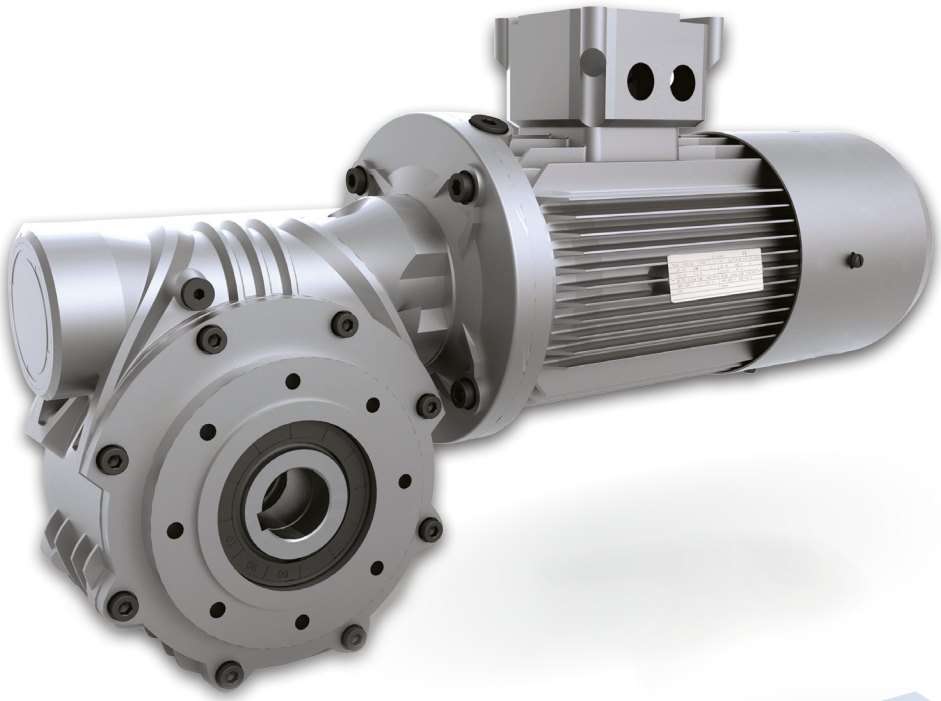
TGE
TRANSMISSION



R series

WORM GEAR UNITS

R Series Worm gear units

P: 0.12–7.5kW

i: 7.1–63 (imax: 2500)

T2N: 36–553 N.m

Features

» Unique modular design, general applications of components are maximized, which is convenient for international production, storage quantity is small, supplement circle is short.

» Unique modular design, allocation exchange degree of functional attachments flexibly satisfy various kinds of required structures, arrangement form and different working situations of customer equipment.

» Homodromous shaft output, worm box can be used together, thus reduce driving source.

» Optimized worm gear contact pattern. The transmission accuracy is high, bearing capacity is large.

» It can get large transmission ratio with single level transmission, the transmission is stable, it owns foot mounting, flange mount, shaft mount, shaft mounting and various kinds of mounting methods, Vibration, impact and noise are low.

» It owns foot mounting, flange mounting, shaft mounting and various kinds of mounting methods, which can satisfy various kinds of mounting requirements of customers.

Part characteristics

» Housing materials are high strength grey cast iron and cast aluminium;

» The material of worm is tin bronze, the worm rod is alloy steel, which is grinded after carburizing and quenching; the material has good anti-gluing and anti-abrasion performances, the lifespan is long;

» Shafts are made of alloy via heat treatment;

» Standard accessories such a bearings and oil seals are provided by international a national famous brands;

» Good assembly environment, standardized assembly technology, 100% strict quality assurance inspection and regular type test;

» Fluorous rubber sealing piece, with good high-temperature resistant, anti-aging and anti-abrasion performance, it is safer and with longer lifespan in complex and bad working environment.

Main application

» Modular, high standardization, components of few specifications and models.

» Wide power, torque, speed ratio covering range.

» The products are widely applied in electricity, coal, cement, metallurgy, harbor, agriculture, shipping, lifting, environment protection, stage, logistic, weaving, paper making, light industry, plastics and other regions.

Note:
you must conform to the following instructions!

- The structure scheme, appearance diagram and other attached diagrams in sample are examples, there is no strict proportion requirement (The unmarked dimension units are mm)
- The marked weight is average value, it has no constraint force
- To prevent accidents, all the rotation parts are added with protective covers according to the safety regulations of the nation and region
- Before debugging, you shoutd carefully read instruction book
- Gear unit is on running-permission status when delivered, you should add lubrication oil before putting it into running
- The marked oil quantity in sample is only reference value, actual oil filling quantity should be the same with the mark on oil dipstick
- Lubrication oil viscosity should be selected according to working situation and application environment temperature of gear units
- You can only apply lubrication oil of internationally famous brand

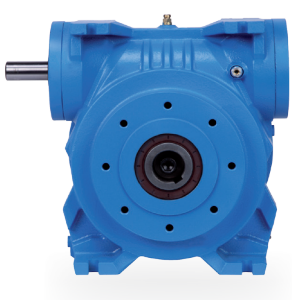
Product function mark

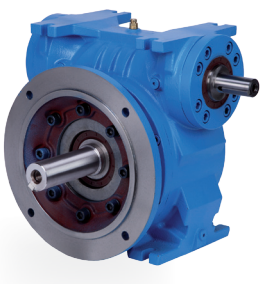
Oil dipstick

Breather

Oil filler

Oil drain

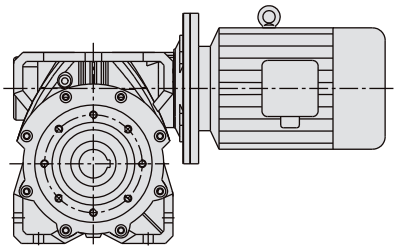




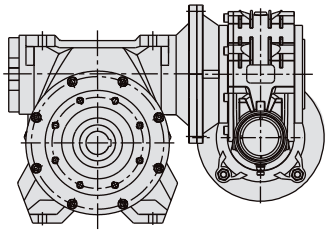
Contents

1	Structure scheme	3
2	Type designation	3
3	Type selection and example	4
4	Transmission capacity	6
5	Directly connected motor power table	8
6	Permissible radial force on shaft Fr2(N)	9
7	Appearance dimension diagram	10
8	Homodromous shaft output	15
9	Dimensions of input flange and shaft bore	15
10	Combined type	16
11	Attachment	17
12	Shaft end central hole	18
13	Dimension of parallel key and keyway	19

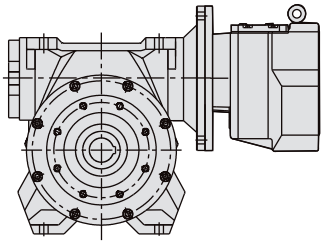
Basic type



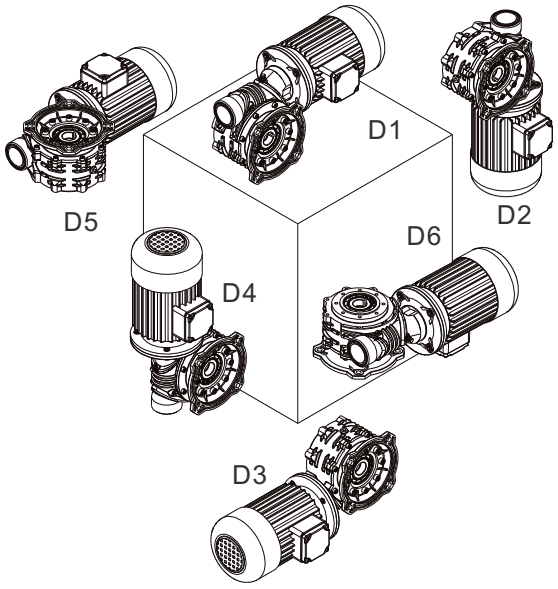
R../R.. Combined type:



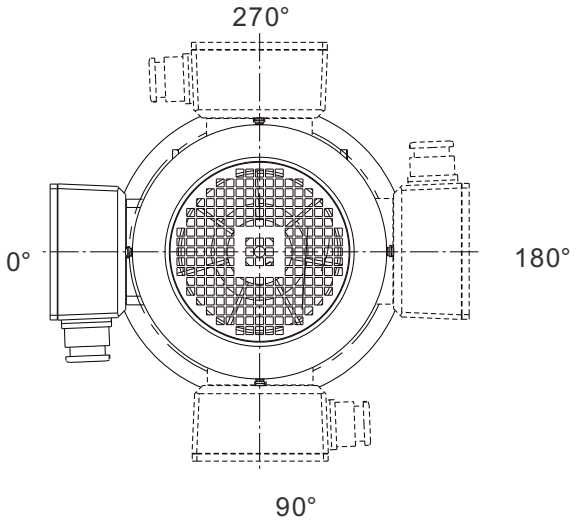
R../CR.. Combined type:



Mounting Positions:



Positions of Motor Terminal Box:



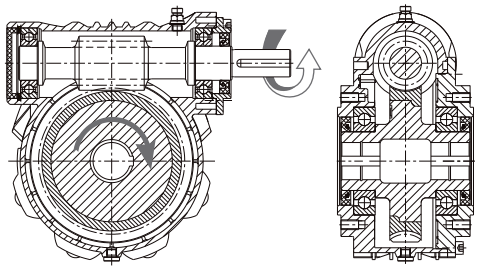
Visual angle:motor end

Standard colour of the machine:
- R050-R080: (RAL9006)
- R100-R250: (RAL5015)

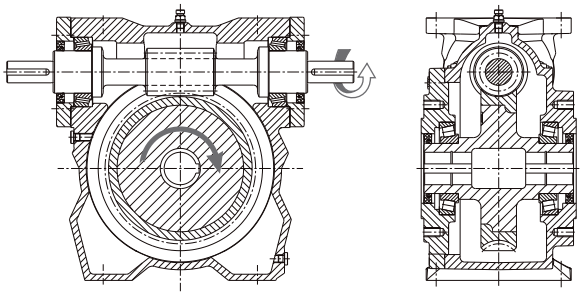
Non-standard colour can be customized according to customer requirements.

R

1 Structure scheme



R Aluminum alloy housing



R cast iron housing

2 Type Designation

R 080 H A - 30 - N - M1.5 + E30 - D1 - 90

R series

Foundation number

Mouting Mode
- H=Horizontal foot mounting
- F=Flange mounting
- A=Torque arm mounting

Output Mode (A/B/C/D/E/F/G/H)

Nominal Ratio

With homodromous output shaft
(This item doesn't have non-standard type)

Input Part
- M with motor
- S with shaft input
- AF with motor connection flange (AF71/AF80...)

Accessories

Other requirements(mounting positions) (D1/D2/D3/D4/D...)

Other requirements(position of motor wiring box 0°/90°/180°/270°)

Combined-type Designation：R125HA/CR47-355-M0.75+E30-D1

Combined-type Designation：R125HA/R063A-160-M1.5+E30-D1

3 Type Selection and Example:

<table>
<tr><th>Serial number</th><th>Instruction</th><th>Codes</th><th colspan="8">Parameters Calculation</th></tr>
<tr><td rowspan="5">1</td><td rowspan="5">Driven Machine Factor</td><td rowspan="5">f_1</td><td rowspan="2">Loading Characteristic</td><td colspan="7">Operating hours per day (h)</td></tr>
<tr><td colspan="2">≤2</td><td colspan="2">2 ~ 10</td><td colspan="2">10~24</td></tr>
<tr><td>Uniform loading</td><td colspan="2">1.00(1.00)</td><td colspan="2">1.00(1.25)</td><td colspan="2">1.25(1.50)</td></tr>
<tr><td>Moderate impact</td><td colspan="2">1.00(1.25)</td><td colspan="2">1.25(1.50)</td><td colspan="2">1.50(1.75)</td></tr>
<tr><td>Heavy impact</td><td colspan="2">1.25(1.50)</td><td colspan="2">1.50(1.75)</td><td colspan="2">1.75(2.00)</td></tr>
<tr><td colspan="9">Note: Apply values in the brackets when starting and stopping time per hour are not less than 10 times.</td></tr>
<tr><td rowspan="5">2</td><td rowspan="5">Ambient temperature factor</td><td rowspan="5">f_t</td><td rowspan="2">Loading Characteristic</td><td colspan="7">Ambient temperature (℃)</td></tr>
<tr><td>20</td><td>25</td><td>30</td><td>35</td><td>40</td><td>45</td><td>50</td></tr>
<tr><td>Uniform loding</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.03</td><td>1.06</td><td>1.12</td><td>1.20</td></tr>
<tr><td>Moderate impact</td><td>1.00</td><td>1.01</td><td>1.02</td><td>1.06</td><td>1.12</td><td>1.16</td><td>1.30</td></tr>
<tr><td>Heavy impact</td><td>1.00</td><td>1.02</td><td>1.04</td><td>1.10</td><td>1.17</td><td>1.20</td><td>1.40</td></tr>
<tr><td>3</td><td>Input Speed</td><td>n_1</td><td colspan="8">≤1800r/min Consult us if higher speed is required.</td></tr>
<tr><td>4</td><td>Calculation of the ratio</td><td>i</td><td colspan="8">$i=n_1/n_2$</td></tr>
<tr><td>5</td><td>Transmission Efficiency</td><td>η</td><td colspan="8">See the table of transmission capacity on P 05</td></tr>
<tr><td>6</td><td>Calculation of the input power of the worm gear box on basis of the torque and power required by the driven machine.</td><td>P_1</td><td colspan="8">$P_1=T_2 \cdot n_1/(9550 \cdot i \cdot \eta)$ or $P_1=P_2/\eta$</td></tr>
<tr><td>7</td><td>Determination of worm gear box type referring to the table of transmis-sion capacity after calculation</td><td>T_{2N}、P_{1N}</td><td colspan="8">$T_{2N} \geq T_2 \cdot f_1 \cdot f_t$ or $P_{1N} \geq P_1 \cdot f_1 \cdot f_t$</td></tr>
<tr><td>8</td><td>Check the radial and axial forces on the shafts.</td><td>F_{r1}/F_{r2}
F_{a1}/F_{a2}</td><td colspan="8">See F_{r2} table on P08.</td></tr>
<tr><td>9</td><td>Determination of Lubrication Method</td><td></td><td colspan="8">Generally Apply Splash Lubrication</td></tr>
<tr><td>10</td><td>Determination of Cooling Method</td><td></td><td colspan="8">Natural Cooling</td></tr>
<tr><td>11</td><td>Confirm every item according to the type</td><td></td><td colspan="8">For details about Type Designation, see P02.</td></tr>
<tr><td>12</td><td>Normal ambient conditions</td><td></td><td colspan="8">Ambient temperature -10 to 40℃, open site, good ventilation, altitude not exceeding 1000 m and common plant dust.</td></tr>
<tr><td>13</td><td>Special ambient conditions</td><td></td><td colspan="8">For higher or lower temperature, dusty sites, chemical reaction (acids, alkaline, etc), or open field (sunlight, ice, rain, etc), please consult us!</td></tr>
</table>

R

Examples of type selection

1) Gear motor

Known Criteria:

1. The power required by the driven machine P2=5kW, speed needed n2=95r/min
2. Common motor: 4-pole, speed n1=1450r/min
3. Loading characteristics: moderate impact, working 12 hours/d and starting frequency1 time/h, ambient temperature 20℃
4. Mounting output mode: Unidirectional solid output shaft on the same side with flange, flange-mounted, mounting position D4, terminal box position 180°.

Selection Steps:

1. By referring to the table of Loading Characteristic, we get the driven machine factor f1=1.5, and ft=1
2. Calculation of the ratio: As i=n1/n2=1450/95=15.3, nominal ratio iN=15 is appropriate
3. Calculation of the input power and determination of the motor power (transmission efficiency of worm boxη=84%) :
   P1=P2/η =5/0.84=5.95kW, so 7.5kW motor is selected.
4. Determination of the rated power of the gear motor P1N: P1N ≥P1×f1×ft =5.95×1.5×1=8.925kW
5. The type selected according to the table of transmission capacity, known conditions and the above data:
   R125FA-15-M7.5-D4-180

2) Gear Unit

Known Criteria:

1. The torque required by the driven machine T2=75N·m and speed required n2=73r/min
2. The requirement of the motor supplied by the users: 4-pole, speed n1=1450r/min
3. Loading characteristic: moderate impact, operating 16h/d,Continuous running,environment temperature 20℃
4. Mounting output mode: hollow output shaft with parallel key, foot-mounted, mounting position D1

Selection steps:

1. By referring to the table of loading Characteristic, we get the driven machine factor f1=1.5, and ft=1.
2. Calculation of the ratio iN: As i= n1/ n2=1450/73=19.86, nominal ratio iN=20 is appropriate
3. Determination of the nominal torque T2N and rated power P1N of the gear unit (transmission efficiency of worm boxη=81%) :
   T2N ≥T2 ·f1·ft=75×1.5=112.5 N· m;
   P1N ≥P1 ·f1·ft=T2· f1·ft ·n1 /(9550· iN ·η)
   =175×1.5×1×1450/(9550×20×0.81)
   =1.05 kW
   In the table of Transmission Capacity, R63 meets the requirements (T2N=116 N·m, P1N=1.12 kW)
4. Determination of the input part: As P1N ≥P1=T2·n1 /(9550· iN·η) = 75×1450/(9550×20×0.81) =0.7kW
   and power of the user-supplied motor is specified as 0.75kW, in the table of dimensions of input flange and shaft bore on P14, Af80 is selected.
5. The type is selected according to known criteria and data: **R063HG-20-AF80-D1**

4 Transmission Capacity:

4.1 Basic type

	n_1 (r/min)	i_N	η	R050				R063				R080				R100			
				n_{2N} (r/min)	T_{2N} (N·m)	i_{ex}	P_{1N}	n_{2N} (r/min)	T_{2N} (N·m)	i_{ex}	P_{1N}	n_{2N} (r/min)	T_{2N} (N·m)	i_{ex}	P_{1N}	n_{2N} (r/min)	T_{2N} (N·m)	i_{ex}	P_{1N}
	1450	7	0.87	220	37	6.60	0.98	234	69	6.2	1.94	177	230	8.2	4.90	250	315	5.8	9.5
		10	0.84	136	57	10.7	0.97	140	110	10.3	1.92	136	255	10.7	4.32	136	465	10.7	7.9
		15	0.84	101	62	14.3	0.78	98.9	114	14.7	1.40	101	235	14.3	2.96	101	450	14.3	5.7
		20	0.81	77.7	69	18.7	0.69	75.0	116	19.3	1.12	73.7	230	19.7	2.19	77.7	430	18.7	4.32
		30	0.79	45.3	80	32	0.48	46.8	131	31	0.81	45.3	270	32	1.62	45.3	555	32	3.33
		45	0.75	32.2	62	45	0.28	33.7	106	43	0.50	33.7	235	43	1.11	33.0	435	44	2.00
		60	0.71	25.4	53	57	0.20	23.8	103	61	0.36	25.0	215	58	0.79	25.4	405	57	1.52

4.2 R../R..Combined type

	n_1 (r/min)	n_{2N} (r/min)	i_N	η	R050./R050			R063./R050			R080./R050		
					T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	iex	P_{1N}
	1450	14.5	100	0.55	78	94.6	0.23	141	96.8	0.40	230	94.6	0.67
		9.06	160	0.54	78	152.9	0.14	141	156.4	0.25	230	152.9	0.42
		7.25	200	0.52	78	205.4	0.11	141	210.2	0.20	230	205.4	0.33
		4.08	355	0.48	111	341.3	0.10	188	330.7	0.18	325	341.3	0.30
		3.22	450	0.45	111	458.7	0.08	188	444.3	0.14	325	458.7	0.24
		2.30	630	0.40	111	597.3	0.07	188	578.7	0.12	325	597.3	0.21
		1.45	1000	0.35	111	1024	0.05	188	992.0	0.08	325	1024	0.14
		1.04	1400	0.30	122	1440	0.04	205	1376	0.08	355	1376	0.13
		0.73	2000	0.30	122	2025	0.03	205	1935	0.05	355	1935	0.09
		0.58	2500	0.24	122	2565	0.03	205	2745	0.05	355	2610	0.09

4.3 R../CR..Combined type

i_N:100-710

	n_1 (r/min)	n_{2N} (r/min)	i_N	η	R125./CR47			R160./CR47			R200./CR77			R250./CR87		
					T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}
	1450	14.5	100	0.72	1200	100.8	2.51	2300	101.5	4.78	4350	97.0	9.5	6700	99.1	14.3
		12.9	112	0.70	1200	110.9	2.35	2300	112.8	4.42	4350	107.8	8.8	6700	114.1	12.7
		11.6	125	0.70	1300	128.3	2.20	2450	128.9	4.12	4500	120.5	8.1	7200	127.0	12.3
		9.06	160	0.66	1400	153.0	2.11	2650	154.0	3.96	4900	151.4	7.4	7500	155.8	11.1
		8.06	180	0.66	1400	175.6	1.83	2650	174.7	3.49	4900	171.9	6.6	7500	173.5	9.9
		6.47	224	0.66	1450	219.8	1.52	2800	228.4	2.82	5200	230.2	5.2	8000	223.1	8.2
		5.80	250	0.66	1450	241.9	1.38	2800	253.8	2.54	5200	255.7	4.68	8000	256.7	7.2
		5.18	280	0.66	1500	280.0	1.23	2950	290.1	2.34	5600	285.9	4.51	8500	285.8	6.8
		4.08	355	0.65	1600	333.8	1.12	3050	346.5	2.06	5800	359.0	3.77	8800	350.5	5.9
		3.63	400	0.64	1600	383.0	0.99	3050	393.0	1.84	5800	407.7	3.38	8800	390.4	5.3
		3.22	450	0.64	1600	421.8	0.90	3050	437.3	1.65	5800	452.5	3.04	8800	450.1	4.64
		3.02	480	0.63	1650	458.9	0.87	3200	472.5	1.63	6000	464.6	3.11	9100	477.9	4.59
		2.59	560	0.62	1650	526.7	0.77	3200	536.0	1.46	6000	527.6	2.79	9100	532.4	4.19
		2.42	600	0.62	1650	579.9	0.70	3200	596.3	1.31	6000	585.6	2.51	9100	613.8	3.63
		2.30	630	0.62	1650	675.0	0.60	3200	666.5	1.18	6000	656.0	2.24	9100	683.1	3.26
		2.04	710	0.60	1650	751.5	0.56	3200	749.3	1.08	6000	738.3	2.06	9100	765.0	3.01

R125				R160				R200				R250			
n_{2N} (r/min)	T_{2N} (N·m)	i_{ex}	P_{1N}	n_{2N} (r/min)	T_{2N} (N·m)	i_{ex}	P_{1N}	n_{2N} (r/min)	T_{2N} (N·m)	i_{ex}	P_{1N}	n_{2N} (r/min)	T_{2N} (N·m)	i_{ex}	P_{1N}
186	650	7.8	14.5	/	/	/	/	/	/	/	/	/	/	/	/
136	720	10.7	12.2	/	/	/	/	/	/	/	/	/	/	/	/
98.9	745	14.7	9.2	98.9	1500	14.7	18.5	101	2500	14.3	31.5	98.9	3950	14.7	48.7
77.7	715	18.7	7.2	/	/	/	/	/	/	/	/	/	/	/	
45.3	835	32	5.0	43.9	1600	33	9.3	42.6	3050	34	17.2	43.9	5000	33	29.1
33.0	765	44	3.52	32.2	1550	45	7.0	33.0	2900	44	13.3	32.2	5050	45	22.7
25.4	685	57	2.57	25.0	1450	58	5.3	/	/	/	/	/	/	/	/

R100./R050			R125./R063			R160./R080			R200./R100			R250./R125		
T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}
405	94.6	1.18	1200	90.9	3.64	2300	120.3	5.3	4350	83.1	14.4	6700	114.4	16.2
405	152.9	0.74	1300	151.6	2.28	2450	156.4	4.40	4500	152.9	8.3	7200	156.4	12.9
405	205.4	0.58	1450	215.1	2.12	2800	210.2	3.89	5200	205.4	7.4	8000	215.1	10.9
570	341.3	0.53	1500	330.7	1.34	2950	352.0	2.65	5500	362.7	4.80	8500	352	7.6
570	458.7	0.42	1650	469.3	1.24	3200	473.0	2.28	6000	487.3	4.15	9100	484	6.3
570	597.3	0.36	1650	618.7	0.99	3200	649.0	1.87	6000	634.7	3.59	9100	616	5.6
570	1024	0.24	1650	992.0	0.72	3200	1056	1.31	6000	1088	2.39	9100	1056	3.74
570	1408	0.20	1650	1364	0.60	3200	1440	1.12	6000	1408	2.16	9100	1440	3.20
625	1980	0.16	1650	1892	0.42	3200	1935	0.84	6000	1936	1.57	9100	1980	2.33
625	2565	0.15	1650	2451	0.42	3200	2494	0.81	6000	2508	1.51	9100	2565	2.24

i_N:800-5000

n_1 (r/min)	n_{2N} (r/min)	i_N	η	R125./CR47			R160./CR67			R200./CR77			R250./CR87		
				T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}	T_{2N} (N·m)	i_{ex}	P_{1N}
1450	1.81	800	0.6	1650	841.7	0.50	3200	848.7	0.95	6000	835.1	1.82	9100	861.3	2.67
	1.61	900	0.6	1650	893.6	0.47	3200	930.6	0.87	6000	914.8	1.66	9100	935.6	2.46
	1.30	1120	0.6	1650	1083	0.39	3200	1107	0.73	6000	1089	1.39	9100	1114	2.07
	1.16	1250	0.6	1650	1218	0.34	3200	1230	0.66	6000	1214	1.25	9100	1245	1.85
	1.04	1400	0.6	1650	1452	0.29	3200	1467	0.55	6000	1457	1.04	9100	1485	1.55
	0.91	1600	0.6	1650	1668	0.25	3200	1683	0.48	6000	1655	0.92	9100	1686	1.37
	0.81	1800	0.58	1650	1836	0.24	3200	1854	0.45	6000	1837	0.86	9100	1872	1.27
	0.73	2000	0.56	1650	2137	0.21	3200	2157	0.40	6000	2057	0.79	9100	2096	1.18
	0.58	2500	0.54	1650	2670	0.17	3200	2691	0.33	6000	2618	0.64	9100	2669	0.96
	0.52	2800	0.52	1650	2974	0.16	3200	3002	0.31	6000	2917	0.60	9100	2997	0.89
	0.46	3150	0.5	1650	3274	0.15	3200	3305	0.29	6000	3238	0.56	9100	3327	0.83
	0.41	3550	0.48	1650	3811	0.14	3200	3847	0.26	6000	3626	0.52	9100	3726	0.77
	0.36	4000	0.46	1650	4243	0.13	3200	4283	0.25	6000	4068	0.49	9100	4194	0.72
	0.32	4500	0.44	1650	4752	0.12	3200	4797	0.23	6000	4616	0.45	9100	4743	0.66
	0.29	5000	0.4	1650	5047	0.12	3200	5094	0.24	6000	5060	0.45	9100	5198	0.66

5 Directly connected motor power table

	R50 Directly connected motor power table											R63 Directly connected motor power table										
Pm(kW) / iN	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4
7																						
10																						
15			R50													R63						
20																						
30																						
45																						
60																						

	R80 Directly connected motor power table											R100 Directly connected motor power table										
Pm(kW) / iN	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	14
7																						
10			R80													R100						
15																						
20																						
30																						
45																						
60																						

	R125 Directly connected motor power table											R160 Directly connected motor power table										
Pm(kW) / iN	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22
7																						
10			R125													R160						
15																						
20																						
30																						
45																						
60																						

	R200 Directly connected motor power table											R250 Directly connected motor power table										
Pm(kW) / iN	3	4	5.5	7.5	11	15	18.5	22	30	37	45	7.5	11	15	18.5	22	30	37	45	55	75	90
7																						
10			R200													R250						
15																						
20																						
30																						
45																						
60																						

1. Symbol means it can be connected with motor directly
2. Symbol means it can be connected with motor directly (motor power larger than rated input power of gear unit, that is P≥PiN)
3. Symbol means it can't be connected with motor that is.
4. The selection of motor power should conform to relerant driven equipment coefficient and selection regulation.
5. The motor is 4-pole motor

R

6 Permissible Radial Force on Shaft (Fr2)(N):

R50~80 Series Output Shaft Radial force Fr_2 Table

n_{2N} (r/min)		$Fr_{2(N)}$		
Output speed range		R50	R63	R80
200	315	560	810	/
180	200	940	1250	1810
160	180	985	1280	2000
125	160	1120	1550	2280
100	125	1200	1680	2400
90	100	1300	1930	2930
80	90	1430	2000	3200
63	80	1530	2180	3410
50	63	1690	2400	3800
40	50	1740	2650	4060
31.5	40	1970	2940	4670
25	31.5	2180	3220	5250
20	25	2480	3360	5250
≤20		2520	3760	5250

R100~250 Series Output Shaft Radial force Fr_2 Table

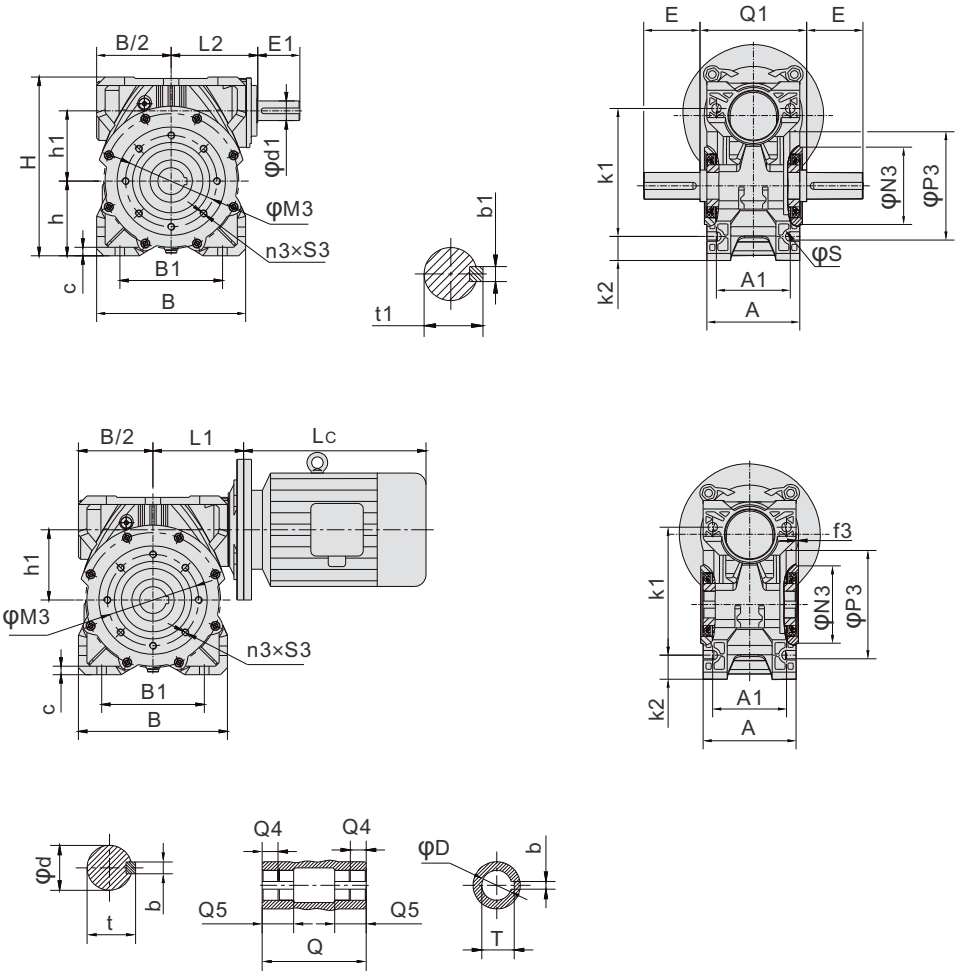
n_{2N} (r/min)		$Fr_{2(N)}$				
Output speed range		R100	R125	R160	R200	R250
160	250	1340	1230	/	/	/
100	160	2160	2920	8120	/	/
80	100	2790	3780	9990	19500	30320
63	80	3340	4640	11310	21300	33890
50	63	3610	5160	/	/	/
40	50	3880	5400	13730	25200	40600
31.5	40	4560	6360	14700	25200	44040
25	31.5	4920	6960	14700	25200	47000
20	25	5540	7350	14700	25200	47000
≤20		6300	7350	/	/	/

7 Outline dimension diagram:

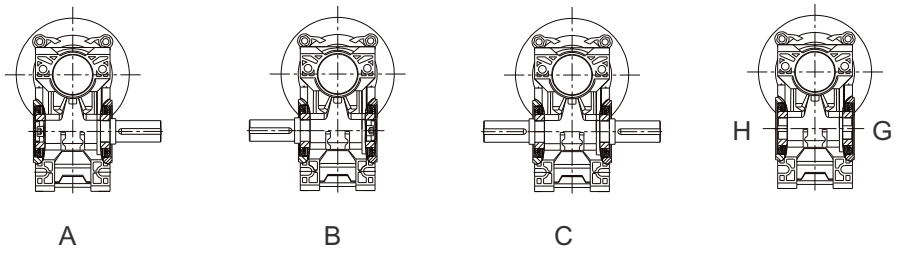
R.50 ~ R.80

	R050	R063	R080
A	85	103	112
A1	70	85	90
B	120	144	172
B1	80	100	120
b	8	8	10
b1	5	6	8
C	7	8	10
C2	8	8	10
D	25H7	25H7	32H7
d	25k6	25k6	32k6
d1	14k6	19k6	24k6
E	50	50	80
E1	30	40	50
E2	68	70	89
F	68.5	80	95
f2	5	5	5
f3	3	3	3
G	43.5	53	57
G1	26	28	39
H	144	174	209
H1	36	42	48
h	60	72	86
h1	50	63	80
K1	104	130	155
K2	20	22	26
L1	78	100	121
L2	72	88	104
L3	60	73	87
M2	130	130	165
M3	85	95	115
N2	110H7	110H7	130H7
N3	70h7	80h7	95h7
n3	4	8	8
P2	160	160	200
P3	100	110	134
P4	119	135	170
Q	85	104	112
Q1	101	120	132
Q4	18	18	20
Q5	30	31	37
S	9	9	11
S2	9	9	11
S3	M8	M8	M8
T	28.3	28.3	35.3
t	28	28	35
t1	16	21.5	27
Weight (kg)*	3	5.4	8.8

R...H foot-mounted (Applicable for torque arm-mounting)



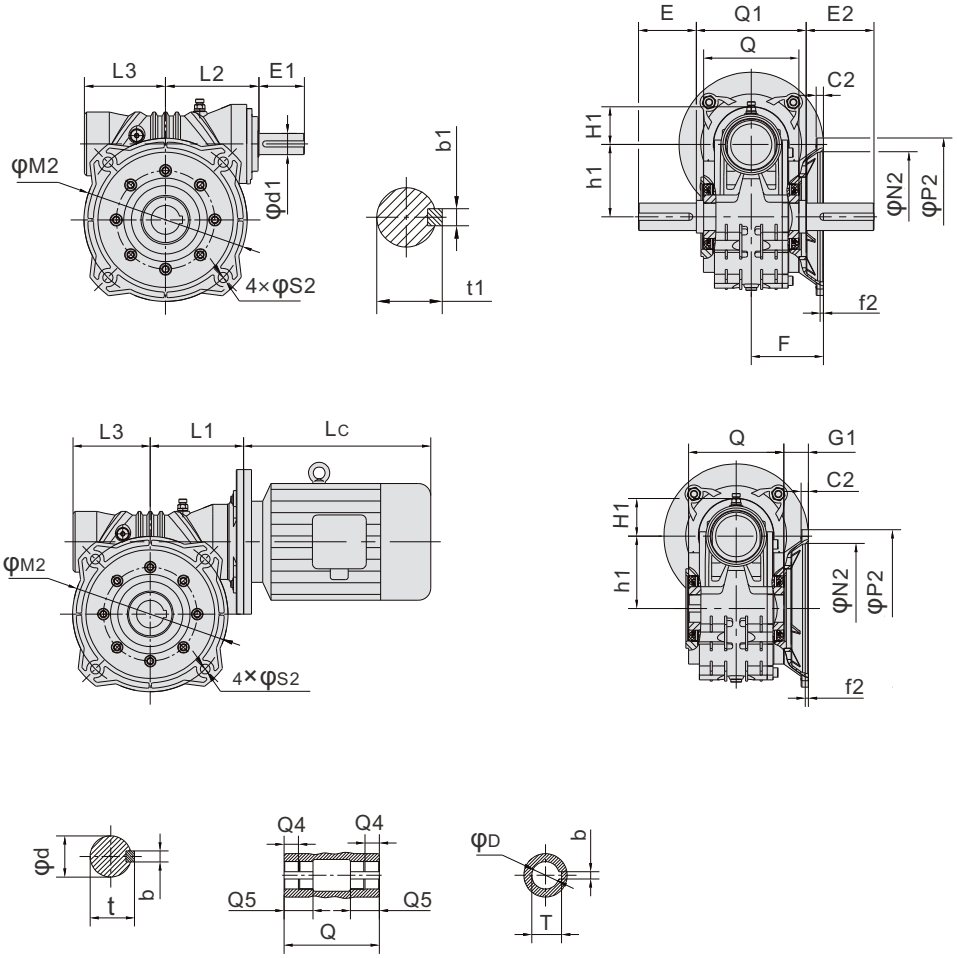
Output Mode:



⚠ Note: 1.For hollow shaft with spline hollow shaft or locking plate hollow shaft, please consult us.
2. *Weight of motor and lubrication oil are not included.
3. Lc can be seen on motor sample.

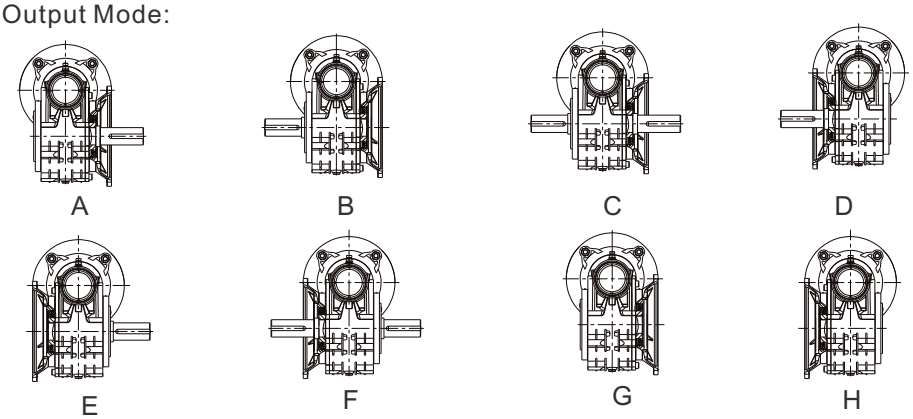
R

R...F flange-mounted



	R050	R063	R080
A	85	103	112
A1	70	85	90
B	120	144	172
B1	80	100	120
b	8	8	10
b1	5	6	8
C	7	8	10
C2	8	8	10
D	25H7	25H7	32H7
d	25k6	25k6	32k6
d1	14k6	19k6	24k6
E	50	50	80
E1	30	40	50
E2	68	70	89
F	68.5	80	95
f2	5	5	5
f3	3	3	3
G	43.5	53	57
G1	26	28	39
H	144	174	209
H1	36	42	48
h	60	72	86
h1	50	63	80
K1	104	130	155
K2	20	22	26
L1	78	100	121
L2	72	88	104
L3	60	73	87
M2	130	130	165
M3	85	95	115
N2	110H7	110H7	130H7
N3	70h7	80h7	95h7
n3	4	8	8
P2	160	160	200
P3	100	110	134
P4	119	135	170
Q	85	104	112
Q1	101	120	132
Q4	18	18	20
Q5	30	31	37
S	9	9	11
S2	9	9	11
S3	M8	M8	M8
T	28.3	28.3	35.3
t	28	28	35
t1	16	21.5	27
Weight (kg)*	3	5.4	8.8

Output Mode:



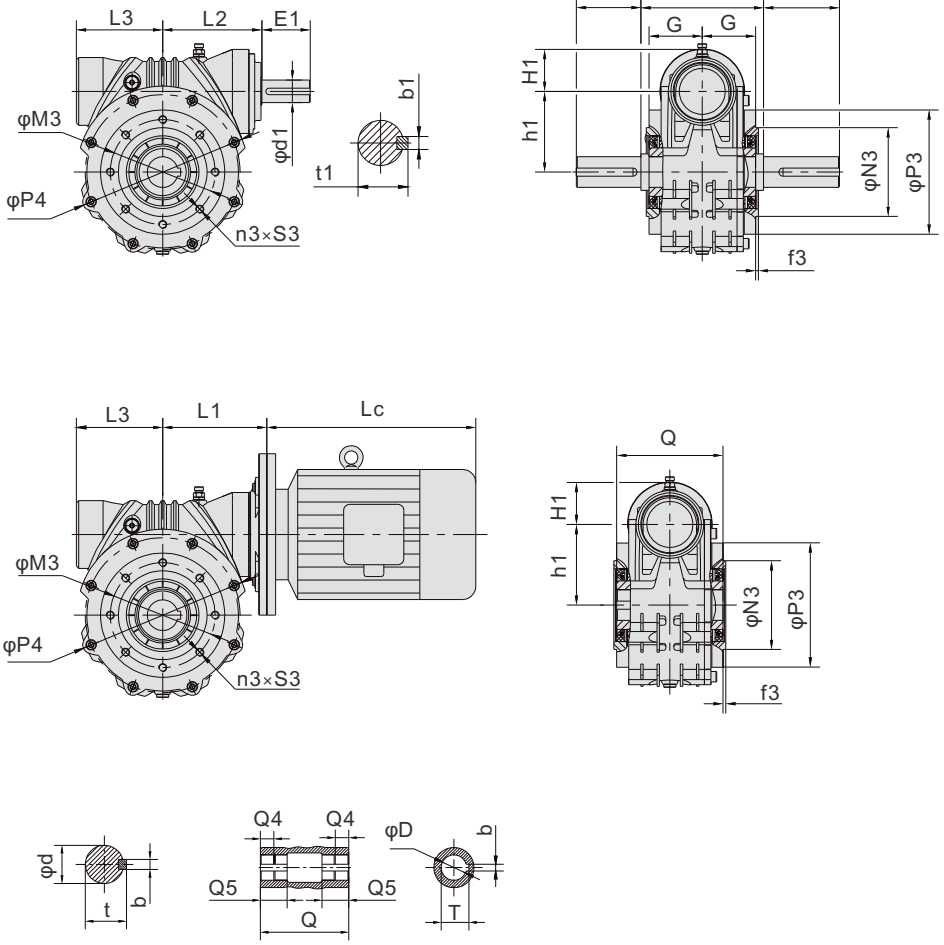
⚠ Note: 1.For hollow shaft with spline hollow shaft or locking plate hollow shaft, please consult us.
2. *Weight of motor and lubrication oil are not included.
3. Lc can be seen on motor sample.

R

R.50 ~ R.80

	R050	R063	R080
A	85	103	112
A1	70	85	90
B	120	144	172
B1	80	100	120
b	8	8	10
b1	5	6	8
C	7	8	10
C2	8	8	10
D	25H7	25H7	32H7
d	25k6	25k6	32k6
d1	14k6	19k6	24k6
E	50	50	80
E1	30	40	50
E2	68	70	89
F	68.5	80	95
f2	5	5	5
f3	3	3	3
G	43.5	53	57
G1	26	28	39
H	144	174	209
H1	36	42	48
h	60	72	86
h1	50	63	80
K1	104	130	155
K2	20	22	26
L1	78	100	121
L2	72	88	104
L3	60	73	87
M2	130	130	165
M3	85	95	115
N2	110H7	110H7	130H7
N3	70h7	80h7	95h7
n3	4	8	8
P2	160	160	200
P3	100	110	134
P4	119	135	170
Q	85	104	112
Q1	101	120	132
Q4	18	18	20
Q5	30	31	37
S	9	9	11
S2	9	9	11
S3	M8	M8	M8
T	28.3	28.3	35.3
t	28	28	35
t1	16	21.5	27
Weight (kg)*	3	5.4	8.8

R...AShaft-mounted (Applicable for torque arm-mounting)



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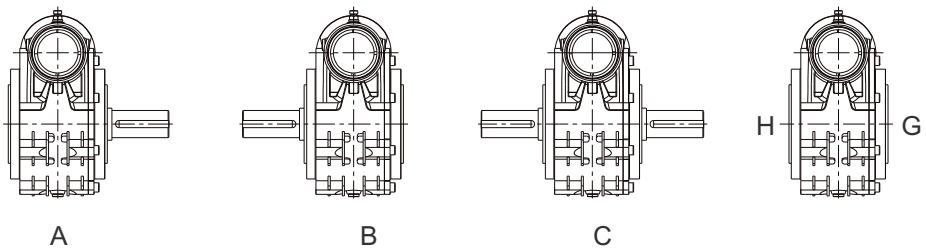
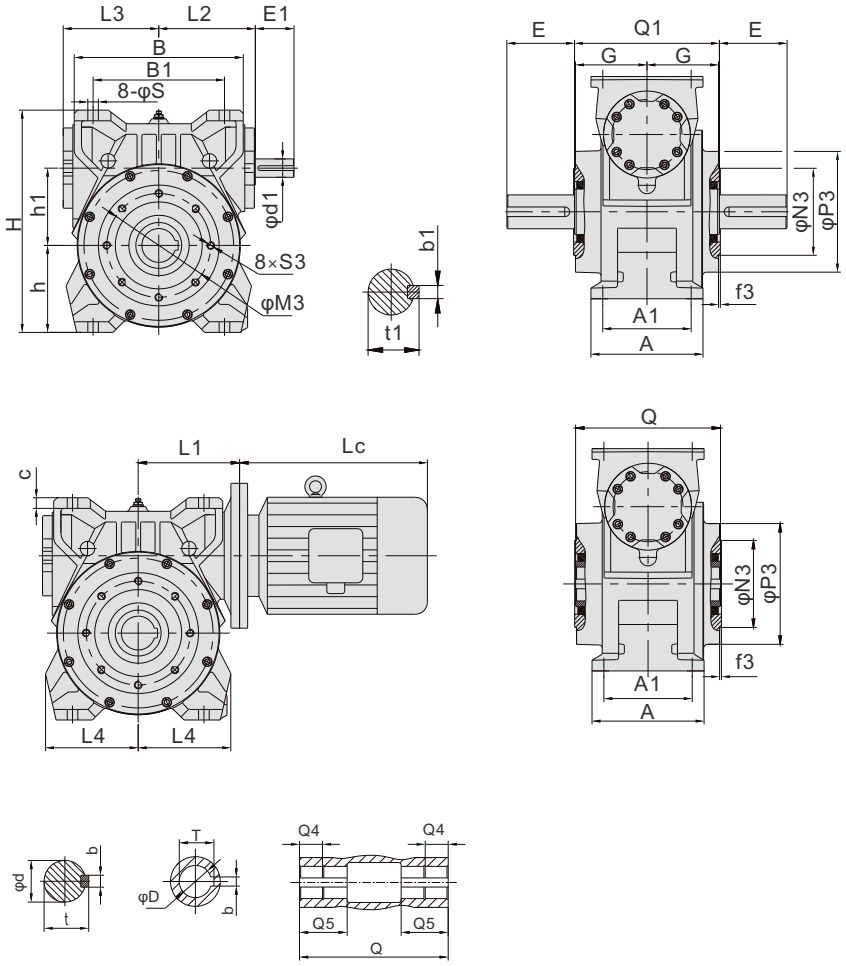


⚠ Note: 1.For hollow shaft with spline hollow shaft or locking plate hollow shaft, please consult us.
2. *Weight of motor and lubrication oil are not included.
3. Lc can be seen on motor sample.

R

R.100~R.250

R...H foot-mounted (Applicable for torque arm-mounting)



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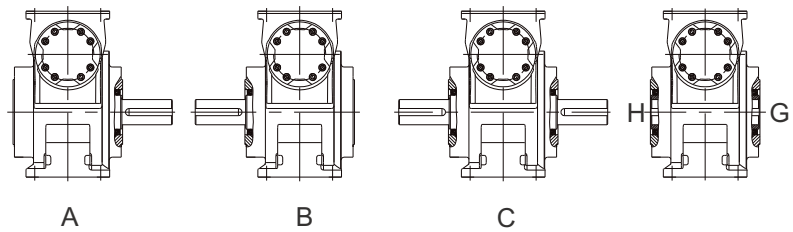


	R100	R125	R160	R200	R250
A	132	188	232	270	320
A1	105	162	183	214	250
B	214	258	350	441	552
B1	146	200	272	342	425
b	10	12	20	25	28
b1	8	8	10	14	18
C	14	16	22	30	35
C2	14	16	22	22	25
D	38H7	42H7	70H7	90H7	100H7
d	38K6	42k6	70m6	90m6	100m6
d1	28K6	28k6	38k6	48k6	60m6
E	80	110	140	170	210
E1	60	60	80	110	120
E2	94	120	181.5	211	261
F	100	136	191.5	216	256
f2	4	4	5	5	5
f3	3.5	3.5	4	5	5
G	66	97	148	173	203
G1	34	39	41.5	41	51
H	254	340	460	565	690
h	106	145	180	225	280
h1	100	125	160	200	250
L1	142	179	210	254	315
L2	123	165	200	248	307
L3	122	160.5	198	244	304
L4	115	143	192	240	295
M2	215	265	400	400	500
M3	130	165	215	265	300
N2	180h7	230h7	350h7	350h7	450h7
N3	110h7	130h7	180h7	230h7	250h7
n	4	4	8	8	8
P2	250	300	450	450	550
P3	152	190	250	300	340
Q	132	194	300	350	410
Q1	152	214	300	350	410
Q4	20	35	27	34	34
Q5	40	62	70	85	85
S	13.5	13.5	22	26	33
S2	13.5	13.5	17.5	17.5	17.5
S3	M10	M12	M16	M16	M16
T	41.3	45.3	74.9	95.4	106.4
t	41	45	74.5	95	106
t1	31	31	41	51.5	64
Weight (kg)*	40	80	150	240	420

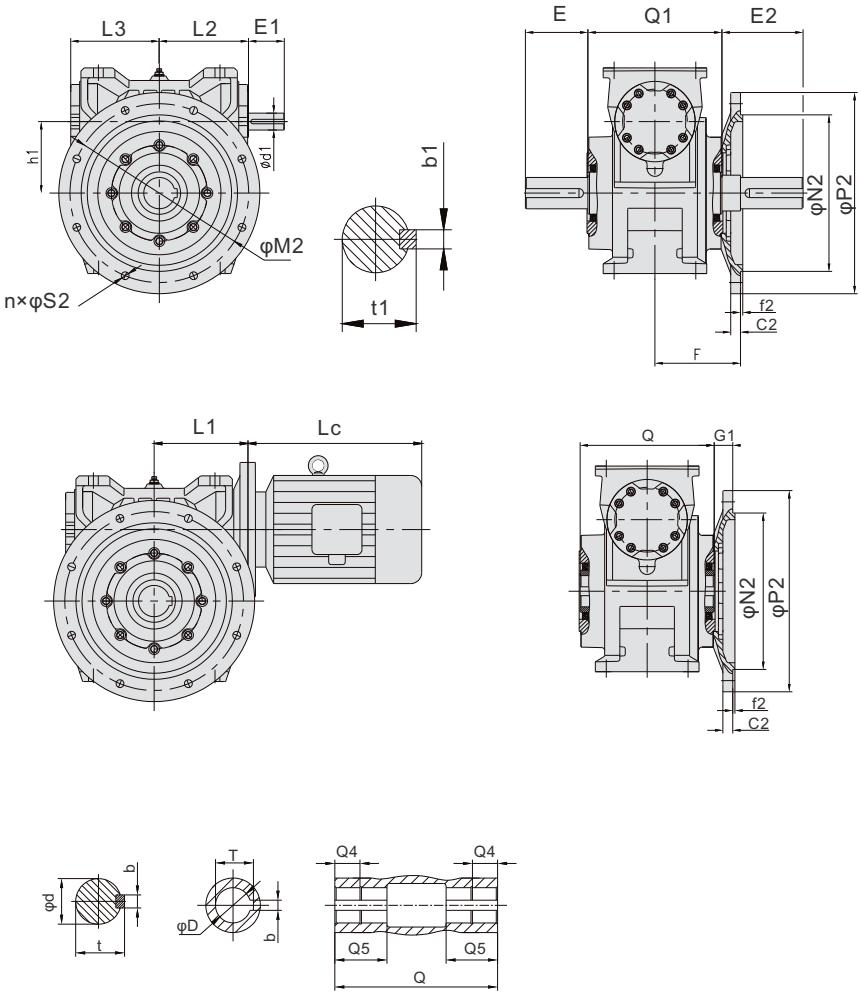
⚠ Note:Lc can be seen on motor sample.

R

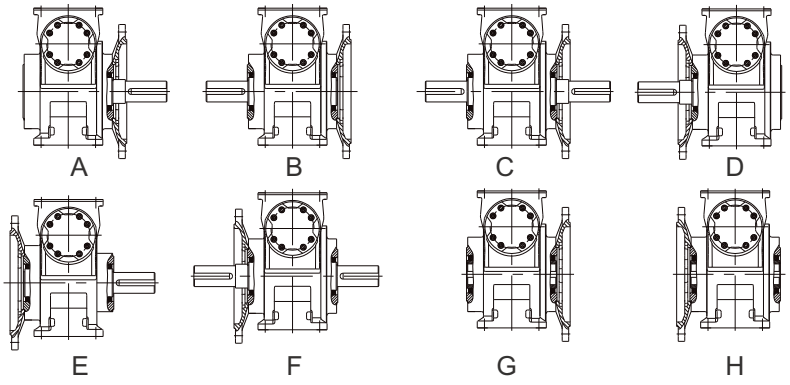
R.100 ~ R.250

	R100	R125	R160	R200	R250
A	132	188	232	270	320
A1	105	162	183	214	250
B	214	258	350	441	552
B1	146	200	272	342	425
b	10	12	20	25	28
b1	8	8	10	14	18
C	14	16	22	30	35
C2	14	16	22	22	25
D	38H7	42H7	70H7	90H7	100H7
d	38K6	42k6	70m6	90m6	100m6
d1	28K6	28k6	38k6	48k6	60m6
E	80	110	140	170	210
E1	60	60	80	110	120
E2	94	120	181.5	211	261
F	100	136	191.5	216	256
f2	4	4	5	5	5
f3	3.5	3.5	4	5	5
G	66	97	148	173	203
G1	34	39	41.5	41	51
H	254	340	460	565	690
h	106	145	180	225	280
h1	100	125	160	200	250
L1	142	179	210	254	315
L2	123	165	200	248	307
L3	122	160.5	198	244	304
L4	115	143	192	240	295
M2	215	265	400	400	500
M3	130	165	215	265	300
N2	180h7	230h7	350h7	350h7	450h7
N3	110h7	130h7	180h7	230h7	250h7
n	4	4	8	8	8
P2	250	300	450	450	550
P3	152	190	250	300	340
Q	132	194	300	350	410
Q1	152	214	300	350	410
Q4	20	35	27	34	34
Q5	40	62	70	85	85
S	13.5	13.5	22	26	33
S2	13.5	13.5	17.5	17.5	17.5
S3	M10	M12	M16	M16	M16
T	41.3	45.3	74.9	95.4	106.4
t	41	45	74.5	95	106
t1	31	31	41	51.5	64
Weight(kg)*	40	80	150	240	420

R...F flange-mounted



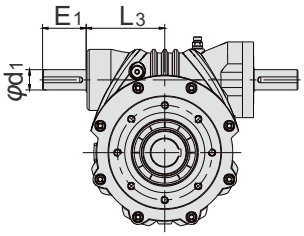
Output Mode:



⚠ Note: Lc can be seen on motor sample.

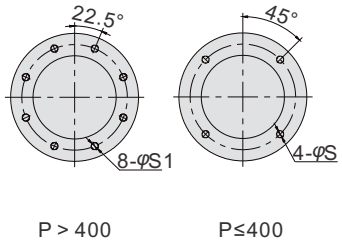
R

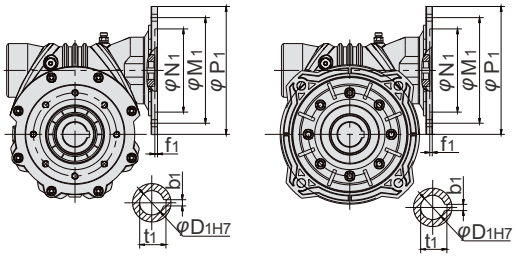
8 Output code of homodromous shaft is N:



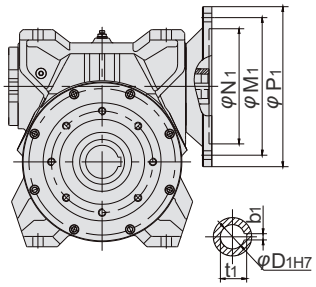
	R050	R063	R080	R100	R125	R160	R200	R250
d1	14k6	19k6	24k6	28k6	28k6	38k6	48k6	60m6
E1	30	40	50	60	60	80	110	120
L3	62	75	89	123	165	200	248	307

9 Dimensions of Input Flange and Shaft Bore:





R050-R080



R100-R250

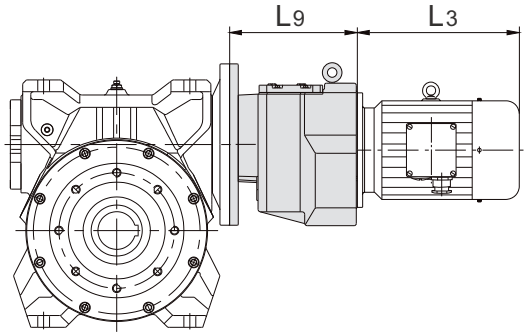
Size	Standard bore diameter of D1 worm rod iN							b1	t1	Flange dimensions N1	M1	P1	S1	f1	Code
	7	10	15	20	30	45	60								
R050	19	19	19	19	/	/	/	6	21.8	130	165	200	φ11	4	AF80
	14	14	14	14	14	14	14	5	16.8	110	130	160	φ9	5	AF71
R063	24	24	24	24	/	/	/	8	27.3	130	165	200	φ11	5	AF90
	/	19	19	19	19	/	/	6	21.8						AF80
	/	/	/	/	14	14	14	5	16.8	110	130	160	φ9	4	AF71
R080	28	28	28	28	28	/	/	8	31.3	180	215	250	φ13.5	4.5	AF100
	/	24	24	24	24	24	/	8	27.3	130	165	200	φ11	5	AF90
	/	19	19	19	19	19	19	6	21.8						AF80
	/	/	/	/	/	14	14	5	16.8	110	130	160	φ9	4	AF71
R100	28	28	28	28	28	/	/	8	31.3	180	215	250	φ13.5	4.5	AF100
	24	24	24	24	24	24	24	8	27.3	130	165	200	φ11	5	AF90
	/	/	/	19	19	19	19	6	21.8						AF80
R125	38	38	38	38	38	38	/	10	41.3	230	265	300	φ13.5	4.5	AF132
	28	28	28	28	28	28	28	8	31.3	180	215	250	φ13.5	4.5	AF100
	/	/	/	/	/	24	24	8	27.3	130	165	200	φ11	4.5	AF90
R160	/	/	42	/	42	/	/	12	45.3	250	300	350	M16	5.5	AF160
	/	/	38	/	38	38	38	10	41.3	230	265	300	M12	4.5	AF132
	/	/	/	/	28	28	28	8	31.3	180	215	250	φ13.5	4.5	AF100
R200	/	/	48	/	/	/	/	14	51.8	250	300	350	M16	5.5	AF180
	/	/	42	/	42	42	/	12	45.3						AF160
	/	/	/	/	38	38	/	10	41.3	230	265	300	M12	4.5	AF132
R250	/	/	55	/	/	/	/	16	59.3	300	350	400	M16	5.5	AF200
	/	/	48	/	48	48	/	14	51.8	250	300	350	M16	5.5	AF180
	/	/	/	/	42	42	/	12	45.3						AF160

R

10 Combined type:

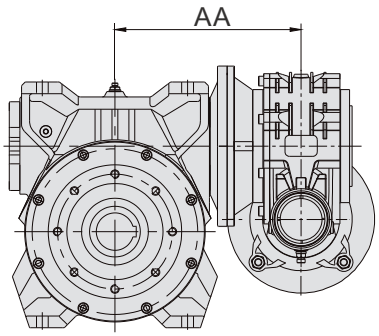
10.1 R../CR.. Combined type

R../CR



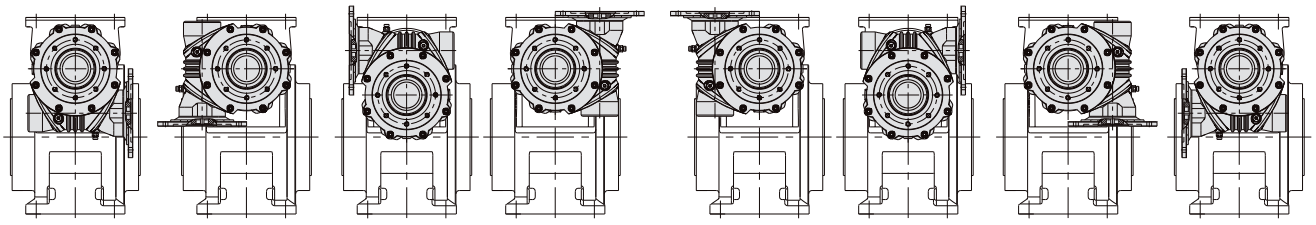
Type	L9
R125/CR47	182
R160/CR67	210
R200/CR77	226
R250/CR87	281

10.2 Dimensions and arrangement of Combined-type:



	R050/R050	R063/R050	R080/R050	R100/R050	R125/R063	R160/R080	R200/R100	R250/R125
AA	148	155	180	200	245	310	360	460

Combine-type Designs:



ZR01 ZR02 ZR03 ZR04 ZR05 ZR06 ZR07 ZR08

11 Attachment

11.1 Lubrication oil

L

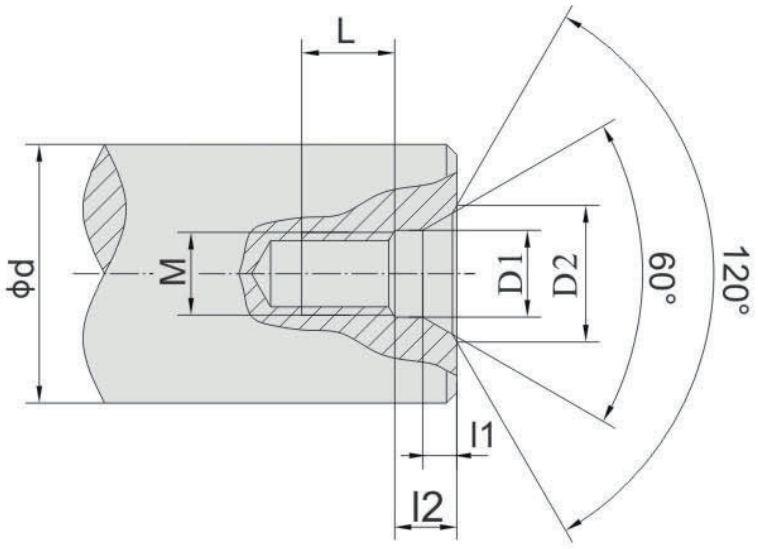
Size / Mounting position	R050	R063	R080	R100	R125	R160	R200	R250
D1	0.25	0.5	0.75	1	8	15	30	55
D2/D4	0.3	0.5	0.75	1	10	20	35	60
D5/D6	0.25	0.5	0.75	1	3.5	6	10	17.5
D3	0.25	0.5	0.75	1	6	10	20	35

⚠ Note: when ambient temperature is -20℃~40℃.

1. R050-R080 Series have been filled with 000 multi purpose extreme pressure semi-fluid lithium grease when delivered, the code is UV00.
2. R100-R250 are recommended to apply worm rod lubrication,oil viscosity brand humber:ISO VG680,accessory code Uv68.
   (1) When ambient temperature is lower than -10℃, synthetic oil should be used;
   (2) To ensure lifespan of the product, we recommend synthetic oil ;
   (3) When ambient temperature exceeds the above range, please consult with us.

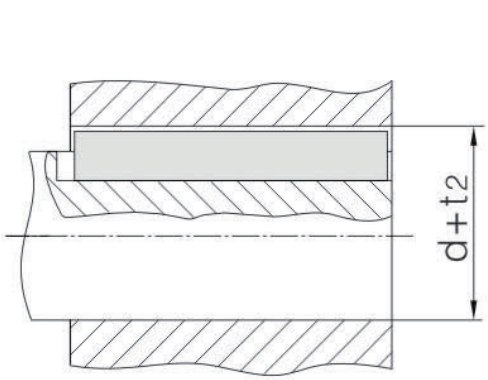
12 Shaft end central hole

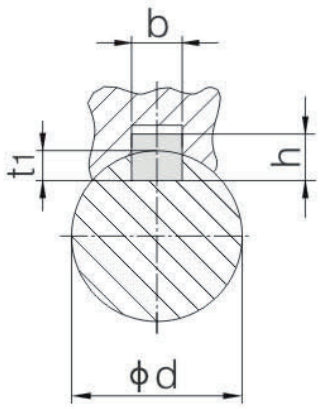
Shaft end C Type screw central hole



d	M	L	l2	l1	D1	D2
7 < d ≤ 10	M3	10	2.6	1.8	3.2	5.8
10 < d ≤ 13	M4	10	3.2	2.1	4.3	7.4
13 < d ≤ 16	M5	10	4	2.4	5.3	8.8
16 < d ≤ 21	M6	12	5	2.8	6.4	10.5
21 < d ≤ 24	M8	12	6	3.3	8.4	13.2
24 < d ≤ 30	M10	15	7.5	3.8	10.5	16.3
30 < d ≤ 38	M12	20	9.5	4.4	13	19.8
38 < d ≤ 50	M16	25	12	5.2	17	25.3
50 < d ≤ 85	M20	30	15	6.4	21	31.3
85 < d ≤ 130	M24	35	18	8	25	38
130 < d ≤ 225	M30	45	18	11	31	48

13 Dimension of parallel key and keyway





d	b	h	t_1	$d + t_2$
8 < d ≦ 10	3	3	1.8	d + 1.4
10 < d ≦ 12	4	4	2.5	d + 1.8
12 < d ≦ 17	5	5	3	d + 2.3
17 < d ≦ 22	6	6	3.5	d + 2.8
22 < d ≦ 30	8	7	4	d + 3.3
30 < d ≦ 38	10	8	5	d + 3.3
38 < d ≦ 44	12	8	5	d + 3.3
44 < d ≦ 50	14	9	5.5	d + 3.8
50 < d ≦ 58	16	10	6	d + 4.3
58 < d ≦ 65	18	11	7	d + 4.4
65 < d ≦ 75	20	12	7.5	d + 4.9
75 < d ≦ 85	22	14	9	d + 5.4
85 < d ≦ 95	25	14	9	d + 5.4
95 < d ≦ 110	28	16	10	d + 6.4
110 < d ≦ 130	32	18	11	d + 7.4
130 < d ≦ 150	36	20	12	d + 8.4
150 < d ≦ 170	40	22	13	d + 9.4
170 < d ≦ 200	45	25	15	d + 10.4
200 < d ≦ 230	50	28	17	d + 11.4
230 < d ≦ 260	56	32	20	d + 12.4

R

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