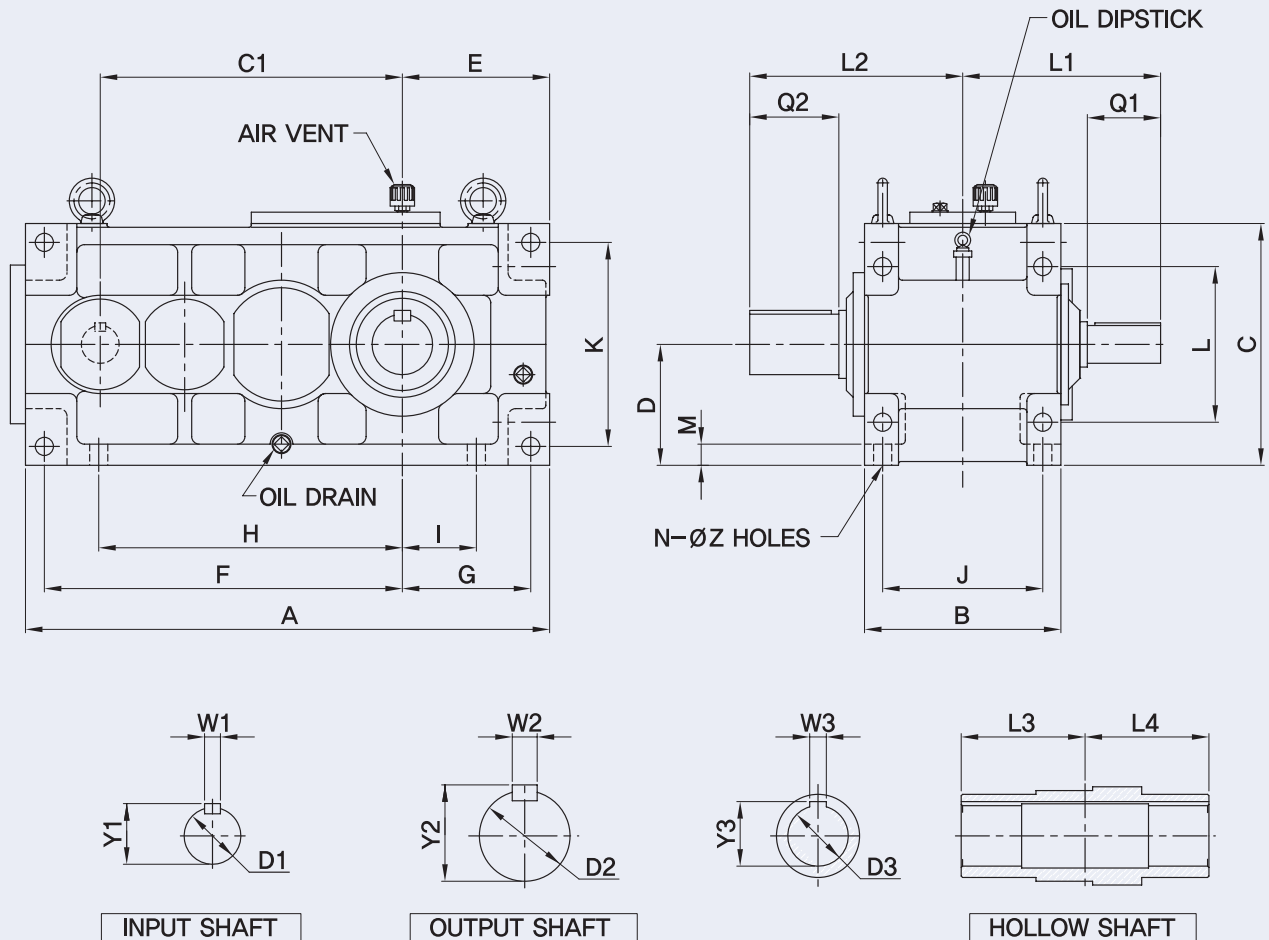


(UNIT : mm)

size	A	B	C	C1	D	D1	D2	D3	E	F	G	H	I	J	K	L
02	574	260	320	280	160	48	80	80	195	354	170	282	98	212	270	206
03	618	274	360	310	180	50	100	95	207	389	182	314	110	228	310	246
04	677	314	400	340	200	55	105	105	229	420	201	341	122	260	344	260
05	731	329	430	374	215	60	120	115	240	463	212	387	136	279	374	296
06	812	356	470	409	235	70	130	125	270	507	235	413	141	292	400	308
07	885	380	530	445	265	75	140	135	295	555	260	445	150	316	454	350
08	981	431	600	490	300	80	160	150	322	617	280	511	174	353	516	406
09	1049	451	670	540	335	85	170	165	335	672	293	566	187	373	586	476

size	L1	L2	L3	L4	M	N	Q1	Q2	W1	W2	W3	Y1	Y2	Y3	Z	Weight (kg)	OIL (Liter)
02	290	304	164	164	28	4	120	140	14	22	22	51.5	85	85.4	24	201	9
03	297	341	171	171	28	4	120	170	14	28	25	53.5	106	100.4	24	256	14
04	327	403	193	193	34	4	130	210	16	28	28	59	111	111.4	28	353	18
05	340	411	201	201	34	4	135	210	18	32	32	64	127	122.4	28	455	24
06	358	434	214	214	40	4	140	220	20	32	32	74.5	137	132.4	33	560	28
07	370	478	228	228	40	4	140	250	20	36	36	79.5	148	143.4	33	726	33
08	416	504	254	254	52	4	160	250	22	40	36	85	169	158.4	39	969	55
09	426	574	264	264	52	4	160	310	22	40	40	90	179	174.4	39	1208	79

HH3



(UNIT : mm)

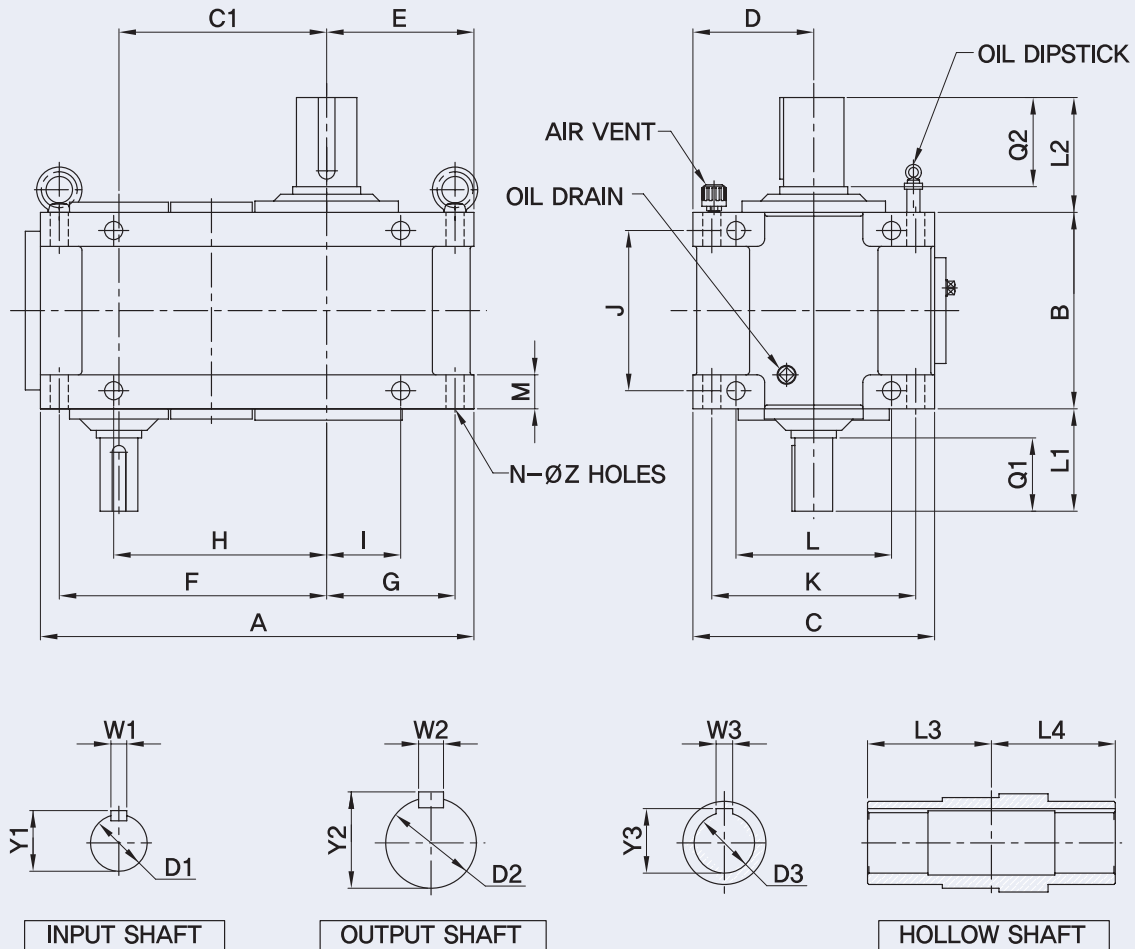
size	A	B	C	C1	D	D1	D2	D3	E	F	G	H	I	J	K	L
02	662	260	320	368	160	32	80	80	195	442	170	369	98	260	270	206
03	720	274	360	408	180	38	100	95	207	488	182	416	110	274	310	246
04	785	314	400	444	200	38	105	105	229	524	201	449	122	314	344	260
05	845	329	430	486	215	48	120	115	240	575	212	499	136	329	374	296
06	935	356	470	529	235	48	130	125	270	627	235	533	141	356	400	308
07	1015	380	530	575	265	50	140	135	295	685	260	575	150	380	454	350
08	1125	431	600	630	300	55	160	150	322	757	280	651	174	431	516	406
09	1207	451	670	694	335	60	170	165	335	826	293	720	187	451	586	476

size	L1	L2	L3	L4	M	N	Q1	Q2	W1	W2	W3	Y1	Y2	Y3	Z	Weight (kg)	OIL (Liter)
02	290	304	164	164	28	4	120	140	10	22	22	35	85	85.4	24	222	11
03	297	341	171	171	28	4	120	170	10	28	25	41	106	100.4	24	292	15
04	327	403	193	193	30	4	130	210	10	28	28	41	111	111.4	28	396	20
05	340	411	201	201	34	4	135	210	14	32	32	51.5	127	122.4	28	517	27
06	358	434	214	214	40	4	140	220	14	32	32	51.5	137	132.4	33	614	36
07	370	478	228	228	40	4	140	250	14	36	36	53.5	148	143.4	33	797	47
08	416	504	254	254	52	4	160	250	16	40	36	59	169	158.4	39	1085	68
09	426	574	264	264	52	4	160	310	18	40	40	64	179	174.4	39	1297	90

HV2 / HV3

Nominal Ratio	SPEED		GEAR UNIT SIZE								TYPE
	Input rpm	Model	02	03	04	05	06	07	08	09	
		Torque (kg.m)	877	1218	1652	2203	2773	3725	5067	6931	
			Mechanical Power Ratings (UNIT : KW)								
10.0		1800	148	191	243	343	393	509	646	841	HV2
		1500	130	168	215	302	346	448	568	740	
		1200	110	143	184	258	296	384	486	633	
		800	93	126	161	228	260	337	428	558	
14.0		1800	109	148	191	268	336	424	538	715	HV2
		1500	91	130	168	236	296	374	473	629	
		1200	73	105	143	194	252	319	404	538	
		800	61	88	121	162	211	279	356	474	
20.0		1800	67	95	142	186	236	318	423	597	HV2
		1500	56	79	119	156	197	268	355	501	
		1200	45	64	96	125	159	216	286	402	
		800	38	54	80	105	133	181	241	337	
25.0		1800	60	87	117	134	159	217	320	406	HV3
		1500	51	73	97	112	133	181	281	357	
		1200	41	59	78	89	106	145	225	306	
		800	34	50	65	74	88	121	187	256	
31.5		1800	49	69	93	120	145	195	277	357	HV3
		1500	41	58	78	100	121	162	244	314	
		1200	33	47	63	80	97	130	197	268	
		800	27	39	53	66	81	109	164	227	
40.0		1800	43	58	70	89	114	158	214	293	HV3
		1500	36	48	58	75	96	133	179	246	
		1200	29	39	46	60	78	107	145	198	
		800	24	32	39	50	65	90	122	165	
50.0		1800	29	42	58	81	95	130	185	252	HV3
		1500	25	35	48	68	79	108	155	211	
		1200	20	28	39	54	63	86	125	169	
		800	16.7	24	32	45	53	72	105	143	
63.0		1800	24	33	45	64	82	115	147	205	HV3
		1500	20	28	38	54	69	96	123	172	
		1200	16.0	22	30	43	56	77	99	139	
		800	13.5	19	25	36	47	64	83	117	
80.0		1800	19	27	36	51	66	94	119	165	HV3
		1500	15.8	22	30	42	55	78	100	139	
		1200	12.8	18.1	24	34	44	63	80	112	
		800	10.7	15.2	20	29	37	53	67	94	
90.0		1800	15.3	22	31	42	54	76	99	137	HV3
		1500	12.9	18.1	26	35	45	63	83	114	
		1200	10.4	14.7	21	28	36	51	67	91	
		800	8.7	12.3	17.4	24	31	43	56	76	
100.0		1800	15.9	21	30	38	53	63	92	134	HV3
		1500	13.4	18.0	25	32	44	52	77	111	
		1200	10.8	14.6	20	26	35	42	61	89	
		800	9.1	12.3	16.5	21	29	35	51	74	
112.0		1800	13.0	17.3	26	34	45	59	81	111	HV3
		1500	10.9	14.6	22	29	38	50	68	93	
		1200	8.8	11.7	17.4	23	30	40	55	74	
		800	7.4	9.9	14.7	20	25	34	46	62	

HV2

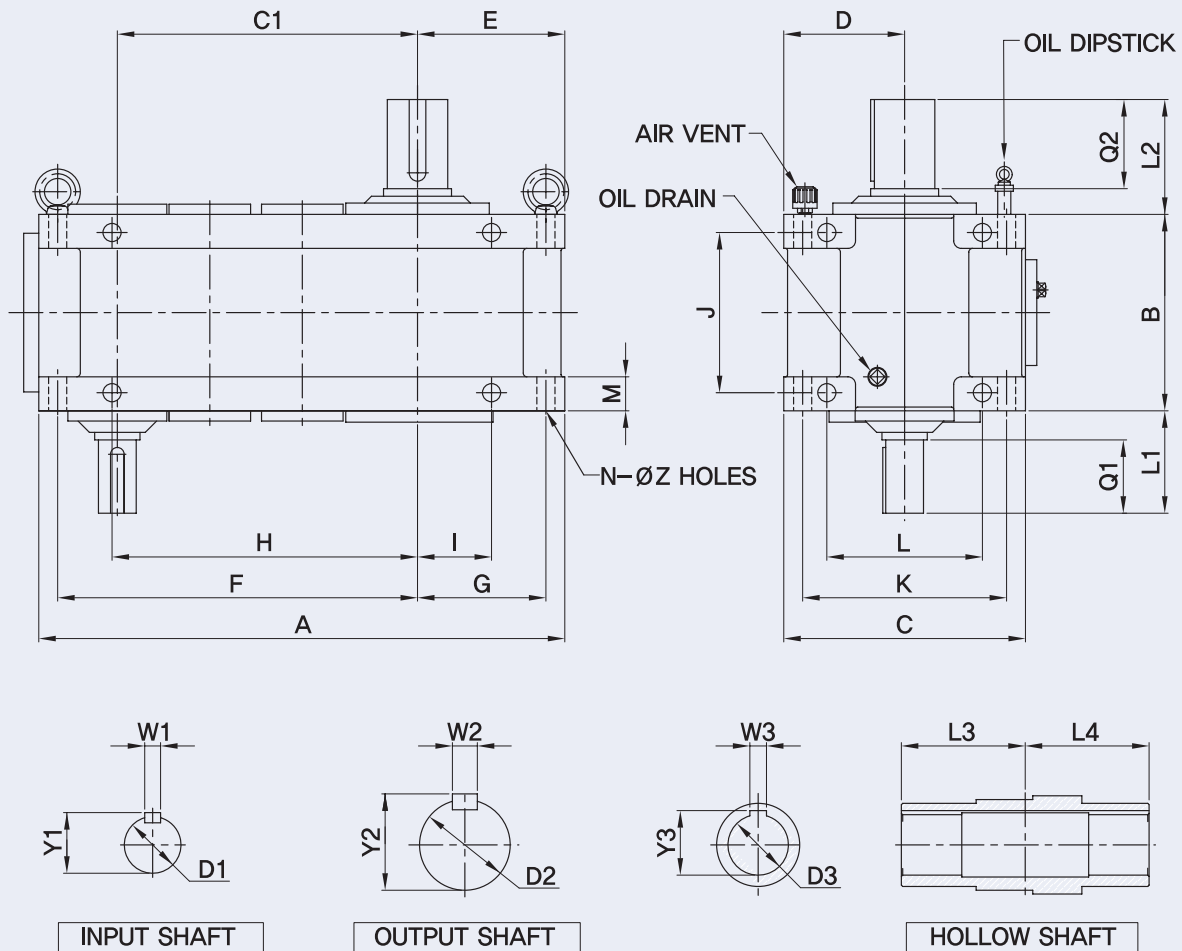


(UNIT : mm)

size	A	B	C	C1	D	D1	D2	D3	E	F	G	H	I	J	K	L
02	574	260	320	280	160	48	80	80	195	354	170	282	98	212	270	206
03	618	274	360	310	180	50	100	95	207	389	182	314	110	228	310	246
04	677	314	400	340	200	55	105	105	229	420	201	341	122	260	344	260
05	731	329	430	374	215	60	120	115	240	463	212	387	136	279	374	296
06	812	356	470	409	235	70	130	125	270	507	235	413	141	292	400	308
07	885	380	530	445	265	75	140	135	295	555	260	445	150	316	454	350
08	981	431	600	490	300	80	160	150	322	617	280	511	174	353	516	406
09	1049	451	670	540	335	85	170	165	335	672	293	566	187	373	586	476

size	L1	L2	L3	L4	M	N	Q1	Q2	W1	W2	W3	Y1	Y2	Y3	Z	Weight (kg)	OIL (Liter)
02	160	174	164	164	28	4	120	140	14	22	22	51.5	85	85.4	24	201	21
03	160	204	171	171	28	4	120	170	14	28	25	53.5	106	100.4	24	256	26
04	170	246	193	193	34	4	130	210	16	28	28	59	111	111.4	28	353	34
05	176	246	201	201	34	4	135	210	18	32	32	64	127	122.4	28	455	45
06	180	256	214	214	40	4	140	220	20	32	32	74.5	137	132.4	33	560	58
07	180	288	228	228	40	4	140	250	20	36	36	79.5	148	143.4	33	726	94
08	201	288	254	254	52	4	160	250	22	40	36	85	169	158.4	39	969	117
09	201	348	264	264	52	4	160	310	22	40	40	90	179	174.4	39	1208	139

HV3



(UNIT : mm)

size	A	B	C	C1	D	D1	D2	D3	E	F	G	H	I	J	K	L
02	662	260	320	368	160	32	80	80	195	442	170	369	98	212	270	206
03	720	274	360	408	180	38	100	95	207	488	182	416	110	228	310	246
04	785	314	400	444	200	38	105	105	229	524	201	449	122	260	344	260
05	845	329	430	486	215	48	120	115	240	575	212	499	136	279	374	296
06	935	356	470	529	235	48	130	125	270	627	235	533	141	292	400	308
07	1015	380	530	575	265	50	140	135	295	685	260	575	150	316	454	350
08	1125	431	600	630	300	55	160	150	322	757	280	651	174	353	516	406
09	1207	451	670	694	335	60	170	165	335	826	293	720	187	373	586	476

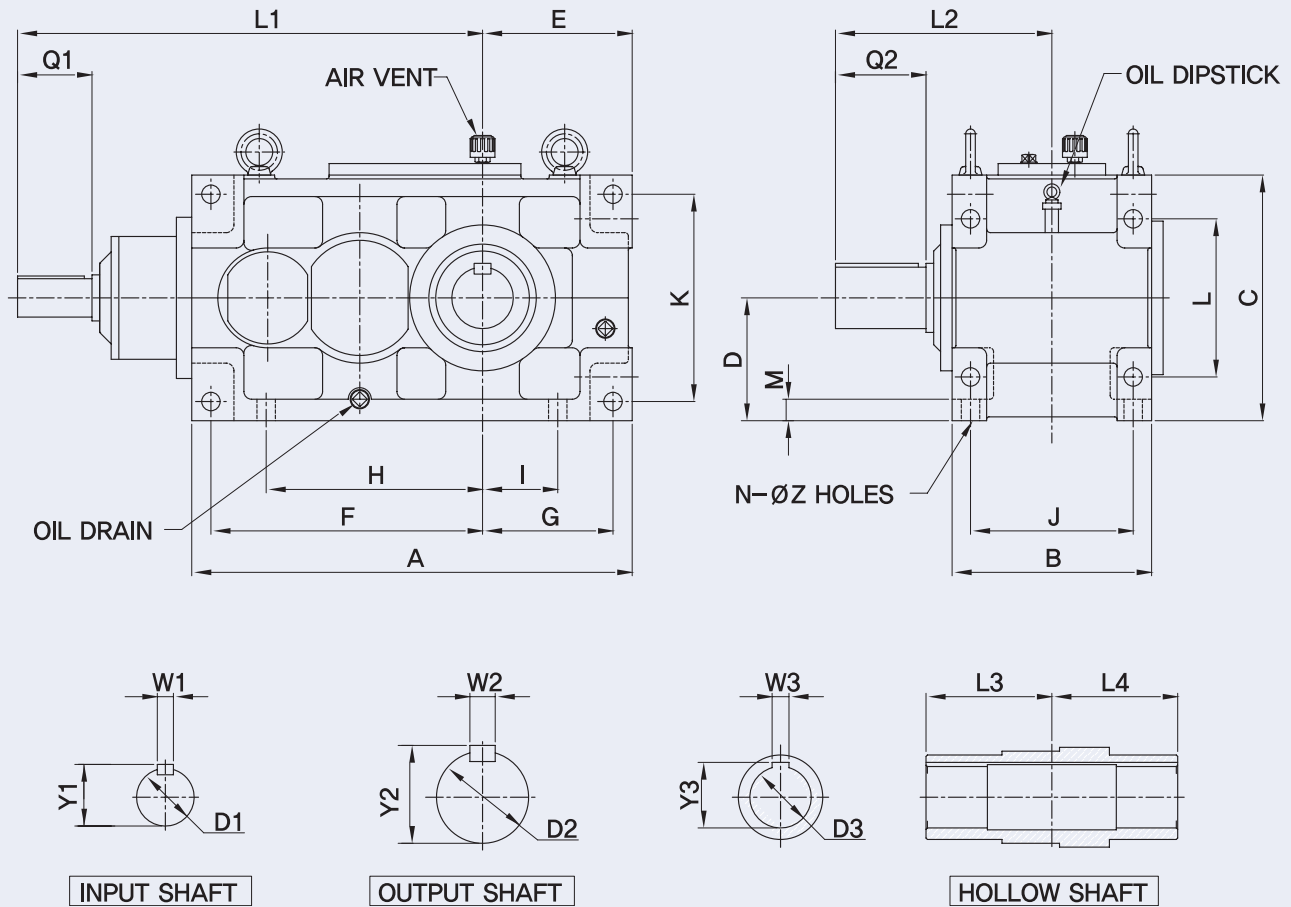
size	L1	L2	L3	L4	M	N	Q1	Q2	W1	W2	W3	Y1	Y2	Y3	Z	Weight (kg)	OIL (Liter)
02	160	174	164	164	28	4	120	140	10	22	22	35	85	85.4	24	222	25
03	160	204	171	171	28	4	120	170	10	28	25	41	106	100.4	24	292	31
04	170	246	193	193	30	4	130	210	10	28	28	41	111	111.4	28	396	45
05	176	246	201	201	34	4	135	210	14	32	32	51.5	127	122.4	28	517	58
06	180	256	214	214	40	4	140	220	14	32	32	51.5	137	132.4	33	614	73
07	180	288	228	228	40	4	140	250	14	36	36	53.5	148	143.4	33	797	102
08	201	288	254	254	52	4	160	250	16	40	36	59	169	158.4	39	1085	133
09	201	348	264	264	52	4	160	310	18	40	40	64	179	174.4	39	1297	151

BH2 / BH3

(Nominal power : KW)

Nominal Ratio	SPEED		GEAR UNIT SIZE								TYPE
	Input rpm	Model	02	03	04	05	06	07	08	09	
		Torque (kg.m)	790	1106	1452	1928	2589	3363	4390	5739	
		Mechanical Power Ratings (UNIT : KW)									
10.0		1800	107	128	168	237	307	376	507	707	BH2
		1500	94	107	148	209	270	332	447	622	
		1200	78	86	125	169	229	281	382	532	
		800	66	72	107	142	198	242	331	464	
14.0		1800	76	101	116	160	200	266	336	407	BH3
		1500	67	85	102	134	166	221	296	359	
		1200	56	68	87	108	133	177	253	306	
		800	47	57	75	90	111	147	220	270	
20.0		1800	70	96	116	148	182	229	291	375	BH3
		1500	61	84	102	124	151	202	256	330	
		1200	52	68	83	99	122	163	218	283	
		800	46	57	69	82	101	135	193	248	
25.0		1800	55	79	113	148	182	229	291	375	BH3
		1500	46	66	94	124	151	202	256	330	
		1200	37	53	75	99	122	163	218	283	
		800	31	45	63	82	101	135	193	248	
31.5		1800	44	63	88	120	157	200	252	332	BH3
		1500	37	53	74	100	131	176	222	293	
		1200	30	42	59	81	106	148	185	250	
		800	25	36	49	68	89	125	155	220	
40.0		1800	33	57	76	99	123	157	195	256	BH3
		1500	27	47	64	82	103	133	172	226	
		1200	22	38	51	66	82	107	147	193	
		800	18.5	32	43	55	68	89	129	170	
50.0		1800	32	39	56	75	97	135	173	243	BH3
		1500	26	32	47	63	81	113	145	203	
		1200	21	26	38	51	66	91	117	164	
		800	17.7	22	32	43	55	76	98	137	
63.0		1800	22	30	44	59	77	108	137	190	BH3
		1500	18.1	25	37	50	65	90	115	159	
		1200	14.6	21	30	40	52	73	93	128	
		800	12.2	17.2	25	34	44	61	78	107	
80.0		1800	19	28	37	44	63	71	104	149	BH3
		1500	16.1	23	31	37	52	59	87	124	
		1200	13.0	19	25	30	42	47	69	99	
		800	10.9	15.7	20	25	35	40	58	83	
90.0		1800	15.6	22	33	43	56	71	98	137	BH3
		1500	13.1	19	27	36	47	59	83	115	
		1200	10.5	15.1	22	29	38	47	67	92	
		800	8.8	12.7	19	24	32	40	56	76	
100.0		1800	12.3	18.2	18.5	28	46	60	68	73	BH3
		1500	10.3	15.3	15.5	23	39	50	57	61	
		1200	8.4	12.3	12.6	19	31	40	46	50	
		800	7.1	10.3	10.6	16.0	26	33	39	42	
112.0		1800	12.3	18.2	19	28	46	60	68	74	BH3
		1500	10.3	15.3	15.7	23	38	50	58	62	
		1200	8.4	12.3	12.7	19	31	40	46	50	
		800	7.0	10.4	10.7	16.2	26	33	39	42	

BH2

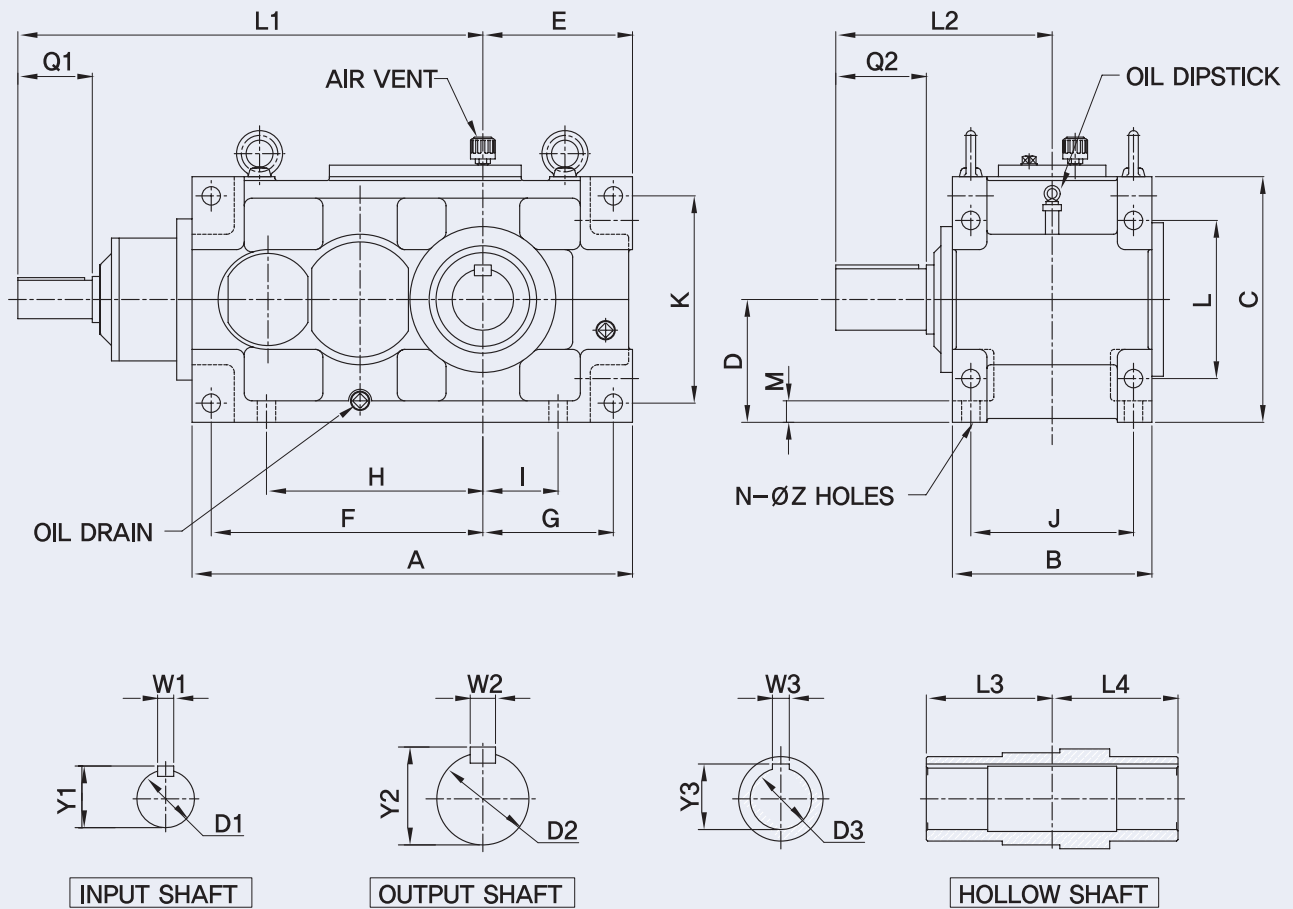


(UNIT : mm)

size	A	B	C	D	D1	D2	D3	E	F	G	H	I	J	K	L
02	574	260	338	160	50	80	80	195	354	170	282	98	212	270	206
03	618	274	378	180	55	100	95	207	389	182	314	110	228	310	246
04	677	314	422	200	60	105	105	229	420	201	341	122	260	344	260
05	731	329	452	215	65	120	115	240	463	212	387	136	279	374	296
06	812	356	492	235	70	130	125	270	507	235	413	141	292	400	308
07	885	380	552	265	75	140	135	295	555	260	445	150	316	454	350
08	981	431	622	300	85	160	150	322	617	280	511	174	353	516	406
09	1049	451	692	335	90	170	165	335	672	293	566	187	373	586	476

size	L1	L2	L3	L4	M	N	Q1	Q2	W1	W2	W3	Y1	Y2	Y3	Z	Weight (kg)	OIL (Liter)
02	639	304	164	164	28	4	130	140	14	22	22	53.5	85	85.4	24	221	10
03	684	341	171	171	28	4	135	170	16	28	25	59	106	100.4	24	280	14
04	735	403	193	193	34	4	135	210	18	28	28	64	111	111.4	28	381	19
05	793	411	201	201	34	4	138	210	18	32	32	69	127	122.4	28	505	22
06	838	434	214	214	40	4	140	220	20	32	32	74.5	137	132.4	33	615	26
07	912	478	228	228	40	4	160	250	20	36	36	79.5	148	143.4	33	793	32
08	982	504	254	254	52	4	160	250	22	40	36	90	169	158.4	39	1055	58
09	1116	574	264	264	52	4	195	310	25	40	40	95	179	174.4	39	1330	84

BH3



(UNIT : mm)

size	A	B	C	D	D1	D2	D3	E	F	G	H	I	J	K	L
02	574	260	338	160	감속비 대 비 결 정	80	80	195	354	170	282	98	212	270	206
03	618	274	378	180		100	95	207	389	182	314	110	228	310	246
04	677	314	422	200		105	105	229	420	201	341	122	260	344	260
05	731	329	452	215		120	115	240	463	212	387	136	279	374	296
06	812	356	492	235		130	125	270	507	235	413	141	292	400	308
07	885	380	552	265		140	135	295	555	260	445	150	316	454	350
08	981	431	622	300		160	150	322	617	280	511	174	353	516	406
09	1049	451	692	335		170	165	335	672	293	566	187	373	586	476

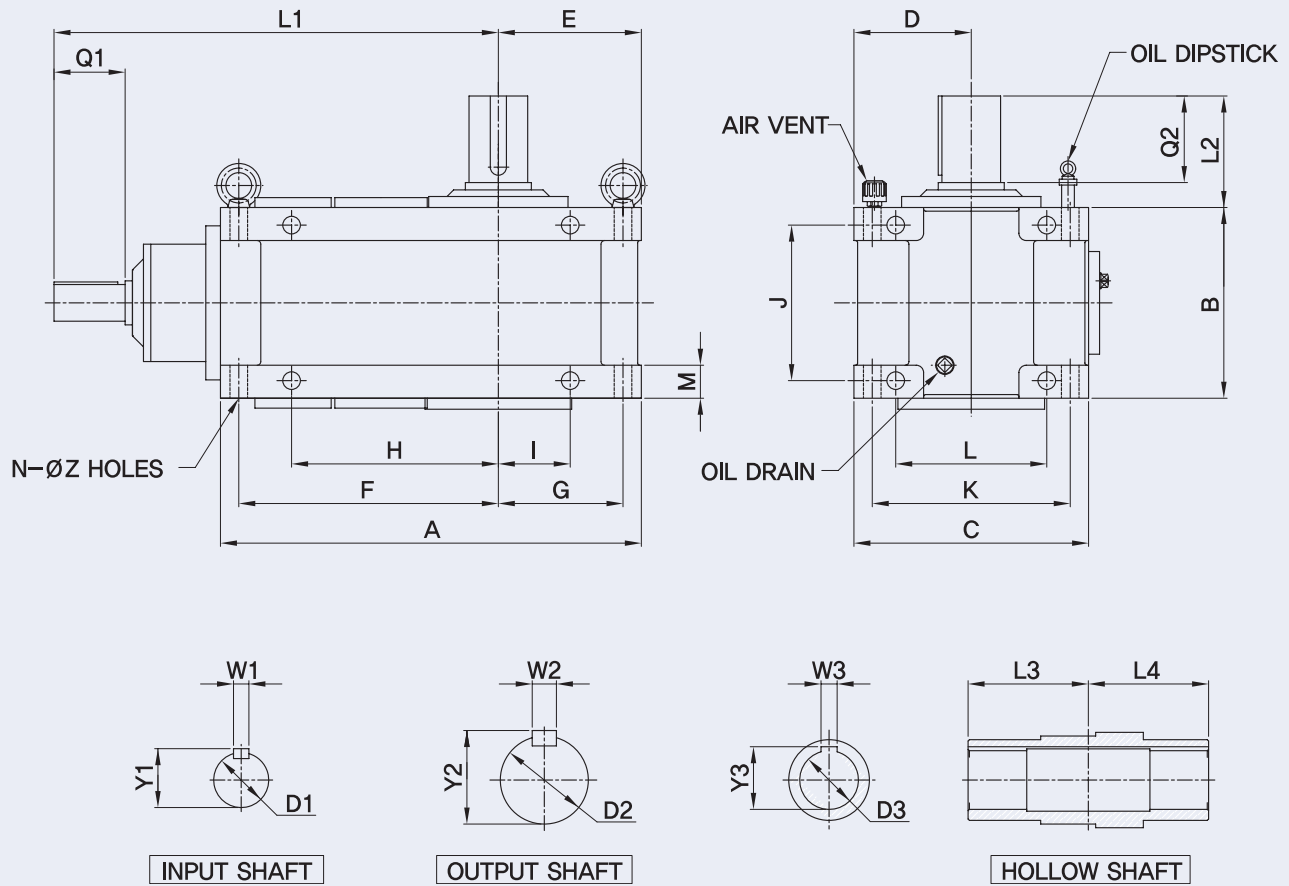
size	L1	L2	L3	L4	M	N	Q1	Q2	W1	W2	W3	Y1	Y2	Y3	Z	Weight (kg)	OIL (Liter)
02	633	304	164	164	28	4	100	140	감속비 대 비 결 정	22	22	감속비 대 비 결 정	85	85.4	24	219	10
03	696	341	171	171	28	4	112	170		28	25		106	100.4	24	279	13
04	762	403	193	193	34	4	120	210		28	28		111	111.4	28	382	18
05	818	411	201	201	34	4	125	210		32	32		127	122.4	28	493	24
06	888	434	214	214	40	4	130	220		32	32		137	132.4	33	601	28
07	949	478	228	228	40	4	135	250		36	36		148	143.4	33	779	33
08	1025	504	254	254	52	4	135	250		40	36		169	158.4	39	1037	56
09	1109	574	264	264	52	4	140	310		40	40		179	174.4	39	1299	79

BV2 / BV3

(Nomiral power : KW)

Nominal Ratio	SPEED		GEAR UNIT SIZE								TYPE
	Input rpm	Model	02	03	04	05	06	07	08	09	
		Torque (kg.m)	790	1106	1452	1928	2589	3363	4390	5739	
			Mechanical Power Ratings (UNIT : KW)								
10.0		1800	107	128	168	237	307	376	507	707	BV2
		1500	94	107	148	209	270	332	447	622	
		1200	78	86	125	169	229	281	382	532	
		800	66	72	107	142	198	242	331	464	
14.0		1800	76	101	116	160	200	266	336	407	BV3
		1500	67	85	102	134	166	221	296	359	
		1200	56	68	87	108	133	177	253	306	
		800	47	57	75	90	111	147	220	270	
20.0		1800	70	96	116	148	182	229	291	375	BV3
		1500	61	84	102	124	151	202	256	330	
		1200	52	68	83	99	122	163	218	283	
		800	46	57	69	82	101	135	193	248	
25.0		1800	55	79	113	148	182	229	291	375	BV3
		1500	46	66	94	124	151	202	256	330	
		1200	37	53	75	99	122	163	218	283	
		800	31	45	63	82	101	135	193	248	
31.5		1800	44	63	88	120	157	200	252	332	BV3
		1500	37	53	74	100	131	176	222	293	
		1200	30	42	59	81	106	148	185	250	
		800	25	36	49	68	89	125	155	220	
40.0		1800	33	57	76	99	123	157	195	256	BV3
		1500	27	47	64	82	103	133	172	226	
		1200	22	38	51	66	82	107	147	193	
		800	18.5	32	43	55	68	89	129	170	
50.0		1800	32	39	56	75	97	135	173	243	BV3
		1500	26	32	47	63	81	113	145	203	
		1200	21	26	38	51	66	91	117	164	
		800	17.7	22	32	43	55	76	98	137	
63.0		1800	22	30	44	59	77	108	137	190	BV3
		1500	18.1	25	37	50	65	90	115	159	
		1200	14.6	21	30	40	52	73	93	128	
		800	12.2	17.2	25	34	44	61	78	107	
80.0		1800	19	28	37	44	63	71	104	149	BV3
		1500	16.1	23	31	37	52	59	87	124	
		1200	13.0	19	25	30	42	47	69	99	
		800	10.9	15.7	20	25	35	40	58	83	
90.0		1800	15.6	22	33	43	56	71	98	137	BV3
		1500	13.1	19	27	36	47	59	83	115	
		1200	10.5	15.1	22	29	38	47	67	92	
		800	8.8	12.7	19	24	32	40	56	76	
100.0		1800	12.3	18.2	18.5	28	46	60	68	73	BV3
		1500	10.3	15.3	15.5	23	39	50	57	61	
		1200	8.4	12.3	12.6	19	31	40	46	50	
		800	7.1	10.3	10.6	16.0	26	33	39	42	
112.0		1800	12.3	18.2	19	28	46	60	68	74	BV3
		1500	10.3	15.3	15.7	23	38	50	58	62	
		1200	8.4	12.3	12.7	19	31	40	46	50	
		800	7.0	10.4	10.7	16.2	26	33	39	42	

BV2

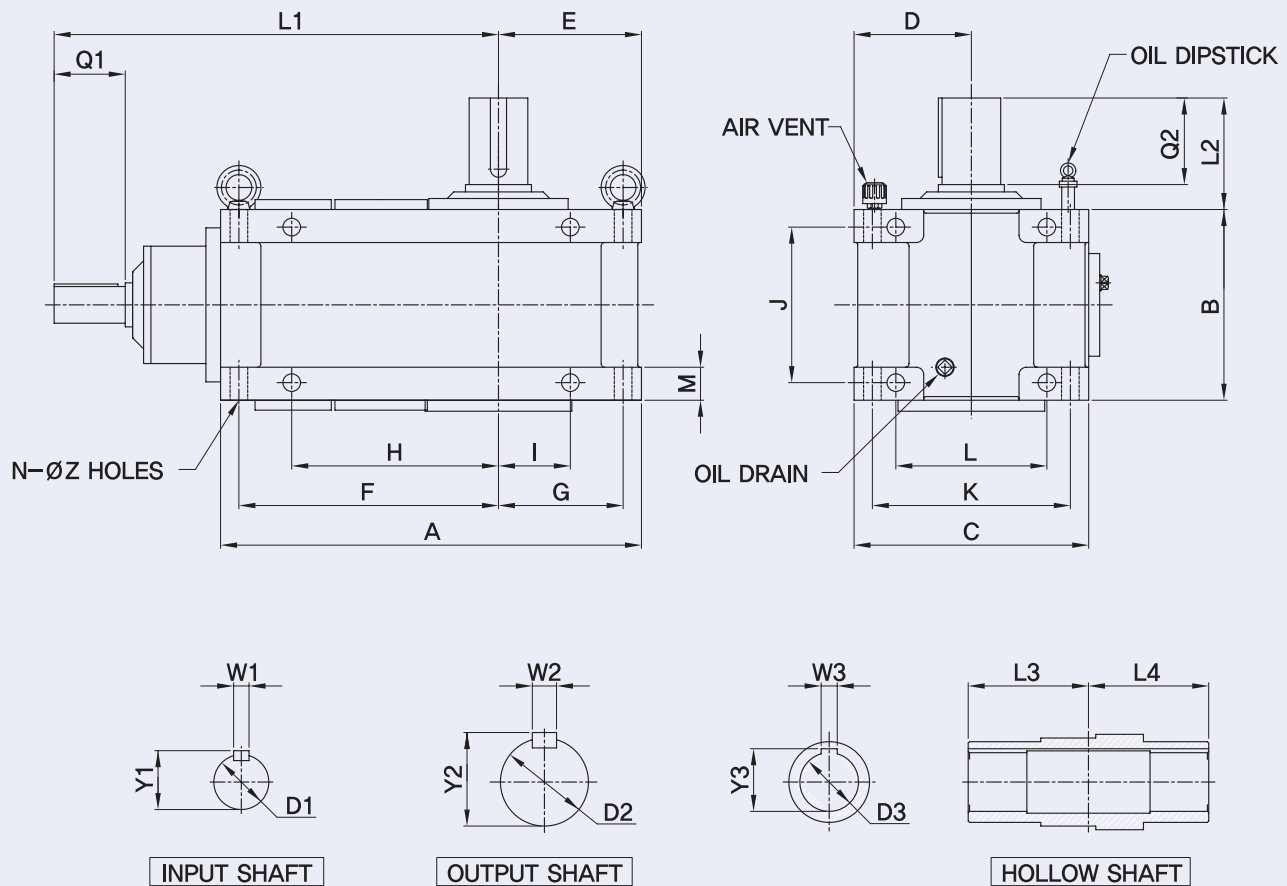


(UNIT : mm)

size	A	B	C	D	D1	D2	D3	E	F	G	H	I	J	K	L
02	574	260	320	160	50	80	80	195	354	170	282	98	212	270	206
03	618	274	360	180	55	100	95	207	389	182	314	110	228	310	246
04	677	314	400	200	60	105	105	229	420	201	341	122	260	344	260
05	731	329	430	215	65	120	115	240	463	212	387	136	279	374	296
06	812	356	470	235	70	130	125	270	507	235	413	141	292	400	308
07	885	380	530	265	75	140	135	295	555	260	445	150	316	454	350
08	981	431	600	300	85	160	150	322	617	280	511	174	353	516	406
09	1049	451	670	335	90	170	165	335	672	293	566	187	373	586	476

size	L1	L2	L3	L4	M	N	Q1	Q2	W1	W2	W3	Y1	Y2	Y3	Z	Weight (kg)	OIL (Liter)
02	639	174	164	164	45	4	130	140	14	22	22	85	53.5	85.4	24	221	19
03	684	204	171	171	45	4	135	170	16	28	25	106	59	100.4	24	280	27
04	735	246	193	193	50	4	135	210	18	28	28	111	64	111.4	28	381	34
05	793	246	201	201	50	4	138	210	18	32	32	127	69	122.4	28	505	47
06	838	256	214	214	64	4	140	220	20	32	32	137	74.5	132.4	33	615	59
07	912	288	228	228	64	4	160	250	20	36	36	148	79.5	143.4	33	793	89
08	982	288	254	254	78	4	160	250	22	40	36	169	90	158.4	39	1055	111
09	1116	348	264	264	78	4	195	310	25	40	40	179	95	174.4	39	1330	137

BV3

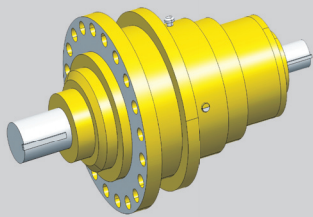


(UNIT : mm)

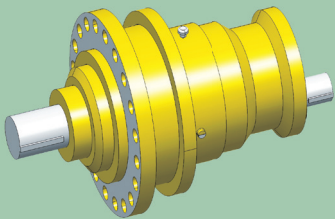
size	A	B	C	D	D1	D2	D3	E	F	G	H	I	J	K	L
02	574	260	320	160	감속비 대결 비정	80	80	195	354	170	282	98	212	270	206
03	618	274	360	180		100	95	207	389	182	314	110	228	310	246
04	677	314	400	200		105	105	229	420	201	341	122	260	344	260
05	731	329	430	215		120	115	240	463	212	387	136	279	374	296
06	812	356	470	235		130	125	270	507	235	413	141	292	400	308
07	885	380	530	265		140	135	295	555	260	445	150	316	454	350
08	981	431	600	300		160	150	322	617	280	511	174	353	516	406
09	1049	451	670	335		170	165	335	672	293	566	187	373	586	476

size	L1	L2	L3	L4	M	N	Q1	Q2	W1	W2	W3	Y1	Y2	Y3	Z	Weight (kg)	OIL (Liter)
02	633	174	164	164	45	4	100	174	감속비 대결 비정	22	22	85	감속비 대결 비정	85.4	24	219	19
03	696	204	171	171	45	4	112	204		28	25	106		100.4	24	279	27
04	762	246	193	193	50	4	120	246		28	28	111		111.4	28	382	34
05	818	246	201	201	50	4	125	246		32	32	127		122.4	28	493	47
06	888	256	214	214	64	4	130	256		32	32	137		132.4	33	601	59
07	949	288	228	228	64	4	135	288		36	36	148		143.4	33	779	89
08	1025	288	254	254	78	4	135	288		40	36	169		158.4	39	1037	111
09	1109	288	264	264	78	4	140	348		40	40	179		174.4	39	1299	137

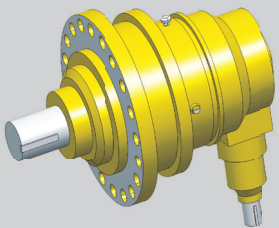
WP-Series



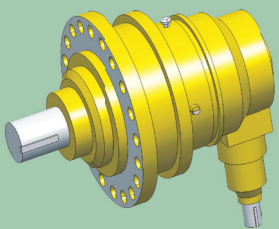
HH-TYPE



HV-TYPE



BH-TYPE



BV-TYPE

PN types Standard gear units

PS types Helical gear units

PL types Bevel gear units

PK types Bevel-Helical gear units

▶ Type Classification <형식분류>

P

TYPE

PN : STANDARD GEAR UNIT
 PS : HELICAL GEAR UNIT
 PL : BEVEL GEAR UNIT
 PK : BEVEL HELICAL GEAR

3

STAGE

2 : DOUBLE
 3 : TRIPLE
 4 : QUADRUPLE
 5 : QUINTUPLE

12

UNIT SIZE

09 :
 10 :
 ...
 34 :

S

OUTPUT SHAFT TYPE

A : HOLLOW WITH SHRINK SHAFT
 B : SOLID WITH KEY SHAFT
 C : HOLLOW WITH SPLINE SHAFT
 D : SOLID WITH SPLINE SHAFT

0050

RATIO

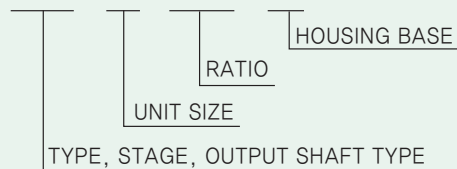
0025 : 1/25
 0028 : 1/28
 ...
 4000 : 1/4000

HH

HOUSING BASE

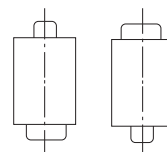
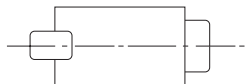
HH : HALF TYPE
 HF : FULL TYPE

Example : PN2S - 26 - 0100 - HH

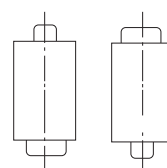
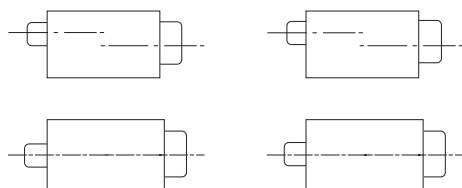


▶ Shaft Arrangement <축의 배열>

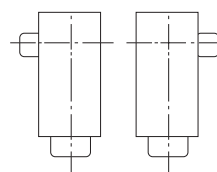
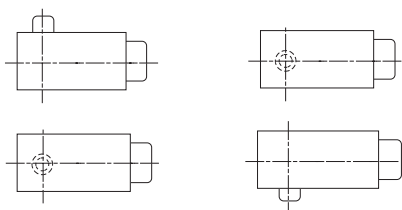
PN-Type



PS-Type



PL / PK-Type

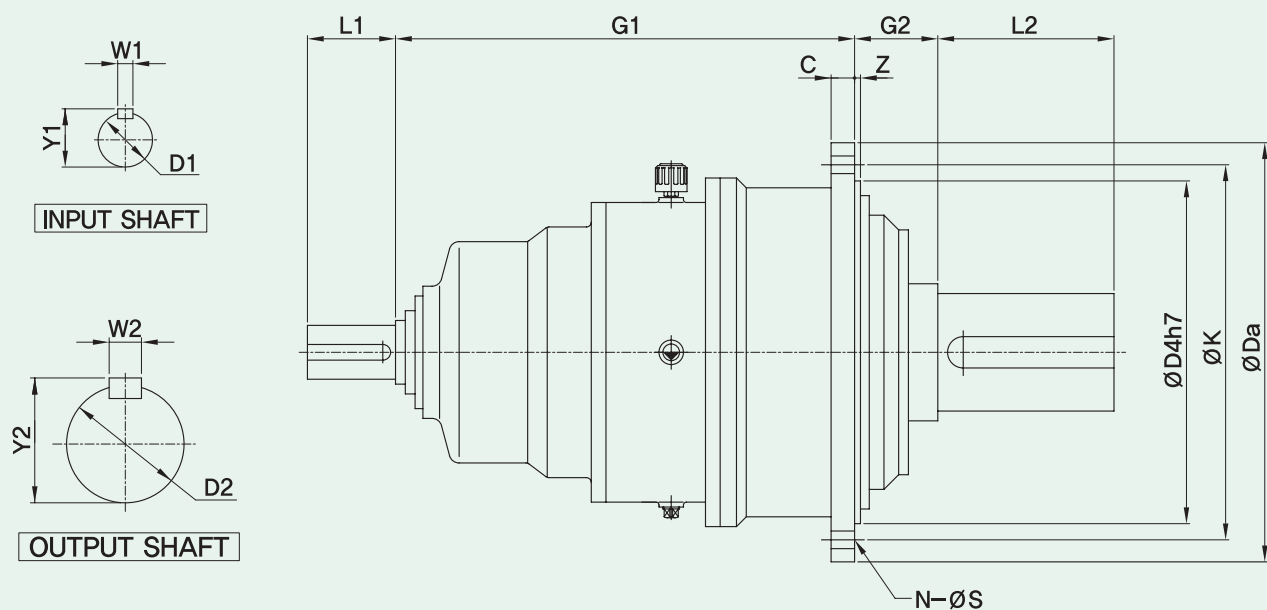


PN2 & PS2

Nominal Ratio	Speed		GEAR UNIT SIZE											
	Input rpm	Model	9	10	11	12	13	14	16	17	18	19	20	21
		Torque (kg.m)	2192	3086	4174	5978	8268	11634	15943	20132	24312	29303	35274	38901
		Mechanical Power Ratings (UNIT : kW)												
25	1,800	164	232	313	448	619	874	1,194	1,507	1,820	2,201	2,641	–	
	1,200	109	155	209	299	413	522	796	1,004	1,214	1,468	1,762	1,950	
	900	77	108	147	210	290	410	559	707	854	1,032	1,239	1,371	
28	1,800	148	208	282	403	558	786	1,074	1,357	1,639	1,981	2,377	–	
	1,200	98	139	188	269	372	524	716	905	1,092	1,321	1,585	1,756	
	900	70	98	133	189	261	368	504	636	768	928	1,115	1,234	
32	1,800	131	185	251	358	496	698	955	1,206	1,457	1,762	2,113	2,340	
	1,200	88	124	167	239	330	466	637	804	971	1,174	1,409	1,560	
	900	62	87	117	168	232	327	448	565	683	826	991	1,097	
36	1,800	115	162	220	313	433	611	835	1,055	1,274	1,541	1,849	2,047	
	1,200	77	108	146	209	289	408	557	703	850	1,027	1,232	1,366	
	900	54	75	102	147	204	287	392	495	597	722	866	960	
40	1,800	104	146	198	283	392	553	756	955	1,153	1,394	1,673	1,853	
	1,200	68	96	131	186	258	364	498	628	758	917	1,100	1,219	
	900	48	69	93	133	183	259	354	448	540	654	784	869	
45	1,800	92	130	176	251	348	490	670	846	1,022	1,236	1,483	1,642	
	1,200	61	86	118	168	232	326	446	564	682	823	989	1,094	
	900	43	61	82	118	163	230	314	397	479	579	695	770	
50	1,800	83	116	158	226	313	442	604	762	919	1,112	1,334	1,477	
	1,200	55	78	106	151	209	294	402	508	613	742	889	985	
	900	39	55	74	106	146	207	282	357	431	521	626	693	
56	1,800	74	104	142	202	280	394	539	680	821	992	1,192	1,319	
	1,200	49	70	95	134	186	263	359	454	547	662	794	880	
	900	35	48	66	95	131	185	252	318	385	466	558	619	
63	1,800	66	92	126	180	248	350	479	605	730	882	1,060	1,172	
	1,200	44	62	84	120	166	233	319	403	487	588	706	673	
	900	30	44	59	84	116	164	224	284	342	414	496	550	
71	1,800	59	83	112	160	221	311	425	536	648	676	940	1,040	
	1,200	38	55	74	106	146	208	283	358	432	522	626	694	
	900	27	38	52	74	104	145	199	251	304	367	441	488	
80	1,800	52	73	98	142	196	276	377	476	575	695	834	924	
	1,200	35	49	60	95	131	184	251	317	383	463	556	616	
	900	25	34	46	66	91	129	177	223	270	326	390	433	
90	1,800	46	65	88	126	174	245	335	424	511	618	742	821	
	1,200	31	43	59	84	116	163	223	282	341	412	494	547	
	900	21	30	42	59	81	115	158	198	240	289	348	385	
100	1,800	42	59	79	113	156	221	301	380	460	556	667	739	
	1,200	28	38	53	76	104	148	202	254	306	371	445	492	
	900	19	27	37	53	73	104	142	179	216	261	313	347	
112	1,800	37	52	71	101	139	197	269	340	410	497	595	660	
	1,200	25	35	47	67	94	131	180	227	274	331	397	439	
	900	17	25	33	47	65	92	126	160	192	233	279	309	
125	1,800	34	47	64	90	125	176	241	305	368	445	534	592	
	1,200	22	31	42	60	84	118	161	203	245	296	356	394	
	900	16	21	29	43	59	83	114	143	172	208	250	277	

GEAR UNIT SIZE													TYPE
22	23	24	25	26	27	28	29	30	31	32	33	34	
44807	51079	58945	68282	75968	84367	93890	104757	115644	131295	148244	166270	189204	
Mechanical Power Ratings (UNIT : kW)													
—	—	—	—	—	—	—	—	—	—	—	—	—	PN2
2,239	2,552	2,945	3,436	3,796	4,238	4,726	5,273	5,970	6,617	7,462	8,358	9,228	
1,574	1,794	2,071	2,393	2,669	2,980	3,323	3,708	4,197	4,652	5,247	5,876	6,716	
—	—	—	—	—	—	—	—	—	—	—	—	—	
2,015	2,297	2,651	3,062	3,416	3,815	4,253	4,746	5,372	5,630	6,716	7,522	8,597	
1,416	1,616	1,864	2,153	2,402	2,682	2,990	3,337	3,778	4,187	4,722	5,289	6,045	
2,687	3,062	3,534	4,084	4,555	5,086	5,671	6,328	7,164	7,939	8,954	10,030	11,461	
1,790	2,041	2,356	2,722	3,036	3,391	3,781	4,218	4,776	5,293	5,970	6,686	7,642	
1,259	1,436	1,657	1,914	2,135	2,395	2,658	2,967	3,358	3,722	4,197	4,701	5,373	
2,351	2,680	3,092	3,572	3,985	4,451	4,962	5,537	6,268	6,947	7,835	8,776	10,030	
1,567	1,787	2,062	2,382	2,657	2,966	3,308	3,691	4,178	4,632	5,224	5,850	6,686	
1,101	1,257	1,449	1,675	1,869	2,086	2,327	2,595	2,939	3,257	3,673	4,113	4,701	
2,126	2,424	2,797	3,557	3,606	4,266	4,489	5,010	5,671	6,394	7,088	7,939	9,074	
1,399	1,595	1,841	2,126	2,372	2,650	2,953	3,295	3,731	4,135	4,663	5,464	5,610	
997	1,136	1,312	1,515	1,690	1,888	2,105	2,348	2,658	2,946	3,323	3,722	4,254	
1,885	2,148	2,479	2,864	3,196	—	—	—	—	—	—	—	—	PS2
1,256	1,433	1,652	1,910	2,130	2,378	2,652	2,959	3,350	3,714	4,188	4,691	5,360	
883	1,007	1,162	1,343	1,499	1,673	1,865	2,081	2,356	2,611	2,945	3,299	3,770	
1,697	1,933	2,232	2,579	2,876	—	—	—	—	—	—	—	—	
1,130	1,289	1,488	1,718	1,918	2,141	2,387	2,664	3,016	3,342	3,769	4,222	4,825	
795	907	1,046	1,208	1,348	1,505	1,679	1,873	2,121	2,350	2,651	2,969	3,393	
1,514	1,727	1,992	2,302	2,568	—	—	—	—	—	—	—	—	
1,009	1,151	1,328	1,535	1,712	1,912	2,131	2,378	2,693	2,984	3,366	3,769	4,308	
710	809	934	1,079	1,204	1,344	1,499	1,672	1,893	2,098	2,366	2,651	3,029	
1,346	1,535	1,771	2,046	2,282	—	—	—	—	—	—	—	—	
898	1,024	1,181	1,364	1,522	1,699	1,895	2,114	2,393	2,652	2,992	3,350	3,829	
631	719	830	960	1,070	1,195	1,332	1,486	1,683	1,865	2,104	2,356	2,692	
1,194	1,362	1,572	1,816	2,026	—	—	—	—	—	—	—	—	
797	908	1,048	1,211	1,350	1,507	1,681	1,876	2,124	2,353	2,654	2,974	3,397	
560	638	737	852	950	1,060	1,182	1,319	1,493	1,655	1,866	2,090	2,390	
1,060	1,208	1,394	1,612	1,798	—	—	—	—	—	—	—	—	
707	805	930	1,074	1,199	1,338	1,492	1,664	1,885	2,089	2,356	2,639	3,016	
497	567	654	755	843	941	1,050	1,171	200	1,469	1,656	1,855	2,121	
942	1,074	1,240	1,433	1,598	—	—	—	—	—	—	—	—	
629	716	827	955	1,066	1,189	1,326	1,480	1,675	1,856	2,094	2,345	2,681	
442	504	582	672	749	836	933	1,041	1,178	1,305	1,473	1,649	1,884	
848	967	1,116	1,289	1,438	—	—	—	—	—	—	—	—	
565	644	744	859	959	1,070	1,194	1,332	1,507	1,672	1,885	2,111	2,412	
397	453	523	604	674	753	839	936	1,060	1,175	1,325	1,484	1,697	
757	863	996	1,151	1,284	—	—	—	—	—	—	—	—	
505	576	664	767	856	956	1,066	1,189	1,346	1,492	1,682	1,885	2,154	
356	405	467	540	602	672	749	836	946	1,050	1,184	1,325	1,514	
678	774	893	1,031	1,151	—	—	—	—	—	—	—	—	
452	516	595	688	767	857	955	1,066	1,206	1,337	1,507	1,688	1,930	
318	362	419	484	539	602	672	749	848	941	1,060	1,187	1,357	

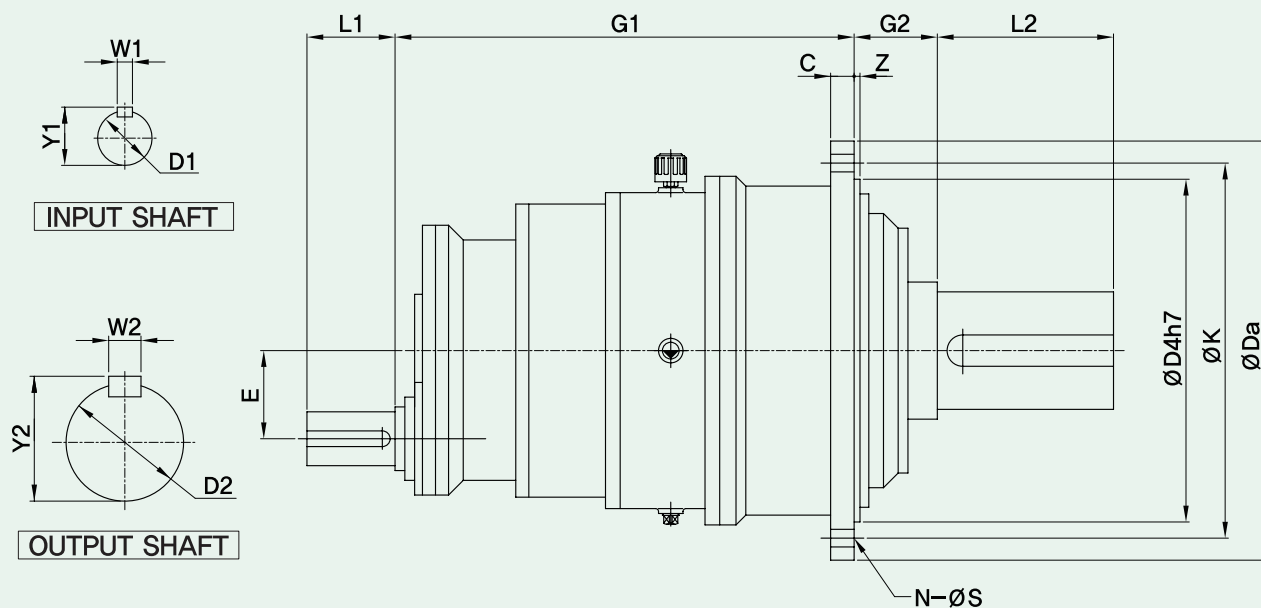
PN2



(UNIT : mm)

SIZE	C	Da	D1	D2	D4	G1	G2	K	L1	L2	N	S	W1	W2	Y1	Y2	Z	Weight (kg)	OIL (Liter)
9	24	428	55	120	350	469	95	388	90	210	24	18	16	32	59	127	6±1.5	240	6
10	28	472	55	130	394	489	95	436	90	210	28	18	16	32	59	137	8±1.5	290	8
11	32	525	70	150	425	579	109	485	120	240	20	22	20	36	74.5	158	8±1.5	350	12
12	34	605	70	160	495	593	106	555	120	270	20	26	20	40	74.5	169	9±1.5	490	16
13	39	645	80	180	535	714	118	595	140	310	24	26	22	45	85	190	11±1.5	590	20
14	42	720	80	210	610	737	139	665	140	350	32	26	22	50	85	221	9	820	32
16	44	770	95	230	660	851	142	715	160	350	36	26	25	50	100	241	10	1030	40
17	50	895	95	250	750	877	139	830	160	400	24	33	25	56	100	262	10	1500	56
18	50	930	110	260	785	1006	134	865	180	400	32	33	28	56	116	272	10	1900	66
19	56	980	110	280	840	1030	148.5	915	180	450	36	33	28	63	116	292	12	2000	82
20	56	980	110	300	840	1030	148.5	915	180	500	36	33	28	70	116	314	12	2100	75
21	62	1115	120	310	935	1046	158	1025	210	500	32	39	32	70	127	324	24	2650	110
22	62	1115	120	330	935	1046	158	1025	210	500	32	39	32	70	127	344	24	2800	95
23	68	1210	130	350	1025	1150	175	1120	210	550	36	39	32	80	137	365	28	3450	130
24	68	1210	130	360	1025	1150	175	1120	210	590	36	39	32	80	137	375	28	3900	125
25	74	1320	140	380	1115	1241	182	1220	240	590	36	45	36	80	148	395	29	4750	190
26	74	1320	140	400	1115	1241	182	1220	240	650	36	45	36	90	148	417	29	5150	160
27	81	1460	150	430	1215	1379	196.5	1345	240	690	32	52	36	90	158	447	31	6100	245
28	81	1460	150	450	1215	1379	196.5	1345	240	750	32	52	36	100	158	469	31	6550	205
29	87	1565	160	460	1320	1457	209	1450	270	750	36	52	40	100	169	479	34	7800	305
30	87	1565	160	480	1320	1457	209	1450	270	790	36	52	40	100	169	499	34	8300	255
31	94	1665	170	500	1400	1607	232	1545	270	790	32	62	40	100	179	519	36	10200	380
32	94	1665	170	510	1400	1607	232	1545	270	850	32	62	40		179		36	10700	315
33	100	1755	180	530	1495	1683	251	1635	310	900	36	62	45		190		36	12350	460
34	100	1755	180	570	1495	1683	251	1635	310	950	36	62	45		190		36	13150	380

PS2



(UNIT : mm)

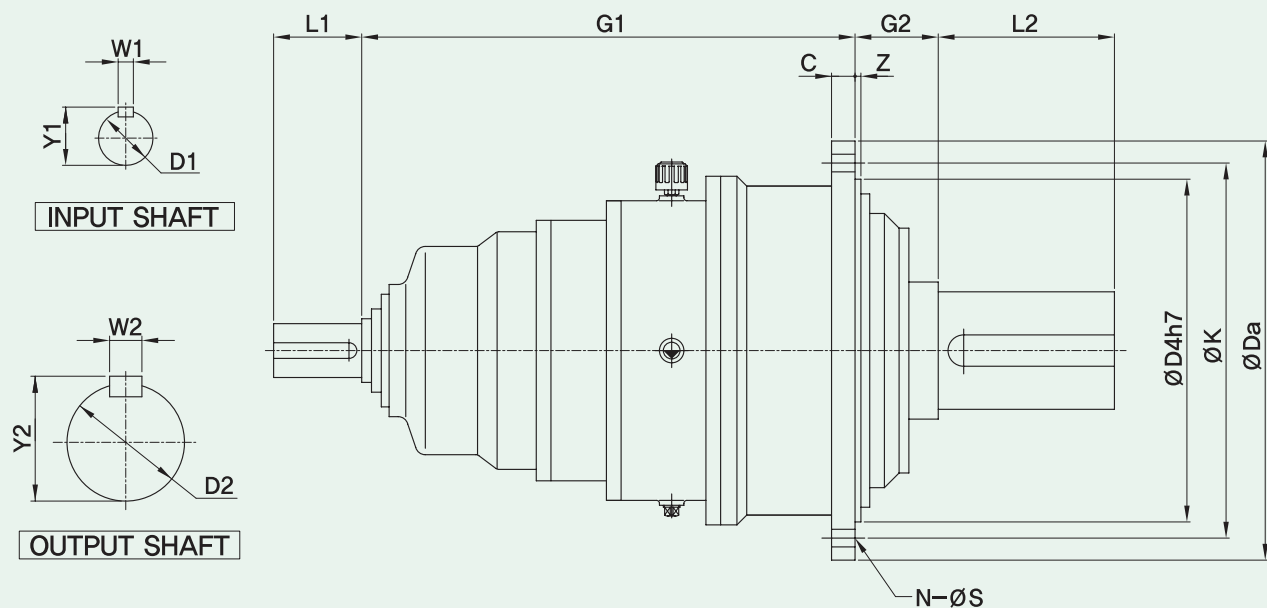
SIZE	C	Da	D1	D2	D4	E	G1	G2	K	L1	L2	N	S	W1	W2	Y1	Y2	Z	Weight (kg)	OIL (Liter)
9	24	428	38	120	350	90	469	95	388	60	210	24	18	10	32	41	127	6±1.5	260	6
10	28	472	38	130	394	90	489	95	436	60	210	28	18	10	32	41	137	8±1.5	310	8
11	32	525	55	150	425	115	579	109	485	90	240	20	22	16	36	59	158	8±1.5	380	12
12	34	605	55	160	495	115	593	106	555	90	270	20	26	16	40	59	169	9±1.5	520	16
13	39	645	70	180	535	140	714	118	595	120	310	24	26	20	45	74.5	190	11±1.5	660	20
14	42	720	70	210	610	140	737	139	665	120	350	32	26	20	50	74.5	221	9	920	32
16	44	770	80	230	660	170	851	142	715	140	350	36	26	22	50	85	241	10	1150	40
17	50	895	80	250	750	170	877	139	830	140	400	24	33	22	56	85	262	10	1650	56
18	50	930	90	260	785	200	1006	134	865	160	400	32	33	25	56	95	272	10	1950	66
19	56	980	90	280	840	200	1030	149	915	160	450	36	33	25	63	95	292	12	2400	82
20	56	980	90	300	840	200	1030	149	915	160	500	36	33	25	70	95	314	12	2500	75
21	62	1115	100	310	935	230	1076	158	1025	180	500	32	39	28	70	106	324	24	2900	110
22	62	1115	100	330	935	230	1076	158	1025	180	500	32	39	28	70	106	344	24	3100	95
23	68	1210	120	350	1025	265	1175	175	1120	210	550	36	39	32	80	127	365	28	3800	130
24	68	1210	120	360	1025	265	1175	175	1120	210	590	36	39	32	80	127	375	28	4100	125
25	74	1320	130	380	1115	300	1291	182	1220	210	590	36	45	32	80	137	395	29	4950	190
26	74	1320	130	400	1115	300	1291	182	1220	210	650	36	45	32	90	137	417	29	5350	160
27	81	1460	140	430	1215	320	1429	197	1345	240	690	32	52	36	90	148	447	31	6800	245
28	81	1460	140	450	1215	320	1429	197	1345	240	750	32	52	36	100	148	469	31	7200	205
29	87	1565	150	460	1320	360	1507	209	1450	240	750	36	52	36	100	158	479	34	8500	305
30	87	1565	150	480	1320	360	1507	209	1450	240	790	36	52	36	100	158	499	34	9000	255
31	94	1665	160	500	1400	400	1662	232	1545	270	790	32	62	40	100	169	519	36	10500	380
32	94	1665	160	510	1400	400	1662	232	1545	270	850	32	62	40		169		36	11200	315
33	100	1755	170	530	1495	400	1743	251	1635	270	900	36	62	40		179		36	12700	460
34	100	1755	170	570	1495	400	1743	251	1635	270	950	36	62	40		179		36	13500	380

PN3 & PS3

Nominal Ratio	Speed		GEAR UNIT SIZE											
	Input rpm	Model	9	10	11	12	13	14	16	17	18	19	20	21
		Torque (kg.m)	2212	3132	4238	6066	8374	14395	16145	20391	24640	29754	35733	39551
		Mechanical Power Ratings (UNIT : kW)												
140	1,800	30	42	57	82	113	158	216	274	330	398	479	530	
	1,200	20	28	38	54	74	106	144	182	220	266	319	353	
	900	14	20	27	38	53	74	101	128	154	187	224	249	
160	1,800	26	37	50	71	98	138	190	239	289	349	419	463	
	1,200	17	24	33	47	66	92	126	160	192	233	280	310	
	900	12	17	23	34	46	65	89	113	135	163	196	217	
180	1,800	23	33	44	64	88	124	168	212	257	310	372	412	
	1,200	15	22	29	42	58	82	112	142	172	206	248	275	
	900	11	15	21	29	41	57	79	99	120	145	174	194	
200	1,800	21	29	40	56	78	110	151	191	230	280	335	371	
	1,200	14	20	27	38	53	74	101	127	154	186	223	247	
	900	10	14	19	27	37	52	71	90	108	131	158	174	
225	1,800	18	26	35	50	70	98	134	170	205	248	298	330	
	1,200	12	17	24	34	47	66	90	113	137	166	198	220	
	900	9	12	17	24	33	46	63	80	97	116	140	154	
250	1,800	17	24	32	46	62	89	121	152	185	223	268	296	
	1,200	11	16	21	30	42	59	80	102	124	149	179	198	
	900	8	11	15	21	29	42	56	72	87	105	126	140	
280	1,800	15	21	28	41	56	79	108	137	164	199	239	265	
	1,200	10	14	19	28	37	53	72	91	110	133	160	176	
	900	7	10	13	19	26	37	51	64	78	93	113	124	
280	1,800	16	21	29	41	56	80	109	138	167	202	242	268	
	1,200	10	14	19	28	37	53	73	92	112	134	161	179	
	900	7	10	14	19	27	37	52	64	78	95	114	126	
315	1,800	13	19	25	36	50	71	97	122	148	179	215	238	
	1,200	9	13	17	24	34	47	65	82	98	120	143	158	
	900	6	9	12	17	24	34	45	57	70	84	101	111	
355	1,800	12	17	23	32	44	64	86	109	132	158	191	211	
	1,200	8	11	16	22	30	42	58	72	88	106	127	140	
	900	6	8	10	15	21	29	41	51	62	74	89	99	
400	1,800	11	15	20	29	40	56	77	96	116	142	169	187	
	1,200	7	10	13	19	26	37	52	65	78	94	113	125	
	900	5	7	9	14	19	26	36	45	55	66	80	88	
450	1,800	9	13	18	25	35	49	68	86	103	125	150	167	
	1,200	6	9	12	17	24	34	46	58	70	84	101	112	
	900	4	6	8	12	17	24	32	41	48	59	71	78	
500	1,800	8	12	16	23	31	44	61	77	94	113	136	150	
	1,200	6	8	11	16	22	30	41	52	62	76	90	100	
	900	4	6	8	11	15	21	29	36	44	53	63	70	
560	1,800	8	11	14	20	29	40	55	68	83	101	121	134	
	1,200	5	7	10	13	19	26	36	46	55	67	80	89	
	900	3	5	7	10	14	19	26	33	39	47	56	63	
630	1,800	7	9	13	18	25	36	48	61	74	90	108	119	
	1,200	4	6	8	12	17	24	32	41	49	60	72	79	
	900	3	4	6	9	11	17	23	29	35	42	51	56	
710	1,800	5	8	11	16	23	391	43	54	66	79	95	106	
	1,200	4	5	8	11	14	22	29	36	44	53	64	71	
	900	3	4	5	8	10	15	20	26	30	37	45	50	
800	1,800	5	7	10	14	20	28	38	48	59	71	85	94	
	1,200	3	5	7	10	13	19	25	32	38	47	56	62	
	900	2	3	5	7	9	14	18	23	27	33	39	44	
900	1,800	4	7	9	13	18	25	34	43	52	62	76	83	
	1,200	3	4	6	8	12	17	23	29	35	42	50	55	
	900	2	3	4	6	8	11	16	20	25	29	35	39	

GEAR UNIT SIZE													TYPE
22	23	24	25	26	27	28	29	30	31	32	33	34	
45437	51798	61768	68967	75836	85911	95732	106870	121008	134076	151185	169369	193547	
Mechanical Power Ratings (UNIT : kW)													PN3
608	694	800	853	1,032	—	—	—	—	—	—	—	—	
406	462	534	617	688	768	857	955	1,081	1,199	1,352	1,514	1,730	
285	325	375	433	484	540	602	672	761	843	951	1,064	1,217	
533	607	701	809	902	—	—	—	—	—	—	—	—	
355	404	467	540	601	672	749	836	947	1,049	1,183	1,325	1,514	
248	285	329	379	423	473	527	587	665	738	831	932	1,064	
473	540	623	719	803	—	—	—	—	—	—	—	—	
316	360	415	480	535	598	666	743	841	932	1,051	1,177	1,346	
222	253	291	338	376	420	468	522	592	656	739	828	946	
426	486	560	647	722	—	—	—	—	—	—	—	—	
284	324	373	432	481	538	599	668	757	839	947	1,060	1,211	
199	227	262	304	339	378	422	470	532	590	665	745	852	
378	432	498	575	642	716	799	892	1,009	1,118	1,261	1,414	1,615	
252	288	332	384	428	478	533	594	673	746	841	942	1,076	
178	203	233	270	300	336	375	419	474	524	592	663	757	
341	389	448	518	577	646	719	803	908	1,007	1,135	1,272	1,453	
227	259	299	346	385	430	480	535	606	671	757	848	970	
160	182	210	243	271	303	338	376	426	473	532	596	682	
304	347	400	462	516	576	642	716	811	899	1,014	1,135	1,298	
203	232	266	308	344	384	428	478	541	599	676	757	865	
143	162	188	217	242	270	302	336	380	422	475	532	609	
307	350	404	467	521	582	649	724	820	908	1,025	1,147	1,312	PS3
205	234	270	312	348	388	433	482	546	606	683	766	875	
144	164	189	219	244	272	304	340	385	426	480	538	614	
274	312	360	415	463	517	577	643	728	808	911	1,020	1,165	
182	208	240	277	308	344	384	430	486	539	607	680	778	
128	146	169	195	217	243	270	302	342	378	426	478	547	
242	276	319	368	412	460	512	571	647	716	808	905	1,034	
162	185	212	246	274	306	341	380	431	478	539	604	690	
114	129	150	173	192	215	240	268	303	336	379	424	485	
215	245	283	328	365	407	455	506	574	636	718	803	918	
144	163	188	218	244	271	302	338	383	424	478	535	612	
101	115	133	153	171	191	213	237	269	298	336	377	431	
191	218	252	290	324	362	403	450	510	565	637	714	816	
127	145	168	194	216	241	269	300	340	377	425	476	544	
90	102	118	136	152	170	189	212	240	266	299	335	383	
172	197	227	262	292	326	364	406	460	509	574	643	734	
115	131	151	174	194	217	242	270	306	340	383	428	490	
81	92	106	123	137	153	170	190	215	239	269	302	344	
154	175	562	234	260	290	324	362	410	455	512	574	655	
102	116	134	156	174	194	216	241	274	302	342	383	437	
72	82	95	109	123	136	152	170	192	213	240	269	307	
137	156	180	208	232	259	288	322	365	403	455	510	583	
91	104	120	138	155	173	192	215	242	269	304	340	389	
64	73	84	98	109	122	135	151	171	189	214	240	273	
121	138	160	185	205	229	256	286	323	359	404	452	517	
80	92	107	122	137	154	170	191	216	239	269	301	344	
57	65	74	87	97	108	120	134	152	168	189	213	242	
108	122	142	163	182	204	227	253	287	318	359	402	460	
72	82	95	109	132	136	151	169	191	212	239	268	306	
51	57	66	77	86	96	107	119	135	149	168	188	215	
96	109	126	145	16	181	202	226	256	283	319	358	408	
64	73	84	97	108	121	134	150	170	188	212	238	272	
45	51	59	69	77	84	95	106	119	133	150	168	191	

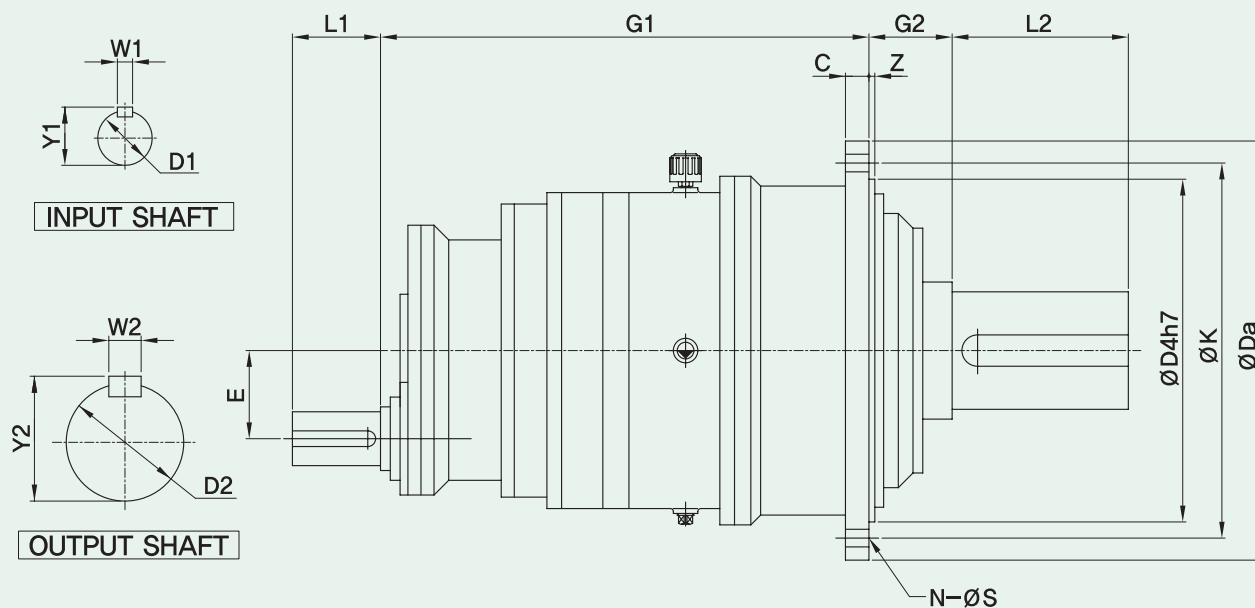
PN3



(UNIT : mm)

SIZE	C	Da	D1	D2	D4	G1	G2	K	L1	L2	N	S	W1	W2	Y1	Y2	Z	Weight (kg)	OIL (Liter)
9	24	428	55	120	350	565	95	388	90	210	24	18	16	32	59	127	6±1.5	250	7
10	28	472	55	130	394	585	95	436	90	210	28	18	16	32	59	137	6±1.5	300	9
11	32	525	55	150	425	616	109	485	90	240	20	22	16	36	59	158	8±1.5	370	13
12	34	605	55	160	495	630	106	555	90	270	20	26	16	40	59	169	9±1.5	500	17
13	39	645	55	180	535	688	118	595	90	310	24	26	16	45	59	190	11±1.5	620	21
14	42	720	55	210	610	711	139	665	90	350	32	26	16	50	59	221	9	880	33
16	44	770	70	230	660	853	142	715	120	350	36	26	20	50	74.5	241	10	1100	42
17	50	895	70	250	750	879	139	830	120	400	24	33	20	56	74.5	262	10	1580	60
18	50	930	80	260	785	1014	134	865	140	400	32	33	22	56	85	272	10	2000	70
19	56	980	80	280	840	1037	148.5	915	140	450	36	33	22	63	85	292	12	2100	85
20	56	980	80	300	840	1037	148.5	915	140	500	36	33	22	70	85	314	12	2200	75
21	62	1115	80	310	935	1093	158	1025	140	500	32	39	22	70	85	324	24	2785	115
22	62	1115	80	330	935	1093	158	1025	140	500	32	39	22	70	85	344	24	2950	105
23	68	1210	95	350	1025	1222	175	1120	160	550	36	39	25	80	100	365	28	3625	140
24	68	1210	95	360	1025	1222	175	1120	160	590	36	39	25	80	100	375	28	4100	135
25	74	1320	95	380	1115	1285	182	1220	160	590	36	45	25	80	100	395	29	5000	195
26	74	1320	95	400	1115	1285	182	1220	160	650	36	45	25	90	100	417	29	5400	170
27	81	1460	110	430	1215	1470	196.5	1345	180	690	32	52	28	90	116	447	31	6400	250
28	81	1460	110	450	1215	1470	196.5	1345	180	750	32	52	28	100	116	469	31	6875	220
29	87	1565	110	460	1320	1517	209	1450	180	750	36	52	28	100	116	479	34	8190	310
30	87	1565	110	480	1320	1517	209	1450	180	790	36	52	28	100	116	499	34	8715	280
31	94	1665	120	500	1400	1585	232	1545	210	790	32	62	32	100	127	519	36	10700	390
32	94	1665	120	510	1400	1585	232	1545	210	850	32	62	32		127		36	11200	360
33	100	1755	130	530	1495	1710	251	1635	210	900	36	62	32		137		36	12950	470
34	100	1755	130	570	1495	1710	251	1635	210	950	36	62	32		137		36	13800	430

PS3



(UNIT : mm)

SIZE	C	Da	D1	D2	D4	E	G1	G2	K	L1	L2	N	S	W1	W2	Y1	Y2	Z	Weight (kg)	OIL (Liter)
9	24	428	38	120	350	90	565	95	388	60	210	24	18	10	32	41	127	6±1.5	270	7
10	28	472	38	130	394	90	585	95	436	60	210	28	18	10	32	41	137	8±1.5	320	9
11	32	525	38	150	425	90	616	109	485	60	240	20	22	10	36	41	158	8±1.5	390	13
12	34	605	38	160	495	90	630	106	555	60	270	20	26	10	40	41	169	9±1.5	540	17
13	39	645	38	180	535	90	688	118	595	60	310	24	26	10	45	41	190	11±1.5	670	21
14	42	720	38	210	610	90	711	139	665	60	350	32	26	10	50	41	221	9	930	33
16	44	770	55	230	660	115	853	142	715	90	350	36	26	16	50	59	241	10	1115	42
17	50	895	55	250	750	115	879	139	830	90	400	24	33	16	56	59	262	10	1625	60
18	50	930	70	260	785	140	1014	134	865	120	400	32	33	20	56	74.5	272	10	2060	70
19	56	980	70	280	840	140	1037	149	915	120	450	36	33	20	63	74.5	292	12	2160	85
20	56	980	70	300	840	140	1037	149	915	120	500	36	33	20	70	74.5	314	12	2260	75
21	62	1115	70	310	935	140	1093	158	1025	120	500	32	39	20	70	74.5	324	24	2870	115
22	62	1115	70	330	935	140	1093	158	1025	120	500	32	39	20	70	74.5	344	24	3040	105
23	68	1210	80	350	1025	170	1222	175	1120	140	550	36	39	22	80	85	365	28	3730	140
24	68	1210	80	360	1025	170	1222	175	1120	140	590	36	39	22	80	85	375	28	4220	135
25	74	1320	80	380	1115	170	1284	182	1220	140	590	36	45	22	80	85	395	29	5150	195
26	74	1320	80	400	1115	170	1284	182	1220	140	650	36	45	22	90	85	417	29	5560	170
27	81	1460	90	430	1215	200	1470	197	1345	160	690	32	52	25	90	95	447	31	6580	250
28	81	1460	90	450	1215	200	1470	197	1345	160	750	32	52	25	100	95	469	31	7080	220
29	87	1565	90	460	1320	200	1517	209	1450	160	750	36	52	25	100	95	479	34	8400	310
30	87	1565	90	480	1320	200	1517	209	1450	160	790	36	52	25	100	95	499	34	8970	280
31	94	1665	100	500	1400	230	1617	232	1545	180	790	32	62	28	100	106	519	36	11000	390
32	94	1665	100	510	1400	230	1617	232	1545	180	850	32	62	28		106		36	11500	360
33	100	1755	120	530	1495	265	1735	251	1635	210	900	36	62	32		127		36	13300	470
34	100	1755	120	570	1495	265	1735	251	1635	210	950	36	62	32		127		36	14200	430

PL2

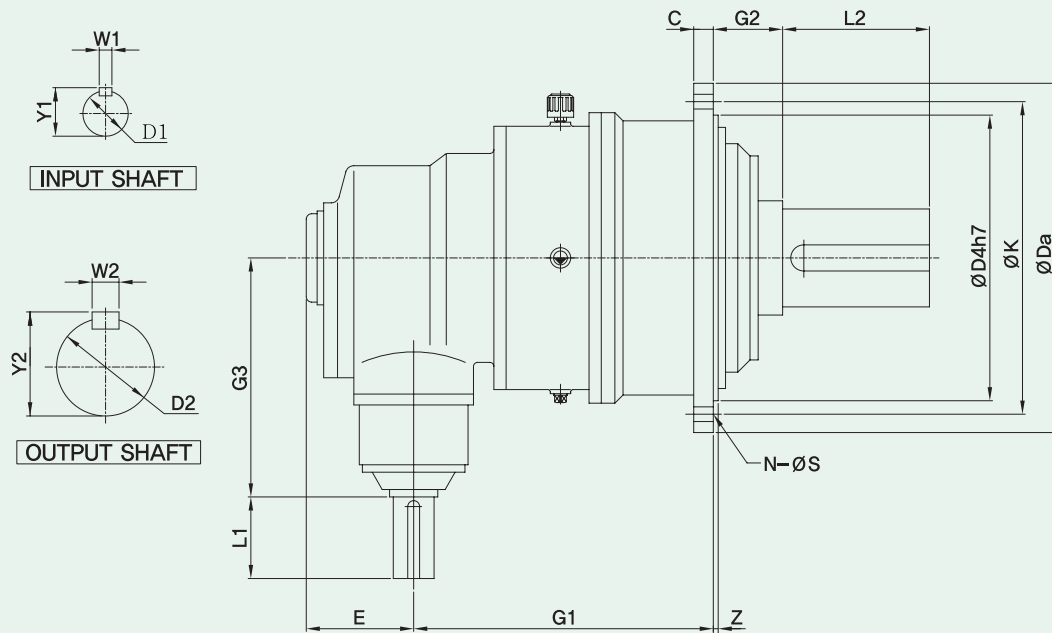
Nominal Ratio	Speed		GEAR UNIT SIZE										
	Input rpm	Model	09	10	11	12	13	14	16	17	18	19	20
		Torque (kg.m)	2221	3131	4240	6060	8292	11517	15702	20020	24631	29777	35088
			Mechanical Power Ratings (UNIT : kW)										
31.5	1,800	133	187	254	362	502	612	967	1,038	1,476	1,784	1,820	
	1,200	89	125	169	242	335	408	646	692	984	1,189	1,213	
	900	62	88	119	170	235	287	453	487	692	836	853	
35.5	1,800	118	167	226	322	414	584	859	1,030	1,309	1,583	1,805	
	1,200	79	110	150	215	296	389	572	686	874	1,056	1,204	
	900	55	78	106	151	195	273	403	483	614	743	846	
40	1,800	104	148	200	286	367	518	762	962	1,163	1,405	1,686	
	1,200	70	98	133	191	245	346	508	642	775	937	1,124	
	900	50	70	93	134	172	243	358	451	545	658	791	
45	1,800	94	131	178	254	352	496	678	856	1,033	1,249	1,499	
	1,200	62	88	119	169	234	330	43	570	689	833	1,000	
	900	44	62	83	119	164	232	317	401	484	585	703	
50	1,800	84	118	160	229	317	446	610	769	930	1,124	1,349	
	1,200	56	79	107	152	211	298	407	514	620	750	899	
	900	39	55	75	107	149	209	286	361	435	527	632	
56	1,800	74	106	143	204	282	398	545	688	830	1,003	1,205	
	1,200	50	71	95	136	188	265	362	458	553	670	803	
	900	35	50	68	96	133	187	255	322	389	470	565	
63	1,800	66	94	127	181	251	354	484	611	738	892	1,070	
	1,200	44	62	85	121	167	236	323	407	492	595	714	
	900	32	44	60	86	118	165	227	287	345	419	502	
71	1,800	59	83	113	161	223	314	430	542	655	792	950	
	1,200	40	55	76	107	149	209	287	361	437	528	634	
	900	28	39	53	75	105	147	201	254	307	371	446	
80	1,800	53	74	100	143	198	278	382	481	581	702	844	
	1,200	35	49	67	95	132	186	254	320	388	468	562	
	900	25	35	47	68	92	131	179	225	272	330	395	
90	1,800	47	66	89	127	175	247	338	427	516	624	750	
	1,200	31	43	59	85	118	166	226	286	344	416	499	
	900	21	30	42	60	82	116	159	200	242	293	351	
100	1,800	42	59	80	114	158	223	305	385	464	562	674	
	1,200	28	40	53	77	106	149	203	257	310	374	450	
	900	19	28	37	54	74	105	143	180	218	263	316	

 The compulsory lubrication system is required for the park marked with

GEAR UNIT SIZE										
21	22	23	24	25	26	27	28	29	30	31~34
38314	45410	51681	57685	68728	73748	85603	94883	105879	119853	
Mechanical Power Ratings (UNIT : kW)										
2,371	2,722	—	—	—	—	—	—	—	—	On request
1,580	1,814	2,069	2,387	2,758	3,077	3,436	3,524	—	—	
1,112	1,276	1,455	1,679	1,940	2,163	2,415	2,478	—	—	
2,104	2,416	—	—	—	—	—	—	—	—	
1,403	1,610	1,836	2,054	2,448	2,730	3,048	3,400	—	—	
987	1,132	1,290	1,445	1,721	1,919	2,143	2,390	—	—	
1,867	2,143	—	—	—	—	—	—	—	—	
1,244	1,429	1,630	1,880	2,172	2,423	2,706	3,017	—	—	
875	993	1,145	1,322	1,528	1,703	1,902	2,121	—	—	
1,660	1,906	2,172	2,507	—	—	—	—	—	—	
1,106	1,271	1,448	1,672	1,931	2,154	2,405	2,682	—	—	
779	893	1,018	—	1,358	1,514	1,691	1,886	2,104	2,382	
1,494	1,715	1,955	2,256	—	—	—	—	—	—	
996	1,144	1,303	1,504	1,738	1,938	2,165	2,413	—	—	
700	803	917	1,058	1,222	1,362	1,522	1,697	1,893	2,143	
1,333	1,531	1,746	2,014	—	—	—	—	—	—	
889	1,021	1,164	1,343	1,552	1,730	1,932	2,155	2,405	2,722	
626	718	818	944	1,091	1,217	1,359	1,515	1,691	1,914	
1,186	1,361	1,552	1,790	2,069	2,308	2,576	2,873	—	—	
791	907	1,034	1,194	1,379	1,538	1,718	1,915	2,137	2,419	
556	638	727	839	970	1,081	1,208	1,347	1,503	1,701	
1,052	1,207	1,376	1,589	1,836	2,047	2,286	2,549	—	—	
701	805	918	1,060	1,224	1,366	1,524	1,699	1,896	2,147	
493	566	646	745	861	960	1,072	1,195	1,333	1,510	
934	1,072	1,222	1,410	1,630	1,817	2,029	2,262	—	—	
623	714	815	940	1,086	1,212	1,352	1,508	1,684	1,906	
438	503	573	660	764	852	951	1,061	1,184	1,340	
830	953	1,086	125	1,448	2	1,804	2,011	2,244	2,540	
73	635	724	835	965	1,076	1,202	1,340	1,496	1,693	
389	447	510	587	678	757	846	943	1,052	1,191	
626	857	978	1,128	1,303	1,453	1,624	1,810	2,020	2,286	
498	571	652	752	869	970	1,082	1,207	1,346	1,524	
350	402	458	529	611	682	761	848	947	1,072	

표시부는 강제 윤활SYSTEM이 요구됨.

PL2



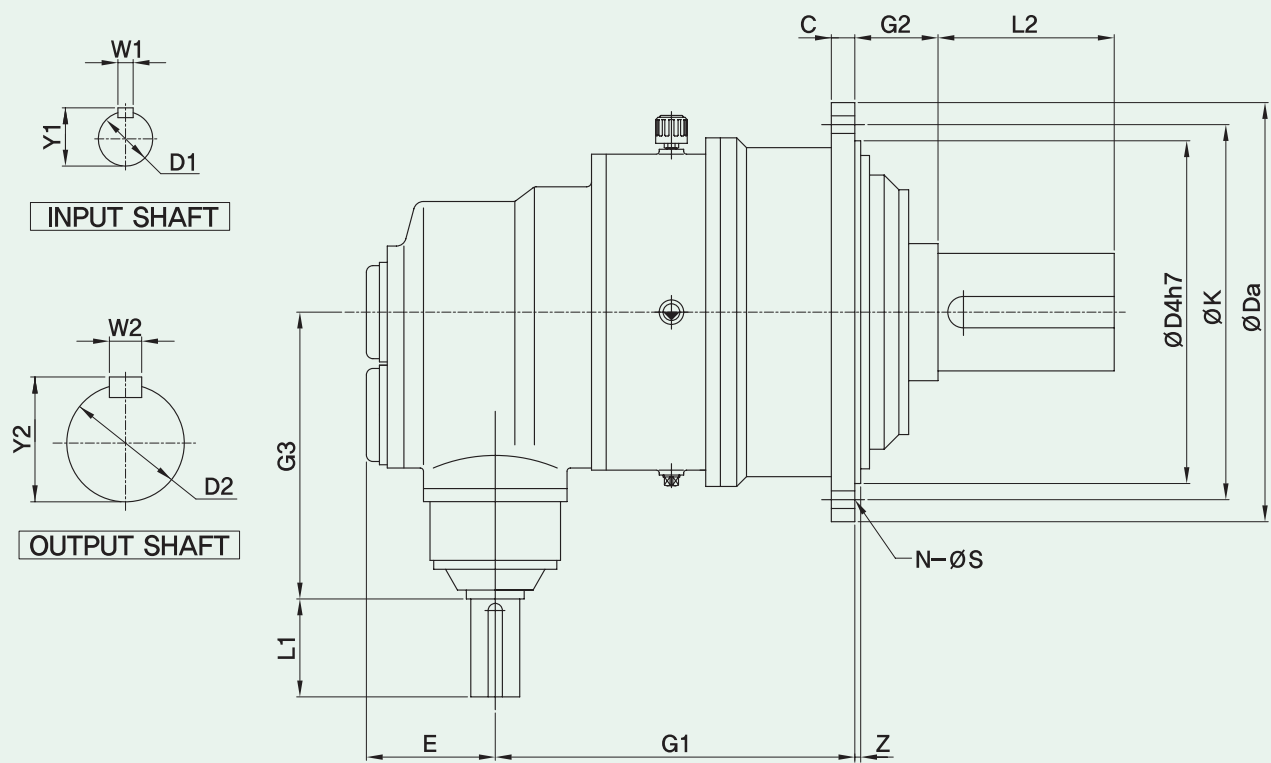
(UNIT : mm)

SIZE	C	Da	D1	D2	D4	E	G1	G2	K	L1	L2	N	S	W1	W2	Y1	Y2	Z	Weight (kg)	OIL (Liter)
9	24	428	To be determined on the basis of reduction ratio	120	350	185	425	95	388	To be determined on the basis of reduction ratio	210	24	18		32	To be determined on the basis of reduction ratio	127	6±1.5	260	6
10	28	472		130	394	185	446	95	436		210	28	18		32		130	8±1.5	310	8
11	32	525		150	425	210	501	109	485		240	20	22		36		158	8±1.5	380	12
12	34	605		160	495	210	485	106	555		270	20	26		40		169	9±1.5	520	16
13	39	645		180	535	250	619	118	595		310	24	26		45		190	11±1.5	650	20
14	42	720		210	610	250	630	139	665		350	32	26		50		221	9	910	32
16	44	770		230	660	295	705	142	715		350	36	26		50		241	10	1140	40
17	50	895		250	750	295	731	139	830		400	24	33		56		262	10	1660	56
18	50	930		260	785	350	882	134	865		400	32	33		56		272	10	2100	66
19	56	980		280	840	350	906	149	915		450	36	33		63		292	12	2200	82
20	56	980		300	840	350	906	149	915		500	36	33		70		314	12	2300	75
21	62	1115		310	935	400	996	158	1025		500	32	39		70		324	24	2930	110
22	62	1115		330	935	400	996	158	1025		500	32	39		70		344	24	3100	95
23	68	1210		350	1025	400	1055	175	1120		550	36	39		80		365	28	3800	130
24	68	1210		360	1025	400	1055	175	1120		590	36	39		80		375	28	4300	125
25	74	1320		380	1115	475	1138	182	1220		590	36	45		80		395	29	5250	190
26	74	1320		400	1115	475	1138	182	1220		650	36	45		80		417	29	5660	160
27	81	1460		430	1215	475	1272	197	1345		690	32	52		90		447	31	6680	245
28	81	1460		450	1215	475	1272	197	1345		750	32	52		100		469	31	7180	205
29	87	1565		460	1320	530	1367	209	1450		750	36	52		100		479	34	8500	305
30	87	1565	480	1320	530	1367	209	1450	790	36	52		100	499	34	9070	255			
31~34	On request																			

PK2

Nominal Ratio	Speed		GEAR UNIT SIZE										
	Input rpm	Mode	09	10	11	12	13	14	16	17	18	19	20
		Torque (kg.m)	2200	3102	4202	6002	8657	11716	16002	20215	24443	29528	35438
Mechanical Power Ratings (UNIT : kW)													
112	1,800		37	52	71	101	140	197	270	341	412	498	598
	1,200		25	35	47	67	94	132	180	227	275	331	398
	900		17	25	33	47	65	92	126	160	192	233	280
125	1,800		33	47	63	91	126	176	241	305	368	446	535
	1,200		22	31	42	60	84	118	161	204	246	298	356
	900		16	22	30	43	59	83	114	143	173	209	251
140	1,800		30	42	57	80	112	158	216	272	329	398	478
	1,200		20	28	38	54	74	106	144	181	232	265	318
	900		14	20	27	38	53	74	101	128	154	187	224
160	1,800		26	37	50	71	98	138	188	239	288	348	418
	1,200		17	24	33	47	65	92	126	158	192	232	278
	900		12	17	23	34	46	65	89	111	135	163	196
180	1,800		23	33	44	62	88	122	168	212	256	310	372
	1,200		15	22	29	42	58	82	112	142	170	206	247
	900		11	15	21	29	41	57	79	99	120	145	174
200	1,800		21	29	40	56	78	110	151	191	230	278	335
	1,200		14	20	26	37	53	73	101	127	154	186	223
	900		10	14	19	27	37	52	71	89	108	131	156
225	1,800		18	26	35	50	70	98	134	169	205	247	298
	1,200		12	17	24	34	47	66	90	113	137	166	198
	900		9	12	17	24	33	46	63	80	96	116	140
250	1,800		17	23	32	46	62	89	121	152	185	223	268
	1,200		11	16	21	30	42	59	80	102	122	149	179
	900		8	11	15	21	29	42	56	72	87	105	125
280	1,800		15	21	28	41	56	79	108	137	164	199	239
	1,200		10	14	19	26	37	53	72	91	109	133	160
	900		7	10	13	19	26	37	51	64	78	93	113
320	1,800		13	18	25	36	49	70	95	119	144	174	209
	1,200		9	12	17	24	31	46	62	79	96	116	139
	900		6	9	12	17	23	33	44	56	68	82	98
360	1,800		12	16	22	31	43	61	84	106	128	155	186
	1,200		8	11	15	20	29	41	56	71	85	103	124
	900		5	8	10	15	20	29	39	50	60	72	87
400	1,800		10	15	20	29	40	55	76	95	115	139	167
	1,200		7	10	13	19	26	37	50	64	77	92	112
	900		5	7	9	14	18	26	35	45	54	65	79
450	1,800		9	13	18	25	35	49	67	85	102	124	149
	1,200		6	9	12	17	23	32	44	56	68	83	100
	900		4	6	8	11	17	23	32	39	48	59	70
500	1,800		8	12	16	23	31	44	60	77	92	112	133
	1,200		6	8	11	16	20	30	41	50	61	74	89
	900		4	6	7	10	15	20	28	36	43	52	63
560	1,800		On request										
	1,200												
	900												

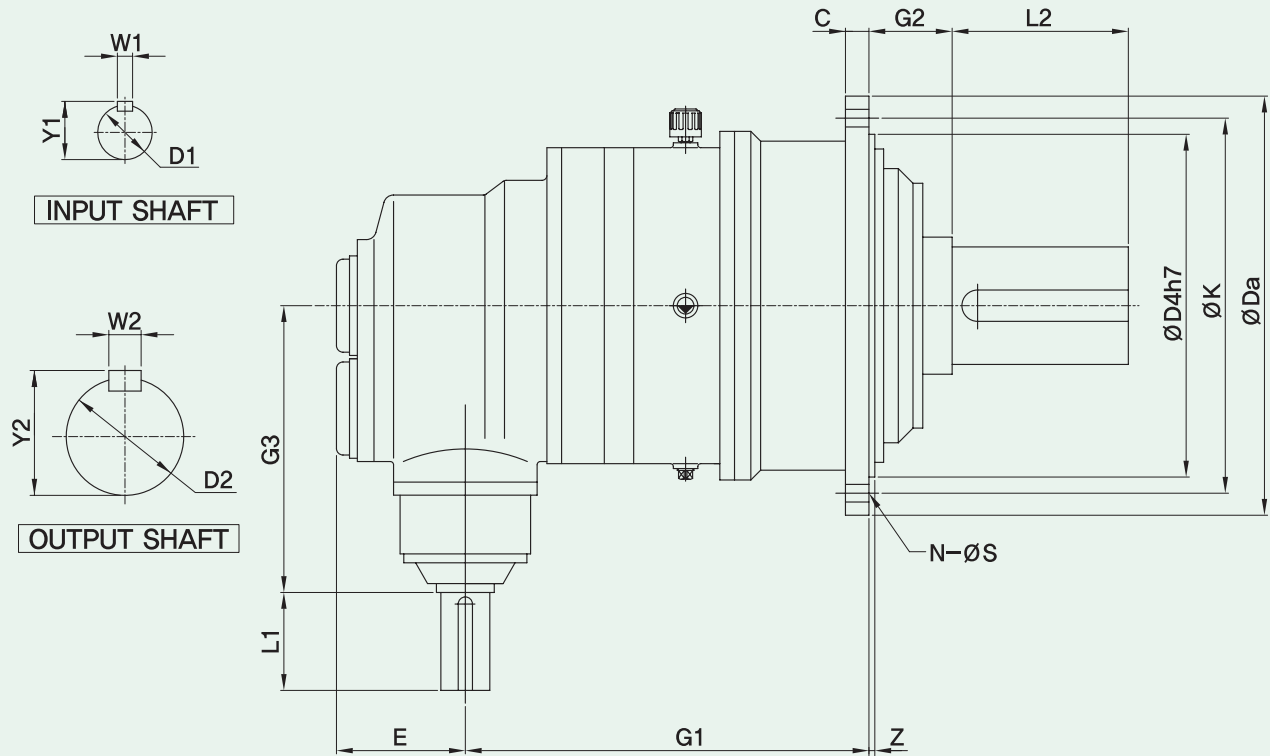
PK2



(UNIT : mm)

SIZE	C	Da	D1	D2	D4	E	G1	G2	G3	K	L1	L2	N	S	W1	W2	Y1	Y2	Z	Weight (kg)	OIL (Liter)
9	24	428	To be determined on the basis of reduction ratio	120	350	119	339	95	320	388	To be determined on the basis of reduction ratio	210	24	18	To be determined on the basis of reduction ratio	32	To be determined on the basis of reduction ratio	127	6±1.5	270	6
10	28	472		130	394	119	359	95	320	436		210	28	18		32		137	8±1.5	320	8
11	32	525		150	425	137	419	109	375	485		240	20	22		36		158	8±1.5	390	12
12	34	605		160	495	137	433	106	375	555		270	20	26		40		169	9±1.5	540	16
13	39	645		180	535	172	519	118	445	595		310	24	26		45		190	11±1.5	690	20
14	42	720		210	610	172	542	139	445	665		350	32	26		50		221	9	950	32
16	44	770		230	660	194	632	142	520	715		350	36	26		50		241	10	1200	40
17	50	895		250	750	194	658	139	520	830		400	24	33		56		262	10	1700	56
18	50	930		260	785	240	742	134	615	865		400	32	33		56		272	10	2010	73
19	56	980		280	840	240	765	149	615	915		450	36	33		63		292	12	2470	82
20	56	980	300	840	240	765	149	615	915	500	36	33	70	314	12	2550	75				
21~26		On request																			

PK3



(UNIT : mm)

SIZE	C	Da	D1	D2	D4	E	G1	G2	G3	K	L1	L2	N	S	W1	W2	Y1	Y2	Z	Weight (kg)	OIL (Liter)
9	24	428	To be determined on the basis of reduction ratio	120	350	119	435	165	320	388	To be determined on the basis of reduction ratio	210	24	18	To be determined on the basis of reduction ratio	32	To be determined on the basis of reduction ratio	127	6±1.5	280	7
10	28	472		130	394	119	455	174	320	436		210	28	18		32		137	8±1.5	330	9
11	32	525		150	425	119	486	204	320	485		240	20	22		36		158	8±1.5	390	15
12	34	605		160	495	119	500	224	320	555		270	20	26		40		169	9±1.5	530	20
13	39	645		180	535	119	558	241	320	595		310	24	26		45		190	11±1.5	670	21
14	42	720		210	610	119	581	278	320	665		350	32	26		50		221	9	940	33
16	44	770		230	660	137	693	285	375	715		350	36	26		50		241	10	1137	42
17	50	895		250	750	137	719	294	375	830		400	24	33		56		262	10	1660	60
18	50	930		260	785	172	818	303	445	865		400	32	33		56		272	10	2100	70
19	56	980		280	840	172	841	328	445	915		450	36	33		63		292	12	2200	85
20	56	980		300	840	172	841	328	445	915		500	36	33		70		314	12	2300	75
21	62	1115		310	935	172	898	354	445	1025		500	32	39		70		324	24	2930	115
22	62	1115		330	935	172	898	354	445	1025		500	32	39		70		344	24	3100	105
23	68	1210		350	1025	194	1003	380	520	1120		550	36	39		80		365	28	3800	140
24	68	1210		360	1025	194	1003	380	520	1120		590	36	39		80		375	28	4300	135
25	74	1320		380	1115	194	1065	407	520	1220		590	36	45		80		395	29	5250	195
26	74	1320		400	1115	194	1065	407	520	1220		650	36	45		90		417	29	5660	170
27	81	1460		430	1215	240	1206	453	615	1345		690	32	52		90		417	31	6680	250
28	81	1460		450	1215	240	1206	453	615	1345		750	32	52		100		469	31	7180	220
29	87	1565		460	1320	240	1252	483	615	1450		750	36	52		100		479	34	8500	310
30	87	1565		480	1320	240	1252	483	615	1450		790	36	52		100		499	34	9070	280

PK3

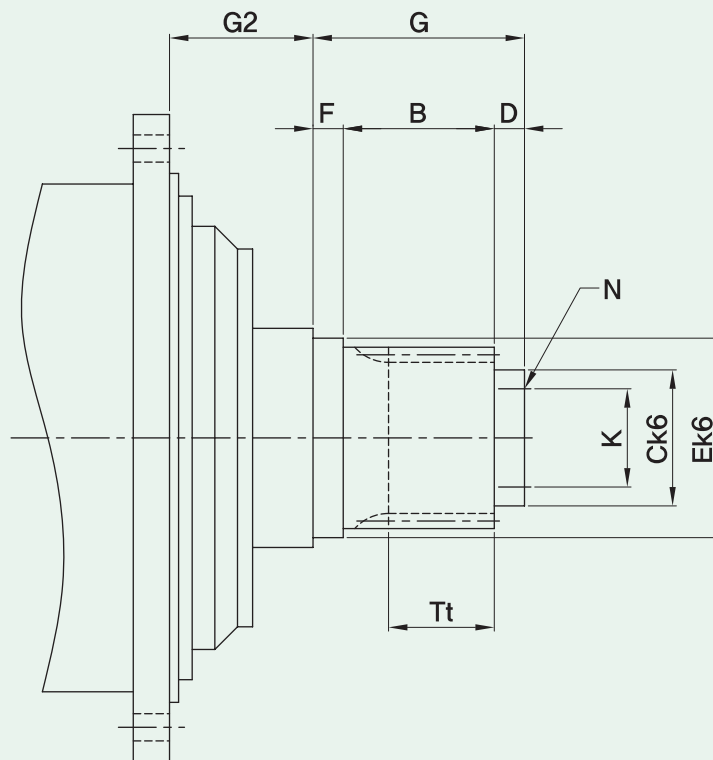
Nominal Ratio	Speed		GEAR UNIT SIZE										
	Input rpm	Mode	09	10	11	12	13	14	16	17	18	19	20
		Torque (kg.m)	2242	3140	4260	6155	8497	11886	16216	20522	24779	29967	35988
		Mechanical Power Ratings (UNIT : kW)											
560	1,800	8	11	14	20	29	40	55	70	84	101	121	
	1,200	5	7	10	13	19	26	36	46	55	67	80	
	900	3	5	7	10	14	19	26	33	39	47	57	
630	1,800	7	9	13	18	25	36	49	61	74	90	108	
	1,200	4	6	8	12	17	24	32	41	49	60	72	
	900	3	4	6	9	12	17	23	29	35	42	51	
710	1,800	6	8	11	17	23	31	43	54	66	79	96	
	1,200	4	5	7	11	14	22	29	36	44	53	64	
	900	3	4	6	8	10	15	20	26	30	37	45	
800	1,800	5	7	10	14	20	28	38	48	59	71	85	
	1,200	3	5	7	10	13	19	25	32	38	47	56	
	900	2	3	5	7	9	14	18	23	27	33	39	
900	1,800	5	7	9	13	18	25	34	43	52	62	76	
	1,200	3	4	6	8	12	17	23	29	35	42	50	
	900	2	3	4	6	8	11	16	20	25	29	35	
1000	1,800	4	6	8	12	16	23	31	38	47	56	68	
	1,200	3	4	5	7	11	14	20	26	31	37	46	
	900	2	3	4	6	8	10	15	18	21	27	32	
1120	1,800	4	5	7	11	14	20	28	35	42	50	61	
	1,200	3	3	5	7	10	13	18	23	28	34	41	
	900	2	2	3	5	7	9	12	16	19	24	28	
1250	1,800	3	5	6	10	13	18	24	31	37	46	54	
	1,200	2	3	4	6	8	12	17	20	25	30	36	
	900	2	2	3	5	6	8	11	15	18	21	26	
1400	1,800	3	4	6	8	6	16	22	28	34	41	48	
	1,200	2	3	4	6	7	11	14	18	23	26	32	
	900	1	2	3	4	5	8	10	14	16	19	23	
1600	1,800	3	4	5	7	10	14	19	24	29	35	42	
	1,200	2	3	3	5	7	10	13	16	19	24	29	
	900	1	2	2	3	5	7	9	11	14	17	20	
1800	1,800	2	3	4	6	8	12	17	22	26	31	37	
	1,200	2	2	3	5	6	8	11	14	17	20	25	
	900	1	2	2	3	4	6	8	10	12	15	18	
2000	1,800	2	3	4	6	8	11	15	19	23	29	34	
	1,200	1	2	3	4	5	7	10	13	16	19	23	
	900	1	1	2	3	4	5	7	9	11	14	16	
2240	1,800	2	3	4	5	7	10	14	17	20	25	30	
	1,200	1	2	2	3	5	7	9	12	14	17	20	
	900	1	1	2	2	3	5	6	8	10	12	14	
2500	1,800	2	2	3	5	6	9	12	15	19	23	28	
	1,200	1	2	2	3	4	6	8	10	12	15	18	
	900	1	1	1	2	3	4	6	7	9	11	13	
2800	1,800	2	2	3	4	6	8	11	14	17	20	24	
	1,200	1	1	2	3	4	5	7	9	11	13	16	
	900	1	1	1	2	3	4	5	7	8	9	11	
3150	1,800	1	2	3	4	5	7	10	12	14	18	22	
	1,200	1	1	2	2	3	5	6	8	10	12	14	
	900	1	1	1	2	2	3	5	6	7	8	10	
3550	1,800	1	2	2	3	4	6	9	11	13	16	19	
	1,200	1	1	2	2	3	4	6	7	9	11	13	
	900	1	1	1	2	2	3	4	5	6	7	9	
4000	1,800	1	1	2	3	4	6	8	10	12	14	17	
	1,200	1	1	1	2	5	4	5	6	8	9	11	
	900	0	1	1	1	2	3	4	5	6	7	8	

(Nomiral power : kW)

GEAR UNIT SIZE										
21	22	23	24	25	26	27	28	29	30	31~34
39885	45683	52107	60236	69503	77470	86579	93931	107730	121914	
Mechanical Power Ratings (UNIT : kW)										
134	154	175	203	234	262	292	325	364	410	On request
90	103	118	136	156	174	194	217	242	274	
63	72	82	95	110	123	137	153	170	192	
119	137	156	180	209	233	259	289	323	365	
79	91	104	120	139	155	173	193	215	244	
56	64	73	84	98	109	122	136	151	171	
106	121	138	160	185	206	230	257	287	324	
71	82	92	107	124	138	154	172	191	216	
50	57	65	75	87	97	108	8	134	152	
94	108	122	142	164	182	204	228	254	288	
62	72	82	95	109	122	136	152	169	192	
44	51	57	66	77	86	96	107	119	135	
84	96	109	126	145	163	181	203	226	256	
55	64	73	84	97	108	121	134	150	170	
39	45	52	60	69	77	86	95	106	120	
76	86	98	114	131	146	163	182	203	230	
50	58	66	76	88	97	109	121	136	154	
35	41	46	53	62	69	77	86	96	108	
67	77	88	101	118	131	146	163	181	205	
44	52	59	67	78	88	97	108	121	137	
32	36	42	47	55	61	69	77	86	97	
60	70	79	91	104	118	131	145	163	184	
40	46	53	60	70	78	88	97	108	122	
28	33	37	43	50	55	61	69	77	87	
54	61	71	82	94	104	116	130	145	164	
36	41	47	54	62	70	78	86	97	109	
25	29	33	38	44	50	55	61	69	77	
47	54	61	71	82	91	102	114	127	144	
31	36	41	47	55	61	68	76	85	96	
23	25	29	34	38	43	48	53	60	68	
42	48	55	64	73	82	91	101	113	128	
28	32	36	42	48	54	60	67	76	85	
19	23	26	29	34	38	43	47	53	60	
37	43	49	56	66	73	82	91	102	115	
25	29	32	38	43	49	54	61	67	77	
18	20	23	27	30	34	38	43	47	54	
34	38	44	50	59	65	73	82	91	103	
23	25	29	34	40	43	49	54	60	68	
16	18	20	24	27	30	34	38	43	48	
30	35	40	46	53	59	65	73	82	92	
20	23	26	30	35	40	43	47	54	61	
15	16	18	21	25	27	30	34	38	43	
26	31	35	41	47	53	59	65	73	82	
18	20	24	28	31	35	38	43	48	55	
13	15	17	19	23	25	27	30	34	38	
24	28	31	36	42	47	52	58	65	73	
16	18	20	24	28	31	35	38	43	49	
11	12	15	17	19	21	25	27	30	34	
22	24	28	32	37	41	46	52	58	65	
14	17	18	22	25	28	31	35	38	43	
10	11	14	15	17	19	21	24	27	30	
19	22	24	29	32	36	41	46	50	58	
12	14	17	19	22	24	28	30	34	38	
9	10	11	14	16	17	19	21	24	27	

On request

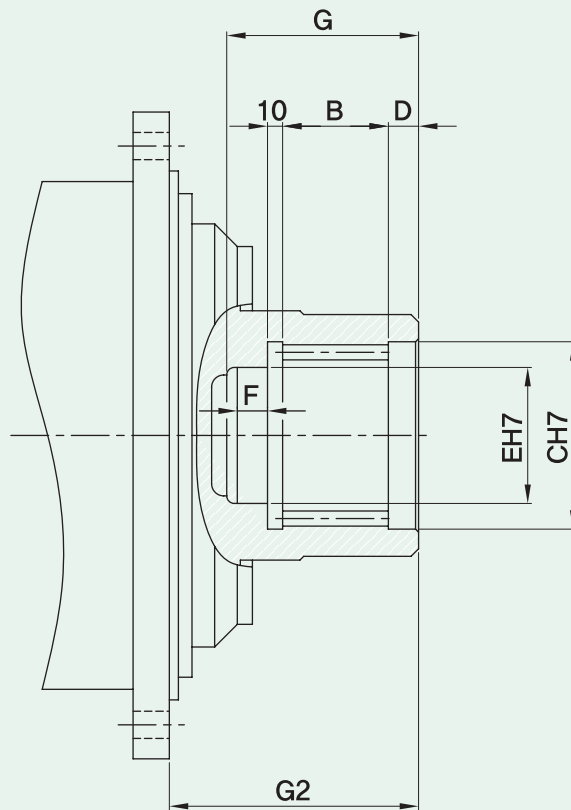
Solid with Involute Spline (DIN 5480)



(UNIT : mm)

SIZE	G2	G	F	B	D	N	Tt	k	C	E
9	95	120	20	80	20	3×M16×24	70	80	110	132
10	95	130	20	90	20	3×M16×24	80	90	120	142
11	109	150	25	100	25	3×M16×24	90	110	140	162
12	106	160	25	110	25	3×M16×24	100	130	90	182
13	118	175	25	120	30	3×M16×24	110	140	100	202
14	139	195	30	135	30	3×M16×24	125	160	120	222
16	142	220	30	155	35	3×M20×30	140	185	140	252
17	139	240	35	165	40	3×M20×30	150	200	155	262
18	134	250	35	175	40	3×M20×30	160	215	170	282
19	148.5	260	35	185	40	3×M20×30	170	225	180	302
20	148.5	270	35	195	40	6×M20×30	180	235	190	312
21	158	280	35	205	40	6×M20×30	190	250	200	322
22	158	290	35	215	40	6×M20×30	200	265	210	342
23	175	290	35	215	40	6×M20×30	200	275	230	362
24	175	310	35	235	40	6×M20×30	220	290	245	382
25	182	320	35	245	40	6×M24×36	230	310	260	402
26	182	330	35	255	40	6×M24×36	240	330	280	422
27	196.5	340	35	265	40	6×M24×36	250	370	310	442
28	196.5	360	40	275	45	6×M24×36	260	380	330	452
29	209	370	40	285	45	6×M24×36	270	390	340	462
30	209	385	40	300	45	6×M24×36	285	410	360	482

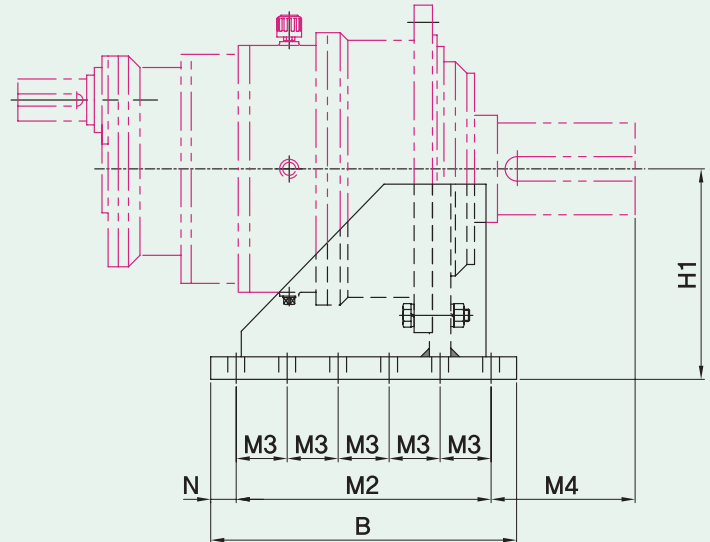
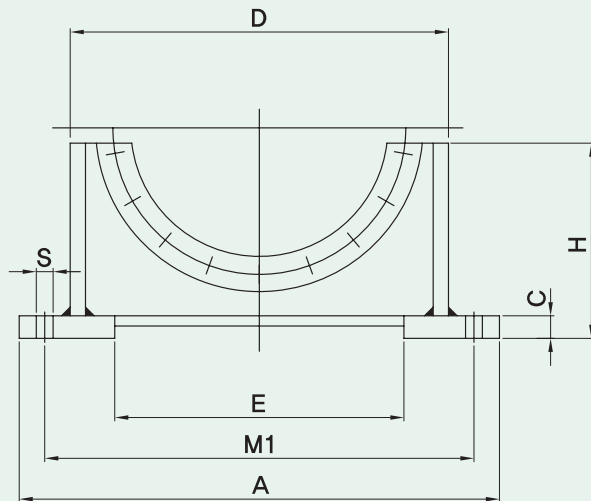
Hollow with Involute Spline (DIN 5480)



(UNIT : mm)

SIZE	G2	G	F	B	D	C	E
9	165	150	20	70	40	122	107
10	174	160	20	80	40	132	117
11	204	180	25	90	45	142	125
12	223	190	25	100	45	162	145
13	237	200	25	110	45	182	165
14	264	215	25	125	45	212	195
16	285	235	25	140	50	242	220
17	290	250	30	150	50	252	230
18	303	260	30	160	50	262	240
19	327.5	270	30	170	50	282	260
20	327.5	280	30	180	50	302	280
21	354	310	40	190	60	312	290
22	354	320	40	200	60	332	310
23	348	320	40	200	60	342	320
24	368	340	40	220	60	362	340
25	372	350	40	230	60	382	360
26	382	360	40	240	60	402	380
27	423	370	40	250	60	442	420
28	428	385	40	260	65	452	430
29	433	400	45	270	65	462	440
30	448	415	45	285	65	482	460

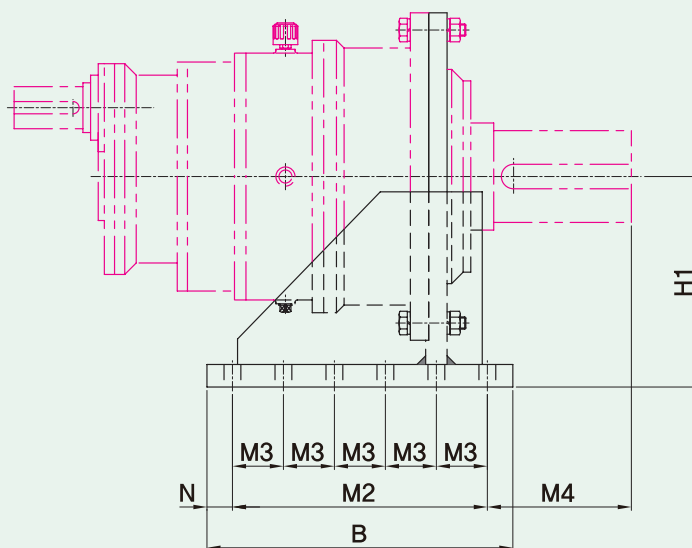
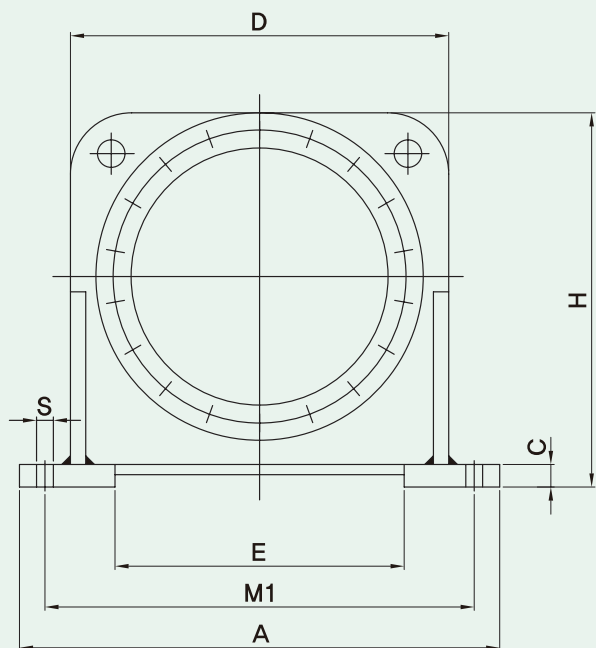
Half-Type



(UNIT : mm)

SIZE	A	B	C	D	E	H	H1	M1	M2	M3	M4	N	S
9	580	330	20	450	380	255	260	520	260	130	240	35	26
10	630	360	25	500	430	275	280	570	290	145	240	35	26
11	680	400	30	550	480	310	315	620	330	110	274	35	26
12	760	450	30	630	560	355	360	700	380	95	292	35	26
13	820	490	35	680	610	380	390	750	420	105	334	35	26
14	920	560	35	760	680	420	430	840	480	120	380	40	33
16	980	580	40	820	700	460	470	900	500	125	374	40	33
17	1130	670	45	940	810	530	540	1040	580	145	405	45	39
18	1180	720	45	980	830	550	560	1080	620	155	385	50	39
19	1260	760	50	1050	880	580	590	1160	640	160	450	60	45
20	1260	760	50	1050	880	575	590	1160	640	160	500	60	45
21	1440	840	55	1170	1020	545	660	1320	700	175	513	70	52
22	1440	840	55	1170	1020	545	660	1320	700	175	513	70	52
23	1540	910	60	1270	1100	715	730	1420	750	150	567	80	52
24	1540	910	60	1270	1100	715	730	1420	750	150	607	80	52
25	1700	1000	65	1400	1240	780	795	1550	860	215	574	70	62
26	1700	1000	65	1400	1240	780	795	1550	860	215	634	70	62
27	1850	1100	70	1550	1370	850	870	1700	950	190	664	75	62
28	1850	1100	70	1550	1370	850	870	1700	950	190	724	75	62
29	1980	1100	75	1640	1460	905	925	1820	1000	250	731	90	70
30	1980	1180	75	1640	1460	905	925	1820	1000	250	771	90	70
31	2150	1300	75	1750	1570	980	1000	1950	1100	220	773	100	70
32	2150	1300	75	1750	1570	980	1000	1950	1100	220	833	100	70
33	2230	1350	85	1850	1630	1030	1050	2050	1150	230	883	100	78
34	2230	1350	85	1850	1630	1030	1050	2050	1150	230	933	100	78

Full-Type

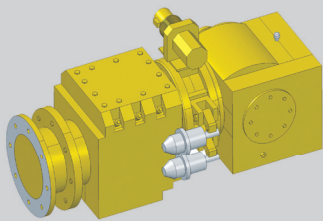


(UNIT : mm)

SIZE	A	B	C	D	E	H	H1	M1	M2	M3	M4	N	S
9	580	330	20	450	380	480	260	520	260	130	240	35	26
10	630	360	25	500	430	525	280	570	290	145	240	35	26
11	680	400	30	550	480	585	315	620	330	110	274	35	26
12	760	450	30	630	560	670	360	700	380	95	292	35	26
13	820	490	35	680	610	720	390	750	420	105	334	35	26
14	920	560	35	760	680	800	430	840	480	120	380	40	33
16	980	580	40	820	700	865	470	900	500	125	374	40	33
17	1130	670	45	940	810	998	540	1040	580	145	405	45	39
18	1180	720	45	980	830	1035	560	1080	620	155	385	50	39
19	1260	760	50	1050	880	1090	590	1160	640	160	450	60	45
20	1260	760	50	1050	880	1090	590	1160	640	160	500	60	45
21	1440	840	55	1170	1020	1228	660	1320	700	175	513	70	52
22	1440	840	55	1170	1020	1228	660	1320	700	175	513	70	52
23	1540	910	60	1270	1100	1345	730	1420	750	150	567	80	52
24	1540	910	60	1270	1100	1345	730	1420	750	150	607	80	52
25	1700	1000	65	1400	1240	1465	795	1550	860	215	574	70	62
26	1700	1000	65	1400	1240	1465	795	1550	860	215	634	70	62
27	1850	1100	70	1550	1370	1610	870	1700	950	190	664	75	62
28	1850	1100	70	1550	1370	1610	870	1700	950	190	724	75	62
29	1980	1100	75	1640	1460	1715	925	1820	1000	250	731	90	70
30	1980	1180	75	1640	1460	1715	925	1820	1000	250	771	90	70
31	2150	1300	75	1750	1570	1845	1000	1950	1100	220	773	100	70
32	2150	1300	75	1750	1570	1845	1000	1950	1100	220	833	100	70
33	2230	1350	85	1850	1630	1940	1050	2050	1150	230	883	100	78
34	2230	1350	85	1850	1630	1940	1050	2050	1150	230	933	100	78

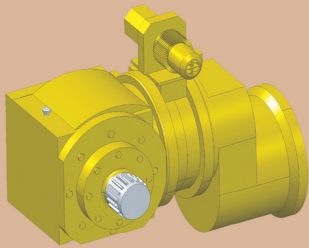
WP

WT-Series



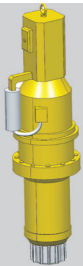
TH-TYPE

TH type Hoisting gear unit



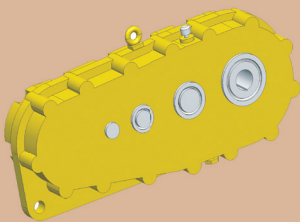
TL-TYPE

TL type Luffing gear unit



TS-TYPE

TS type Slewing gear unit

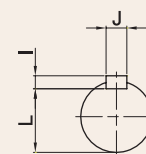
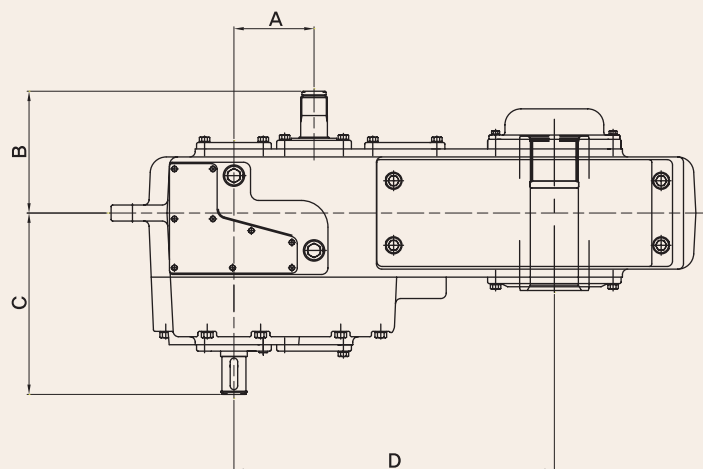


TT-TYPE

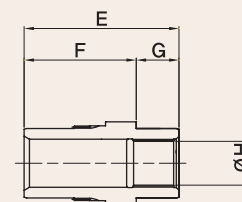
TT type Trolley gear unit

TH-H

8 TON HOISTING

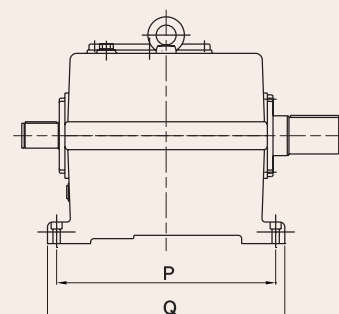
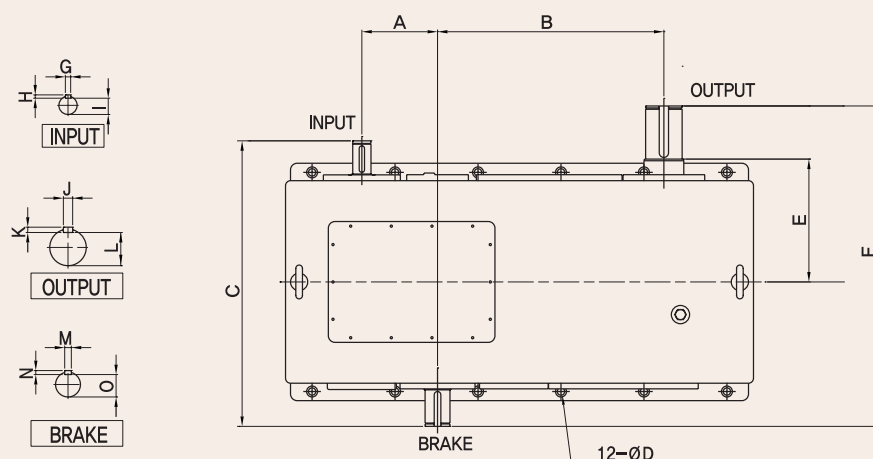


INPUT



OUTPUT SHAFT

12 TON HOISTING



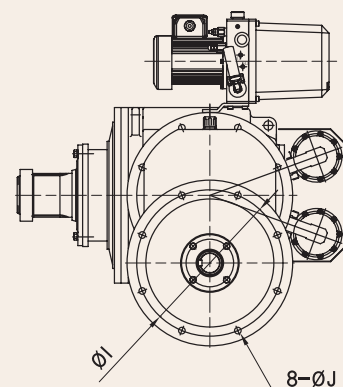
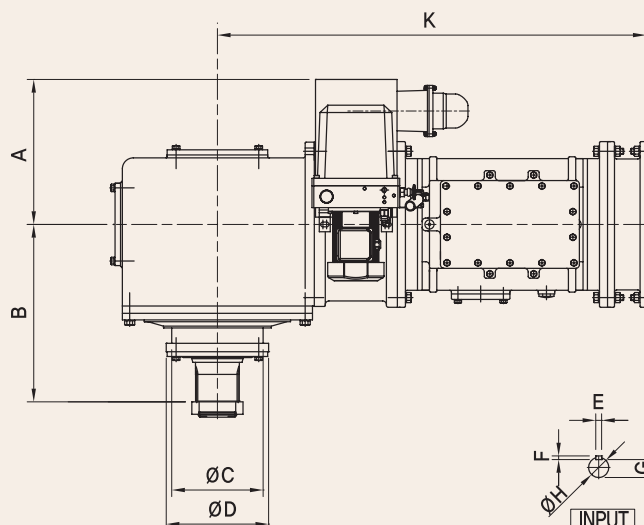
(UNIT : mm)

Ton	Dimension																
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
8	150	228	339.5	600	290	205	85	82	9	14	45	39.5	-	-	-	-	-
12	228	682	860	22	370	965	16	10	49	28	16	100	20	12	6.75	660	715

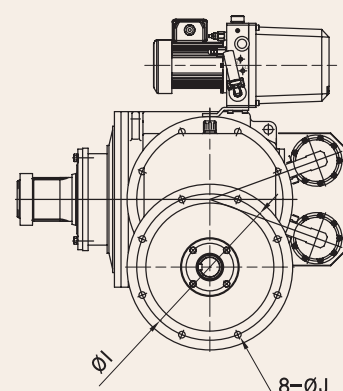
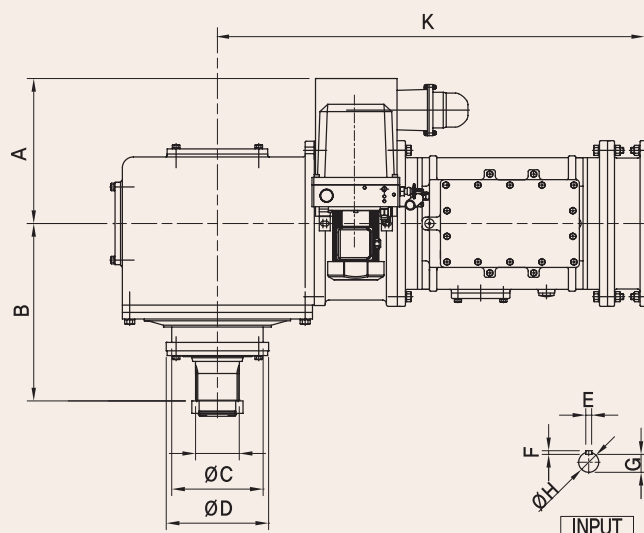
Ton	Specification			
	Power (kw×p)	Input (rpm)	Ratio	Oil (ℓ)
8	25×4	1400	H : 1/34.12 L : 1/86.40	19.6
12	65×4	1797	H : 1/20.25 M : 1/39.40 L : 1/142.26	30

TH-B

12 TON HOISTING



20 TON HOISTING



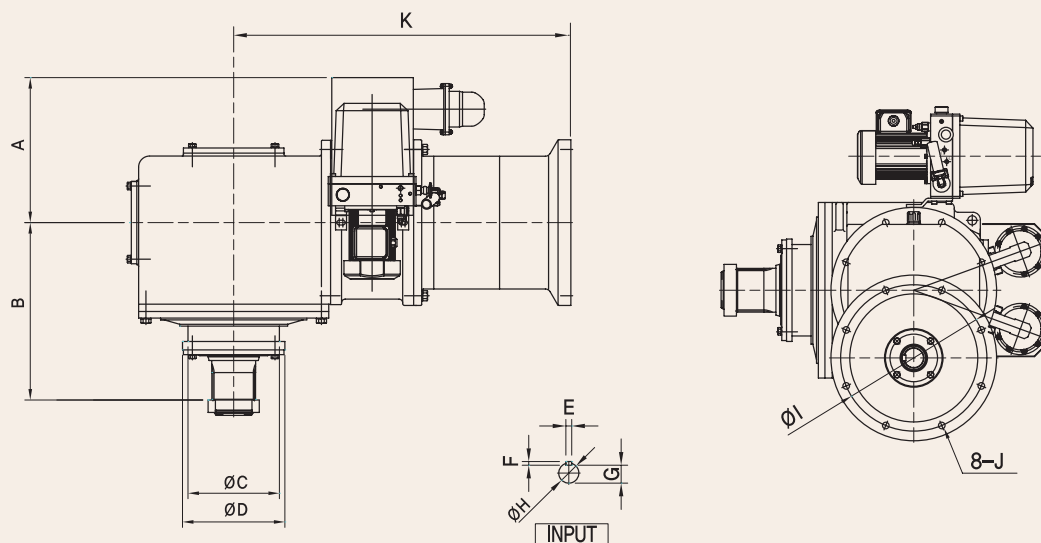
(UNIT : mm)

Ton	Dimension										
	A	B	C	D	E	F	G	H	I	J	K
12	396.4	485	250	280	16	10	49	55	400	18	1175
20	396.4	640.6	350	390	16	10	49	55	400	18	1378.5

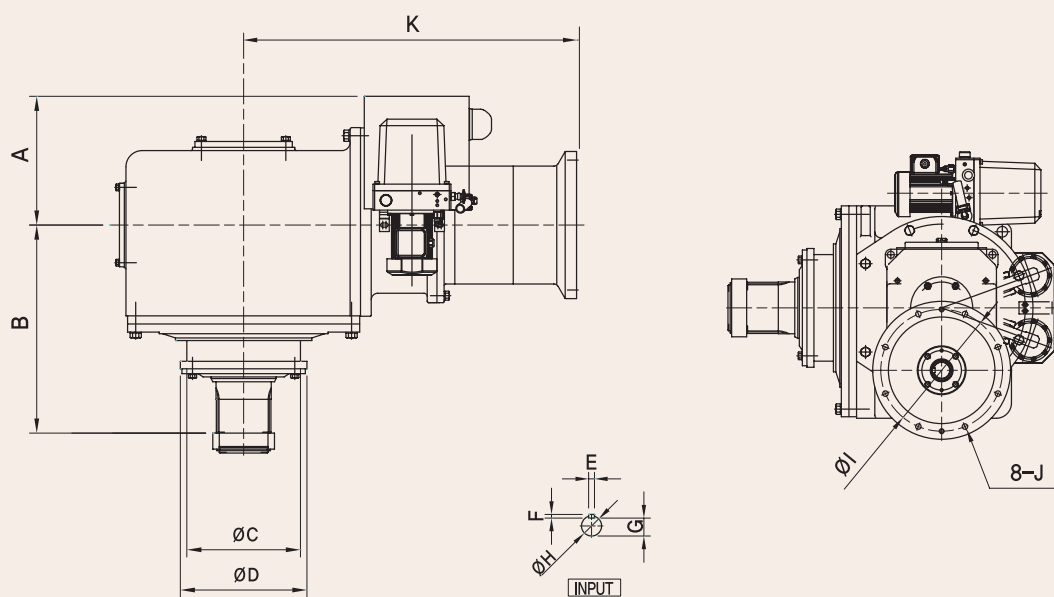
Ton	Specification			
	Power (kw×p)	Input (rpm)	Ratio	Oil (ℓ)
12	65×4	1750	H : 1/15.1 M : 1/31.0 L : 1/71.7	80
20	90×4	1750	H : 1/27.3 M : 1/66.7 L : 1/124.3	110

TL

12 TON LUFFING



20 TON LUFFING



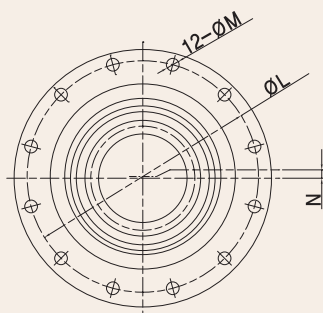
(UNIT : mm)

Ton	Dimension											Specification			
	A	B	C	D	E	F	G	H	I	J	K	Power (kw×p)	Input (rpm)	Ratio	Oil (ℓ)
12	396.4	485	250	280	16	10	49	55	400	M16 TAP	922.2	65×4	1750	1/43.3	70
20	396.4	640.6	350	390	16	10	49	55	400	M16 TAP	1025.5	90×4	1750	1/124.0	100

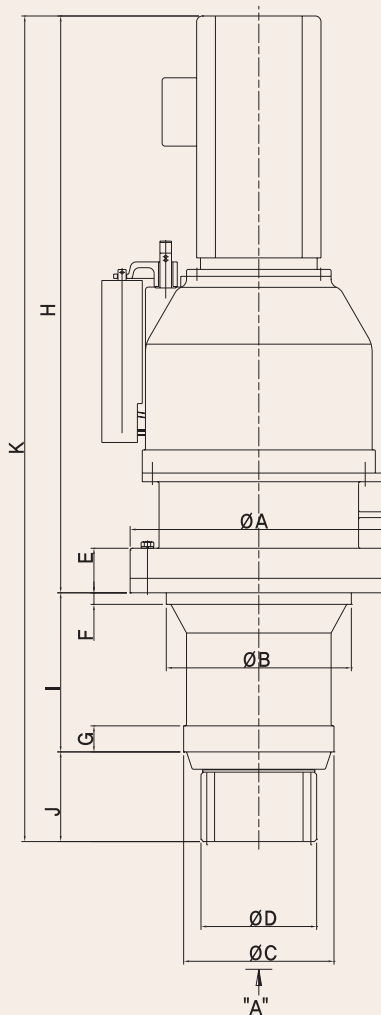
WT

TS

12 TON SLEWING / 20 TON SLEWING



VIEW "A"



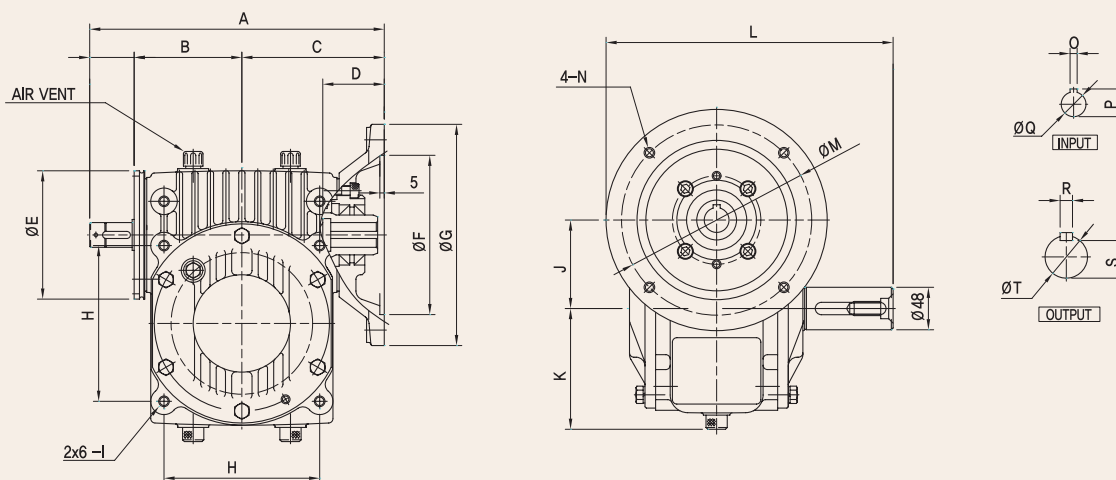
(UNIT : mm)

Ton	Dimension													
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
12	445	320	260	수요 자속 결정	77	20	45	997	275	수요 자속 결정	1427	400	22	1.5
20	445	320	260		77	20	45	997	487		1639	400	22	1.5

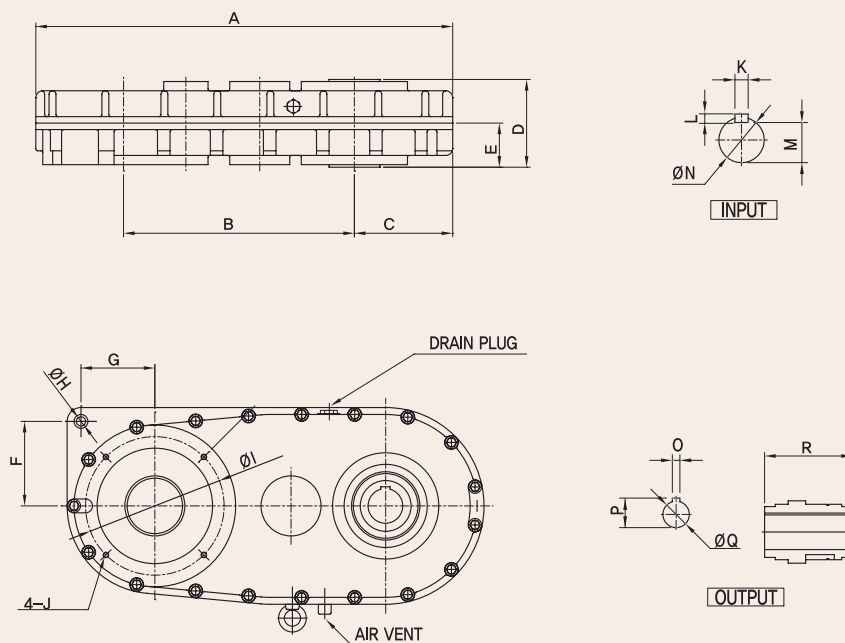
Ton	Specification			
	Power (kw×p)	Input (rpm)	Ratio	Oil (ℓ)
12	6.3×4	1750	1/216	25
20	6.3×4	1750	1/216	25

TT

8 TON TROLLEY



12 TON TROLLEY / 20 TON TROLLEY

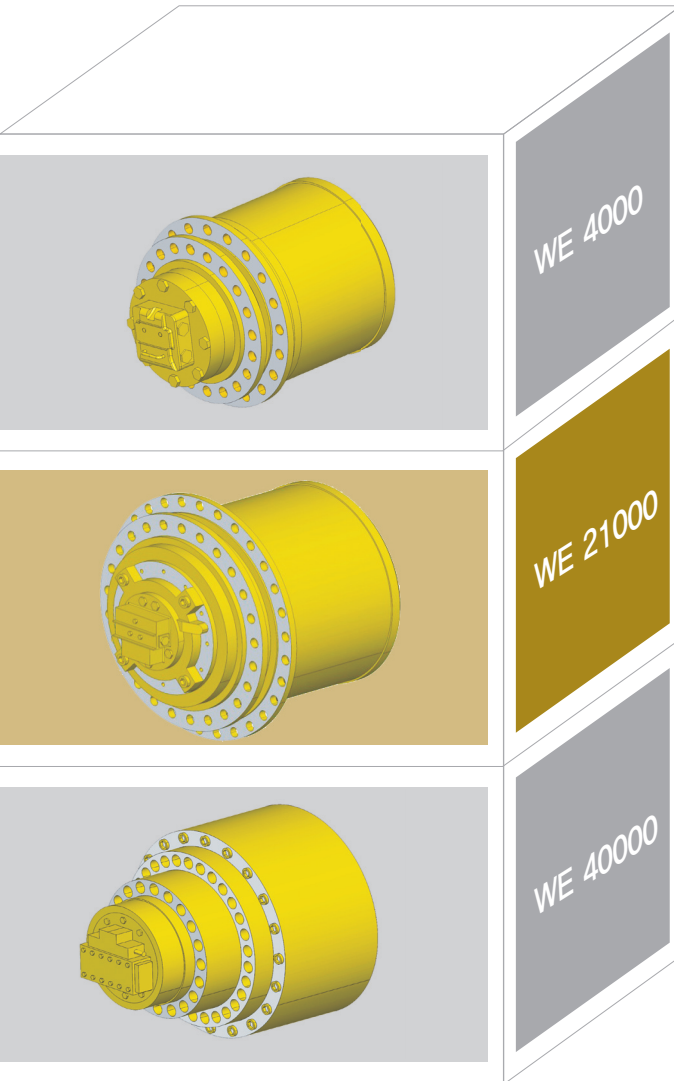


(UNIT : mm)

Ton	Dimension																			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
8	333	121.75	161	69.5	145	180	250	176	M12 TAP	100	136.5	324.5	215	M12 TAP	8	31.3	28	14	42.5	48
12	903	500	213	190	95.5	183	160	20	300	M16 TAP	14	9	42.5	48	20	79.9	75	190	-	-

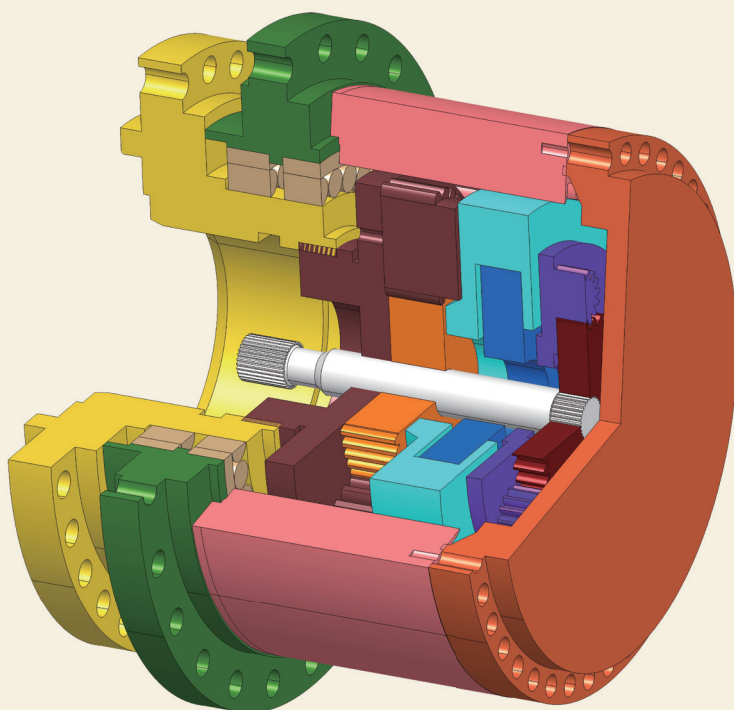
Ton	Specification			
	Power (kw×p)	Input (rpm)	Ratio	Oil (ℓ)
8	6.6×4	1750	1/38	1
12	6.6×4	1750	1/40	6
20	6.6×4	1750	1/40	6

WE-Series



WE type Excavator's Traveling unit

PK3

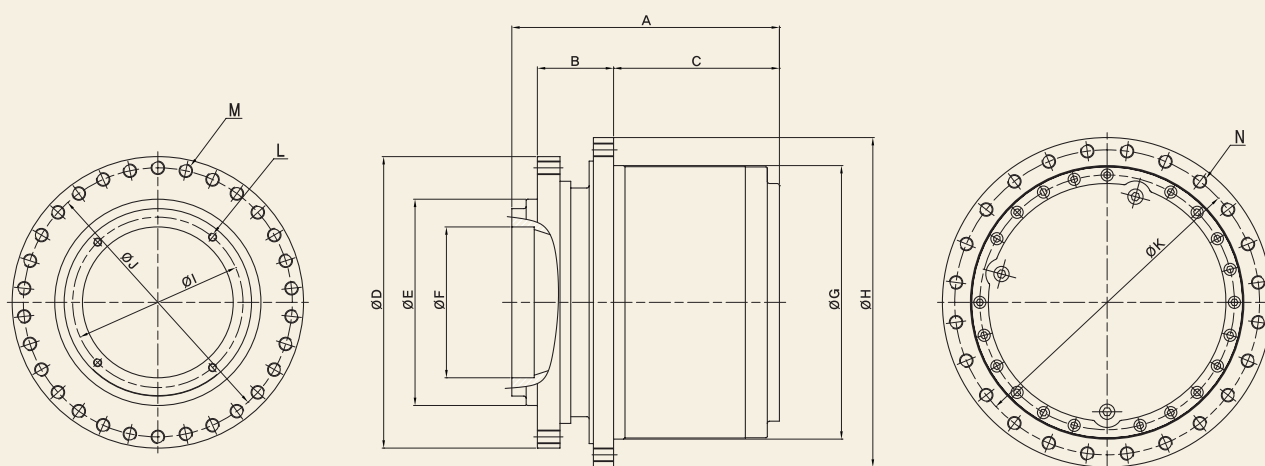


Excavator Traveling gear unit

(UNIT : mm)

SIZE	Reduction Gear				Hydraulic Motor			Application (ton)
	Gear Ratio	Rated Output Torque		output speed	Displacement	Output Speed	Max Pressure	
	i	kgf-m	N-m	max' rpm	cm ³ /rev	max rpm	Mpa	
WE 1250	54.467	1,250	12,250	70	USER 선택 사양 적용			8~10
WE 1500	53	1,500	14,700	60				8~10
WE 2100	53	2,100	20,580	60				13~18
WE 2600	53.706	2,600	25,480	60				13~18
WE 2800	48	2,800	27,440	58				13~18
WE 3450	39.14	3,450	33,810	70				15~20
WE 4600	48	4,600	45,080	50				18~25
WE 6900	63.843	6,900	67,620	40				29~34
WE 7200	46.127	7,200	70,603	52				29~34
WE 7500	70.15	7,500	73,545	36				34~37
WE 8000	54.47	8,000	72,400	45				34~37
WE 10000	68.23	10,000	98,060	40				45~55
WE 21000	120.45	21,000	205,900	21				70~85
WE 40000	350	40,000	392,000	15				180~200

PK3



(UNIT : mm)

SIZE	A	B	C	D	E	F	G	H	I
WE 1250	260	80	155	278	210 h8	145	265 h8	328	180
WE 1500	283	88	167	298	230 h8	155	292 h8	362	190
WE 2100	285	99.5	158	308	245 h8	165	324 h8	394	200
WE 2600	293	99.5	175.5	308	246 h8	165	324 h8	394	200
WE 2800	383	99.5	243	370	300 h8	190	362 h8	432	235
WE 3450	367	99.5	227	370	300 h8	190	362 h8	432	235
WE 4600	430	98.5	283	403	330 h8	225	402 h8	470	265
WE 6900	427	112	308	462	380 h8	240	450 h8	525	265
WE 7200	427	112	275	460	380 h8	260	450 h8	525	300
WE 7500	463	112	308	462	380 h8	240	450 h8	525	265
WE 8000	427	112	275	460	380 h8	260	450 h8	525	300
WE 10000	536	130	334	500	420 h8	260	510 h8	586	300
WE 21000	597	170	370	650	460 h8	340	610 h8	735	380
WE 40000	700	200	440	800	610 h8	400	790 h8	915	440

SIZE	J	K	L	M	N	Weight(kg)	OIL(Liter)
WE 1250	250	300	4-M10XP1.5	12-M16XP2.0	12-M16XP2.0	68	1.3
WE 1500	270	332	4-M10XP1.5	15-M16XP2.0	12-M16XP2.0	100	1.5
WE 2100	280	364	4-M10XP1.5	20-M16XP2.0	15-M16XP2.0	110	1.8
WE 2600	280	364	4-M10XP1.5	20-M16XP2.0	15-M16XP2.0	118	2.2
WE 2800	340	402	4-M12XP1.5	30-M16XP2.0	24-M16XP2.0	150	2.8
WE 3450	340	402	4-M12XP1.5	30-M16XP2.0	24-M16XP2.0	190	3
WE 4600	370	440	4-M12XP1.5	20-M20XP2.5	30-M16XP2.0	265	3.3
WE 6900	425	490	4-M12XP1.5	26-M20XP2.5	24-M20XP2.5	315	5.4
WE 7200	425	490	4-M12XP1.5	26-M20XP2.5	24-M20XP2.5	316	5.4
WE 7500	425	490	4-M16XP1.5	26-M24XP3.0	24-M20XP2.5	316	5.6
WE 8000	425	490	4-M16XP1.5	26-M24XP3.0	32-M20XP2.5	320	6.3
WE 10000	460	550	4-M16XP1.5	26-M24XP3.0	36-M20XP2.5	460	10
WE 21000	600	680	4-M18XP1.5	30-M30XP3.5	24-M30XP3.5	865	17
WE 40000	750	830	4-M24XP1.5	30-M30XP3.5	24-M30XP3.5	1050	30

Travel / Slewing Reducer for Excavator (OEM)



Travel Reducer
(45~55TON)



Travel Reducer
(29~37TON)



Travel Reducer
(13~18TON)



Travel Reducer
(10~14TON)

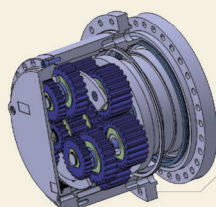


Slewing Reducer
(5TON)

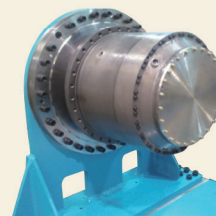
Travel Reducer for Excavator & Wheel loader (Woorim)



Excavator 80~100TON
A30100

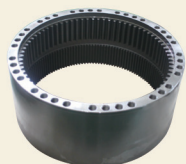


3D Modeling



Wheel Loader Reducer
1050HP

Parts



Ring Gear



Spindle



Sun Gear



Slewing Pinion



Double Helical Gear



1st Carrier Ass'y



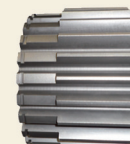
2nd Carrier Ass'y



3rd Carrier Ass'y

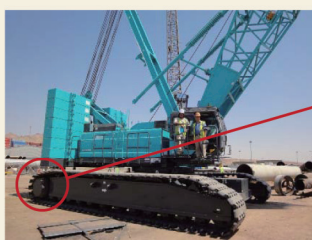


1st Sun Pinion



2nd Sun Gear

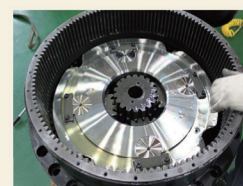
Traveling gearbox for crawler crane



1st Planetary Gear

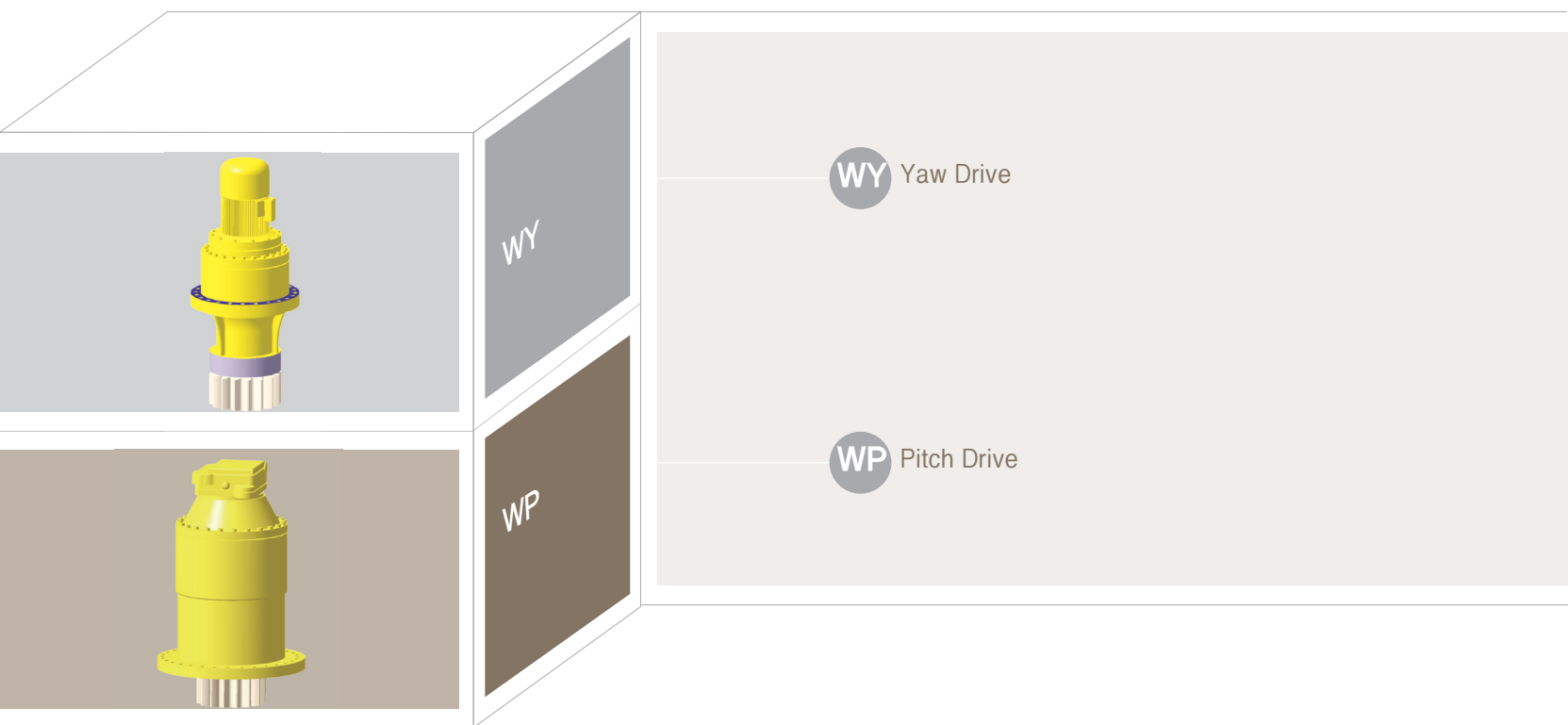


2nd Planetary Gear



3rd Planetary Gear

WW-Series



Technical date

WY

Yaw drive

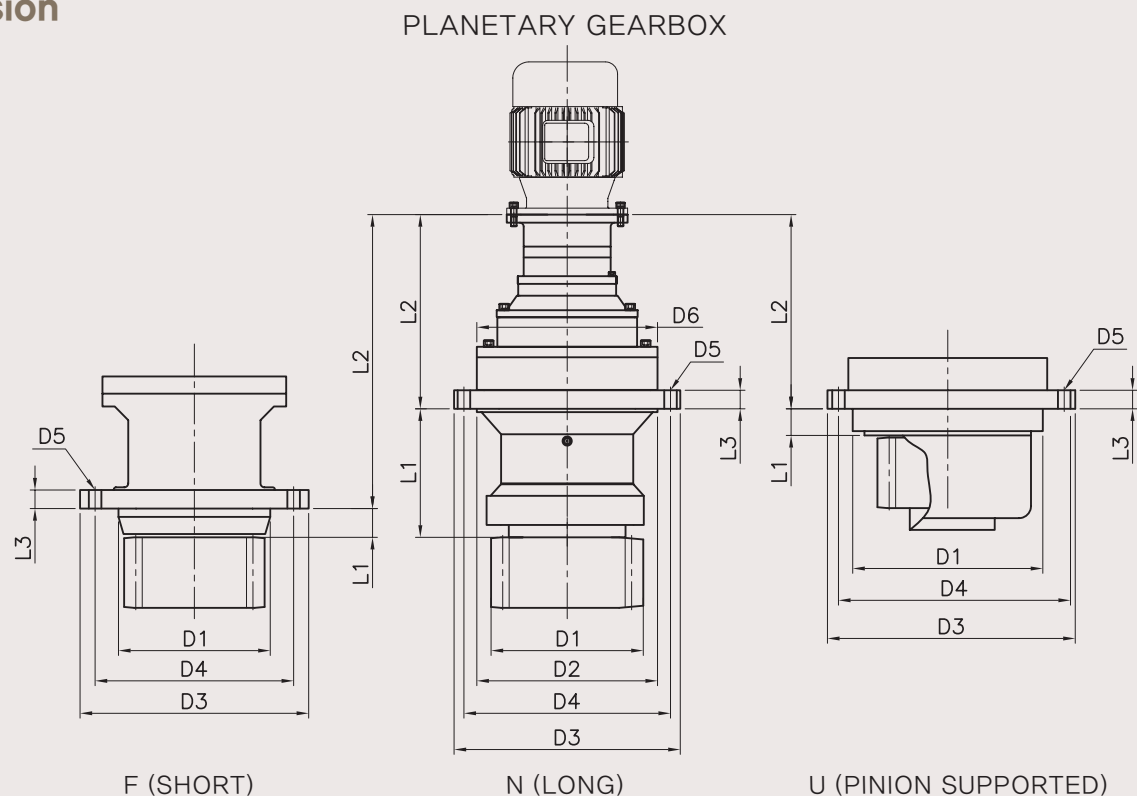
TYPE	Nominal Toque(Nm)	Peak Torque(Nm)	Ratio	Pinion module	Weight(Kg)
WY 8.0	8,000	15,000	600–2000	m10–m14	120
WY 12.0	12,000	25,000	600–2000	m12–m16	170
WY 21.0	21,000	52,000	600–2000	m12–m20	300
WY 25.0	25,000	60,000	600–2000	m14–m20	350
WY 30.0	30,000	75,000	600–2000	m16–m20	400
WY 42.0	42,000	105,000	600–2000	m16–m20	550
WY 60.0	60,000	150,000	600–2000	m20–m24	650
WY 80.0	80,000	200,000	600–2000	m22–m26	1000
WY 100.0	100,000	250,000	600–2000	m26–m30	1800
WY 120.0	120,000	300,000	600–2000	m30–m36	2100

WP

Pitch drive

TYPE	Nominal Toque(Nm)	Peak Torque(Nm)	Ratio	Pinion module	Weight(Kg)
WP 2.5	2,500	4,500	100–250	m10–m12	60
WP 4.0	4,000	8,000	100–250	m10–m12	90
WP 8.0	8,000	16,500	100–250	m10–m14	120
WP 12.0	12,000	25,000	100–250	m12–m16	170
WP 18.0	18,000	40,000	100–250	m12–m20	300
WP 25.0	25,000	55,000	100–250	m14–m20	350
WP 35.0	35,000	70,000	100–250	m16–m20	400

Dimension



TYPE	VERSION	D1	D2	D3	D4	D5	D6	L1	L2	L3
W 2.5	F	175		275	245	10 – Φ 18	244	41	370	20
W 4.0	F	175		275	245	10 – Φ 18	244	41	400	20
W 8.0	F	250		360	320	24 – Φ 18	292	130	460	35
W 8.0	N	200	250	360	325	10 – Φ 18	292	225	350	25
W 12.0	F	310		410	360	12 – Φ 22	348	70	540	30
W12.0	N	230	280	348	314	12 – Φ 18	348	300	360	98
W21.0	F	310		410	360	12 – Φ 22	348	70	540	30
W21.0	N	230	280	348	314	24 – Φ 18	348	300	400	125
W21.0	U	340		405	375	24 – Φ 18	348	90	450	40
W25.0	F	320		410	370	24 – Φ 18	400	75	600	35
W25.0	N	300	425	500	450	24 – Φ 18	400	360	500	40
W25.0	U	340		400	370	24 – Φ 18	400	36	550	176
W30.0	F	390		520	480	30 – Φ 18	428	60	700	35
W30.0	N	300	425	500	460	12 – Φ 22	428	350	520	40
W42.0	F	410		490	450	24 – Φ 22	428	125	660	40
W42.0	N	400	425	520	470	24 – Φ 22	428	318	580	40
W42.0	U	415		530	480	16 – Φ 28	428	140	500	45
W60.0	F	420		530	490	24 – Φ 22	490	160	870	40
W60.0	U	555		645	600	32 – Φ 30	490	430	760	100
W80.0	F	555		650	600	32 – Φ 30	542	70	900	50
W80.0	U	555		650	600	32 – Φ 30	542	70	900	50
W100.0	F	630		740	680	32 – Φ 30	695	112	1250	50
W120.0	U	750		900	830	24 – Φ 32	695	60	900	100

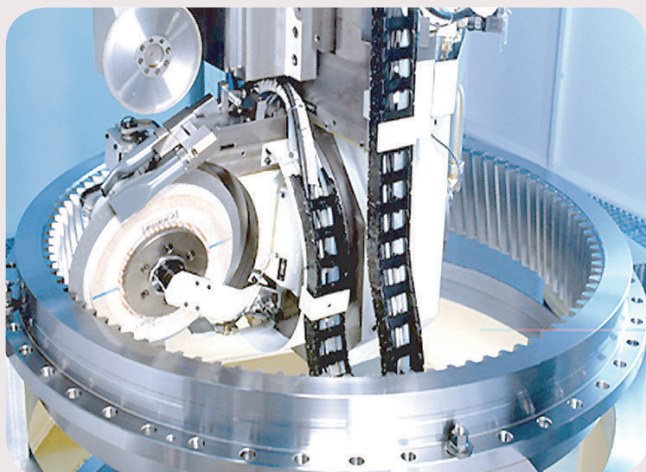


»»» Gear Box for Wind Turbine

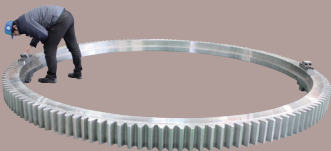
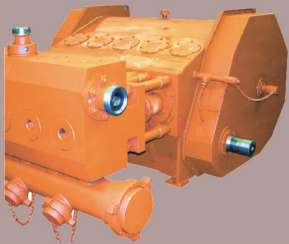


3MW GEAR BOX

»»» Related Parts



Other Products



Precision Gear & Large Gear Parts

Shale gas pump
〈Bull Pinion & Gear / Reducer〉

Drives / Drive Axle Assembly Parts

▶ Precision Gear & Large Gear Parts



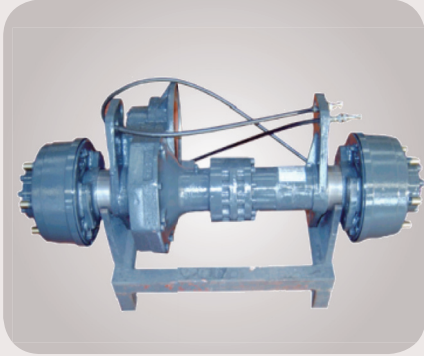
▶ Shale gas pump Parts (Bull Pinion & Gear /Reducer)





▶ Drive / Drive Axle Assembly

>>> DRIVE AXLE ASSEMBLY



Specification	Loading capacity	Application
MA15	1,500kg	Electric forklift
MA20	2,500kg	
MA30	3,200kg	

>>> DRIVE



Specification	Loading capacity	Application
MD15	1,500kg	Electronic truck, Mini electric forklift
MD20	2,500kg	

>>> TRANSFER



Specification	Maximum load	Application
MT12	1,200kg	Electric forklift
MT14	1,400kg	
MT18	1,800kg	
MT 15W	1,500kg	Indoor platform truck
MT 10W	1,000kg	3-wheel electric trailer
MT 18W	1,300kg	Walkie type electric forklift

APPENDIX

Symbol Nomenclature

Reference Data

Reducer Selection
Process

Technical Data

Quotation / Order Sheet

Reference Record

1

Symbol Nomenclature 〈부호설명〉

2

Reference Data

3

Reducer Selection Process 〈감속기 선정 Process〉

4

Technical Data 〈기술자료〉

5

Quotation / Order Sheet 〈주문서〉

6

Reference Record

▶ Symbol Nomenclature <부호설명>

Symbol <부호>	Nomenclature <설명>		Unit <단위>
P	Power	용량	kW
n	Speed	회전수	rpm
i	Ratio	감속비	1 /
T	Torque	물체에 회전력을 일으키는 힘	kgf.m
O.H.L	Over Hung Load	축단하중	kg
η	Efficiency	효율	%
f	Motor frequency	Motor 주파수	Hz
t	Ambient temperature	주위온도	℃

▶ Determination of Power <동력의 결정>

$$HP = F \times S / 75$$

$$= T \times N / 716.2$$

$$kW = F \times S / 102$$

$$= T \times N / 974$$

F : Applied force(Force in the direction of tangent) (kg)

F : 작용력(접선방향의 힘) (kg)

S : Distance moved for a second, Speed(m/s)

S : 1초간에 움직인거리, 속도(m/s)

N : R.P.M

N : 1분간의 회전수 (R.P.M)

T : Torque (kg · m)

T : 회전력, MOMENT(kg · m)

▶ Horse Power <마력(HP)>

❖ A unit for measuring the power, 1HP means the work load to move a 75kg weight object by one meter for one second.

❖ 동력을 나타내는 하나의 단위 즉, 75kg의 물체를 1초동안에 1m를 움직인 일의 량을 1HP라고 한다.

$$HP = \frac{F \times S}{75}$$

F : Applied force (kg)

F : 작용력(접선방향의 힘) (kg)

S : Distance moved(m/s)

S : 움직인속도 (m/s)

▶ Rotation Speed <회전속도>

$$V = \pi \times D \times N$$

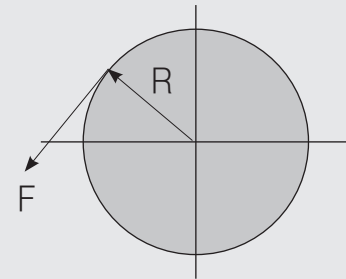
V : 속도 (m/min)

D : 직경 (m)

N : RPM

▶ Torque

$$\cdot T = 974 \times \frac{KW}{N} \quad (kgf \cdot m) \quad \cdot T = F \times r \quad (kgf \cdot m)$$



T : TORQUE

KW : CAPACITY N : R.P.M

T : TORQUE

F : Force in the direction of a tangent(kg)

R : Radius of rotational body(m)

T : TORQUE

KW : 용량 N : 회전수

T : TORQUE

F : 접선방향의 힘(kg)

R : 회전체의 반경(m)

▶ Power

$$\cdot \text{Hoisting } P = \frac{m \times g \times V}{\eta \times 1,000}$$

P : Power (KW)

P : Power (KW)

Fr : Friction Force (kg)

Fr : 마찰력 (kg)

m : Weight (kg)

m : 중량 (kg)

V : Velocity (m/sec)

V : 속도 (m/sec)

η : Efficiency

η : 효율

μ : Friction Factor

μ : 마찰계수

T : Torque (kg · m)

T : Torque (kg · m)

n : RPM

n : RPM

g : 9.81

g : 9.81

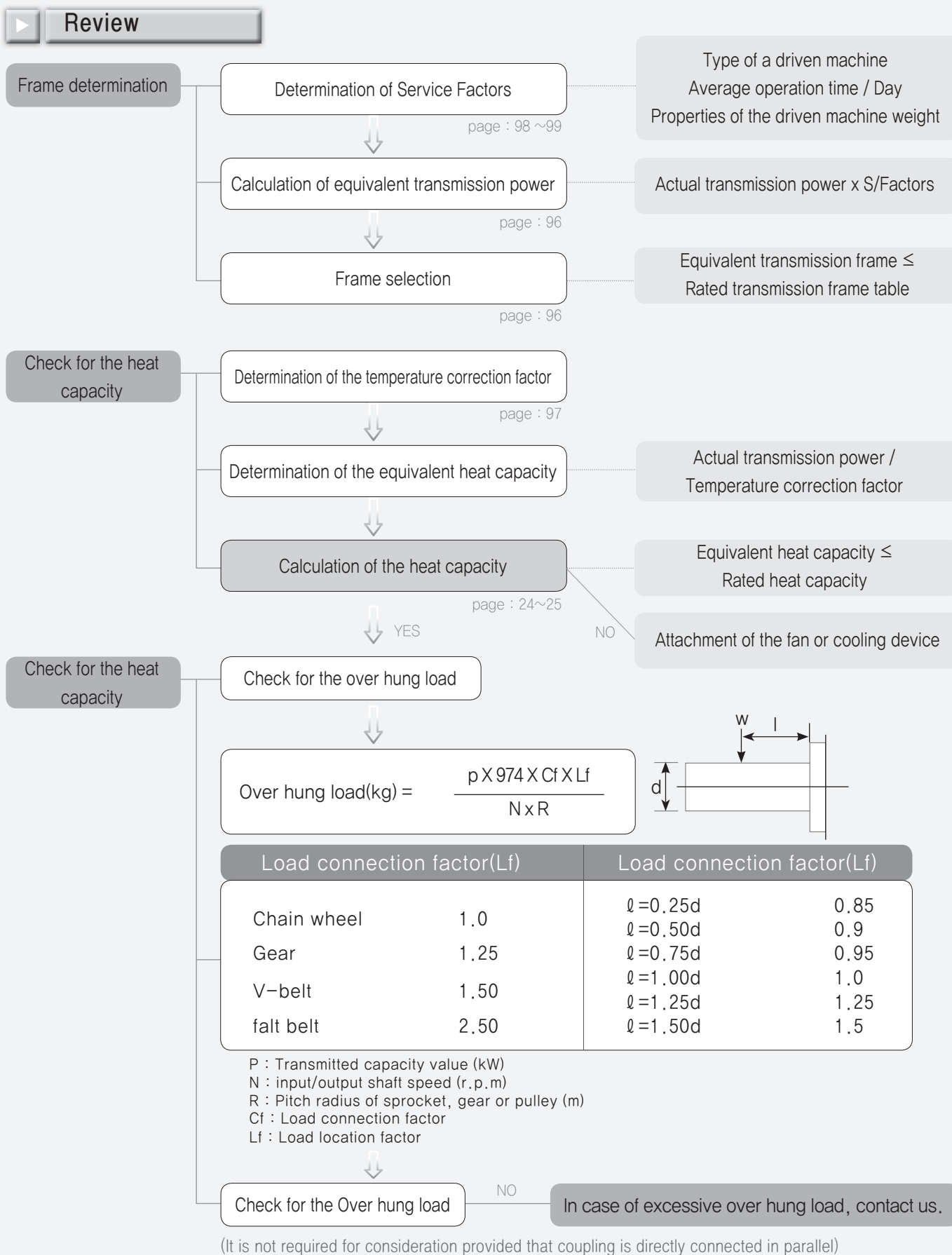
$$\cdot \text{Friction } P = \frac{Fr \times V}{1,000}$$

$$Fr = \eta \times m \times g$$

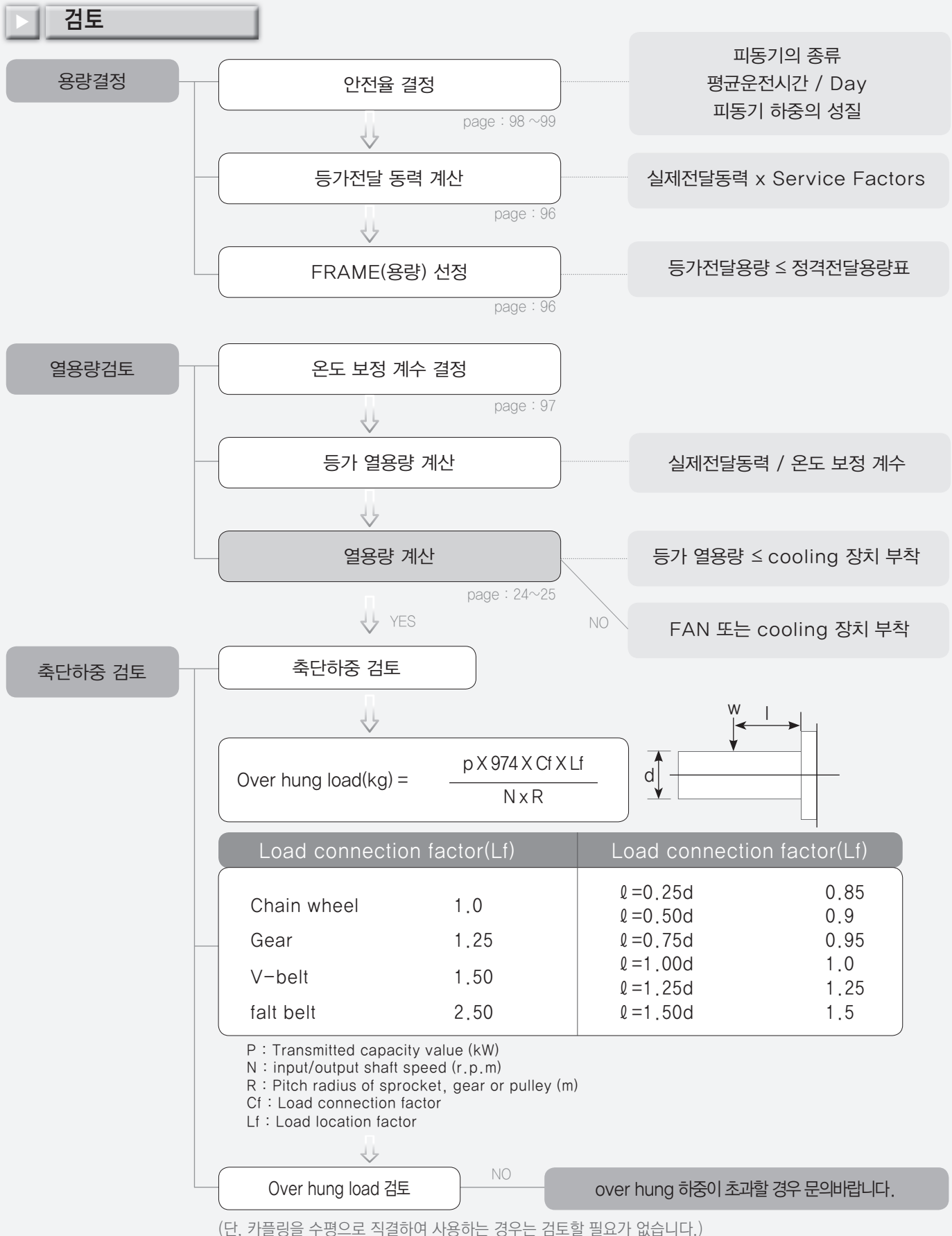
$$\cdot \text{Rotation } P = \frac{T \times n}{974}$$

3. Reducer Selection Process

A) General Reducer (WS-Series)



가) 일반감속기 (WS-Series)



3. Reducer Selection Process

▶ Example of reducer selection

■ Application Equipment : Agitator

■ Specification : Operation time : 8hr/day
Power : 75kW
Input RPM : 1,200
Output RPM : 38
Output shaft sprocket(PCD : 1,000mm) used

■ Selection

1)Reduction ration = $1,200/38 = 31.578$

2)Service Factors (SF) = 1.25(M)

3)Calculation of equivalent transmission power = $75\text{kW} \times 1.25 = 93.8\text{kW}$

4)Capacity Selection

Where input shaft speed is 1200rpm and reduction ratio is 31.5, the optimal Model is selected as 620(SH3)

◆ Refer to page 10 or 11

◆ $93.8\text{kW} < 104\text{kW} = (\text{Result OK})$

5)Equivalent heat Capacity = motor Power / Thermal Factor (Refer to page 24)

◆ Reducer ambient temperature 30 ° C, Reducer efficiency =

Calculation of the equivalent heat capacity of 80%

$\Rightarrow 75\text{kW} / 1.04 = 72 \text{ kW} \leq 106\text{kW} = \text{OK}(\text{Cooling system not required})$

▶ In case the equivalent heat capacity is higher than the rated heat capacity, the cooling system is required.

In this case, Please contact us.

6)Review of the over hang load

◆ Shaft end load = $\frac{75 \times 974 \times 1.0 \times 1.0}{38 \times 0.5} = 3,845\text{kg}$

◆ The permissible over hung loads for frame size 620: $4,620 \text{ Kg} \geq 3,845 \text{ kg} = \text{OK}$

▶ 감속기 선정 예

■ 적용장비 : 교반기(Agitator)

■ 사양 : 운전시간 : 8hr/day
 동 력 : 75kW
 Input RPM : 1200
 Output RPM : 38
 출력축 Sprocket(PCD : 1,000mm) 사용

■ 선 정

1)감속비 = $1,200/38 = 31.578$

2)Service Factors (SF) = 1.25(M)

3)등가 전달 동력 계산 = $75kW \times 1.25 = 93.8kW$

4)용량(Frame) 선정

입력축 rpm = 1,200 감속비 = 31.5일 경우 최적 Model은 620(SH3)
 으로 선정됩니다.

◆ page 10 or 11 참조

◆ $93.8kW < 104kW = (\text{Result OK})$

5)등가 열용량 = MOTOR 동력 / 온도 보정 계수(page 24 참조)

◆ 감속기 주의온도 = 30 ℃, 감속기효율 = 80% 시의 등가 열용량의 계산

⇒ $75kW / 1.04 = 72 kW \leq 106kW = \text{OK}(\text{냉각 장치 불필요})$

▶ 등가 열용량 ≥ 정격 열용량의 경우는 cooling 장치의 부착이 필요하므로 별도 문의 바랍니다.

6)over-hang load 검토

◆ 축단하중 = $\frac{75 \times 974 \times 1.0 \times 1.0}{38 \times 0.5} = 3,845kg$

◆ Frame Size 620에서의 축단하중 허용치는 $4,620 Kg \geq 3,845 kg = (\text{Result OK})$

3. Reducer Selection Process

▶ Output Shaft Permissible Over hung Loads

UNIT : TON

STAGE	RPM	FRAME SIZE																				
		125	160	200	250	280	315	355	400	450	500	560	630									
Single	700	0.42	0.49	0.55	0.59	0.69	0.82	1.32	1.65	1.87	2.21	2.82	3.43									
	600	0.47	0.57	0.62	0.85	0.92	0.98	1.48	1.96	2.31	2.93	3.15	3.36									
	500	0.53	0.64	0.85	1.07	1.19	1.34	1.88	2.3	2.92	3.25	3.87	4.41									
	400	0.62	0.75	0.99	1.27	1.41	1.57	2.08	2.72	3.42	4.08	5.25	6.37									
	300	0.77	0.9	1.18	1.51	1.63	1.91	2.68	3.29	4.08	4.96	6.36	8.24									
	200	0.9	1.07	1.42	1.82	2.03	2.29	3.11	4.02	5.09	6.06	8	9.92									
	100	1.08	1.29	1.7	2.22	2.49	2.74	3.84	4.87	6.19	7.43	9.71	12									
STAGE	RPM	FRAME SIZE																				
		240	272	305	340	385	430	480	540	605	680	765	855	960	1080	1210						
Single	200	0.65	0.79	0.99	1.2	1.51	1.89	2.35	2.82	3.39	3.97	4.86	6.03	7.58	9.44	11.98						
	150	0.78	0.95	1.19	1.44	1.77	2.25	2.82	3.39	4.02	4.72	5.86	7.15	9.04	11.2	13.48						
	100	0.89	1.09	1.36	1.71	2.12	2.69	3.34	4	4.78	5.65	7.02	8.5	10.85	13.27	16.09						
	75	1.09	1.34	1.68	1.94	2.45	3.16	3.86	4.67	5.56	6.59	8.4	10.13	12.89	15.43	18.65						
	50	1.23	1.51	1.89	2.22	2.79	3.53	4.39	5.25	6.26	7.32	9.42	11.49	14.53	17.94	21.52						
	25	1.39	1.7	2.13	2.43	3.07	3.85	4.8	5.77	6.85	8.25	10.18	12.45	15.73	19.69	23.66						
STAGE	RPM	FRAME SIZE																				
		400	440	497	555	620	700	785	880	990	1105	1240	1395	1565	1760	2100	2300	2500	2700	2900	3200	3500
Single	60	1.54	1.95	2.53	3.25	4.09	4.98	5.91	6.89	8.91	10.9	14	16.8	19.9	22	26.1	28.8	31.8	35.0	39.6	44.8	50.6
	50	1.67	2.11	2.74	3.52	4.37	5.24	6.27	7.32	9.41	11.5	14.5	18	21.5	22.6	28.5	31.3	34.5	38.1	43.0	48.7	55
	40	1.81	2.29	2.98	3.83	4.62	5.53	6.54	7.73	9.83	12	14.9	18.7	22.3	23.0	29.1	32.1	35.4	39.0	44.2	49.9	56.4
	30	1.97	2.49	3.23	4.15	4.95	5.81	6.81	7.92	10.1	12.4	15.8	19.2	23.2	25.8	31.5	34.7	38.3	42.3	47.7	54	61
	20	2.09	2.65	3.45	4.42	5.16	6.15	7.25	8.32	10.5	12.8	16.2	19.9	23.9	28.3	32.9	36.2	39.9	44.0	49.8	56.2	63.6
	10	2.3	2.91	3.78	4.85	5.42	6.57	7.58	8.42	11.3	13.1	16.7	20.1	24.6	31.2	38.7	42.6	47.0	51.9	58.6	66.2	74.9

▶ Thermal factor <온도 보정 계수>

Ambient	Reducer efficiency %				
	100	80	60	40	20
10℃	1.11	1.31	1.6	2.14	3.64
20℃	1	1.18	1.44	1.93	3.28
30℃	0.88	1.04	1.27	1.7	2.89
40℃	0.75	0.89	1.08	1.45	2.46
50℃	0.63	0.74	0.91	1.22	2.07

 Service factor Selection guide

Application	3-10 Hrs/Day	Over 10 Hrs/Day	Application	3-10 Hrs/Day	Over 10 Hrs/Day	Application	3-10 Hrs/Day	Over 10 Hrs/Day
AERATORS**		2.00	Screen Drive	1.75	2.00	Cut-Off Saws-Drag	1.50	1.75
AGITATORS			Strackers	1.25	1.50	Debarking Drums	1.75	2.00
pure liquids	1.00	1.25	Utility Winches	1.25	1.50	Feeds-Eder	1.25	1.50
liquids and solids	1.25	1.50	DRY DOCK CRANES			Feeds-Gang	1.75	1.75
liquids-variable density	1.00	1.50	ELEVATORS			Feeds-Trimmer	1.25	1.50
BLOWERS			Bucket-Uniform Load			Log Deck	1.75	1.75
centrifugal	1.00	1.25	Bucket-Heavy Load	1.00	1.25	Log Hauls-Incline-Well Type	1.75	1.75
Lobe	1.25	1.50	Bucket-Cont	1.25	1.50	Log Turning Devices	1.75	1.75
Vane	1.00	1.25	Centrifugal Discharge	1.00	1.25	Planer Feed	1.25	1.50
BREWING AND DISTILLING			Escalators	1.00	1.25	Planer Tilting Hoists	1.50	1.50
Bottling Machinery	1.00	1.25	Freightv	1.00	1.25	Rolls-Live-Off-Brg		
Brew Kettles, Cont, Dut	1.00	1.25	Gravity Discharge	1.25	1.50	-Roll Cases	1.75	1.75
Cookers-Cont, Duty	1.00	1.25	Man Lifts*	1.00	1.25	Sorting Table	1.25	1.50
Mash Tubs-Cont, duty	1.00	1.25	passener*			Tipple Hoist	1.25	1.50
Scale Hopper,			EXTRUDERS(Plastic)**			Transfer-Chain	1.50	1.75
Frequent Starts	1.25	1.50	Film			Transfer-Cranewa	1.50	1.75
CAN FILLING MACHINES	1.00	1.25	Sheet		1.25	Tray Drives	1.25	1.50
CANE KNIVES		1.50	Coaring		1.25	Veneer Lathe Drives*		
DAR DUMPE	1.75	2.00	Rods		1.25	MACHINE TOOLS		
DAR PULLERS	1.25	1.50	Pipe		1.25	Bending Roll	1.25	1.50
CLARIFIERS	1.00	1.25	Tubing		1.25	Punch Press-Gear Driven	1.75	2.00
CLASSIFIERS	1.25	1.50	Blow molders		1.25	Notching Press-Belt		
CLAY WORKING			Pre-plasticizers		1.50	Driven*		
MACHINERY	1.75	2.00	FANX		1.50	Plate Planer	1.75	2.00
Brick press	1.75	2.00	Centrifugal	1.00	1.25	Tapping Machin	1.75	2.00
Briquette Machine	1.25	1.50	Cooling Towers			Other Machine Tools		
Clay Working Mavhinery	1.25	1.50	Induced Draft*			Main Drive	1.25	1.50
Pug Mill			1Forced Draft*		1.25	Auxiliary Driven	1.00	1.25
COMPRESSORS	1.00	1.25	Induced Draft*	1.25	1.50	METAL MILLS		
Centuifugal	1.25	1.50	Large(Mine, Etc.)	1.25	1.50	Draw Bench Carriage and		
Lobe			Large(industrial)	1.25	1.50	Main Drive	1.25	1.50
Reciprocating,	1.25	1.50	Light(Small Diameter)	1.00	1.25	Pinch, Dryer and scrubber		
Multi-Cyinder			FEEDERS			Rolls, Reversing		
Reciprocating,	1.75	2.00	Apron	1.25	1.50	Slitters	1.25	1.50
Single-Cylinder			Belt	1.25	1.50	Table Conveyors		
CONVEYORS-UNIFORMLY			Disc	1.00	1.25	Non-Reversing		
LOADED OR FED			Recirprocating	1.75	2.00	Group Drives	1.25	1.50
Apron	1.00	1.25	Screw	1.25	1.50	Individual Drive	1.75	2.00
Assembly	1.00	1.25	FOOD INDUSTRY			Reversing*		
Belt	1.00	1.25	Beet Slicer	1.25	1.50	Wire Drawing and		
Bucket	1.00	1.25	Cereal Cooker	1.00	1.25	Flattening Machine	1.25	1.50
Chain	1.00	1.25	Dough Mixer	1.25	1.50	Wire Winding Machine	1.25	1.50
Flight	1.00	1.25	Meat Grinders	1.25	1.50	MILLS, ROTARY TYPE		
Oven	1.00	1.25	GENERATORS(Not Welding)	1.00	1.25	Ball and Rod**		
Screw	1.00	1.25	HAMMER MILLS	1.75	2.00	Spur Ring Gear		2.00
CONVEYORS-HEAVY DUTY			HOISTS			Helical Ring Gear		1.50
NOT UNIFORMLY FED			Heavy Duty	1.75	2.00	Direct Connected		2.00
Apron	1.25	1.50	Medium Duty	1.25	1.50	Cement Kilns		1.50
Assembly	1.25	1.50	Skip Hoist	1.25	1.50	Dryers and Coolers**		1.50
Belt	1.25	1.50	LAUNDRY WASHERS			Pebble		1.50
Bucket	1.25	1.50	Reversing	1.25	1.50	Plain and Wedge Bar**		1.50
chain	1.25	1.50	LAUNDRY RUMBLERS	1.25	1.50	Tumbling Barrels	1.75	2.00
flight	1.25	1.50	LINE SHAFTS				1.25	1.50
Live Roll*			Driving Processing			MIXERS		
Oven	1.25	1.50	Equipment	1.25	1.50	Concrete Mixers, Cont		
reciprocating	1.75	2.00	Light	1.00	1.25	Concrete Mixers Intermittent	1.25	1.50
Screw	1.25	1.50	Other Lineshafts	1.00	1.25	Constant Density	1.00	1.25
shaker	1.75	2.00	LUMBER INDUSTRY			variable Density	1.25	1.50
CRANES			Barkers-Spindle Feed	1.25	1.50	OLE INDUSTRY		
Main Hoists	1.00	1.25	Barkers-Main Drive	1.75	1.75	Chillers	1.25	1.50
Bridge Travel*			Carriage Drive*			Oil Well Pumping		
Trolley Travel*			Conveyors-Burner	1.25	1.50	Paraffin Filter pres	1.25	1.50
CRUSHER			Conveyors			Rotary Kilns	1.25	1.50
Ore	1.75	2.00	-Main or Heavy Duty	1.50	1.50	PAPER MILLS		
Stone	1.75	2.00	Conveyors-Main Log	1.75	2.00	Agitator(Mixer)		1.50
Sugar**		1.50	Conveyors-Re-Saw*			Agitator for Pure Liquors		1.25
DREDGES			Converors			Barking Drums		2.00
Cable Reels	1.25	1.50	-Merry-Go-Round	1.25	1.50	Barkers - Mechancial		2.00
Conveyors	1.25	1.50	Conveyors-Slab	1.75	2.00	Beater		1.50
Cutter Head Drives	1.75	2.00	Conveyors-Transfer	1.25	1.50	Breaker Stac		1.25
Jig Drives	1.75	2.00	Chains-Floor	1.50	1.50	Calender***		1.25
Maneuvering Winches	1.25	1.50	Chains-Green	1.50	1.75	Chipper		2.00
Pumps	1.25	1.50	Cut-Off Saws-Chain	1.50	1.75	Chip Feeder		1.50
						Coating Rolls		1.25

3. Reducer Selection Process

Service factor Selection guide

Application	3-10 Hrs/Day	Over 10 Hrs/Day	Application	3-10 Hrs/Day	Over 10 Hrs/Day	Application	3-10 Hrs/Day	Over 10 Hrs/Day
Conveyors			PULLERS	1.75	2.00	Collectors	1.00	1.25
Chip, Bark, Chemical	1.25		Barge Haul			Dewatering Screws	1.25	1.50
Log(incl. Slab)	2.00		PUMPS	1.00	1.25	Scum Breasers	1.25	1.50
Conch rolls	1.25		Centrifugal	1.25	1.50	Slow or Rapi Mixers	1.25	1.50
Cutters	2.00		Proportioning			Thickeners	1.25	1.50
Cylinder Molds	1.25		Reciprocating			Vacuum Filters	1.25	1.50
Dryers***			single Acting, 3 or more cylinders	1.25	1.50	SCREENS		
Paper Machine	1.25		Dobule Acting, 2 or more cylinders	1.25	1.50	Air Washing	1.00	
Conveyor Type	1.25		single Acting, 1 or 2 cylind\ders			Rotary – Stone or Gravel	1.25	1.50
Embosser	1.25		Double Acting, single cylinders*	1.00	1.25	Traveling Water Intake	1.00	1.25
Extruder	1.50		Rotary – Gear Type	1.00	1.25	SLAB PUSHERS	1.25	1.50
Fourdrinier Rolls(includes Lumpbreder, Dandy Roll, Wire Turning and Return Rolls)	1.25		Rotary – Lobe, Vane			STEERING GEAR#		
Jordan**	1.50		RUBBER AND PLASTICS INDUSTRIES	1.75	2.00	STOKERS	1.00	1.25
Kiln drive	1.50		Crackers***	1.25	1.50	SUGAR INDUSTRY		
Mt. Hope Roll	1.25		Laboratory Equipment			Cane knives		1.50
Paper Rolls	1.25		Mixers			Crushers		1.50
Platter	1.50		Refiners**	1.25	1.50	Mills (low speel end)		2.00
Presses – Felt and Sucition	1.25		Plastic Calendars	1.25	1.50	TEXTILE INDUSTRY		
Pulper**	2.00		Rubber Calendars			Batchers	1.25	1.50
Pumps – Vacuum	1.50		Rubber Mill, Single or multiple	1.25	1.50	Calenders	1.25	1.50
Reel(surface Type)	1.25		Sheeter			Cards	1.25	1.50
Screens			Tire building Machines*			Dry Cans	1.25	1.50
Chip	1.50		Tire and Tube Press			Dryers	1.25	1.50
Rotary	1.50		Openers*		1.50	Dyeing Machinery	1.25	1.50
Vibrating	2.00		Tubers and Strainers**		1.50	Knitting Machines*		
Size Press	1.25		Warming Mills*	1.25	1.50	Looms	1.25	1.50
Super Calender	1.25		SAND MULLER			Mangles	1.25	1.50
Thicker (AC Motor)	1.50		SEWA GE DISPOSAL EQUIPMENT	1.00	1.25	Nappers	1.25	1.50
(DC Motor)	1.25		Bar Screens	1.00	1.25	Pads	1.25	1.50
Washer (AC Motor)	1.50		Chemical Feeders			Range Drives*		
(DC Motor)	1.25					Slashers	1.25	1.50
Wind and Unwind Stand	1.25					Soapers	1.25	1.50
Winders (Surface Type)	1.25					Spinners	1.25	1.50
Yandee Dryers***	1.25					Tenter Frames	1.25	1.50
PRINTING PRESSES						Washers	1.25	1.50
						Winders	1.25	1.50
						WINDLASS*		

Service factor Selection guide

Application	3-10 Hrs/Day	Application	3-10 Hrs/Day
DRY DOCK CRANES		RUBBER INDUSTRY	
Main Hoist	1.00	Intensive Internal Mixers	1.75
Auxiliary Hoist	1.00	(a) Batch Mixers	1.50
Room.(Luffing)	1.00	(b) Continuous Mixers	
Rotating.(Swing or Slew)	1.25	Mixing Mill–2 smooth rolls–	
Tracking.(Drive Wheels)	1.50	(if corrugated rolls are used, then usethen use the some service, factors that are used for a Cracker – Warmer)	
PLASTICS INDUSTRY		Batch Drop Mill – 2 smooth rolls	
Intensive Internal Mixers		Cracker Warmer –2 Rolls,	
(a) Batch Mixers	1.75	1 corrugated Roll	1.75
(b) Continuous Mixers	1.50	Cracker, 2 corrugated Roll	2.00
Batch Drop Mill – 2 smooth rolls.	1.25	Hokding, Feed and Blend Mill–2 Roll	1.25
Continuous Feed, Holding & Blend Mill	1.25	Refiner – 2 Roll	1.50
Compounding Mills	1.25	Cakecders	1.50
Calenders	1.50	Extryders	
Extruders	1.50	(a) Continuous screw Operation	1.50
(a) Variable speed Drive	1.50	(b) Intermittent Screw Operation	1.75
(b) Fixed Speed Drive	1.75		

Service factor Selection guide

Prime Mover	Daily Service in hours	Load symbol for driven machine		
		U	M	H
Electric motors, turbines, hydraulic motors	UP to 3	0.8	1	1.5
	above 3 to 10	11.25	1.75	
	above 10	1.25	1.5	2
Piston engines 4–6 cyl cyclic variation 1:100–1:200	UP to 3	11.25	1.75	
	above 3 to 10	1.25	1.5	2
	above 10	1.5	1.75	2.25
Piston engines 1–3 cyl cyclic variation to 1:100	UP to 3	1.25	1.5	2
	above 3 to 10	1.5	1.75	2.25
	above 10	1.75	2	2.5

*Refer to Factory

**To be selected on basis of 24hr.service only.

***Anti-Friction Bearings Only

A) Recommended Lubrication Oil

Ambient Temp.		Lubrication Oil	MAKER				
			Honam Refinery	Yukong	Keukdong	MOBIL KOREA	Ssangyong
-10℃ ~ 15℃		ISO VG 68	MEROPA LUBRICANT 68	EP LUBRICANT HD 68	OMALA 68	MOBIL GEAR 626	GEAR LUBE 68S
		100	100	100	100	627	100S
	4℃ ~ 38℃	150	150	150	150	629	150S
		220	220	220	220	630	220S
38℃ ~ 65℃		320	320	320	320	632	320S
		460	460	460	460	634	460S
		680	680	680	680	636	680S
GREASE	NLGI 00		MULTIFAK EP 00	CROWN EP 00	ALVANIA EP 00	MOBILPLEX EP 00	—
	1		1	1	1	1	—
	2		2	2	2	2	—

• Tolerance range for each VG is ±10% of values

Product Types	Temperature	Load	Used Lubrication Oil	Remark
Geared motor (planetary)	10℃ or lower	full load	ISO VG 150	
	Higher than 10℃		ISO VG 220	
Planetary reducer	10℃ or lower	full load	ISO VG 150	ISO VG 68 in case of the turbine steel
	Higher than 10℃		ISO VG 220	
Standard type	10℃ or lower	full load	ISO VG 150	Under very heavy load conditions, it is recommended to use the viscosity higher than this
	Higher than 10℃		ISO VG 220	
Worm	10℃ or lower	ordinary load	ISO VG 220	
	Higher than 10℃		ISO VG 320	
	10℃ or lower	heavy load	ISO VG 320	
	Higher than 10℃		ISO VG 460	

- Use the NLGI 02(EP-2) grease.
- If temperature exceeds 40 °C or higher, please contact us.
- In case of high temperature, select the one step higher viscosity.

B) Reducer Efficiency

Reducer types	Efficiency(η)	Reducer types	Efficiency(η)
parallel type	98 ~ 99.5%	worm type	50 ~ 90%
right angle type	97.5 ~ 98.5%	planetary type	98 ~ 99.5%

$$\text{Efficiency} = \frac{\text{Output Shaft Power}}{\text{Input Shaft Power}}$$

$$\eta = \frac{HP^2}{HP^1}$$

$$\eta = \frac{KW^2}{KW^1}$$

C) Materials Used for a Reducer

Use	Materials	Tensile strength (N/mm ²)	Heat treatment
CASING	SS400	400 이상	ANNEALING
	GC200	200 이상	
GEAR	SCM415	850 이상	CARBURIZING QUENCHING & TEMPERING
	SCM440	1,000 이상	
	S45C	700이상	
	AIBC2	500 이상	
	PBC2	200 이상	
SHAFT	S45C	580 이상	NORMALIZING QUENCHING& TEMPERING
	SCM440	1,000 이상	
	SC480	480 이상	

가) 추천윤활유

주변온도		점도분류	MAKER				
			호남정유 CALTEX	유공 GULF	극동 SHELL	MOBIL KOREA	쌍용 DAPHNE
-10℃ ~ 15℃	4℃ ~ 38℃	ISO VG 68	MEROPA LUBRICANT 68	EP LUBRICANT HD 68	OMALA 68	MOBIL GEAR 626	GEAR LUBE 68S
		100	100	100	100	627	100S
		150	150	150	150	629	150S
38℃ ~ 65℃		220	220	220	220	630	220S
		320	320	320	320	632	320S
		460	460	460	460	634	460S
		680	680	680	680	636	680S

GREASE	NLGI 00	MULTIFAK EP 00	CROWN EP 00	ALVANIA EP 00	MOBILPLEX EP 00	-
	1	1	1	1	1	-
	2	2	2	2	2	-

• Tolerance range for each VG is ±10% of values

제품종류	주위온도	하중상태	사용윤활유	비 고
기어드모터 (유성)	10℃이하	전하중	ISO VG 150	
	10℃초과		ISO VG 220	
유성감속기	10℃이하	전하중	ISO VG 150	터빈용 강제 경우는 ISO VG 68
	10℃초과		ISO VG 220	
표 준 형	10℃이하	전하중	ISO VG 150	매주 격심한 부하조건 경우는 이보다 높은 점도를 사용하는 것이 좋음.
	10℃초과		ISO VG 220	
웜	10℃이하	보통하중	ISO VG 220	
	10℃초과		ISO VG 320	
	10℃이하	중하중	ISO VG 320	
	10℃초과		ISO VG 460	

• Grease는 NLGI O2(EP-2)를 사용. • 주위 온도가 40℃ 이상 되는 경우에는 문의하십시오.
• 사용 온도가 높은 경우에는 한 단계 높은 점도류를 선택할 것.

나) 감속기 효율

감속기 종류	효율(η)	감속기 종류	효 율(η)
parallel type	98 ~ 99.5%	worm type	50 ~ 90%
right angle type	97.5 ~ 98.5%	planetary type	98 ~ 99.5%

$$\text{효율} = \frac{\text{출력축 동력}}{\text{입력축 동력}}$$

$$\eta = \frac{HP^2}{HP^1}$$

$$\eta = \frac{KW^2}{KW^1}$$

다) 감속기 사용 재료

용 도	재 질	인장강도(N/mm ²)	열 처 리
CASING	SS400	400 이상	ANNEALING
	GC200	200 이상	
GEAR	SCM415	850 이상	CARBURIZING QUENCHING & TEMPERING
	SCM440	1,000 이상	
	S45C	700이상	
	AIBC2	500 이상	
	PBC2	200 이상	
SHAFT	S45C	580 이상	NORMALIZING QUENCHING& TEMPERING
	SCM440	1,000 이상	
	SC480	480 이상	

D) Troubleshooting

Symptoms	Causes	Corrective Actions
Over Heated	Overloaded operation	Operating with proper load
	Too little or too much lubrication oil	Maintain oil level up to the indicator line of oil dipstick
	Bad or improper lubrication oil	Replace aged or contaminated oil with new one
	Too small bearing gap (taper puller)	Adjust the bearing gap
	Bad oil seal	Replace oil seal
	Interruption of the ventilation of the electric motor	Remove the interruption factors
	Opened 1 phase out of 3 phases or imperfect	Checking for connections, and if required, fasten loosen parts
	Connection shortage of the stator coil in the middle	Repair stator
	Voltage unbalance	Checking the transformer and circuits
	Coil earthing	Checking the transformer and circuits
	Curved shaft or tight tension of the connection part	Check shaft center, and adjust the tension
	Bad bearing (abrasion, roughness)	Replace the damaged bearing
	Friction of parts	Disassemble and check, and if required, repair parts
Noise and Allophone	Regular noise–Bad toothing of teeth, damaged bearing	Replace gear and bearing, and replenish lubrication oil, and if required, replace the lubrication oil.
	High metal sound–lubrication oil in shortage	Replenish lubrication oil, and if required, replace with new one
	Irregular noise (connection) – penetration of foreign materials and damaged bearing	Remove contaminations (Cleaning), and replace bearing
	Contact of the rotator with the stator	Repair motor
	Fan contact with the hood	Repairing fan (separating and reassembling the fan)
	Three phase electric motor operated in a single phase,	Checking the circuit
	Loosen fixing part (shaft and gear, connection part of the flange)	Disassemble and check to remove appropriate causes, and if required, replace the parts.
Vibration	Abrasion of teeth	Replacing the gear
	Penetration of foreign materials	Replenish lubrication oil, and if required, replace with new one
	Abrasion and damage of the bearing	Replace the damaged bearing
	Loosening of the attached bolt and the fixed bolt	Fasten the bolt
	Loosening of assembled parts (shaft, gear)	Disassemble and check then reassemble tightly the parts
	Shaft center that is not straight (bad balance)	Check for the load connection status, and if required, accurately
	End play of the electric motor is too big	Check for end play of bearing, and if required, insert washers as required for accurate end play
	Damaged case and connection parts	Replacing damaged parts
Oil leakage	Damaged oil seal	Replace the oil seal
	Bad packing (connection part)	Replace the packing and reseal it
	Loose oil drainage hole plug	Tighten the plug using Teflon tape
	Loose oil gauge plug	Replace the plug
	Oil leakage in other welding parts	Reweld or replace the part
	Abrasion of output power shaft (sealing part)	Replace the output shaft
	Output power cover grease in shortage	Add grease as required
	Grease ring part: vertical type	
	Wrong attachment of a part	Contact us
no operate or malfunction of electric motor	Disconnected fuse	Check for fuse capacity rating, and replace the fuse
	Low operation torque	Replace the operation type or increase the capacity
	Opened circuit, poor connection	Check relay for overload, and starter push button for proper operation
	Disconnected coil	Change motor
	Power failure or abnormal power	Check the power
	Overload	Measure the current and check the load
	Jamming of the bearing and parts	Reassemble or replace the part concerned

라)고장원인 및 대책

구 분	원 인	대 책
발 열	과부하 운전	적정부하로 운전
	윤활유의 과소 또는 과다	유면계의 지시선에 맞게 한다.
	윤활유의 불량 또는 부적당	노화, 오염된 것은 새 윤활유로 교체
	베어링 틈새 과소(테이퍼풀러)	베어링 틈새조정
	오일 시일 불량	오일 시일 교체
	전동기의 통풍 방해	방해 요인 제거
	3상중 1상이 열려 있거나 접속 불완전	접속 여부를 점검, 단단히 한다
	고정자 코일이 중간에서 단락	수리한다
	전압의 불평형	변압기 및 회로조사
	코일 접지	변압기 및 회로조사
	축이 휘었거나 연결부의 장력이 팽팽하다	축심 점검, 장력을 조절
	베어링의 불량(마모, 거칠다)	교체
	부품의 마찰	분해점검후 수정
	규칙적소음-치의 치합 상태불량, 베어링손상	기어교체, 베어링 교체, 윤활유 보충교체
심한 소음 및 이음	높은 금속음 윤활유 부족	윤활유 보충, 교체
	불규칙 소음(이음)-이물질 침입, 베어링손상	이물질 제거(세척), 베어링 교체
	회전자와 고정자의 접촉	수리
	팬이 후드에 닿는다	수리(팬을 이격시켜 재조립)
	3상 전동기가 단상운전하고 있다	회로조사
	고정 부위가 헐겁다(축과기어, 프랜지 접합부)	분해후 점검, 원인 제거, 교체
심한 진동	치의 마모	기어교체
	이물질 침입	이물질제거 및 윤활유 교체
	베어링 마모 및 손상	베어링 교체
	취부 볼트 및 고정볼트의 이완	볼트 조임
	조립부위(축, 기어)의 이완	분해 점검후 재조립
	축심이 일직선이 아니다(밸런스가 나쁘다)	부하의 연결상태 조사 및 재연결
	전동기의 엔드프레이가 너무 크다	베어링 조사, 와셔를 넣어 재조립
	게이스 및 연결 부위 파손	교체
오일의 누유	오일 시일 손상	오일 시일 교체
	패킹 불량(접합부)	패킹 교체 및 재설링
	배유구 플러그 이완	단단히 체결(테프론테이프)
	유면계 플러그 이완	교체
	기타 용접부위 누유	재용접 또는 교체
	출력축 마모(씰링부위)	출력축 교체
	출력 카바 그리이스 부족	카바의 그리이스 보충
	(그리이스링 부위:수직형)	
	제품의 잘못된 부착	당사로 문의
전동기 기동 불능 또는 기동 곤란	퓨유즈가 끊어진다.	퓨유즈의 용량 조사, 교체
	기동 토크가 모자란다.	기동방식 교체 또는 용량 늘임
	회로가 열려 있다. 접속 불안전	과부하 릴레이, 기동기 푸시 버튼 조사
	코일의 단선	수리
	정진 또는 전원이 이상	전원 점검
	과부하	전류 측정 및 부하조사
	베어링 및 부품의 끼임 현상	재조립 또는 교체

woorim

Quotation / Order sheet

Your reference No.

Our reference No.

Date.

The following information required for quotations or order.

1. Company name : _____ Name of person in charge : _____
Division concerned : _____ Tel : _____ E-mail : _____

2. Quantity : _____

3. Specification Type _____ Unit Size _____ Service Factor _____
Input _____ rpm/Output _____ rpm Ratio _____

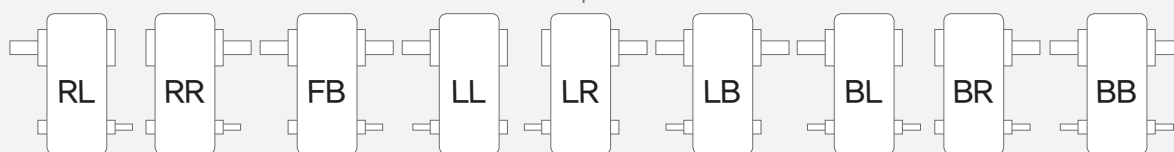
4. Power source : a. Motor _____ b. Engine(Cylinders) _____ c. Others _____
Required transmitting power _____ ps. kw

5. Driven Machine Type : _____
Required transmitting power _____ ps. kw Number of revolution _____ rpm

6. Conditions of service : Duration _____ hours per day
Impact-load _____ yes or no
Starting torque _____ A rated torqueX%
Momentary max over load _____ A rated torqueX%
Ambient Temperature _____ Dust _____ Others _____

7. Arrangement

Direction of rotation : determined from front of output shaft



8. Coupling method : High Speed Shaft : _____ Low speed shaft : _____

If Overhung load is applied, give detailed dimensions.

9. Accessories

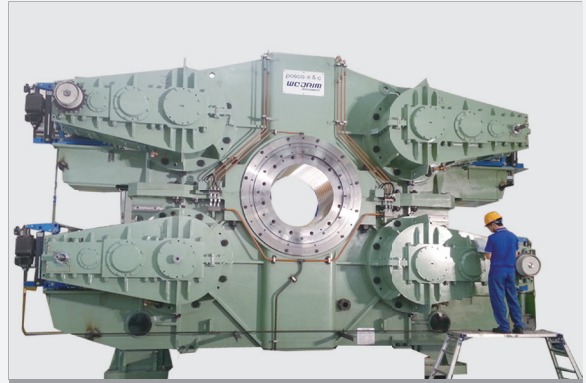
Common bed _____ need or no need
Foundation bilt _____ need or no need
Others _____

10. Place of delivery : _____ Delivery time : _____

11. Remarks : Additional requirement.



CUSTOMER : HYUNDAI HEAVYIND. Co., Ltd.
PRODUCT & SPEC : REDUCER GEAR BOX
APPLICATION : STEEL MILL
CAPACITY : 1,150,000 N.m (4,800 x 3,000 x 3,750)
WEIGHT : 53,000kg



CUSTOMER : POSCO
PRODUCT & SPEC : CONVERTER TILTING DEVICE
APPLICATION : STEEL MILL PLANT
CAPACITY : 300TON (8,610 x 7,000 x 3,560)
WEIGHT : 200,000kg



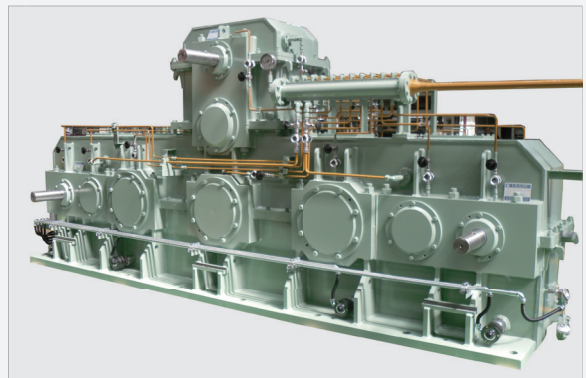
CUSTOMER : US Steel Co., Ltd.
PRODUCT & SPEC : PINION STAND
APPLICATION : STEEL MILL
CAPACITY : 1,150,000 N.m (2,850 x 2,700 x 2,500)
WEIGHT : 45,000kg



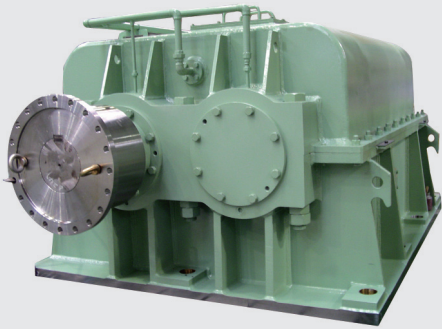
CUSTOMER : HYUNDAI STEEL Co., Ltd.
PRODUCT & SPEC : PULVERIZER REDUCER
APPLICATION : POWER PLANT / STEEL MILL
CAPACITY : 170,000 N.m (2,100 x 2,000 x 1,700)
WEIGHT : 15,000kg



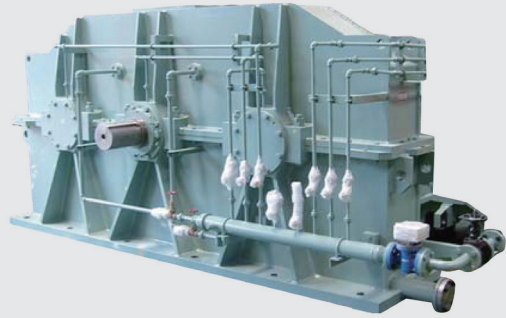
CUSTOMER : DOOSAN HEAVY INDUSTRIES Co., Ltd.
PRODUCT & SPEC : MAIN HOISTING REDUCER / 700TON
APPLICATION : TRANSPORTING PRODUCTS
CAPACITY : 460,000 N.m (800 x 2,300 x 5,300)
WEIGHT : 21,000kg



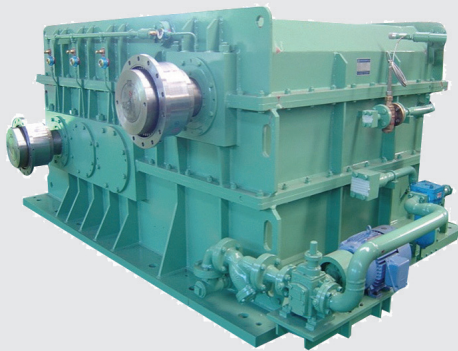
CUSTOMER : POSCO Co., Ltd.
PRODUCT & SPEC : PINCH ROLL REDUCER
APPLICATION : ROLL MAIN DRIVE
CAPACITY : 90,000 N.m (1,100 x 2,100 x 4,500)
WEIGHT : 15,000kg



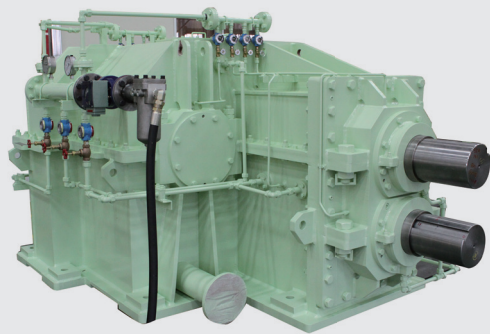
CUSTOMER : Nippon Steel Co., Ltd.
PRODUCT & SPEC : DOWN COILER REDUCER
APPLICATION : TRANSPORTING MILL
CAPACITY : 95,000 N.m (2,500 x 2,500 x 1,700)
WEIGHT : 27,000kg



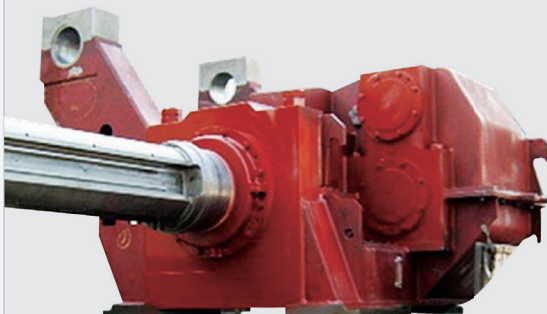
CUSTOMER : JP STEEL PLAN TECH
PRODUCT & SPEC : MILL DRIVE GEAR REDUCER
APPLICATION : STEEL MILL
CAPACITY : 70,000 N.m (700 x 1,200 x 2,100)
WEIGHT : 5,500kg



CUSTOMER : tenova Co., Ltd. / IFS
PRODUCT & SPEC : RECOILER / UNCOILER REDUCER
APPLICATION : COIL WINDER
CAPACITY : 60,000 N.m (1,200 x 1,600 x 3,100)
WEIGHT : 12,500kg



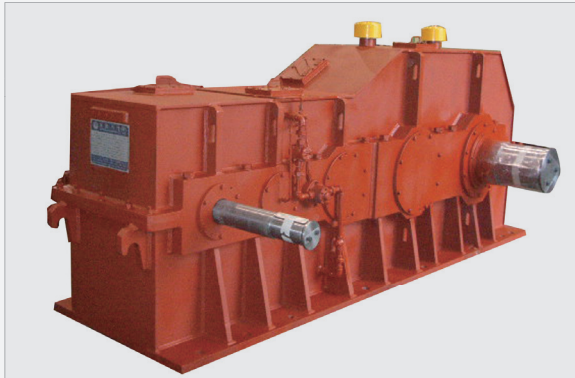
CUSTOMER : ISI IN JAPAN
PRODUCT & SPEC : PINION STAND
APPLICATION : STEEL MILL
CAPACITY : 10,000 N.m (1,200 x 1,700 x 1,300)
WEIGHT : 5,800kg



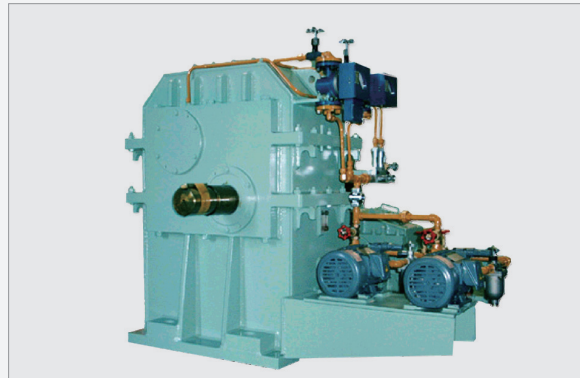
CUSTOMER : POSCO Co., Ltd.
PRODUCT & SPEC : RECOILER / UNCOILER REDUCER
APPLICATION : COIL WINDER
CAPACITY : 250,000 N.m (1,800 x 2,400 x 3,600)
WEIGHT : 25,000kg



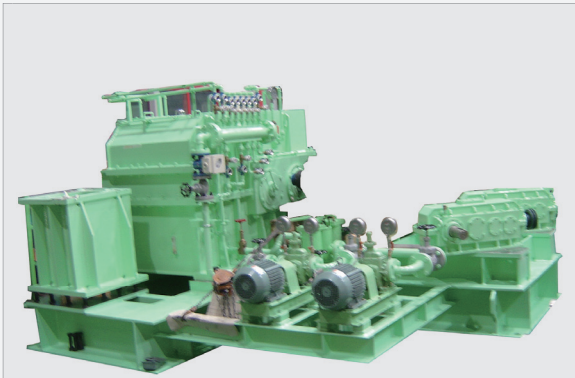
CUSTOMER : POSCO Co., Ltd.
PRODUCT & SPEC : LADDLE CRANE REDUCER
APPLICATION : DRIVING LADLE
CAPACITY : 460,000 N.m (1,100 x 1,300 x 7,800)
WEIGHT : 29,000kg



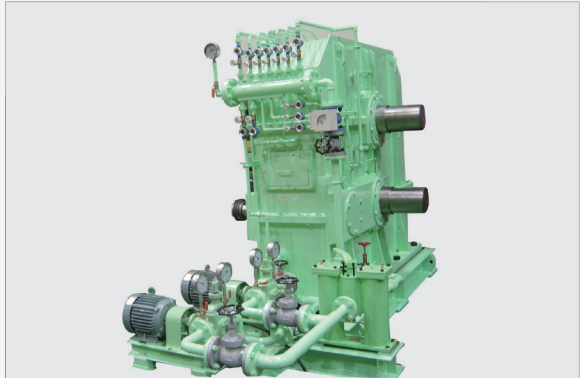
CUSTOMER : POSCO Co., Ltd.
PRODUCT & SPEC : LADLE CRANE REDUCER
APPLICATION : DRIVING LADLE
CAPACITY : 300,000 N.m (1,050 x 1,500 x 3,800)
WEIGHT : 7,000kg



CUSTOMER : Nippon Steel Co., Ltd.
PRODUCT & SPEC : PINCH ROLL REDUCER
APPLICATION : TRANSPORTING HOT COIL
CAPACITY : 48,000 N.m (900 x 1,800 x 1,700)
WEIGHT : 5,400kg



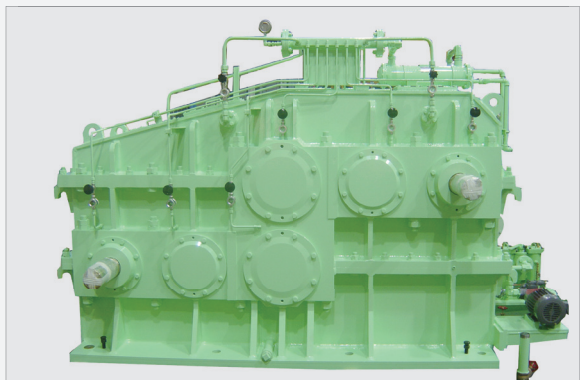
CUSTOMER : HYUNDAI STEEL Co., Ltd.
PRODUCT & SPEC : SKIN PASS MILL
APPLICATION : STEEL MILL
CAPACITY : 23,000 N.m (2,600 x 1,800 x 3,340)
WEIGHT : 25,000kg



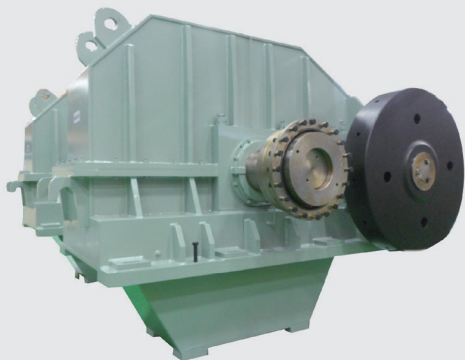
CUSTOMER : HYUNDAI STEEL Co., Ltd.
PRODUCT & SPEC : SKIN PASS MILL
APPLICATION : STEEL MILL
CAPACITY : 18,000 N.m (830 x 1,850 x 1,900)
WEIGHT : 6,300kg



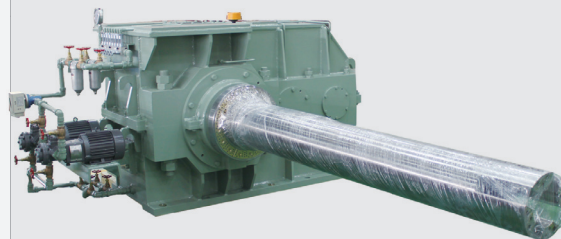
CUSTOMER : IDH Co., Ltd.
PRODUCT & SPEC : 28 x 114 MILL
APPLICATION : STEEL MILL
CAPACITY : 960,000 N.m (800 x 2,300 x 3,400)
WEIGHT : 10,000kg



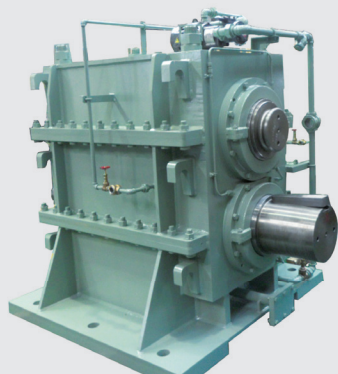
CUSTOMER : JFE Steel Co., Ltd.
PRODUCT & SPEC : PINION STANA
APPLICATION : STEEL MILL
CAPACITY : 40,000 N.m (1,100 x 1,800 x 2,800)
WEIGHT : 13,000kg



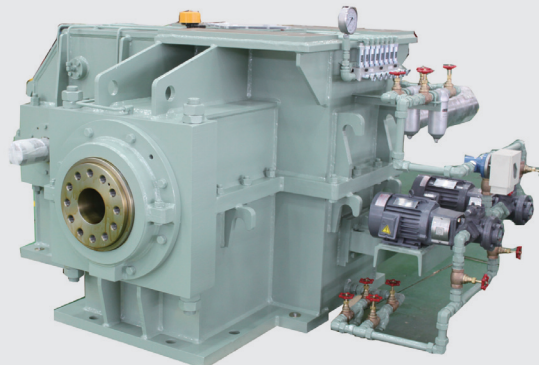
CUSTOMER : US Steel Co., Ltd.
PRODUCT & SPEC : MAIN REDUCER
APPLICATION : STEEL MILL
CAPACITY : 100,000 N.m (2,900 x 3,000 x 3,600)
WEIGHT : 30,000kg



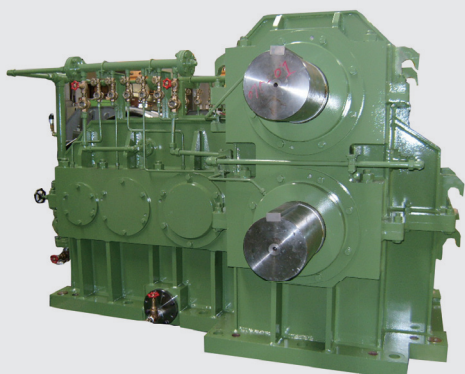
CUSTOMER : US Steel Co., Ltd.
PRODUCT & SPEC : PAY OFF REEL
APPLICATION : STEEL MILL
CAPACITY : 190,000 N.m (900 x 1,300 x 2,100)
WEIGHT : 5,100kg



CUSTOMER : HYUNDAI ENGINEERING Co., Ltd.
PRODUCT & SPEC : MILL REDUCER
APPLICATION : STEEL MILL
CAPACITY : 30,000 N.m (1,400 x 1,800 x 2,100)
WEIGHT : 4,500kg



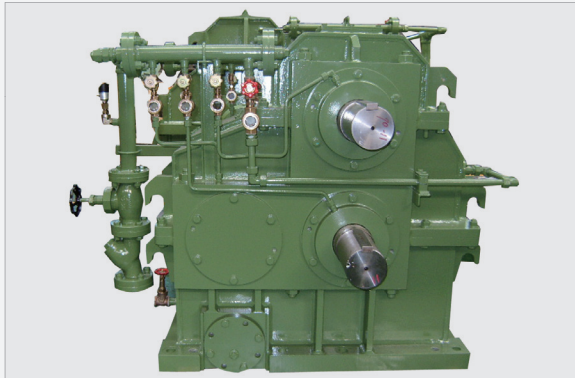
CUSTOMER : KSINDUSTRIAL Co., Ltd.
PRODUCT & SPEC : PAY OFF REEL
APPLICATION : STEEL MILL
CAPACITY : 18,000 N.m (1,000 x 1,250 x 2,000)
WEIGHT : 4,500kg



CUSTOMER : DAEHAN STEEL Co., Ltd.
PRODUCT & SPEC : PINION STAND (HORIZONTAL)
APPLICATION : STEEL MILL
CAPACITY : 270,000 N.m (1,900 x 1,800 x 2,500)
WEIGHT : 8,000kg



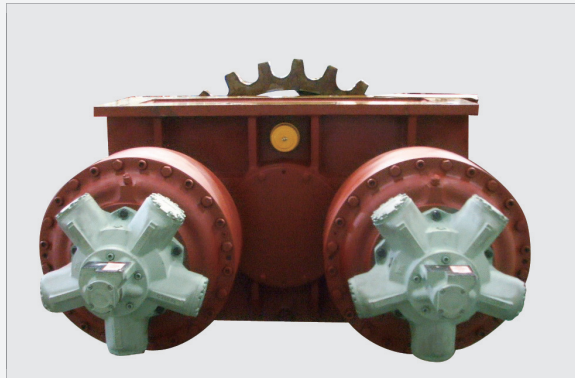
CUSTOMER : DAEHAN STEEL Co., Ltd.
PRODUCT & SPEC : PINION STAND (VERTICAL)
APPLICATION : STEEL MILL
CAPACITY : 200,000 N.m (1,700 x 1,700 x 3,100)
WEIGHT : 9,000kg



CUSTOMER : US Steel Co., Ltd.
PRODUCT & SPEC : PINION STANA (HORIZONTAL)
APPLICATION : STEEL MILL
CAPACITY : 45,000 N.m (700 x 1,300 x 1,150)
WEIGHT : 2,200kg



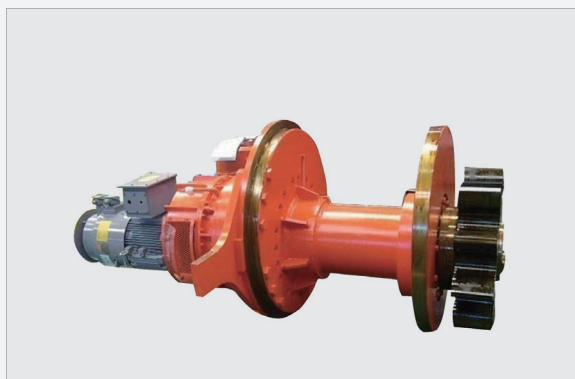
CUSTOMER : DAEHAN STEEL Co., Ltd.
PRODUCT & SPEC : PINION STANA
APPLICATION : STEEL MILL
CAPACITY : 25,000 N.m (760 x 1,200 x 3,400)
WEIGHT : 5,000kg



CUSTOMER : HBE
PRODUCT & SPEC : PRESS REDUCER FOR FORGING
APPLICATION : FORGING MATERIAL PRESS
CAPACITY : 280,000 N.m (1,540 x 1,900 x 2,100)
WEIGHT : 6,500kg



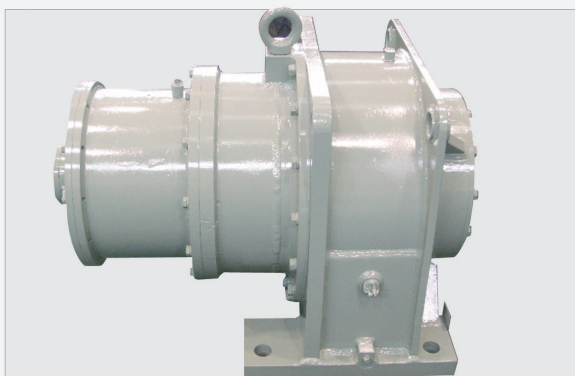
CUSTOMER : JFE Steel Co., Ltd.
PRODUCT & SPEC : TLC REDUCER
APPLICATION : CHARTERED SHIP TRANSPORTING
 CAR / VESSEL ROTATION
CAPACITY : 260,000 N.m (1,100 x 1,700 x 1,600)
WEIGHT : 3,500kg



CUSTOMER : MES IN JAPAN
PRODUCT & SPEC : SLEWING REDUCER / 45TON
APPLICATION : JIB CRANE
CAPACITY : 180,000 N.m ($\varnothing$ 1,250 x 3,500)
WEIGHT : 3,100kg



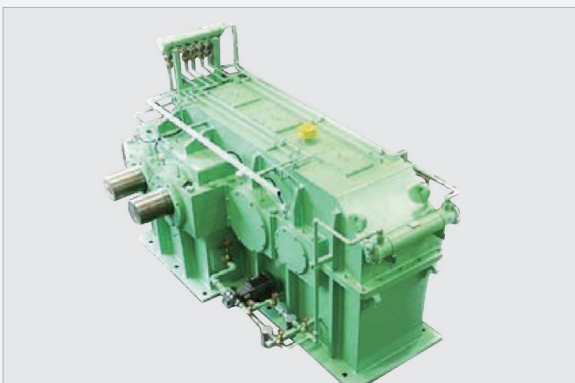
CUSTOMER : HYUNDAI HEAVY INDUSTRIES Co., Ltd.
PRODUCT & SPEC : SLEWING REDUCER
APPLICATION : ROTATING MAIN SHAFT OF JIB CRANE
CAPACITY : 150,000 N.m ($\varnothing$ 700 x 2,700)
WEIGHT : 3,100kg



CUSTOMER : HYUNDAI STEEL Co., Ltd.
PRODUCT & SPEC : PLANETARY REDUCER
APPLICATION : STEEL MILL
CAPACITY : 270,000 N.m (750 x 860 x 1,700)
WEIGHT : 2,000kg



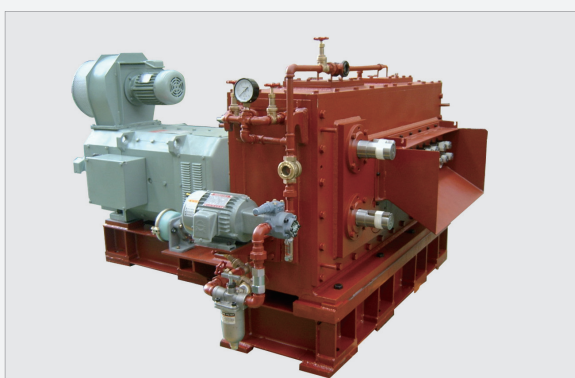
CUSTOMER : Nippon Steel Co., Ltd.
PRODUCT & SPEC : TLC REDUCER
APPLICATION : 350 TON CHARTERED SHIP
 TRANSPORT CAR / VESSEL ROTATION
CAPACITY : 50,000 N.m ($\varnothing$ 800 x 2,000)
WEIGHT : 1,800kg



CUSTOMER : SIN HEUNG Co., Ltd.
PRODUCT & SPEC : ROTOR DRIVE REDUCER
APPLICATION : RUBBER MATERIAL GRINDER
CAPACITY : 80,000 N.m (1,600 x 1,950 x 3,400)
WEIGHT : 21,000kg



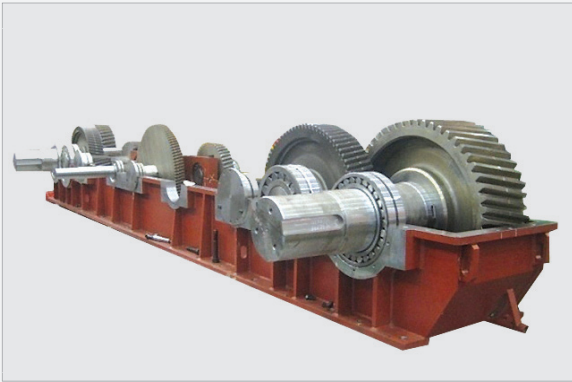
CUSTOMER : POSCO Co., Ltd.
PRODUCT & SPEC : 2-SPEED REDUCER
APPLICATION : BELT CONVEYOR REDUCER
CAPACITY : 90,000 N.m (910 x 1,400 x 1,900)
WEIGHT : 5,000kg



CUSTOMER : IDH Co., Ltd.
PRODUCT & SPEC : LEVELLER REDUCER
APPLICATION : TRANSPORTING HOT COIL
CAPACITY : 20,000 N.m (570 x 800 x 1,350)
WEIGHT : 1,500kg



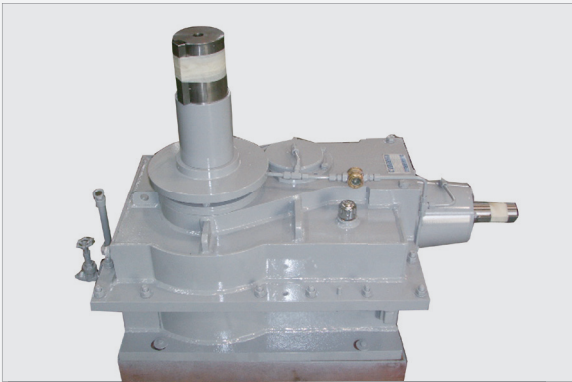
CUSTOMER : POSCO Co., Ltd.
PRODUCT & SPEC : ROLLER TABLE REDUCER
APPLICATION : DRIVING ROLLER TABLE
CAPACITY : 3,000 N.m (400 x 380 x 560)
WEIGHT : 250kg



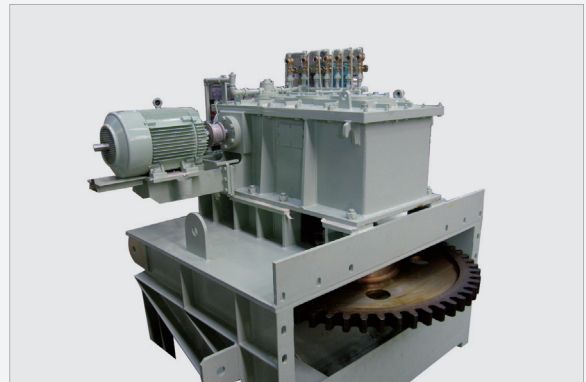
CUSTOMER : SEAHBESTEEL Co., Ltd.
PRODUCT & SPEC : LADLE CRANE REDUCER
APPLICATION : TRANSPORTING LADLE
CAPACITY : 260,000 N.m (1,050 x 1,400 x 6,000)
WEIGHT : 20,000kg



CUSTOMER : SAMBO C.M.C
PRODUCT & SPEC : R.C.D GEAR BOX
APPLICATION : R.C.D (Reverse Circulation Drilling Machine)
CAPACITY : 800,000 N.m (2,100 x 2,300 x 2,800)
WEIGHT : 14,000kg



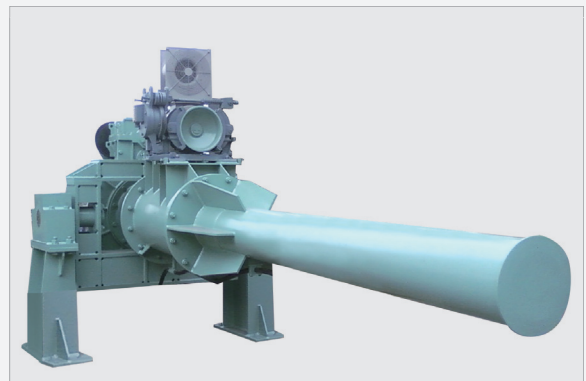
CUSTOMER : KP CHEMICAL
PRODUCT & SPEC : BEVEL REDUCER
APPLICATION : PETROCHEMISTRY
CAPACITY : 13,000 N.m (650 x 770 x 800)
WEIGHT : 900kg



CUSTOMER : BORYEONG THERMAL POWER PLANT
PRODUCT & SPEC : ROTOR DRIVE REDUCER
APPLICATION : DRIVING GEAR FOR AIR PREHEATER
CAPACITY : 50,000 N.m (2,500 x 2,400 x 2,700)
WEIGHT : 4,500kg



CUSTOMER : SCHISEE Co., Ltd.
PRODUCT & SPEC : WINCH REDUCER
APPLICATION : DRY DOCK
CAPACITY : $\varnothing$ 1,350 x 2,000
WEIGHT : 4,000kg



CUSTOMER : HYUNDAI HEAVY INDUSTRIES Co., Ltd.
PRODUCT & SPEC : LUFFING CRANE REDUCER
APPLICATION : JACK SCREW
CAPACITY : 150,000 N.m (1,600 x 2,400 x 5,000)
WEIGHT : 7,000kg