BONENG

J Jack

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Selection Sample C05.0007–EN

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BONENG

Screw Jack

On the basis of summarizing gear units design and manufacturing experiences in the past twenty years,analyzing and absorbing advanced technology of international gear units motor production,Boneng Transmission makes innovative development,pushing forward new type J series gear motor to better satisfy customer requirements.

Compared with internationally advanced gear motor and the original J series gear motor of Boneng,the new type J series screw jack has the following characteristics:

In the iron and steel, stage equipment, medical equipment and other various fields, Boneng combines various kinds of applications, dedicates to manufacture satisfying products for you.

- Unique outline structure design, thus forming excellent design concept with world–level intellectual property rights for Boneng;
- Unique modular design,components are categorized to difterent types; standard components are stored in large amount, which are changeable, so delivery period of worm gear unit is short, and it's easy to get spare parts; (international produc–tion, fast delivery, more appropriate for storage, in–time production);
- It applies cabinet with nodular cast iron, good rigidity, easy to cut, inner structure design is reasonable, impact–proof performance is good;
  Germany imported worm wheel hob is used to process turbine, which optimizes contact area, ensures intensity; hand finishing transmission worm processed by fine grinding has high efficiency, targe output torque;
- Input mode: motor direct–linking input, gear unit direct–linking input and manual input (equipped with hand wheel);
- Various kinds of output type: screw rod top thread, top flange, type pin jonit, column jonit and flexible nut, etc, it can be equipped with frame and foundation to satisfy lifting requrements on different directions;
- Various kinds of products, each type has various kinds of strokes and various kinds of lifting load range.

ISO9001

Note: You must conform to the following instructions

- The structure scheme,appearance diagram and other attached diagrams in sample are examples,there is no strict proportion requirement.(The unmarked dimension units are mm).
- We can only refer to the marked weight in the manual.
- To prevent accidents,all the rotation parts should be added with protective covers according to local safety regulations and laws.
- Before testing,users should read instruction manual carefully.
- Jack has been tested before delivered,users should add lubrication oil before running.
- We can only refer to the marked oil in the manual.Actual oil filling level should be the same with the mark on oil immersion lens.
- Lubrication oil viscosity should be selected according to working conditions and the temperature of local environment.
- Users can only use high guality lubrication oil.

Product Function Mark

 Oil glass

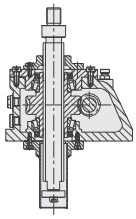
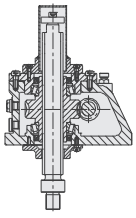
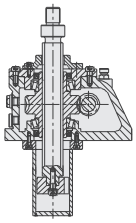
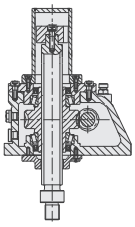
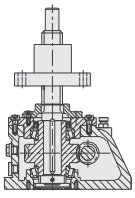
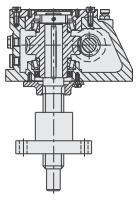
 Breather

 Oil filler

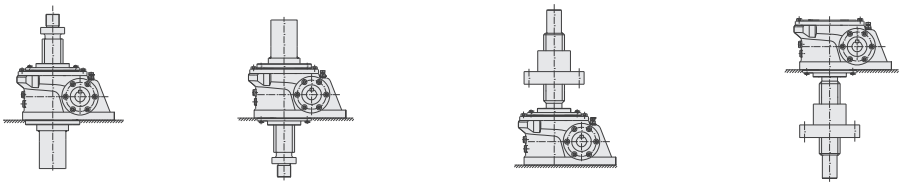
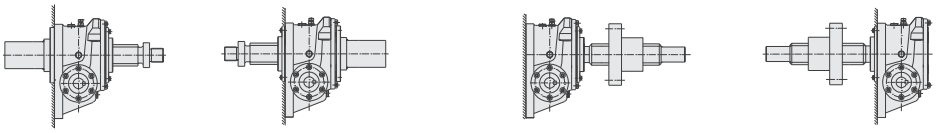
 Oil drain

Contents

1 Structure Scheme:

Structure Mode	Output Mode	Structure Drawing	Explanation
Plain mode	J ..BU		The screw may produce rotary force when lifting,so anti–rotation measures should be adopted.
	J ..BD		
With Anti–rotation device	J ..RU		With anti–rotation device,the screw travels up and down only and produces no rotary force.
	J ..RD		
Structure Traveling nut	J ..NU		For travelling nut type,the screw rotates to drive the nut move.Due to its cylindric structure,supporting mode is often used at the screw end to ensure good transmission of long stroke. Note:Bellows are not supplied with the travelling nut type screw jack.Consult us if required.
	J ..ND		

2 Mounting Positions:

D1	
D2	
D3	

Note:When applying D3 mounting position, performance level of foot–mounting bolts should be above 10.9.

3 Type Designation:

J 010 B U –100 H A – M1.5 + UT11 – D1 –90

Series

Size

Mounting Mode
B=Basic structure
R=Anti–rotation structure
N=Travelling nut structure

Output Modes
U=Screw rod upward
D=Screw rod downward

Stroke

Worm Ratio
H=High speed
L=Low speed

Input Modes
A/B/C/D/E/F/G

Input Part
M=Matched with motor
AF=Matched with motor connecting flange
Shaft input type, not marked when there is no input

Accessories

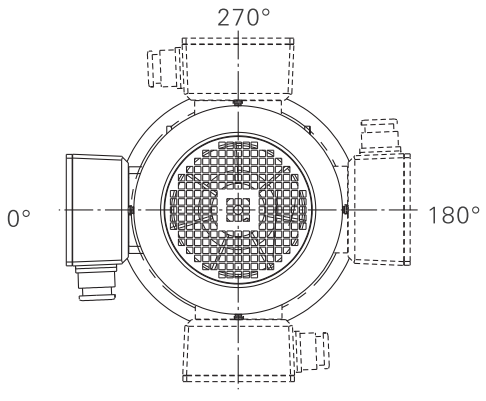
Mounting Positions
D1/D2/D3

Positions of Motor Terminal Box
0° /90° /180° /270°

Combined–type Designation:J100BU–200HE–CRL37–18.9–M1.1+UT11–D1–ZR01

Combined–type Designation:J100BU–200HE–R063FA–15–M1.1+UT11–D1–ZR01

Positions of Motor Terminal Box



Visual angle:motor end

4 Basic Parameters:

Type		J010	J025	J050	J100	J150	J200	J300	J500	J750	J1000
Maximum loading (KN)		9.8	24.5	49	98	147	196	294	490	735	980
Screw road external diameter (mm)		20	26	40	50	55	65	85	120	130	150
Screw rod bottom diameter (mm)		15.5	20.5	31	39	44	52	67	102	112	128
Screw rod bolt distance L1(mm)		4	5	8	10	10	12	16	16	16	20
Ratio i	H Speed	5	5.6	5.2	10.667	10.667	9.667	10.667	10.333	12.333	11.333
	L Speed	20	26	26	24	24	29	32	31	31	34
Comprehenswe efficiency	H Speed	21	21	22	22	20	20	19	15	13	13
	L Speed	12	12	14	15	14	13	11	10	8	8
Allowable input maximum Power (KW)	H Speed	0.47	1.06	2.05	2.32	2.36	4.70	8.18	13.93	13.37	22.63
	L Speed	0.35	0.38	0.56	1.41	2.2	3.58	3.90	6.14	9.00	9.92
Empty–loading torque T0	(N • m)	0.29	0.62	1.4	2	2.6	3.9	9.8	19.6	29.4	39.2
Allowable input shaft torque*	(N • m)	20	49	126	247	247	247	620	973	1745	2219
Input shaft torque for** Maximum loading (N • m)	H Speed	6	16.9	56	69.3	112.8	224.3	390.5	886.9	1277.2	2161
	L Speed	2.8	6.0	16.8	44.8	78.3	136.8	206.8	488.9	954.8	1353.5
The axial displacement of the screw Rod (movable nut) for each turn of the input shaft(mm)	H Speed	0.80	0.89	1.54	0.94	0.94	1.24	1.50	1.55	1.30	1.76
	L Speed	0.20	0.19	0.31	0.42	0.42	0.41	0.50	0.52	0.52	0.59
Allowable input shaft rotation speed (rpm) for maximum loading	H Speed	750	600	350	320	200	200	200	150	100	100
	L Speed	1200	600	320	300	290	250	180	120	90	70
Screw rod rotation torque during maximum loading (N • m)		20.1	65.1	201.5	503.6	813.2	1287.7	2531.9	5551.3	8921.8	13878.3
Pipe material		Stainless steel (rotation stop pipe applies common steel pipe)									
Lubrication mode		Apply splash lubrication in common									
Cooling method		Natural cooling									
Common ambient condition		Ambient temperature: −10℃ ~ 40℃, open site has good ventilation, altitude is under 1000 meters, common plant dust.									
Specied ambient condition		High temperature, low temperature, much dust, chemical effect (acid,alkali,etc), oper–air (direct sunshine,ice,water spray,etc), please consult.									

"*" Allowable torque of input shaft of the gear unit.
"**" Include non–loading torque value.

5 Type Selection:

5.1 Determination of screw jack type

(1) Calculation of total equivalent load Ws (N)

Ws=Wmax • f1(N)

Driven Machine Factor :

Load Characteristic	Example	Factor for driven machine
Uniform load, small inertia	Shifting device for switches, valves and conveyors	1.0 < f1 ≤ 1.3
Moderate shock load, medium inertia	Moving devices and elevators	1.3 < f1 ≤ 1.5
Heavy shock load, large inertia	Transport goods with trolley; keep the positions of calendering roller	1.5 < f1 ≤ 3.0

(2) Calculation of equivalent load of single jac kW(N):

$$W=\frac{Ws}{\text{Arrangment factor} \cdot \text{Number of jacks in arrangement} \quad fd}$$

Arrangement factor(fd)

Number of jacks in arrangement	1	2	3	4	5 ~ 8
Arrangement factor	1	0.95	0.9	0.85	0.8

(3) Initial selection of jack type:Make an initial selection of jack type by fully considering load,speed, travel, efficiency and drive source.

(4) Make final determination of screw jack type in view of stroke, ambient environment and top end fittings.

5.2 Verification of input power:

If the input power required is greater than the permissible input power, increase the size of the screw jack or decrease the speed of the screw.

Calculation of input power required:

Input speed required	n(r / min)	$n=\frac{V}{L_1}\times i$
Input torque required	T(N • m)	$T=\frac{W\times L_1}{2\pi\times i\times \eta}+T_0$
Input power required	P(kW)	$P=\frac{T\times n}{9550}$

V : Elevator screw shaft (flexible nut) lifting speed (m/min)

L1: Screw rod pitch (m) i: Ratio

w: Equivalent load of single elevator (N) π: Circular constant

η: Comprehensive efficiency of elevator T0: Empty loading torque (N • m)

(L1、i、η、T0 Refer to basic foundation table)

5.3 Verification of the screw stability

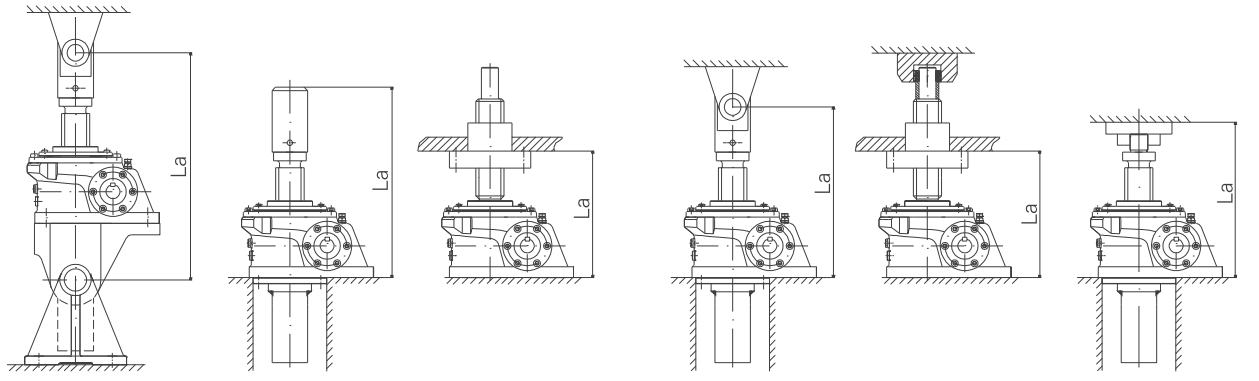
Verify the screw stability when the axial compression load exists. If the load is greater than the critical load, increase the sizes before calculation.

The critical load is calculated with the following formula:

$$P_{CR}=fm\times\left(\frac{d^2}{La}\right)^2 \qquad \text{ensure} \qquad P_{CR}>W\times S_F(S_F=4)$$

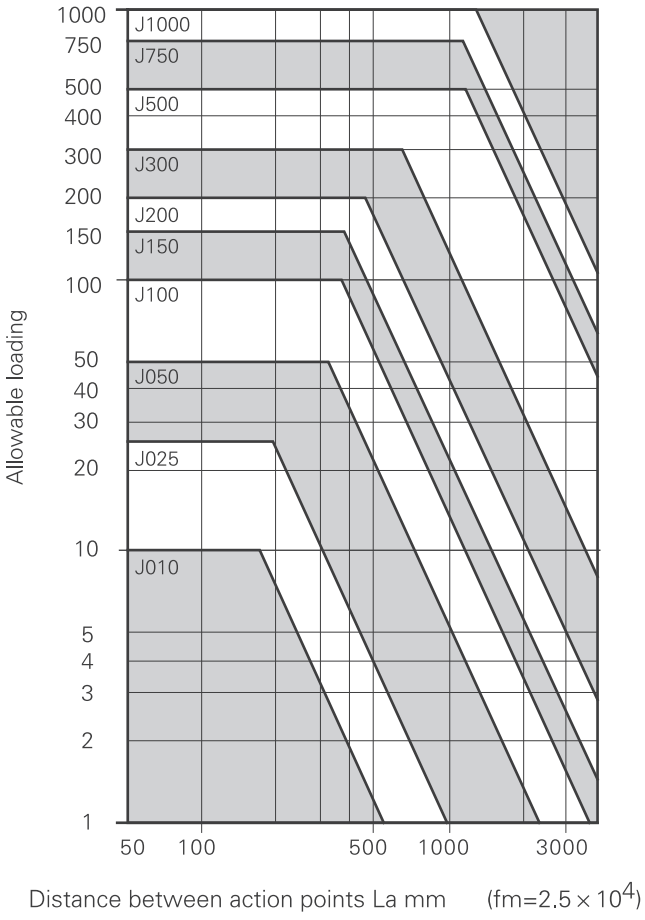
PCR: critical load
d: screw root diameter mm(see the table of technical data)
fm: support factor
La: distance between action points, mm
W: equivalent load of single jack(N)
SF: safety factor(generally SF=4)

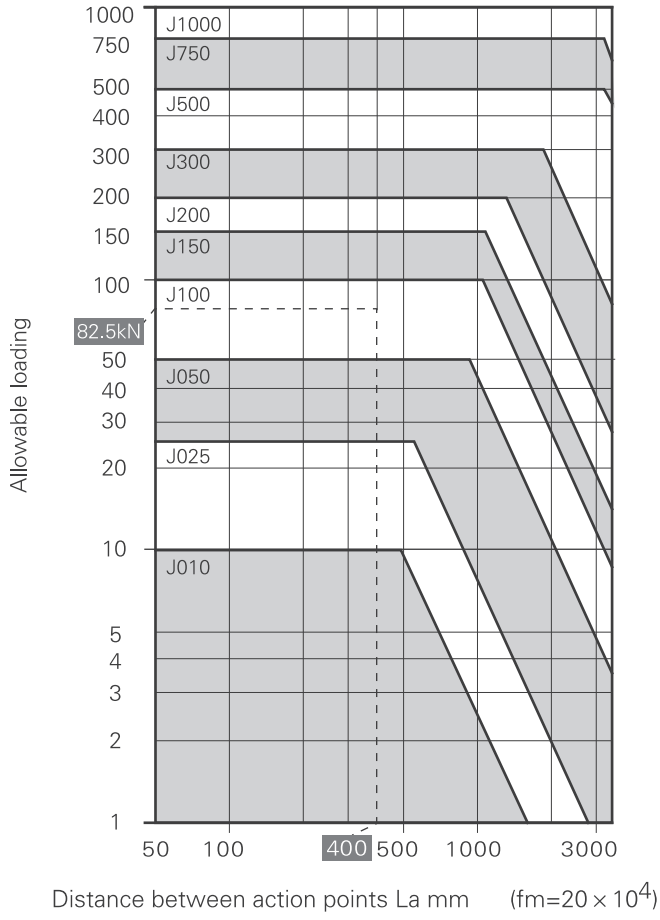
For verification of the screw stability, choose La(based on the sizes) and fm (support factor) as follows



Two end supporting $fm=10\times10^4$ Foundation solid shaft end freedom $fm=2.5\times2.5^4$ Foundation fixed shaft end support or fixing $fm=20\times20^4$

Associated diagram of allowed loading of point distance :





"———" means loading W=82.5kN, (safety coefficient SF=4) point distance La=400mm (foundation fixed shaft end supporting fixing fm=20×10^4) as an example; at this time, you can select ladder screw elevator J100 witch can satisfy crossing point of vertical and horizontal axis.

5.4 Verification of critical speed:

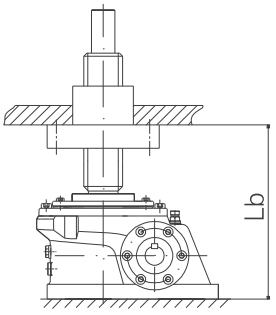
If select travelling nut type, the rotary speed of the screw must be lower than the critical speed; if vice versa, increase the size before calculation.

$$n_c = \frac{96 \times fn \times d \times 10^6}{Lb^2} \qquad n_s = \frac{n_1}{i}$$

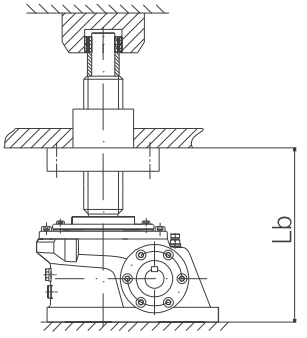
nc: critical speed r/min
d: screw root diameter mm(see the table of basic parameters)
fn: length factor
Lb: distance between supports, mm
ns: screw speed
n1: input speed r/min
i: ratio(see the table of basic parameters)

Lb (as per the sizes) and fn (length factor) are as follows in verifying the rotary speed of screw.

Movable shaft end fn=0.36



Supporting shaft end fn=1.56



Calculation example: J200NU–1200HA–D1 Input speed is 1200r/min，run under shaft end support, check according to outline dimension and transmisson capacity：
i=9.667 d=52 Lb=1432

$$n_s = \frac{n_1}{i} = \frac{1200}{9.667} = 124 \text{ r/min}$$

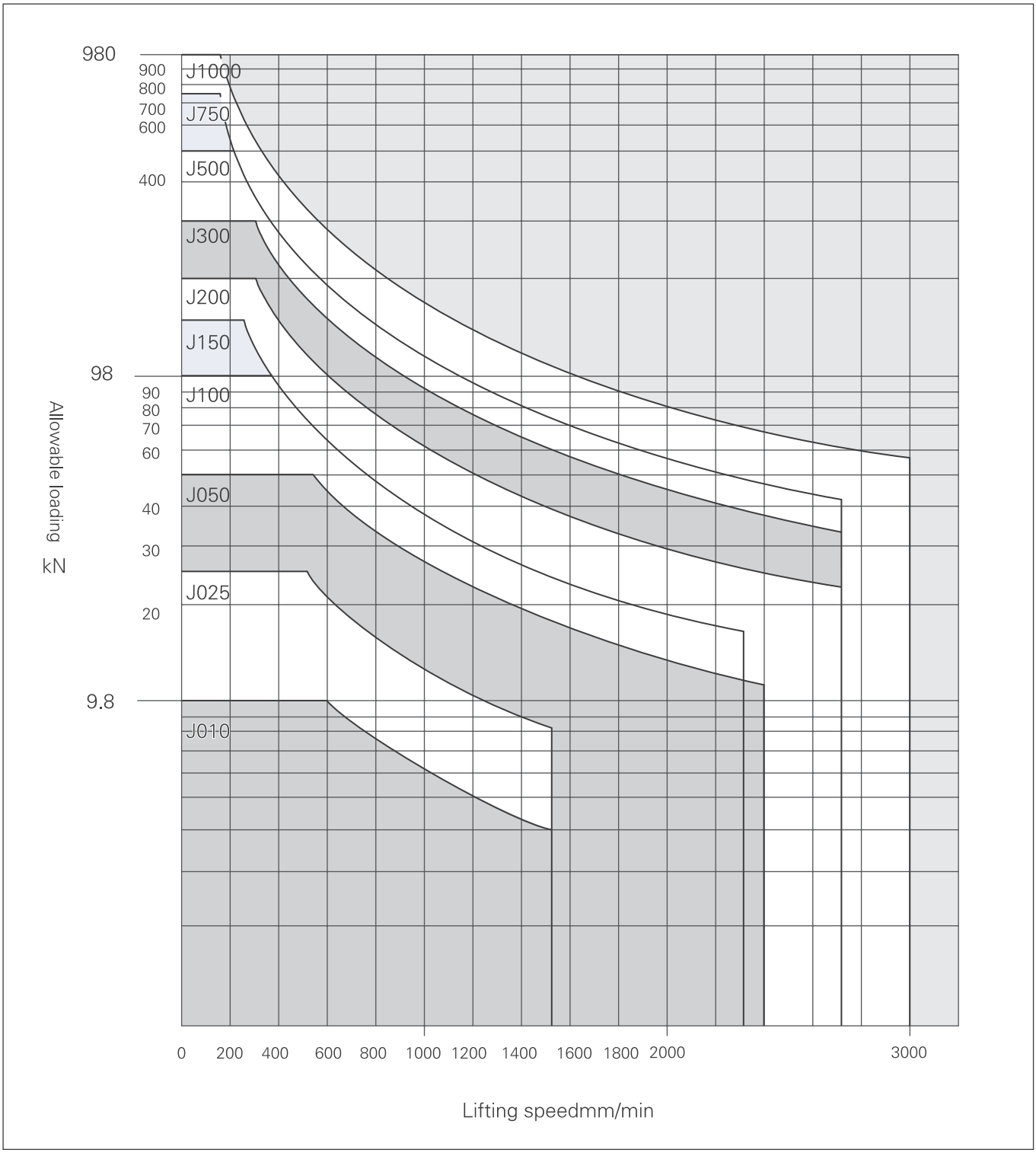
$$n_c = \frac{96 \times fn \times d \times 10^6}{Lb^2} = \frac{96 \times 1.56 \times 52 \times 10^6}{(1432)^2} = 3798 \text{ r/min}$$

nc=3798 r/min>124 r/min .....ok

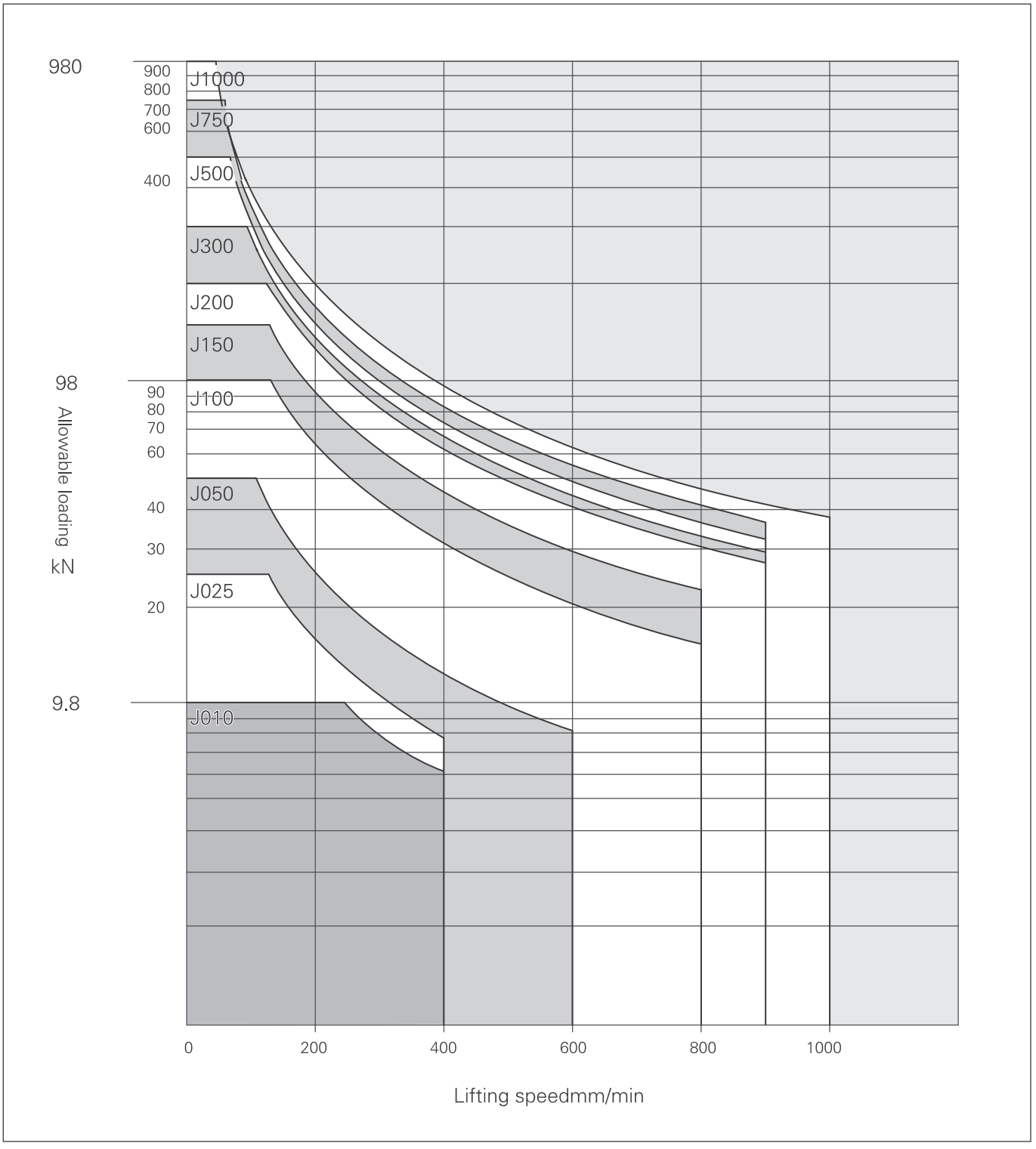
Association diagram of screw rod lifting speed and allowable loading:

The picture is established according to maximum allowable input capacity of screw rod, please check allowable loading according to this picture, determine elevator type. When detailed type is needed, confirm by calculation.

H Speed



L Speed


980
900
800
700
600
400
J1000
J750
J500
J300
J200
J150
98
90
80
70
60
J100
40
J050
30
J025
20
9.8
J010
Allowable loading
kN
0
200
400
600
800
1000
Lifting speedmm/min

5.5 Drive source options

Determine the required drive unit capacity for synchronous drive Pt

1. Add the torque required for each jack $T_{1\sim4}$ on the drive unit side to determine the overall torque Tt

(1) Required torque per jack:

$$T_{1\sim4} = \frac{T}{\text{Gearbox efficiency}^{\text{No.of gearbox}}}$$

(2) Required torque for the drive unit:

$T_t = T_1 + T_2 + T_3 + T_4$

$T_{1\sim4}$: Required torque for each jack on the drive unit side N.m

T : Required input torque per jack N.m

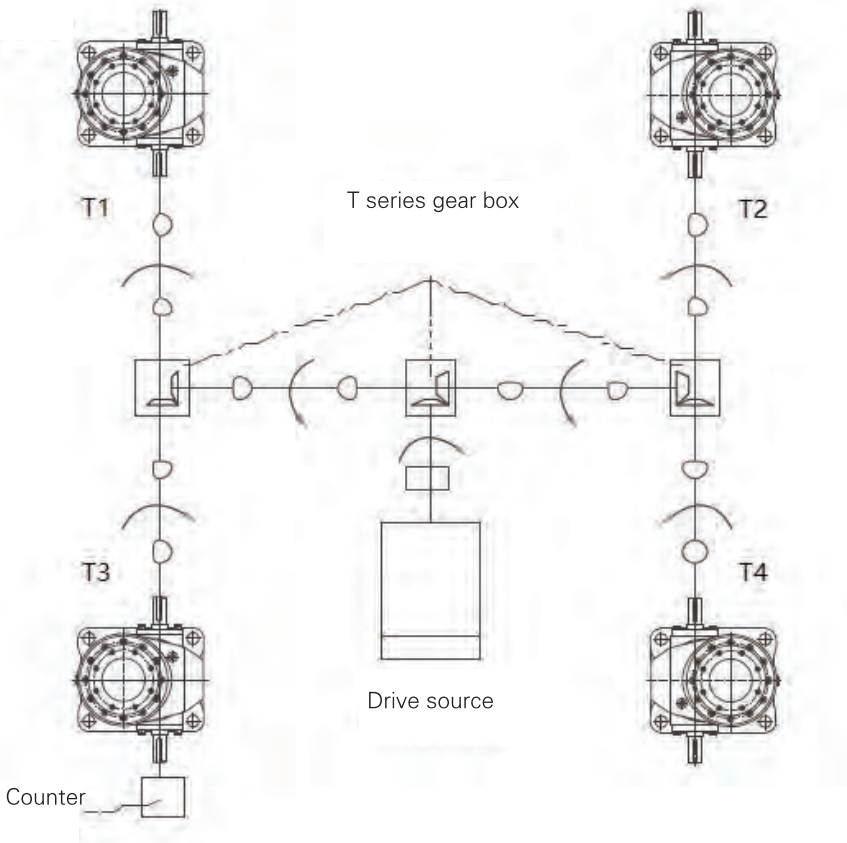
T_t : Required torque for the drive unit N.m

Gearbox efficiency: Assume 0.9

For a four unit system (fig.1),

$$T_{1\sim4} = \frac{T}{0.9^2}$$

fig.1



2.Determine the required drive unit capacity Pt with input n and overall Tt determined in 1.

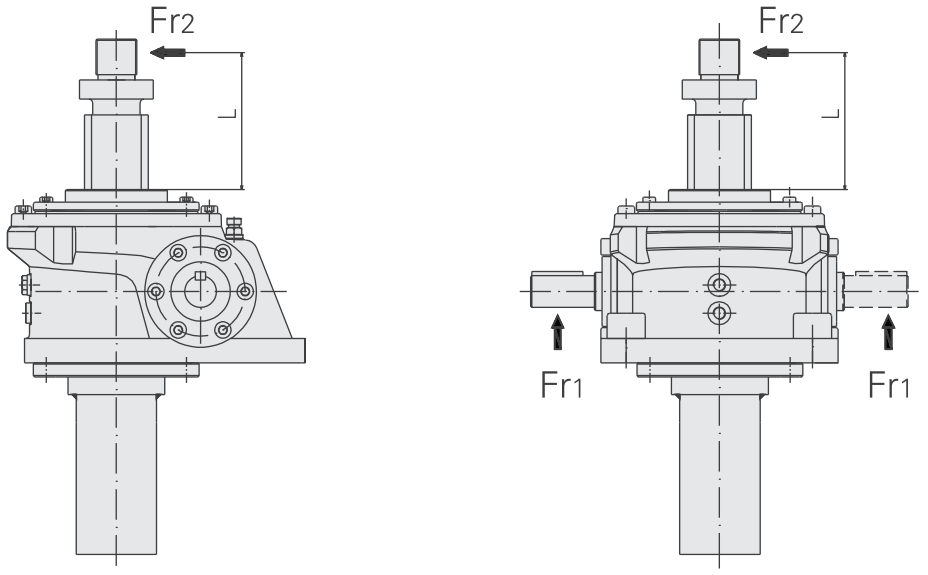
$$Pt = \frac{Tt \times n}{9550}$$

5.6 Allowable radial force of input shaft Fr1

When installing chain wheel, gear, belt on input shaft, please confirm radial force excerted on input shaft is under allowable radial force.

Ratio	Allowable radial force Fr1								Unit (N)	
	J010	J025	J050	J100	J150	J200	J300	J500	J750	J1000
H Speed	380	710	1500	2270	3160	4320	6110	10100	13900	18000
L Speed	220	420	820	1430	1950	2800	4400	6650	9390	13200

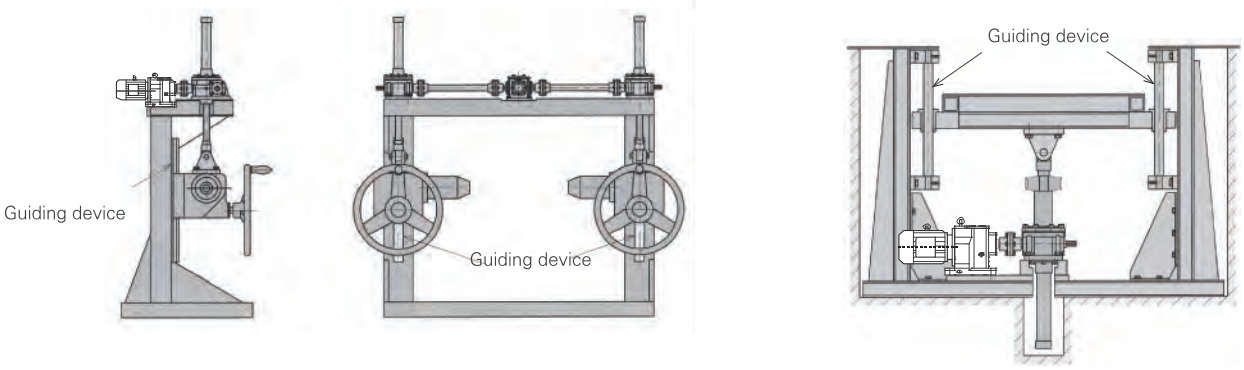
5.7 Allowable radial force of screw rod output end Fr2



When exerting force on screw rod output end, please confirm radial force exerted on screw rod output end, under allowable radial force

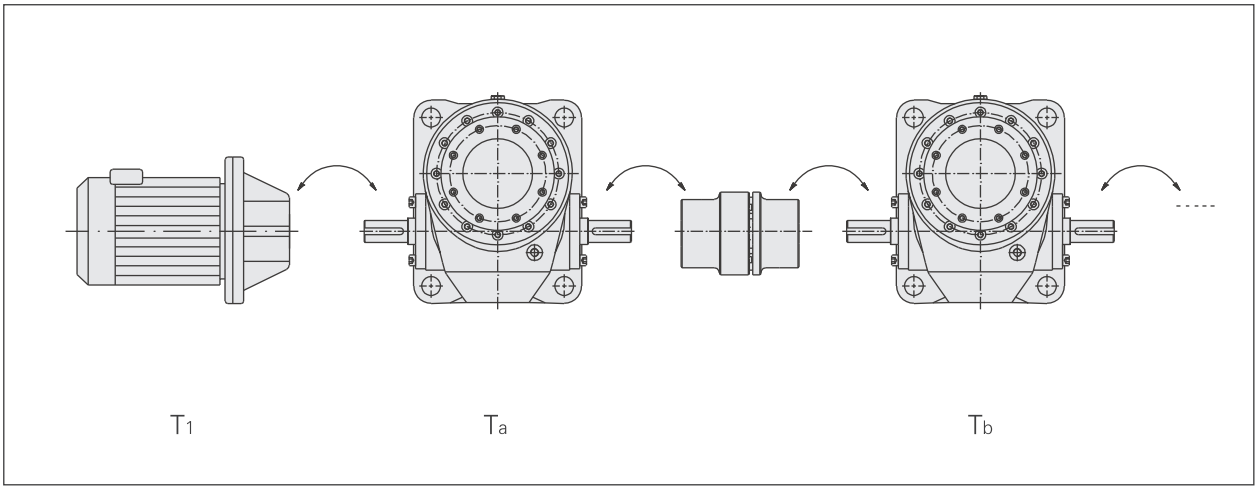
Type / Highlighted quantity of screw rod	Allowable radial force Fr2								Unit (N)	
	J010	J025	J050	J100	J150	J200	J300	J500	J750	J1000
100	318	570	2500	4010	4610	8210	38200	85300	73500	186200
200	159	290	1250	2010	2300	4110	23000	50400	56800	145000
300	106	190	830	1340	1540	2740	15300	33600	46100	104700
400	79	140	620	1000	1150	2050	11400	25200	39300	78500
500	64	110	500	800	920	1640	9100	20200	33900	62800
600	53	100	420	670	770	1370	7600	16800	29900	52300
700	51	90	360	570	660	1170	6500	14400	26700	44800
800	48	90	310	500	580	1030	5700	12600	24100	39200
900	45	90	280	450	510	910	5000	11200	22000	34800
1000	42	90	250	400	460	820	4500	10100	20200	31300

If external diameter force exceeds allowable radial force of screw rod, please add guide device, For example:



5.7 When elevator transmission is in series (that means the same axial line is equipped with two or more elevators)

Make strenght examination to input shaft end of each elevator:

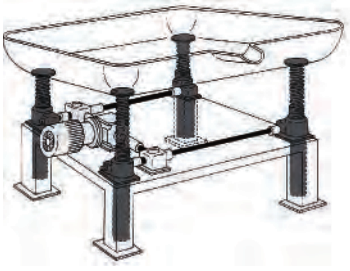


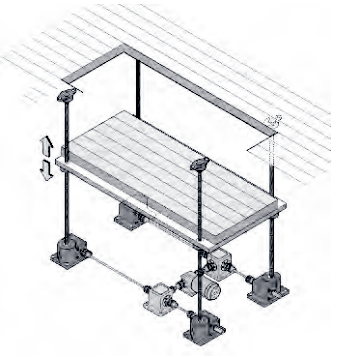
T_a: Input torque needed by elevator a

T_b: Input torque needed by elevator b

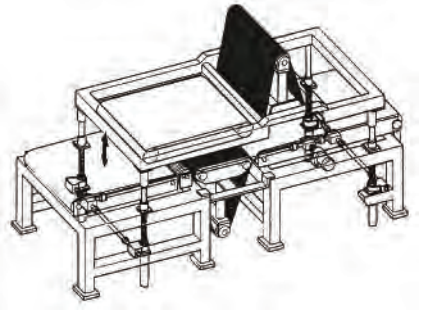
Torque needed by motor $T_1 = T_a + T_b <$ Allowable input shaft torque of elevator a

6 Examples:

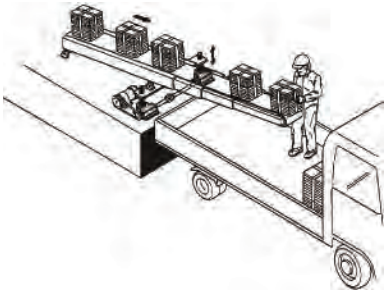




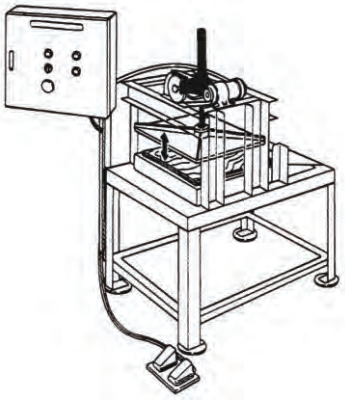
Lifting platform



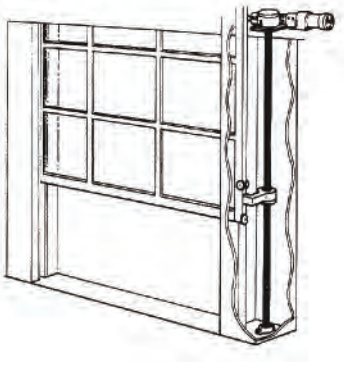
Height adjustment of surface machining tool



Inclination adjustment of the sliding belt



Height adjustment of straightening machine

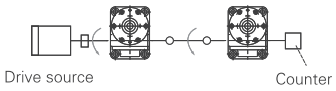


Auto opening of large windows or doors

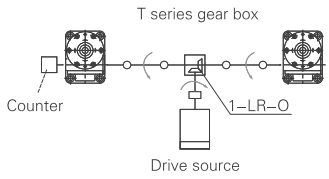
7 Arrangement Type Examples:

7.1 Two sets interlock

Linear

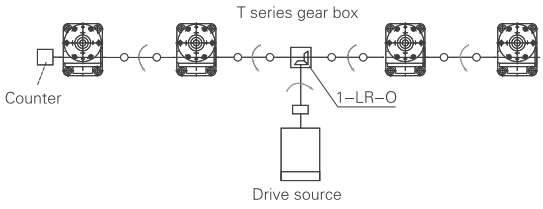


Layout T

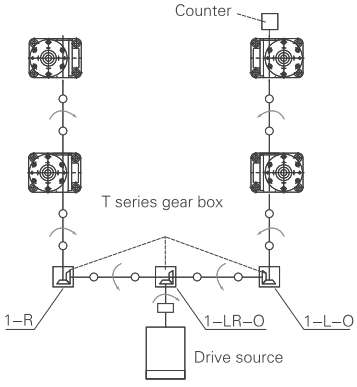


7.2 Four sets interlock

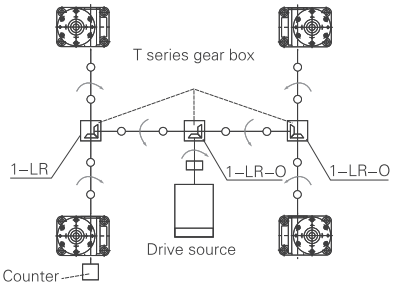
Layout T



Layout U

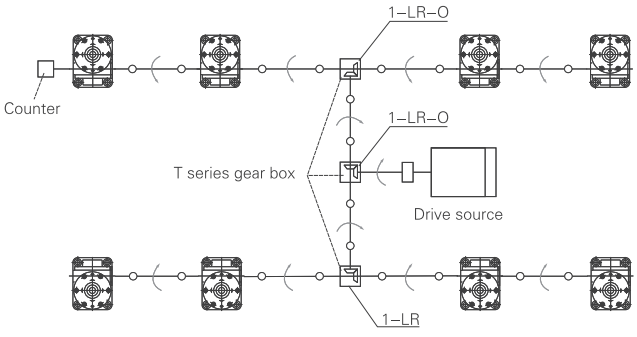


Layout H

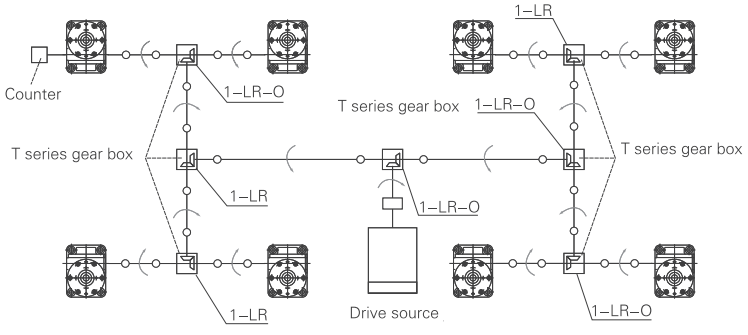


7.3 Eight sets interlock

Layout H



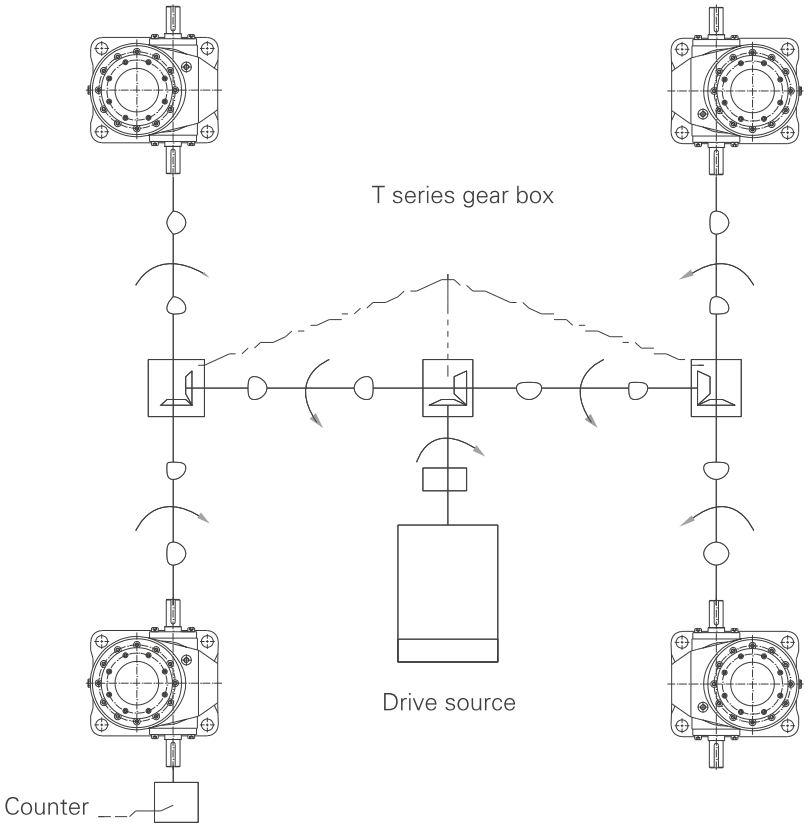
Layout 2H



8 Examples Of Type Selection:

Known Criteria:

1. The axial load of the lifting platform: 88KN, lifting speed: 200mm/min, stroke: 260mm
2. Normal motor: 4 pole, speed n1=1450r/min
3. Load characteristic: moderate, operating 16h/d, starts per hour:10
4. Mounting mode: 4 jacks, Layout H(See 14), foot–mounted with fixed shaft end, accessories UJ11 and UF11
5. Lateral load, guiding device on one side of the jack.



Selection steps:

1.Calculation of total equivalent load Ws (driven machine factor f1=1.3)

Ws=Wmax • f1=88000 × 1.3=114400N

2.Calculation of equivalent load of single jack W(arrangement factor fd=0.85)

W= 114400/(4X0.85) =33647N

3. Initial selection of jack type:

J050BU–300HA–UJ11–UF11selected after considering speed, efficiency, drive source, load and stroke allowance (In reference to the table of technical data, permissible load and distance between action points. If H/L ratio is difficult to deter–mine, use H ratio temporarily)

4. Verification of input power of single jack:

(1) Input power required by single jack:

① $n=\frac{v1}{L1}\times i=\frac{0.2}{0.008}\times 5.2=130$ r/min

② $T=\frac{W\times L1}{2\pi\times i\times \eta}+T0=\frac{33647\times 0.008}{2\times 3.14\times 5.2\times 0.22}+1.4=38.9N\cdot m$

③ $P=\frac{T\times n}{9550}=\frac{38.9\times 130}{9550}=0.53kW$

(2) According to the table of technical data, Pmax=2.05kW>P is OK.

5. Verification of screw stability:

According to the table of technical data (page 03) , associated diagram of allowed loading of point distance (page 05~06) and dimension diagram (page 23~24).

d=31, La=（489+33）=522, $fm=20\times 10^4$, SF=4

$P_{CR}=fm\times(\frac{d^2}{La})^2=20\times 10^4\times(\frac{31^2}{522})=677856N$

$P_{CR}=677856N>W\times S_F=33647\times 4=134456N$ is OK.

6. Verification of critical speed:

Because of none travelling nut type and low rotary speed, the verification of critical speed can be ignored.

Note: If the above verifications fail, select the larger size jack. For selection of T series gear units, refer to T series brochures.

7. Drive source options

（1）Required torque per jack：

$T_{1\sim4}=\frac{T}{\text{Gearbox efficiency}^{\text{No.of gearbox}}}=\frac{38.9}{0.9^2}=48N.m$

（2）Required torque for the drive unit：

$T_t=T_1+T_2+T_3+T_4=192N.m$

（3）required drive unit capacity：

$Pt=\frac{T_t\times n}{9550}=\frac{192\times 130}{9550}=2.61Kw$

（4）Drive source = required drive unit capacity × drive unitfactor=2.61 × 1.3=3.39KW

Based on above data,we select 4KW motor.

9 Notes:

- ◆ None of static, dynamic or shock loads should exceed the max permissible load. Selection of a jack with sufficient capacity must be based on safety factor, stroke and screw stability.
- ◆ Make sure that the speed matches the load. Verify the max permissible load, external permissible load and permitted rotary speed of the screw. In case these figures exceed those of the product, severe damage may occur in the machine.
- ◆ The surface temperature of the reduction part and the travelling nut should be within −15～80℃.
- ◆ Permissible speed of the input shaft is 1500r/min. Higher speed are not allowed.
- ◆ J screw jacks are not designed for continuous duty circle.
  The unit of %ED for single screw jack is 30min J (Trapezoid screw) duty circle must be less than 20%ED

$$ED=\frac{\text{work time in one load circle}}{\text{work time in one load circle+rest time in one load circle}}\times 100\%$$

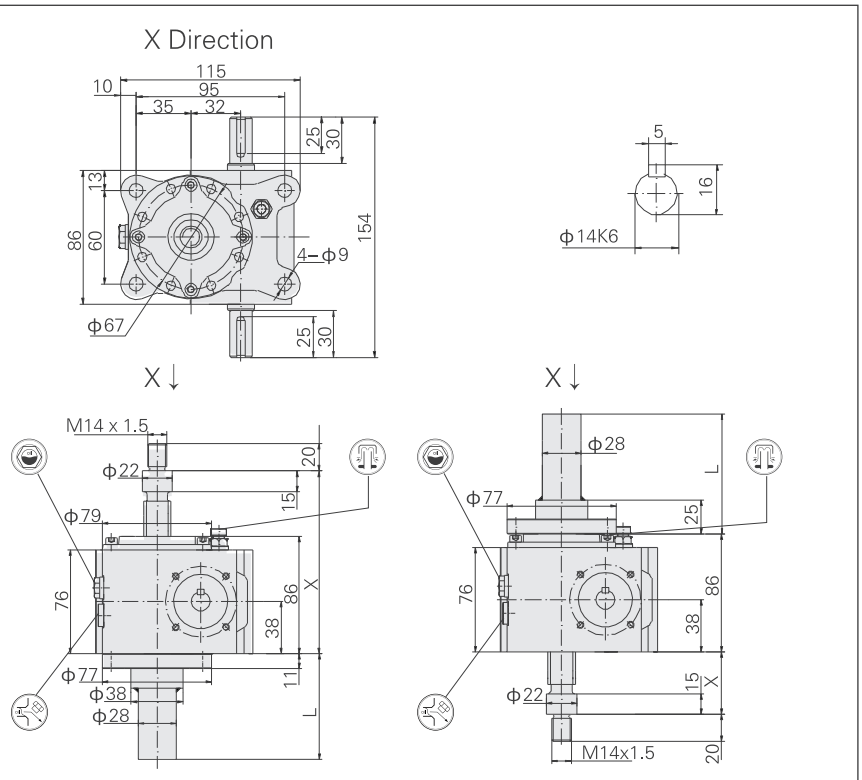
- ◆ If several screw jacks are arranged in an axial line, verify the strength of the input shaft and make sure the torque of each jack stay within the permissible input torque.
- ◆ Make sure the starting torque of the drive source is greater than 200% of the service torque.
- ◆ When working under below 0℃, the screw jack must be guaranteed by sufficient drive source, for its efficiency decreases as a result of the viscosity change in the grease.
- ◆ J has self−locking function theoretically, but may break down when working under heavy shock circumstance. So an additional break or a drive source with brake is recommended.
- ◆ The normal ambient environment: ambient temperature −10 to 40℃, ample space, good ventilation, altitude not exceeding 1000m and normal plant dust.
- ◆ When working in places with volume of dust, bellows should be supplied to guard the screw. In the open air, use the covers to protect the machine against rains and sunlight.
- ◆ Do not halt the screw jack intentionally during its operation, for it may cause severe damage to the product.

10 Outline Dimension:

J010

Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
25	111	136	161	186	119	5.4
50	111	161	161	211	144	5.4
100	111	211	161	261	194	5.5
150	111	261	161	311	244	5.6
200	111	311	161	361	294	5.7
250	111	361	201	451	384	6
300	111	411	201	501	434	6.1
350	111	461	201	551	484	6.2
400	111	511	201	601	534	6.3
500	111	611	236	736	669	6.6
600	111	711	236	836	769	6.9
800	111	911	271	1071	1004	7.5
1000	111	1111	301	1301	1234	8

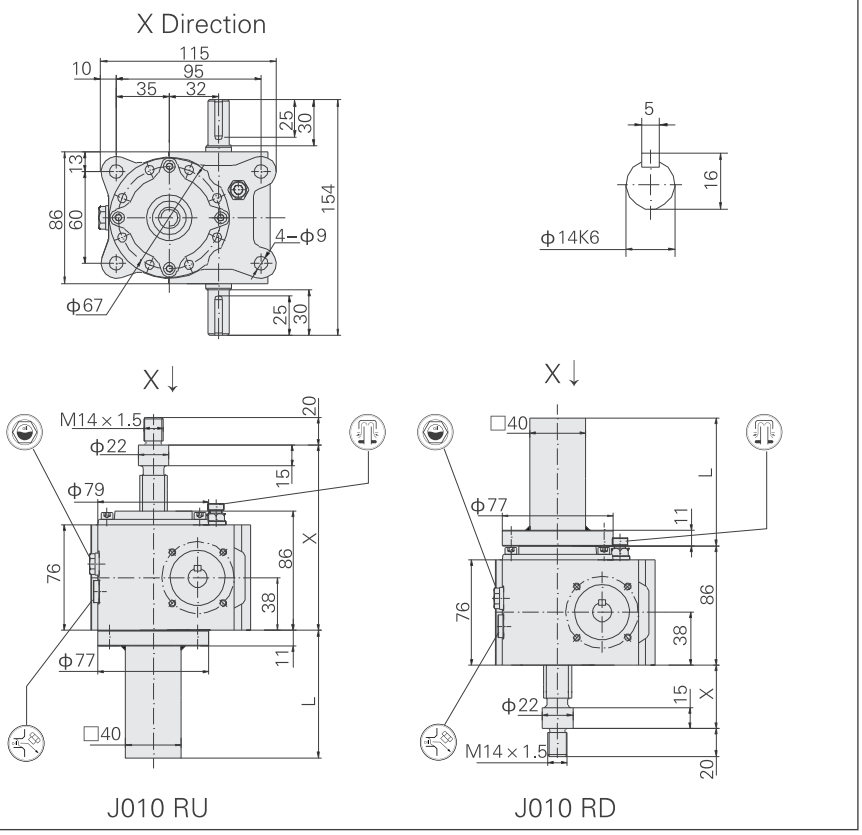
Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
25	25	50	75	100	119	5.4
50	25	75	75	125	144	5.4
100	25	125	75	175	194	5.5
150	25	175	75	225	244	5.6
200	25	225	75	275	294	5.7
250	25	275	115	365	384	6
300	25	325	115	415	434	6.1
350	25	375	115	465	484	6.2
400	25	425	115	515	534	6.3
500	25	525	150	650	669	6.6
600	25	625	150	750	769	6.9
800	25	825	185	985	1004	7.5
1000	25	1025	215	1215	1234	8



J010 BU J010 BD

Stroke (mm)	RU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
25	111	136	161	186	119	6.2
50	111	161	161	211	144	6.3
100	111	211	161	261	194	6.6
150	111	261	161	311	244	6.9
200	111	311	161	361	294	7.2
250	111	361	201	451	384	7.8
300	111	411	201	501	434	8.1
350	111	461	201	551	484	8.5
400	111	511	201	601	534	8.8
500	111	611	236	736	669	9.6
600	111	711	236	836	769	11
800	111	911	271	1071	1004	12
1000	111	1111	301	1301	1234	14

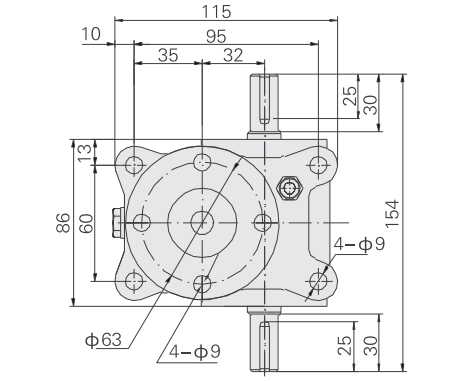
Stroke (mm)	RD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
25	25	50	75	100	119	6.2
50	25	75	75	125	144	6.3
100	25	125	75	175	194	6.6
150	25	175	75	225	244	6.9
200	25	225	75	275	294	7.2
250	25	275	115	365	384	7.8
300	25	325	115	415	434	8.1
350	25	375	115	465	484	8.5
400	25	425	115	515	534	8.8
500	25	525	150	650	669	9.6
600	25	625	150	750	769	11
800	25	825	185	985	1004	12
1000	25	1025	215	1215	1234	14

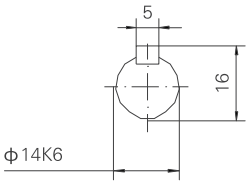


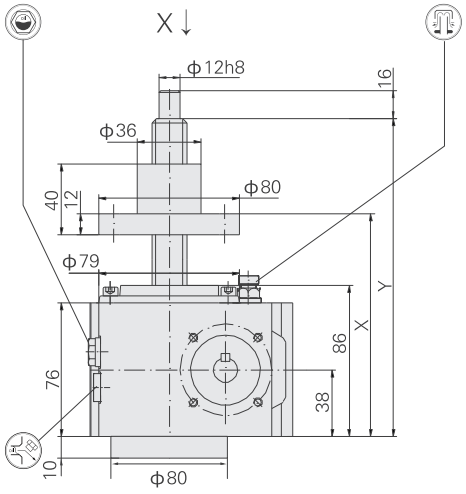
J010 RU J010 RD

Note: X (1) dimension with dust–proof cover.

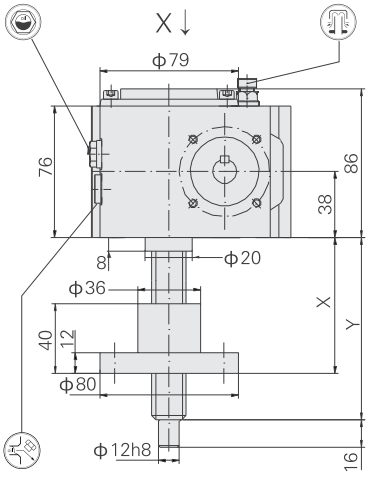
X Direction







J010 NU

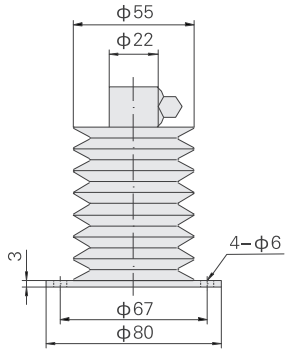


J010 ND

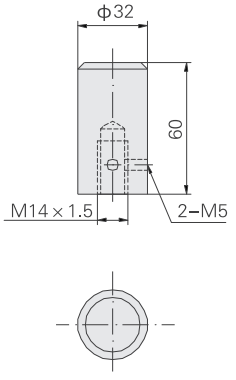
Stroke (mm)	NU			
	X		Y	m(kg)
	MIN	MAX		
25	108	133	171	5.8
50	108	158	196	5.8
100	108	208	246	5.9
150	108	258	296	6
200	108	308	346	6.1
250	108	358	396	6.2
300	108	408	446	6.2
350	108	458	496	6.3
400	108	508	546	6.4
500	108	608	646	6.6
600	108	708	746	6.8
800	108	908	946	7.2
1000	108	1108	1146	7.6

Stroke (mm)	ND			
	X		Y	m(kg)
	MIN	MAX		
25	60	85	95	5.8
50	60	110	120	5.8
100	60	160	170	5.9
150	60	210	220	6
200	60	260	270	6.1
250	60	310	320	6.2
300	60	360	370	6.2
350	60	410	420	6.3
400	60	460	470	6.4
500	60	560	570	6.6
600	60	660	670	6.8
800	60	860	870	7.2
1000	60	1060	1070	7.6

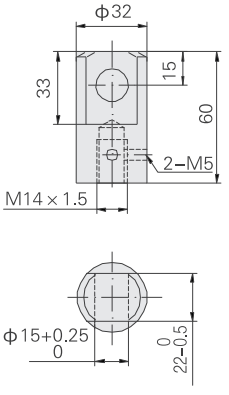
Accessories



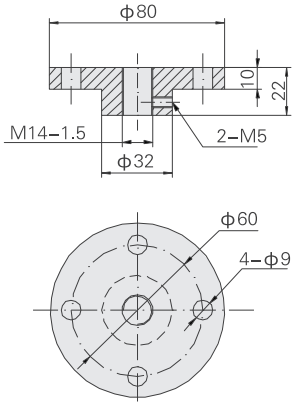
UJ11



UT12



UT11



UF11

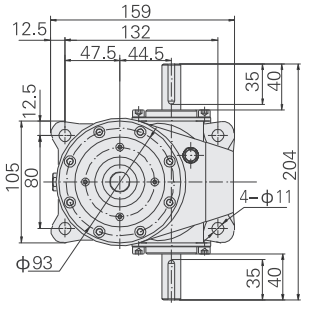
10 Outline Dimension:

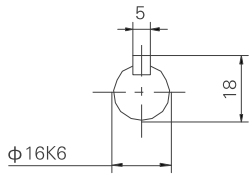
J025

Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	132	182	147	197	99	7.5
100	132	232	147	247	149	7.7
150	132	282	147	297	199	7.9
200	132	332	147	347	249	8.1
250	132	382	167	417	319	8.3
300	132	432	167	467	369	8.5
350	132	482	167	517	419	8.7
400	132	532	167	567	469	8.9
500	132	632	187	687	589	9.4
600	132	732	187	787	689	9.8
800	132	932	207	1007	909	11
1000	132	1132	227	1227	1129	12
1200	132	1332	242	1442	1334	13

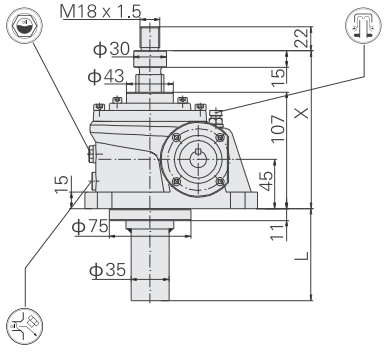
Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	42	92	57	107	99	7.5
100	42	142	57	157	149	7.7
150	42	192	57	207	199	7.9
200	42	242	57	257	249	8.1
250	42	292	77	327	319	8.3
300	42	342	77	377	369	8.5
350	42	392	77	427	419	8.7
400	42	442	77	477	469	8.9
500	42	542	97	597	589	9.4
600	42	642	97	697	689	9.8
800	42	842	117	917	909	11
1000	42	1042	137	1137	1129	12
1200	42	1242	152	1352	1334	13

X Direction



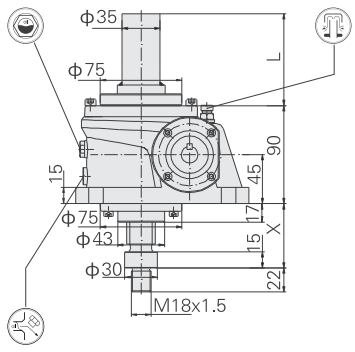


X↓



J025 BU

X↓

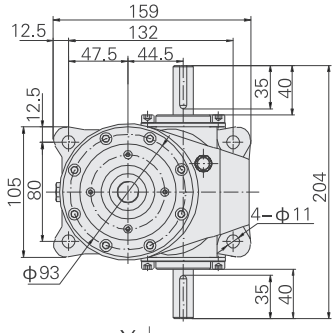


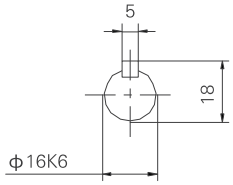
J025 BD

Stroke (mm)	RU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	132	182	147	197	125	9
100	132	232	147	247	175	10
150	132	282	147	297	225	11
200	132	332	147	347	275	12
250	132	382	167	417	345	12.5
300	132	432	167	467	395	13
350	132	482	167	517	445	13.5
400	132	532	167	567	495	14
500	132	632	187	687	615	15
600	132	732	187	787	715	17
800	132	932	207	1007	935	19
1000	132	1132	227	1227	1155	21
1200	132	1332	242	1442	1370	24

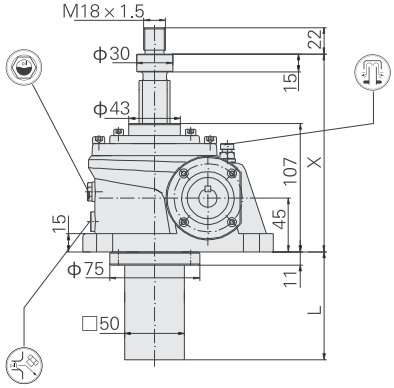
Stroke (mm)	RD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	42	92	57	107	125	9
100	42	142	57	157	175	10
150	42	192	57	207	225	11
200	42	242	57	257	275	12
250	42	292	77	327	345	12.5
300	42	342	77	377	395	13
350	42	392	77	427	445	13.5
400	42	442	77	477	495	14
500	42	542	97	597	615	15
600	42	642	97	697	715	17
800	42	842	117	917	935	19
1000	42	1042	137	1137	1155	21
1200	42	1242	152	1352	1370	24

X Direction



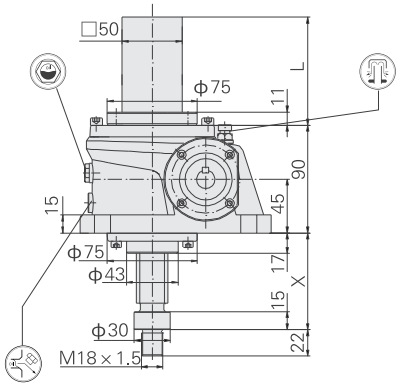


X↓



J025 RU

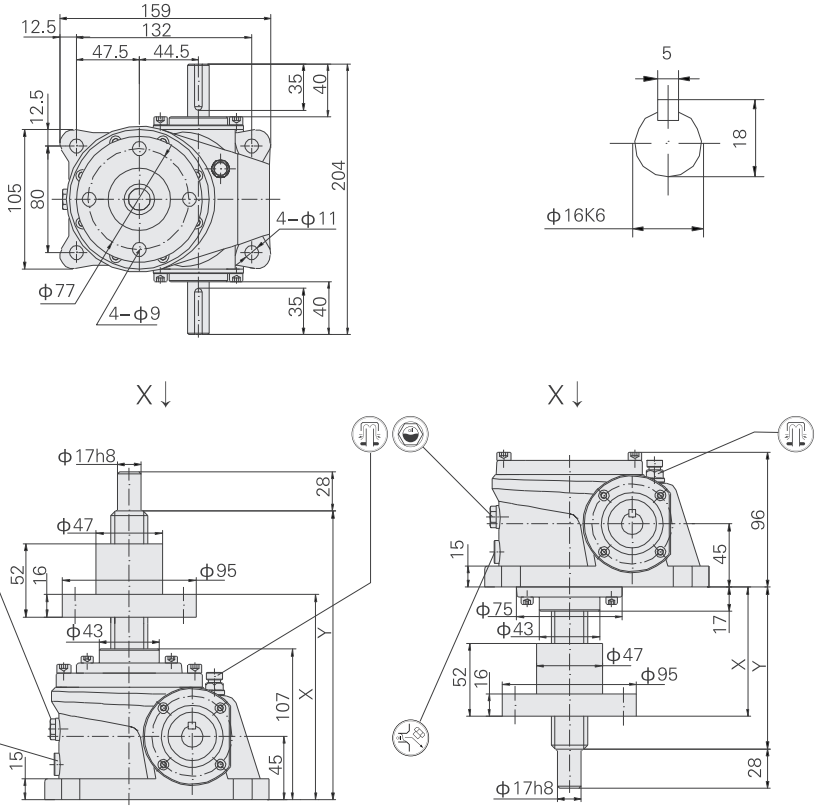
X↓



J025 RD

Note: X (1) dimension with dust–proof cover.

X Direction

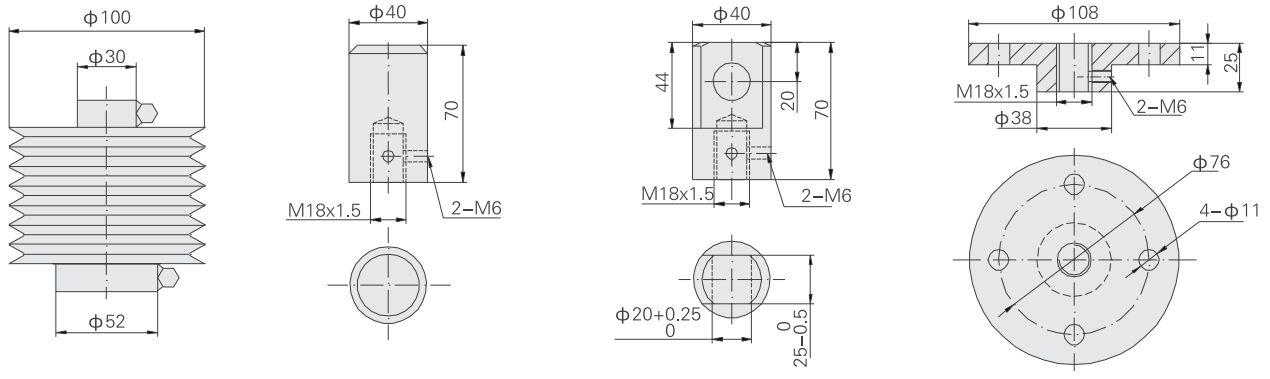


J025 NU J025 ND

Stroke (mm)	NU			
	X		Y	m(kg)
	MIN	MAX		
50	133	183	229	9.1
100	133	233	279	9.2
150	133	283	329	9.4
200	133	333	379	9.5
250	133	383	429	9.7
300	133	433	479	9.9
350	133	483	529	10.5
400	133	533	579	11
500	133	633	679	11
600	133	733	779	11
800	133	933	979	12
1000	133	1133	1179	13
1200	133	1333	1379	13

Stroke (mm)	ND			
	X		Y	m(kg)
	MIN	MAX		
50	79	129	139	9.1
100	79	179	189	9.2
150	79	229	239	9.4
200	79	279	289	9.5
250	79	329	339	9.7
300	79	379	389	9.9
350	79	429	439	10.5
400	79	479	489	11
500	79	579	589	11
600	79	679	689	11
800	79	879	889	12
1000	79	1079	1089	13
1200	79	1279	1289	13

Accessories



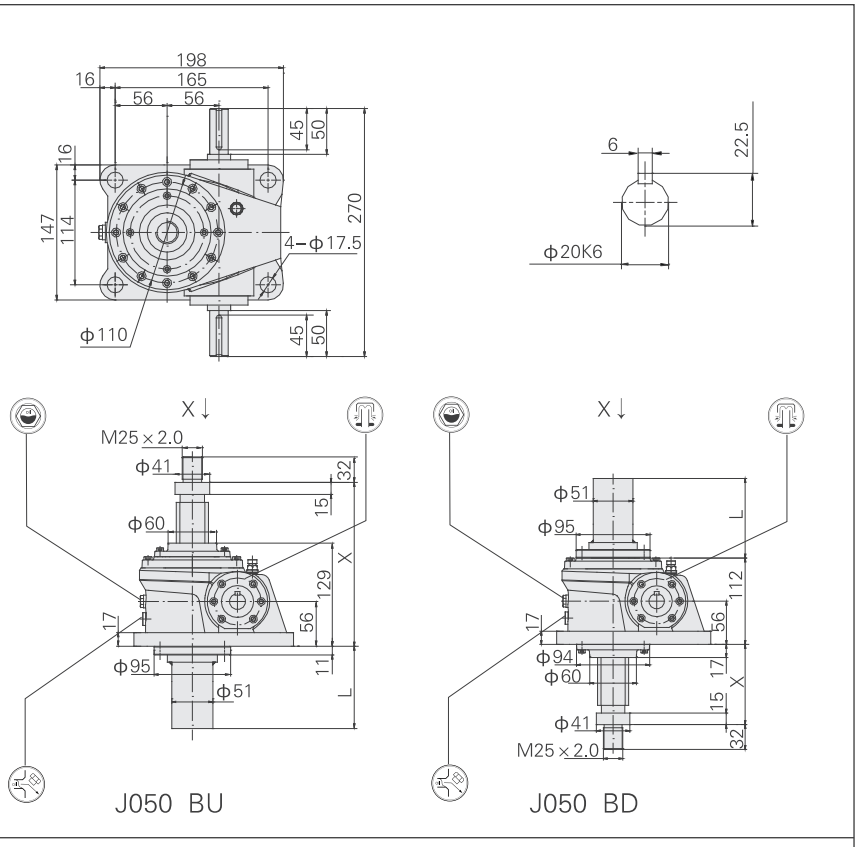
UJ11 UT12 UT11 UF11

10 Outline Dimension:

J050

Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	154	204	169	219	105	18
100	154	254	169	269	155	18
150	154	304	169	319	205	19
200	154	354	169	369	255	19
250	154	404	189	439	325	20
300	154	454	189	489	375	20
350	154	504	189	539	425	21
400	154	554	189	589	475	21
450	154	604	209	659	545	22
500	154	654	209	709	595	22
550	154	704	209	759	645	23
600	154	754	209	809	695	23
650	154	804	229	879	765	24
700	154	854	229	929	815	24
800	154	954	229	1029	915	25
1000	154	1154	249	1249	1135	27
1200	154	1354	264	1464	1350	29
1500	154	1654	289	1789	1675	32

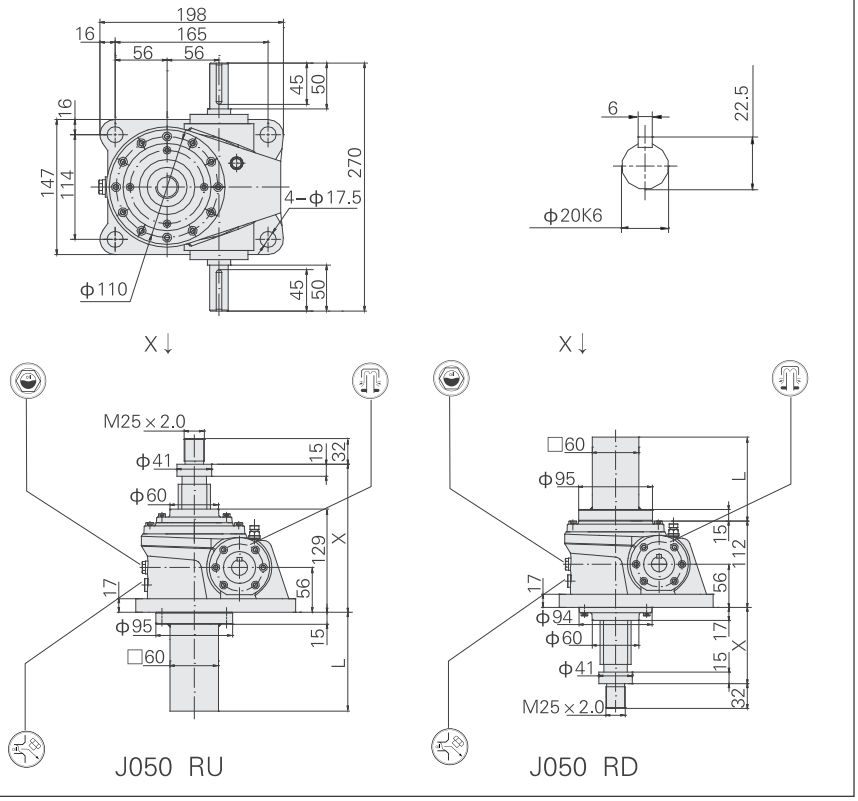
Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	42	92	57	107	105	18
100	42	142	57	157	155	18
150	42	192	57	207	205	19
200	42	242	57	257	255	19
250	42	292	77	327	325	20
300	42	342	77	377	375	20
350	42	392	77	427	425	21
400	42	442	77	477	475	21
450	42	492	97	547	545	22
500	42	542	97	597	595	22
550	42	592	97	647	645	23
600	42	642	97	697	695	23
650	42	692	117	767	765	24
700	42	742	117	817	815	24
800	42	842	117	917	915	25
1000	42	1042	137	1137	1135	27
1200	42	1242	152	1352	1350	29
1500	42	1542	177	1677	1675	32



J050 BU J050 BD

Stroke (mm)	RU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	154	204	169	219	133	21
100	154	254	169	269	183	22
150	154	304	169	319	233	23
200	154	354	169	369	283	24
250	154	404	189	439	353	25
300	154	454	189	489	403	26
350	154	504	189	539	453	27
400	154	554	189	589	503	28
450	154	604	209	659	573	29
500	154	654	209	709	623	30
550	154	704	209	759	673	31
600	154	754	209	809	723	32
650	154	804	229	879	793	33
700	154	854	229	929	843	34
800	154	954	229	1029	943	36
1000	154	1154	249	1249	1163	40
1200	154	1354	264	1464	1399	44
1500	154	1654	289	1789	1724	50

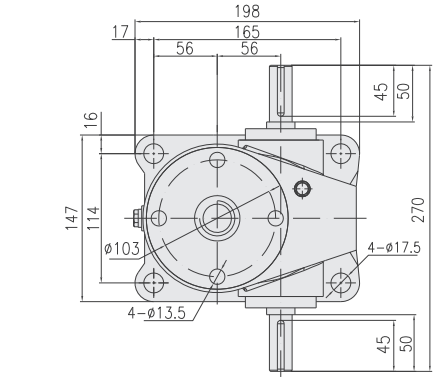
Stroke (mm)	RD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	42	92	57	107	133	21
100	42	142	57	157	183	22
150	42	192	57	207	233	23
200	42	242	57	257	283	24
250	42	292	77	327	353	25
300	42	342	77	377	403	26
350	42	392	77	427	453	27
400	42	442	77	477	503	28
450	42	492	97	547	573	29
500	42	542	97	597	623	30
550	42	592	97	647	673	31
600	42	642	97	697	723	32
650	42	692	117	767	793	33
700	42	742	117	817	843	34
800	42	842	117	917	943	36
1000	42	1042	137	1137	1163	40
1200	42	1242	152	1352	1399	44
1500	42	1542	177	1677	1724	50

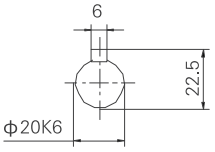


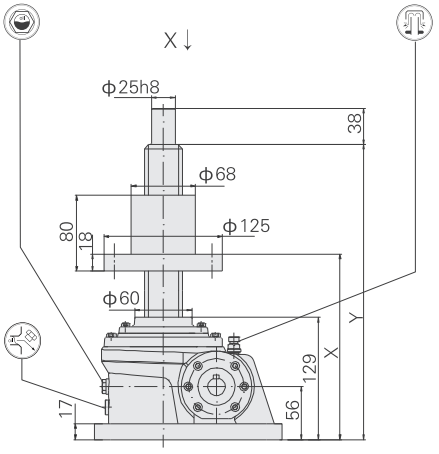
J050 RU J050 RD

Note: X (1) dimension with dust–proof cover.

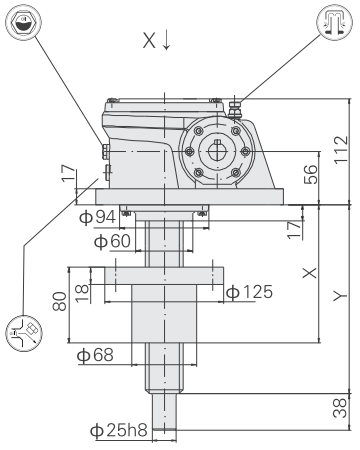
X Direction







J050 NU

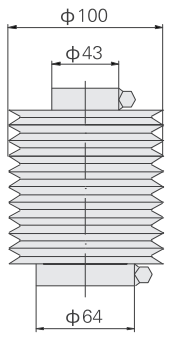


J050 ND

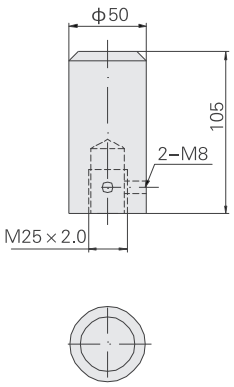
Stroke (mm)	NU			
	X		Y	m(kg)
	MIN	MAX		
50	157	207	280	22
100	157	257	330	22
150	157	307	380	22
200	157	357	430	22
250	157	407	480	23
300	157	457	530	23
350	157	507	580	24
400	157	557	630	24
450	157	607	680	25
500	157	657	730	25
550	157	707	780	26
600	157	757	830	26
650	157	807	880	27
700	157	857	930	27
800	157	957	1030	27
1000	157	1157	1230	29
1200	157	1357	1430	30
1500	157	1657	1730	33

Stroke (mm)	ND			
	X		Y	m(kg)
	MIN	MAX		
50	107	157	168	22
100	107	207	218	22
150	107	257	268	22
200	107	307	318	22
250	107	357	368	23
300	107	407	418	23
350	107	457	468	24
400	107	507	518	24
450	107	557	568	25
500	107	607	618	25
550	107	657	668	26
600	107	707	718	26
650	107	757	768	27
700	107	807	818	27
800	107	907	918	27
1000	107	1107	1118	29
1200	107	1307	1318	30
1500	107	1607	1618	33

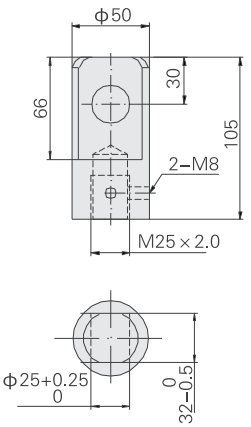
Accessories



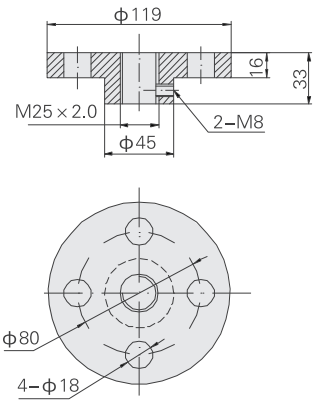
UJ11



UT12



UT11



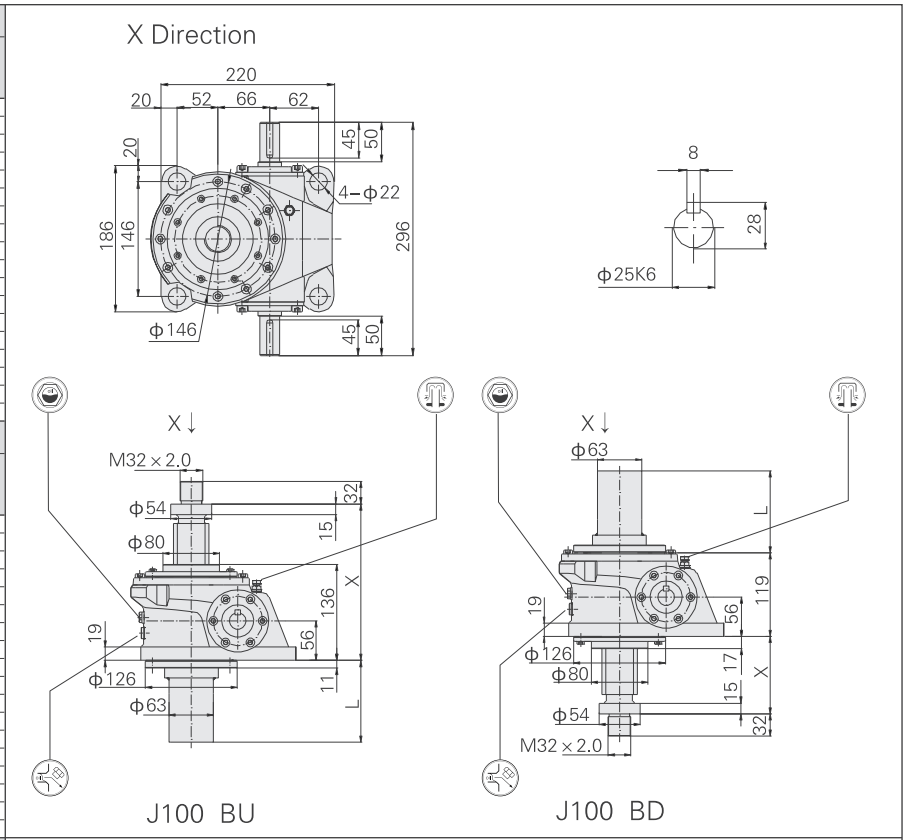
UF11

10 Outline Dimension:

J100

Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	161	211	171	221	101	26
100	161	261	171	271	151	27
150	161	311	171	321	202	28
200	161	361	171	371	252	29
250	161	411	186	436	316	31
300	161	461	186	486	366	32
350	161	511	186	536	416	33
400	161	561	186	586	466	34
450	161	611	211	661	541	36
500	161	661	211	711	591	37
550	161	711	211	761	641	39
600	161	761	211	811	691	40
650	161	811	226	876	756	42
700	161	861	226	926	806	43
800	161	961	226	1026	906	45
1000	161	1161	236	1236	1116	50
1200	161	1361	261	1461	1341	56
1500	161	1661	286	1786	1666	63

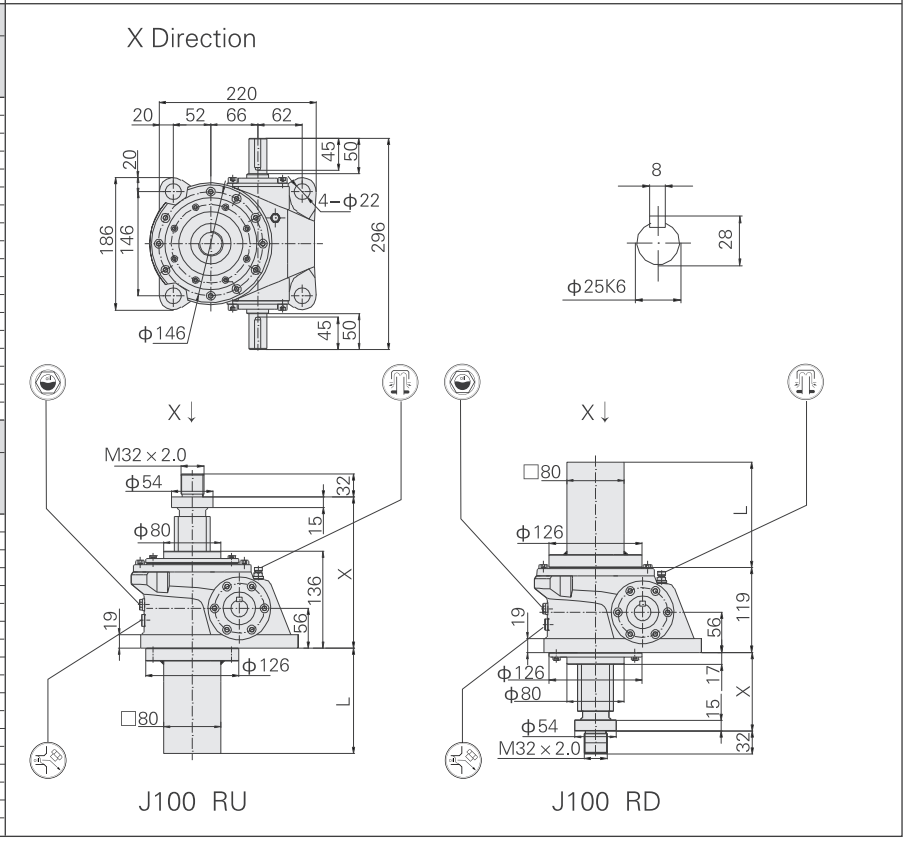
Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	42	92	52	102	101	26
100	42	142	52	152	151	27
150	42	192	52	202	202	28
200	42	242	52	252	252	29
250	42	292	67	317	316	31
300	42	342	67	367	366	32
350	42	392	67	417	416	33
400	42	442	67	467	466	34
450	42	492	92	542	541	36
500	42	542	92	592	591	37
550	42	592	92	642	641	39
600	42	642	92	692	691	40
650	42	692	107	757	756	42
700	42	742	107	807	806	43
800	42	842	107	907	906	45
1000	42	1042	117	1117	1116	50
1200	42	1242	142	1342	1341	56
1500	42	1542	167	1667	1666	63



J100 BU J100 BD

Stroke (mm)	RU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	161	211	171	221	130	29
100	161	261	171	271	180	30
150	161	311	171	321	232	31
200	161	361	171	371	282	32
250	161	411	186	436	346	34
300	161	461	186	486	396	35
350	161	511	186	536	446	36
400	161	561	186	586	496	37
450	161	611	211	661	571	39
500	161	661	211	711	621	40
550	161	711	211	761	671	42
600	161	761	211	811	721	43
650	161	811	226	876	786	45
700	161	861	226	926	836	46
800	161	961	226	1026	936	48
1000	161	1161	236	1236	1146	53
1200	161	1361	261	1461	1371	58
1500	161	1661	286	1786	1707	66

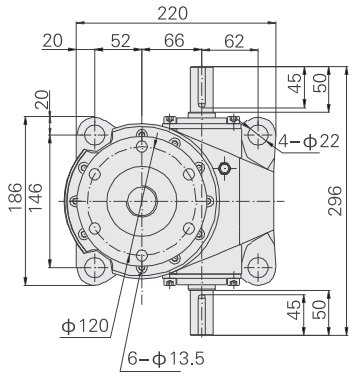
Stroke (mm)	RD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	42	92	52	102	130	29
100	42	142	52	152	180	30
150	42	192	52	202	232	31
200	42	242	52	252	282	32
250	42	292	67	317	346	34
300	42	342	67	367	396	35
350	42	392	67	417	446	36
400	42	442	67	467	496	37
450	42	492	92	542	571	39
500	42	542	92	592	621	40
550	42	592	92	642	671	42
600	42	642	92	692	721	43
650	42	692	107	757	786	45
700	42	742	107	807	836	46
800	42	842	107	907	936	48
1000	42	1042	117	1117	1146	53
1200	42	1242	142	1342	1371	58
1500	42	1542	167	1667	1707	66

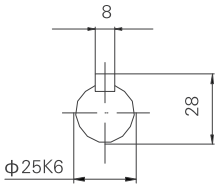


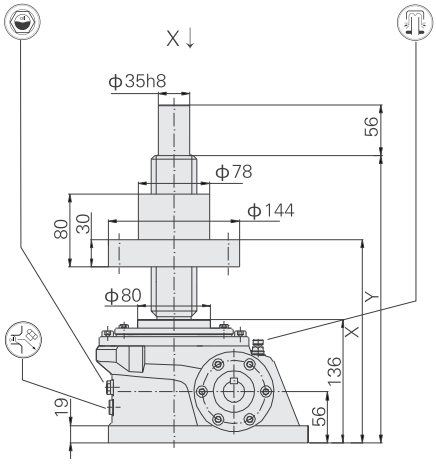
J100 RU J100 RD

Note: X (1) dimension with dust–proof cover.

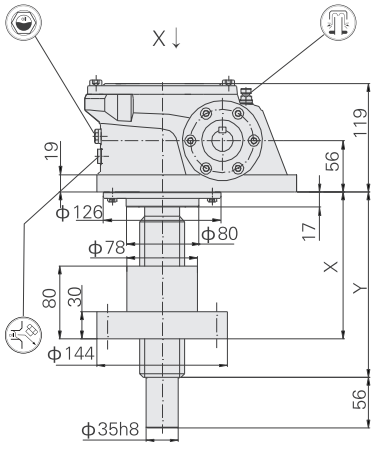
X Direction







J100 NU

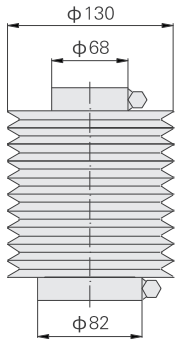


J100 ND

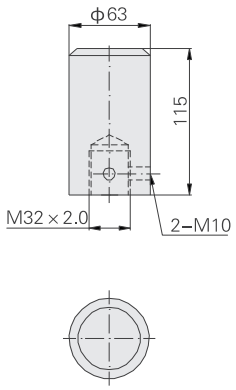
Stroke (mm)	NU			
	X		Y	m(kg)
	MIN	MAX		
50	177	227	287	32
100	177	277	337	32
150	177	327	387	33
200	177	377	437	33
250	177	427	487	34
300	177	477	537	34
350	177	527	587	35
400	177	577	637	36
450	177	627	687	37
500	177	677	737	37
550	177	727	787	38
600	177	777	837	38
650	177	827	887	39
700	177	877	937	40
800	177	977	1037	41
1000	177	1177	1237	43
1200	177	1377	1437	45
1500	177	1677	1737	49

Stroke (mm)	ND			
	X		Y	m(kg)
	MIN	MAX		
50	115	165	175	32
100	115	215	225	32
150	115	265	275	33
200	115	315	325	33
250	115	365	375	34
300	115	415	425	34
350	115	465	475	35
400	115	515	525	36
450	115	565	575	37
500	115	615	625	37
550	115	665	675	38
600	115	715	725	38
650	115	765	775	39
700	115	815	825	40
800	115	915	925	41
1000	115	1115	1125	43
1200	115	1315	1325	45
1500	115	1615	1625	49

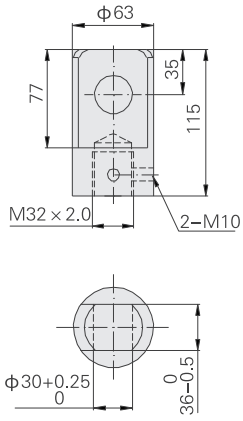
Accessories



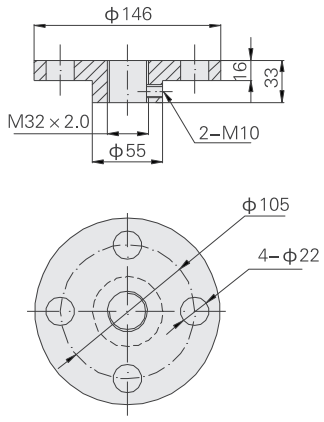
UJ11



UT12



UT11



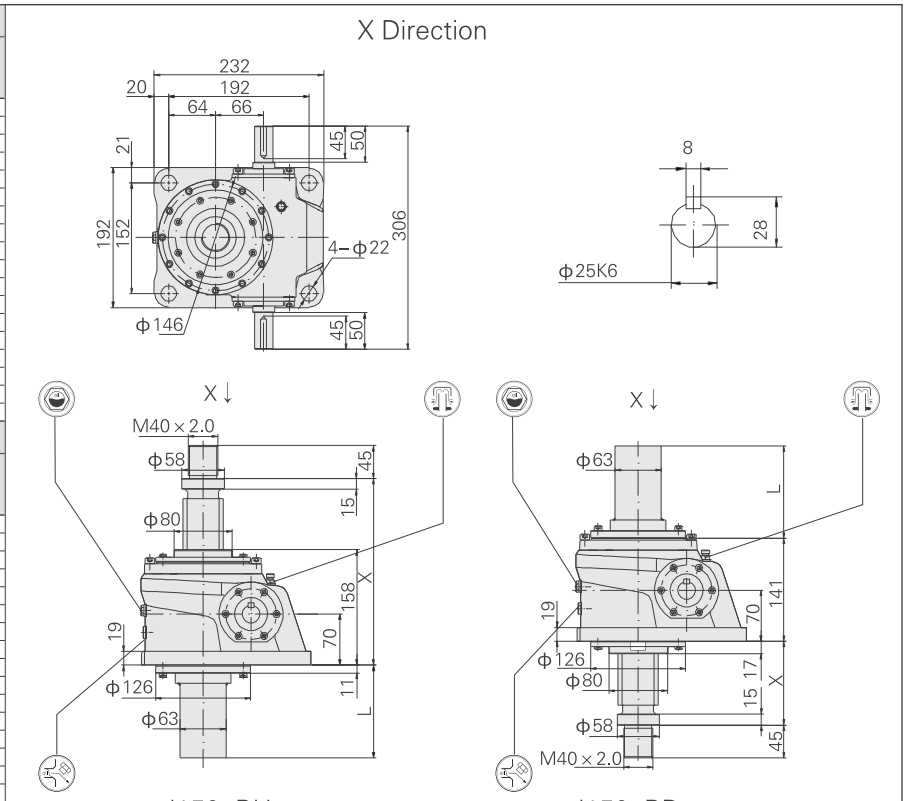
UF11

10 Outline Dimension:

J150

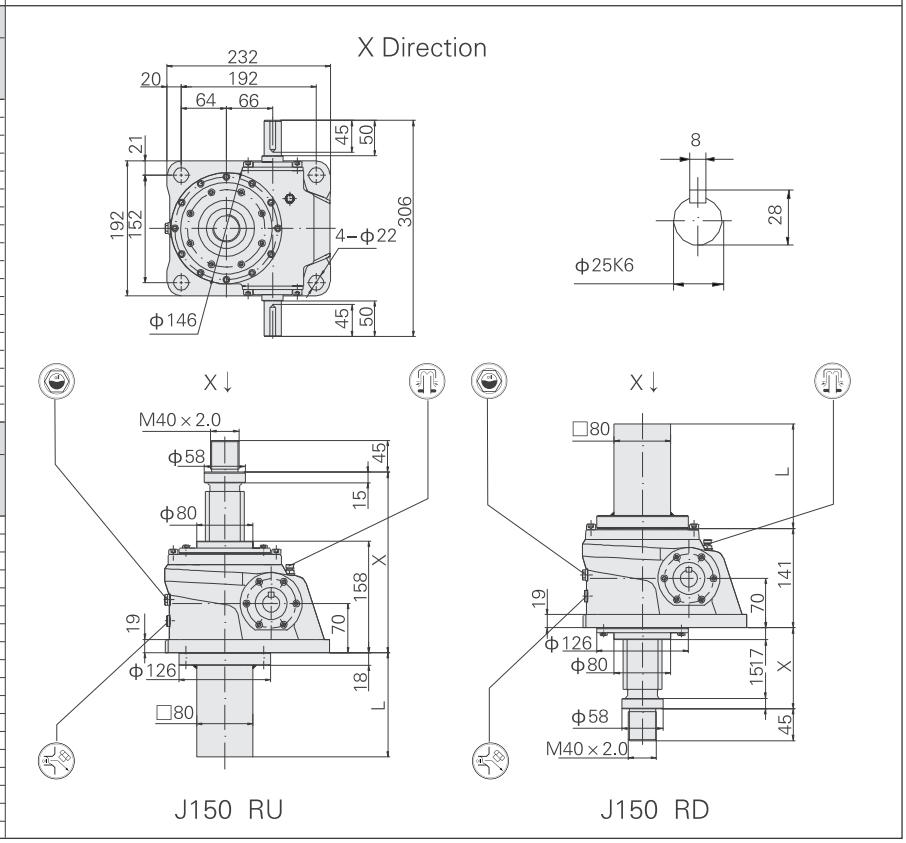
Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	183	233	193	243	101	32
100	183	283	193	293	151	33
150	183	333	193	343	202	34
200	183	383	193	393	252	35
250	183	433	208	458	316	37
300	183	483	208	508	366	38
350	183	533	208	558	416	39
400	183	583	208	608	466	41
450	183	633	233	683	541	44
500	183	683	233	733	591	45
550	183	733	233	783	641	46
600	183	783	233	833	691	47
650	183	833	248	898	756	49
700	183	883	248	948	806	50
800	183	983	248	1048	906	53
1000	183	1183	258	1258	1116	59
1200	183	1383	283	1483	1341	65
1500	183	1683	308	1808	1666	74

Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	42	92	52	102	101	32
100	42	142	52	152	151	33
150	42	192	52	202	202	34
200	42	242	52	252	252	35
250	42	292	67	317	316	37
300	42	342	67	367	366	38
350	42	392	67	417	416	39
400	42	442	67	467	466	41
450	42	492	92	542	541	44
500	42	542	92	592	591	45
550	42	592	92	642	641	46
600	42	642	92	692	691	47
650	42	692	107	757	756	49
700	42	742	107	807	806	50
800	42	842	107	907	906	53
1000	42	1042	117	1117	1116	59
1200	42	1242	142	1342	1341	65
1500	42	1542	167	1667	1666	74



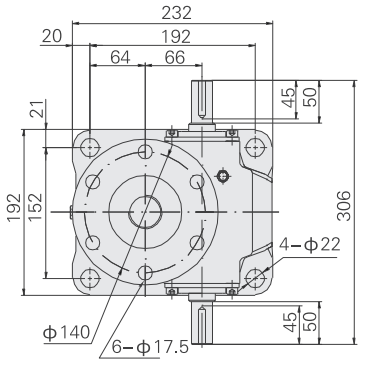
Stroke (mm)	RU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	183	233	193	243	130	36
100	183	283	193	293	180	37
150	183	333	193	343	232	38
200	183	383	193	393	282	40
250	183	433	208	458	346	42
300	183	483	208	508	396	43
350	183	533	208	558	446	44
400	183	583	208	608	496	46
450	183	633	233	683	571	48
500	183	683	233	733	621	49
550	183	733	233	783	671	50
600	183	783	233	833	721	52
650	183	833	248	898	786	54
700	183	883	248	948	836	56
800	183	983	248	1048	936	58
1000	183	1183	258	1258	1146	64
1200	183	1383	283	1483	1371	69
1500	183	1683	308	1808	1707	78

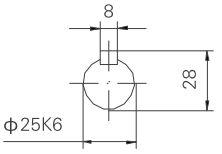
Stroke (mm)	RD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
50	42	92	52	102	130	36
100	42	142	52	152	180	37
150	42	192	52	202	232	38
200	42	242	52	252	282	40
250	42	292	67	317	346	42
300	42	342	67	367	396	43
350	42	392	67	417	446	44
400	42	442	67	467	496	46
450	42	492	92	542	571	48
500	42	542	92	592	621	49
550	42	592	92	642	671	50
600	42	642	92	692	721	52
650	42	692	107	757	786	54
700	42	742	107	807	836	56
800	42	842	107	907	936	58
1000	42	1042	117	1117	1146	64
1200	42	1242	142	1342	1371	69
1500	42	1542	167	1667	1707	78

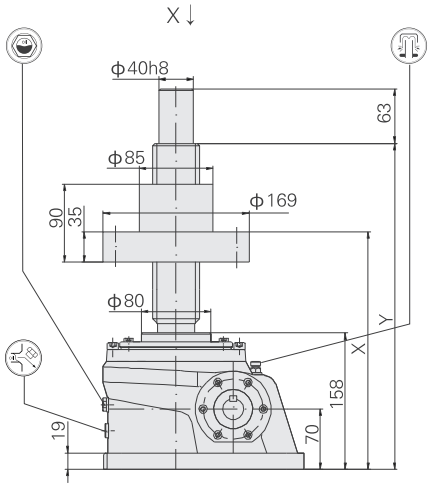


Note: X (1) dimension with dust–proof cover.

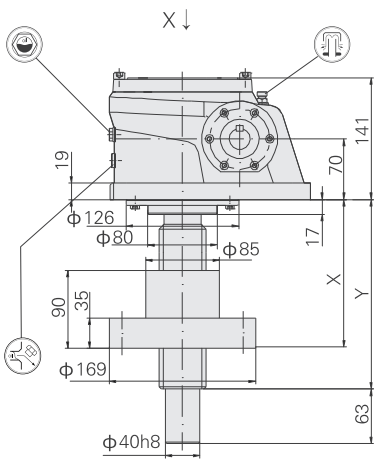
X Direction







J150 NU

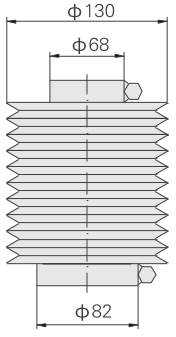


J150 ND

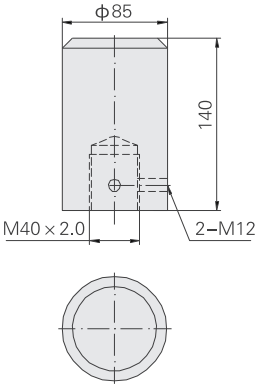
Stroke (mm)	NU			
	X		Y	m(kg)
	MIN	MAX		
50	204	254	319	39
100	204	304	369	40
150	204	354	419	41
200	204	404	469	42
250	204	454	519	42.5
300	204	504	569	43
350	204	554	619	44
400	204	604	669	45
450	204	654	719	45.5
500	204	704	769	46
550	204	754	819	47
600	204	804	869	48
650	204	854	919	49
700	204	904	969	50
800	204	1004	1069	51
1000	204	1204	1269	54
1200	204	1404	1469	57
1500	204	1704	1769	61

Stroke (mm)	ND			
	X		Y	m(kg)
	MIN	MAX		
50	119	169	179	39
100	119	219	229	40
150	119	269	279	41
200	119	319	329	42
250	119	369	379	42.5
300	119	419	429	43
350	119	469	479	44
400	119	519	529	45
450	119	569	579	45.5
500	119	619	629	46
550	119	669	679	47
600	119	719	729	48
650	119	769	779	49
700	119	819	829	50
800	119	919	929	51
1000	119	1119	1129	54
1200	119	1319	1329	57
1500	119	1619	1629	61

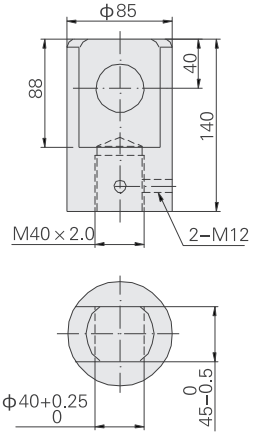
Accessories



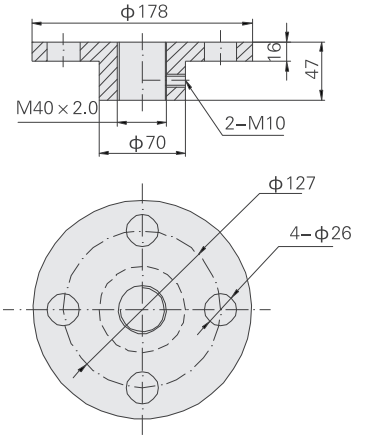
UJ11



UT12



UT11



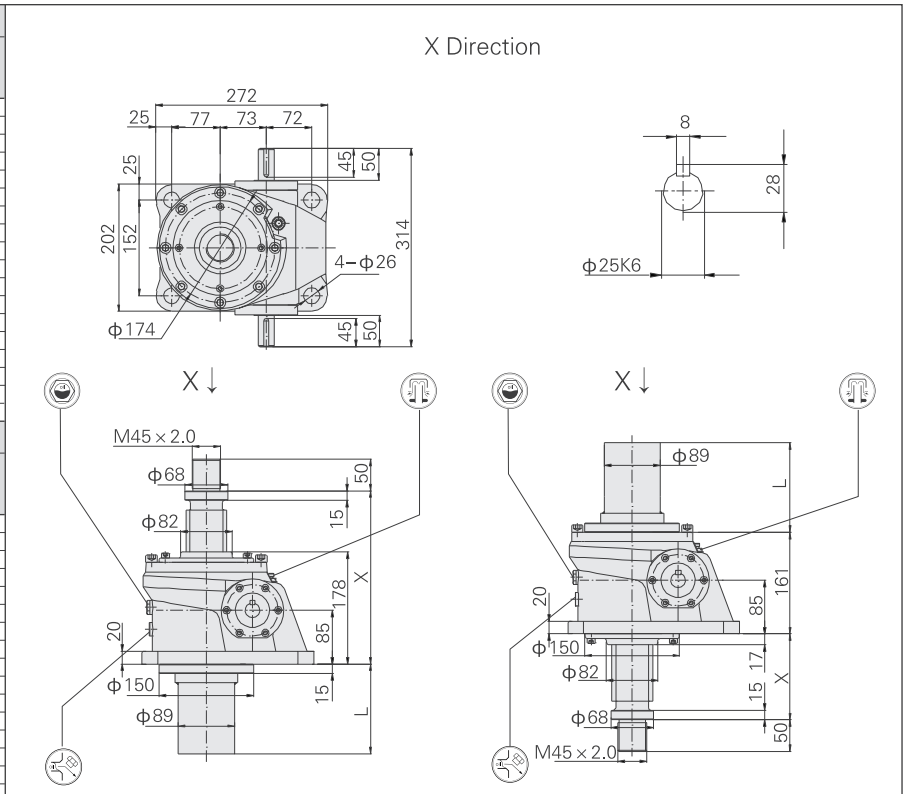
UF11

10 Outline Dimension:

J200

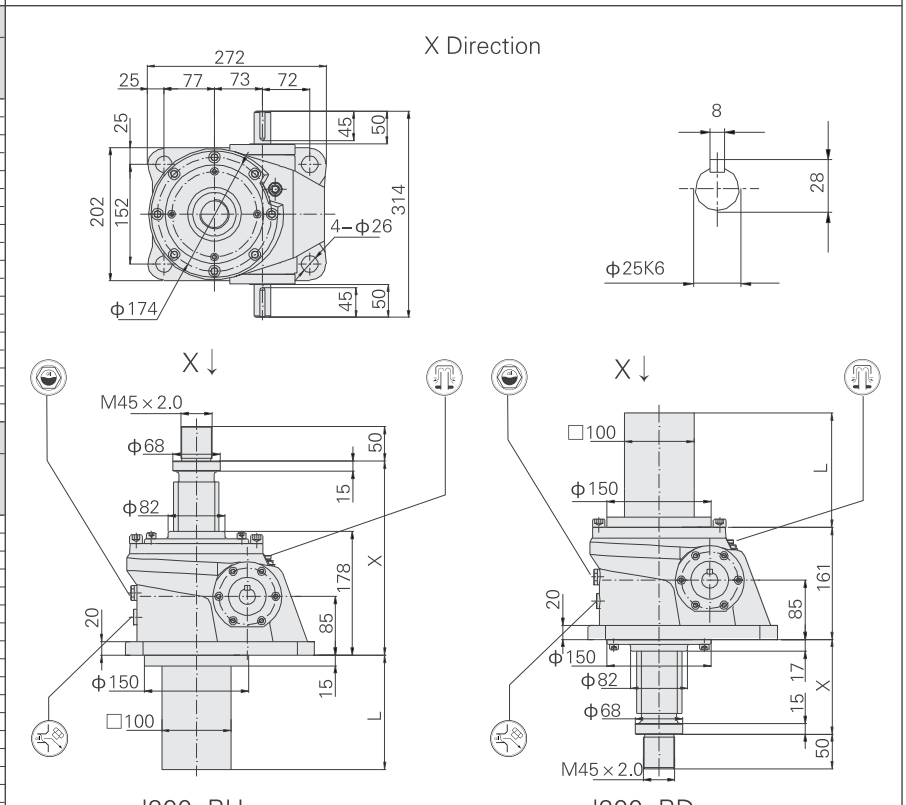
Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	203	303	213	313	151	42
150	203	353	213	363	202	43
200	203	403	213	413	252	45
250	203	453	228	478	316	47
300	203	503	228	528	366	49
350	203	553	228	578	416	51
400	203	603	228	628	466	53
450	203	653	253	703	541	55
500	203	703	253	753	591	57
550	203	753	253	803	641	59
600	203	803	253	853	691	60
650	203	853	268	918	756	62
700	203	903	268	968	806	64
800	203	1003	268	1068	906	67
1000	203	1203	278	1278	1116	74
1200	203	1403	303	1503	1341	81
1500	203	1703	328	1828	1666	92
2000	203	2203	373	2373	2211	109

Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	42	142	52	152	151	42
150	42	192	52	202	202	43
200	42	242	52	252	252	45
250	42	292	67	317	316	47
300	42	342	67	367	366	49
350	42	392	67	417	416	51
400	42	442	67	467	466	53
450	42	492	92	542	541	55
500	42	542	92	592	591	57
550	42	592	92	642	641	59
600	42	642	92	692	691	60
650	42	692	107	757	756	62
700	42	742	107	807	806	64
800	42	842	107	907	906	67
1000	42	1042	117	1117	1116	74
1200	42	1242	142	1342	1341	81
1500	42	1542	167	1667	1666	92
2000	42	2042	212	2212	2211	109



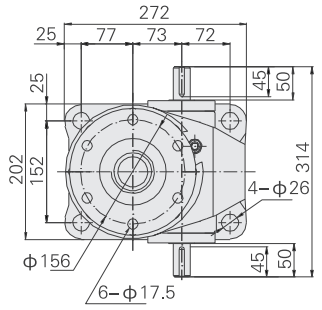
Stroke (mm)	RU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	203	303	213	313	170	51
150	203	353	213	363	220	53
200	203	403	213	413	270	55
250	203	453	228	478	335	57
300	203	503	228	528	385	58
350	203	553	228	578	435	60
400	203	603	228	628	485	62
450	203	653	253	703	560	64
500	203	703	253	753	610	66
550	203	753	253	803	660	68
600	203	803	253	853	710	70
650	203	853	268	918	775	72
700	203	903	268	968	825	74
800	203	1003	268	1068	925	76
1000	203	1203	278	1278	1135	83
1200	203	1403	303	1503	1360	90
1500	203	1703	328	1828	1686	100
2000	203	2203	373	2373	2231	118

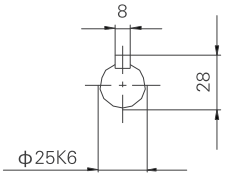
Stroke (mm)	RD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	42	142	52	152	170	51
150	42	192	52	202	220	53
200	42	242	52	252	270	55
250	42	292	67	317	335	57
300	42	342	67	367	385	58
350	42	392	67	417	435	60
400	42	442	67	467	485	62
450	42	492	92	542	560	64
500	42	542	92	592	610	66
550	42	592	92	642	660	68
600	42	642	92	692	710	70
650	42	692	107	757	775	72
700	42	742	107	807	825	74
800	42	842	107	907	925	76
1000	42	1042	117	1117	1135	83
1200	42	1242	142	1342	1360	90
1500	42	1542	167	1667	1686	100
2000	42	2042	212	2212	2231	118

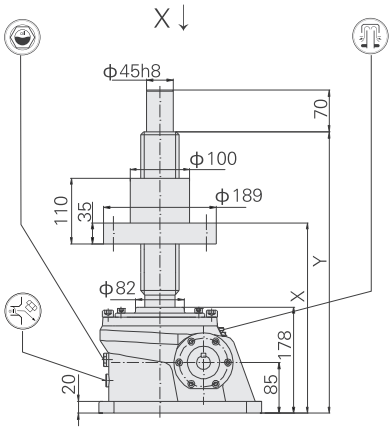


Note: X (1) dimension with dust–proof cover.

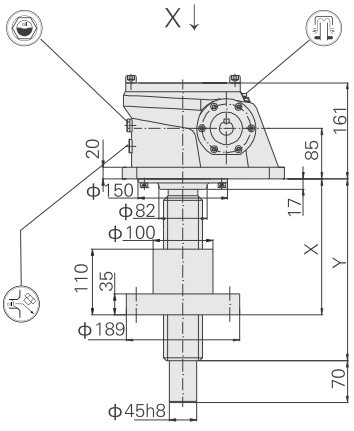
X Direction







J200 NU

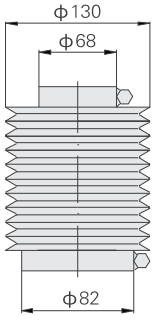


J200 ND

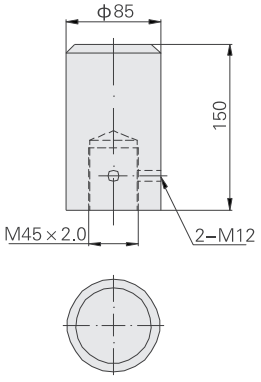
Stroke (mm)	NU			
	X		Y	m(kg)
	MIN	MAX		
100	232	332	417	56
150	232	382	467	57
200	232	432	517	58
250	232	482	567	59
300	232	532	617	60
350	232	582	667	61
400	232	632	717	62
450	232	682	767	63
500	232	732	817	64
550	232	782	867	65
600	232	832	917	66
650	232	882	967	67
700	232	932	1017	68
800	232	1032	1117	71
1000	232	1232	1317	75
1200	232	1432	1517	79
1500	232	1732	1817	85
2000	232	2232	2317	96

Stroke (mm)	ND			
	X		Y	m(kg)
	MIN	MAX		
100	137	237	247	56
150	137	287	297	57
200	137	337	347	58
250	137	387	397	59
300	137	437	447	60
350	137	487	497	61
400	137	537	547	62
450	137	587	597	63
500	137	637	647	64
550	137	687	697	65
600	137	737	747	66
650	137	787	797	67
700	137	837	847	68
800	137	937	947	71
1000	137	1137	1147	75
1200	137	1337	1347	79
1500	137	1637	1647	85
2000	137	2137	2147	96

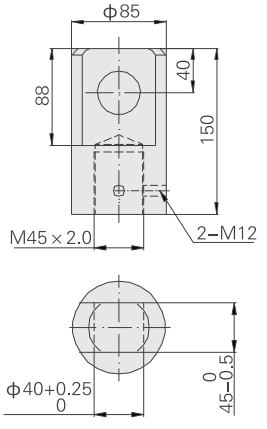
Accessories



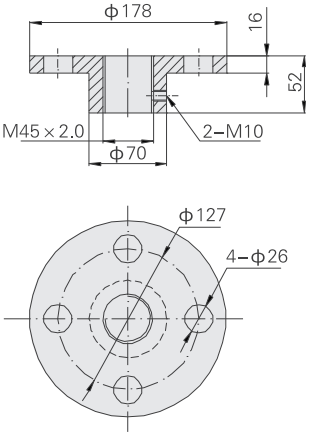
UJ11



UT12



UT11



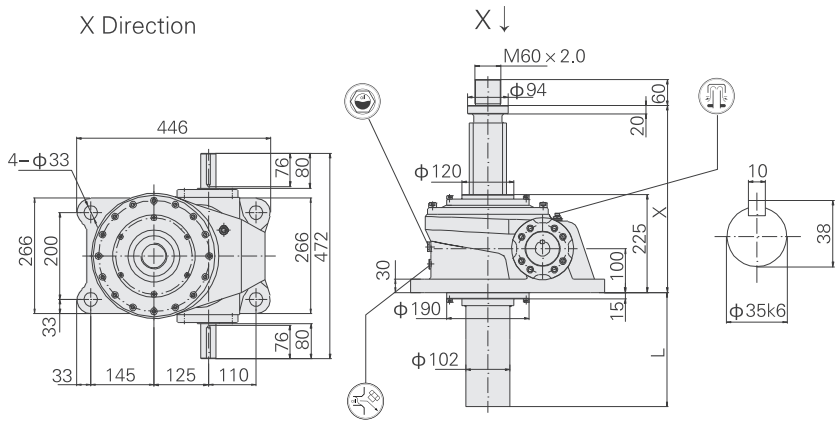
UF11

10 Outline Dimension:

J300

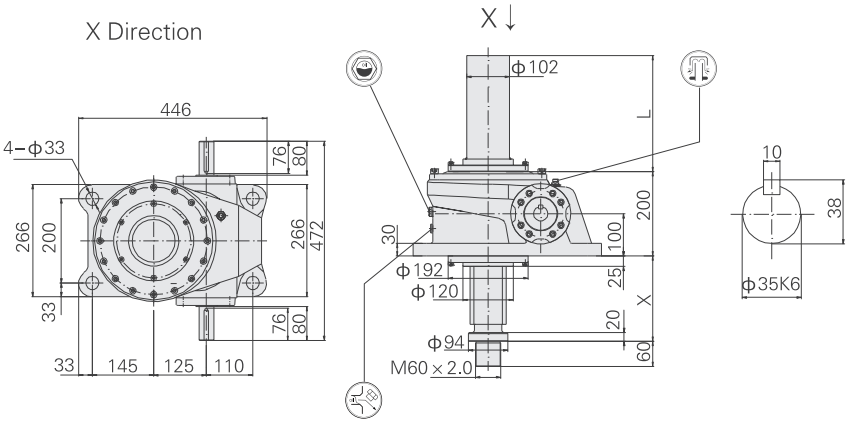
Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	255	355	265	365	160	118
150	255	405	265	415	210	120
200	255	455	265	465	260	123
250	255	505	280	530	325	126
300	255	555	280	580	375	128
350	255	605	280	630	425	131
400	255	655	280	680	475	134
450	255	705	295	745	540	137
500	255	755	295	795	590	139
550	255	805	295	845	640	142
600	255	855	295	895	690	145
650	255	905	310	960	755	148
700	255	955	310	1010	805	151
800	255	1055	310	1110	905	155
1000	255	1255	330	1330	1125	167
1200	255	1455	340	1540	1335	177
1500	255	1755	365	1865	1660	194
2000	255	2255	400	2400	2195	221

J300 BU

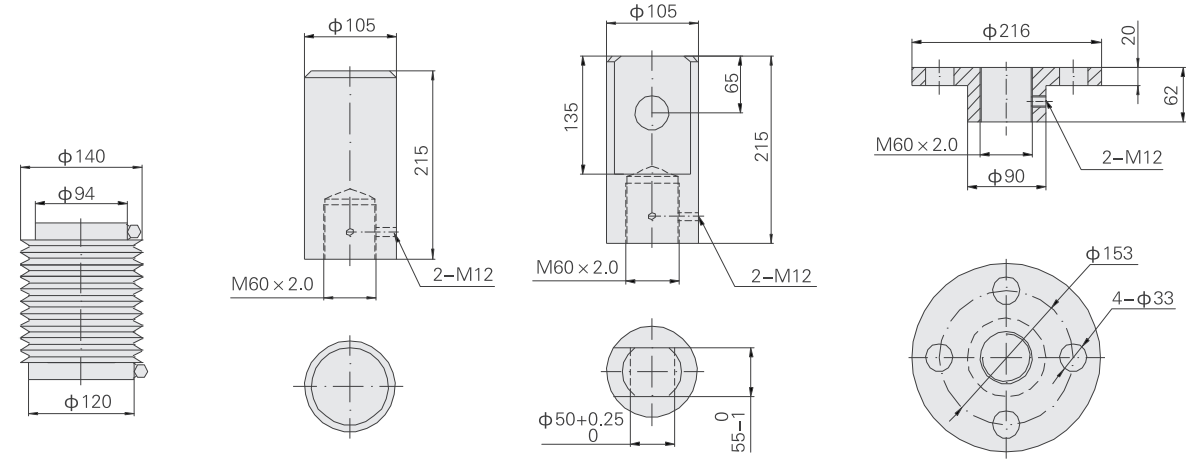


Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	55	155	65	165	160	118
150	55	205	65	215	210	120
200	55	255	65	265	260	123
250	55	305	80	330	325	126
300	55	355	80	380	375	128
350	55	405	80	430	425	131
400	55	455	80	480	475	134
450	55	505	95	545	540	137
500	55	555	95	595	590	139
550	55	605	95	645	640	142
600	55	655	95	695	690	145
650	55	705	110	760	755	148
700	55	755	110	810	805	151
800	55	855	110	910	905	155
1000	55	1055	130	1130	1125	167
1200	55	1255	140	1340	1335	177
1500	55	1555	165	1665	1660	194
2000	55	2055	200	2200	2195	221

J300 BD



Accessories



UJ11 UT12 UT11 UF11

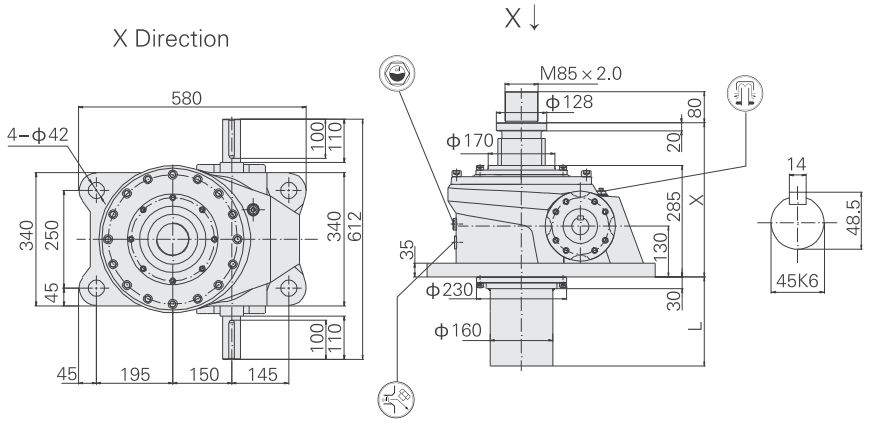
Note: X (1) dimension with dust–proof cover.

10 Outline Dimension:

J500

J500 BU

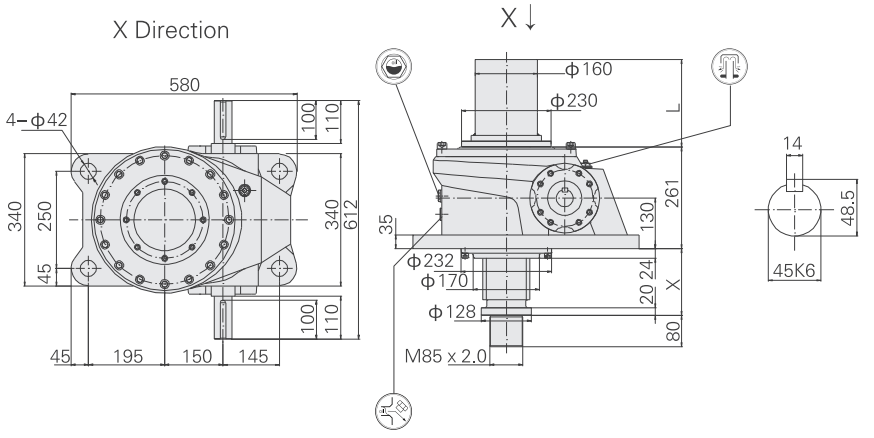
X Direction



Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	315	415	320	420	165	248
200	315	515	320	520	265	260
300	315	615	340	640	385	273
400	315	715	340	740	485	284
500	315	815	350	850	595	279
600	315	915	350	950	695	308
800	315	1115	365	1165	910	332
1000	315	1315	380	1380	1125	357
1200	315	1515	390	1590	1335	380
1500	315	1815	410	1910	1665	417
2000	315	2315	445	2445	2190	477

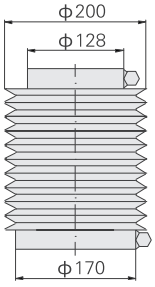
J500 BD

X Direction

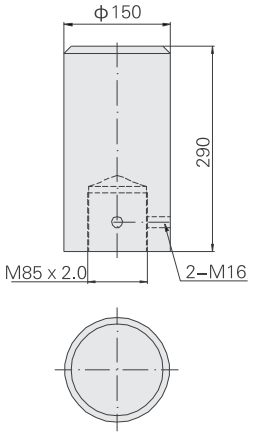


Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	54	154	59	159	165	248
200	54	254	59	259	265	260
300	54	354	79	379	385	273
400	54	454	79	479	485	284
500	54	554	89	589	595	279
600	54	654	89	689	695	308
800	54	854	104	904	910	332
1000	54	1054	119	1119	1125	357
1200	54	1254	129	1329	1335	380
1500	54	1554	149	1649	1665	417
2000	54	2054	184	2184	2190	417

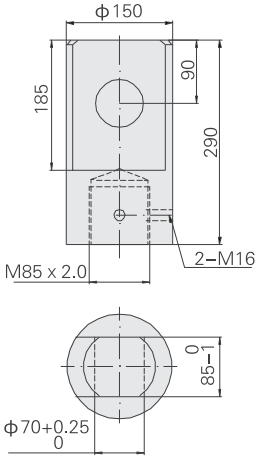
Accessories



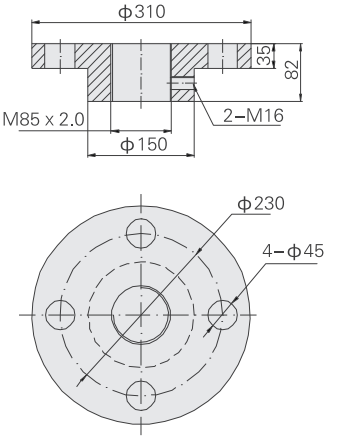
UJ11



UT12



UT11



UF11

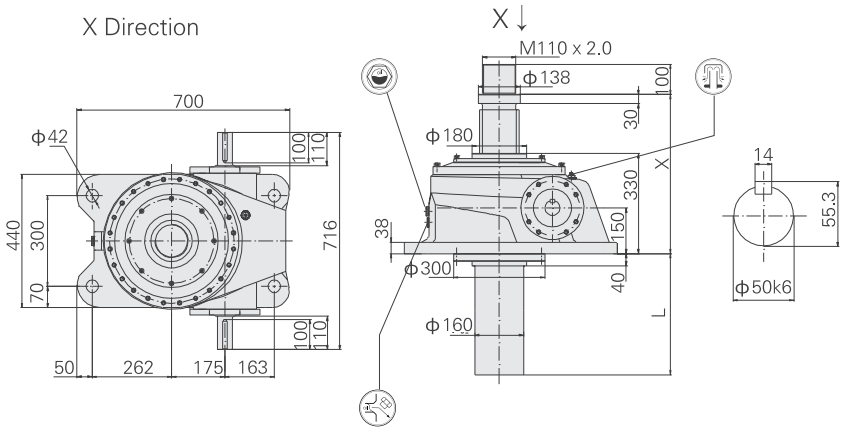
10 Outline Dimension:

J750

Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	370	470	380	480	165	370
200	370	570	380	580	265	384
300	370	670	395	695	385	401
400	370	770	395	795	485	415
500	370	870	410	910	595	431
600	370	970	410	1010	695	445
800	370	1170	425	1225	910	476
1000	370	1370	435	1435	1125	506
1200	370	1570	450	1650	1335	536
1500	370	1870	465	1965	1665	581
2000	370	2370	500	2500	2190	657

J750 BU

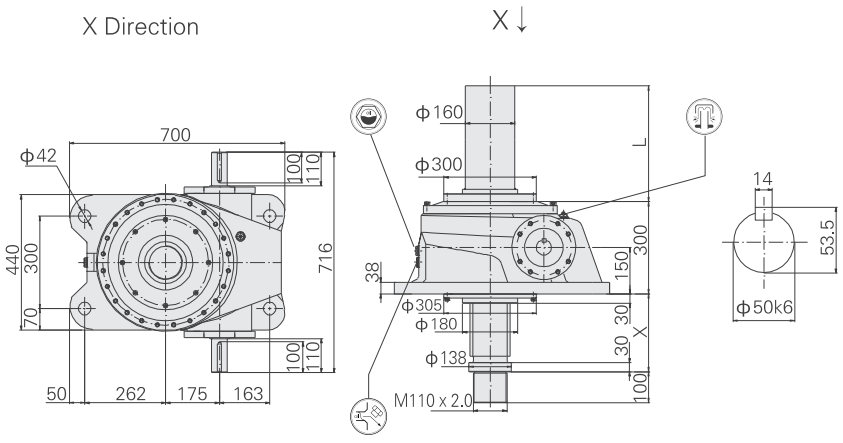
X Direction



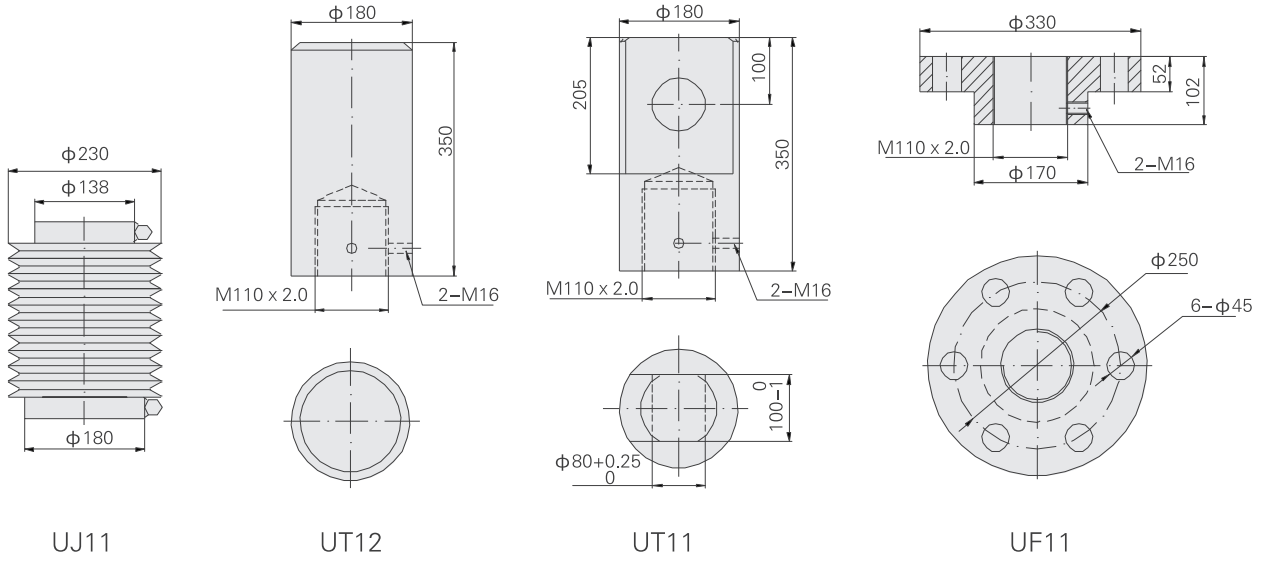
Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	70	170	80	180	165	370
200	70	270	80	280	265	384
300	70	370	95	395	385	401
400	70	470	95	495	485	415
500	70	570	110	610	595	431
600	70	670	110	710	695	445
800	70	870	125	925	910	476
1000	70	1070	135	1135	1125	506
1200	70	1270	150	1350	1335	536
1500	70	1570	165	1665	1665	581
2000	70	2070	200	2200	2190	657

J750 BD

X Direction



Accessories



UJ11 UT12 UT11 UF11

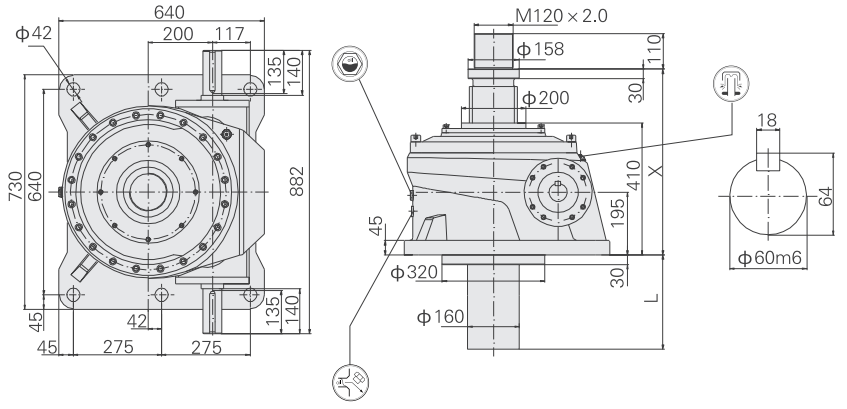
Note: X (1) dimension with dust–proof cover.

10 Outline Dimension:

J1000

J1000 BU

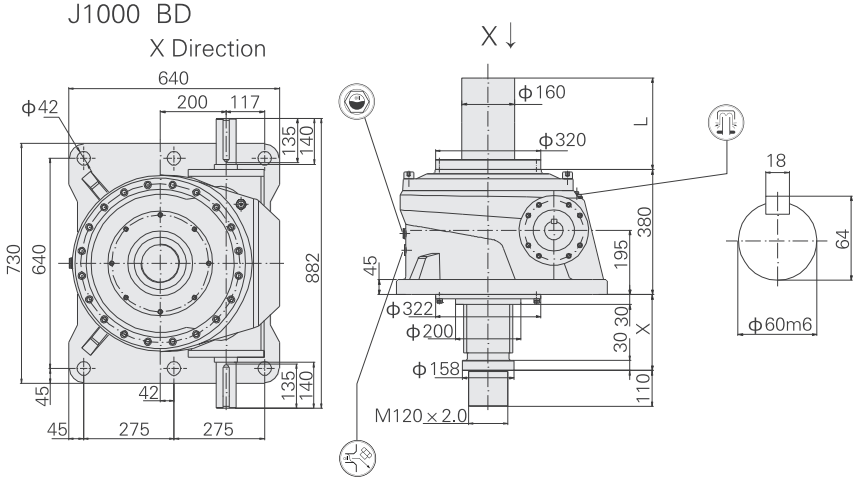
X Direction



Stroke (mm)	BU					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	450	550	460	560	165	748
200	450	650	460	660	265	766
300	450	750	475	775	385	787
400	450	850	475	875	485	805
500	450	950	485	985	595	824
600	450	1050	485	1085	695	842
800	450	1250	500	1300	910	881
1000	450	1450	510	1510	1125	918
1200	450	1650	525	1725	1335	957
1500	450	1950	545	2045	1665	1014
2000	450	2450	575	2575	2190	1109

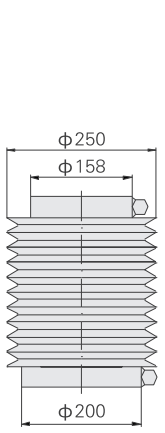
J1000 BD

X Direction

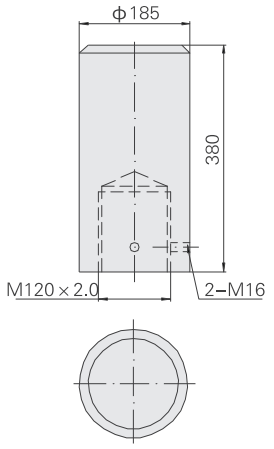


Stroke (mm)	BD					
	X		X(1)		L	m(kg)
	MIN	MAX	MIN	MAX		
100	70	170	80	180	165	748
200	70	270	80	280	265	766
300	70	370	95	395	385	787
400	70	470	95	495	485	805
500	70	570	105	605	595	824
600	70	670	105	705	695	842
800	70	870	120	920	910	881
1000	70	1070	130	1130	1125	918
1200	70	1270	145	1345	1335	957
1500	70	1570	165	1665	1665	1014
2000	70	2070	195	2195	2190	1109

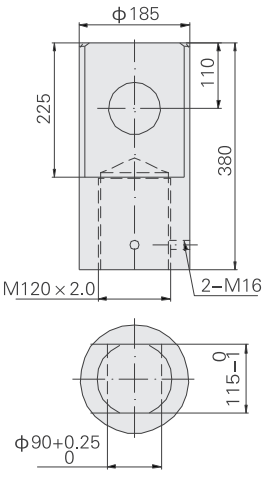
Accessories



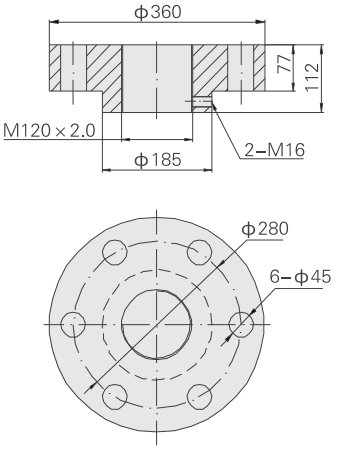
UJ11



UT12

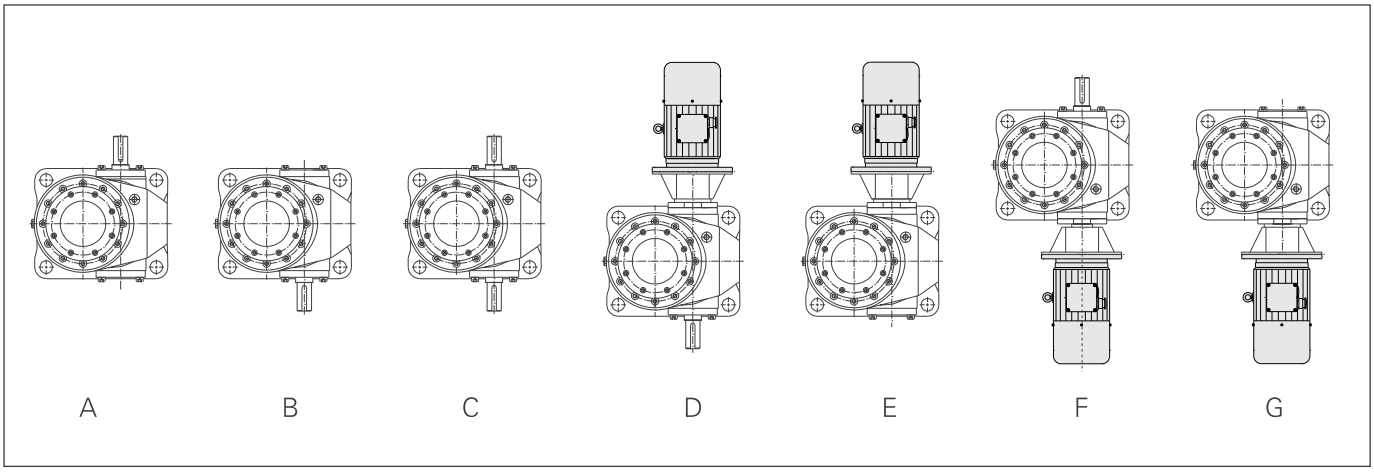


UT11

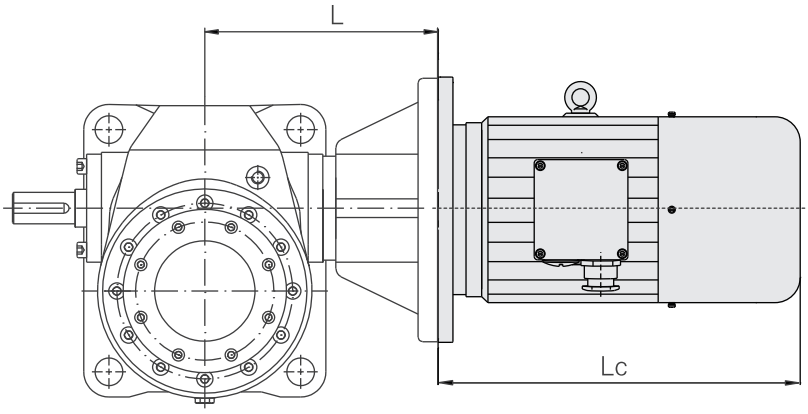


UF11

11 Input Modes:



12 Direct–linking Input:



Type	J010				J025						J050					
Power of motor	0.12	0.18	0.25	0.37	0.12	0.18	0.25	0.37	0.55	0.75	0.25	0.37	0.55	0.75	1.1	1.5
Input flange type	AF63		AF71		AF63		AF71		AF80		AF71		AF80		AF90	
L (mm)	118		120		145						187					

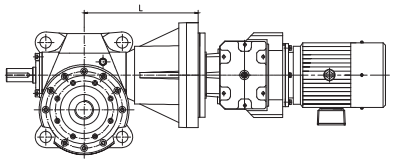
Type	J100						J150						J200					
Power of motor	0.37	0.55	0.75	1.1	1.5	2.2	0.55	0.75	1.1	1.5	2.2	3	0.75	1.1	1.5	2.2	3	4
Input flange type	AF71	AF80		AF90		AF112	AF80		AF90		AF112		AF80	AF90		AF112		
L (mm)	220	223				230	225				232		241			248		

Note:1.Power of motor should be conformed with the transmission capacity.

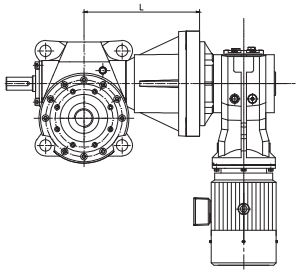
2.The power is for 4–pole motor.

13 Combined–type

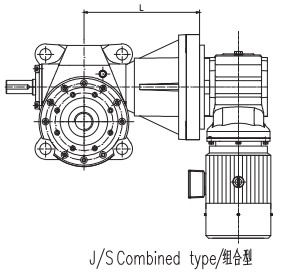
13.1 Dimensions of combined–type



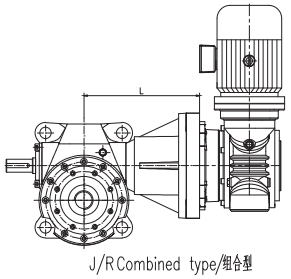
J/CR Combined type/组合型



J/K Combined type/组合型



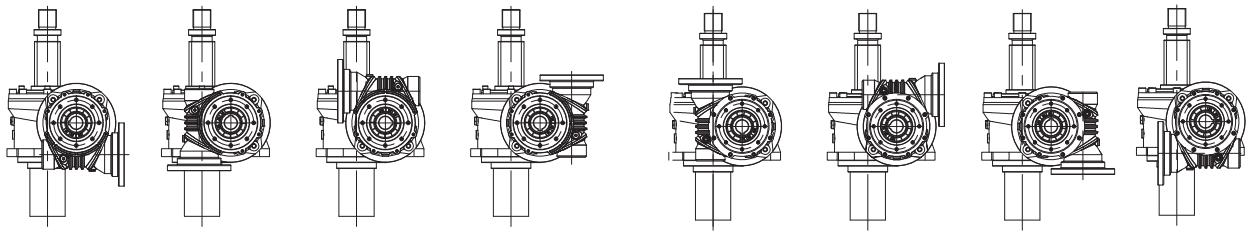
J/S Combined type/组合型



J/R Combined type/组合型

Type	L
J025../C.01..	145
J025../R050..	145
J050../CRL37..	187
J050../KF37..	187
J050../S203..	187
J050../R063..	187
J100../CRL37..	223
J100../KF37..	223
J100../S203..	223
J100../CR47..	223
J100../KF47..	223
J100../S204..	223
J100../R063..	223
J100../R080..	223
J150../CRL37..	225
J150../KF37..	225
J150../S203..	225
J150../CRL47	225
J150../KF47..	225
J150../S204..	225
J150../R063..	225
J150../R080..	225
J200../CRL37..	241
J200../KF37..	241
J200../S203..	241
J200../CRL47..	244
J200../KF47..	241
J200../S204..	241
J200../CRL67..	248
J200../KF67..	248
J200../S206..	248
J200../R080..	241
J200../R100..	248

13.2 Arrangement of combined–type

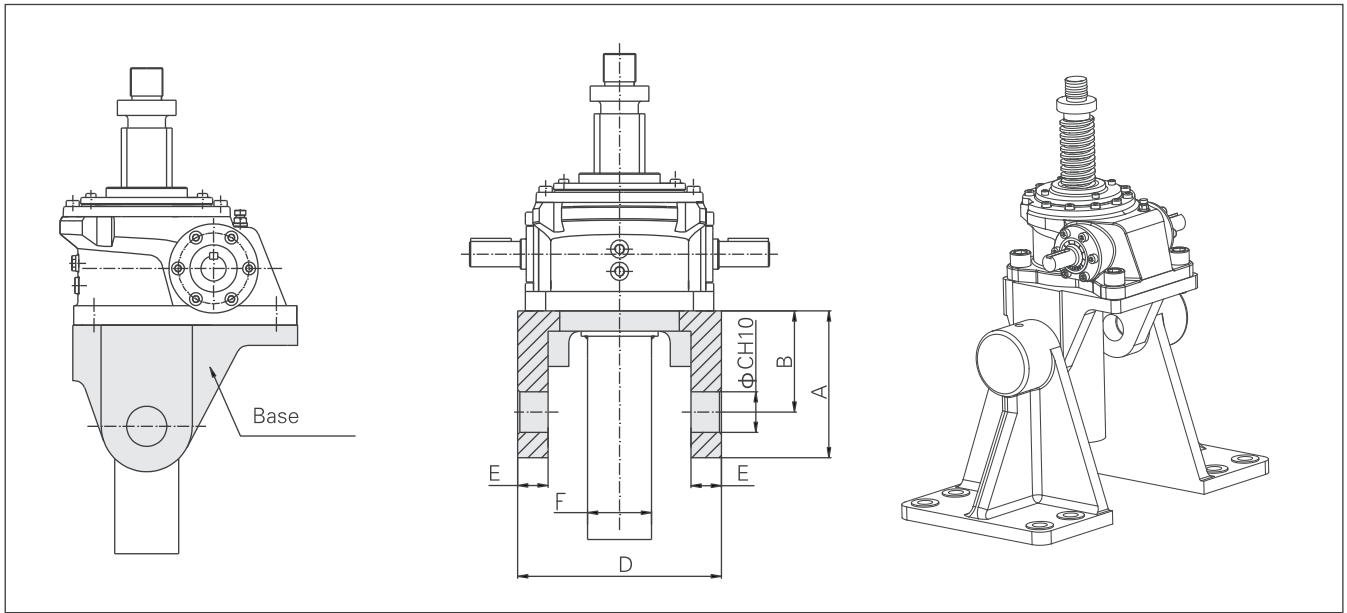


ZR01 ZR02 ZR03 ZR04 ZR05 ZR06 ZR07 ZR08

14 Attachment:

14.1 Base(code UB21)

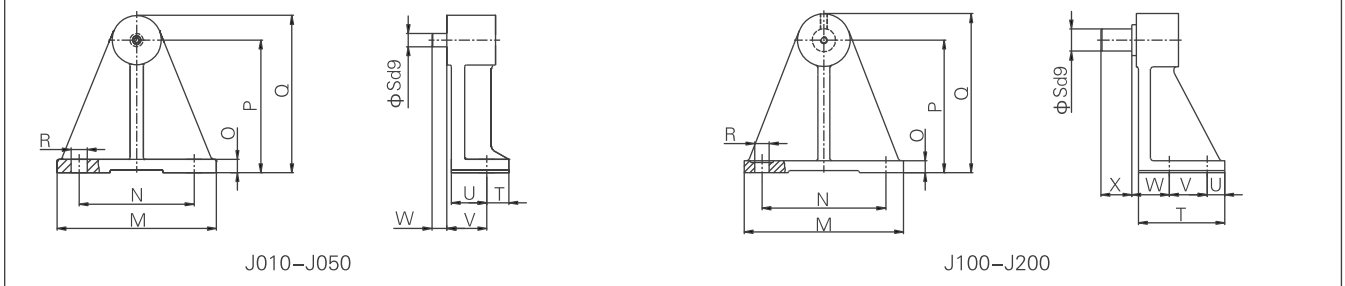
Bases are widely used in switching and inclining devices.



Type	A	B	C	D	E	F
J010	75	60	15	86	15	40
J025	100	75	20	115	20	50
J050	105	75	25	158	25	60
J100	145	100	40	201	30	80
J150	145	105	50	224	44	80
J200	173	110	63	244	50	100

14.2 Support legs(code UB22)

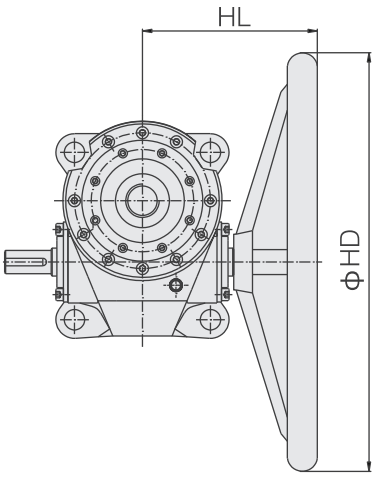
Bases and support legs are often used together to make lifting function in multiple directions.



Type	M	N	O	P	Q	R	S	T	U	V	W	X
J010	180	130	15	150	178	2–Φ17.5	15	25	40	45	17	–
J025	180	130	15	150	178	2–Φ17.5	20	25	40	45	30	–
J050	200	150	15	170	200	2–Φ17.5	25	25	40	45	35	–
J100	280	220	22	240	290	4–Φ22	40	159	30	70	70	55
J150	360	280	27	300	360	4–Φ33	50	195	40	85	85	70
J200	400	320	30	380	450	4–Φ33	63	210	40	90	90	65

14.3 Handwheel(code UN08 ~ UN45)

（1）The manual torque=Required input torque(T)/Radius of handwheel（ϕHD/2）

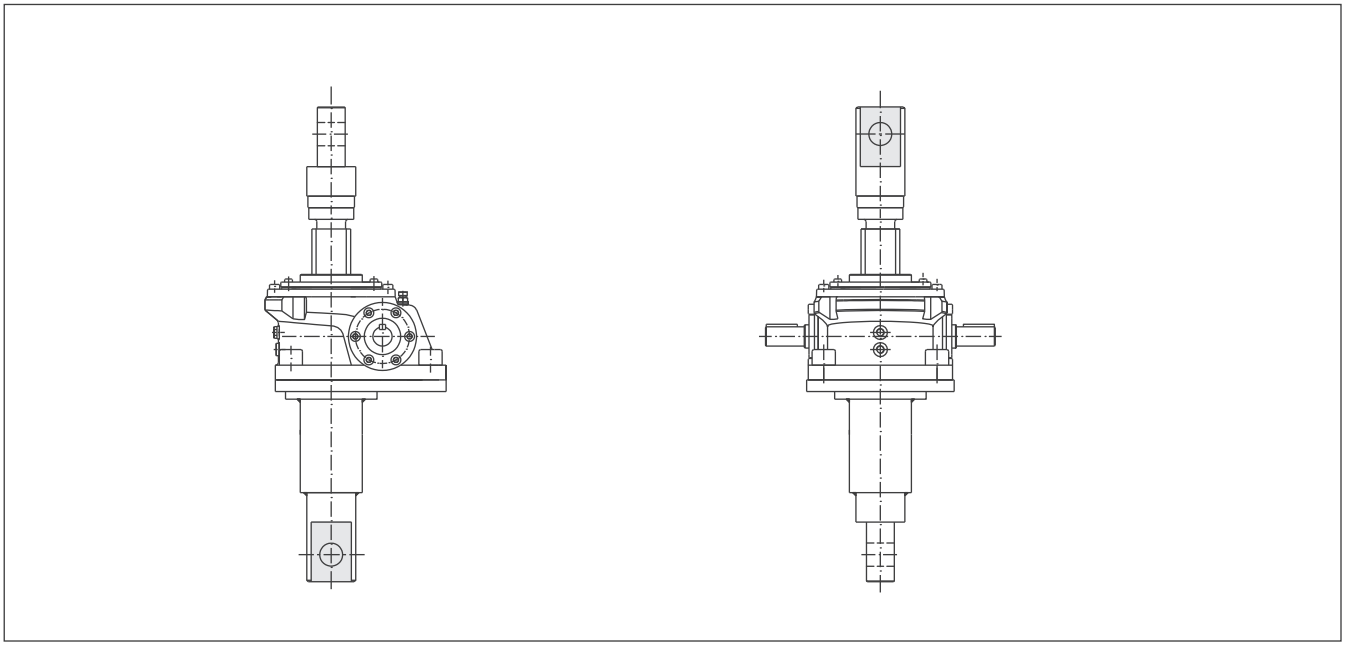


（2）Dimensions: (mm)

Type \ Code	UN08		UN10		UN20		UN28		UN45	
	HD	HL	HD	HL	HD	HL	HD	HL	HD	HL
J010	80	72	100	85	–	–	–	–	–	–
J025	–	–	100	90	200	100	280	114	–	–
J050	–	–	–	–	200	111	280	129	–	–
J100	–	–	–	–	–	–	280	129	450	145
J150	–	–	–	–	–	–	–	–	450	145
J200	–	–	–	–	–	–	–	–	450	162

14.4 Torque–arm mounted(Please consult)

Applicable to opening and reversing devices.



14.5 Oil

Oil amount reference table:

Oil Amount Reference Table										Unit:(L)
Type / Assembly Position	000#Extreme Pressure Grease/000#					VG220（Worm Gear Oil）				
	J010	J025	J050	J100	J150	J200	J300	J500	J750	J1000
D1、D3	0.1	0.12	0.15	0.22	0.25	0.6	2.5	5.5	9.5	14
D2	0.1	0.12	0.15	0.22	0.25	0.5	2	4.5	7.5	8

When ambient temperature is −20℃ ~ +40℃,

1.J010−J150 000# Extreme lubricant has been added when delivery,accessory code is V00;

2.J200−J1000 lubricant brand is VG220(ISO viscosity class),accessory code is V22;

3.Elevator operation process screw (nut) need to grease;

(1) When ambient temperature is lower than −10℃,synthetic oil should be used;

(2) To ensure lifespan of the product,we recommend synthetic oil ;

(3) When ambient temperature exceeds the above range,please consult BONENG.

Note:

14.6 For details about motor accessories, see motor slection.

14.7 Colour of standard allocation J010−J1000: (RAL5015)

Colour of Non−standard allocation can be customized according to customer requirements.

Distributors for Australia & New Zealand

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