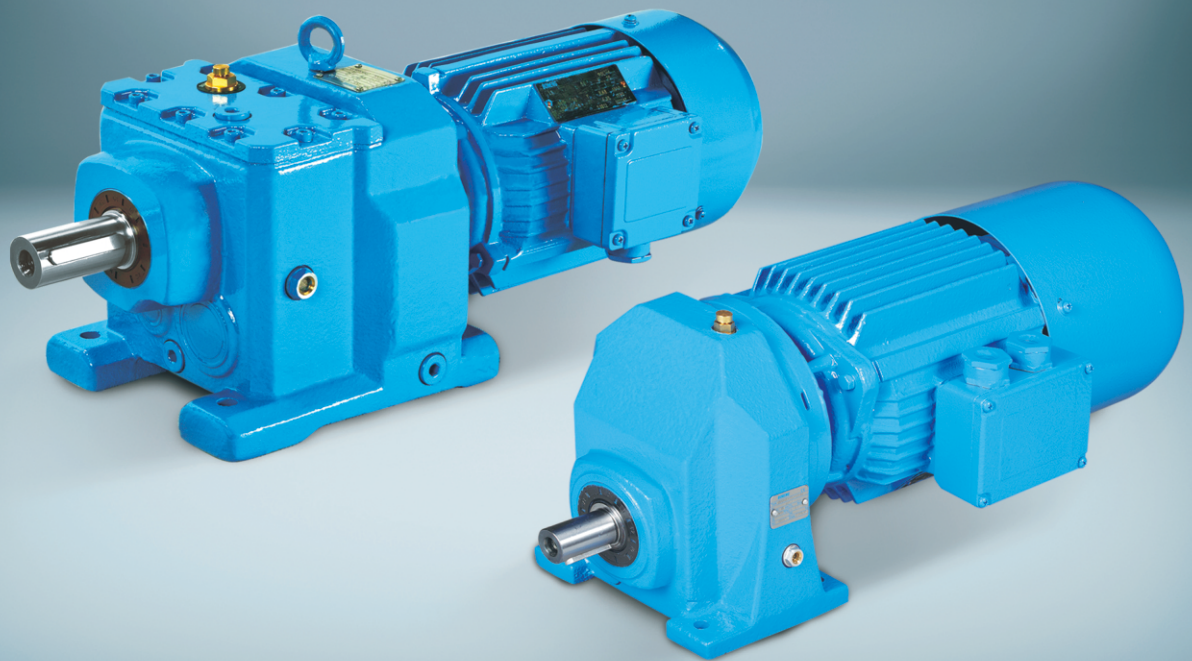
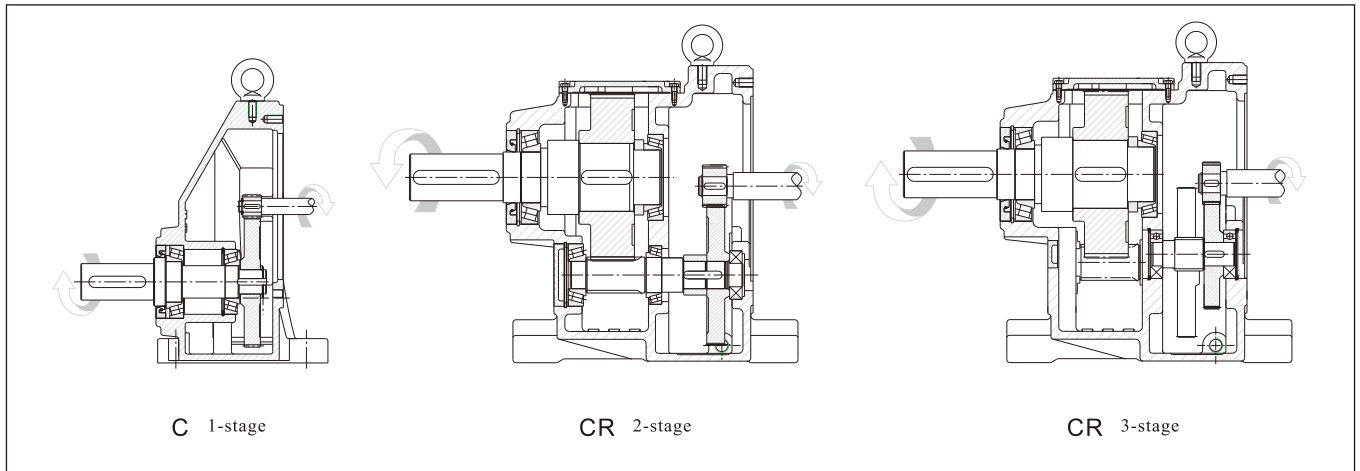


CR Series Helical Gear Units





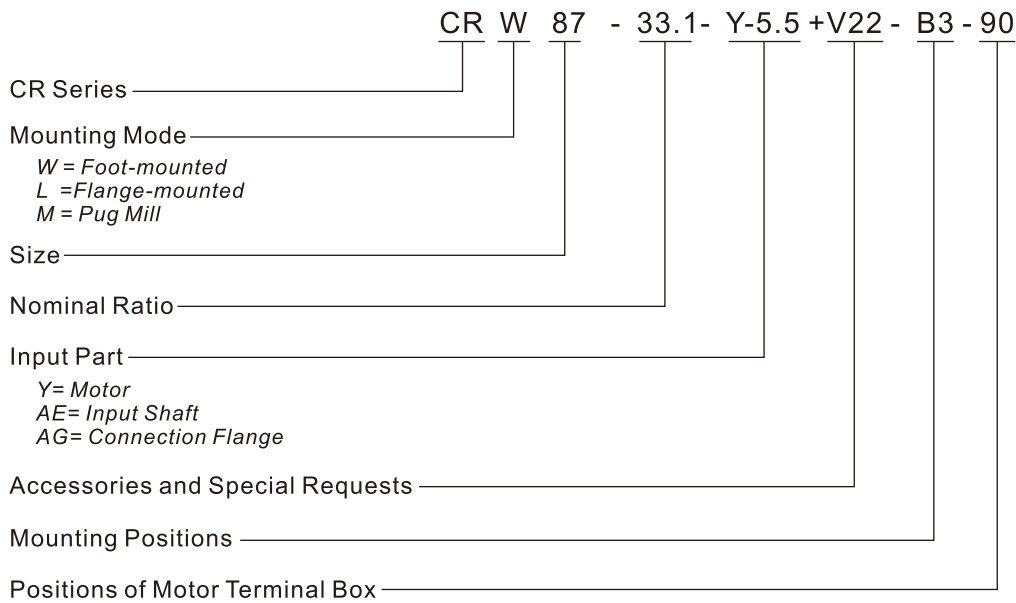
1 Sectional Drawings:



CR

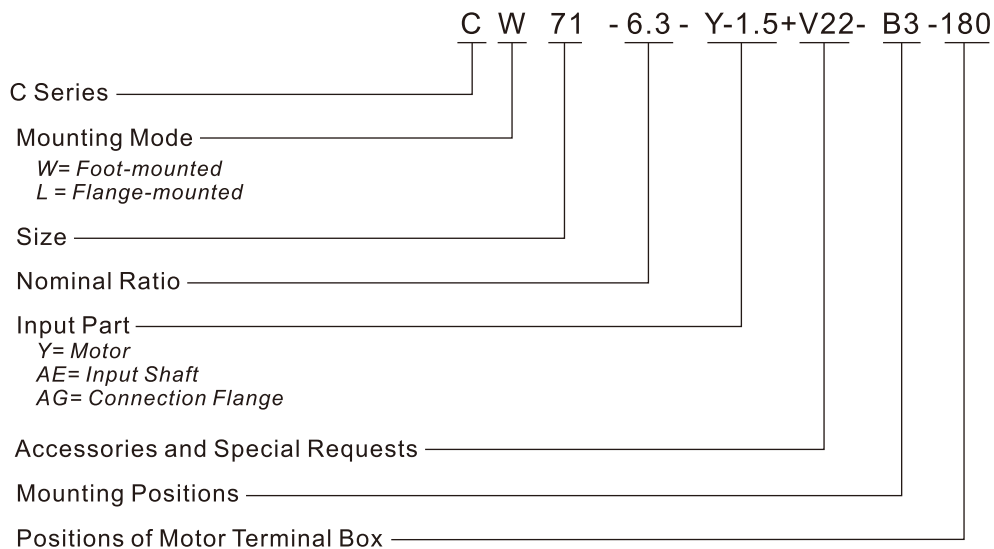
2 Type Designation:

2.1 CR Series:



Combi-type Designation: CRW87/CRL47-286-Y-1.1+E02-B3-90

2.2 C Series:

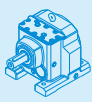




3 Mounting Positions and Position of Motor Terminal Box:

<p>CW..</p>		<p>B3</p>	<p>V6</p>	<p>B6</p>
		<p>B8</p>	<p>V5</p>	<p>B7</p>
<p>CL..</p>		<p>B5</p>	<p>V3</p>	<p>B65</p>
		<p>B51</p>	<p>V1</p>	<p>B75</p>
<p>CRW..</p>		<p>B3</p>	<p>V6</p>	<p>B6</p>
		<p>B8</p>	<p>V5</p>	<p>B7</p>
<p>CRL..</p>		<p>B5</p>	<p>V3</p>	<p>B65</p>
		<p>B51</p>	<p>V1</p>	<p>B75</p>
<p>CRM..</p>		<p>B5</p>	<p>V1</p>	<p>V3</p>

CR



4 Type Selection and Example:

Steps	Description	Symbols	Parameters Calculation and Guidelines			
1	Driven Machine Factor	f_1	Load Characteristic	Operating hours per day (h)		
				≤ 2	2 ~ 10	10 ~ 24
			Uniform	1.00(1.00)	1.00(1.25)	1.25(1.50)
			Moderate	1.00(1.25)	1.25(1.50)	1.50(1.75)
			Heavy	1.25(1.50)	1.50(1.75)	1.75(2.00)
Note: Apply values in the brackets when starts per hour are 10 times or more.						
2	Input Speed	n_1	$\leq 1800\text{rpm}$ Consult us if higher speed required.			
3	Calculation of the Ratio	i	$i = n_1/n_2$			
4	Transmission Efficiency	η	C: 98% CR: 2-stage: 96%, 3-stage: 94%			
5	Calculation of the input power of the gear unit on basis of the torque and power required by the driven machine.	P_1	$P_1 = T_2 \cdot n_1 / (9550 \cdot i \cdot \eta)$ Or $P_1 = P_2 / \eta$			
6	Determination of gear unit type referring to the table of transmission capacity after calculation, For directly-connected motor, require to refer to directly-connected motor power table.	T_{2N} 、 P_{1N}	$T_{2N} \geq T_2 \cdot f_1$ or $P_{1N} \geq P_1 \cdot f_1$			
7	Check the radial and axial forces on the shafts.	F_{r1}/F_{r2} F_{a1}/F_{a2}	See the table of Radial Force on Output Shaft (F_{r2}) on P 19/CR.			
8	Determination of Lubrication system		Generally Splash Lubrication			
9	Determination of Cooling System		Generally Air Cooling			
10	Determination of every item included in the Type Designation		For details about Type Designation, see P2/CR.			
11	Normal ambient conditions		Ambient temperature -10 to 40°C, ample space, good ventilation, altitude not exceeding 1000m and common plant dust.			
12	Special ambient conditions		For higher or lower temperature, dusty sites, chemical reaction (acids, alkaline, etc), or open field (sunlight, ice, rain, etc), please consult us!			

CR

**Examples****1) Geared motor****Known Criteria:**

1. The power required by the driven machine $P_2=20\text{kW}$, speed $n_2=27\text{r/min}$
2. Normal motor: 4-pole, speed $n_1=1450\text{r/min}$
3. Load characteristics: moderate, working 6 hours/d and starting 5 times/h
4. Mounting mode: flange-mounted, mounting position B5, terminal box position 90

Selection Steps:

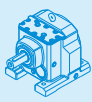
1. By referring to the table of Load Characteristic, we get the driven machine factor $f_1=1.25$.
2. Calculation of the Ratio:
As $i=n_1/n_2=1450/27=53.7$, nominal ratio $i_N=53$ is appropriate.
3. Calculation of the input power and determination of the motor power (transmission efficiency $\eta=94\%$):
 $P_1=P_2/\eta=20/0.94=21.3\text{kW}$, so 22kW motor is selected.
Refer to the directly-connected motor power table, it can be directly-connected.
4. Determination of the nominal power of the geared motor P_{1N} :
 $P_{1N} \geq P_2 \cdot f_1 / \eta = 20 \times 1.25 / 0.94 = 26.6\text{kW}$
5. The type selected:
CRLa147-53-Y-22-B5-90

2) Gear Unit**Known Criteria:**

1. The torque required by the driven machine $T_2=100\text{N.m}$ and speed $n_2=540\text{r/min}$
2. The motor supplied by users: 4-pole, speed $n_1=1450\text{r/min}$
3. Load characteristic: moderate, operating 12h/d continuously
4. Mounting mode: shaft input, foot-mounted, mounting position V6

Selection steps:

1. By referring to the table of Load Characteristic, we get the driven machine factor $f_1=1.5$.
2. Calculation of the ratio i_N :
As $i=n_1/n_2=1450/540=2.69$, nominal ratio $i_N=2.7$ is appropriate
3. Determination of the nominal torque T_{2N} and nominal power P_{1N} of the gear unit (transmission efficiency $\eta=98\%$):
 $T_{2N} \geq T_2 \cdot f_1 = 100 \times 1.5 = 150\text{ N} \cdot \text{m}$;
 $P_{1N} \geq P_1 \cdot f_1 = T_2 \cdot f_1 \cdot n_1 / (9550 \cdot i_N \cdot \eta)$
 $= 100 \times 1.5 \times 1450 / (9550 \times 2.7 \times 0.98)$
 $= 8.6\text{kW}$
In the table of Transmission Capacity, C71 meets the requirements
 $T_{2N}=205\text{ N} \cdot \text{m}$, $P_{1N}=11.5\text{ kW}$
4. Determination of the input mode:
As $P_{1N} \geq P_1 = T_2 \cdot n_1 / (9550 \cdot i_N \cdot \eta)$
 $= 100 \times 1450 / (9550 \times 2.7 \times 0.98) = 5.74\text{kW}$
and power of the user-supplied motor is specified as 7.5kW,
in the table of Dimensions the AE Input Shaft, AE4 is selected.
5. The type selected:
CW71-2.7-AE4-V6



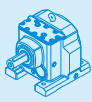
5 Transmission Capacity:

C..(n1=1450r/min)

n ₁ (r/min)	n _{2N} (r/min)	i _N	C.31			C.41			C.61			
			T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	
1450	906	1.6	31	1.59	2.95	62	1.58	5.96	114	1.6	10.8	
	763	1.9	30	1.96	2.32	75	1.88	6.06	126	1.92	9.96	
	659	2.2	35	2.19	2.43	85	2.16	5.97	134	2.18	9.33	
	604	2.4	38	2.46	2.35	85	2.38	5.43	123	2.42	7.72	
	537	2.7	42	2.77	2.30	62	2.77	3.40	118	2.71	6.61	
	468	3.1	29	3.15	1.40	48	3.08	2.37	106	3.04	5.29	
	426	3.4	29	3.37	1.31	50	3.46	2.2	90	3.45	3.96	
	382	3.8	20	3.88	0.78	41	3.67	1.70	87	3.78	3.49	
	322	4.5	21	4.53	0.70	26	4.44	0.90	55	4.5	1.86	
	279	5.2				26	5.13	0.77	35	5.11	1.04	
	264	5.5				26	5.53	0.72	37	5.47	1.04	
	230	6.3							43	6.33	1.03	

C..(n1=1740r/min)

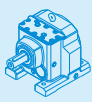
n ₁ (r/min)	n _{2N} (r/min)	i _N	C.31			C.41			C.61			
			T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	
1740	1088	1.6	31	1.59	3.54	62	1.58	7.15	114	1.6	13.0	
	916	1.9	30	1.96	2.78	75	1.88	7.27	126	1.92	12.0	
	791	2.2	35	2.19	2.92	85	2.16	7.16	134	2.18	11.2	
	725	2.4	38	2.46	2.82	85	2.38	6.52	123	2.42	9.26	
	644	2.7	42	2.77	2.76	62	2.77	4.08	118	2.71	7.93	
	561	3.1	29	3.15	1.68	48	3.08	2.84	106	3.04	6.35	
	512	3.4	29	3.37	1.57	50	3.46	2.64	90	3.45	4.75	
	458	3.8	20	3.88	0.94	41	3.67	2.04	87	3.78	4.19	
	387	4.5	21	4.53	0.84	26	4.44	1.08	55	4.5	2.23	
	335	5.2				26	5.13	0.92	35	5.11	1.25	
	316	5.5				26	5.53	0.86	37	5.47	1.25	
	276	6.3							43	6.33	1.24	



CR

	C.71			C.81			C.91			C.101		
	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
	173	1.61	16.3	315	1.56	30.7	505	1.62	47.3	738	1.56	70
	187	1.92	14.8	355	1.93	27.9	570	1.93	44.8	765	1.93	61.13
	200	2.18	13.9	385	2.15	27.2	595	2.15	42	830	2.15	57.28
	203	2.42	12.7	405	2.48	24.8	595	2.48	36.4	830	2.48	52.51
	205	2.71	11.5	405	2.76	22.3	595	2.76	32.7	830	2.76	46.67
	200	3.05	9.96	405	3.09	19.9	595	3.09	29.2	830	3.09	40.65
	200	3.45	8.80	405	3.48	17.7	595	3.48	26	830	3.48	37.06
	190	3.78	7.63	305	3.78	12.3	595	3.78	23.9	830	3.78	33.16
	110	4.5	3.71	290	4.5	9.78	566	4.5	19.1	762	4.5	25.7
	100	5.24	2.90	250	5.07	7.49	395	5.07	11.8	695	5.07	20.29
	100	5.55	2.74	145	5.56	3.96	350	5.56	9.56	556	5.56	15.35
	68	6.28	1.64	155	6.13	3.84	323	6.45	7.60	460	6.45	11.09

	C.71			C.81			C.91			C.101		
	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
	173	1.61	19.6	315	1.56	36.8	505	1.62	56.8	738	1.56	84.0
	187	1.92	17.8	355	1.93	33.5	570	1.93	53.8	765	1.93	73.4
	200	2.18	16.7	385	2.15	32.6	595	2.15	50.4	830	2.15	68.7
	203	2.42	15.2	405	2.48	29.8	595	2.48	43.7	830	2.48	63.0
	205	2.71	13.8	405	2.76	26.8	595	2.76	39.2	830	2.76	56.0
	200	3.05	12.0	405	3.09	23.9	595	3.09	35.0	830	3.09	48.8
	200	3.45	10.6	405	3.48	21.2	595	3.48	31.2	830	3.48	44.5
	190	3.78	9.16	305	3.78	14.8	595	3.78	28.7	830	3.78	39.8
	110	4.5	4.45	290	4.5	11.7	566	4.5	22.9	762	4.5	30.8
	100	5.24	3.48	250	5.07	8.99	395	5.07	14.2	695	5.07	24.3
	100	5.55	3.29	145	5.56	4.75	350	5.56	11.5	556	5.56	18.4
	68	6.28	1.97	155	6.13	4.61	323	6.45	9.12	460	6.45	13.3



CR..(n1=1450r/min)

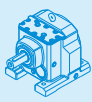
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n ₁ (r/min)	n _{2N} (r/min)	i _N	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	
1450	290	5.0	130	5	3.95	150	5.02	4.54	290	5.08	8.67	510	4.99	15.5	910	4.9	28.2	
	238	6.1	142	6.16	3.5	156	5.98	3.96	310	6.1	7.72	540	5.96	13.8	1020	6.05	25.6	
	213	6.8	144	6.88	3.18	159	6.87	3.51	330	6.92	7.24	580	6.77	13	1070	6.76	24	
	188	7.7	156	7.71	3.07	163	7.56	3.27	380	7.69	7.5	610	7.52	12.3	1160	7.78	22.6	
	167	8.7	156	8.77	2.7	205	8.75	3.56	440	8.79	7.6	630	8.41	11.4	1210	8.66	21.2	
	136	10.7	170	10.8	2.39	230	10.43	3.35	470	10.5	6.8	630	10.56	9.06	1180	10.62	16.9	
	120	12.1	175	12.06	2.2	245	11.97	3.11	500	11.91	6.37	690	11.99	8.74	1230	11.83	15.8	
	107	13.6	185	13.52	2.08	250	13.18	2.88	520	13.25	5.96	720	13.31	8.21	1280	13.64	14.2	
	96	15.1	200	15.25	1.99	265	15.34	2.62	550	14.81	5.64	740	14.91	7.54	1340	15.18	13.4	
	85	17.0	200	17.33	1.75	290	17.08	2.58	560	16.65	5.11	780	16.78	7.06	1390	17	12.4	
	77	18.9	200	18.53	1.64	295	19.13	2.34	480	18.86	3.86	780	18.98	6.24	1440	19.14	11.4	
	70	20.8	145	21.35	1.03	250	20.31	1.87	530	20.68	3.89	820	20.79	5.99	1500	20.79	11	
	58	24.8	170	24.93	1.04	170	24.62	1.05	305	24.6	1.88	650	24.75	3.99	1550	24.75	9.51	
1450	53	27.2	200	27.17	1.12	300	27.69	1.64	520	27.33	2.89	780	27.6	4.29	1500	27.67	8.23	
	44	33.1	200	33.49	0.91	300	33.01	1.38	540	32.59	2.52	820	33.12	3.76	1550	33	7.13	
	39	37.2	200	37.38	0.81	300	37.91	1.2	570	37.41	2.31	820	37.61	3.31	1550	37.47	6.28	
	34	42.2	200	41.91	0.72	300	41.73	1.09	580	41.19	2.14	820	41.75	2.98	1550	41.59	5.66	
	30	47.6	200	47.66	0.64	300	48.57	0.94	600	47.94	1.9	820	46.75	2.66	1550	46.58	5.05	
	27.4	53.0				300	54.02	0.84	600	53.38	1.71	820	52.44	2.37	1550	52.42	4.49	
	24.3	59.7	200	58.74	0.52	300	60.68	0.75	600	59.8	1.52	820	59.51	2.09	1550	59.3	3.97	
	21.8	66.6	200	65.56	0.46	300	67.6	0.67	600	66.72	1.37	820	66.3	1.88	1550	66.61	3.53	
	19.4	74.7	200	73.52	0.41	300	74.42	0.61	600	73.45	1.24	820	73.6	1.69	1550	73.94	3.18	
	17.2	84.5	200	82.92	0.37	300	86.61	0.53	600	85.49	1.07	820	82.42	1.51	1550	82.81	2.84	
	15.4	94.4	200	94.2	0.32	300	96.43	0.47	600	95.18	0.96	820	92.45	1.35	1550	93.19	2.53	
	13.9	104	200	100.7	0.3	300	108	0.42	600	106.6	0.85	820	104.9	1.19	1550	105.4	2.23	
	12.6	115	200	116.1	0.26	300	114.7	0.4	600	113.2	0.8	820	115	1.08	1550	115.5	2.04	
	10.6	137	200	135.6	0.22	300	139	0.33	600	137.2	0.66	650	136.9	0.72	1550	137.5	1.71	
	9.2	157				300	160.3	0.28	600	158.1	0.58	700	155.4	0.68	1550	160.1	1.47	
	8.5	170				300	173.1	0.26	600	170.8	0.53	700	166.4	0.64	1550	169.6	1.39	
	7.6	192										800	192.5	0.63	1520	191.89	1.2	
6.6	219													1500	219.6	1.04		
6.2	235													1150	236.3	0.74		
5.5	264																	

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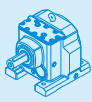
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	CR..97			CR..107			CR..137			CR..147			CR..167		
	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
	1780	5.08	53.2	2900	4.86	90.6	4600	5.04	139	8670	4.99	264			
	1890	6.06	47.4	2970	6.00	75.2	5110	6.02	129	8670	6.02	219			
	1890	6.77	42.4	2970	6.70	67.3	5110	6.82	114	8670	6.72	196			
	2000	7.80	38.9	2970	7.72	58.4	5110	7.84	99	8670	7.74	170			
	2030	8.67	35.6	4300	8.59	76.0	7840	8.69	137	13000	8.61	229			
	2090	10.68	29.7	4300	10.68	61.1	8000	10.56	115	13000	10.6	186			
	2190	11.90	27.9	4300	11.90	54.9	8000	11.94	102	13000	11.8	167			
	2300	13.72	25.5	4300	13.72	47.6	8000	13.75	88.3	12600	13.6	141	17000	8.91	290
	2300	15.27	22.9	4300	15.27	42.8	8000	15.24	79.7	13000	15.2	130	17000	10.71	241
	2400	17.10	21.3	4300	17.10	38.2	8000	16.94	71.7	13000	17	116	17000	12.39	208
	2610	19.26	20.6	4300	19.26	33.9	8000	18.98	64.0	12000	19.1	95.2	17000	13.72	188
	2610	20.92	18.9	4300	20.92	31.2	8000	20.79	58.4	12000	20.8	87.6	18000	15.26	179
	2830	24.90	17.3	4300	24.90	26.2	8000	24.75	49.1	11900	24.8	73.0	15000	16.98	134
	2670	27.02	15	4300	28.01	23.3	7680	26.46	44.1	13000	27.8	70.9	16000	18.8	129
	2890	33.43	13.1	4300	33.37	19.6	8000	32.73	37.1	13000	33.2	59.5	16000	20.99	116
	3000	37.24	12.2	4300	37.18	17.6	8000	36.46	33.3	13000	37.5	52.6	14000	24.88	85.4
	3000	42.96	10.6	4300	42.88	15.2	8000	42.06	28.9	13000	43.2	45.7	18000	27.43	99.6
	3000	47.81	9.53	4300	47.73	13.7	8000	46.81	26.0	13000	47.9	41.2	18000	33.08	82.6
	3000	53.52	8.51	4300	53.43	12.2	8000	52.04	23.3	13000	53.3	37.0	18000	36.85	74.2
	3000	60.28	7.56	4300	60.18	10.8	8000	59.02	20.6	13000	59.6	33.1	18000	42.51	64.3
	3000	65.74	6.93	4300	65.86	9.91	8000	65.87	18.4	13000	65.8	30.0	18000	47.31	57.8
	3000	75.84	6.01	4300	75.88	8.6	8000	75.87	16.0	13000	75.6	26.1	18000	52.97	51.6
	3000	84.40	5.4	4300	84.4	7.74	8000	84.43	14.4	13000	83.8	23.6	18000	59.65	45.8
	3000	94.49	4.82	4300	94.4	6.92	8000	94.53	12.9	13000	93.3	21.2	18000	65.5	41.7
	3000	106.4	4.28	4300	106.3	6.14	8000	106.5	11.4	13000	105	18.9	18000	75.47	36.2
	3000	115.6	3.94	4300	115.7	5.64	8000	115.6	10.5	13000	114	17.3	18000	83.94	32.6
	3000	137.6	3.31	4300	137.6	4.75	8000	137.7	8.82	13000	136	14.5	18000	93.88	29.1
	3000	155.0	2.94	4300	155.2	4.21	8000	155.1	7.83	13000	154	12.9	18000	105.7	25.9
	3000	170.0	2.68	4300	170.0	3.84	8000	170.1	7.14	13000	168	11.7	18000	115	23.8
	3000	187.5	2.43	4300	197.4	3.31	8000	197.3	6.16	13000	195	10.1	18000	136.9	20.0
	2750	220.2	1.9	4300	220.2	2.97	8000	220.3	5.51	13000	218	9.06	18000	154.3	17.7
	1600	233.4	1.04	4300	233.3	2.80	8000	233.5	5.20	13000	231	8.55	18000	169.1	16.2
	1800	264.4	1.03	4300	264.5	2.47	8000	264.6	4.59	13000	262	7.55	18000	186.4	14.7



CR..(n1=1740r/min)

			CR..37			CR..47			CR..67			CR..77			CR..87		
n ₁ (r/min)	n _{2N} (r/min)	i _N	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
1740	348	5.0	130	5	4.74	150	5.02	5.45	290	5.08	10.40	510	4.99	18.60	910	4.9	33.84
	285	6.1	142	6.16	4.20	156	5.98	4.75	310	6.1	9.26	540	5.96	16.56	1020	6.05	30.72
	256	6.8	144	6.88	3.82	159	6.87	4.21	330	6.92	8.69	580	6.77	15.60	1070	6.76	28.80
	226	7.7	156	7.71	3.68	163	7.56	3.92	380	7.69	9.00	610	7.52	14.76	1160	7.78	27.12
	200	8.7	156	8.77	3.24	205	8.75	4.27	440	8.79	9.12	630	8.41	13.68	1210	8.66	25.44
	163	10.7	170	10.8	2.87	230	10.43	4.02	470	10.5	8.16	630	10.56	10.87	1180	10.62	20.28
	144	12.1	175	12.06	2.64	245	11.97	3.73	500	11.91	7.64	690	11.99	10.49	1230	11.83	18.96
	128	13.6	185	13.52	2.50	250	13.18	3.46	520	13.25	7.15	720	13.31	9.85	1280	13.64	17.04
	115	15.1	200	15.25	2.39	265	15.34	3.14	550	14.81	6.77	740	14.91	9.05	1340	15.18	16.08
	102	17.0	200	17.33	2.10	290	17.08	3.10	560	16.65	6.13	780	16.78	8.47	1390	17	14.88
	92.1	18.9	200	18.53	1.97	295	19.13	2.81	480	18.86	4.63	780	18.98	7.49	1440	19.14	13.68
	83.7	20.8	145	21.35	1.24	250	20.31	2.24	530	20.68	4.67	820	20.79	7.19	1500	20.79	13.20
70.2	24.8	170	24.93	1.25	170	24.62	1.26	305	24.6	2.26	650	24.75	4.79	1550	24.75	11.41	
1740	64.0	27.2	200	27.17	1.34	300	27.69	1.97	520	27.33	3.47	780	27.6	5.15	1500	27.67	9.88
	52.6	33.1	200	33.49	1.09	300	33.01	1.66	540	32.59	3.02	820	33.12	4.51	1550	33	8.56
	46.8	37.2	200	37.38	0.97	300	37.91	1.44	570	37.41	2.77	820	37.61	3.97	1550	37.47	7.54
	41.2	42.2	200	41.91	0.86	300	41.73	1.31	580	41.19	2.57	820	41.75	3.58	1550	41.59	6.79
	36.6	47.6	200	47.66	0.77	300	48.57	1.13	600	47.94	2.28	820	46.75	3.19	1550	46.58	6.06
	32.8	53.0				300	54.02	1.01	600	53.38	2.05	820	52.44	2.84	1550	52.42	5.39
	29.1	59.7	200	58.74	0.62	300	60.68	0.90	600	59.8	1.82	820	59.51	2.51	1550	59.3	4.76
	26.1	66.6	200	65.56	0.55	300	67.6	0.80	600	66.72	1.64	820	66.3	2.26	1550	66.61	4.24
	23.3	74.7	200	73.52	0.49	300	74.42	0.73	600	73.45	1.49	820	73.6	2.03	1550	73.94	3.82
	20.6	84.5	200	82.92	0.44	300	86.61	0.64	600	85.49	1.28	820	82.42	1.81	1550	82.81	3.41
	18.4	94.4	200	94.2	0.38	300	96.43	0.56	600	95.18	1.15	820	92.45	1.62	1550	93.19	3.04
	16.7	104	200	100.7	0.36	300	108	0.50	600	106.6	1.02	820	104.9	1.43	1550	105.4	2.68
	15.1	115	200	116.1	0.31	300	114.7	0.48	600	113.2	0.96	820	115	1.30	1550	115.5	2.45
	12.7	137	200	135.6	0.26	300	139	0.40	600	137.2	0.79	650	136.9	0.86	1550	137.5	2.05
	11.1	157				300	160.3	0.34	600	158.1	0.70	700	155.4	0.82	1550	160.1	1.76
	10.2	170				300	173.1	0.31	600	170.8	0.64	700	166.4	0.77	1550	169.6	1.67
	9.1	192										800	192.5	0.76	1520	191.89	1.44
	7.9	219													1500	219.6	1.25
7.4	235													1150	236.3	0.89	
6.6	264																



CR

	CR..97			CR..107			CR..137			CR..147			CR..167		
	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
	1780	5.08	63.8	2900	4.86	108.7	4600	5.04	166.8	8670	4.99	316.8			
	1890	6.06	56.9	2970	6.00	90.2	5110	6.02	154.8	8670	6.02	262.8			
	1890	6.77	50.9	2970	6.70	80.8	5110	6.82	136.8	8670	6.72	235.2			
	2000	7.80	46.7	2970	7.72	70.1	5110	7.84	118.8	8670	7.74	204.0			
	2030	8.67	42.7	4300	8.59	91.2	7840	8.69	164.4	13000	8.61	274.8			348.0
	2090	10.68	35.6	4300	10.68	73.3	8000	10.56	138.0	13000	10.6	223.2			289.2
	2190	11.90	33.5	4300	11.90	65.9	8000	11.94	122.4	13000	11.8	200.4			249.6
	2300	13.72	30.6	4300	13.72	57.1	8000	13.75	106.0	12600	13.6	169.2	17000	8.91	225.6
	2300	15.27	27.5	4300	15.27	51.4	8000	15.24	95.6	13000	15.2	156.0	17000	10.71	214.8
	2400	17.10	25.6	4300	17.10	45.8	8000	16.94	86.0	13000	17	139.2	17000	12.39	160.8
	2610	19.26	24.7	4300	19.26	40.7	8000	18.98	76.8	12000	19.1	114.2	17000	13.72	154.8
	2610	20.92	22.7	4300	20.92	37.4	8000	20.79	70.1	12000	20.8	105.1	18000	15.26	139.2
	2830	24.90	20.8	4300	24.90	31.4	8000	24.75	58.9	11900	24.8	87.6	15000	16.98	102.5
	2670	27.02	18.0	4300	28.01	28.0	7680	26.46	52.9	13000	27.8	85.1	16000	18.8	119.5
	2890	33.43	15.7	4300	33.37	23.5	8000	32.73	44.5	13000	33.2	71.4	16000	20.99	99.1
	3000	37.24	14.6	4300	37.18	21.1	8000	36.46	40.0	13000	37.5	63.1	14000	24.88	89.0
	3000	42.96	12.7	4300	42.88	18.2	8000	42.06	34.7	13000	43.2	54.8	18000	27.43	77.2
	3000	47.81	11.4	4300	47.73	16.4	8000	46.81	31.2	13000	47.9	49.4	18000	33.08	69.4
	3000	53.52	10.2	4300	53.43	14.6	8000	52.04	28.0	13000	53.3	44.4	18000	36.85	61.9
	3000	60.28	9.1	4300	60.18	13.0	8000	59.02	24.7	13000	59.6	39.7	18000	42.51	55.0
	3000	65.74	8.3	4300	65.86	11.9	8000	65.87	22.1	13000	65.8	36.0	18000	47.31	50.0
	3000	75.84	7.2	4300	75.88	10.3	8000	75.87	19.2	13000	75.6	31.3	18000	52.97	43.4
	3000	84.40	6.5	4300	84.4	9.3	8000	84.43	17.3	13000	83.8	28.3	18000	59.65	39.1
	3000	94.49	5.8	4300	94.4	8.3	8000	94.53	15.5	13000	93.3	25.4	18000	65.5	34.9
	3000	106.4	5.1	4300	106.3	7.4	8000	106.5	13.7	13000	105	22.7	18000	75.47	31.1
	3000	115.6	4.7	4300	115.7	6.8	8000	115.6	12.6	13000	114	20.8	18000	83.94	28.6
	3000	137.6	4.0	4300	137.6	5.7	8000	137.7	10.6	13000	136	17.4	18000	93.88	24.0
	3000	155.0	3.5	4300	155.2	5.1	8000	155.1	9.4	13000	154	15.5	18000	105.7	21.2
	3000	170.0	3.2	4300	170.0	4.6	8000	170.1	8.6	13000	168	14.0	18000	115	19.4
	3000	187.5	2.9	4300	197.4	4.0	8000	197.3	7.4	13000	195	12.1	18000	136.9	17.6
	2750	220.2	2.3	4300	220.2	3.6	8000	220.3	6.6	13000	218	10.9	18000	154.3	
	1600	233.4	1.2	4300	233.3	3.4	8000	233.5	6.2	13000	231	10.3	18000	169.1	
	1800	264.4	1.2	4300	264.5	3.0	8000	264.6	5.5	13000	262	9.1	18000	186.4	

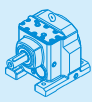


CR/CR Combi-type Transmission Capacity:

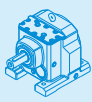
CR../CRL...(n1=1450r/min)

n ₁ (r/min)	n _{2N} (r/min)	i _n	CR../37/CRL37			CR../47/CRL37			CR../67/CRL37			CR../77/CRL37			CR../87/CRL47		
			T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
1450	9.93	146	200	145.4	0.23	300	144.4	0.34	600	143.6	0.69	820	144.6	0.93	1550	141.6	1.8
	8.79	165	200	163.1	0.20	300	161.8	0.31	600	161	0.61	820	162.1	0.83	1550	155.9	1.64
	7.92	183	200	183.9	0.18	300	182.5	0.27	600	181.6	0.54	820	182.8	0.74	1550	181.5	1.41
	7.04	206	200	209	0.16	300	207.4	0.24	600	206.4	0.48	820	207.8	0.65	1550	202.1	1.26
	6.39	227	200	230.3	0.14	300	233.5	0.21	600	230.4	0.43	820	231.7	0.58	1550	224.1	1.14
	5.73	253	200	257.2	0.13	300	260.8	0.19	600	257.4	0.38	820	258.8	0.52	1550	257.4	0.99
	5.07	286	200	288.2		300	292.3	0.17	600	288.4	0.34	820	290	0.47	1550	283.3	0.9
	4.48	324	200	327.8		300	332.5	0.15	600	328.1	0.3	820	329.8	0.41	1550	327.9	0.78
	3.64	398	200	403.7		300	409.4	0.12	600	404	0.24	820	406.2	0.33	1550	390.8	0.65
	3.22	450	200	450.8		300	457.2		600	451.2	0.22	820	453.6	0.3	1550	448.5	0.57
	2.87	506	200	505.4		300	512.5		600	505.8	0.2	820	508.5	0.27	1550	493.9	0.52
	2.58	562	200	570		300	578.1		600	570.5	0.17	820	573.6	0.24	1550	574.8	0.44
	2.29	632	200	647.8		300	657		600	648.3	0.15	820	651.8	0.21	1550	640	0.4
	2.06	703	200	692.7		300	702.5		600	693.2	0.14	820	696.9	0.19	1550	716.8	0.36
	1.87	774	200	798		300	809.4		600	798.7	0.12	820	803	0.17	1550	761	0.34
	1.57	923	200	931.9		300	945.1		600	932.6		820	937.6	0.14	1550	922.5	0.28
	1.43	1012	200	1016		300	1030		600	1016		820	1022	0.13	1550	1038	0.25
	1.18	1231	200	1252		300	1270		600	1253		820	1260		1550	1237	0.21
	1.05	1384	200	1397		300	1417		600	1398		820	1406		1550	1420	0.18
	0.92	1570	200	1567		300	1589		600	1568		820	1576		1550	1564	0.16
	0.82	1771	200	1782		300	1807		600	1783		820	1792		1550	1820	0.14
	0.74	1972	200	2008		300	2036		600	2009		820	2020		1550	2024	0.13
	0.65	2221	200	2196		300	2227		600	2197		820	2209		1550	2274	
	0.59	2478	200	2451		300	2485		600	2453		820	2466		1550	2533	
	0.52	2811	200	2748		300	2833		600	2796		820	2779		1550	2780	
	0.46	3171	200	3125		300	3222		600	3180		820	3160		1550	3235	
	0.41	3530	200	3521		300	3631		600			820			1550	3598	
	0.36	3976	200	3851		300	3971		600			820			1550	4042	
	0.33	4436	200	4298		300	4432		600			820			1550	4503	
	0.29	4975	200	4820		300	4970		600			820			1550	4957	
0.26	5628	200	5436		300	5605		600			820			1550	5769		
0.23	6287	200	6176		300	6368		600			820			1550	6423		
0.21	6926	200	6605		300	6810		600			820			1550	7194		
0.18	7977	200	7811		300	7996		600			820						
0.16	8911	200	8874		300	9084		600			820						
0.15	9818	200	9490		300	9714		600			820						
0.13	10856	200	10938		300	11196		600			820						
0.11	12933	200	12774		300	13076		600			820						
0.10	14821																
0.09	16048																
0.08	18125																

CR



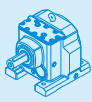
	CR..97/CRL67			CR..107/CRL77			CR..137/CRL77			CR..147/CRL87			CR..167/CRL107		
	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
	3000	141.7	3.49	4300	142.7	4.96	8000	143.2	9.2	13000	139.9	15.3	18000	147.4	20.1
	3000	157.7	3.13	4300	158.4	4.47	8000	158.9	8.29	13000	161.4	13.3	18000	170	17.4
	3000	176.2	2.81	4300	177.4	3.99	8000	178	7.4	13000	179.6	11.9	18000	189.2	15.7
	3000	198.1	2.49	4300	199.7	3.55	8000	200.4	6.58	13000	201.1	10.7	18000	211.9	14
										CR..147/CRL77					
	3000	227.2	2.18	4300	221.6	3.2	8000	217.3	6.07	13000	223.6	9.58	18000	223.3	13.3
	3000	257.7	1.92	4300	251.7	2.81	8000	246.8	5.34	13000	253.9	8.44	18000	249.5	11.9
	3000	286.4	1.73	4300	279.6	2.53	8000	274.2	4.81	13000	282.1	7.59	18000	287.4	10.3
													CR..167/CRL97		
	3000	327.3	1.51	4300	312.7	2.27	8000	306.6	4.3	13000	315.5	6.79	18000	319.5	9.28
	3000	391	1.26	4300	392.6	1.8	8000	385	3.42	13000	396.1	5.41	18000	393.6	7.53
	3000	443.5	1.11	4300	445.8	1.59	8000	437.2	3.01	13000	449.7	4.76	18000	438.5	6.76
	3000	493.4	1	4300	494.8	1.43	8000	485.3	2.72	13000	499.3	4.29	18000	505.6	5.87
	3000	551.5	0.9	4300	554.4	1.28	8000	543.6	2.42	13000	559.3	3.83	18000	562.7	5.27
	3000	620	0.8	4300	623.9	1.14	7680	611.8	2.07	13000	629.4	3.4	18000	630.1	4.71
	3000	702.3	0.7	4300	705.7	1	8000	692	1.9	13000	711.9	3.01	18000	709.7	4.18
	3000	770.1	0.64	4300	773	0.92	8000	758	1.74	13000	779.8	2.75	18000	770.9	3.85
	3000	916.1	0.54	4300	920.2	0.77	8000	902.4	1.46	13000	928.4	2.31	18000	917.6	3.23
	3000	1018	0.49	4300	1026	0.69	8000	1006	1.31	13000	1036	2.07	18000	995.7	2.98
	3000	1214	0.41	4300	1231	0.58	8000	1208	1.09	13000	1242	1.72	18000	1232	2.41
	3000	1393	0.35	4300	1398	0.51	8000	1371	0.96	13000	1411	1.52	18000	1372	2.16
	3000	1534	0.32	4300	1552	0.46	8000	1522	0.87	13000	1566	1.37	18000	1583	1.87
	3000	1785	0.28	4300	1738	0.41	8000	1705	0.77	13000	1754	1.22	18000	1762	1.68
	3000	1988	0.25	4300	1950	0.36	8000	1912	0.69	13000	1967	1.09	18000	1972	1.5
	3000	2227	0.22	4300	2213	0.32	8000	2170	0.61	13000	2232	0.96	18000	2221	1.34
	3000	2485	0.2	4300	2465	0.29	8000	2417	0.55	13000	2487	0.86	18000	2423	1.22
	3000	2708	0.18	4300	2750	0.26	8000	2750	0.48	13000	2745	0.78	18000	2814	1.05
	3000	3152	0.16	4300	3079	0.23	8000	3079	0.43	13000	3074	0.7	18000	3132	0.95
	3000	3509	0.14	4300	3454	0.21	8000	3454	0.38	13000	3448	0.62	18000	3506	0.85
	3000	3931	0.13	4300	3919	0.18	8000	3920	0.34	13000	3913	0.55	18000	3948	0.75
	3000	4386		4300	4367	0.16	8000	4367	0.3	13000	4360	0.49	18000	4306	0.69
	3000	4829		4300	4847	0.15	8000	4848	0.27	13000	4840	0.44	18000	4968	0.6
	3000	5620		4300	5428	0.13	8000	5429	0.24	13000	5420	0.4	18000	5528	0.54
	3000	6257		4300	6089	0.12	8000	6090	0.22	13000	6080	0.35	18000	6189	0.48
	3000	7008		4300	6909		8000	6910	0.19	13000	6898	0.31	18000	6969	0.43
	3000	8078		4300	7780		8000	7791	0.17	13000	7687	0.28	18000	7923	0.37
	3000	8994		4300	8727		8000	8739	0.15	13000	8623	0.25	18000	8871	0.33
	3000	10073		4300	9903		8000	9916	0.13	13000	9784	0.22	18000	9989	0.3
	3000	10695		4300	10856		8000	10871	0.12	13000	10726	0.2	18000	10853	0.27
	3000	12964		4300	12923		8000	12941		13000	12769	0.17	18000	12918	0.23
	3000	14939		4300	14670		8000	14690		13000	14494	0.15	18000	14551	0.2
	3000	16139		4300	15708		8000	15730		13000	15520	0.14	18000	15960	0.19
				4300	18172		8000	18197		13000	17954	0.12	18000	17603	0.17



CR../CRL..(n1=1740r/min)

n ₁ (r/min)	n _{2N} (r/min)	i _n	CR../37/CRL37			CR../47/CRL37			CR../67/CRL37			CR../77/CRL37			CR../87/CRL47			
			T _{2N} (N·m)	i _{ex}		T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	
1740	11.92	146	200	145.4	0.28	300	144.4	0.41	600	143.6	0.83	820	144.6	1.12	1550	141.6	2.16	
	10.55	165	200	163.1	0.24	300	161.8	0.37	600	161	0.73	820	162.1	1.00	1550	155.9	1.97	
	9.50	183	200	183.9	0.22	300	182.5	0.32	600	181.6	0.65	820	182.8	0.89	1550	181.5	1.69	
	8.45	206	200	209	0.19	300	207.4	0.29	600	206.4	0.58	820	207.8	0.78	1550	202.1	1.51	
	7.67	227	200	230.3	0.17	300	233.5	0.25	600	230.4	0.52	820	231.7	0.70	1550	224.1	1.37	
	6.88	253	200	257.2	0.16	300	260.8	0.23	600	257.4	0.46	820	258.8	0.62	1550	257.4	1.19	
	6.08	286	200	288.2	0.13	300	292.3	0.20	600	288.4	0.41	820	290	0.56	1550	283.3	1.08	
	5.38	324	200	327.8		300	332.5	0.18	600	328.1	0.36	820	329.8	0.49	1550	327.9	0.94	
	4.37	398	200	403.7		300	409.4	0.14	600	404	0.29	820	406.2	0.40	1550	390.8	0.78	
	3.86	450	200	450.8		300	457.2	0.12	600	451.2	0.26	820	453.6	0.36	1550	448.5	0.68	
	3.44	506	200	505.4		300	512.5		600	505.8	0.24	820	508.5	0.32	1550	493.9	0.62	
	3.10	562	200	570		300	578.1		600	570.5	0.20	820	573.6	0.29	1550	574.8	0.53	
	2.75	632	200	647.8		300	657		600	648.3	0.18	820	651.8	0.25	1550	640	0.48	
	2.47	703	200	692.7		300	702.5		600	693.2	0.17	820	696.9	0.23	1550	716.8	0.43	
	2.24	774	200	798		300	809.4		600	798.7	0.14	820	803	0.20	1550	761	0.41	
	1.88	923	200	931.9		300	945.1		600	932.6	0.12	820	937.6	0.17	1550	922.5	0.34	
	1.72	1012	200	1016		300	1030		600	1016		820	1022	0.16	1550	1038	0.30	
	1.42	1231	200	1252		300	1270		600	1253		820	1260	0.13	1550	1237	0.25	
	1.26	1384	200	1397		300	1417		600	1398		820	1406		1550	1420	0.22	
	1.10	1570	200	1567		300	1589		600	1568		820	1576		1550	1564	0.19	
	0.98	1771	200	1782		300	1807		600	1783		820	1792		1550	1820	0.17	
	0.89	1972	200	2008		300	2036		600	2009		820	2020		1550	2024	0.16	
	0.78	2221	200	2196		300	2227		600	2197		820	2209		1550	2274	0.12	
	0.71	2478	200	2451		300	2485		600	2453		820	2466		1550	2533		
	0.62	2811	200	2748		300	2833		600	2796		820	2779		1550	2780		
	0.55	3171	200	3125		300	3222		600	3180		820	3160		1550	3235		
	0.49	3530	200	3521		300	3631		600			820			1550	3598		
	0.43	3976	200	3851		300	3971		600			820			1550	4042		
0.40	4436	200	4298		300	4432		600			820			1550	4503			
0.35	4975	200	4820		300	4970		600			820			1550	4957			
0.31	5628	200	5436		300	5605		600			820			1550	5769			
0.28	6287	200	6176		300	6368		600			820			1550	6423			
0.25	6926	200	6605		300	6810		600			820			1550	7194			
0.22	7977	200	7811		300	7996		600			820							
0.19	8911	200	8874		300	9084		600			820							
0.18	9818	200	9490		300	9714		600			820							
0.16	10856	200	10938		300	11196		600			820							
0.13	12933	200	12774		300	13076		600			820							
0.12	14821																	
0.11	16048																	
0.10	18125																	

CR



	CR..97/CRL67			CR..107/CRL77			CR..137/CRL77			CR..147/CRL87			CR..167/CRL107		
	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)	T _{2N} (N·m)	i _{ex}	P _{1N} (kW)
	3000	141.7	4.19	4300	142.7	5.95	8000	143.2	11.0	13000	139.9	18.4	18000	147.4	24.1
	3000	157.7	3.76	4300	158.4	5.36	8000	158.9	9.95	13000	161.4	16.0	18000	170	20.9
	3000	176.2	3.37	4300	177.4	4.79	8000	178	8.88	13000	179.6	14.3	18000	189.2	18.8
	3000	198.1	2.99	4300	199.7	4.26	8000	200.4	7.90	13000	201.1	12.8	18000	211.9	16.8
										CR..147/CRL77					
	3000	227.2	2.62	4300	221.6	3.84	8000	217.3	7.28	13000	223.6	11.5	18000	223.3	16.0
	3000	257.7	2.30	4300	251.7	3.37	8000	246.8	6.41	13000	253.9	10.1	18000	249.5	14.3
	3000	286.4	2.08	4300	279.6	3.04	8000	274.2	5.77	13000	282.1	9.11	18000	287.4	12.4
													CR..167/CRL97		
	3000	327.3	1.81	4300	312.7	2.72	8000	306.6	5.16	13000	315.5	8.15	18000	319.5	11.1
	3000	391	1.51	4300	392.6	2.16	8000	385	4.10	13000	396.1	6.49	18000	393.6	9.04
	3000	443.5	1.33	4300	445.8	1.91	8000	437.2	3.61	13000	449.7	5.71	18000	438.5	8.11
	3000	493.4	1.20	4300	494.8	1.72	8000	485.3	3.26	13000	499.3	5.15	18000	505.6	7.04
	3000	551.5	1.08	4300	554.4	1.54	8000	543.6	2.90	13000	559.3	4.60	18000	562.7	6.32
	3000	620	0.96	4300	623.9	1.37	7680	611.8	2.48	13000	629.4	4.08	18000	630.1	5.65
	3000	702.3	0.84	4300	705.7	1.20	8000	692	2.28	13000	711.9	3.61	18000	709.7	5.02
	3000	770.1	0.77	4300	773	1.10	8000	758	2.09	13000	779.8	3.30	18000	770.9	4.62
	3000	916.1	0.65	4300	920.2	0.92	8000	902.4	1.75	13000	928.4	2.77	18000	917.6	3.88
	3000	1018	0.59	4300	1026	0.83	8000	1006	1.57	13000	1036	2.48	18000	995.7	3.58
	3000	1214	0.49	4300	1231	0.70	8000	1208	1.31	13000	1242	2.06	18000	1232	2.89
	3000	1393	0.42	4300	1398	0.61	8000	1371	1.15	13000	1411	1.82	18000	1372	2.59
	3000	1534	0.38	4300	1552	0.55	8000	1522	1.04	13000	1566	1.64	18000	1583	2.24
	3000	1785	0.34	4300	1738	0.49	8000	1705	0.92	13000	1754	1.46	18000	1762	2.02
	3000	1988	0.30	4300	1950	0.43	8000	1912	0.83	13000	1967	1.31	18000	1972	1.80
	3000	2227	0.26	4300	2213	0.38	8000	2170	0.73	13000	2232	1.15	18000	2221	1.61
	3000	2485	0.24	4300	2465	0.35	8000	2417	0.66	13000	2487	1.03	18000	2423	1.46
	3000	2708	0.22	4300	2750	0.31	8000	2750	0.58	13000	2745	0.94	18000	2814	1.26
	3000	3152	0.19	4300	3079	0.28	8000	3079	0.52	13000	3074	0.84	18000	3132	1.14
	3000	3509	0.17	4300	3454	0.25	8000	3454	0.46	13000	3448	0.74	18000	3506	1.02
	3000	3931	0.16	4300	3919	0.22	8000	3920	0.41	13000	3913	0.66	18000	3948	0.90
	3000	4386	0.13	4300	4367	0.19	8000	4367	0.36	13000	4360	0.59	18000	4306	0.83
	3000	4829		4300	4847	0.18	8000	4848	0.32	13000	4840	0.53	18000	4968	0.72
	3000	5620		4300	5428	0.16	8000	5429	0.29	13000	5420	0.48	18000	5528	0.65
	3000	6257		4300	6089	0.14	8000	6090	0.26	13000	6080	0.42	18000	6189	0.58
	3000	7008		4300	6909	0.12	8000	6910	0.23	13000	6898	0.37	18000	6969	0.52
	3000	8078		4300	7780		8000	7791	0.20	13000	7687	0.34	18000	7923	0.44
	3000	8994		4300	8727		8000	8739	0.18	13000	8623	0.30	18000	8871	0.40
	3000	10073		4300	9903		8000	9916	0.16	13000	9784	0.26	18000	9989	0.36
	3000	10695		4300	10856		8000	10871	0.14	13000	10726	0.24	18000	10853	0.32
	3000	12964		4300	12923		8000	12941	0.12	13000	12769	0.20	18000	12918	0.28
	3000	14939		4300	14670		8000	14690		13000	14494	0.18	18000	14551	0.24
	3000	16139		4300	15708		8000	15730		13000	15520	0.17	18000	15960	0.23
				4300	18172		8000	18197		13000	17954	0.14	18000	17603	0.20



6 Directly connected motor power table:

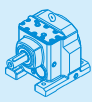
$\frac{P_m}{iN}$ (kW)	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	
1.6																						
1.9																						
2.2																						
2.4																						
2.7																						
3.1																						
3.4																						
3.8																						
4.5																						
5.2																						
5.5																						

$\frac{P_m}{iN}$ (kW)	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	
1.6																								
1.9																								
2.2																								
2.4																								
2.7																								
3.1																								
3.4																								
3.8																								
4.5																								
5.2																								
5.5																								
6.3																								

$\frac{P_m}{iN}$ (kW)	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	
1.6																								
1.9																								
2.2																								
2.4																								
2.7																								
3.1																								
3.4																								
3.8																								
4.5																								
5.2																								
5.5																								
6.3																								

$\frac{P_m}{iN}$ (kW)	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45											
1.6																								
1.9																								
2.2																								
2.4																								
2.7																								
3.1																								
3.4																								
3.8																								
4.5																								
5.2																								
5.5																								
6.3																								

- Note: 1. Means permissible directly-connected motor.
 2. Means permissible directly-connected motor(The motor's power is more than nominal input power of gear unit, $P_1 > P_{1N}$).
 3. Means unallowed directly-connected motor.
 4. The selection of motor shall be suitable for driver machine factor and regulations of type selection.
 5. The motor is 4-pole motor.



iN	P _m (kW)																					
	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	
5																						
6.1																						
6.8																						
7.7																						
8.7																						
10.7																						
12.1																						
13.6																						
15.1																						
17																						
18.9																						
20.8																						
24.8																						
27.2																						
33.1																						
37.2																						
42.2																						
47.6																						
53																						
59.7																						
66.6																						
74.7																						
84.5																						
94.4																						
104																						
115																						
137																						
157																						
170																						

CR37

CR47

iN	P _m (kW)																											
	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	
5																												
6.1																												
6.8																												
7.7																												
8.7																												
10.7																												
12.1																												
13.6																												
15.1																												
17																												
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47.6																												
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59.7																												
66.6																												
74.7																												
84.5																												
94.4																												
104																												
115																												
137																												
157																												
170																												

CR67

CR77

- Note: 1. Means permissible directly-connected motor.
 2. Means permissible directly-connected motor(The motor's power is more than nominal input power of gear unit, P₁ > P_{1N}).
 3. Means unallowed directly-connected motor.
 4. The selection of motor shall be suitable for driver machine factor and regulations of type selection.
 5. The motor is 4-pole motor.



CR

in	P _m (kW)																											
	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	
5																												
6.1																												
6.8																												
7.7																												
8.7																												
10.7																												
12.1																												
13.6																												
15.1																												
17																												
18.9																												
20.8																												
24.8																												
27.2																												
33.1																												
37.2																												
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59.7																												
66.6																												
74.7																												
84.5																												
94.4																												
104																												
115																												
137																												
157																												
170																												
192																												
219																												
235																												
264																												

CR87

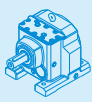
CR97

in	P _m (kW)																										
	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	
5																											
6.1																											
6.8																											
7.7																											
8.7																											
10.7																											
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CR107

CR137

- Note: 1. Means permissible directly-connected motor.
 2. Means permissible directly-connected motor(The motor's power is more than nominal input power of gear unit, P₁ > P_{1N}).
 3. Means unallowed directly-connected motor.
 4. The selection of motor shall be suitable for driver machine factor and regulations of type selection.
 5. The motor is 4-pole motor.



7.3 C Series Radial Force on Output Shaft (Fr2)(N):

n_{2N} (r/min)	C.31	C.41	C.61	C.71	C.81	C.91	C.101
800 ~ 1120	48	94	196	268	144	280	306
710 ~ 800	48	94	196	285	148	298	510
630 ~ 710	68	94	208	370	376	420	760
560 ~ 630	85	110	1300	433	340	1584	808
500 ~ 560	170	238	2244	944	1020	1683	1879
450 ~ 500	221	548	2380	2176	1658	2389	3040
400 ~ 450	280	1173	2380	2720	2321	3171	3817
355 ~ 400	374	1403	2626	3646	4276	3851	4718
280 ~ 355	391	1471	2848	3825	4675	5253	5960
265 ~ 280	425	1598	3043	4165	5083	6137	6673
250 ~ 265	570	1708	3043	4454	5372	6486	7718
≤ 250	850	1819	3409	4760	5823	7225	8245

Note: For lower output speed, apply the largest Fr2 value in each type.

7.4 CR Series Radial Force on Output Shaft(Fr2)(N):

n_{2N} (r/min)	Fr2(N)									
	CR.37	CR.47	CR.67	CR.77	CR.87	CR.97	CR.107	CR.137	CR.147	CR.167
250 ~ 355	684	2052	4689	3591	8082	8865	10170	31050	44370	/
224 ~ 250	711	2223	5031	3591	8505	9450	11160	32310	47800	/
200 ~ 224	900	2358	5211	3465	8802	9810	11520	33750	52560	/
180 ~ 200	1548	2448	5247	3546	9180	10170	12420	35100	48735	/
160 ~ 180	1548	2502	5364	3699	9450	10710	10170	24840	44910	67575
125 ~ 160	1638	2601	5724	5841	9720	10890	11160	27990	51600	74250
112 ~ 125	1629	2772	5985	6066	10260	11430	12420	31230	55710	79830
100 ~ 112	1692	2840	6134	6206	10490	11700	12960	32400	57060	82125
90 ~ 100	1809	2907	6282	6651	10890	12240	13860	34650	56430	91215
80 ~ 90	2151	3033	6480	6858	11340	12600	14400	36540	60300	98010
71 ~ 80	2313	3177	6480	7182	11700	12960	14740	39150	60300	100260
63 ~ 71	2313	3258	6453	7425	11970	13320	15570	39150	58140	108000
56 ~ 63	3474	3438	6876	9090	12510	14318	17280	44460	58140	108000
45 ~ 56	3402	3645	7065	9009	12510	7542	18090	48690	56430	108000
40 ~ 45	3708	4221	7065	8928	14400	9540	19395	48060	56430	108000
35.5 ~ 40	4086	4167	6777	8928	15120	16740	20700	48060	56430	108000
31.5 ~ 35.5	4374	4437	6453	8928	15210	17820	22050	48060	56430	108000
28 ~ 31.5	4455	4635	6453	8928	15210	17820	22950	48060	56430	108000
25 ~ 28	4455	4815	6453	8928	12150	17820	23940	48060	56430	108000
22.4 ~ 25	4455	4878	6453	8928	13680	17820	25200	48060	56430	108000
≤ 22.4	4455	4878	6453	8928	14220	17820	26280	48060	56430	108000

Note: For lower output speed, apply the largest Fr2 value in each type.



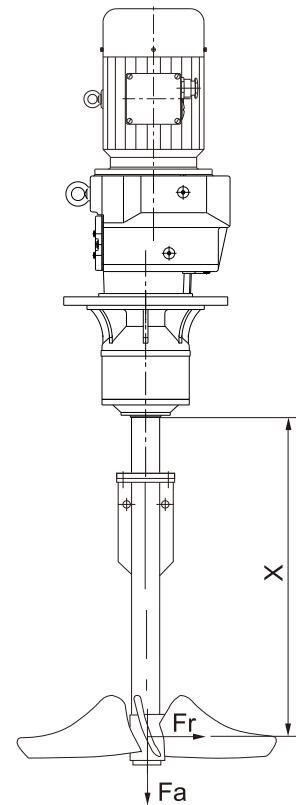
7.5 Axial Force on CRM Shaft (Fa)(N):

Type	n ₂ (r/min)							
	< 16	16-25	26-40	41-60	61-100	101-160	161-250	251-400
CRM67	17380	13200	10538	8063	6138	4906	3806	3223
CRM77	22000	16940	13090	9977	7337	5808	4411	4070
CRM87	28290	22080	16445	12190	9419	7015	6313	5589
CRM97	34080	26400	19440	13920	10620	8208	6996	5712
CRM107	38760	29760	21360	15600	11736	9804	7140	6744
CRM137	70000	65890	52800	41690	37180	34870	28160	25630
CRM147	70000	66660	50490	43890	36850	30690	26510	24860
CRM167	70000	68580	55728	40824	28944	25488		

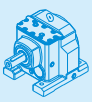
7.6 Radial Force on CRM Shaft (Fr₂)(N):

Type \ X(mm)	500	1000	2000	3000	4000	5000
CRM67	1100	580	290	—	—	—
CRM77	2290	1200	600	400	—	—
CRM87	3700	1950	1000	670	510	—
CRM97	5670	3000	1540	1030	780	620
CRM107	7940	4230	2180	1470	1100	890
CRM137	13800	7500	3900	2640	2000	1600
CRM147	20000	11000	5700	3880	2930	2300
CRM167	27000	14600	7600	5100	3880	3100

Note: For lower output speed, apply the largest Fr₂ value in each type.



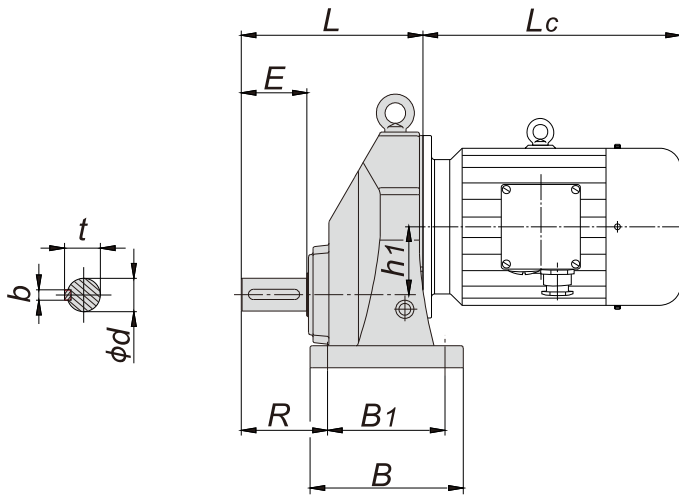
CR



8 Dimensions:

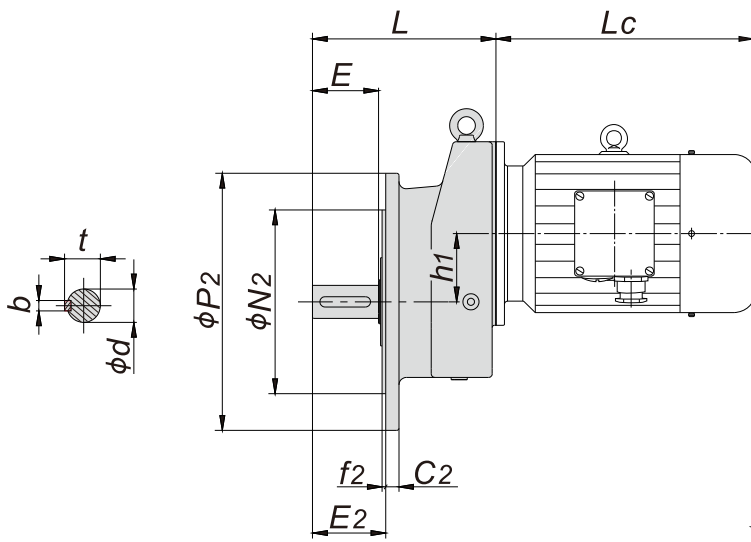
C

CR



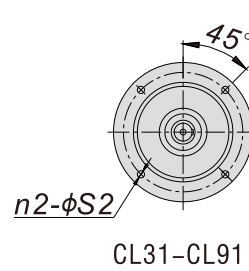
Foot-mounted

CW31~CW101

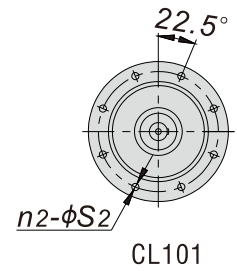


Flange-mounted

CL31~CL101



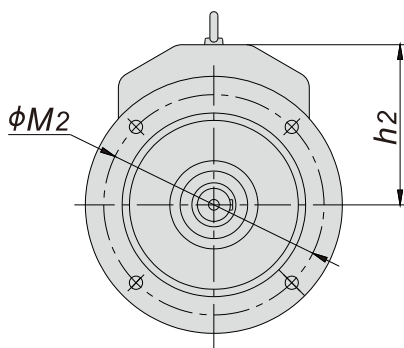
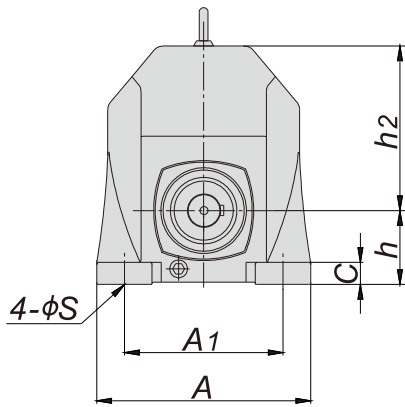
CL31-CL91



CL101

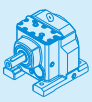


CR

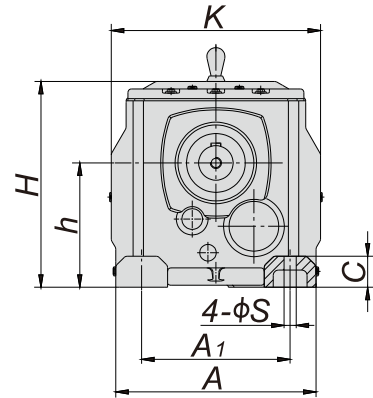
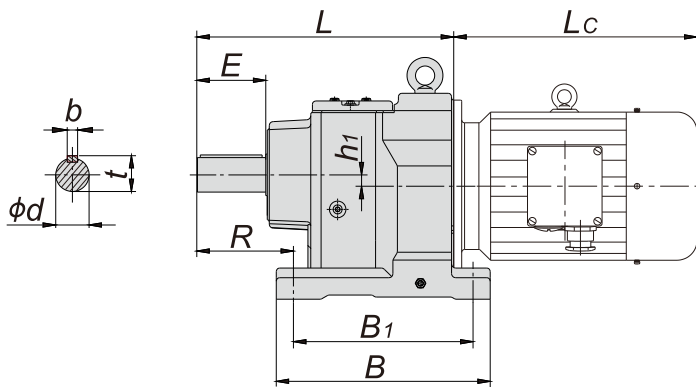


Size	31	41	61	71	81	91	101
A	160	180	180	230	290	340	400
A1	125	135	135	170	215	260	310
B	140	140	155	190	210	240	270
B1	110	110	120	150	160	180	210
b	6	8	8	12	14	14	18
C	12	16	20	25	30	35	45
C2	8	12	12	15	18	20	22
d	20k6	25k6	25k6	40k6	45k6	50k6	60m6
E	40	50	50	80	90	100	120
E2	50	60	60	90	100	110	130
f2	3	3.5	3.5	4	5	5	5
h	55	70	80	90	100	120	140
h1	44	52	58	73	93	115	130
h2	107	135	141	178	223	270	310
L	156	170	178	243	254	283	332
M2	130	165	165	215	300	350	400
n2	4	4	4	4	4	4	8
N2	110h7	130h7	130h7	180h7	250h7	300h7	350h7
P2	160	200	200	250	350	400	450
R	52	72	75	105	120	133	152
S	9	11	14	18	18	20	22
S2	9	11	11	14	18	18	18
t	22.5	28	28	43	48.5	53.5	64
Weight (kg)	4	7	12	20	33	60	75

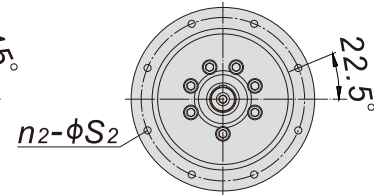
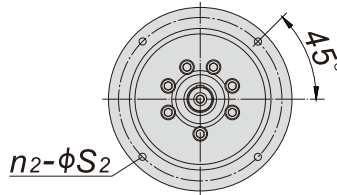
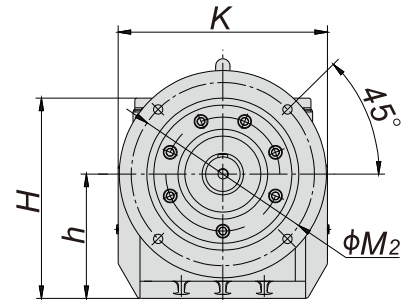
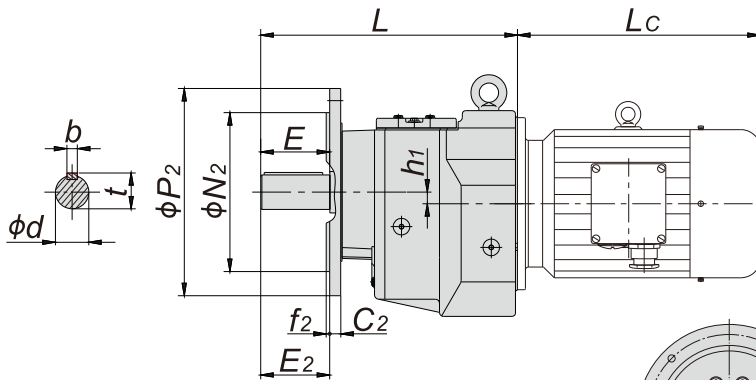
Note: * The weight of motor and lubricant is not included.



CR



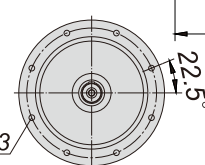
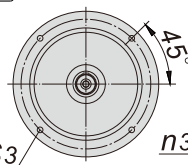
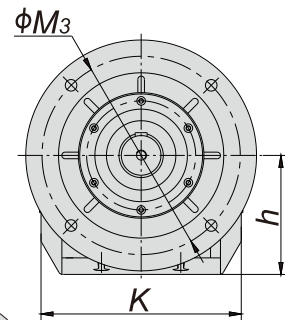
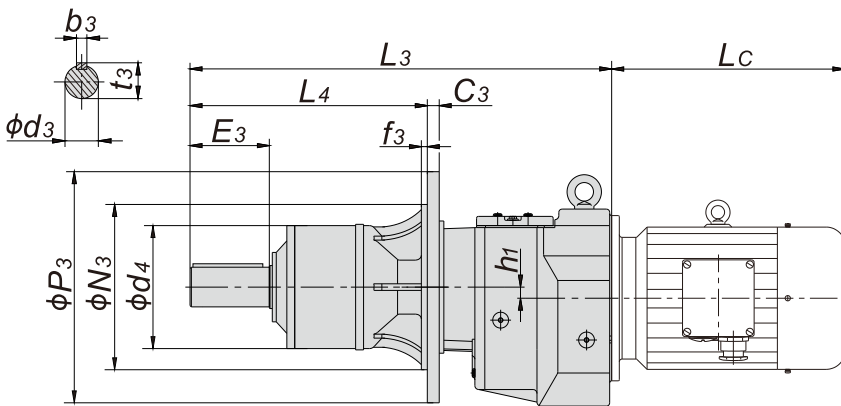
Foot-mounted **CRW37~CRW167**



Flange-mounted **CRL37~CRL167**

CRLa37~CRLa107
CRLb37~CRLb87

CRLa137~CRLa167
CRLb97~CRLb167



Pug Mill **CRM67~CRM167**

CRM67~CRM87

CRM97~CRM167



CR

	Size	37	47	67	77	87	97	107	137	147	167
	A	145	170	210	230	290	340	400	450	530	660
	A1	110	135	150	170	215	250	290	340	380	500
	B	160	195	235	245	310	365	440	490	590	670
	B1	130	165	195	205	260	310	370	410	500	580
	b	8	8	10	12	14	18	20	25	28	32
	C	18	24	30	30	45	55	65	70	80	100
	d	25k6	30k6	35k6	40k6	50k6	60m6	70m6	90m6	110m6	120m6
	E	50	60	70	80	100	120	140	170	210	210
	E2	50	60	70	80	100	120	140	170	210	210
	H	152	190	215	234	298	368	414	505	569	679
	h	90	115	130	140	180	225	250	315	355	425
	h1	4.9	15.4	19.4	9.9	16.8	11.2	24.4	35.2	41	63
	K	161	180	221	241	303	340	415	464	548	660
	L	213	240	285	307	377	444	501	600	695	790
	R	75	90	100	115	140	160	185	220	260	270
	S	9	13.5	13.5	17.5	17.5	22	26	33	39	39
	t	28	33	38	43	53.5	64	74.5	95	116	127
CRLa..	C2	8	10	12	15	16	18	20	22	22	25
	f2	3	3	3.5	4	5	5	5	5	5	6
	M2	100	115	165	215	265	300	300	400	400	500
	N2	80h7	95h7	130h7	180h7	230h7	250h7	250h7	350h7	350h7	450h7
	n2	4	4	4	4	4	4	4	8	8	8
	P2	120	140	200	250	300	350	350	450	450	550
CRLb..	C2	10	10	15	18.5	18	22	22	25	25	28
	f2	3.5	3.5	4	4	5	5	5	5	5	6
	M2	130	130	215	265	300	400	400	500	500	600
	N2	110h7	110h7	180h7	230h7	250h7	350h7	350h7	450h7	450h7	550h7
	n2	4	4	4	4	4	8	8	8	8	8
	P2	160	160	250	300	350	450	450	550	550	660
CRM..	S2	9	9	13.5	13.5	17.5	17.5	17.5	17.5	17.5	22
	b3			12	14	18	20	22	28	28	32
	C3			16	18	18	22	25	25	28	31
	d3			40k6	50k6	60m6	70m6	80m6	100m6	110m6	125m6
	d4			144	170	186	214	232	253	274	290
	E3			80	100	120	140	170	210	210	210
	f3			4	5	5	5	5	5	6	6
	L3			464	534	644	749	870	1035	1154	1313
	L4			240	300	360	420	500	600	660	730
	M3			265	300	300	400	500	500	600	600
	N3			230h7	250h7	250h7	350h7	450h7	450h7	550h7	550h7
	n3			4	4	4	8	8	8	8	8
P3			300	350	350	450	550	550	660	660	
S3			13.5	17.5	17.5	17.5	17.5	17.5	22	22	
t3			43	53.5	64	74.5	85	106	116	132	
Weight (kg)	CRL	9	14	27	33	60	110	150	255	365	615
	CRM	/	/	46	63	98	175	250	400	565	885

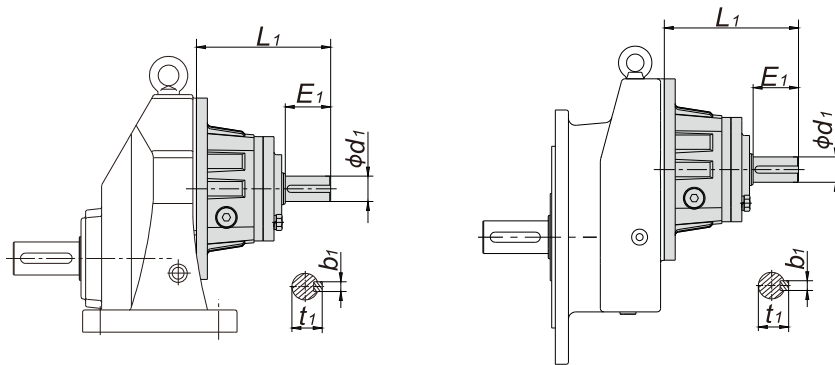
Note: * The weight of motor and lubricant is not included.



9 Input Part:

9.1 C Series Dimensions of AE Input Shaft :

CR

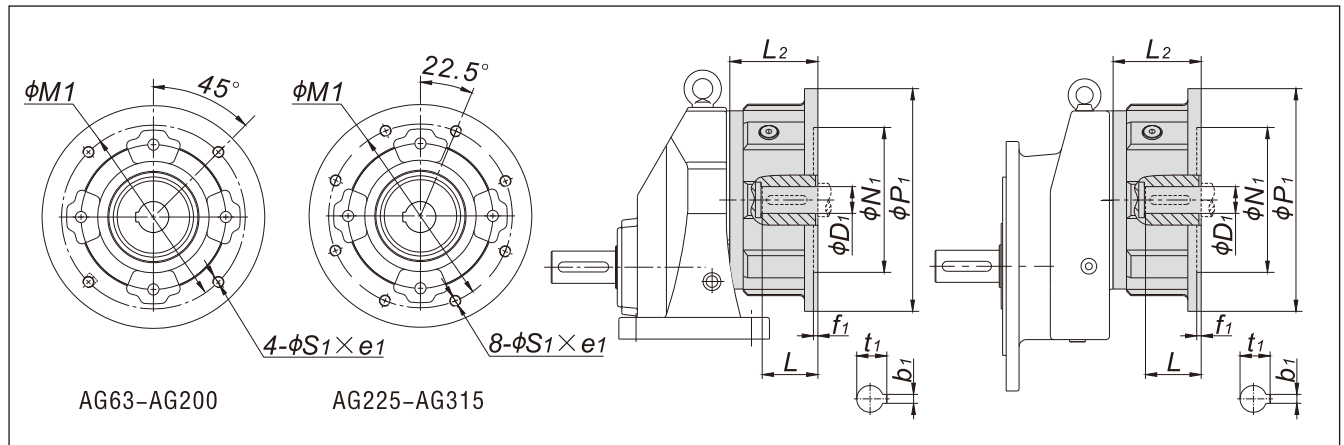


Size	Input Shaft	Range of Power	d1	E1	L1	b1	t1	Weight (kg)
31	AE2	0.12-1.1kW	19k6	40	117	6	21.5	3.2
41	AE2	0.12-1.1kW	19k6	40	119	6	21.5	3.9
	AE3	1.5-5.5kW	28k6	60	175	8	31	7.5
61	AE2	0.12-1.1kW	19k6	40	119	6	21.5	3.9
	AE3	1.5-5.5kW	28k6	60	175	8	31	7.5
71	AE2	0.12-1.1kW	19k6	40	111	6	21.5	4.7
	AE3	1.5-5.5kW	28k6	60	165	8	31	8.5
	AE4	7.5-11kW	38k6	80	216	10	41	12.8
81	AE2	0.12-1.1kW	19k6	40	108	6	21.5	5.9
	AE3	1.5-5.5kW	28k6	60	158	8	31	9.9
	AE4	7.5-11kW	38k6	80	209	10	41	14.5
	AE5	15-22kW	42k6	110	271	12	45	25.4
91	AE3	1.5-5.5kW	28k6	60	156	8	31	11.9
	AE4	7.5-11kW	38k6	80	203	10	41	17
	AE5	15-22kW	42k6	110	265	12	45	26.6
	AE6	30-45kW	48k6	110	327	14	51.5	51.6
101	AE3	1.5-5.5kW	28k6	60	146	8	31	13.9
	AE4	7.5-11kW	38k6	80	190	10	41	19.3
	AE5	15-22kW	42k6	110	252	12	45	29.1
	AE6	30-45kW	48k6	110	314	14	51.5	50.8

*Range of Power is based on 4-pole motor



9.2 C Series Dimensions of AG Connection Flange:

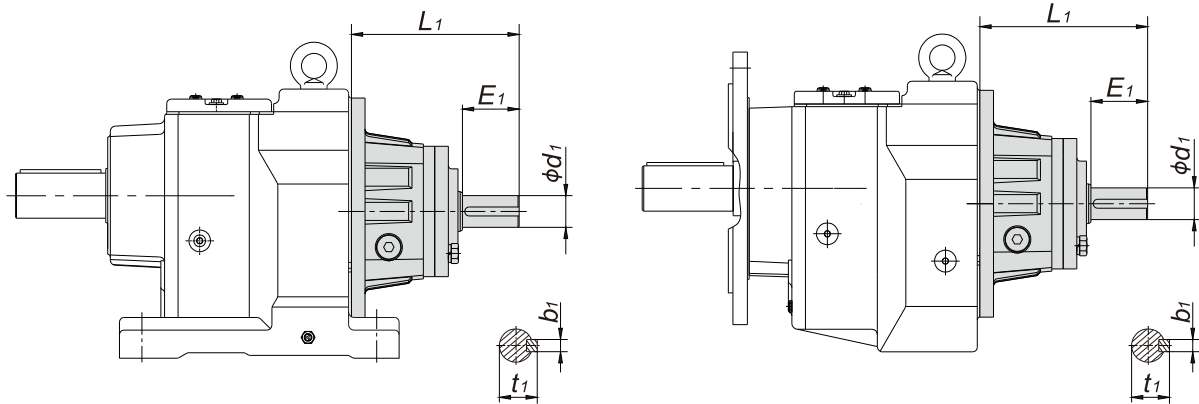


CR

Size	Flange	e1	D1	N1	M1	P1	f1	b1	t1	L	S1	L2	Weight(kg)
31	AG63	14	11H7	95H7	115	140	4	4	12.8	23	M8	59	4.5
	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	59	4.5
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	74	7.3
41	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	61	4.6
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9.1
	AG100	21	28H7	180H7	215	250	5	8	31.3	60	M12	96	13.1
	AG112	21	28H7	180H7	215	250	5	8	31.3	60	M12	96	13.1
61	AG 71	14	14H7	110H7	130	160	4	5	12.8	30	M8	61	4.6
	AG 80	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8
	AG 90	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9.1
	AG100	21	28H7	180H7	215	250	5	8	31.3	60	M12	96	13.1
	AG112	21	28H7	180H7	215	250	5	8	31.3	60	M12	96	13.1
71	AG 80	18	19H7	130H7	165	200	4	6	21.8	40	M10	68	9.7
	AG 90	18	24H7	130H7	165	200	4	8	27.3	50	M10	73	10.6
	AG100	21	28H7	180H7	215	250	5	8	31.3	60	M12	86	13.9
	AG112	21	28H7	180H7	215	250	5	8	31.3	60	M12	86	13.9
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	103	19.7
81	AG 90	18	24H7	130H7	165	200	5	8	27.3	50	M10	70	11.1
	AG100	21	28H7	180H7	215	250	5	8	31.3	60	M12	83	15.8
	AG112	21	28H7	180H7	215	250	5	8	31.3	60	M12	83	15.8
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	96	22.6
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	143	37.2
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	143	37.2
91	AG100	21	28H7	180H7	215	250	5	8	31.3	60	M12	78	17
	AG112	21	28H7	180H7	215	250	5	8	31.3	60	M12	78	17
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	94	24.5
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	137	40.4
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	137	40.4
	AG200	28	55H7	300H7	350	400	6	16	59.3	110	M16	167	51.9
101	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	83	25.4
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	124	43.4
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	124	43.4
	AG200	28	55H7	300H7	350	400	6	16	59.3	110	M20	154	52.4
	AG225	28	60H7	350H7	400	450	6	18	64.4	140	M16	182	89

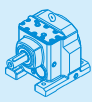


9.3 CR Series Dimensions of AE Input Shaft

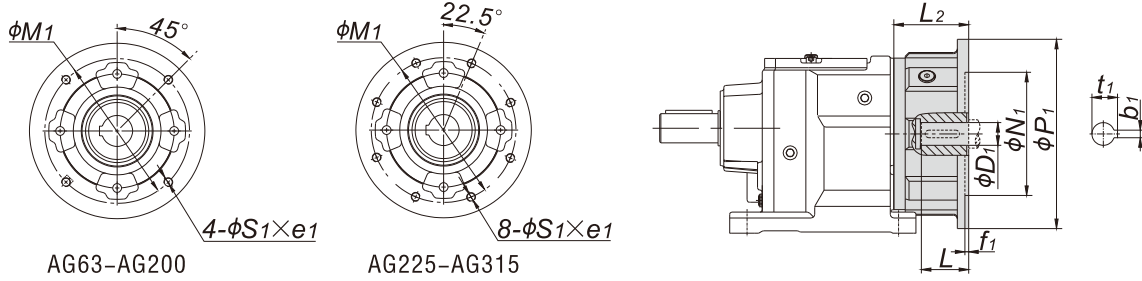


Size	Input Shaft	Range of Power	d1	E1	L1	b1	t1	Weight (kg)
37	AE2	0.12-1.1kW	19k6	40	117	6	21.5	3.2
47	AE2	0.12-1.1kW	19k6	40	119	6	21.5	3.9
	AE3	1.5-4kW	28k6	60	175	8	31	7.5
67	AE2	0.12-1.1kW	19k6	40	119	6	21.5	3.9
	AE3	1.5-5.5kW	28k6	60	175	8	31	7.5
77	AE2	0.12-1.1kW	19k6	40	111	6	21.5	4.7
	AE3	1.5-5.5kW	28k6	60	165	8	31	8.5
	AE4	7.5-11kW	38k6	80	216	10	41	12.8
87	AE2	0.12-1.1kW	19k6	40	108	6	21.5	5.9
	AE3	1.5-5.5kW	28k6	60	158	8	31	9.9
	AE4	7.5-11kW	38k6	80	209	10	41	14.5
	AE5	15-22kW	42k6	110	271	12	45	25.4
97	AE3	1.5-5.5kW	28k6	60	156	8	31	11.9
	AE4	7.5-11kW	38k6	80	203	10	41	17
	AE5	15-22kW	42k6	110	265	12	45	26.6
	AE6	30-45kW	48k6	110	327	14	51.5	51.6
107	AE3	1.5-5.5kW	28k6	60	146	8	31	13.9
	AE4	7.5-11kW	38k6	80	190	10	41	19.3
	AE5	15-22kW	42k6	110	252	12	45	29
	AE6	30-45kW	48k6	110	314	14	51.5	50.8
137 147	AE4	7.5-11kW	38k6	80	176	10	41	23.7
	AE5	15-22kW	42k6	110	238	12	45	37.3
	AE6	30-45kW	48k6	110	298	14	51.5	57.2
	AE7	55-90kW	55m6	110	297	16	59	64
137	AE8	110-132kW	70m6	140	377	20	74.5	84.4
147	AE8	110-200kW	70m6	140	377	20	74.5	84.4
167	AE5	15-22kW	42k6	110	228	12	45	48.8
	AE6	30-45kW	48k6	110	280	14	51.5	66
	AE7	55-90kW	55m6	110	279	16	59	73
	AE8	110-200kW	70m6	140	361	20	74.5	96

* Range of Power is based on 4-pole motor.



9.4 CR Series Dimensions of AG Connection Flange:



CR

Size	Flange	e1	D1	N1	M1	P1	f1	b1	t1	L	S1	L2	Weight(kg)
37	AG63	14	11H7	95H7	115	140	4	4	12.8	23	M8	59	4.5
	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	59	4.5
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	74	7.3
47	AG63	14	11H7	95H7	115	140	4	4	12.8	23	M8	61	4.6
	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	61	4.6
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9
	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	96	13.1
67	AG63	14	11H7	95H7	115	140	4	4	16.3	23	M8	61	4.6
	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	61	4.6
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9
	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	96	13.1
77	AG71	14	14H7	110H7	130	160	4	5	16.3	30	M8	53	5.5
	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	68	9.7
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	73	10.6
	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	86	13.9
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	103	19.7
87	AG80	18	19H7	130H7	165	200	4	6	21.8	40	M10	65	10.2
	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	70	11.1
	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	83	15.8
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	96	22.6
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	143	37.2
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	143	37.2
97	AG90	18	24H7	130H7	165	200	4	8	27.3	50	M10	64	14.1
	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	78	17
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	94	24.5
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	137	40.4
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	137	40.4
	AG200	28	55H7	300H7	350	400	6	16	59.3	110	M20	167	51.9
107	AG100\112	21	28H7	180H7	215	250	5	8	31.3	60	M12	69	19.6
	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	83	25.4
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	124	43.4
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	124	43.4
	AG200	28	55H7	300H7	350	400	6	16	59.3	110	M20	154	52.4
	AG225	28	60H7	350H7	400	450	6	18	64.4	140	M16	182	89
137 147	AG132	21	38H7	230H7	265	300	5	10	41.3	80	M12	71	33.1
	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	110	50
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	110	50
	AG200	28	55H7	300H7	350	400	6	16	59.3	110	M20	138	60.3
	AG225	28	60H7	350H7	400	450	6	18	64.4	140	M16	166	98.6
	AG250	28	65H7	450H7	500	550	7	18	69.4	140	M16	171	122.56
147	AG280	28	75H7	450H7	500	550	7	20	79.9	140	M16	171	122.56
167	AG160	28	42H7	250H7	300	350	6	12	45.3	110	M16	100	59.7
	AG180	28	48H7	250H7	300	350	6	14	51.8	110	M16	100	59.7
	AG200	28	55H7	300H7	350	400	6	16	59.3	110	M20	120	70.7
	AG225	28	60H7	350H7	400	450	7	18	64.4	140	M16	148	100.9
	AG250	28	65H7	450H7	500	550	7	18	69.4	140	M16	153	133.8
	AG280	28	75H7	450H7	500	550	7	20	79.9	140	M16	153	133.8
	AG315	35	80H7	550H7	600	660	7	22	85.4	170	M20	200	221.7



10 Combi-type Designation:

	Type	L9
	CR..37/CRL37	181
	CR..47/CRL37 CR..67/CRL37	183
	CR..77/CRL37	173
	CR..87/CRL47	180
	CR..97/CRL67	225
	CR..107/CRL77	238.5
	CR..137/CRL77	227
	CR..147/CRL77	227
	CR..147/CRL87	281
	CR..167/CRL97	322
	CR..167/CRL107	361

11 Accessory:

11.1 Oil:

Oil level ()											
	B3	B5	B51	B8	B6\B7	B65	B75	V1	V3	V5	V6
C.31	0.52	0.25	0.36	0.45	0.36	0.22	0.36	0.38	0.36	0.6	0.36
C.41	0.7	0.35	0.45	0.6	0.45	0.38	0.45	0.51	0.45	0.8	0.45
C.61	0.8	0.4	0.51	0.7	0.5	0.42	0.6	0.6	0.5	0.9	0.5
C.71	1.6	0.8	0.7	1.6	1	0.7	1	1.2	0.9	2	1
C.81	2.5	1.3	0.9	2.7	1.6	1.2	1.6	2.2	1.5	3.1	1.8
C.91	3.45	1.8	1.25	3.7	2.2	1.8	2.2	3	2.1	4.3	2.5
C.101	6.2	3.5	2.9	7.7	4.1	3	4.1	4.5	3.6	8.5	4.1

Type	Mounting position	B3*	V6*	B8	V5	B6	B7	Type	Mounting position	B5\B51 B65\B75*	V3*	V1
CRW37		0.3/1	0.9	1	1.1	0.8	1	CRL37		0.4/1	0.9	1.1
CRW47		0.7/1.5	1.6	1.5	1.7	1.5	1.5	CRL47		0.7/1.5	1.6	1.7
CRW67		1.1/2.3	2.6/3.5	2.8	3.2	1.8	2	CRL67、CRM67		1.2/2.5	2.7/3.6	3.1
CRW77		1.2/3	3.8/4.3	3.6	4.3	2.5	3.4	CRL77、CRM77		1.2/2.6	3.8/4.1	4.1
CRW87		2.3/6	6.7 / 8.4	7.2	7.7	6.3	6.5	CRL87、CRM87		2.4/6	6.8/7.9	7.7
CRW97		4.6/9.8	11.7/14	11.7	13.4	11.3	11.7	CRL97、CRM97		5.1/10.2	11.9/14	14
CRW107		6/13.7	16.3	16.9	19.2	13.2	15.9	CRL107、CRM107		6.3/14.9	15.9	19.2
CRW137		10/25	28	29.5	31.5	25	25	CRL137、CRM137		9.5/25	27	32.5
CRW147		15.4/40	46.5	48	52	39.5	41	CRL147、CRM147		16.4/42	47	52
CRW167		27/70	82	78	88	66	69	CRL167、CRM167		26/70	82	88

* The large gear units and Combi-type gear units must be filled with the larger oil volume.

Note: When ambient temperature is -10°C ~+40°C, for CR series products, lubricant brand is VG220(ISO viscosity class), accessory code is V22.

11.2 Please refer to page 5/Y motor section for motor accessories.