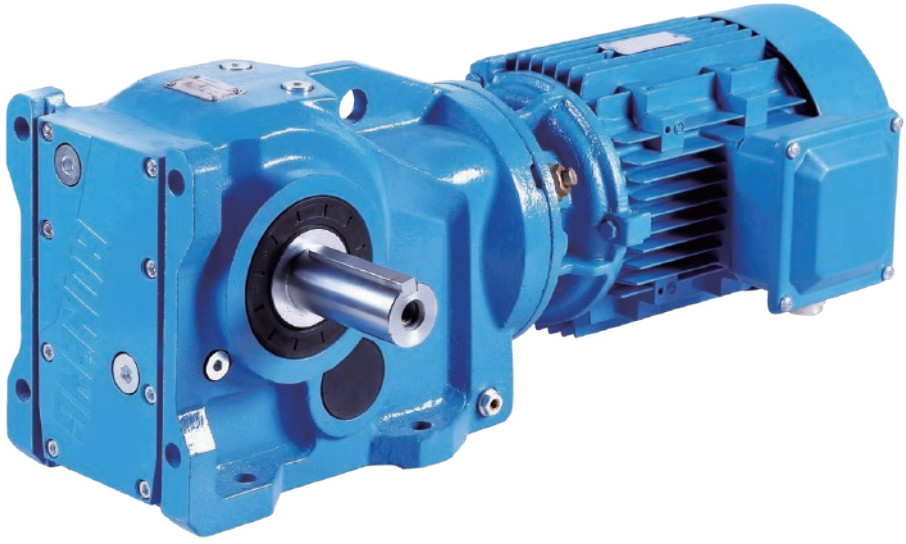
BONENG



K Helical–Bevel Gearmotor

Modified Date 06/2023
Selection Sample C05.0036–EN

Boneng Transmission

www.motiontech.com.au

Boneng Transmission enhances reliable, accurate, efficient and intelligent operation in the industry

Controller/ Drive/ Motor/ Gearmotor/ Gearbox

Note:

- 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.

⚠You must conform to the following instructions:

- 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 should carefully read instruction book.
- Gearbox 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 immersion lens.
- Lubrication oil viscosity should be selected according to working situation and application environment temperature of gearmotor.
- You can only apply lubrication oil of internationlly famous brand.

Contents

1 Type Designation

K 3 08 H A – C32 – D1 0 1 –

Series

Stages
3–stage

Size

Mounting Mode
H=Horizontal foot–mounted
F=Flange–mounted
S=Short flange–mounted
A=Torque arm–mounted
T=Torque arm–mounted with accessory

Output Mode
A/B/D/E=Unidirectional output shaft
C/F=Bidirectional output shaft
G/H=Hollow shaft with parallel key
I/J=Hollow shaft with shrink disk
K/L=Hollow shaft with involute spline

Nominal Ratio Code

Mounting Positions
D1/D2/D3/D4/D5/D6

Accessories and Specific Configuration
0=None
1=Unconventional installation of gear
2=Strengthen gear shaft cover
6=Oil compensating tank
A=Unconventional installation of gear and strengthen gear shaft cover
B=Unconventional installation of gear and oil compensating tank
C=Strengthen gear shaft cover and oil compensating tank

Oil Code
0=Without oil filling(Please select this option when you do not need lubricating oil);
1=With mineral oil VG220(Please select this option when the ambient temperature is –20℃~+40℃, and K303~K312 need lubricating oil);
2=With mineral oil VG320(Please select this option when the ambient temperature is –20℃~+40℃, and K315~K318 need lubricating oil);
5=With synthetic lubricating oil VG220(It is recommended to select this option when you need lubricating oil and the ambient temperature is below 0℃);

Note[1] Motor Type/Frame Size/Poles/Power Code

Power kW	4–pole Type	Power kW	4–pole Type	Power kW	4–pole Type	Power kW	4–pole Type
0.12	MA063M4A12	1.1	MA090M4B11	11	MA160M4C11	55	MA250M4C55
0.18	MA063M4A18	1.5	MA090M4B15	15	MA160L4C15	75	MA280S4C75
0.25	MA071M4A25	2.2	MA100M4B22	18.5	MA180M4C18	90	MA280M4C90
0.37	MA071M4A37	3	MA100M4B30	22	MA180L4C22		
0.55	MA080M4A55	4	MA112L4B40	30	MA200M4C30		
0.75	MA080M4A75	5.5	MA132L4B55	37	MA225M4C37		
		7.5	MA132L4B75	45	MA225M4C45		

MA 132M 4 B55 A C 6 – A 0 N 1 0– 0 1 1

Cable Entry Position
1 / 2 / 3 / 4

Terminal Box Position
1 / 2 / 3 / 4

Motor mounting Position 0

Motor protection
0=standard configuration(IP55/F)
1=with rain cover
4=IP65/with metal joint
5=IP65/with metal joint and rain cover
J=with metal joint
K=with metal joint and rain cover

Thermal Protection and Heating Protection
0=Without thermal protection and heating Protection
1=Thermistor
2=Thermal switch
3= PT100 temperature sensor
4=Heating belt
5=Thermistor and heating belt
6=Thermal switch and heating belt
7= PT100 temperature sensor and heating belt

Brake
N=Without brake
A=Brake 220–240VAC
D=Brake with release handle 220–240VAC
G=Brake with self–lock device 220–240VAC
K=Brake with micro switch 220–240VAC

Encoder
0=No encoder
1=high–performance HTL encoder(1024P)
2=standard encoder accessories
3=economic HTL encoder(1024P)
4=high–performance TTL encoder(1024P)

Cooling Method
A=Self–fan cooling
F=Forced–fan cooling

Frequency/Voltage Code
6=60Hz 460V△
G=60Hz 230VY
J=60Hz 575VY
8=60Hz 460VY
H=60Hz 230V△
K=60Hz 575V△
Note:Alternative code of 3kW and below: 8,G,J;
Alternative code of 4kW and above: 6,H,K.

Frame Material
L=Die–casting aluminum frame(standard configuration of 100 and below)
C=Grey cast iron frame(standard configuration of 112 and above)

Mounting Mode A

Power Code[1)]

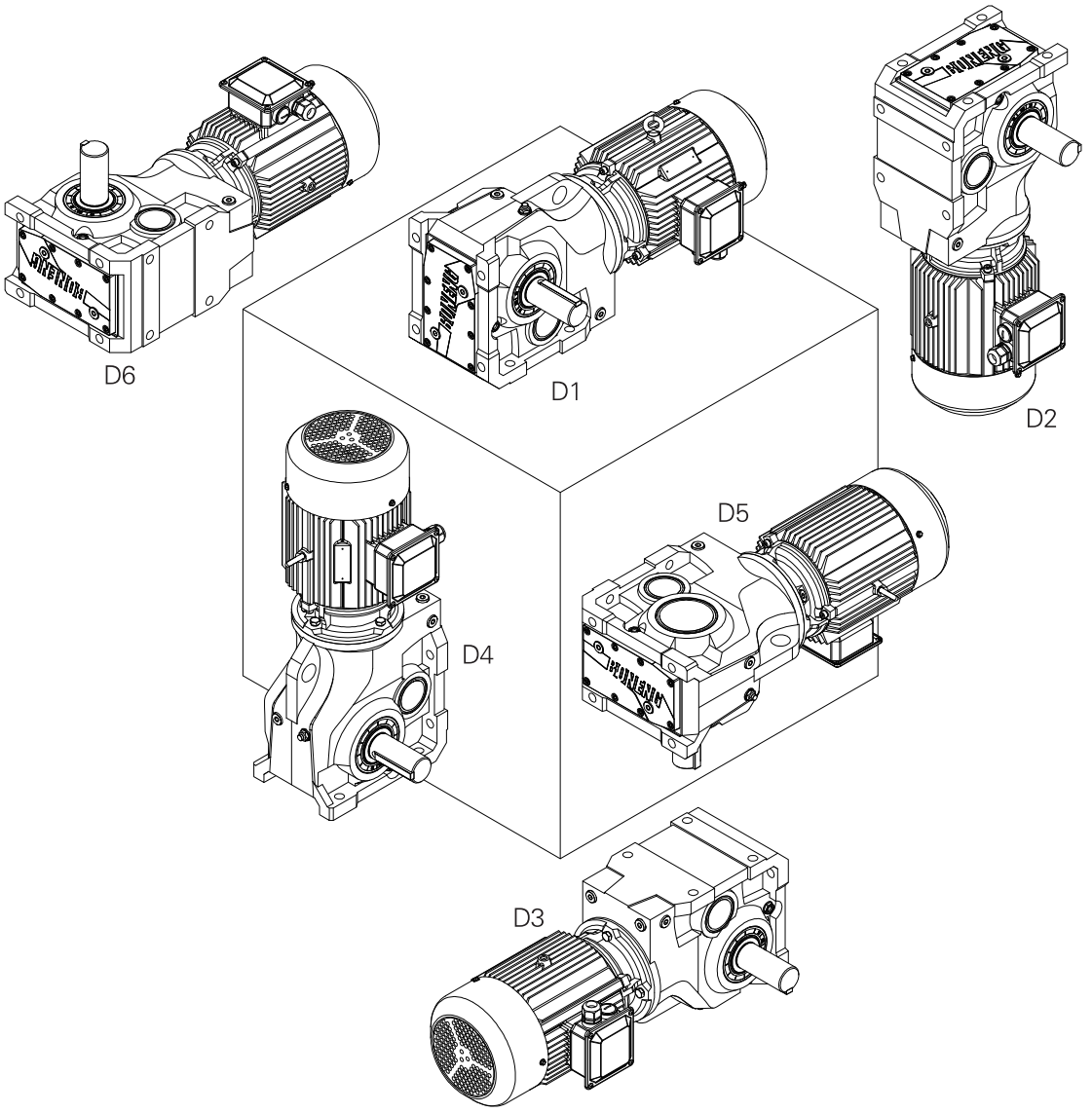
Motor Poles[1)]
4=4–pole

Frame Size[1)]

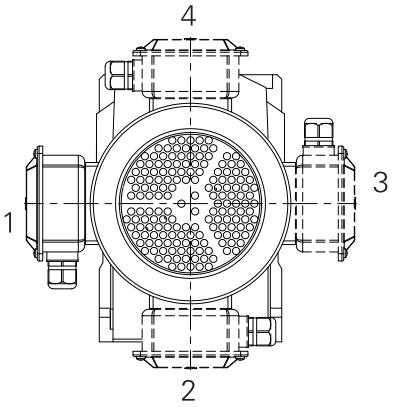
Motor Type[1)]
MA=NEMA efficiency three–phase asynchronous motor

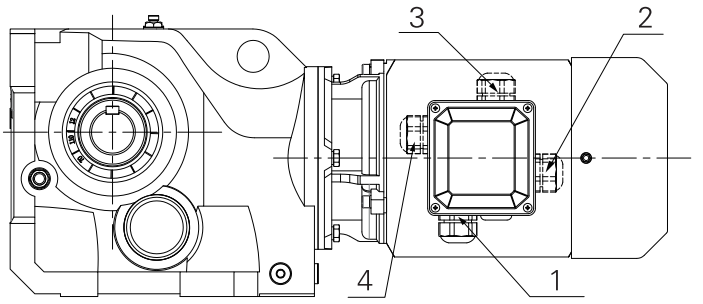
◆**Example of product type with input flange or input shaft:** K308HA–C32–D101–AE300
◆**Example of product type with input flange and motor type:** K308HA–C32–D101–AP132–MA132M4B55FC6–A0N10–011
◆**Combi–type designation:** K308HA/C205–D28–D100–MA080M4A75AL6–A0N00–011

2 Mounting Positions



Motor terminal box and cable entry position (View :Motor afterbody)





Assembly colour of gearmotor (RAL5015)

3 Type Selection and Example

<table>
<tr><th>Step</th><th>Description</th><th>Symbol</th><th colspan="4">Parameters Calculation and Guideline</th></tr>
<tr><td rowspan="6">1</td><td rowspan="6">Driven Machine Factor</td><td rowspan="6">f_1</td><td rowspan="2">Load Characteristic</td><td colspan="3">Operating hours per day (h)</td></tr>
<tr><td>≤2</td><td>2~10</td><td>10~24</td></tr>
<tr><td>Uniform</td><td>1.00(1.00)</td><td>1.00(1.25)</td><td>1.25(1.50)</td></tr>
<tr><td>Moderate</td><td>1.00(1.25)</td><td>1.25(1.50)</td><td>1.50(1.75)</td></tr>
<tr><td>Heavy</td><td>1.25(1.50)</td><td>1.50(1.75)</td><td>1.75(2.00)</td></tr>
<tr><td colspan="4">Note: Apply values in the brackets when starts per hour are 10 times or more.</td></tr>
<tr><td>2</td><td>Input Speed</td><td>n_1</td><td colspan="4">≤1800rpm Consult us if higher speed required.</td></tr>
<tr><td>3</td><td>Calculation of the Ratio</td><td>i</td><td colspan="4">$i=n_1/n_2$</td></tr>
<tr><td>4</td><td>Transmission Efficienc</td><td>η</td><td colspan="4">K_3.. 3–stage： 94%</td></tr>
<tr><td>5</td><td>Calculation of the input power of the gearmotor on basis of the torque and power required by the driven machine.</td><td>P_1</td><td colspan="4">$P_1=T_2 \cdot n_1/(9550 \cdot i \cdot \eta)$ or $P_1=P_2/\eta$</td></tr>
<tr><td>6</td><td>Determination of gearunit type referring to the table of transmission capacity after calculation,For directly–connected motor, require to refer to directly–connected motor power table.</td><td>T_{2N}、P_{1N}</td><td colspan="4">$T_{2N} \geqslant T_2 \cdot f_1$ or $P_{1N} \geqslant P_1 \cdot f_1$</td></tr>
<tr><td>7</td><td>Check the radial and axial forces on the shafts.</td><td>F_{r1}/F_{r2} F_{a1}/F_{a2}</td><td colspan="4">See the table of Radial Force on Output Shaft (Fr2) on P15</td></tr>
<tr><td>8</td><td>Determination of Lubrication system</td><td>/</td><td colspan="4">Generally Splash Lubrication</td></tr>
<tr><td>9</td><td>Determination of Cooling Syste</td><td>/</td><td colspan="4">Generally Air Cooling</td></tr>
<tr><td>10</td><td>Determination of every item included in the Type Designation.</td><td>/</td><td colspan="4">For details about Type Designation, see P01</td></tr>
<tr><td>11</td><td>Normal ambient conditions</td><td>/</td><td colspan="4">Ambient temperature –20 to 40℃, ample space, good ventilation, altitude not exceeding 1000m and common plant dust.</td></tr>
<tr><td>12</td><td>Special ambient conditions</td><td>/</td><td colspan="4">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>

n_2： The output speed required by the driven machine.
T_2： The output torque required by the driven machine.
P_2： The output power required by the driven machine.
T_{2N}： The rated output torque of gearmotor.
P_{1N}： The rated input power of gearmotor.

Example

◆ Known Criteria:

1、Load characteristics by the driven machine: Moderate,
working 16 hours/d and starting 10 times/h;

2、Normal motor: 4–pole 460V 60Hz,
speed n_1=1740r/min;

3、The power required P_2=10KW,
speed n_2=16 r/min;

4、Mounting mode: flange–mounted,unidirectional output shaft A, mounting position D1, motor terminal box 1, cable entry position 1.

◆ Selection steps:

1、By referring to the table of Load Characteristic,
we get the driven machine factor f_1=1.75;

2、Calculation of the Ratio i_N:
$i=n_1/n_2$=1740/16=108.8, nominal ratio i_N=112;

3、Calculation of the input power and determination of the motor power
(transmission efficiency η =94%):
$P_1 \geqslant P_2/\eta$ =10/0.94=10.64kW, so 11kW 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}:
$P_{1N} \geqslant P_2 \cdot f_1/\eta = 10 \times 1.75/0.94 = 18.62$kW;

5、The type selected: K312FA–D11–D100– MA160M4C11AC6–A0N00–011

4 Transmission Capacity

4.1 K Transmission capacity

K...(i_N=4–180)

Nominal Input Speed	Nominal Output Speed	Nominal Ratio Code	Nominal Ratio	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power
n_{1N} (r/min)	n_{2N} (r/min)	Code	i_N	T_{2N} (N.m)	iex	P_{1N} (kW)	T_{2N} (N.m)	iex	P_{1N} (kW)
				K303			K304		
1740	435	B40	4	150	3.95	6.9	200	3.95	9.2
	387	B45	4.5	150	4.46	6.1	230	4.43	9.5
	348	B50	5	150	5.08	5.4	250	5.01	9.1
	311	B56	5.6	160	5.74	5.1	260	5.56	8.5
	276	B63	6.3	180	6.42	5.1	280	6.19	8.2
	245	B71	7.1	180	7.24	4.53	280	6.95	7.3
	218	B80	8	180	8.25	3.97	300	7.85	7.0
	193	B90	9	180	9.33	3.52	310	8.71	6.5
	174	C10	10	180	10.6	3.10	340	9.98	6.2
	155	C11	11.2	180	11.4	2.88	360	11.0	6.0
	139	C13	12.5	180	12.7	2.59	380	12.4	5.6
	124	C14	14	200	14.3	2.55	400	13.5	5.4
	109	C16	16	200	16.3	2.24	420	15.2	5.0
	96.7	C18	18	210	18.4	2.08	420	17.2	4.46
	87.0	C20	20	220	20.8	1.92	450	19.1	4.30
	77.7	C22	22.4	225	22.4	1.83	450	21.8	3.75
	69.6	C25	25	230	25.6	1.63	450	24.0	3.42
	62.1	C28	28	230	27.6	1.51	450	27.1	3.03
	55.2	C32	31.5	230	32.2	1.30	450	31.5	2.60
	49.0	C36	35.5	230	36.3	1.16	450	37.2	2.20
	43.5	C40	40	230	41.3	1.01	450	41.8	1.96
	38.7	C45	45	230	46.7	0.90	450	47.2	1.74
	34.8	C50	50	230	52.9	0.79	450	52.4	1.56
	31.1	C56	56	230	57.0	0.74	450	60.1	1.37
	27.6	C63	63	230	66.7	0.63	450	66.0	1.24
	24.5	C71	71	230	75.6	0.55	450	74.4	1.10
	21.8	C80	80	230	83.3	0.50	450	79.5	1.03
	19.3	C90	90	230	91.1	0.46	450	92.4	0.89
	17.4	D10	100	230	99.6	0.42	450	104.0	0.79
	15.5	D11	112				450	113.6	0.72
	13.9	D13	125				450	124.6	0.66
	12.4	D14	140						
	10.9	D16	160						
	9.7	D18	180						

Note: (1)Actual output speed of the gearmotor: Actual input speed (n_1)/Exact ration (iex);
(2)Rated input power corresponding to actual input speed of the gearmotor: $P_{1N}=T_{2N}*n_1/(9550*iex)$,the rated output torque T_{2N} in the formula remains unchanged.

Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power
T_{2N} (N.m)	iex	P_{1N} (kW)	T_{2N} (N.m)	iex	P_{1N} (kW)	T_{2N} (N.m)	iex	P_{1N} (kW)	T_{2N} (N.m)	iex	P_{1N} (kW)
K305			K306			K307			K308		
360	4.08	16.1	680	4.20	29.5						
360	4.58	14.3	680	4.82	25.7						
360	5.18	12.7	700	5.14	24.8						
380	5.75	12.0	730	5.59	23.8						
400	6.56	11.1	750	6.02	22.7						
420	7.41	10.3	750	6.90	19.8	1300	6.86	34.5	1800	7.07	46.4
420	8.23	9.3	750	8.00	17.1	1300	7.81	30.3	1800	8.04	40.8
430	9.43	8.3	750	9.17	14.9	1300	8.66	27.4	1800	9.33	35.2
450	10.4	7.9	750	9.78	14.0	1300	9.93	23.8	1800	10.2	32.3
460	10.7	7.8	750	11.4	12.0	1300	11.2	21.2	2100	11.4	33.5
500	12.0	7.6	750	13.0	10.5	1380	12.0	20.9	2350	12.5	34.2
550	13.6	7.4	850	13.9	11.2	1550	13.7	20.7	2350	14.0	30.6
600	15.1	7.2	850	15.7	9.8	1650	15.2	19.8	2600	15.9	29.8
620	17.3	6.5	850	18.0	8.6	1650	17.4	17.3	2600	18.5	25.7
650	19.0	6.2	850	19.2	8.0	1650	19.6	15.4	2600	20.1	23.6
680	21.4	5.8	950	22.7	7.6	1650	22.0	13.7	2850	22.6	23.0
680	22.9	5.4	950	26.0	6.6	1750	25.1	12.7	3000	2.48	22.1
680	29.5	4.20	950	27.8	6.2	1750	27.8	11.5	3000	28.6	19.1
680	33.1	3.74	950	31.2	5.5	1750	31.0	10.3	3000	30.5	17.9
680	37.4	3.31	950	35.8	4.83	1750	35.3	9.0	3000	35.7	15.4
680	41.5	2.99	950	38.2	4.53	1750	39.2	8.1	3000	40.6	13.4
680	47.5	2.61	950	45.5	3.80	1750	44.9	7.1	3000	47.0	11.6
680	52.3	2.37	950	50.7	3.42	1750	50.5	6.3	3000	51.3	10.7
680	58.9	2.10	950	55.7	3.11	1750	56.5	5.6	3000	57.7	9.5
630	62.9	1.82	950	63.3	2.74	1750	62.9	5.1	3000	63.2	8.6
520	73.2	1.29	950	69.1	2.50	1750	68.9	4.63	3000	73.0	7.5
520	82.3	1.15	950	78.7	2.20	1750	74.9	4.26	3000	77.9	7.0
520	89.9	1.05	900	83.6	1.96	1750	84.2	3.79	3000	90.0	6.1
520	98.6	0.96	850	96.7	1.60	1750	92.3	3.46	3000	102.3	5.3
520	107.1	0.88	850	115.0	1.35	1750	108.3	2.94	3000	113.6	4.81
			850	122.3	1.27	1700	120.4	2.57	3000	127.8	4.28
						1650	132.5	2.27	3000	140.6	3.89
						1600	149.3	1.95	2500	153.7	2.96
						1600	175.7	1.66	2000	177.9	2.05

4.1 K Transmission capacity

K...(i_N=4–180)

Nominal Input Speed	Nominal Output Speed	Nominal Ratio Code	Nominal Ratio	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power
n_{1N} (r/min)	n_{2N} (r/min)	Code	i_N	T_{2N} (N.m)	iex	P_{1N} (kW)	T_{2N} (N.m)	iex	P_{1N} (kW)
				K309			K310		
1740	435	B40	4						
	387	B45	4.5						
	348	B50	5						
	311	B56	5.6						
	276	B63	6.3						
	245	B71	7.1	3500	7.24	88			
	218	B80	8	3500	7.93	80	6000	8.14	134
	193	B90	9	3800	9.37	74	6000	9.11	120
	174	C10	10	4000	10.5	69	6000	10.7	102
	155	C11	11.2	4000	11.2	65	6500	11.7	102
	139	C13	12.5	4500	12.8	64	7500	12.5	109
	124	C14	14	5000	14.3	64	7900	14.0	103
	109	C16	16	5000	16.2	56	8300	16.5	92
	96.7	C18	18	5000	18.1	50	8300	17.9	84
	87.0	C20	20	5000	19.4	47.0	8300	20.9	72
	77.7	C22	22.4	5000	22.2	41.1	8300	23.2	65
	69.6	C25	25	5000	24.6	37.0	8300	24.6	62
	62.1	C28	28	5000	27.9	32.6	8300	27.9	54
	55.2	C32	31.5	5000	31.3	29.1	8300	31.2	48.4
	49.0	C36	35.5	5000	34.5	26.4	8300	34.5	43.9
	43.5	C40	40	5000	37.8	24.1	8300	38.6	39.2
	38.7	C45	45	5000	44.6	20.4	8300	45.5	33.2
	34.8	C50	50	5000	50.0	18.2	8500	49.4	31.4
	31.1	C56	56	5000	53.4	17.1	9000	57.6	28.4
	27.6	C63	63	5000	61.1	14.9	9000	63.9	25.7
	24.5	C71	71	5000	67.9	13.4	9000	67.7	24.2
	21.8	C80	80	5000	77.1	11.8	9000	77.0	21.3
	19.3	C90	90	5000	86.4	10.5	9000	86.2	19.0
	17.4	D10	100	5000	98.6	9.2	9000	95.7	17.1
	15.5	D11	112	5000	105.1	8.7	9000	112.0	14.6
	13.9	D13	125	4300	120.8	6.5	9000	120.4	13.6
	12.4	D14	140	4300	135.8	5.8	9000	135.3	12.1
	10.9	D16	160	4300	150.0	5.2	8500	155.8	9.9
	9.7	D18	180	4300	168.7	4.64	8500	173.3	8.9

Note: (1)Actual output speed of the gearmotor: Actual input speed (n_1)/Exact ration (iex);
(2)Rated input power corresponding to actual input speed of the gearmotor: $P_{1N}=T_{2N}*n_1/(9550*iex)$,the rated output torque T_{2N} in the formula remains unchanged.

Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power
T_{2N} (N.m)	iex	P_{1N} (kW)	T_{2N} (N.m)	iex	P_{1N} (kW)	T_{2N} (N.m)	iex	P_{1N} (kW)	T_{2N} (N.m)	iex	P_{1N} (kW)
K312			K315			K316			K318		
9500	7.14	242									
9500	8.11	213									
9500	9.45	183									
9500	10.5	165	20000	10.1	359	36000	9.97	658	47000	10.1	845
10500	11.7	163	20000	11.5	316	38000	11.2	621	47000	11.4	749
12000	12.6	174	20000	13.4	272	38000	12.4	558	47000	13.2	649
13100	14.3	167	20000	14.9	244	38000	14.0	495	47000	15.1	569
14500	16.6	159	20000	16.6	219	38000	16.1	430	47000	16.1	531
14500	18.5	143	20000	18.4	199	38000	17.8	389	47000	17.4	491
14500	20.6	128	20000	19.9	183	38000	19.7	352	50000	20.2	452
14500	22.7	116	20000	22.9	159	38000	21.7	319	53000	22.5	429
14500	24.6	107	20000	24.1	151	38000	24.3	285	53000	24.1	401
14500	28.3	93	20000	27.4	133	38000	27.0	256	58000	27.1	389
14500	32.1	82	20000	31.9	114	38000	30.5	227	58000	31.4	337
14500	34.6	76	20000	35.4	103	38000	35.1	197	58000	35.8	295
14500	39.3	67	20000	39.5	92	38000	38.7	179	58000	38.3	276
14500	45.8	58	20000	43.6	84	38000	42.9	161	58000	41.4	256
14500	50.9	52	20000	47.3	77	38000	47.8	145	58000	47.9	221
14500	56.7	46.6	20000	54.4	67	38000	54.2	127	58000	53.5	198
14500	62.6	42.2	20000	61.6	59.2	38000	60.2	115	58000	60.3	175
14500	68.0	38.9	20000	68.6	53.2	38000	68.8	101	58000	66.7	158
14500	78.1	33.8	20000	75.9	48	38000	78.1	89	58000	75.0	140
14500	88.5	29.9	20000	87.4	41.7	38000	86.8	80	58000	83.0	127
14500	98.5	26.8	20000	97.3	37.4	38000	98.6	70	58000	99.2	107
14500	109.1	24.2	20000	107.7	33.8	38000	113.1	61	58000	109.8	96
14500	127.3	20.8	20000	125.7	29.0	38000	127.9	54	58000	124.0	85
14500	135.0	19.6	20000	133.4	27.3	38000	140.4	49.3	58000	141.6	75
14500	153.1	17.3				38000	155.1	44.6	58000	159.1	66
14500	174.8	15.1									

4.2 K.../C... Combi–type transmission capacity

K.../C...(i_N=112–14000)

Nominal Input Speed	Nominal Output Speed	Nominal Ratio Code	Nominal Ratio	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power
n_{1N} (r/min)	n_{2N} (r/min)	Code	i_N	T_{2N} (N • m)	iex	P_{1N} (kW)	T_{2N} (N • m)	iex	P_{1N} (kW)	T_{2N} (N • m)	iex	P_{1N} (kW)
				K303/C201			K304/C203			K305/C203		
	15.5	D11	112	230	116.2	0.36	450	110.4	0.74	680	106.8	1.16
	13.9	D13	125	230	129.5	0.32	450	126.5	0.65	680	122.4	1.01
	12.4	D14	140	230	144.8	0.29	450	138.9	0.59	680	134.4	0.92
	10.9	D16	160	230	153.7	0.27	450	156.2	0.52	680	151.2	0.82
				K303/C301								
	9.7	D18	180	230	182.9	0.23	450	167.4	0.49	680	162.0	0.76
							K304/C303			K305/C303		
	8.70	D20	200	230	209.6	0.20	450	189.7	0.43	680	183.6	0.67
	7.77	D22	224	230	238.8	0.18	450	214.5	0.38	680	207.6	0.60
				K303/C201			K304/C203			K305/C203		
	6.96	D25	250	230	248.3	0.17	450	264.1	0.31	680	265.5	0.47
	6.21	D28	280	230	281.3	0.15	450	298.3	0.27	680	299.9	0.41
	5.52	D32	315	230	332.1	0.13	450	331.1	0.25	680	332.9	0.37
	4.90	D36	355	230	370.3		450	379.4	0.22	680	381.5	0.32
	4.35	D40	400	230	413.8		450	416.6	0.20	680	418.9	0.30
	3.87	D45	450	230	439.2		450	468.7	0.17	680	471.2	0.26
				K303/C301								
	3.48	D50	500	230	522.7		450	502.2	0.16	680	504.9	0.25
							K304/C303			K305/C303		
	3.11	D56	560	230	599.0		450	569.2	0.14	680	572.2	0.22
	2.76	D63	630	230	682.4		450	643.6	0.13	680	647.0	0.19
	2.45	D71	710	230	740.5		450	732.8		680	736.8	0.17
	2.18	D80	800	230	805.9		450	825.8		680	830.3	0.15
1740	1.93	D90	900	230	893.0		450	937.4		680	942.5	0.13
	1.74	E10	1000	230	998.3		450	1001		680	1006	
	1.55	E11	1120	230	1172		450	1127		680	1133	
	1.39	E13	1250	230	1285		450	1283		680	1290	
	1.24	E14	1400	230	1394		450	1455		680	1462	
	1.09	E16	1600	230	1681		450	1644		680	1653	
	0.97	E18	1800	230	1880		450	1771		680	1780	
	0.87	E20	2000	230	1997		450	2072		680	2083	
	0.78	E22	2240	230	2207		450	2351		680	2364	
	0.70	E25	2500	230	2561		450	2581		680	2459	
	0.62	E28	2800	230	3088		450	2917		680	2780	
	0.55	E32	3150	230	3455		450	3142		680	2994	
	0.49	E36	3550	230	3669		450	3676		680	3504	
	0.44	E40	4000	230	4055		450	4171		680	3975	
	0.39	E45	4500	230	4756		450	4594		680	4378	
	0.35	E50	5000	230	5403		450	5023		680	4787	
	0.31	E56	5600	230	5830		450	5491		680	5233	
	0.28	E63	6300				450	6431		680	6257	
	0.25	E71	7100				450	7032		680	6841	
	0.22	E80	8000				450	7688		680	7480	
	0.19	E90	9000									
	0.17	F10	10000									
	0.16	F11	11200									
	0.14	F13	12500									
	0.12	F14	14000									

Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power
T_{2N} (N • m)	iex	P_{1N} (kW)	T_{2N} (N • m)	iex	P_{1N} (kW)	T_{2N} (N • m)	iex	P_{1N} (kW)
K306/C203			K307/C203			K308/C205		
950	115.7	1.50	1750	106.8	2.99	3000	113.3	4.83
950	132.6	1.31	1750	122.4	2.60	3000	120.8	4.53
950	145.6	1.19	1750	134.4	2.37	3000	135.0	4.05
950	163.8	1.06	1750	151.2	2.11	3000	150.0	3.64
950	175.5	0.99	1750	162.0	1.97	3000	187.5	2.92
K306/C303			K307/C303					
950	198.9	0.87	1750	183.6	1.74	3000	205.0	2.67
950	224.9	0.77	1750	207.6	1.54	3000	233.8	2.34
K306/C203			K307/C203					
950	254.2	0.68	1750	250.6	1.27	3000	258.8	2.11
950	287.1	0.60	1750	283.1	1.13	3000	284.9	1.92
950	318.6	0.54	1750	314.2	1.01	3000	323.4	1.69
950	365.2	0.47	1750	360.1	0.89	3000	344.9	1.58
950	401.0	0.43	1750	395.4	0.81	3000	385.6	1.42
950	451.1	0.38	1750	444.8	0.72	3000	428.4	1.28
950	483.3	0.36	1750	476.6	0.67	3000	535.5	1.02
K306/C303			K307/C303					
950	547.7	0.32	1750	540.1	0.59	3000	585.5	0.93
950	619.3	0.28	1750	610.7	0.52	3000	667.6	0.82
950	705.3	0.25	1750	695.4	0.46	3000	710.4	0.77
						K308/C305		
950	794.8	0.22	1750	783.7	0.41	3000	799.7	0.68
950	902.2	0.19	1750	889.6	0.36	3000	899.6	0.61
950	963.0	0.18	1750	949.6	0.34	3000	1014	0.54
950	1085	0.16	1750	1070	0.30	3000	1125	0.49
950	1235	0.14	1750	1218	0.26	3000	1289	0.42
950	1400	0.12	1750	1380	0.23	3000	1417	0.39
950	1582		1750	1560	0.20	3000	1681	0.33
950	1704		1750	1680	0.19	3000	1867	0.29
950	1994		1750	1966	0.16	3000	2138	0.26
950	2263		1750	2231	0.14	3000	2349	0.23
950	2475		1750	2459	0.13	3000	2509	0.22
950	2798		1750	2780		3000	2977	0.18
950	3013		1750	2994		3000	3305	0.17
950	3526		1750	3504		3000	3786	0.14
950	4001		1750	3975		3000	4159	0.13
950	4406		1750	4378		3000	4689	
950	4817		1750	4787		3000	5012	
950	5267		1750	5233		3000	5827	
950	5819		1750	5860		3000	6678	
950	6362		1750	6408		3000	7137	
950	6956		1750	7005		3000	8298	
						3000	9333	
						3000	10197	
						3000	11178	
						3000	12150	

K.../C... Combi–type transmission capacity

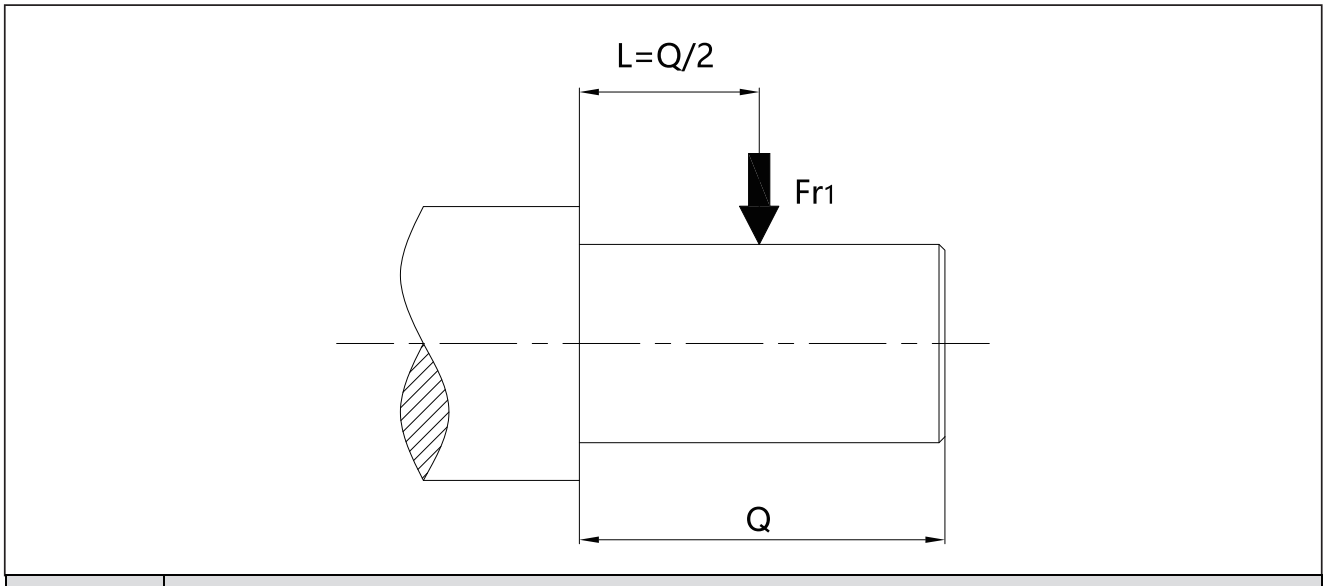
K.../C...(i_N=112–14000)

Nominal Input Speed	Nominal Output Speed	Nominal Ratio Code	Nominal Ratio	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power
n_{1N} (r/min)	n_{2N} (r/min)	Code	i_N	T_{2N} (N • m)	iex	P_{1N} (kW)	T_{2N} (N • m)	iex	P_{1N} (kW)	T_{2N} (N • m)	iex	P_{1N} (kW)
				K309/C205			K310/C207			K312/C208		
1740	15.5	D11	112	5000	116.0	7.9	9000	112.6	14.6	14500	115.9	22.8
	13.9	D13	125	5000	123.6	7.4	9000	128.8	12.7	14500	131.0	20.2
	12.4	D14	140	5000	138.2	6.6	9000	145.0	11.3	14500	142.4	18.6
							K310/C307					
	10.9	D16	160	5000	153.6	5.93	9000	157.5	10.4	14500	160.0	16.5
	9.7	D18	180	5000	192.0	4.74	9000	181.3	9.0	14500	175.1	15.1
	8.70	D20	200	5000	209.9	4.34	9000	192.5	8.5	14500	202.9	13.0
	7.77	D22	224	5000	239.4	3.81	9000	221.3	7.4	14500	216.7	12.2
							K310/C207			K312/C207		
	6.96	D25	250	5000	250.1	3.64	9000	246.3	6.7	14500	247.0	10.7
	6.21	D28	280	5000	275.3	3.31	9000	280.5	5.85	14500	281.3	9.4
	5.52	D32	315	5000	312.6	2.91	9000	310.8	5.28	14500	311.7	8.5
	4.90	D36	355	5000	333.3	2.73	9000	355.4	4.61	14500	356.4	7.4
	4.35	D40	400	5000	372.6	2.44	9000	400.2	4.10	14500	401.4	6.6
							K310/C307			K312/C307		
	3.87	D45	450	5000	414.0	2.20	9000	434.7	3.77	14500	436.0	6.1
	3.48	D50	500	5000	517.5	1.76	9000	500.3	3.28	14500	501.7	5.27
	3.11	D56	560	5000	565.8	1.61	9000	531.3	3.09	14500	532.8	4.96
	2.76	D63	630	5000	645.2	1.41	9000	610.7	2.69	14500	612.4	4.31
	2.45	D71	710	5000	686.6	1.33	9000	714.2	2.30	14500	716.2	3.69
				K309/C305								
	2.18	D80	800	5000	772.8	1.18	9000	800.4	2.05	14500	802.7	3.29
	1.93	D90	900	5000	869.4	1.05	9000	914.3	1.79	14500	916.9	2.88
	1.74	E10	1000	5000	979.8	0.93	9000	976.4	1.68	14500	979.2	2.70
	1.55	E11	1120	5000	1087	0.84	9000	1118	1.47	14500	1121	2.36
	1.39	E13	1250	5000	1245	0.73	9000	1273	1.29	14500	1277	2.07
	1.24	E14	1400	5000	1370	0.67	9000	1311	1.25	14500	1315	2.01
	1.09	E16	1600	5000	1625	0.56	9000	1504	1.09	14500	1509	1.75
	0.97	E18	1800	5000	1804	0.50	9000	1708	0.96	14500	1713	1.54
	0.87	E20	2000	5000	2067	0.44	9000	1911	0.86	14500	1917	1.38
	0.78	E22	2240	5000	2270	0.40	9000	2129	0.77	14500	2135	1.24
	0.70	E25	2500	5000	2426	0.38	9000	2428	0.68	14500	2379	1.11
	0.62	E28	2800	5000	2878	0.32	9000	2786	0.59	14500	2729	0.97
	0.55	E32	3150	5000	3196	0.29	9000	3163	0.52	14500	3099	0.85
	0.49	E36	3550	5000	3660	0.25	9000	3540	0.46	14500	3468	0.76
	0.44	E40	4000	5000	4020	0.23	9000	3943	0.42	14500	3862	0.68
	0.39	E45	4500	5000	4534	0.20	9000	4332	0.38	14500	4244	0.62
	0.35	E50	5000	5000	4845	0.19	9000	4920	0.33	14500	4820	0.55
	0.31	E56	5600	5000	5633	0.16	9000	6122	0.27	14500	5997	0.44
	0.28	E63	6300	5000	6411	0.14	9000	8775	0.19	14500	9009	0.29
	0.25	E71	7100	5000	6852	0.13	9000	6637	0.25	14500	6815	0.39
	0.22	E80	8000	5000	7966		9000	8258	0.20	14500	8478	0.31
	0.19	E90	9000	5000	8960		9000	8775	0.19	14500	9009	0.29
	0.17	F10	10000	5000	9789		9000	10146	0.16	14500	10416	0.25
	0.16	F11	11200	5000	10731		9000	10732	0.15	14500	11018	0.24
	0.14	F13	12500	5000	11664		9000	12068	0.14	14500	12390	0.21
	0.12	F14	14000				9000	12835		14500	13178	0.20

Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power	Rated Output Torque	Exact Ratio	Rated Intput Power
T_{2N} (N • m)	iex	P_{1N} (kW)	T_{2N} (N • m)	iex	P_{1N} (kW)	T_{2N} (N • m)	iex	P_{1N} (kW)
K315/C210			K316/C210			K318/C210		
20000	115.8	31.5	38000	107.1	64.6	58000	114.0	92.7
20000	129.6	28.1	38000	119.9	57.7	58000	127.6	82.8
20000	143.4	25.4	38000	132.7	52.2	58000	141.2	74.8
20000	167.5	21.8	38000	155.0	44.7	58000	165.0	64.0
20000	184.9	19.7	38000	171.1	40.5	58000	182.2	58.0
20000	195.6	18.6	38000	181.0	38.2	58000	192.7	54.8
20000	222.4	16.4	38000	205.8	33.6	58000	219.1	48.2
K315/C209			K316/C209			K318/C209		
20000	249.9	14.6	38000	247.8	27.9	58000	252.7	41.8
20000	277.9	13.1	38000	275.5	25.1	58000	281.0	37.6
20000	315.4	11.6	38000	312.7	22.1	58000	319.0	33.1
20000	357.5	10.2	38000	354.5	19.5	58000	361.6	29.2
20000	403.6	9.0	38000	400.1	17.3	58000	408.1	25.9
20000	428.3	8.5	38000	424.7	16.3	58000	433.2	24.4
20000	492.1	7.4	38000	487.9	14.2	58000	497.6	21.2
20000	545.2	6.7	38000	540.5	12.8	58000	551.3	19.2
20000	619.5	5.88	38000	614.3	11.3	58000	626.5	16.9
20000	693.8	5.25	38000	688.0	10.1	58000	701.7	15.1
20000	793.0	4.60	38000	786.2	8.8	58000	801.9	13.2
20000	846.1	4.31	38000	838.9	8.3	58000	855.6	12.4
K315/C309			K316/C309			K318/C309		
20000	987.7	3.69	38000	979.3	7.1	58000	998.8	10.6
20000	1143	3.19	38000	1134	6.1	58000	1156	9.1
20000	1246	2.92	38000	1236	5.60	58000	1260	8.4
20000	1402	2.60	38000	1390	4.98	58000	1418	7.5
20000	1536	2.37	38000	1523	4.54	58000	1554	6.8
20000	1774	2.05	38000	1759	3.94	58000	1794	5.89
20000	1894	1.92	38000	1878	3.69	58000	1915	5.52
20000	2244	1.62	38000	2225	3.11	58000	2270	4.66
20000	2439	1.49	38000	2384	2.90	58000	2388	4.43
20000	2673	1.36	38000	2617	2.65	58000	2617	4.04
20000	3086	1.18	38000	3026	2.29	58000	3021	3.50
20000	3296	1.11	38000	3237	2.14	58000	3226	3.28
20000	3905	0.93	38000	3842	1.80	58000	3823	2.76
20000	4257	0.86	38000	4194	1.65	58000	4167	2.54
20000	4792	0.76	38000	4730	1.46	58000	4691	2.25
20000	5248	0.69	38000	5189	1.33	58000	5138	2.06
20000	6039	0.60	38000	5998	1.15	58000	5735	1.84
20000	6800	0.54	38000	6753	1.03	58000	6457	1.64
20000	7446	0.49	38000	7395	0.94	58000	7072	1.49
20000	8609	0.42	38000	8550	0.81	58000	8176	1.29
20000	9177	0.40	38000	9114	0.76	58000	8715	1.21
20000	10602	0.34	38000	10529	0.66	58000	10068	1.05
20000	12052	0.30	38000	11970	0.58	58000	11446	0.92
20000	13390	0.27	38000	13298	0.52	58000	12716	0.83

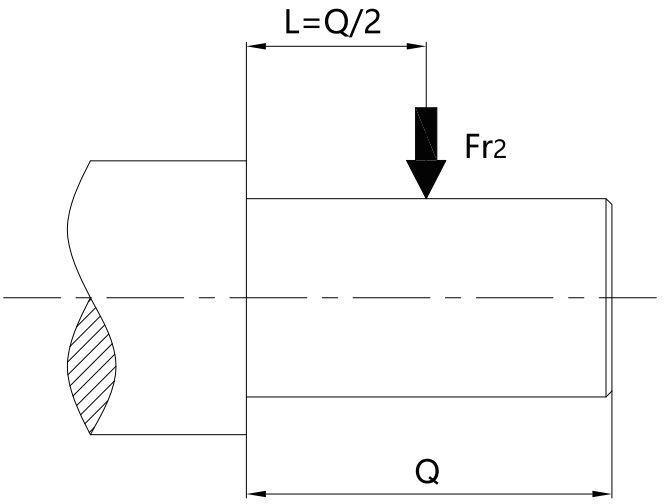
5 Permissble Radial Force

5.1 Radial force on input shaft (Fr1) (N)



	Fr1 (N)											
	K303	K304	K305	K306	K307	K308	K309	K310	K312	K315	K316	K318
AE2	803	803	803	803	803	803	/	/	/	/	/	/
AE3	/	1504	1504	1504	1504	1504	1504	1504	/	/	/	/
AE4	/	/	/	/	2188	2188	2188	2188	2188	/	/	/
AE5	/	/	/	/	/	4207	4207	4207	4207	4207	4207	4207
AE6	/	/	/	/	/	/	5664	5664	5664	5664	5664	5664
AE7	/	/	/	/	/	/	/	/	9957	9957	9957	9957
AE8	/	/	/	/	/	/	/	/	12546	12546	12546	12546

5.2 Radial force on output shaft (Fr2) (N)

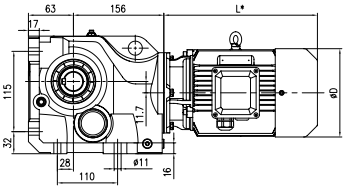


n_{2N} (r/min)	Fr2 (N)											
	K303	K304	K305	K306	K307	K308	K309	K310	K312	K315	K316	K318
315～425	1466	2430	4330	7715	/	/	/	/	/	/	/	/
280～315	1600	2650	4720	8410	/	/	/	/	/	/	/	/
225～280	1750	2890	5150	9165	/	/	/	/	/	/	/	/
160～225	1899	3150	5610	9990	11135	12150	14220	22140	29250	/	/	/
140～160	2070	3240	5791	10350	12510	12780	14760	23220	29700	30400	52180	58530
125～140	2250	3510	6105	10620	12960	13410	14580	24300	30510	31920	54790	61450
112～125	2340	3348	6088	11070	13590	13320	14470	25200	31860	33520	57500	64530
90～112	2430	3510	6001	10260	13500	13770	15300	19710	28620	35190	60400	67750
80～90	2610	3807	6139	9900	14490	14670	16020	21240	30240	36950	63420	71140
71～80	2799	3960	6204	9720	14130	15120	17190	23490	31500	38800	66600	74700
63～71	2880	4239	6419	9720	13860	16110	18810	26010	34200	42300	69750	76770
56～63	2997	4500	6490	9360	13860	16200	19800	28800	36900	46800	73500	78120
50～56	3150	4770	6650	9270	13860	16650	20970	29700	38700	48600	79740	81180
45～50	3285	5040	6835	9270	13860	17280	22050	31500	41340	51300	81900	85050
35.5～45	3375	5328	7028	9270	13860	19260	23130	33300	44460	54000	89730	92700
31.5～35.5	3960	5328	7028	9270	13860	20520	25470	36450	48600	60300	96660	101430
28～31.5	4194	5328	7028	9270	13860	21150	27900	37980	52200	65250	105300	113400
25～28	4410	5328	7028	9270	13860	22500	29070	39960	53910	67410	108000	113490
22.4～25	4662	5328	7028	9270	13860	23580	30420	41220	57600	71100	114300	123300
20～22.4	4968	5328	7028	9270	13860	24570	32040	43200	60930	75780	126000	130500
18～20	5076	5328	7028	9270	13860	24570	33390	45450	63000	79200	126090	132300
16～18	5076	5328	7028	9270	13860	24570	34920	47700	66150	82710	132480	143100
≤16	5076	5328	7028	9270	13860	24570	36000	51300	71280	88200	135000	152910

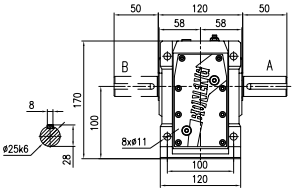
6 Dimensions

K303 Dimensions

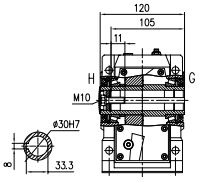
Horizontal foot–mounted



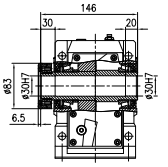
Horizontal foot–mounted (H)
Weight: 12.7kg (Without motor and oil)



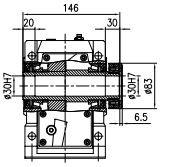
K303HA Unidirectional output shaft
K303HB Unidirectional output shaft
K303HC Bidirectional output shaft



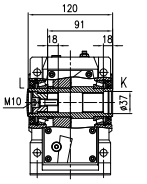
K303HG Hollow shaft with parallel key
K303HH Hollow shaft with parallel key



K303HI Hollow shaft with shrink disk

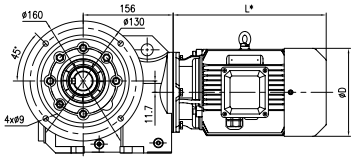


K303HJ Hollow shaft with shrink disk

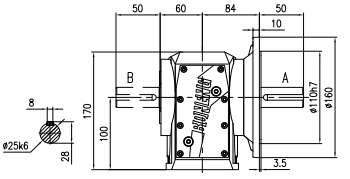


K303HK Hollow shaft with involute spline
K303HL Hollow shaft with involute spline

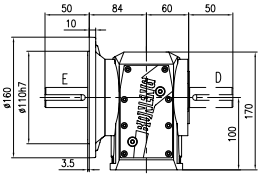
Flange–mounted



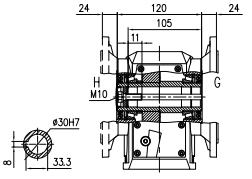
Flange–mounted (F)
Weight:13.5kg (Without motor and oil)



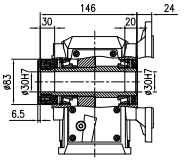
K303FA Unidirectional output shaft
K303FB Unidirectional output shaft
K303FC Bidirectional output shaft



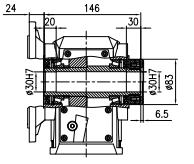
K303FD Unidirectional output shaft
K303FE Unidirectional output shaft
K303FF Bidirectional output shaft



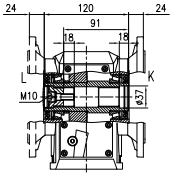
K303FG Hollow shaft with parallel key
K303FH Hollow shaft with parallel key



K303FI Hollow shaft with shrink disk

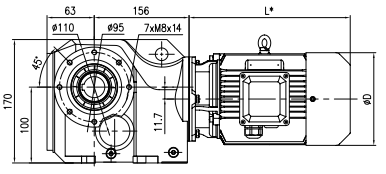


K303FJ Hollow shaft with shrink disk

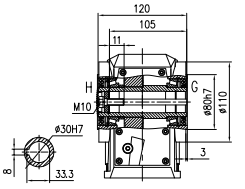


K303FK Hollow shaft with involute spline
K303FL Hollow shaft with involute spline

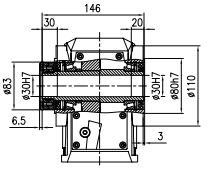
Short flange–mounted



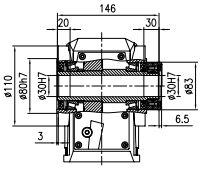
Short flange–mounted (S)
Weight:12kg (Without motor and oil)



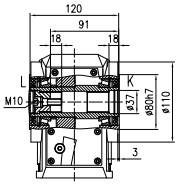
K303SG Hollow shaft with parallel key
K303SH Hollow shaft with parallel key



K303SI Hollow shaft with shrink disk

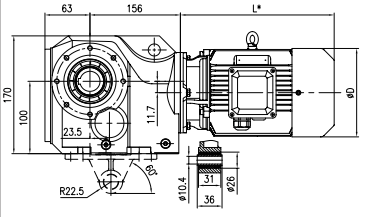


K303SJ Hollow shaft with shrink disk

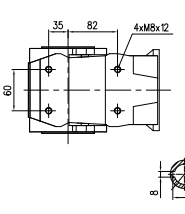


K303SK Hollow shaft with involute spline
K303SL Hollow shaft with involute spline

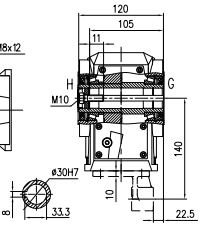
Torque arm–mounted / Torque arm–mounted with accessory



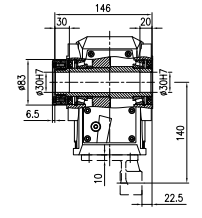
Torque arm–mounted with accessory (T)
Weight:26kg
(Without motor and oil)



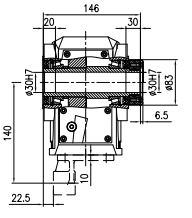
Torque arm–mounted without accessory (A)
Weight:16kg
(Without motor and oil)



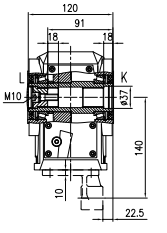
K303AG Hollow shaft with parallel key
K303AH Hollow shaft with parallel key
K303TG Hollow shaft with parallel key
K303TH Hollow shaft with parallel key



K303AI Hollow shaft with shrink disk
K303TI Hollow shaft with shrink disk



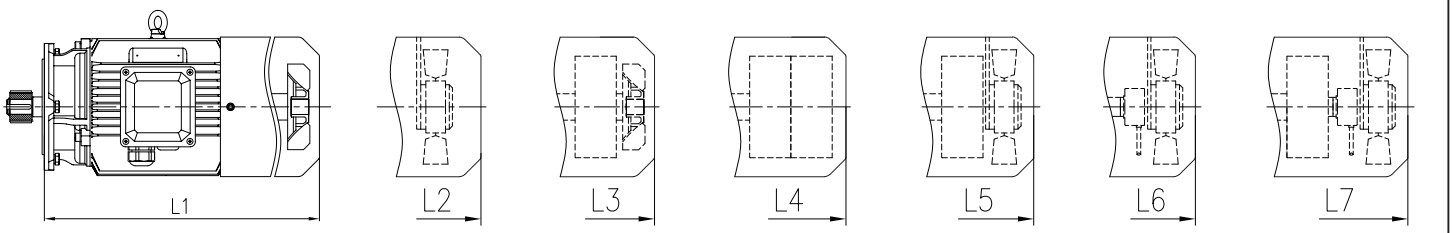
K303AJ Hollow shaft with shrink disk
K303TJ Hollow shaft with shrink disk



K303AK Hollow shaft with involute spline
K303AL Hollow shaft with involute spline
K303TK Hollow shaft with involute spline
K303TL Hollow shaft with involute spline

Note: Involute spline size DIN5480: m1.25 × Z22 × α30 × D30 × 9H

Corresponding motor dimension table for K303



L1	L2	L3	L4	L5	L6	L7
Self-fan cooling	Forced-fan cooling	Brake +Self-fan cooling	Double brake	Brake +Driven fan	Encorder +Forced-fan cooling	Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K303

Directly connected motor dimension table

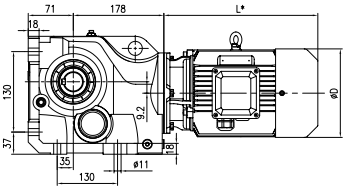
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
0.12	4-100	206	261	241	296	*	*	124
0.18	4-100	206	261	241	296	*	*	124
0.25	4-100	223	273	263	318	318	358	139
0.37	4-100	223	273	263	318	318	358	139
0.55	4-71	299	344	359	404	404	449	162
0.75	4-56	299	344	359	404	404	449	162
1.1	4-35.5	347	392	402	452	452	497	176
1.5	4-28	347	392	402	452	452	497	176
2.2	4-16	394	449	469	529	529	574	202
3	4-11.2	394	449	469	529	529	574	202

Directly connected motor weight table / kg

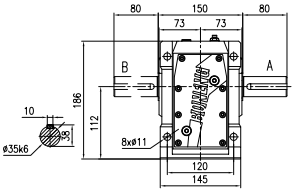
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
0.12	4-100	7	7.5	8.5	9	/	/	
0.18	4-100	8	8.5	9.5	10	/	/	
0.25	4-100	9	10	10.5	11.5	10.5	12.5	
0.37	4-100	10	11	11.5	12.5	11.5	13.5	
0.55	4-71	15	16	19	20	16.5	21	
0.75	4-56	16	17	20	21	17.5	22	
1.1	4-35.5	21	22	25	26	22.5	27	
1.5	4-28	23	24	27	28	24.5	29	
2.2	4-16	36	37	44	45	38	45	
3	4-11.2	36	37	44	45	38	45	

K304 Dimensions

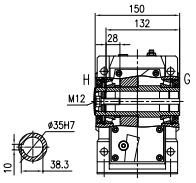
Horizontal foot–mounted



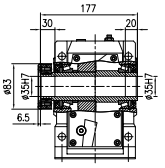
Horizontal foot–mounted (H)
Weight: 19kg (Without motor and oil)



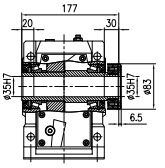
K304HA Unidirectional output shaft
K304HB Unidirectional output shaft
K304HC Bidirectional output shaft



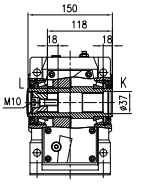
K304HG Hollow shaft with parallel key
K304HH Hollow shaft with parallel key



K304HI Hollow shaft with shrink disk

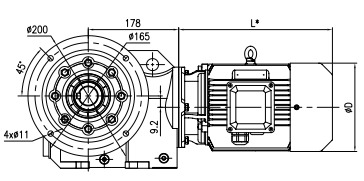


K304HJ Hollow shaft with shrink disk

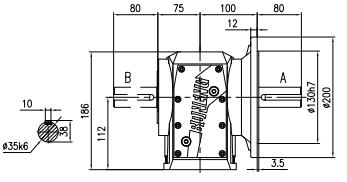


K304HK Hollow shaft with involute spline
K304HL Hollow shaft with involute spline

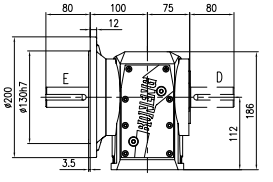
Flange–mounted



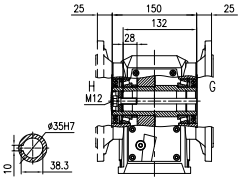
Flange–mounted (F)
Weight: 23kg (Without motor and oil)



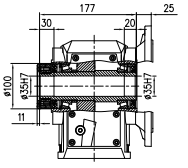
K304FA Unidirectional output shaft
K304FB Unidirectional output shaft
K304FC Bidirectional output shaft



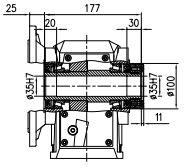
K304FD Unidirectional output shaft
K304FE Unidirectional output shaft
K304FF Bidirectional output shaft



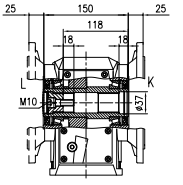
K304FG Hollow shaft with parallel key
K304FH Hollow shaft with parallel key



K304FI Hollow shaft with shrink disk

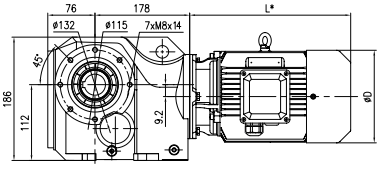


K304FJ Hollow shaft with shrink disk

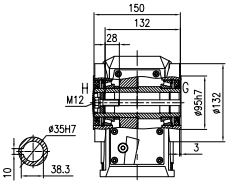


K304FK Hollow shaft with involute spline
K304FL Hollow shaft with involute spline

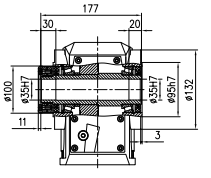
Short flange–mounted



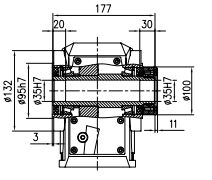
Short flange–mounted (S)
Weight: 20kg (Without motor and oil)



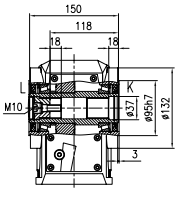
K304SG Hollow shaft with parallel key
K304SH Hollow shaft with parallel key



K304SI Hollow shaft with shrink disk

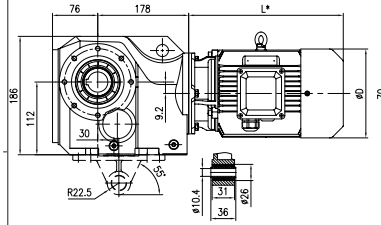


K304SJ Hollow shaft with shrink disk

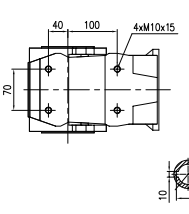


K304SK Hollow shaft with involute spline
K304SL Hollow shaft with involute spline

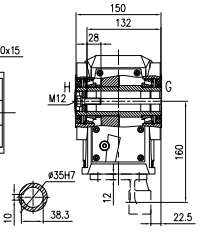
Torque arm–mounted / Torque arm–mounted with accessory



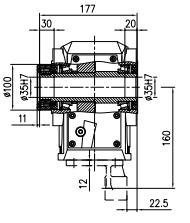
Torque arm–mounted with accessory (T)
Weight: 22kg
(Without motor and oil)



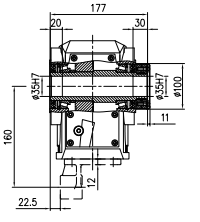
Torque arm–mounted without accessory (A)
Weight: 20kg
(Without motor and oil)



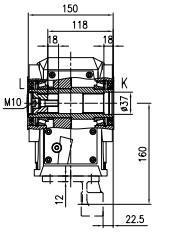
K304AG Hollow shaft with parallel key
K304AH Hollow shaft with parallel key
K304TG Hollow shaft with parallel key
K304TH Hollow shaft with parallel key



K304AI Hollow shaft with shrink disk
K304TI Hollow shaft with shrink disk



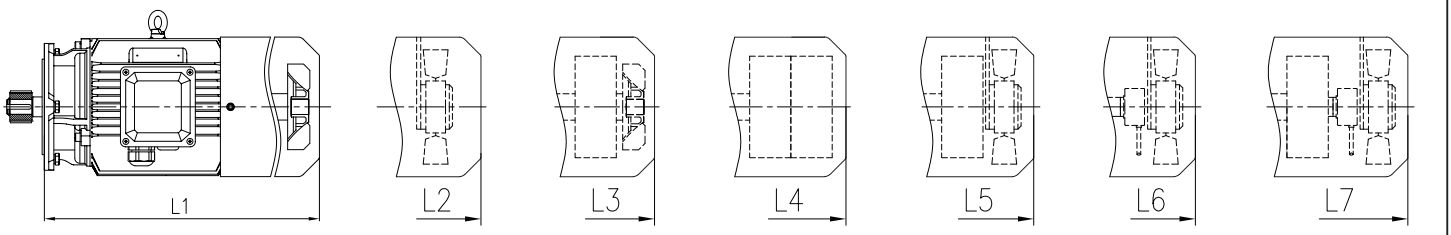
K304AJ Hollow shaft with shrink disk
K304TJ Hollow shaft with shrink disk



K304AK Hollow shaft with involute spline
K304AL Hollow shaft with involute spline
K304TK Hollow shaft with involute spline
K304TL Hollow shaft with involute spline

Note: Involute spline size DIN5480: m2 × Z16 × α30 × D35 × 9H

Corresponding motor dimension table for K304



Self-fan cooling | Forced-fan cooling | Brake +Self-fan cooling | Double brake | Brake +Driven fan | Encorder +Forced-fan cooling | Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K304

Directly connected motor dimension table

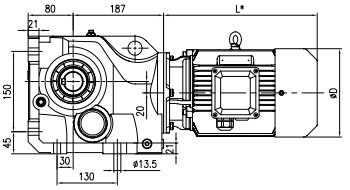
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
0.12	4-125	207	262	242	297	*	*	124
0.18	4-125	207	262	242	297	*	*	124
0.25	4-125	224	274	264	319	319	359	139
0.37	4-125	224	274	264	319	319	359	139
0.55	4-125	300	345	360	405	405	450	162
0.75	4-112	300	345	360	405	405	450	162
1.1	4-71	348	393	403	453	453	498	176
1.5	4-50	348	393	403	453	453	498	176
2.2	4-35.5	395	450	470	530	530	575	202
3	4-28	395	450	470	530	530	575	202
4	4-20	459	519	534	599	599	639	220

Directly connected motor weight table / kg

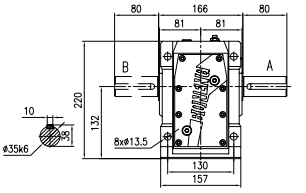
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
0.12	4-125	7	7.5	8.5	9	/	/	
0.18	4-125	8	8.5	9.5	10	/	/	
0.25	4-125	9	10	10.5	11.5	10.5	12.5	
0.37	4-125	10	11	11.5	12.5	11.5	13.5	
0.55	4-125	15	16	19	20	16.5	21	
0.75	4-112	16	17	20	21	17.5	22	
1.1	4-71	21	22	25	26	22.5	27	
1.5	4-50	23	24	27	28	24.5	29	
2.2	4-35.5	36	37	44	45	38	45	
3	4-28	36	37	44	45	38	45	
4	4-20	56	57	64	65	58	66	

K305 Dimensions

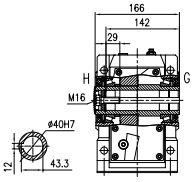
Horizontal foot–mounted



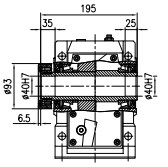
Horizontal foot–mounted (H)
Weight: 26kg (Without motor and oil)



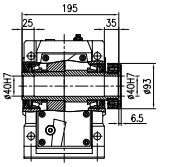
K305HA Unidirectional output shaft
K305HB Unidirectional output shaft
K305HC Bidirectional output shaft



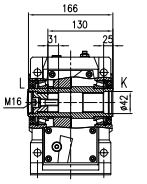
K305HG Hollow shaft with parallel key
K305HH Hollow shaft with parallel key



K305HI Hollow shaft with shrink disk

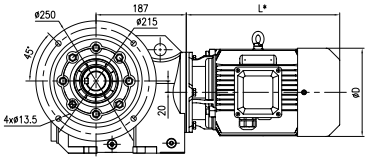


K305HJ Hollow shaft with shrink disk

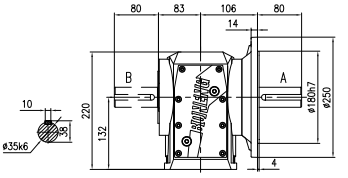


K305HK Hollow shaft with involute spline
K305HL Hollow shaft with involute spline

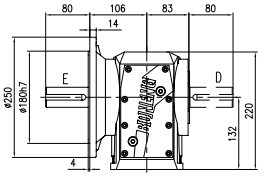
Flange–mounted



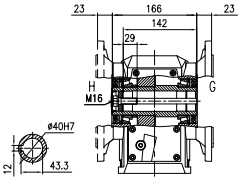
Flange–mounted (F)
Weight: 32kg (Without motor and oil)



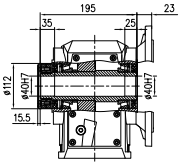
K305FA Unidirectional output shaft
K305FB Unidirectional output shaft
K305FC Bidirectional output shaft



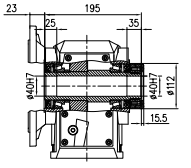
K305FD Unidirectional output shaft
K305FE Unidirectional output shaft
K305FF Bidirectional output shaft



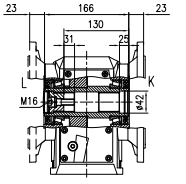
K305FG Hollow shaft with parallel key
K305FH Hollow shaft with parallel key



K305FI Hollow shaft with shrink disk

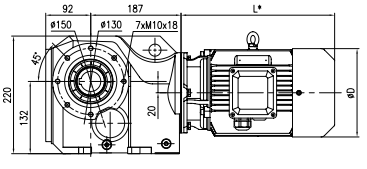


K305FJ Hollow shaft with shrink disk

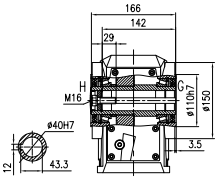


K305FK Hollow shaft with involute spline
K305FL Hollow shaft with involute spline

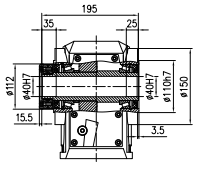
Short flange–mounted



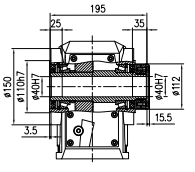
Short flange–mounted (S)
Weight: 28kg (Without motor and oil)



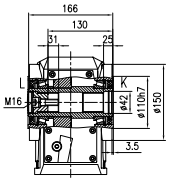
K305SG Hollow shaft with parallel key
K305SH Hollow shaft with parallel key



K305SI Hollow shaft with shrink disk



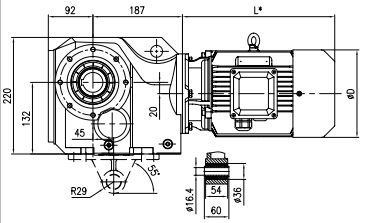
K305SJ Hollow shaft with shrink disk



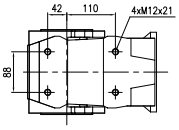
K305SK Hollow shaft with involute spline
K305SL Hollow shaft with involute spline

Torque arm–mounted

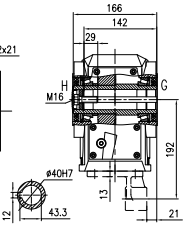
Torque arm–mounted with accessory



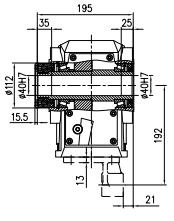
Torque arm–mounted with accessory (T)
Weight: 31kg
(Without motor and oil)



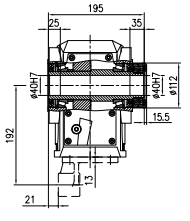
Torque arm–mounted without accessory (A)
Weight: 28kg
(Without motor and oil)



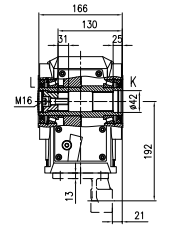
K305AG Hollow shaft with parallel key
K305AH Hollow shaft with parallel key
K305TG Hollow shaft with parallel key
K305TH Hollow shaft with parallel key



K305AI Hollow shaft with shrink disk
K305TI Hollow shaft with shrink disk



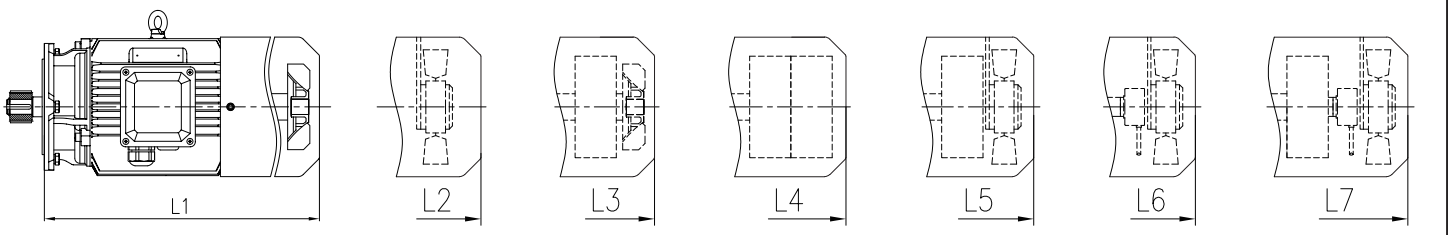
K305AJ Hollow shaft with shrink disk
K305TJ Hollow shaft with shrink disk



K305AK Hollow shaft with involute spline
K305AL Hollow shaft with involute spline
K305TK Hollow shaft with involute spline
K305TL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m2 × Z16 × α30 × D35 × 9H

Corresponding motor dimension table for K305



Self-fan cooling | Forced-fan cooling | Brake +Self-fan cooling | Double brake | Brake +Driven fan | Encorder +Forced-fan cooling | Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K305

Directly connected motor dimension table

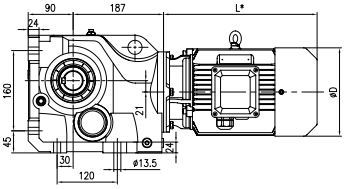
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
0.25	4-112	224	274	264	319	319	359	139
0.37	4-112	224	274	264	319	319	359	139
0.55	4-112	300	345	360	405	405	450	162
0.75	4-112	300	345	360	405	405	450	162
1.1	4-63	348	393	403	453	453	498	176
1.5	4-63	348	393	403	453	453	498	176
2.2	4-56	395	450	470	530	530	575	202
3	4-40	395	450	470	530	530	575	202
4	4-28	459	519	534	599	599	639	220

Directly connected motor weight table / kg

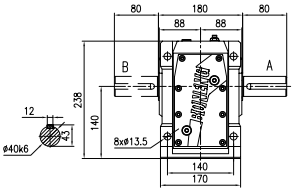
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
0.25	4-112	9	10	10.5	11.5	10.5	12.5	
0.37	4-112	10	11	11.5	12.5	11.5	13.5	
0.55	4-112	15	16	19	20	16.5	21	
0.75	4-112	16	17	20	21	17.5	22	
1.1	4-63	21	22	25	26	22.5	27	
1.5	4-63	23	24	27	28	24.5	29	
2.2	4-56	36	37	44	45	38	45	
3	4-40	36	37	44	45	38	45	
4	4-28	56	57	64	65	58	66	

K306 Dimensions

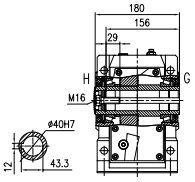
Horizontal foot–mounted



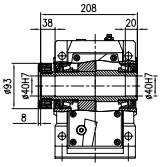
Horizontal foot–mounted (H)
Weight: 32kg (Without motor and oil)



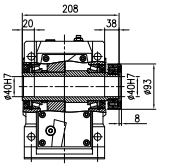
K306HA Unidirectional output shaft
K306HB Unidirectional output shaft
K306HC Bidirectional output shaft



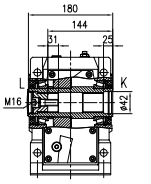
K306HG Hollow shaft with parallel key
K306HH Hollow shaft with parallel key



K306HI Hollow shaft with shrink disk

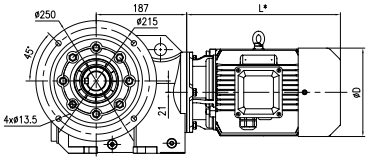


K306HJ Hollow shaft with shrink disk

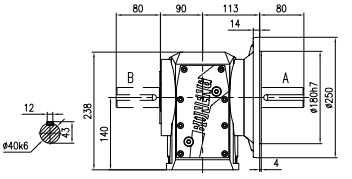


K306HK Hollow shaft with involute spline
K306HL Hollow shaft with involute spline

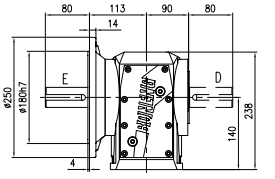
Flange–mounted



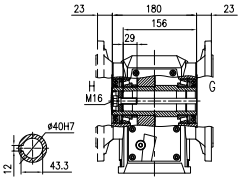
Flange–mounted (F)
Weight: 39kg (Without motor and oil)



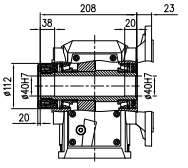
K306FA Unidirectional output shaft
K306FB Unidirectional output shaft
K306FC Bidirectional output shaft



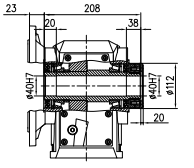
K306FD Unidirectional output shaft
K306FE Unidirectional output shaft
K306FF Bidirectional output shaft



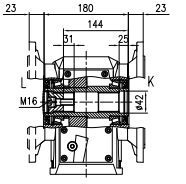
K306FG Hollow shaft with parallel key
K306FH Hollow shaft with parallel key



K306FI Hollow shaft with shrink disk

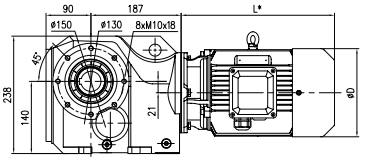


K306FJ Hollow shaft with shrink disk

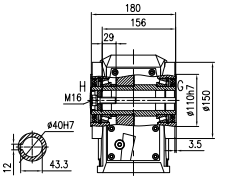


K306FK Hollow shaft with involute spline
K306FL Hollow shaft with involute spline

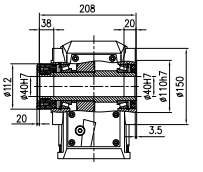
Short flange–mounted



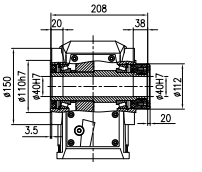
Short flange–mounted (S)
Weight: 34kg (Without motor and oil)



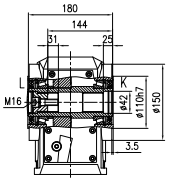
K306SG Hollow shaft with parallel key
K306SH Hollow shaft with parallel key



K306SI Hollow shaft with shrink disk

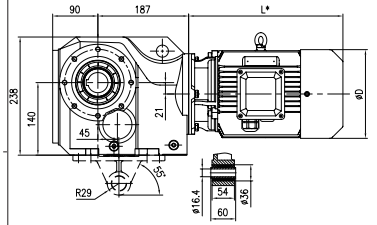


K306SJ Hollow shaft with shrink disk

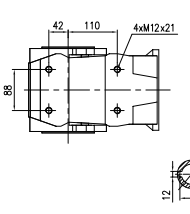


K306SK Hollow shaft with involute spline
K306SL Hollow shaft with involute spline

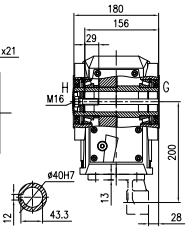
Torque arm–mounted / Torque arm–mounted with accessory



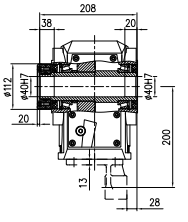
Torque arm–mounted with accessory (T)
Weight: 37kg
(Without motor and oil)



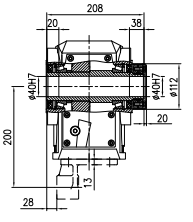
Torque arm–mounted without accessory (A)
Weight: 34kg
(Without motor and oil)



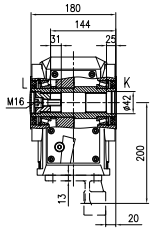
K306AG Hollow shaft with parallel key
K306AH Hollow shaft with parallel key
K306TG Hollow shaft with parallel key
K306TH Hollow shaft with parallel key



K306AI Hollow shaft with shrink disk
K306TI Hollow shaft with shrink disk



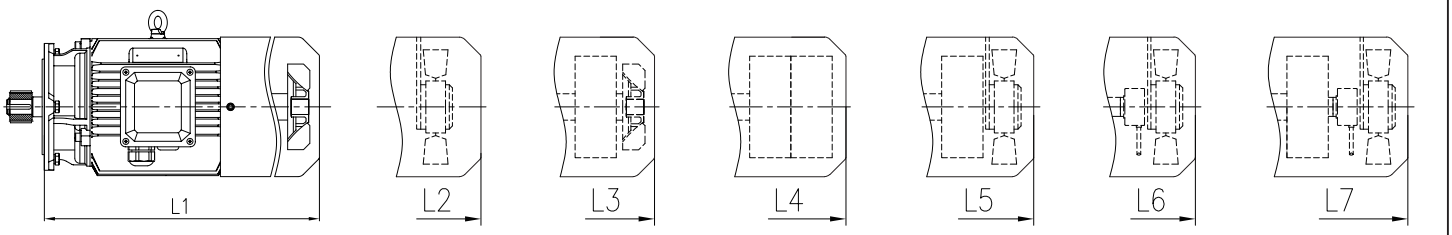
K306AJ Hollow shaft with shrink disk
K306TJ Hollow shaft with shrink disk



K306AK Hollow shaft with involute spline
K306AL Hollow shaft with involute spline
K306TK Hollow shaft with involute spline
K306TL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m2 × Z16 × α30 × D35 × 9H

Corresponding motor dimension table for K306



Self-fan cooling	Forced-fan cooling	Brake +Self-fan cooling	Double brake	Brake +Driven fan	Encorder +Forced-fan cooling	Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K306

Directly connected motor dimension table

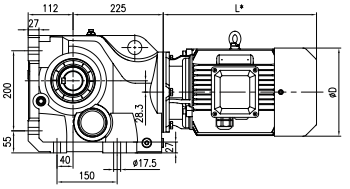
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
0.37	90-125	224	274	264	319	319	359	139
0.55	63-125	300	345	360	405	405	450	162
0.75	45-125	300	345	360	405	405	450	162
1.1	31.5-90	348	393	403	453	453	498	176
1.5	22.4-90	348	393	403	453	453	498	176
2.2	14-80	395	450	470	530	530	575	202
3	9-56	395	450	470	530	530	575	202
4	7.1-40	459	519	534	599	599	639	220
5.5	4-31.5	508	573	588	658	658	688	259
7.5	4-22.4	508	573	588	658	658	688	259

Directly connected motor weight table / kg

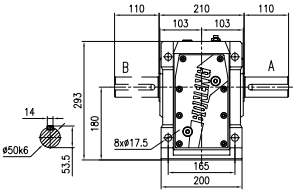
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
0.37	90-125	10	11	11.5	12.5	11.5	13.5	
0.55	63-125	15	16	19	20	16.5	21	
0.75	45-125	16	17	20	21	17.5	22	
1.1	31.5-90	21	22	25	26	22.5	27	
1.5	22.4-90	23	24	27	28	24.5	29	
2.2	14-80	36	37	44	45	38	45	
3	9-56	36	37	44	45	38	45	
4	7.1-40	56	57	64	65	58	66	
5.5	4-31.5	77	79	88	90	80	91	
7.5	4-22.4	88	90	99	101	91	102	

K307 Dimensions

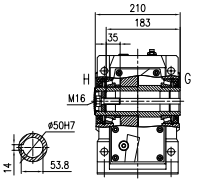
Horizontal foot–mounted



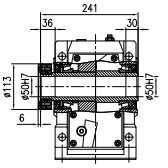
Horizontal foot–mounted (H)
Weight: 59kg (Without motor and oil)



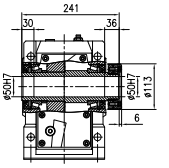
K307HA Unidirectional output shaft
K307HB Unidirectional output shaft
K307HC Bidirectional output shaft



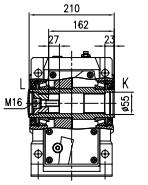
K307HG Hollow shaft with parallel key
K307HH Hollow shaft with parallel key



K307HI Hollow shaft with shrink disk

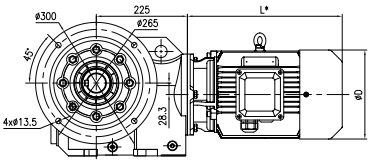


K307HJ Hollow shaft with shrink disk

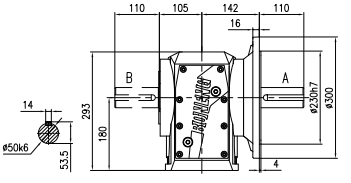


K307HK Hollow shaft with involute spline
K307HL Hollow shaft with involute spline

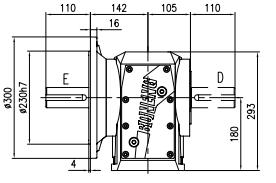
Flange–mounted



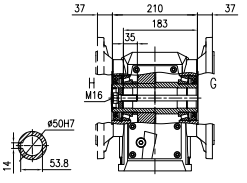
Flange–mounted (F)
Weight: 67kg (Without motor and oil)



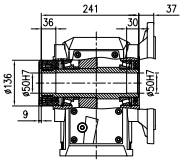
K307FA Unidirectional output shaft
K307FB Unidirectional output shaft
K307FC Bidirectional output shaft



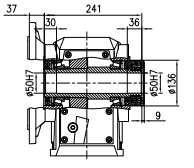
K307FD Unidirectional output shaft
K307FE Unidirectional output shaft
K307FF Bidirectional output shaft



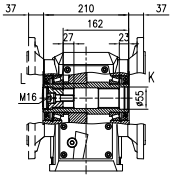
K307FG Hollow shaft with parallel key
K307FH Hollow shaft with parallel key



K307FI Hollow shaft with shrink disk

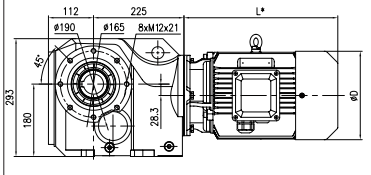


K307FJ Hollow shaft with shrink disk

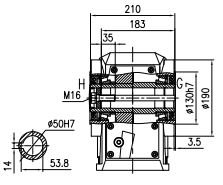


K307FK Hollow shaft with involute spline
K307FL Hollow shaft with involute spline

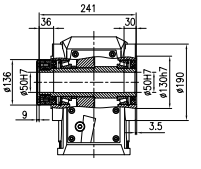
Short flange–mounted



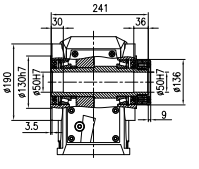
Short flange–mounted (S)
Weight: 60kg (Without motor and oil)



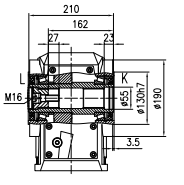
K307SG Hollow shaft with parallel key
K307SH Hollow shaft with parallel key



K307SI Hollow shaft with shrink disk



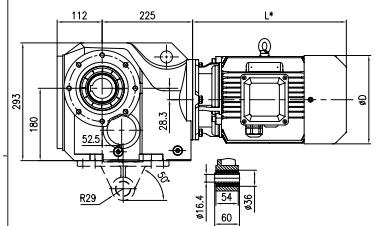
K307SJ Hollow shaft with shrink disk



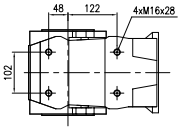
K307SK Hollow shaft with involute spline
K307SL Hollow shaft with involute spline

Torque arm–mounted

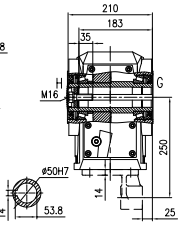
Torque arm–mounted with accessory



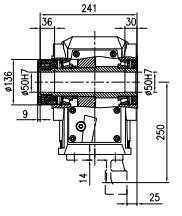
Torque arm–mounted with accessory (T)
Weight: 64kg
(Without motor and oil)



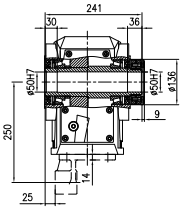
Torque arm–mounted without accessory (A)
Weight: 60kg
(Without motor and oil)



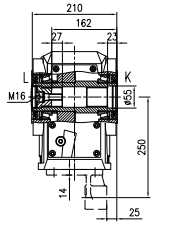
K307AG Hollow shaft with parallel key
K307AH Hollow shaft with parallel key
K307TG Hollow shaft with parallel key
K307TH Hollow shaft with parallel key



K307AI Hollow shaft with shrink disk
K307TI Hollow shaft with shrink disk



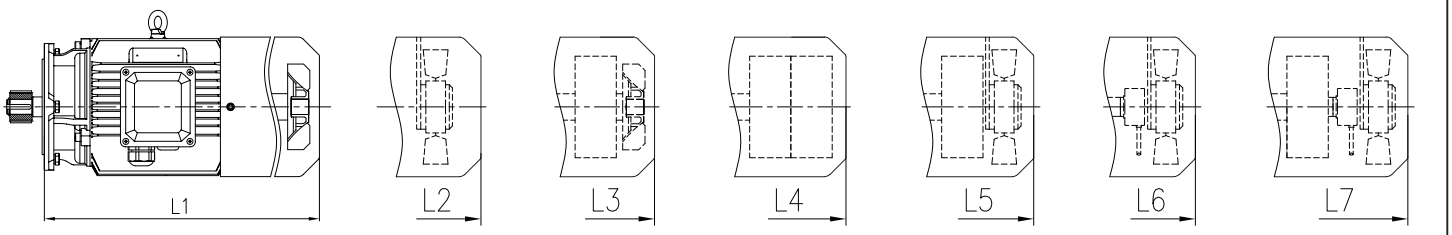
K307AJ Hollow shaft with shrink disk
K307TJ Hollow shaft with shrink disk



K307AK Hollow shaft with involute spline
K307AL Hollow shaft with involute spline
K307TK Hollow shaft with involute spline
K307TL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m2 × Z24 × α30 × D50 × 9H

Corresponding motor dimension table for K307



Self-fan cooling	Forced-fan cooling	Brake +Self-fan cooling	Double brake	Brake +Driven fan	Encorder +Forced-fan cooling	Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K307

Directly connected motor dimension table

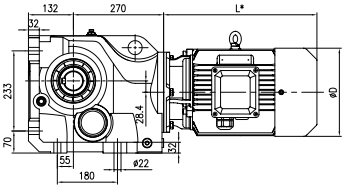
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
0.37	160-180	216	266	256	311	311	351	139
0.55	112-180	292	337	352	397	397	442	162
0.75	90-180	292	337	352	397	397	442	162
1.1	56-112	340	385	395	445	445	490	176
1.5	40-112	340	385	395	445	445	490	176
2.2	28-112	387	442	462	522	522	567	202
3	20-112	387	442	462	522	522	567	202
4	16-80	451	511	526	591	591	631	220
5.5	9-50	497	562	577	647	647	677	259
7.5	7.1-40	497	562	577	647	647	677	259
11	7.1-28	551	601	646	701	701	736	314
15	7.1-20	581	631	676	731	731	766	314

Directly connected motor weight table / kg

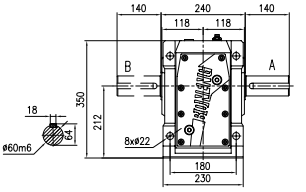
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
0.37	160-180	10	11	11.5	12.5	11.5	13.5	
0.55	112-180	15	16	19	20	16.5	21	
0.75	90-180	16	17	20	21	17.5	22	
1.1	56-112	21	22	25	26	22.5	27	
1.5	40-112	23	24	27	28	24.5	29	
2.2	28-112	36	37	44	45	38	45	
3	20-112	36	37	44	45	38	45	
4	16-80	56	57	64	65	58	66	
5.5	9-50	77	79	88	90	80	91	
7.5	7.1-40	88	90	99	101	91	102	
11	7.1-28	129	131	150	151	132	152	
15	7.1-20	161	163	182	183	164	184	

K308 Dimensions

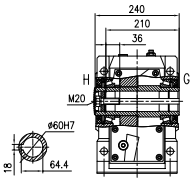
Horizontal foot–mounted



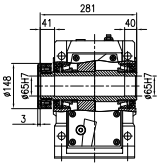
Horizontal foot–mounted (H)
Weight: 89kg (Without motor and oil)



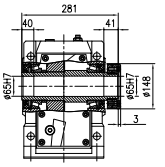
K308HA Unidirectional output shaft
K308HB Unidirectional output shaft
K308HC Bidirectional output shaft



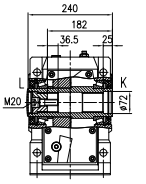
K308HG Hollow shaft with parallel key
K308HH Hollow shaft with parallel key



K308HI Hollow shaft with shrink disk

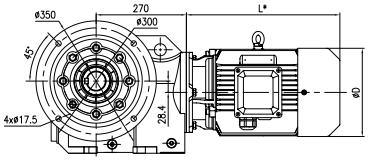


K308HJ Hollow shaft with shrink disk

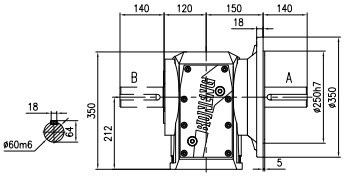


K308HK Hollow shaft with involute spline
K308HL Hollow shaft with involute spline

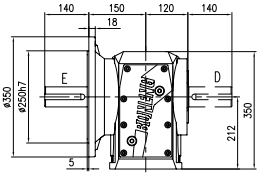
Flange–mounted



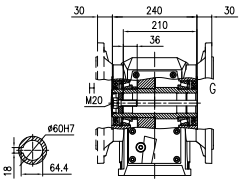
Flange–mounted (F)
Weight: 108kg (Without motor and oil)



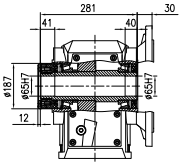
K308FA Unidirectional output shaft
K308FB Unidirectional output shaft
K308FC Bidirectional output shaft



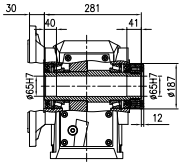
K308FD Unidirectional output shaft
K308FE Unidirectional output shaft
K308FF Bidirectional output shaft



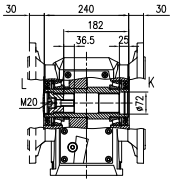
K308FG Hollow shaft with parallel key
K308FH Hollow shaft with parallel key



K308FI Hollow shaft with shrink disk

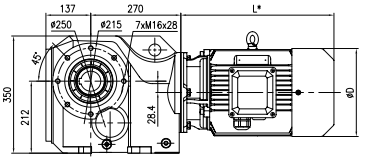


K308FJ Hollow shaft with shrink disk

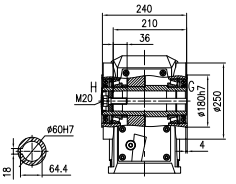


K308FK Hollow shaft with involute spline
K308FL Hollow shaft with involute spline

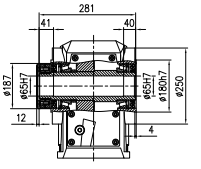
Short flange–mounted



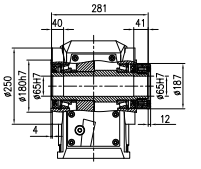
Short flange–mounted (S)
Weight: 97kg (Without motor and oil)



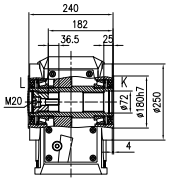
K308SG Hollow shaft with parallel key
K308SH Hollow shaft with parallel key



K308SI Hollow shaft with shrink disk

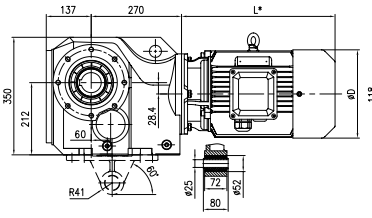


K308SJ Hollow shaft with shrink disk

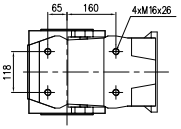


K308SK Hollow shaft with involute spline
K308SL Hollow shaft with involute spline

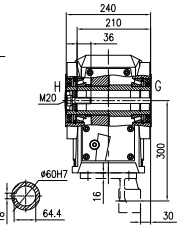
Torque arm–mounted / Torque arm–mounted with accessory



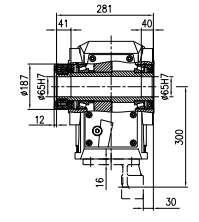
Torque arm–mounted with accessory (T)
Weight: 105kg
(Without motor and oil)



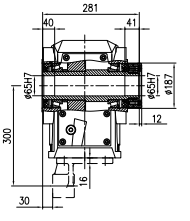
Torque arm–mounted without accessory (A)
Weight: 97kg
(Without motor and oil)



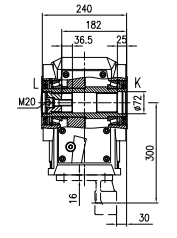
K308AG Hollow shaft with parallel key
K308AH Hollow shaft with parallel key
K308TG Hollow shaft with parallel key
K308TH Hollow shaft with parallel key



K308AI Hollow shaft with shrink disk
K308TI Hollow shaft with shrink disk



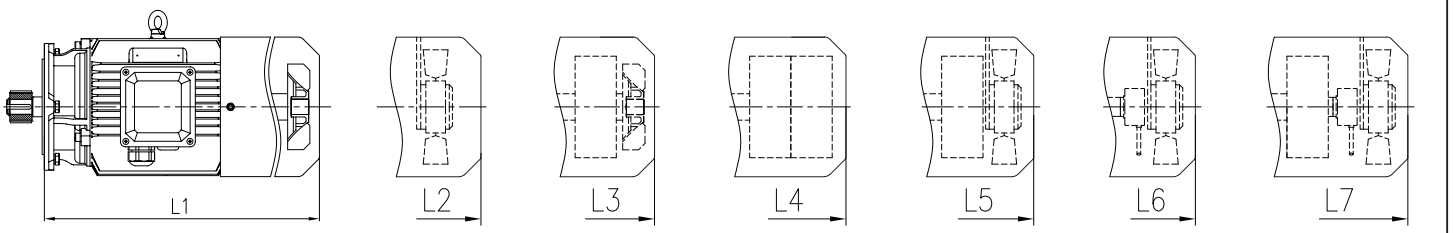
K308AJ Hollow shaft with shrink disk
K308TJ Hollow shaft with shrink disk



K308AK Hollow shaft with involute spline
K308AL Hollow shaft with involute spline
K308TK Hollow shaft with involute spline
K308TL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m2 × Z31 × α30 × D65 × 9H

Corresponding motor dimension table for K308



Self-fan cooling	Forced-fan cooling	Brake +Self-fan cooling	Double brake	Brake +Driven fan	Encorder +Forced-fan cooling	Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K308

Directly connected motor dimension table

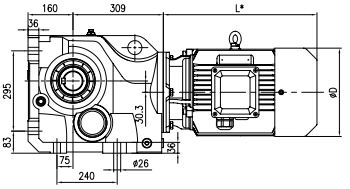
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
0.55	160-180	283	328	343	388	388	433	162
0.75	140-180	283	328	343	388	388	433	162
1.1	100-160	331	376	386	436	436	481	176
1.5	71-160	331	376	386	436	436	481	176
2.2	50-160	378	433	453	513	513	558	202
3	35.5-160	378	433	453	513	513	558	202
4	25-140	442	502	517	582	582	622	220
5.5	16-80	489	554	569	639	639	669	259
7.5	8-71	489	554	569	639	639	669	259
11	7.1-50	550	600	645	700	700	735	314
15	7.1-35.5	580	630	675	730	730	765	314
18.5	7.1-28	621	666	731	776	776	816	356
22	7.1-25	669	714	779	824	824	864	356

Directly connected motor weight table / kg

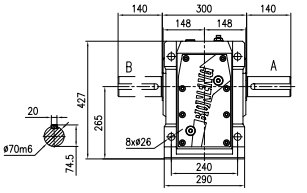
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
0.55	160-180	15	16	19	20	16.5	21	
0.75	140-180	16	17	20	21	17.5	22	
1.1	100-160	21	22	25	26	22.5	27	
1.5	71-160	23	24	27	28	24.5	29	
2.2	50-160	36	37	44	45	38	45	
3	35.5-160	36	37	44	45	38	45	
4	25-140	56	57	64	65	58	66	
5.5	16-80	77	79	88	90	80	91	
7.5	8-71	88	90	99	101	91	102	
11	7.1-50	129	131	150	151	132	152	
15	7.1-35.5	161	163	182	183	164	184	
18.5	7.1-28	200	202	232	233	203	235	
22	7.1-25	220	222	252	253	223	255	

K309 Dimensions

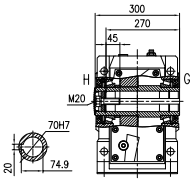
Horizontal foot–mounted



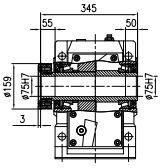
Horizontal foot–mounted (H)
Weight: 155kg (Without motor and oil)



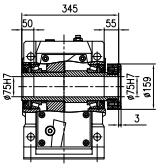
K309HA Unidirectional output shaft
K309HB Unidirectional output shaft
K309HC Bidirectional output shaft



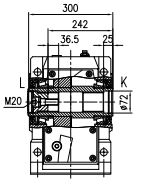
K309HG Hollow shaft with parallel key
K309HH Hollow shaft with parallel key



K309HI Hollow shaft with shrink disk

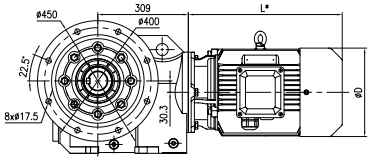


K309HJ Hollow shaft with shrink disk

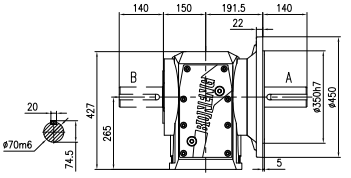


K309HK Hollow shaft with involute spline
K309HL Hollow shaft with involute spline

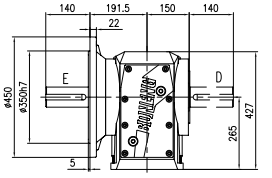
Flange–mounted



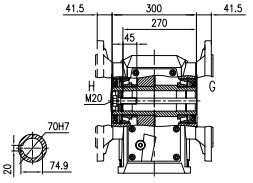
Flange–mounted (F)
Weight: 174kg (Without motor and oil)



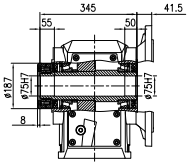
K309FA Unidirectional output shaft
K309FB Unidirectional output shaft
K309FC Bidirectional output shaft



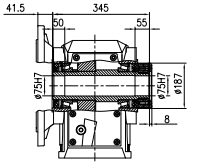
K309FD Unidirectional output shaft
K309FE Unidirectional output shaft
K309FF Bidirectional output shaft



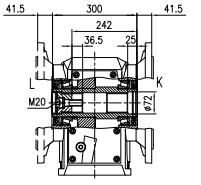
K309FG Hollow shaft with parallel key
K309FH Hollow shaft with parallel key



K309FI Hollow shaft with shrink disk

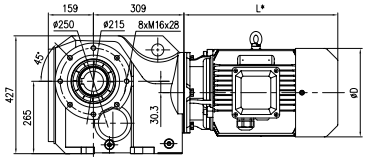


K309FJ Hollow shaft with shrink disk

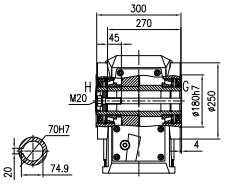


K309FK Hollow shaft with involute spline
K309FL Hollow shaft with involute spline

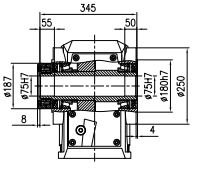
Short flange–mounted



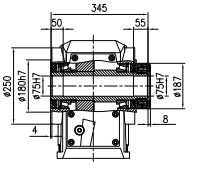
Short flange–mounted (S)
Weight: 154kg (Without motor and oil)



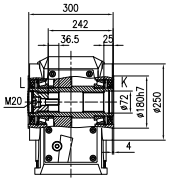
K309SG Hollow shaft with parallel key
K309SH Hollow shaft with parallel key



K309SI Hollow shaft with shrink disk

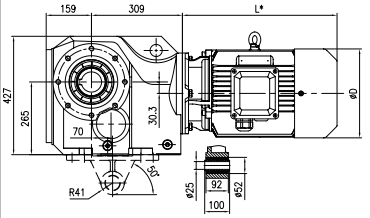


K309SJ Hollow shaft with shrink disk

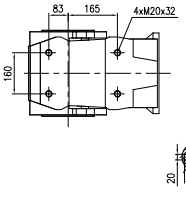


K309SK Hollow shaft with involute spline
K309SL Hollow shaft with involute spline

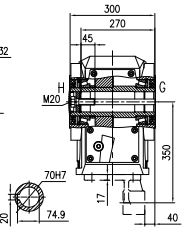
Torque arm–mounted / Torque arm–mounted with accessory



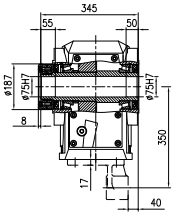
Torque arm–mounted with accessory (T)
Weight: 167kg
(Without motor and oil)



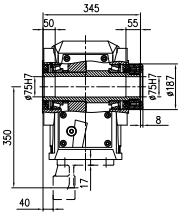
Torque arm–mounted without accessory (A)
Weight: 154kg
(Without motor and oil)



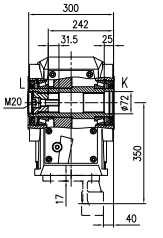
K309AG Hollow shaft with parallel key
K309AH Hollow shaft with parallel key
K309TG Hollow shaft with parallel key
K309TH Hollow shaft with parallel key



K309AI Hollow shaft with shrink disk
K309TI Hollow shaft with shrink disk



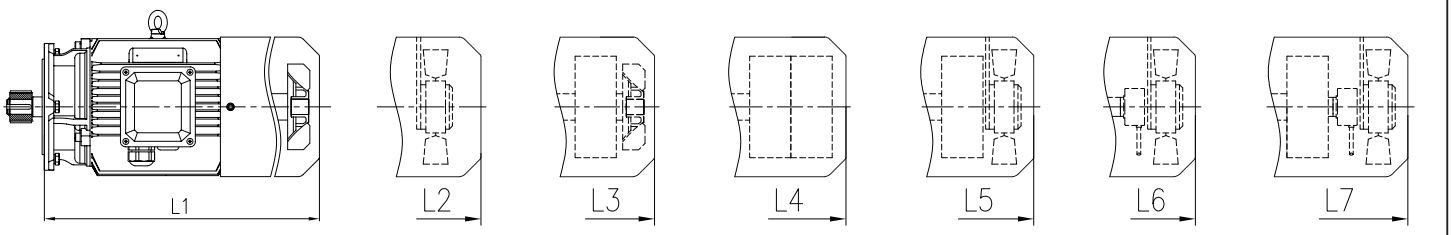
K309AJ Hollow shaft with shrink disk
K309TJ Hollow shaft with shrink disk



K309AK Hollow shaft with involute spline
K309AL Hollow shaft with involute spline
K309TK Hollow shaft with involute spline
K309TL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m2 × Z34 × α30 × D70 × 9H

Corresponding motor dimension table for K309



Self-fan cooling | Forced-fan cooling | Brake +Self-fan cooling | Double brake | Brake +Driven fan | Encorder +Forced-fan cooling | Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K309

Directly connected motor dimension table

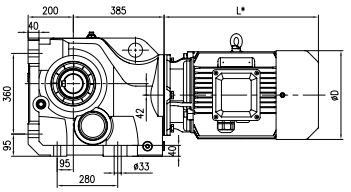
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
1.1	140-180	328	373	383	433	433	478	176
1.5	112-180	328	373	383	433	433	478	176
2.2	90-180	374	429	449	509	509	554	202
3	63-180	374	429	449	509	509	554	202
4	45-180	438	498	513	578	578	618	220
5.5	35.5-112	488	553	568	638	638	668	259
7.5	25-112	488	553	568	638	638	668	259
11	16-90	544	594	639	694	694	729	314
15	9-63	574	624	669	724	724	759	314
18.5	7.1-50	615	660	725	770	770	810	356
22	7.1-40	663	708	773	818	818	858	356
30	7.1-28	705	725	820	845	845	890	398

Directly connected motor weight table / kg

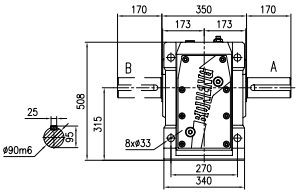
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
1.1	140-180	21	22	25	26	22.5	27	
1.5	112-180	23	24	27	28	24.5	29	
2.2	90-180	36	37	44	45	38	45	
3	63-180	36	37	44	45	38	45	
4	45-180	56	57	64	65	58	66	
5.5	35.5-112	77	79	88	90	80	91	
7.5	25-112	88	90	99	101	91	102	
11	16-90	129	131	150	151	132	152	
15	9-63	161	163	182	183	164	184	
18.5	7.1-50	200	202	232	233	203	235	
22	7.1-40	220	222	252	253	223	255	
30	7.1-28	280	280	330	328	281	330	

K310 Dimensions

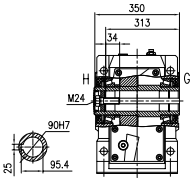
Horizontal foot–mounted



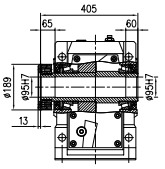
Horizontal foot–mounted (H)
Weight: 271kg (Without motor and oil)



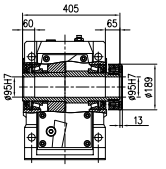
K310HA Unidirectional output shaft
K310HB Unidirectional output shaft
K310HC Bidirectional output shaft



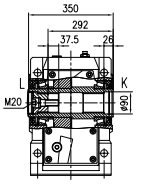
K310HG Hollow shaft with parallel key
K310HH Hollow shaft with parallel key



K310HI Hollow shaft with shrink disk

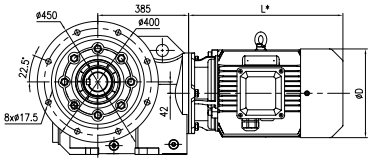


K310HJ Hollow shaft with shrink disk

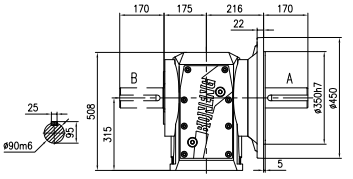


K310HK Hollow shaft with involute spline
K310HL Hollow shaft with involute spline

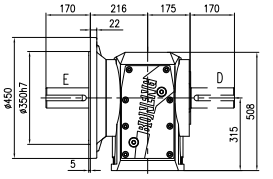
Flange–mounted



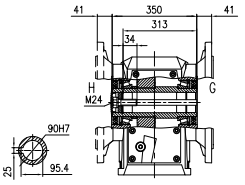
Flange–mounted (F)
Weight: 280kg (Without motor and oil)



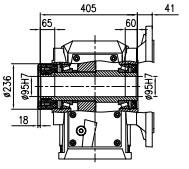
K310FA Unidirectional output shaft
K310FB Unidirectional output shaft
K310FC Bidirectional output shaft



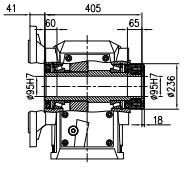
K310FD Unidirectional output shaft
K310FE Unidirectional output shaft
K310FF Bidirectional output shaft



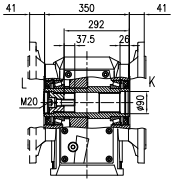
K310FG Hollow shaft with parallel key
K310FH Hollow shaft with parallel key



K310FI Hollow shaft with shrink disk

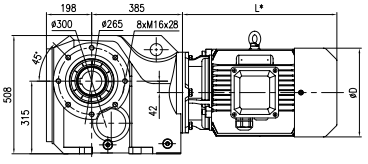


K310FJ Hollow shaft with shrink disk

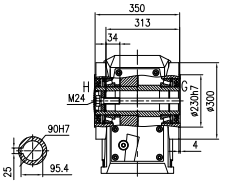


K310FK Hollow shaft with involute spline
K310FL Hollow shaft with involute spline

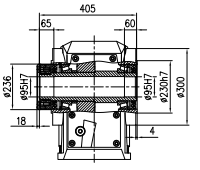
Short flange–mounted



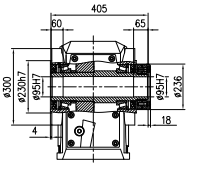
Short flange–mounted (S)
Weight: 261kg (Without motor and oil)



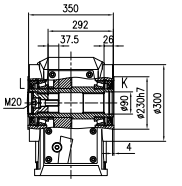
K310SG Hollow shaft with parallel key
K310SH Hollow shaft with parallel key



K310SI Hollow shaft with shrink disk

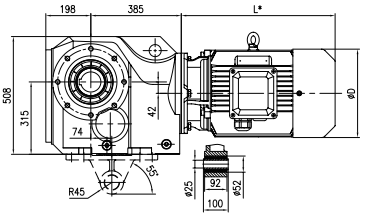


K310SJ Hollow shaft with shrink disk

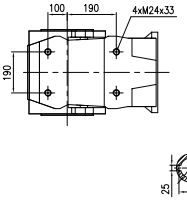


K310SK Hollow shaft with involute spline
K310SL Hollow shaft with involute spline

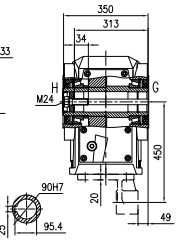
Torque arm–mounted / Torque arm–mounted with accessory



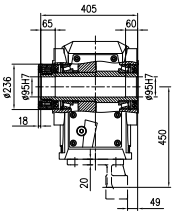
Torque arm–mounted with accessory (T)
Weight: 283kg
(Without motor and oil)



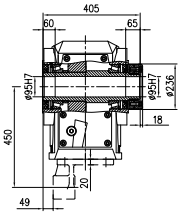
Torque arm–mounted without accessory (A)
Weight: 261kg
(Without motor and oil)



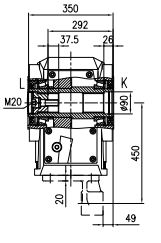
K310AG Hollow shaft with parallel key
K310AH Hollow shaft with parallel key
K310TG Hollow shaft with parallel key
K310TH Hollow shaft with parallel key



K310AI Hollow shaft with shrink disk
K310TI Hollow shaft with shrink disk



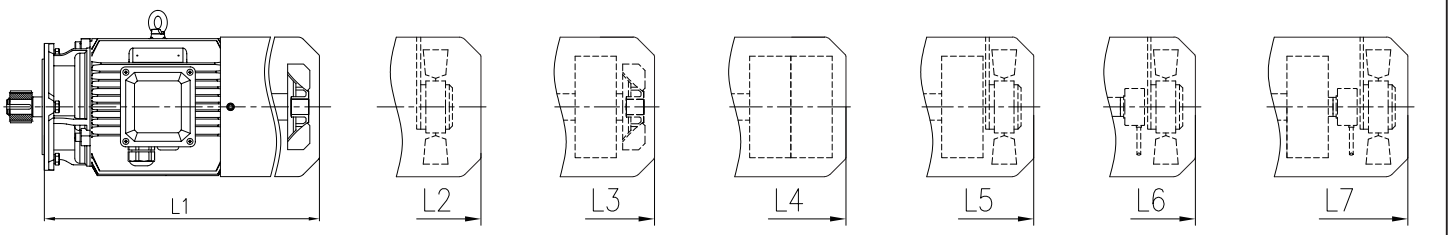
K310AJ Hollow shaft with shrink disk
K310TJ Hollow shaft with shrink disk



K310AK Hollow shaft with involute spline
K310AL Hollow shaft with involute spline
K310TK Hollow shaft with involute spline
K310TL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m3 × Z27 × α30 × D85 × 9H

Corresponding motor dimension table for K310



Self-fan cooling	Forced-fan cooling	Brake +Self-fan cooling	Double brake	Brake +Driven fan	Encorder +Forced-fan cooling	Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K310

Directly connected motor dimension table

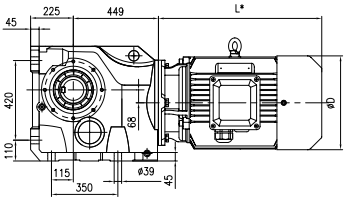
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
2.2	140-180	370	425	445	505	505	550	202
3	112-180	370	425	445	505	505	550	202
4	80-180	434	494	509	574	574	614	220
5.5	56-125	477	542	557	627	627	657	259
7.5	40-125	477	542	557	627	627	657	259
11	28-125	533	583	628	683	683	718	314
15	20-112	563	613	658	713	713	748	314
18.5	16-90	604	649	714	759	759	799	356
22	12.5-80	652	697	762	807	807	847	356
30	8-50	705	725	820	845	845	890	398
37	8-40	746	781	861	901	901	941	446
45	8-35.5	746	781	861	901	901	941	446

Directly connected motor weight table / kg

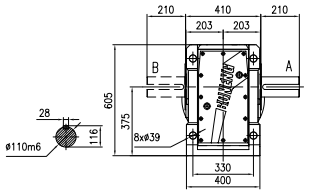
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
2.2	140-180	36	37	44	45	38	45	
3	112-180	36	37	44	45	38	45	
4	80-180	56	57	64	65	58	66	
5.5	56-125	77	79	88	90	80	91	
7.5	40-125	88	90	99	101	91	102	
11	28-125	129	131	150	151	132	152	
15	20-112	161	163	182	183	164	184	
18.5	16-90	200	202	232	233	203	235	
22	12.5-80	220	222	252	253	223	255	
30	8-50	280	280	330	328	281	330	
37	8-40	345	347	395	396	349	398	
45	8-35.5	365	367	415	416	369	418	

K312 Dimensions

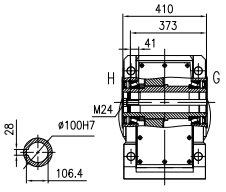
Horizontal foot–mounted



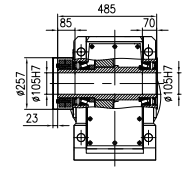
Horizontal foot–mounted (H)
Weight: 462kg (Without motor and oil)



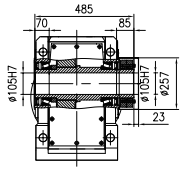
K312HA Unidirectional output shaft
K312HB Unidirectional output shaft
K312HC Bidirectional output shaft



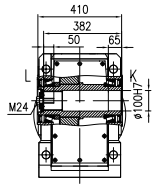
K312HG Hollow shaft with parallel key
K312HH Hollow shaft with parallel key



K312HI Hollow shaft with shrink disk

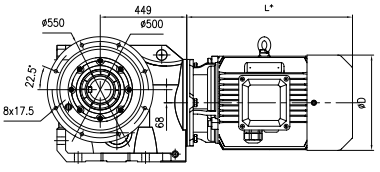


K312HJ Hollow shaft with shrink disk

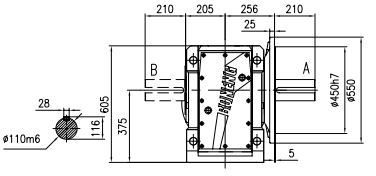


K312HK Hollow shaft with involute spline
K312HL Hollow shaft with involute spline

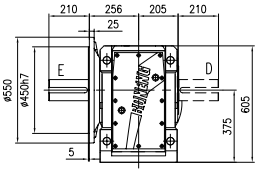
Flange–mounted



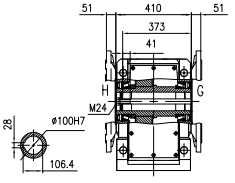
Flange–mounted (F)
Weight: 496kg (Without motor and oil)



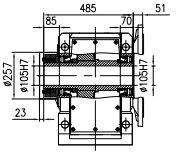
K312FA Unidirectional output shaft
K312FB Unidirectional output shaft
K312FC Bidirectional output shaft



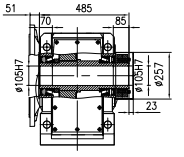
K312FD Unidirectional output shaft
K312FE Unidirectional output shaft
K312FF Bidirectional output shaft



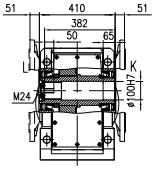
K312FG Hollow shaft with parallel key
K312FH Hollow shaft with parallel key



K312FI Hollow shaft with shrink disk

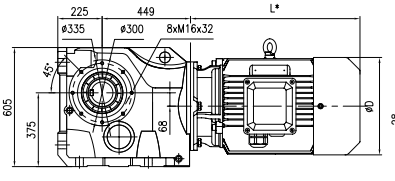


K312FJ Hollow shaft with shrink disk

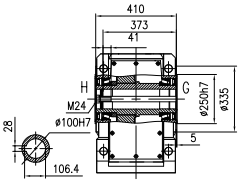


K312FK Hollow shaft with involute spline
K312FL Hollow shaft with involute spline

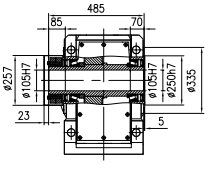
Short flange–mounted



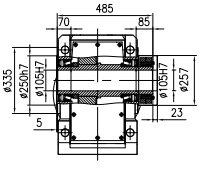
Short flange–mounted (S)
Weight: 462kg (Without motor and oil)



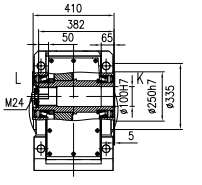
K312SG Hollow shaft with parallel key
K312SH Hollow shaft with parallel key



K312SI Hollow shaft with shrink disk

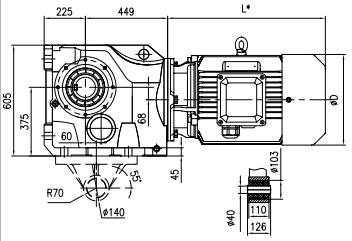


K312SJ Hollow shaft with shrink disk

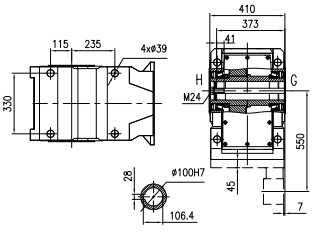


K312SK Hollow shaft with involute spline
K312SL Hollow shaft with involute spline

Torque arm–mounted

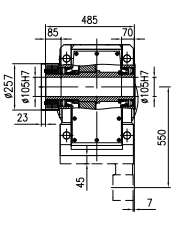


Torque arm–mounted with accessory (T)
Weight: 527kg
(Without motor and oil)

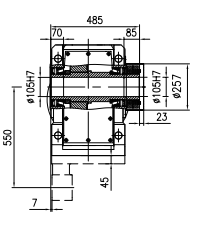


Torque arm–mounted without accessory (A)
Weight: 462kg
(Without motor and oil)

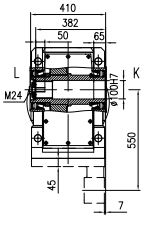
K312AG Hollow shaft with parallel key
K312AH Hollow shaft with parallel key
K312TG Hollow shaft with parallel key
K312TH Hollow shaft with parallel key



K312AI Hollow shaft with shrink disk
K312TI Hollow shaft with shrink disk



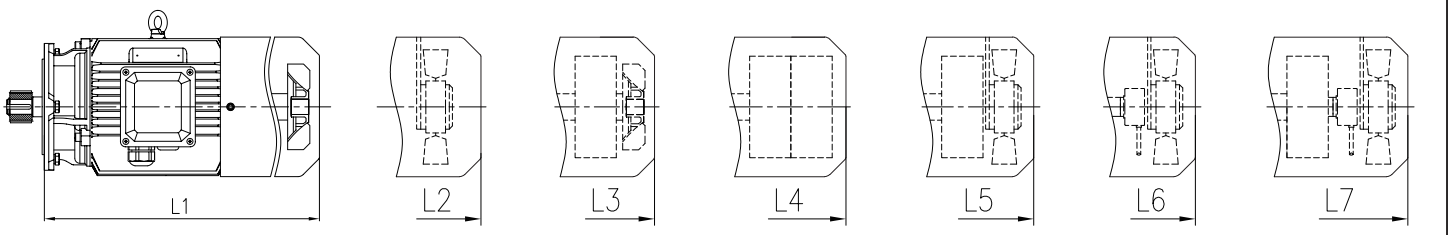
K312AJ Hollow shaft with shrink disk
K312TJ Hollow shaft with shrink disk



K312AK Hollow shaft with involute spline
K312AL Hollow shaft with involute spline
K312TK Hollow shaft with involute spline
K312TL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m3 × Z30 × α30 × D95 × 9H

Corresponding motor dimension table for K312



Self-fan cooling	Forced-fan cooling	Brake +Self-fan cooling	Double brake	Brake +Driven fan	Encorder +Forced-fan cooling	Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K312

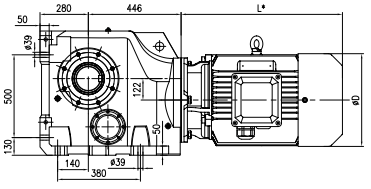
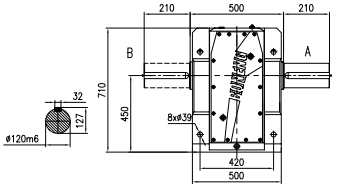
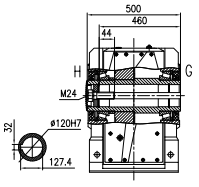
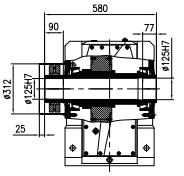
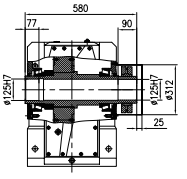
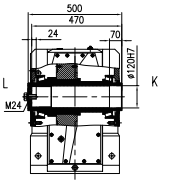
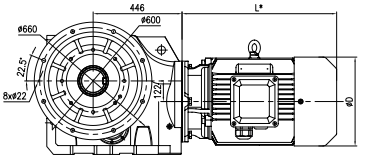
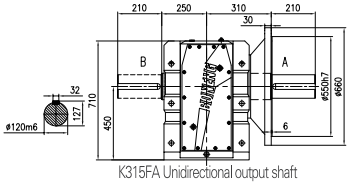
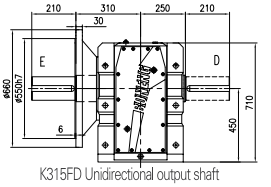
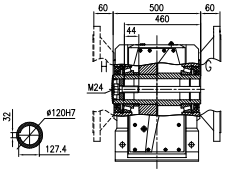
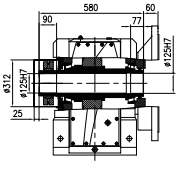
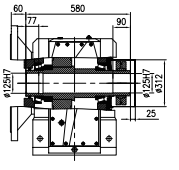
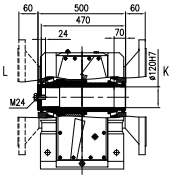
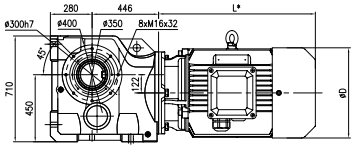
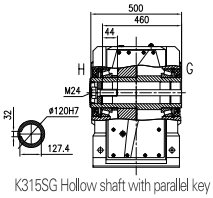
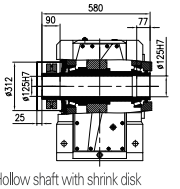
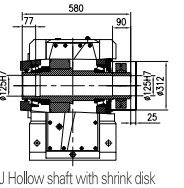
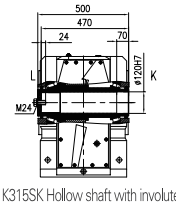
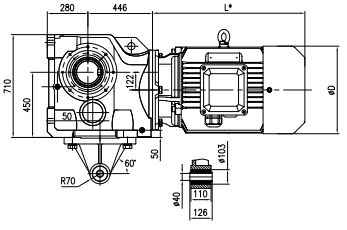
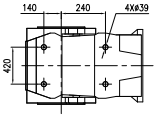
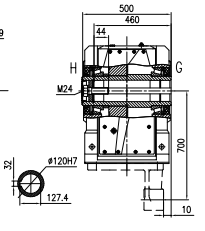
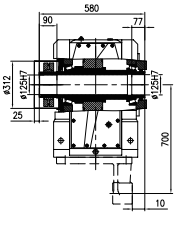
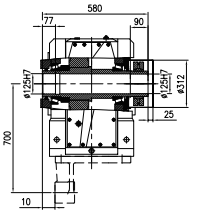
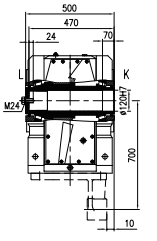
Directly connected motor dimension table

4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
4	140-180	423	483	498	563	563	603	220
5.5	100-140	467	532	547	617	617	647	259
7.5	71-140	467	532	547	617	617	647	259
11	45-140	517	567	612	667	667	702	314
15	35.5-140	547	597	642	697	697	732	314
18.5	28-140	588	633	698	743	743	783	356
22	25-112	636	681	746	791	791	831	356
30	16-90	684	704	799	824	824	869	398
37	9-71	725	760	840	880	880	920	446
45	7.1-56	725	760	840	880	880	920	446
55	7.1-45	841	866	981	1021	1021	1041	485
75	7.1-35.5	886	916	1026	1066	1066	1106	547
90	7.1-28	937	967	1077	1117	1117	1157	547

Directly connected motor weight table / kg

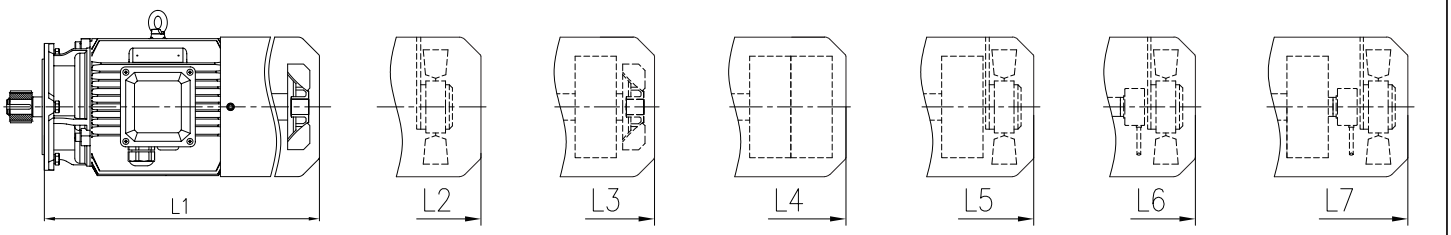
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
4	140-180	56	57	64	65	58	66	
5.5	100-140	77	79	88	90	80	91	
7.5	71-140	88	90	99	101	91	102	
11	45-140	129	131	150	151	132	152	
15	35.5-140	161	163	182	183	164	184	
18.5	28-140	200	202	232	233	203	235	
22	25-112	220	222	252	253	223	255	
30	16-90	280	280	330	328	281	330	
37	9-71	345	347	395	396	349	398	
45	7.1-56	365	367	415	416	369	418	
55	7.1-45	470	471	575	570	470	572	
75	7.1-35.5	630	632	735	733	633	735	
90	7.1-28	710	712	815	813	713	815	

K315 Dimensions

Mounting Mode	
Horizontal foot–mounted	 Horizontal foot–mounted (H) Weight: 697kg (Without motor and oil)
	 K315HA Unidirectional output shaft K315HB Unidirectional output shaft K315HC Bidirectional output shaft
	 K315HG Hollow shaft with parallel key K315HH Hollow shaft with parallel key
	 K315HI Hollow shaft with shrink disk
	 K315HJ Hollow shaft with shrink disk
	 K315HK Hollow shaft with involute spline K315HL Hollow shaft with involute spline
Flange–mounted	 Flange–mounted (F) Weight: 759kg (Without motor and oil)
	 K315FA Unidirectional output shaft K315FB Unidirectional output shaft K315FC Bidirectional output shaft
	 K315FD Unidirectional output shaft K315FE Unidirectional output shaft K315FF Bidirectional output shaft
	 K315FG Hollow shaft with parallel key K315FH Hollow shaft with parallel key
	 K315FI Hollow shaft with shrink disk
	 K315FJ Hollow shaft with shrink disk
	 K315FK Hollow shaft with involute spline K315FL Hollow shaft with involute spline
Short flange–mounted	 Short flange–mounted (S) Weight: 1100kg (Without motor and oil)
	 K315SG Hollow shaft with parallel key K315SH Hollow shaft with parallel key
	 K315SI Hollow shaft with shrink disk
	 K315SJ Hollow shaft with shrink disk
	 K315SK Hollow shaft with involute spline K315SL Hollow shaft with involute spline
Torque arm–mounted	 Torque arm–mounted with accessory (T) Weight: 790kg (Without motor and oil)
	 Torque arm–mounted without accessory (A) Weight: 697kg (Without motor and oil)
	 K315AG Hollow shaft with parallel key K315AH Hollow shaft with parallel key K315TG Hollow shaft with parallel key K315TH Hollow shaft with parallel key
	 K315AI Hollow shaft with shrink disk K315TI Hollow shaft with shrink disk
	 K315AJ Hollow shaft with shrink disk K315TJ Hollow shaft with shrink disk
	 K315AK Hollow shaft with involute spline K315AL Hollow shaft with involute spline K315TK Hollow shaft with involute spline K315TL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m3 × Z38 × α30 × D120 × 9H

Corresponding motor dimension table for K315



Self-fan cooling | Forced-fan cooling | Brake +Self-fan cooling | Double brake | Brake +Driven fan | Encorder +Forced-fan cooling | Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K315

Directly connected motor dimension table

4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
7.5	100-140	467	532	547	617	617	647	259
11	71-140	502	552	597	652	652	687	314
15	50-140	532	582	627	682	682	717	314
18.5	40-140	573	618	683	728	728	768	356
22	31.5-140	621	666	731	776	776	816	356
30	25-112	674	694	789	814	814	859	398
37	20-100	715	750	830	870	870	910	446
45	16-80	715	750	830	870	870	910	446
55	12.5-71	831	856	971	1011	1011	1031	485
75	10-50	876	906	1016	1056	1056	1096	547
90	10-40	927	957	1067	1107	1107	1147	547

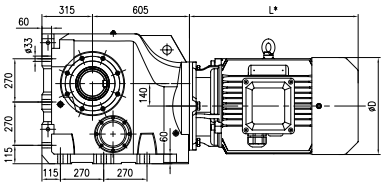
Directly connected motor weight table / kg

4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
7.5	100-140	88	90	99	101	91	102	
11	71-140	129	131	150	151	132	152	
15	50-140	161	163	182	183	164	184	
18.5	40-140	200	202	232	233	203	235	
22	31.5-140	220	222	252	253	223	255	
30	25-112	280	280	330	328	281	330	
37	20-100	345	347	395	396	349	398	
45	16-80	365	367	415	416	369	418	
55	12.5-71	470	471	575	570	470	572	
75	10-50	630	632	735	733	633	735	
90	10-40	710	712	815	813	713	815	

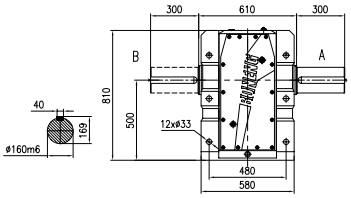
K316 Dimensions

Mounting Mode

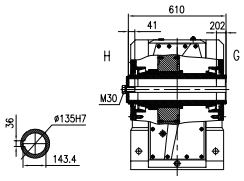
Horizontal foot–mounted



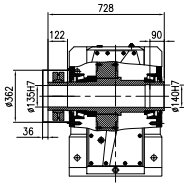
Horizontal foot–mounted (H)
Weight: 1110kg (Without motor and oil)



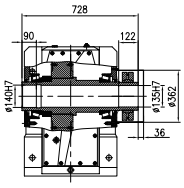
K316HA Unidirectional output shaft
K316HB Unidirectional output shaft
K316HC Bidirectional output shaft



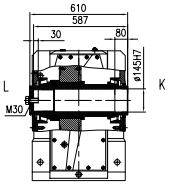
K316HG Hollow shaft with parallel key
K316HH Hollow shaft with parallel key



K316HI Hollow shaft with shrink disk

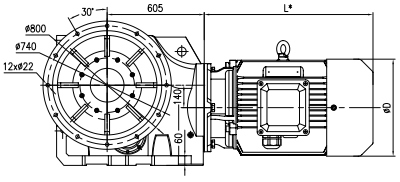


K316HJ Hollow shaft with shrink disk

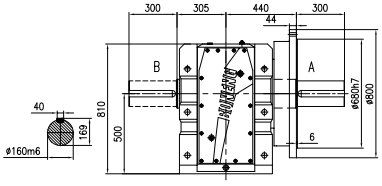


K316HK Hollow shaft with involute spline
K316HL Hollow shaft with involute spline

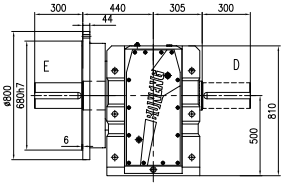
Flange–mounted



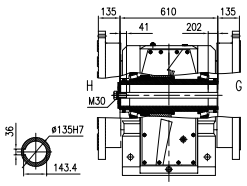
Flange–mounted (F)
Weight:1300kg (Without motor and oil)



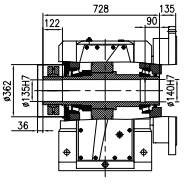
K316FA Unidirectional output shaft
K316FB Unidirectional output shaft
K316FC Bidirectional output shaft



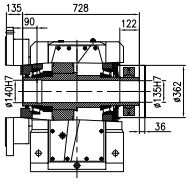
K316FD Unidirectional output shaft
K316FE Unidirectional output shaft
K316FF Bidirectional output shaft



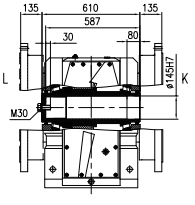
K316FG Hollow shaft with parallel key
K316FH Hollow shaft with parallel key



K316FI Hollow shaft with shrink disk



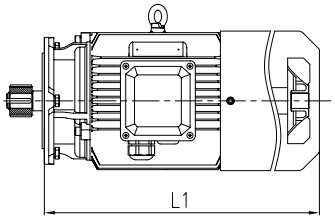
K316FJ Hollow shaft with shrink disk



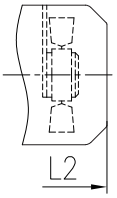
K316FK Hollow shaft with involute spline
K316FL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m3 × Z45 × α30 × D140 × 9H

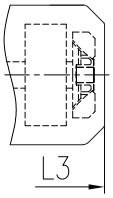
Corresponding motor dimension table for K316



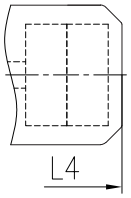
Self-fan cooling



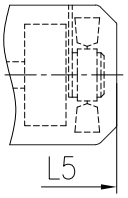
Forced-fan cooling



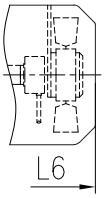
Brake +Self-fan cooling



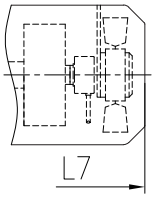
Double brake



Brake +Driven fan



Encorder +Forced-fan cooling



Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K316

Directly connected motor dimension table

4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
11	125-160	502	552	597	652	652	687	314
15	90-160	532	582	627	682	682	717	314
18.5	80-160	573	618	683	728	728	768	356
22	63-160	621	666	731	776	776	816	356
30	45-112	674	694	789	814	814	859	398
37	40-112	715	750	830	870	870	910	446
45	31.5-112	715	750	830	870	870	910	446
55	25-112	831	856	971	1011	1011	1031	485
75	18-90	876	906	1016	1056	1056	1096	547
90	14-80	927	957	1067	1107	1107	1147	547

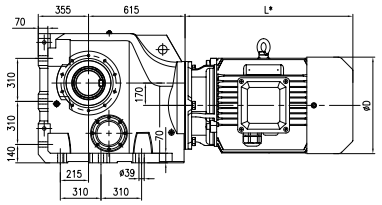
Directly connected motor weight table / kg

4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
11	125-160	129	131	150	151	132	152	
15	90-160	161	163	182	183	164	184	
18.5	80-160	200	202	232	233	203	235	
22	63-160	220	222	252	253	223	255	
30	45-112	280	280	330	328	281	330	
37	40-112	345	347	395	396	349	398	
45	31.5-112	365	367	415	416	369	418	
55	25-112	470	471	575	570	470	572	
75	18-90	630	632	735	733	633	735	
90	14-80	710	712	815	813	713	815	

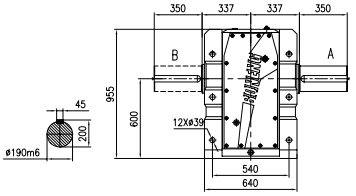
K318 Dimensions

Mounting Mode

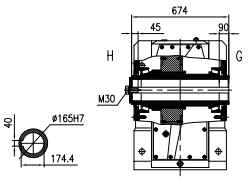
Horizontal foot–mounted



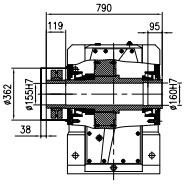
Horizontal foot–mounted (H)
Weight: 1430kg (Without motor and oil)



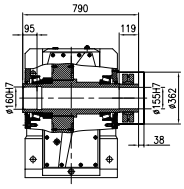
K318HA Unidirectional output shaft
K318HB Unidirectional output shaft
K318HC Bidirectional output shaft



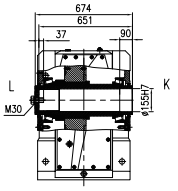
K318HG Hollow shaft with parallel key
K318HH Hollow shaft with parallel key



K318HI Hollow shaft with shrink disk

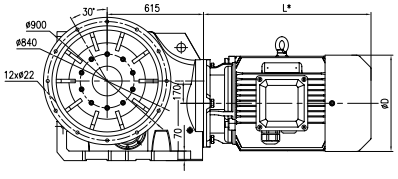


K318HJ Hollow shaft with shrink disk

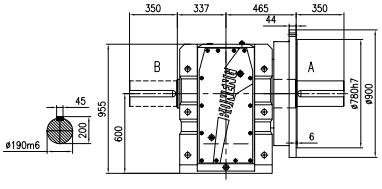


K318HK Hollow shaft with involute spline
K318HL Hollow shaft with involute spline

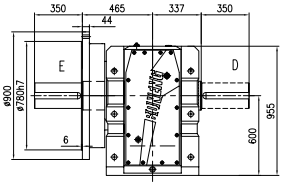
Flange–mounted



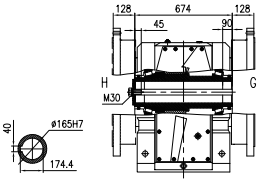
Flange–mounted (F)
Weight: 1688kg (Without motor and oil)



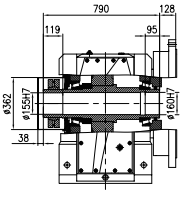
K318FA Unidirectional output shaft
K318FB Unidirectional output shaft
K318FC Bidirectional output shaft



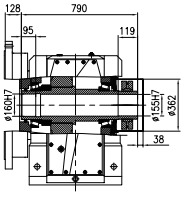
K318FD Unidirectional output shaft
K318FE Unidirectional output shaft
K318FF Bidirectional output shaft



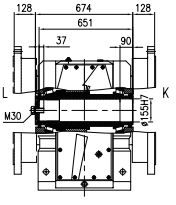
K318FG Hollow shaft with parallel key
K318FH Hollow shaft with parallel key



K318FI Hollow shaft with shrink disk



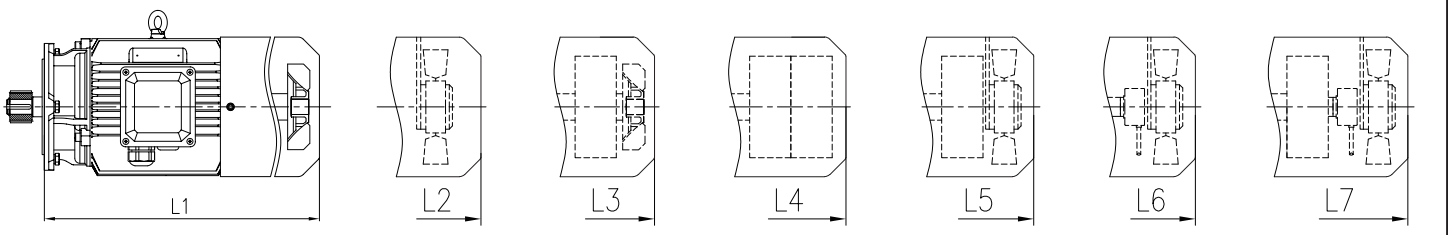
K318FJ Hollow shaft with shrink disk



K318FK Hollow shaft with involute spline
K318FL Hollow shaft with involute spline

Note: Involute spline size DIN 5480 : m3 × Z45 × α30 × D140 × 9H

Corresponding motor dimension table for K318



Self-fan cooling	Forced-fan cooling	Brake +Self-fan cooling	Double brake	Brake +Driven fan	Encorder +Forced-fan cooling	Brake +Encorder +Forced-fan cooling

Corresponding motor dimension table for K318

Directly connected motor dimension table

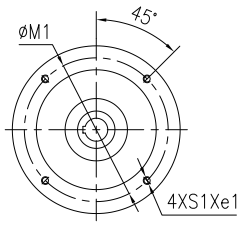
4-pole power (kW)	Range of Ratio	MA						D
		L1	L2	L3	L5	L6	L7	
15	140-160	532	582	627	682	682	717	314
18.5	112-160	573	618	683	728	728	768	356
22	100-160	621	666	731	776	776	816	356
30	71-140	674	694	789	814	814	859	398
37	56-140	715	750	830	870	870	910	446
45	45-140	715	750	830	870	870	910	446
55	40-140	831	856	971	1011	1011	1031	485
75	28-112	876	906	1016	1056	1056	1096	547
90	20-112	927	957	1067	1107	1107	1147	547

Directly connected motor weight table / kg

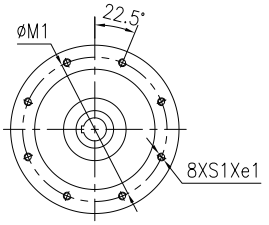
4-pole power (kW)	Range of Ratio	MA						
		M1	M2	M3	M5	M6	M7	
15	140-160	161	163	182	183	164	184	
18.5	112-160	200	202	232	233	203	235	
22	100-160	220	222	252	253	223	255	
30	71-140	280	280	330	328	281	330	
37	56-140	345	347	395	396	349	398	
45	45-140	365	367	415	416	369	418	
55	40-140	470	471	575	570	470	572	
75	28-112	630	632	735	733	633	735	
90	20-112	710	712	815	813	713	815	

7 Input Flange and Input Shaft

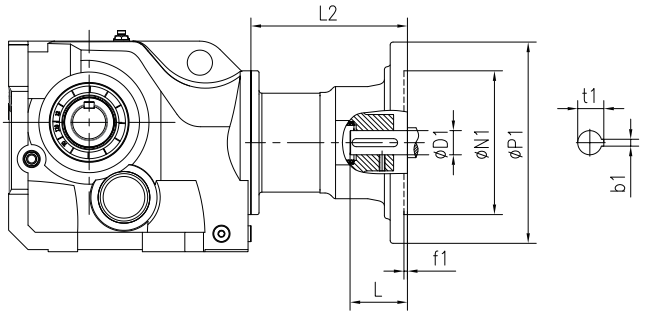
7.1 K series dimensions of AP input flange



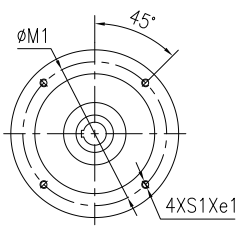
AP063-AP200



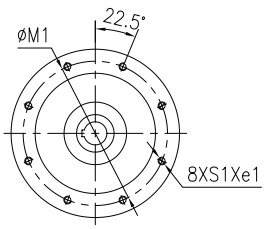
AP225-AP315



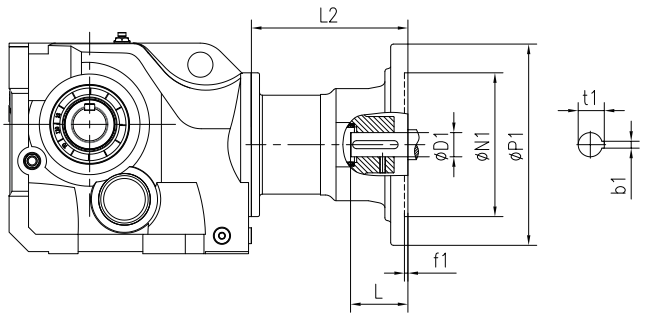
Size	Flange	Range of Ratio	e1	D1	N1	M1	P1	f1	b1	t1	L	S1	L2	Weight(kg)
K303	AP063	4-100	14	11H7	95H7	115	140	4	4	12.8	23	M8	59	4.8
	AP071	4-100	14	14H7	110H7	130	160	4	5	16.3	30	M8	59	4.8
	AP080	4-71	18	19H7	130H7	165	200	4	6	21.8	40	M10	74	7.6
K304	AP063	4-125	14	11H7	95H7	115	140	4	4	12.8	23	M8	61	5.1
	AP071	4-125	14	14H7	110H7	130	160	4	5	16.3	30	M8	61	5.1
	AP080	4-125	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8.6
	AP090	4-71	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9.2
	AP100	4-35.5	28	28H7	180H7	215	250	5	8	31.3	60	M12	191	14.1
	AP112	4-20	28	28H7	180H7	215	250	5	8	31.3	60	M12	191	14.1
K305	AP063	4-112	14	11H7	95H7	115	140	4	4	12.8	23	M8	61	5.1
	AP071	4-112	14	14H7	110H7	130	160	4	5	16.3	30	M8	61	5.1
	AP080	4-112	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8.6
	AP090	4-63	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9.2
	AP100	4-56	28	28H7	180H7	215	250	5	8	31.3	60	M12	191	14.1
	AP112	4-28	28	28H7	180H7	215	250	5	8	31.3	60	M12	191	14.1
K306	AP063	4-125	14	11H7	95H7	115	140	4	4	12.8	23	M8	61	5.1
	AP071	4-125	14	14H7	110H7	130	160	4	5	16.3	30	M8	61	5.1
	AP080	4-125	18	19H7	130H7	165	200	4	6	21.8	40	M10	76	8.6
	AP090	4-90	18	24H7	130H7	165	200	4	8	27.3	50	M10	81	9.2
	AP100	4-80	28	28H7	180H7	215	250	5	8	31.3	60	M12	191	14.1
	AP112	4-40	28	28H7	180H7	215	250	5	8	31.3	60	M12	191	14.1
K307	AP071	7.1-180	14	14H7	110H7	130	160	4	5	16.3	30	M8	53	6.7
	AP080	7.1-180	18	19H7	130H7	165	200	4	6	21.8	40	M10	68	10.3
	AP090	7.1-112	18	24H7	130H7	165	200	4	8	27.3	50	M10	73	11.1
	AP100	7.1-112	28	28H7	180H7	215	250	5	8	31.3	60	M12	181	15.5
	AP112	7.1-80	28	28H7	180H7	215	250	5	8	31.3	60	M12	181	15.5
	AP132	7.1-50	28	38H7	230H7	265	300	5	10	41.3	80	M12	210	22.3
K308	AP080	90-180	18	19H7	130H7	165	200	4	6	21.8	40	M10	65	10.4
	AP090	7.1-160	18	24H7	130H7	165	200	4	8	27.3	50	M10	66	12.1
	AP100	7.1-160	28	28H7	180H7	215	250	5	8	31.3	60	M12	171	18.2
	AP112	7.1-140	28	28H7	180H7	215	250	5	8	31.3	60	M12	171	18.2
	AP132	7.1-80	28	38H7	230H7	265	300	5	10	41.3	80	M12	203	24.9
	AP160	7.1-45	40	42H7	250H7	300	350	6	12	45.3	110	M16	272	46.4
	AP180	7.1-28	40	48H7	250H7	300	350	6	14	51.8	110	M16	272	46.4



AP063-AP200

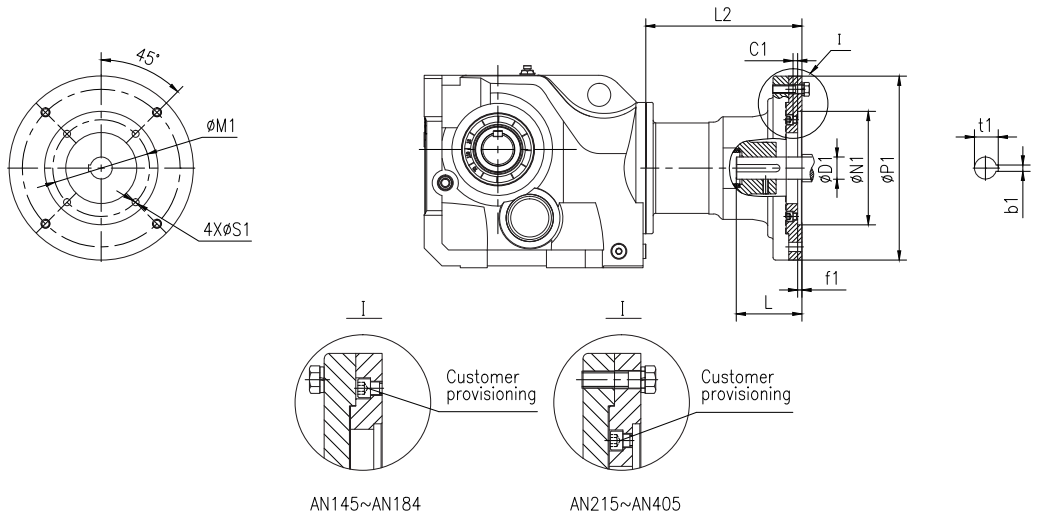


AP225-AP315

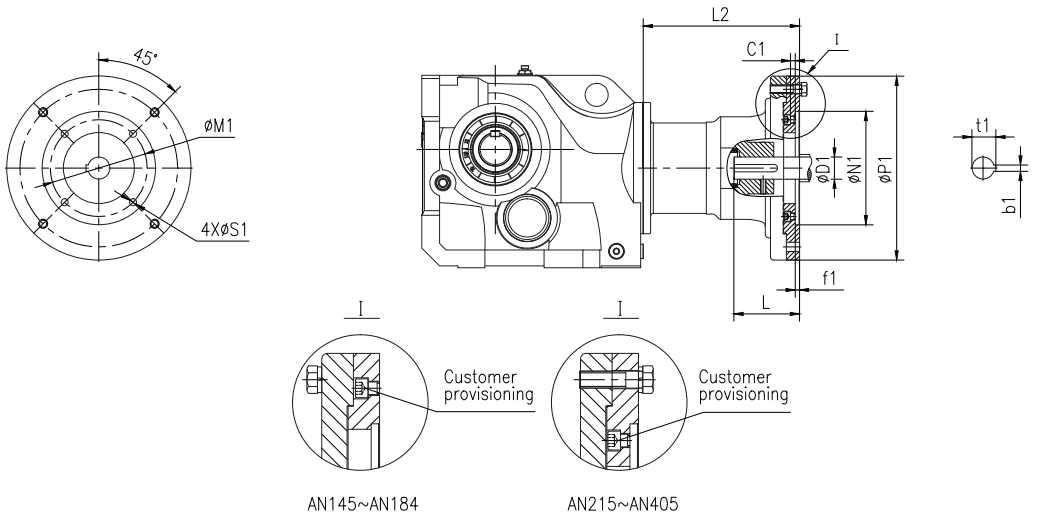


Size	Flange	Range of Ratio	e1	D1	N1	M1	P1	f1	b1	t1	L	S1	L2	Weight(kg)
K309	AP090	7.1-180	18	24H7	130H7	165	200	4	8	27.3	50	M10	61	14.7
	AP100	7.1-180	28	28H7	180H7	215	250	5	8	31.3	60	M12	172	21.5
	AP112	7.1-180	28	28H7	180H7	215	250	5	8	31.3	60	M12	172	21.5
	AP132	7.1-112	28	38H7	230H7	265	300	5	10	41.3	80	M12	202	28.3
	AP160	7.1-90	40	42H7	250H7	300	350	6	12	45.3	110	M16	270	49.9
	AP180	7.1-50	40	48H7	250H7	300	350	6	14	51.8	110	M16	270	49.9
	AP200	7.1-28	40	55H7	300H7	350	400	6	16	59.3	110	M16	327	72.8
K310	AP100	8-180	28	28H7	180H7	215	250	5	8	31.3	60	M12	162	25.6
	AP112	8-180	28	28H7	180H7	215	250	5	8	31.3	60	M12	162	25.6
	AP132	8-125	28	38H7	230H7	265	300	5	10	41.3	80	M12	189	33.7
	AP160	8-125	40	42H7	250H7	300	350	6	12	45.3	110	M16	257	52.3
	AP180	8-90	40	48H7	250H7	300	350	6	14	51.8	110	M16	257	52.3
	AP200	8-50	40	55H7	300H7	350	400	6	16	59.3	110	M16	327	77.4
	AP225	8-40	30	60H7	350H7	400	450	6	18	64.4	140	M16	354	85.1
K312	AP132	7.1-140	28	38H7	230H7	265	300	5	10	41.3	80	M12	175	46.4
	AP160	7.1-140	40	42H7	250H7	300	350	6	12	45.3	110	M16	243	66.9
	AP180	7.1-140	40	48H7	250H7	300	350	6	14	51.8	110	M16	243	66.9
	AP200	7.1-90	40	55H7	300H7	350	400	6	16	59.3	110	M16	316	89.8
	AP225	7.1-71	30	60H7	350H7	400	450	6	18	64.4	140	M16	343	97.5
	AP250	7.1-45	32	65H7	450H7	500	550	7	18	69.4	140	M16	361	131.3
	AP280	7.1-35.5	32	75H7	450H7	500	550	7	20	79.9	140	M16	361	131.3
K315	AP160	10-140	40	42H7	250H7	300	350	6	12	45.3	110	M16	233	90.9
	AP180	10-140	40	48H7	250H7	300	350	6	14	51.8	110	M16	233	90.9
	AP200	10-112	40	55H7	300H7	350	400	6	16	59.3	110	M16	298	109.4
	AP225	10-100	30	60H7	350H7	400	450	6	18	64.4	140	M16	325	117.1
	AP250	10-71	32	65H7	450H7	500	550	7	18	69.4	140	M16	343	147.8
	AP280	10-50	32	75H7	450H7	500	550	7	20	79.9	140	M16	343	147.8
	AP315	10-31.5	35	80H7	550H7	600	660	7	22	85.4	170	M20	447	262.5
K316	AP160	10-160	40	42H7	250H7	300	350	6	12	45.3	110	M16	233	90.9
	AP180	10-160	40	48H7	250H7	300	350	6	14	51.8	110	M16	233	90.9
	AP200	10-112	40	55H7	300H7	350	400	6	16	59.3	110	M16	298	109.4
	AP225	10-112	30	60H7	350H7	400	450	6	18	64.4	140	M16	325	117.1
	AP250	10-112	32	65H7	450H7	500	550	7	18	69.4	140	M16	343	147.8
	AP280	10-90	32	75H7	450H7	500	550	7	20	79.9	140	M16	343	147.8
	AP315	10-63	35	80H7	550H7	600	660	7	22	85.4	170	M20	447	262.5
K318	AP160	71-160	40	42H7	250H7	300	350	6	12	45.3	110	M16	233	90.9
	AP180	71-160	40	48H7	250H7	300	350	6	14	51.8	110	M16	233	90.9
	AP200	10-140	40	55H7	300H7	350	400	6	16	59.3	110	M16	298	109.4
	AP225	10-140	30	60H7	350H7	400	450	6	18	64.4	140	M16	325	117.1
	AP250	10-140	32	65H7	450H7	500	550	7	18	69.4	140	M16	343	147.8
	AP280	10-112	32	75H7	450H7	500	550	7	20	79.9	140	M16	343	147.8
	AP315	10-100	35	80H7	550H7	600	660	7	22	85.4	170	M20	447	262.5

7.2 K series dimensions of AN input flange

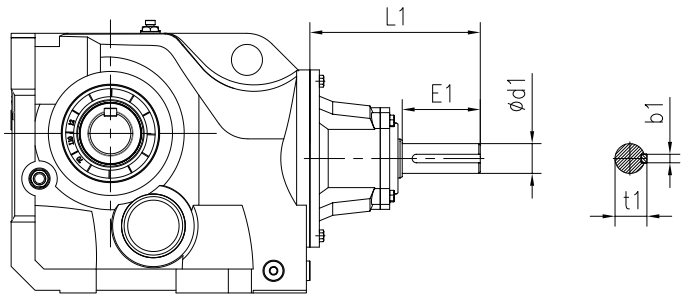


Size	Flange	NEMA Motor Frame	Power (HP)	IEC Standard Power(KW)	c1	D1	N1	M1	P1	f1	b1	t1	L	S1	L2
K303	AN145	143TC	1/1.5	0.75/1.1	6	22.225H7	114.3H7	149.2	200	5	4.76	24.7	58.04	11	92
		145TC	2	1.5											
K304	AN145	143TC	1/1.5	0.75/1.1	6	22.225H7	114.3H7	149.2	200	5	4.76	24.7	58.04	11	94
		145TC	2	1.5											
	AN184	182TC	3	2.2	8	28.575H7	215.9H7	184.2	250	8	6.35	31.7	73.03	13.5	220.5
		184TC	5	4											
K305	AN145	143TC	1/1.5	0.75/1.1	6	22.225H7	114.3H7	149.2	200	5	4.76	24.7	58.04	11	94
		145TC	2	1.5											
	AN184	182TC	3	2.2	8	28.575H7	215.9H7	184.2	250	8	6.35	31.7	73.03	13.5	220.5
		184TC	5	4											
K306	AN145	143TC	1/1.5	0.75/1.1	6	22.225H7	114.3H7	149.2	200	5	4.76	24.7	58.04	11	94
		145TC	2	1.5											
	AN184	182TC	3	2.2	8	28.575H7	215.9H7	184.2	250	8	6.35	31.7	73.03	13.5	220.5
		184TC	5	4											
	AN215	213TC	7.5	5.5	9	34.925H7	215.9H7	184.15	300	8	7.94	38.7	85.73	13.5	245
		215TC	10	7.5											
K307	AN145	143TC	1/1.5	0.75/1.1	6	22.225H7	114.3H7	149.2	200	5	4.76	24.7	58.04	11	86
		145TC	2	1.5											
	AN184	182TC	3	2.2	8	28.575H7	215.9H7	184.2	250	8	6.35	31.7	73.03	13.5	210.5
		184TC	5	4											
	AN215	213TC	7.5	5.5	9	34.925H7	215.9H7	184.15	300	8	7.94	38.7	85.73	13.5	235
		215TC	10	7.5											
K308	AN145	143TC	1/1.5	0.75/1.1	6	22.225H7	114.3H7	149.2	200	5	4.76	24.7	58.04	11	83
		145TC	2	1.5											
	AN184	182TC	3	2.2	8	28.575H7	215.9H7	184.2	250	8	6.35	31.7	73.03	13.5	200.5
		184TC	5	4											
	AN215	213TC	7.5	5.5	9	34.925H7	215.9H7	184.15	300	8	7.94	38.7	85.73	13.5	228
		215TC	10	7.5											
	AN256	254TC	15	11	9	41.275H7	215.9H7	184.15	350	8	9.53	45.8	101.6	13.5	297
		256TC	20	15											
K309	AN184	182TC	3	2.2	8	28.575H7	215.9H7	184.2	250	8	6.35	31.7	73.03	13.5	201.5
		184TC	5	4											
	AN215	213TC	7.5	5.5	9	34.925H7	215.9H7	184.15	300	8	7.94	38.7	85.73	13.5	227
		215TC	10	7.5											
	AN256	254TC	15	11	9	41.275H7	215.9H7	184.15	350	8	9.53	45.8	101.6	13.5	296
		256TC	20	15											
	AN286	284TC	25	18.5	9	47.625H7	266.7H7	228.6	400	8	12.7	53.4	117.48	13.5	352
		286TC	30	22											



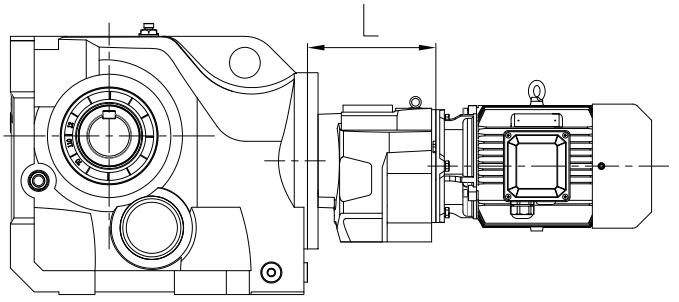
Size	Flange	NEMA Motor Frame	Power (HP)	IEC Standard Power (KW)	c1	D1	N1	M1	P1	f1	b1	t1	L	S1	L2
K310	AN184	182TC	3	2.2	8	28.575H7	215.9H7	184.2	250	8	6.35	31.7	73.03	13.5	191.5
		184TC	5	4											
	AN215	213TC	7.5	5.5	9	34.925H7	215.9H7	184.15	300	8	7.94	38.7	85.73	13.5	214
		215TC	10	7.5											
	AN256	254TC	15	11	9	41.275H7	215.9H7	184.15	350	8	9.53	45.8	101.6	13.5	283
		256TC	20	15											
	AN286	284TC	25	18.5	9	47.625H7	266.7H7	228.6	400	8	12.7	53.4	117.48	13.5	252
		286TC	30	22											
	AN326	324TC	40	30	9.5	53.975H7	317.5H7	279.4	450	8	12.7	60	133.35	17.5	384
		326TC	50	37											
	AN365	364TC	60	45	24.5	60.325H7	317.5H7	279.4	450	8	15.88	67.6	149.23	17.5	399
		365TC	75	55											
K312	AN215	213TC	7.5	5.5	9	34.925H7	215.9H7	184.15	300	8	7.94	38.7	85.73	13.5	200
		215TC	10	7.5											
	AN256	254TC	15	11	9	41.275H7	215.9H7	184.15	350	8	9.53	45.8	101.6	13.5	269
		256TC	20	15											
	AN286	284TC	25	18.5	9	47.625H7	266.7H7	228.6	400	8	12.7	53.4	117.48	13.5	341
		286TC	30	22											
	AN326	324TC	40	30	9.5	53.975H7	317.5H7	279.4	450	8	12.7	60	133.35	17.5	373
		326TC	50	37											
	AN365	364TC	60	45	24.5	60.325H7	317.5H7	279.4	450	8	15.88	67.6	149.23	17.5	388
		365TC	75	55											
	AN405	405TC	100	75	64.5	73.025H7	317.5H7	279.4	450	8	19.05	81.9	184.15	17.5	428
K315	AN256	254TC	15	11	9	41.275H7	215.9H7	184.15	350	8	9.53	45.8	101.6	13.5	259
		256TC	20	15											
	AN286	284TC	25	18.5	9	47.625H7	266.7H7	228.6	400	8	12.7	53.4	117.48	13.5	323
		286TC	30	22											
	AN326	324TC	40	30	9.5	53.975H7	317.5H7	279.4	450	8	12.7	60	133.35	17.5	355
		326TC	50	37											
	AN365	364TC	60	45	24.5	60.325H7	317.5H7	279.4	450	8	15.88	67.6	149.23	17.5	370
		365TC	75	55											
	AN405	405TC	100	75	64.5	73.025H7	317.5H7	279.4	450	8	19.05	81.9	184.15	17.5	410
K316	AN256	254TC	15	11	9	41.275H7	215.9H7	184.15	350	8	9.53	45.8	101.6	13.5	259
		256TC	20	15											
	AN286	284TC	25	18.5	9	47.625H7	266.7H7	228.6	400	8	12.7	53.4	117.48	13.5	323
		286TC	30	22											
	AN326	324TC	40	30	9.5	53.975H7	317.5H7	279.4	450	8	12.7	60	133.35	17.5	355
		326TC	50	37											
	AN365	364TC	60	45	24.5	60.325H7	317.5H7	279.4	450	8	15.88	67.6	149.23	17.5	370
		365TC	75	55											
	AN405	405TC	100	75	64.5	73.025H7	317.5H7	279.4	450	8	19.05	81.9	184.15	17.5	410
K318	AN256	254TC	15	11	9	41.275H7	215.9H7	184.15	350	8	9.53	45.8	101.6	13.5	259
		256TC	20	15											
	AN286	284TC	25	18.5	9	47.625H7	266.7H7	228.6	400	8	12.7	53.4	117.48	13.5	323
		286TC	30	22											
	AN326	324TC	40	30	9.5	53.975H7	317.5H7	279.4	450	8	12.7	60	133.35	17.5	355
		326TC	50	37											
	AN365	364TC	60	45	24.5	60.325H7	317.5H7	279.4	450	8	15.88	67.6	149.23	17.5	370
		365TC	75	55											
	AN405	405TC	100	75	64.5	73.025H7	317.5H7	279.4	450	8	19.05	81.9	184.15	17.5	410

7.3 F series dimensions of AE input shaft



Size	Input Shaft	Range of Power	Range of Ratio	d1	E1	L1	b1	t1	Weight (kg)
K303	AE200	0.12-0.75kW	4-100	19k6	40	117	6	21.5	2.5
K304	AE200	0.12-0.75kW	4-125	19k6	40	119	6	21.5	3.4
	AE300	1.1-4kW	4-50	28k6	60	175	8	31	6.1
K305	AE200	0.12-0.75kW	4-112	19k6	40	119	6	21.5	3.4
	AE300	1.1-4kW	4-63	28k6	60	175	8	31	6.1
K306	AE200	0.12-0.75kW	4-125	19k6	40	119	6	21.5	3.4
	AE300	1.1-4kW	4-90	28k6	60	175	8	31	6.1
K307	AE200	0.12-0.75kW	7.1-180	19k6	40	111	6	21.5	4.9
	AE300	1.1-4kW	7.1-112	28k6	60	165	8	31	7.5
	AE400	5.5-7.5kW	7.1-40	38k6	80	211	10	41	10.5
K308	AE200	0.12-0.75kW	90-180	19k6	40	108	6	21.5	7.2
	AE300	1.1-4kW	7.1-160	28k6	60	155	8	31	10.2
	AE400	5.5-11kW	7.1-71	38k6	80	204	10	41	13.1
	AE500	15-22kW	7.1-35.5	42k6	110	266	12	45	23.3
K309	AE300	1.1-4kW	7.1-180	28k6	60	156	8	31	10.2
	AE400	5.5-11kW	7.1-112	38k6	80	203	10	41	13.1
	AE500	15-22kW	7.1-63	42k6	110	265	12	45	23.3
	AE600	30-45KW	7.1-28	48k6	110	309	14	51.5	40.9
K310	AE300	1.1-4kW	8-180	28k6	60	146	8	31	17.6
	AE400	5.5-11kW	8-125	38k6	80	190	10	41	21.9
	AE500	15-22kW	8-112	42k6	110	252	12	45	29.2
	AE600	30-45KW	8-50	48k6	110	309	14	51.5	45.5
K312	AE400	5.5-11kW	7.1-140	38k6	80	176	10	41	34.6
	AE500	15-22kW	7.1-140	42k6	110	238	12	45	43.8
	AE600	30-45KW	7.1-90	48k6	110	298	14	51.5	57.9
	AE700	55-90KW	7.1-45	55m6	110	297	16	59	64.6
	AE800	110-200KW	7.1-25	70m6	140	377	20	74.5	87.8
K315	AE500	15-22KW	10-140	42k6	110	228	12	45	67.8
	AE600	30-45KW	10-112	48k6	110	280	14	51.5	77.5
	AE700	55-90KW	10-71	55m6	110	279	16	59	81.1
	AE800	110-200KW	10-31.5	70m6	140	361	20	74.5	104.8
K316	AE500	15-22KW	10-160	42k6	110	228	12	45	67.8
	AE600	30-45KW	10-112	48k6	110	280	14	51.5	77.5
	AE700	55-90KW	10-112	55m6	110	279	16	59	81.1
	AE800	110-200KW	10-63	70m6	140	361	20	74.5	104.8
K318	AE500	15-22KW	71-160	42k6	110	228	12	45	67.8
	AE600	30-45KW	10-140	48k6	110	280	14	51.5	77.5
	AE700	55-90KW	10-140	55m6	110	279	16	59	81.1
	AE800	110-200KW	10-100	70m6	140	361	20	74.5	104.8

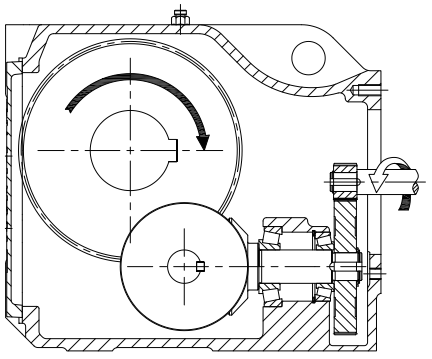
8 Combi-type Dimensions

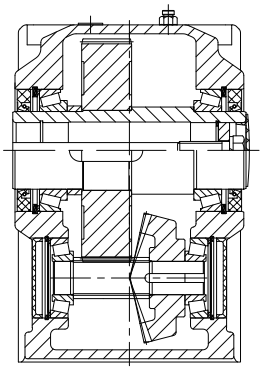


Type	K303/C201 K303/C301	K304/C203 K304/C303	K305/C203 K305/C303	K306/C203 K306/C303	K307/C203 K307/C303	K308/C205 K308/C305	K309/C205 K309/C305	K310/C207 K310/C307
L	134	170	170	170	162	182	183	226
Range of Motor Power (kW)	0.12-0.25	0.12-0.55	0.12-0.75	0.12-1.1	0.12-2.2	0.12-4	0.12-4	0.12-7.5
Type	K312/C207 K312/C307	K312/C208	K315/C209 K315/C309	K315/C210	K316/C209 K316/C309	K316/C210	K318/C209 K318/C309	K318/C210
L	226	258	321	361	321	361	321	361
Range of Motor Power (kW)	0.12-7.5	7.5-18.5	0.12-11	11-22	0.37-22	22-45	0.55-30	30-45

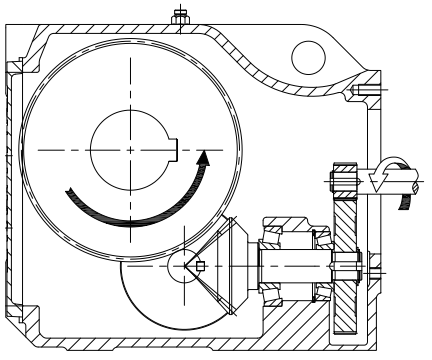
9 Accessories and Specific Configuration

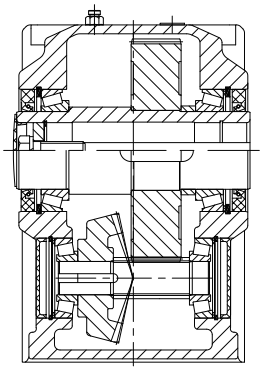
9.1 Unconventional installation of gear(Code 1)





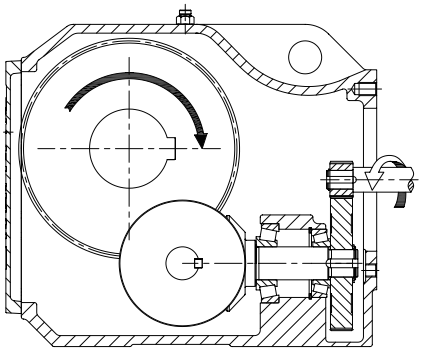
Standard installation

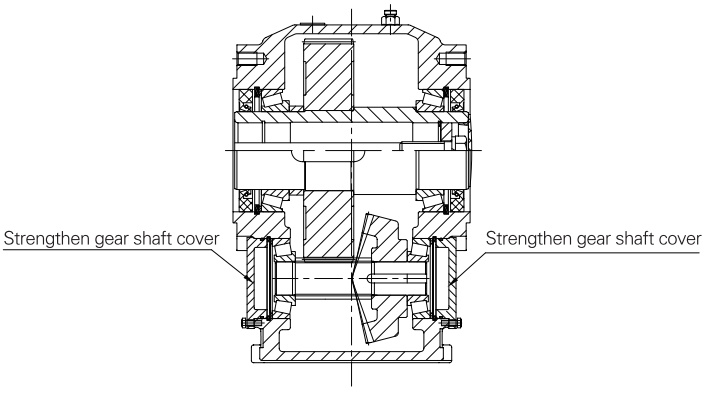




For unconventional installation of this gear ,please indicate code 1 when ordering.

9.2 Strengthen gear shaft cover (Size:K308F/S/A/T~K315F/S/A/T , code 2)





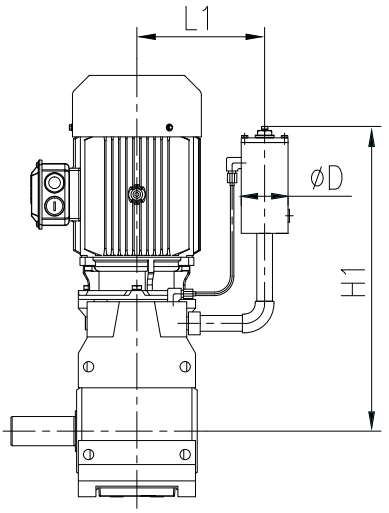
Note: The recommended applications would be load impactive occasions, e.g.gantry crane long travel mechanism etc.

9.3 Oil compensating tank(Code 6)

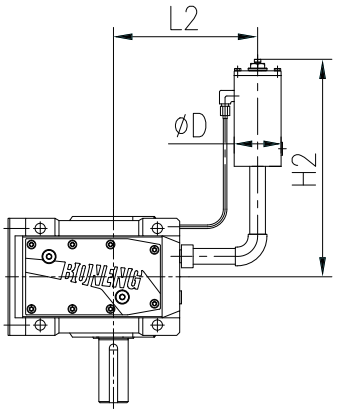
Oil compensating tank lubrication is recommended for gearmotor under working conditions below:

1.Oil compensating tank is recommended for gearmotors with D4 installation position and long duration continuous operation;

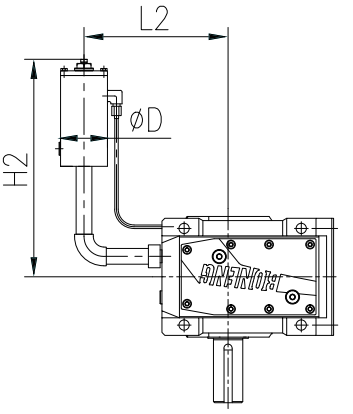
2.Oil compensating tank has been equipped for gearmotors with D5 or D6 installation position before delivery.



Mounting Position：D4



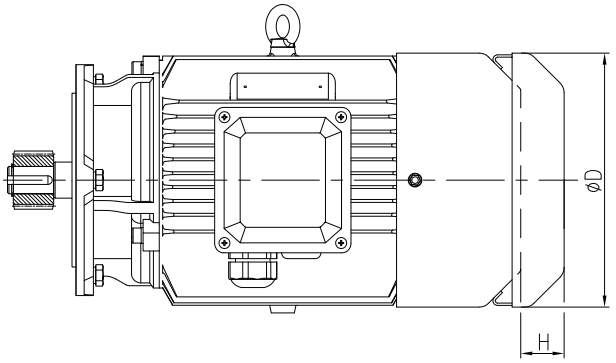
Mounting Position：D5



Mounting Position：D6

规格(mm)	D	L1	H1	L2	H2
K303	42	100	315	170	165
K304	42	115	340	175	170
K305	42	120	345	190	165
K306	42	120	345	200	170
K307	80	160	520	290	270
K308	80	175	585	315	275
K309	80	200	595	340	290
K310	120	270	750	405	405
K312	120	305	810	440	410
K315	120	325	800	470	430
K316	120	340	945	520	435
K318	120	365	945	565	455

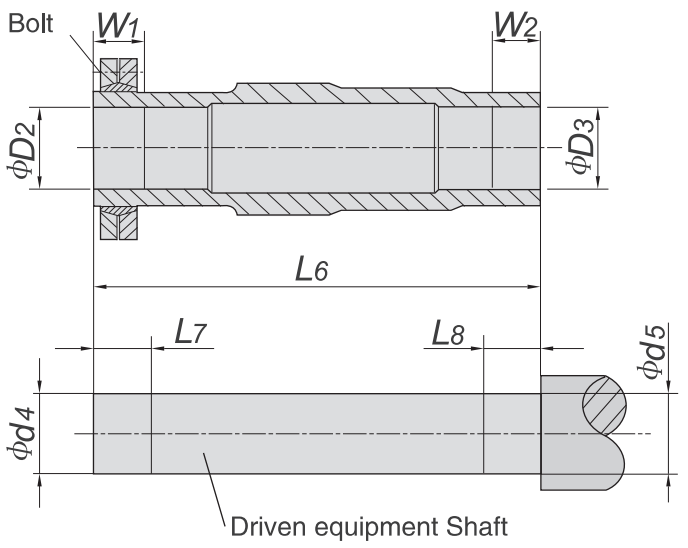
10 Motor Rainproof Cover Dimensions



Frame Size	H63	H71	H80	H90	H100	H112	H132	H160	H180	H200	H225	H250	H280
D	124	139	159	176	199	220	259	314	356	398	446	485	547
H	25	30	30	35	40	40	40	60	60	70	70	80	80

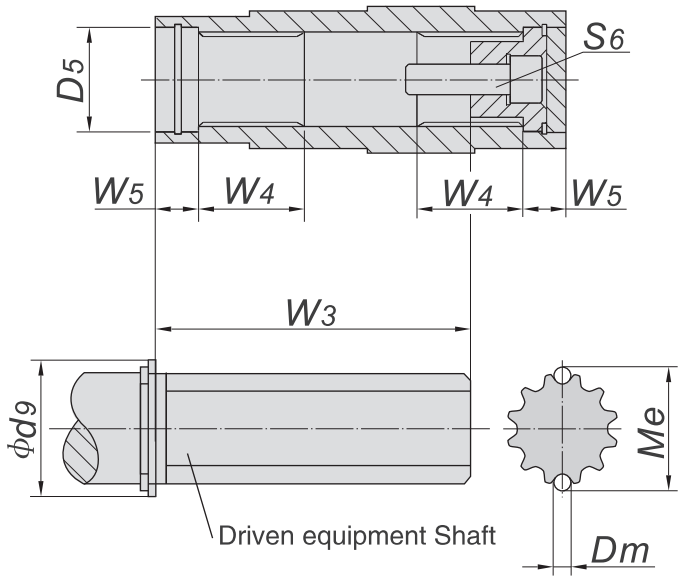
11 Recommended Dimensions for Driven Equipment Shaft

11.1 Shrink disk



Size	D2	D3	d4	d5	L6	L7	L8	W1	W2	Type	Bolt	Number
K303	30H7	30H7	30h6	30h6	146	35	25	30	20	SP2-44×80	M6	0.6
K304	35H7	35H7	35h6	35h6	177	35	25	30	20	SP2-44×80	M6	0.6
K305	40H7	40H7	40h6	40h6	195	40	30	35	25	SP2-50×90	M6	0.8
K306	40H7	40H7	40h6	40h6	208	43	25	38	20	SP2-50×90	M6	0.8
K307	50H7	50H7	50h6	50h6	241	41	35	36	30	SP2-62×110	M6	1.3
K308	65H7	65H7	65h6	65h6	281	46	45	41	40	SP2-80×145	M8	1.9
K309	75H7	75H7	75h6	75h6	345	60	55	55	50	SP2-90×155	M8	3.3
K310	95H7	95H7	95h6	95h6	405	75	70	65	60	SP2-110×185	M10	5.9
K312	105H7	105H7	105h6	105h6	485	95	80	85	70	SP2-140×230	M12	10
K315	125H7	125H7	125h6	125h6	580	100	87	90	77	SP2-155×263	M12	15
K316	135H7	140H7	135h6	140h6	728	130	100	122	90	SP2-175×300	M16	22
K318	155H7	160H7	155h6	160h6	790	130	105	119	95	SP2-195×350	M16	41

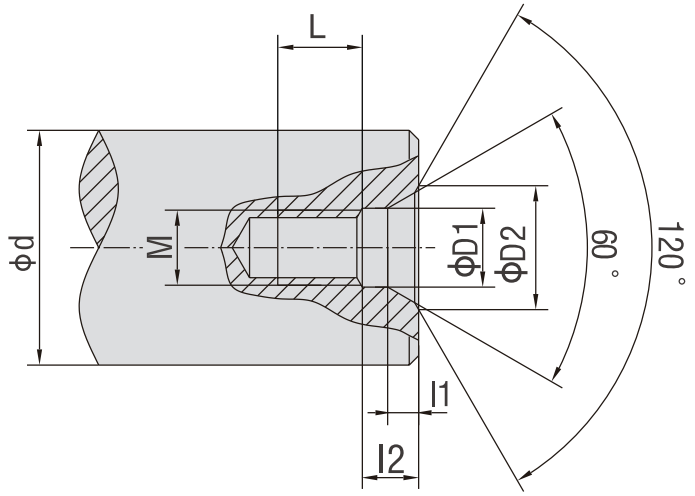
11.2 Involute spline



Size	D5	Dm	d9	Me	W3	W4	W5	S6
K303	37	2.75	42	33.03	85	25	18	M10×30
K304	37	4	42	38.92	115	32	18	M10×30
K305	42	4	47	38.92	125	42	25	M16×40
K306	42	4	47	38.92	140	42	25	M16×40
K307	55	4	62	54.13	160	52	23	M16×50
K308	72	4	82	68.96	180	62	25	M20×60
K309	72	4	90	74.15	240	72	25	M20×60
K310	90	6	105	91	290	89	26	M20×60
K312	100	6	120	101.05	380	92	28	M24×60
K315	120	6	140	125.99	468	107	30	M24×70
K316	145	6	165	146.06	585	128	23	M30×80
K318	155	6	175	146.06	650	128	23	M30×80

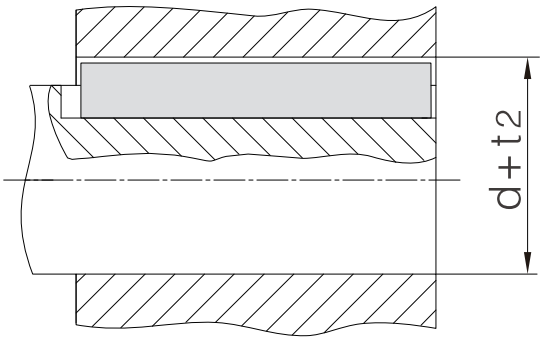
12 Shaft End Centre Hole

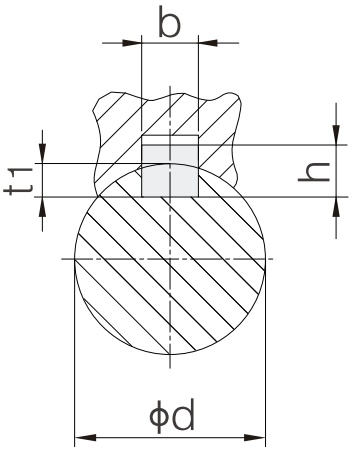
Type C screw central hole in shaft end



d	M	L	12	11	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

14 Oil (L)

Mounting position / Size	D1	D2	D3	D4	D5	D6
K303	0.5	1.1	1.1	1.5	1	1
K304	0.8	1.3	1.7	2.2	1.6	1.6
K305	1	1.9	2.3	3	2.2	2.2
K306	1.1	2.4	2.8	3.6	2.7	2.7
K307	2.2	4.1	4.6	6	4.5	4.5
K308	3.7	8.2	9	11.9	8.4	8.4
K309	7	14.7	17.3	21.5	15.7	16.5
K310	10	22	26	35	25	25
K312	21	41.5	46	55	41	41
K315	31	66	69	92	62	62
K316	35	100	100	125	85	85
K318	60	170	170	205	130	130

Along with the technology advancedet.,the product of the manual of Boneng will be changed,please forgive.

Distributors for Australia & New Zealand

MOTION TECHNOLOGIES PTY LIMITED

24/22-30 Northumberland Road
Caringbah NSW 2229 Australia
Phone: (02) 9524 4782

sales@motiontech.com.au
www.motiontech.com.au

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