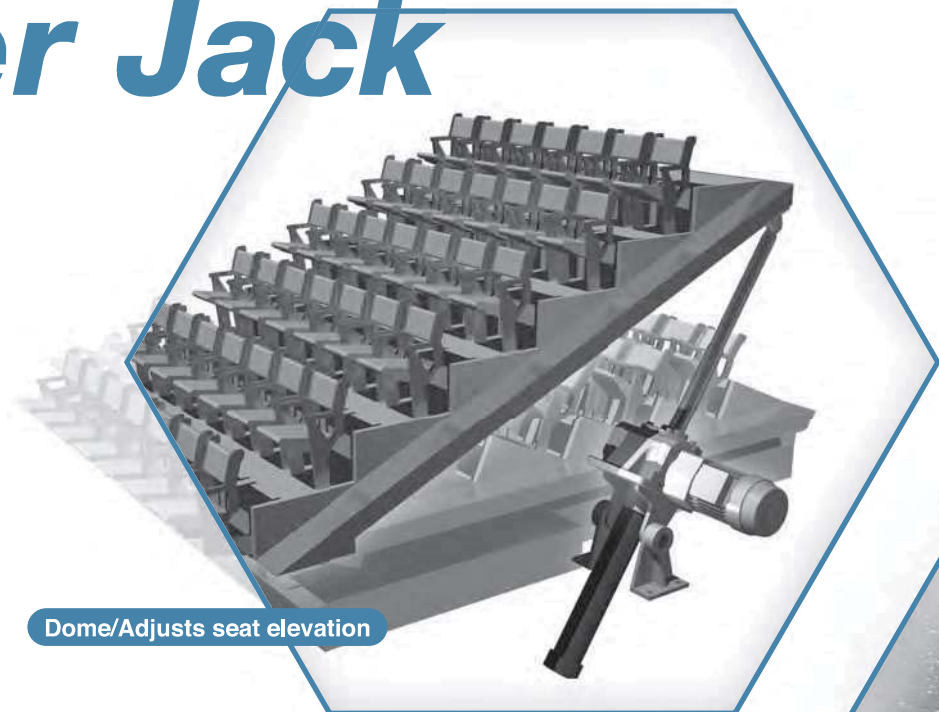




Linipower Jack

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Linipower Jack

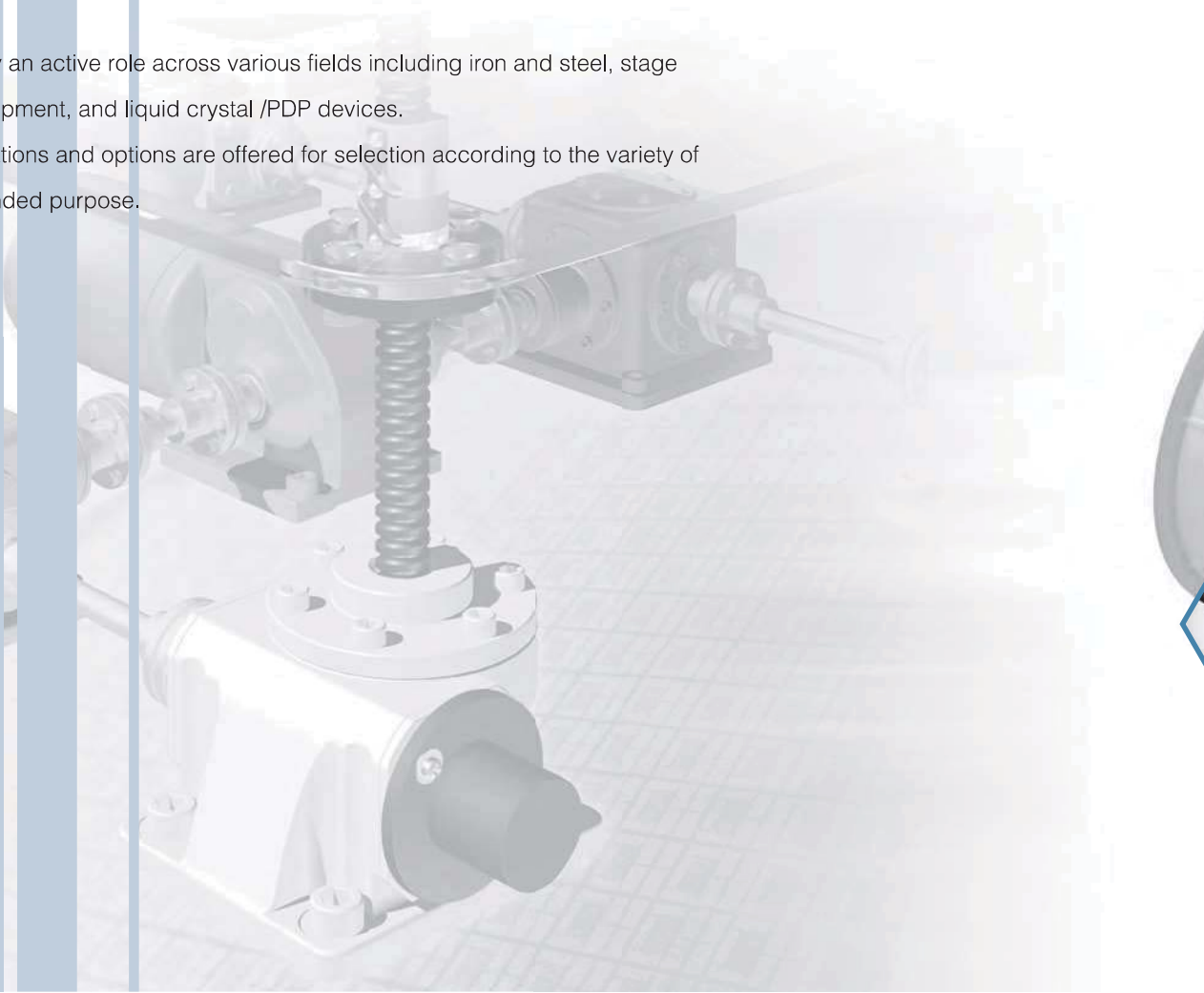


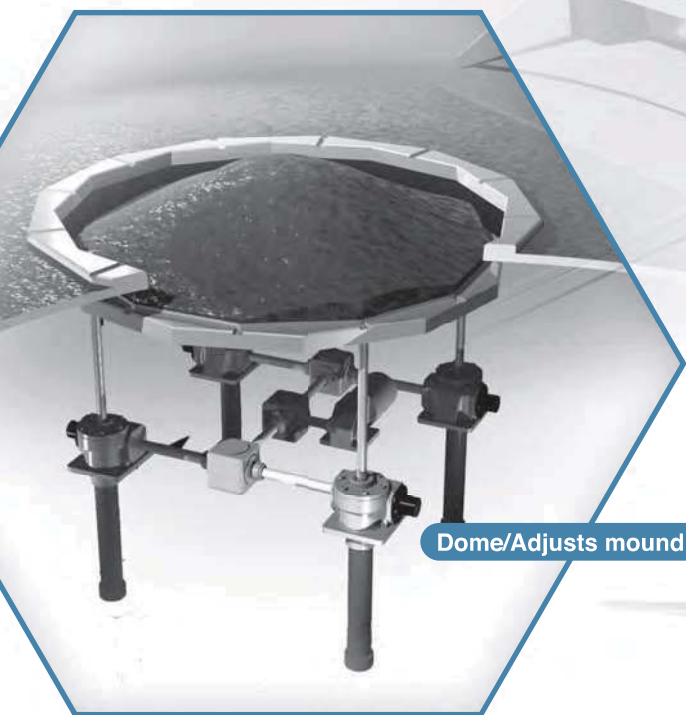
APPLICATION SOLUTION

TSUBAKI Linipower Jack is our latest jack realized through a combination of technology cultivated over years of experience as a top manufacturer of power cylinders and product manufacturing in consideration of thorough quality controls and environmental consciousness.

Linipower Jacks play an active role across various fields including iron and steel, stage setting, medical equipment, and liquid crystal /PDP devices.

In addition, specifications and options are offered for selection according to the variety of application and intended purpose.





Dome/Adjusts mound elevation



Parabolic Antenna/Adjusts antenna angles

Aircraft/Lifts and lowers part



Linipower Jack

Linipower Jack Basic specifications list

				JWM								
				U S		D S		U R		D R		
				(Standard Model for Lifting)		(Standard Model for Suspending)		(Travel Nut Type for Lifting)		(Travel Nut Type for Suspending)		
												
Standard	Frame Size			002 to 200	300 to 1000	002 to 200	300 to 1000	002 to 200				
	1	Basic Capacity	kN {tf}	1.96 to 196 {0.2} to {20}	294 to 980 {30} to {100}	1.96 to 196 {0.2} to {20}	294 to 980 {30} to {100}	1.96 to 196 {0.2} to {20}				
	Screw Outer Diameter			mm	12 to 65	85 to 150	12 to 65	85 to 150	12 to 65			
	Gear Ratio			H/L Speed								
	Stroke			See Table Below								
	Lubrication			Shaft: Grease Reducer Unit: Grease Bath								
	Color			Tsubaki Olive Grey (Munsell 5GY6/0.5)								
	Environment			Indoor								
	*2	Anti-rotation			○	△	○	△	×		×	
	Output	Bellows			○	○	○	○	△		△	
Rod Type End Fitting			○	○	○	○	×		×			
I Type End Fitting			○	○	○	○	×		×			
Table Type End Fitting			○	○	○	○	×		×			
Sensor	LS Counter			○	○	○	○	○		○		
	Internal LS x2			○	○	○	○	○		○		
	Internal LS x4			○	○	○	○	○		○		
	Potentiometer			○	○	○	○	○		○		
	Rotary Encoder			○	○	○	○	○		○		
Input	3 Phase Motor			△	△	△	△	△		△		
	Gearmotor			○	△	○	△	○		○		
	Hand Wheel			○	△	○	△	○		○		
Accessories	Clevis Fitting Adapter			○	△	△	△	△		△		
	Trunnion Fitting Adapter			○	△	△	△	△		△		

*1 Basic capacity means a maximum load which the jack can support (retain).

*2 Rotating force is generated on the screw shaft of the jack. Select anti-rotation specification if the screw shaft is free or there is no guide, etc., on the equipment side.

Frame Size		002	005	010	025	050	100	150	200	300	500	750	1000	
Basic Capacity		kN {tf}	1.96 {0.2}	4.90 {0.5}	9.80 {1}	24.5 {2.5}	49.0 {5}	98.0 {10}	47 {15}	196 {20}	294 {30}	490 {50}	735 {75}	980 {100}
Stroke	100	○	○	○	○	○	○	○	○	△	△	△	△	
	200	○	○	○	○	○	○	○	○	△	△	△	△	
	300	○	○	○	○	○	○	○	○	△	△	△	△	
	400	○	○	○	○	○	○	○	○	△	△	△	△	
	500	△	○	○	○	○	○	○	○	△	△	△	△	
	600	△	○	○	○	○	○	○	○	△	△	△	△	
	800	—	○	○	○	○	○	○	○	△	△	△	△	
	1000	—	△	○	○	○	○	○	○	△	△	△	△	
	1200	—	—	△	○	○	○	○	○	△	△	△	△	
	1500	—	—	—	△	○	○	○	○	△	△	△	△	
	2000	—	—	—	—	△	△	△	○	△	△	△	△	

Traveling nut specification is also available for JW300 and above.

○: Standard △: Produced by order —: Produced depending on the conditions of use. Consult with us. ×: Not producible

JWB						JWH					
U S		D S		U R	D R	U S		D S		U R	D R
(Standard Model for Lifting)		(Standard Model for Suspending)		(Travel Nut Type for Lifting)	(Travel Nut Type for Suspending)	(Standard Model for Lifting)		(Standard Model for Suspending)		(Travel Nut Type for Lifting)	(Travel Nut Type for Suspending)
											
005 to 200	300 to 1000	005 to 200	300 to 1000	005 to 200		010 to 200				010 to 200	
4.90 to 196	294 to 980	4.90 to 196	294 to 980	4.90 to 196		9.80 to 196				9.80 to 196	
{0.5} to {20}	{30} to {100}	{0.5} to {20}	{30} to {100}	{0.5} to {20}		{1} to {20}				{1} to {20}	
16 to 63	85 to 140	16 to 63	85 to 140	16 to 63		20 to 63				20 to 63	
H/L Speed						H Speed					
See Table Below						See Table Below					
Shaft: Grease Reducer Unit: Grease Bath						Shaft: Grease Reducer Unit: Grease Bath					
Tsubaki Olive Grey (Munsell 5GY6/0.5)						Tsubaki Olive Grey (Munsell 5GY6/0.5)					
Indoor						Indoor					
○	△	○	△	×	×	△	△	×		×	×
○	○	○	○	△	△	○	○	△		△	△
○	○	○	○	×	×	○	○	×		×	×
○	○	○	○	×	×	○	○	×		×	×
○	○	○	○	○	○	○	○	○		○	○
○	○	○	○	○	○	○	○	○		○	○
○	○	○	○	○	○	○	○	○		○	○
○	○	○	○	○	○	○	○	○		○	○
○	△	○	△	○	○	△	△	△		△	△
○	△	○	△	○	○	△	△	△		△	△
△	△	△	△	△	△	△	△	△		△	△
○	△	△	△	△	△	○	△	△		△	△
○	△	△	△	△	△	○	△	△		△	△

005	010	025	050	100	150	200	300	500	750	1000	010	025	050	100	150	200
4.90	9.80	24.5	49.0	98.0	147	196	294	490	735	980	9.80	24.5	49.0	98.0	147	196
{0.5}	{1}	{2.5}	{5}	{10}	{15}	{20}	{30}	{50}	{75}	{100}	{1}	{2.5}	{5}	{10}	{15}	{20}
○	○	○	○	○	○	○	△	△	△	△	○	○	○	○	○	○
○	○	○	○	○	○	○	△	△	△	△	○	○	○	○	○	○
○	○	○	○	○	○	○	△	△	△	△	○	○	○	○	○	○
○	○	○	○	○	○	○	△	△	△	△	○	○	○	○	○	○
○	○	○	○	○	○	○	△	△	△	△	○	○	○	○	○	○
○	○	○	○	○	○	○	△	△	△	△	○	○	○	○	○	○
△	○	○	○	○	○	○	△	△	△	△	○	○	○	○	○	○
—	△	○	○	○	○	○	△	△	△	△	△	○	○	○	○	○
—	—	△	○	○	○	○	△	△	△	△	—	△	○	○	○	○
—	—	—	△	△	△	○	△	△	△	△	—	—	△	△	△	○

Linipower Jack

Model Features

JWM [Machine Screw Type]

Low Speed, Low Frequency

JWM (Machine Screw Type) is a standard model, suitable for low speed, low frequency operations. Major components include trapezoidal screw and high precision worm gear.

1. Economical

Simple, compact and affordable.

2. Low Speed, Low Frequency

The unique sliding motion of trapezoidal screw provides smooth and consistent low speed, suitable for low frequency operations.

3. Load

Machine screw has a self-lock feature based on calculation, and can maintain loads.

* Self-lock may not be effective where vibration or shock is present. In this case, install a brake unit.



JWB [Ball Screw Type]

High Speed, High Frequency

JWB (Ball Screw Type) is a highly efficient jack for high speed, high frequency operations. Major components include accurate ball screw and high precision worm gear.

1. High Efficiency

JWB's ball screw generates high efficiency and its compact drive unit produces high power.

2. High Speed

Compared to the JWM, its high efficiency allows easier high speed drive.

3. Extended Life

Long and predictable ball screw life.

*Self-lock is not provided. Must install a brake unit.



JWH [High Lead Ball Screw Type]

Super High Speed, High Frequency

Depending on the high lead ball screw used, the screw shaft speed can exceed that of a JWB by up to 4 times at the same input shaft rpm. Major components include high lead ball screw and high precision worm gear.

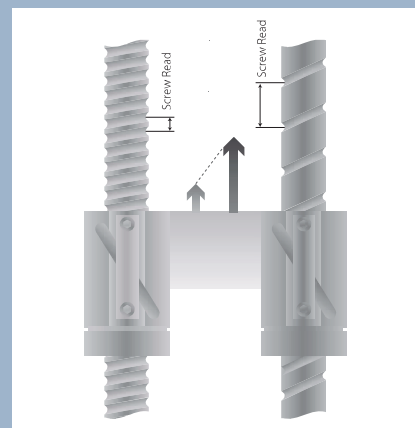
1. Super High Speed

Effective high lead screw allows maximum screw shaft speed of 7.5m/min.

2. Quiet Operation

JWH (High Lead Ball Screw Type) requires less input rpm at its drive and reducer units to run at the same speed of JWB (Ball Screw Type), resulting in considerably quiet operation.

*Self-lock is not provided. Must install a brake unit.



Linipower Jack

Selecting Your Linipower Jack · Technical Notes

Selecting Your Linipower Jack

Selecting Process	P195•196
Example	P197•198

Technical Notes

Screw Shaft Speed and Allowable Load	P199 to 203
Allowable Buckling Load	P204 to 206
Allowable Side Load	P207
Expected Travel Distance and Wear Life	P208
Technical Data	P209
(Allowable OHL and Allowable Screw Shaft rpm)	

Selecting Your Linipower Jack

Selecting Process

- 1) **Equipment** Table or theatre lifter, conveyer line selector etc.
- 2) **Layout** Patterns of multiple jack systems (4, 6 or more units), driving, coupling etc.
- 3) **Maximum Load (W)** Load or work weight N {kgf}.
- 4) **Screw Shaft Speed (V)** Required speed for jack, m/min.
- 5) **Stroke** Actual stroke used, mm.
- 6) **Screw Types** Machine Screw Type (JWM), Ball Screw Type (JWB), High Lead Ball Screw Type (JWH).
- 7) **Installation Configuration** Basic specifications (lift or suspend, with or without rotation prevention).
Travel nut type (lift or suspend).
- 8) **Installation Conditions** Fixed base, shaft end, clevis etc. For compression loads, consider buckling.
- 9) **Expecting Life time** Years jack will withstand wear (for JWB, JWH only).

STEP1 Selecting Your Linipower Jack

1. Adjusted Load Ws

Calculate the "Adjusted Load" Ws, by determining the correct safety coefficient rate (Table 1) for specific load conditions.

$$\text{Adjusted Load } W_s = \text{Maximum Load } W \times \text{Coefficient } S_f$$

N {kgf} N {kgf}

Table 1. Coefficient S_f

Load Conditions	Example Purposes	Coefficient Range
Smooth movement with no shock Light load	Opening and closing a valve Adjusting a conveyor	1.0 to 1.3
Light shock Medium load	Use with various kinds of transporting equipment and lifters	1.3 to 1.5
Severe shock and/or vibration Heavy load	Use with large transporting carriages Holding the position of a press roller	1.5 to 3.0

Note) The above table is for general reference only. Consider particular operating conditions under which you operate before selecting a coefficient.

2. Load per jack

Calculate load W per jack, by using the adjusted load Ws obtained above.

For a synchronous drive, use a synchronous drive coefficient (Table 2).

$$\text{Load / jack } W = \frac{\text{Adjusted Load } W_s \text{ N \{kgf\}}}{\text{No. of jacks} \times \text{synchro. drive coefficient } f_d}$$

N {kgf}

Table 2. Synchronous Drive Coefficient f_d

No. of units	2	3	4	5 to 8
Coefficient	0.95	0.9	0.85	0.8

3. Jack Selection

Follow these steps to make a preliminary jack selection.

Points of preliminary jack selection

- ① Select (temporary) worm speed ratio by adjusting the screw shaft rpm. If difficult to select, inspect by H speed.
- ② Consider traveling space when selecting stroke.
- ③ Select options based on your needs.

4. Verifying Buckling and Screw Shaft rpm

① Allowable Buckling Load

For a compressive load, verify that it does not exceed the allowable buckling load (See page 204 to 206). If it does, increase jack size and recalculate.

② Allowable Screw Shaft rpm

If using a travel nut, verify that it does not exceed the allowable shaft rpm (See page 209). If it does, increase jack size and recalculate.

5. Confirming Required Input rpm

Determine the required input rpm, using the required screw shaft speed.

$$N = \frac{V}{\ell} \times R$$

N : Input rpm r/min
V : Screw Shaft Speed m/min
ℓ : Screw Lead m
R : Gear Ratio

6. Verifying Required Input Torque

Calculate required input torque.

$$T = \frac{W \times \ell}{2 \times \pi \times R \times \eta} + T_o$$

T : Required Input Torque N · m {kgf·m}
W : Lifting Load N {kgf}
ℓ : Screw Lead m
π : Circular Constant 3.14
R : Gear Ratio
η : Overall Efficiency
T_o : Tare Drag Torque N · m {kgf·m}

* For screw lead, gear ratio, overall efficiency and tare drag torque, see pages 191, 217 and 241. Take caution in selecting screw units. (8mm→0.008m)

7. Verifying Input Capacity

$$\text{SI Unit} \quad P = \frac{T \times N}{9550}$$

$$\text{Gravitational Unit} \quad P = \frac{T \times N}{974}$$

T : Required Input Torque N · m {kgf·m}
P : Required Input Load kW
N : Input rpm r/min

8. Allowable Overhang Load

If attaching a sprocket, gear, or belt to the input shaft, verify that the total weight is within the allowable overhang load. (See page 209) If not, increase jack size and recalculate.

9. Verifying Wear Life (JWB/JWH only)

Check if wear life is sufficient. (See page 208)

When increasing travel distance, increase jack size and recalculate.

* Life cannot be calculated for JWM (Machine Screw Type).

10. Selecting Your Options

Select options that best suit your needs.

1. Output Option
2. Installation Option
3. Sensor Option
4. Input Option
5. Accessory Option

11. Jack Number

Determine the actual Linipower Jack number that meets the above conditions.

STEP2 Parts Options

Motor

Determine the required drive unit capacity for synchronous drive Pt value.

1. Add the torque required for each jack $T_{1 \text{ to } 4}$ on the drive unit side to determine the overall Torque T_t .

<Required Torque per Jack>

$$T_{1 \text{ to } 4} = \frac{T}{(\text{Gearbox efficiency})^{\text{No. of gear box}}}$$

<Required Torque for the Drive Unit>

$$T_t = T_1 + T_2 + T_3 + T_4$$

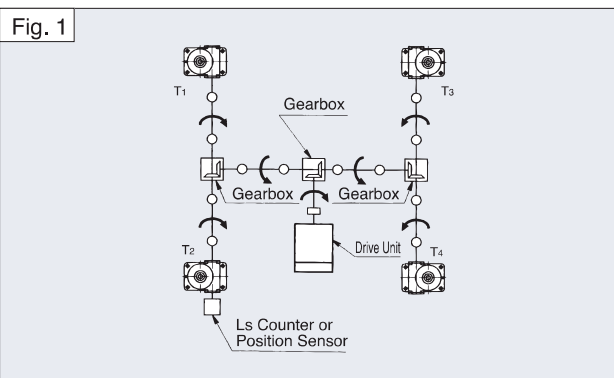
$T_{1 \text{ to } 4}$: Required torque for each jack on the drive unit side $\text{N} \cdot \text{m} \{ \text{kgf} \cdot \text{m} \}$

T : Required input torque per jack $\text{N} \cdot \text{m} \{ \text{kgf} \cdot \text{m} \}$

Gear box efficiency: Assume 0.9

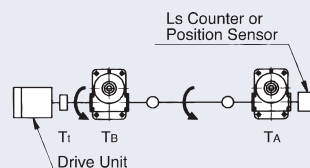
T_t : Required torque for the drive-unit $\text{N} \cdot \text{m} \{ \text{kgf} \cdot \text{m} \}$

For a four unit system (Fig. 1), $T_{1 \text{ to } 4} = \frac{T}{0.9^2}$



2. Be certain that the required input torque calculated is within the allowable input shaft torque.
(e.g.) If jacks are arranged in a linear structure as shown in Fig. 2, the drive unit input shaft consumes the total input torque required for both jacks. This doubled torque should not exceed the allowable input torque.

Fig. 2



T_A : Required input torque for Jack A

T_B : Required input torque for Jack B

Required torque at the motor $T_t = T_A + T_B < \text{Allowable input shaft torque}$

3. Next, determine the required drive unit capacity P_t with input rpm N and overall Torque T_t determined in 1.

SI Unit $P_t = \frac{T_t \times N}{9550}$

Gravitational Unit $P_t = \frac{T_t \times N}{974}$

P_t : Total required torque at the drive unit kW

T_t : Total required torque at the drive unit $\text{N} \cdot \text{m} \{ \text{kgf} \cdot \text{m} \}$

N : Input rpm for the jack r/min

Example

Jack Selection Example 1

Example : Four jack synchronous drive for lifting with 3-phase 220v/60Hz motor (see layout below), operating at room temperature under low dust conditions.

Guide installed on the equipment to prevent side load.

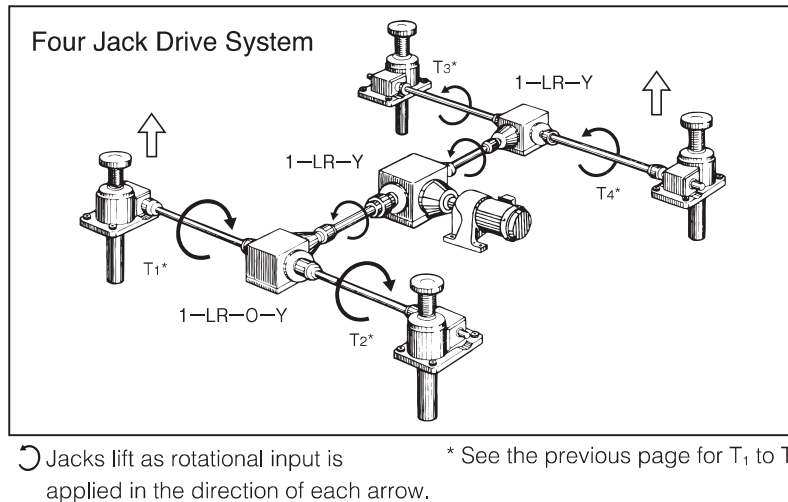
Fixed base-Guided shaft end/Fixed shaft end.

Operation cycle : (2 times/hour) X (8 hours/day) X (300 days/year) X (3 years usage)

① Maximum load : 88.2 kN {9 tf} / 4 Units

② Required speed : 10 mm/s (600 mm/min)

③ Operating stroke : 260 mm



SI Unit

1. Adjusted load Ws is (coefficient Sf=1.3)

$$W_s = 88200 \times 1.3 = 114660 \text{ N}$$

2. Load W per jack is

$$W = \frac{114660}{4 \times 0.85} = 33724 \text{ N}$$

3. Considering speed, efficiency and drive unit, JWB050USH is preliminarily selected.

4. For 260mm operating stroke, use 300 mm stroke for the jack.

Considering its possible dust generation and shaft end stability (see layout above), the appropriate jack would be JWB050USH3JM.

5. Since this load is compressive, calculate the operated buckling load based on the formula used on pages 180 to 182. (Assume safety level Sf=4.) See page 182 for details on calculations.

$$P_{CR} = 20 \times 10^4 \times \left(\frac{31.3^2}{637} \right)^2$$

*Refer to dimensions on page 225.

$$= 473073 \text{ N}$$

$$Sf = \frac{473073}{33724} > 4 \cdots \text{OK}$$

6. This is not a travel nut type so there is no need to confirm allowable screw shaft rpm. (Inspect the allowable screw shaft rpm if using a travel nut.)

{ Gravitational Unit }

1. Adjusted load Ws is (coefficient Sf=1.3)

$$W_s = 9000 \times 1.3 = 11700 \text{ kgf}$$

2. Load W per jack is

$$W = \frac{11700}{4 \times 0.85} = 3442 \text{ kgf}$$

3. Considering speed, efficiency and drive unit, JWB050USH is preliminarily selected.

4. For 260mm operating stroke, use 300 mm stroke for the jack. Considering its possible dust generation and shaft end stability (see layout above), the appropriate jack would be JWB050USH3JM.

5. Since this load is compressive, calculate the operated buckling load based on the formula used on pages 180 to 182. (Assume safety level Sf=4.) See page 182 for details on calculations.

$$P_{CR} = 20 \times 10^3 \times \left(\frac{31.3^2}{637} \right)^2$$

*Refer to dimensions on page 225.

$$= 47307 \text{ kgf}$$

$$Sf = \frac{47307}{3442} > 4 \cdots \text{OK}$$

6. This is not a travel nut type so there is no need to confirm allowable screw shaft rpm. (Inspect the allowable screw shaft rpm if using a travel nut.)

SI Unit

7. Required Input Capacity

$$\textcircled{1} N = \frac{0.60}{0.010} \times 6 = 360 \text{ r/min}$$

$$\textcircled{2} T = \frac{33724 \times 0.010}{2 \times 3.14 \times 6 \times 0.64} + 1.37 = 15.4 \text{ N} \cdot \text{m}$$

$$\text{From } \textcircled{1}\textcircled{2} \quad P = \frac{15.4 \times 360}{9550} = 0.58 \text{ kW}$$

Rated input capacity for JWB050USH3 is 0.58 kW < 2.2 kW.
(If not suitable, increase the frame number or reduce the screw shaft rpm and recalculate.)

8. Overhang load dose not apply so inspection is not required. Inspect as appropriate.

9. Verifying Wear Life for JWB

Calculate the expected travel distance from usage frequency. (See page 184)

Expected driving distance = $0.26 \times 2 \times 8 \times 300 \times 10^{-3} \times 3 = 3.74 \text{ km}$

We then find that the suitable jack number is JWB050.

.....OK

10. Jack Options

Possible dust $\longrightarrow$ Use with bellow

Shaft end $\longrightarrow$ Table shaft end

Finally, we conclude by selecting JWB050USH3JM.

{ Gravitational Unit }

7. Required Input Capacity

$$\textcircled{1} N = \frac{0.60}{0.010} \times 6 = 360 \text{ r/min}$$

$$\textcircled{2} T = \frac{3442 \times 0.010}{2 \times 3.14 \times 6 \times 0.64} + 0.14 = 1.57 \text{ kgf} \cdot \text{m}$$

$$\text{From } \textcircled{1}\textcircled{2} \quad P = \frac{1.57 \times 360}{974} = 0.58 \text{ kW}$$

Rated input capacity for JWB050USH3 is 0.58 kW < 2.2 kW.
(If not suitable, increase the frame number or reduce the screw shaft rpm and recalculate.)

8. Overhang load dose not apply so inspection is not required. Inspect as appropriate.

9. Verifying Wear Life for JWB

Calculate the expected travel distance from usage frequency. (See page 184)

Expected driving distance = $0.26 \times 2 \times 8 \times 300 \times 10^{-3} \times 3 = 3.74 \text{ km}$

We then find that the suitable jack number is JWB050.

.....OK

10. Jack Options

Possible dust $\longrightarrow$ Use with bellow

Shaft end $\longrightarrow$ Table shaft end

Finally, we conclude by selecting JWB050USH3JM.

Selecting Parts (Parts Options)

A. Selecting a Drive Unit

1. Calculate the required torque T_1 (2,3,4) for each jack on the drive unit side.

$$\text{SI Unit} \quad T_1 = \frac{15.4}{0.9^2} = 19.0 \text{ N} \cdot \text{m}$$

$$\left\{ \begin{array}{l} \text{Gravitational} \\ \text{Unit} \end{array} \right. T_1 = \frac{1.57}{0.9^2} = 1.94 \text{ kgf} \cdot \text{m}$$

Since 4 jacks follow the same route

$$\text{SI Unit} \quad T_t = T_1 \times 4 = 76.0 \text{ N} \cdot \text{m}$$

$$\left\{ \begin{array}{l} \text{Gravitational Unit} \end{array} \right. T_t = T_1 \times 4 = 7.76 \text{ kgf} \cdot \text{m}$$

2. Inspecting the Rated Input Torque

In this case, inspection is not necessary because 2 or more jacks are not arranged in a linear structure.

3. Required Capacity for the Drive Unit P_t

$$\text{SI Unit} \quad P_t = \frac{76.0 \times 360}{9550} = 2.87 \text{ kW}$$

$$\left\{ \begin{array}{l} \text{Gravitational} \\ \text{Unit} \end{array} \right. P_t = \frac{7.76 \times 360}{974} = 2.87 \text{ kW}$$

from the input rpm 360r/min we find

$$\frac{1800}{360} = 5$$

Based on this data we select GMTR370-50L5B, Tsubakimoto Chain 3.7kW gearmotor with a brake unit.

B.1. Select a gear box based on the required input torque of $15.4 \text{ N} \cdot \text{m}$ {1.57kgf · m}, and input rpm of 360r/min.

1.1. Gear box on each side of the jack must tolerate the combined torque of 2 jacks. Thus we selected gear box ED4M.

$$\frac{15.4 \times 2}{0.9} = 34.3 \text{ N} \cdot \text{m} \quad \left\{ \frac{1.57 \times 2}{0.9} = 3.49 \text{ kgf} \cdot \text{m} \right\}$$

(Caution: Make sure the direction of the gear box shaft rotation is correct.)

1-2. Gear box by the gearmotor requires torque for 4 jacks

$$\frac{15.4 \times 4}{0.9^2} = 76.1 \text{ N} \cdot \text{m} \quad \left\{ \frac{1.57 \times 4}{0.9^2} = 7.76 \text{ kgf} \cdot \text{m} \right\}$$

From this, we find that the gear box ED6M is most suitable.

Gear box by the jack Left $\longrightarrow$ ED4M 1-LR-O-Y

Right $\longrightarrow$ ED4M 1-LR-Y

Gear box by the gearmotor $\longrightarrow$ ED6M 1-LR-Y

(For details see Tsubakimoto chain Miter Gear Box Catalog).

B.2. Select couplings based on your requirements.

The following is an example process for selecting the right couplings.

2-1. Select couplings used between each jack and their adjacent gear box based on the required input torque per jack, $15.4 \text{ N} \cdot \text{m}$ {1.57kgf · m}, input shaft diameter ($\phi 20$ for JWB050USH), and the gear box shaft diameter ($\phi 19$ for ED4M).

Required number is $2 \times 2 = 4$.

2-2. Select couplings used between the gear boxes based on the required torque for the nearest pair of jacks,

$$\frac{15.4 \times 2}{0.9} = 34.3 \text{ N} \cdot \text{m} \quad \left\{ \frac{1.57 \times 2}{0.9} = 3.49 \text{ kgf} \cdot \text{m} \right\}$$

and the diameter of each gear box shaft: one by the jack ($\phi 19$ for ED4M), and the other by the gearmotor ($\phi 25$ ED6M). Required number is $2 \times 2 = 4$.

2-3. Select couplings used between each gear box and the gearmotor based on the total required torque for the four jacks,

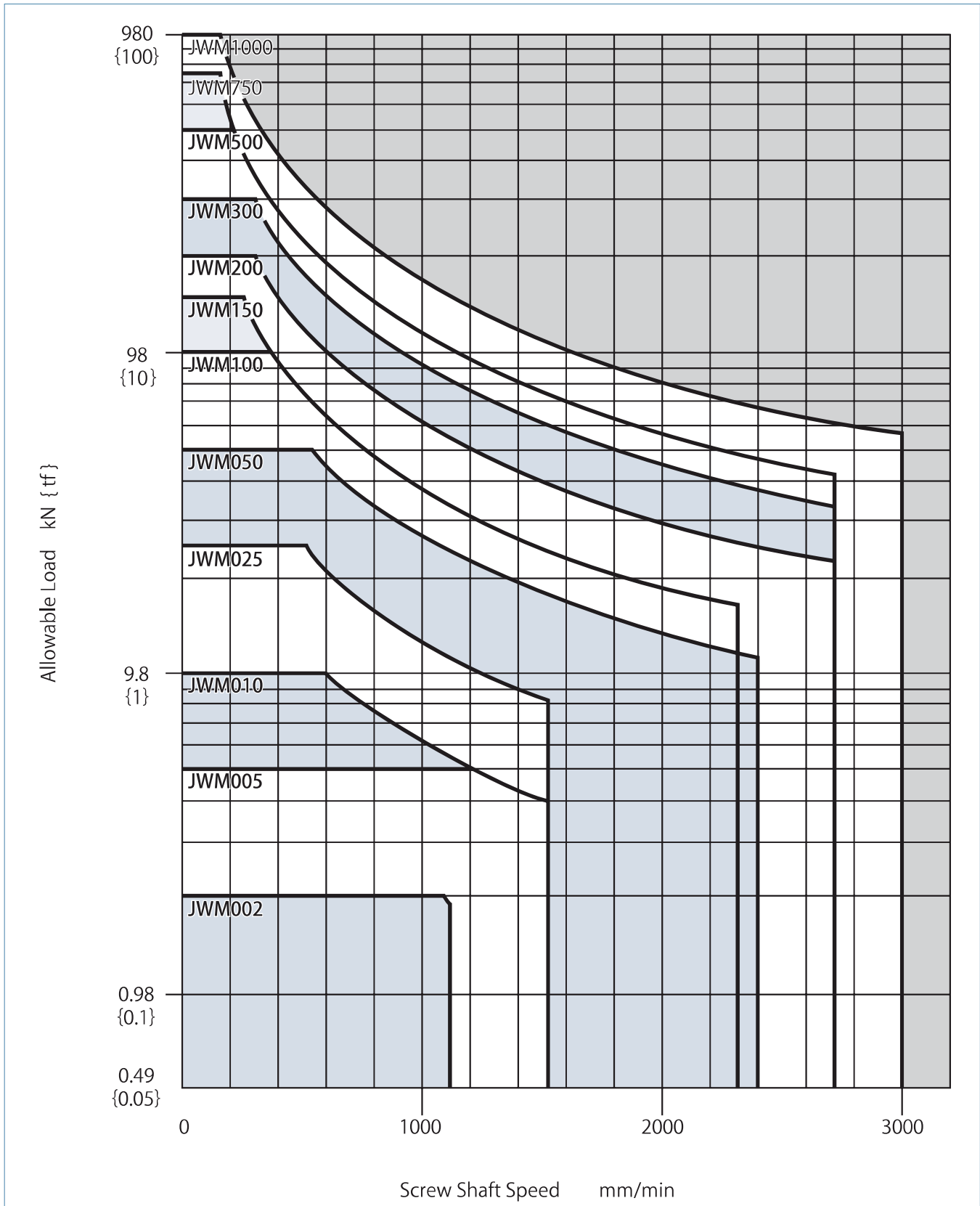
$$\frac{15.4 \times 4}{0.9^2} = 76.1 \text{ N} \cdot \text{m} \quad \left\{ \frac{1.57 \times 4}{0.9^2} = 7.76 \text{ kgf} \cdot \text{m} \right\}$$

and the diameters of the gear box ($\phi 25$ for ED6M) and the gearmotor output shafts.

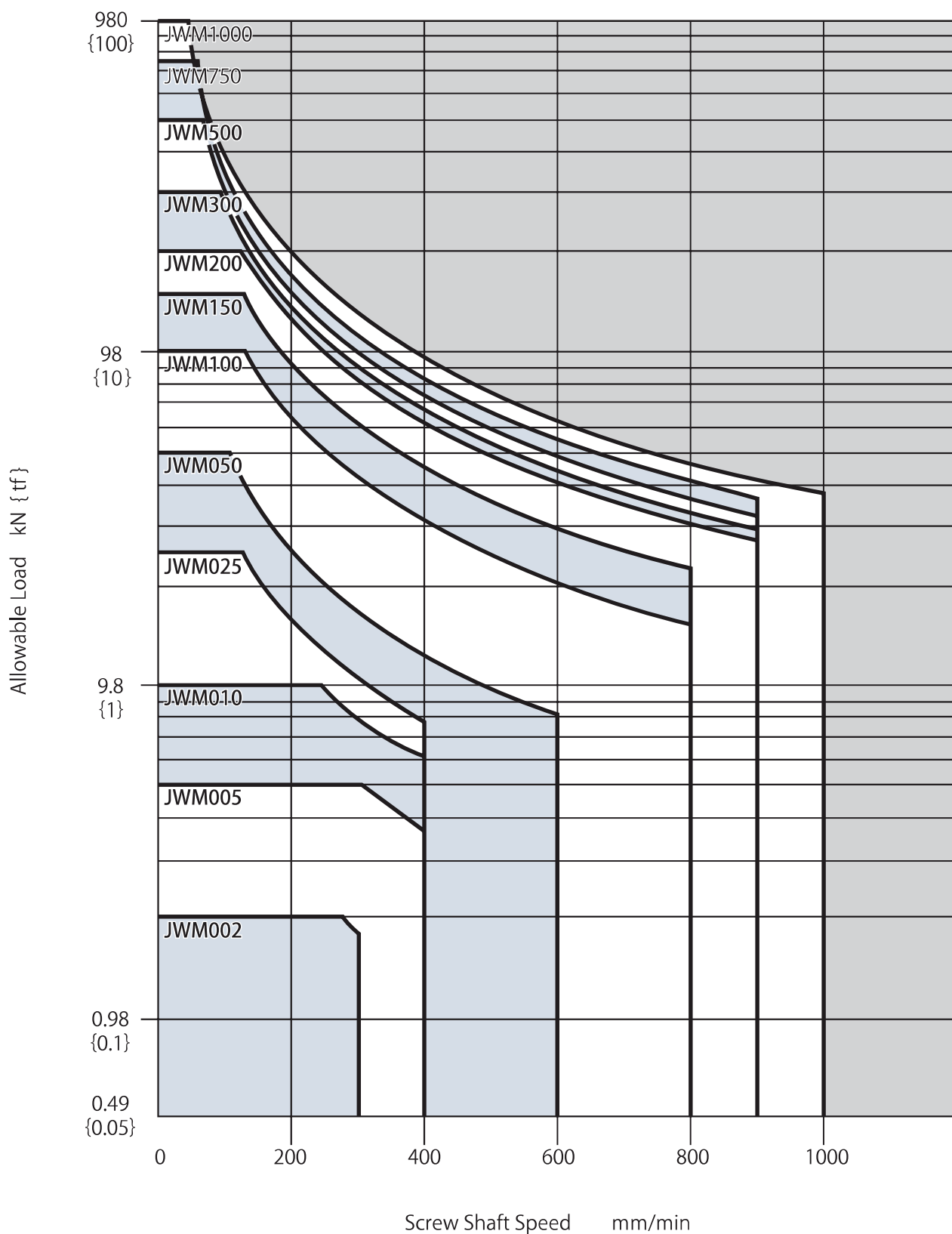
Screw Shaft Speed (Lifting) and Allowable Load for JWM (Machine Screw Type)

This graph illustrates the relationship between screw shaft speed and allowable load for each frame number. Use this graph to select the correct frame number for specific requirements.

■ H Speed



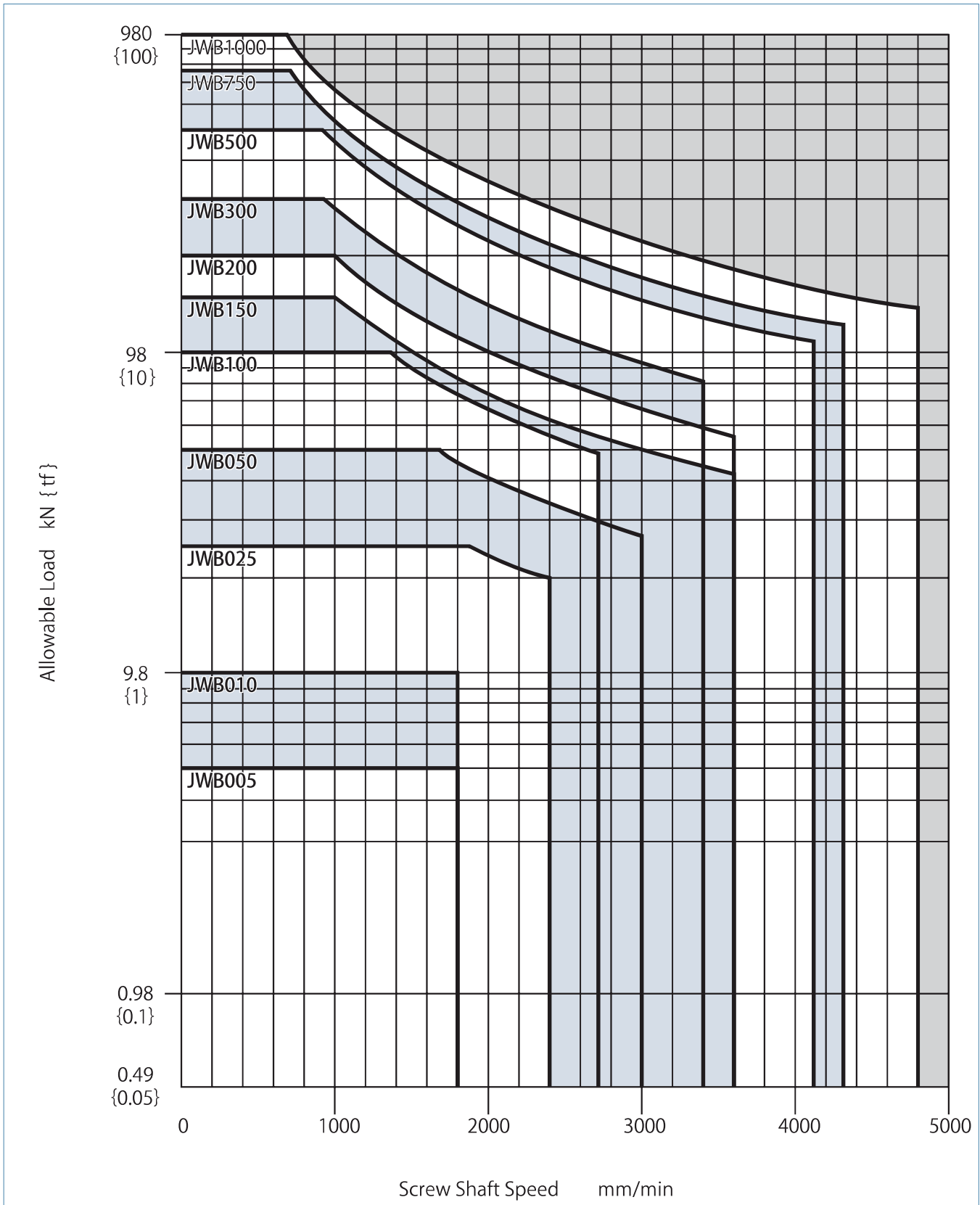
■ L Speed



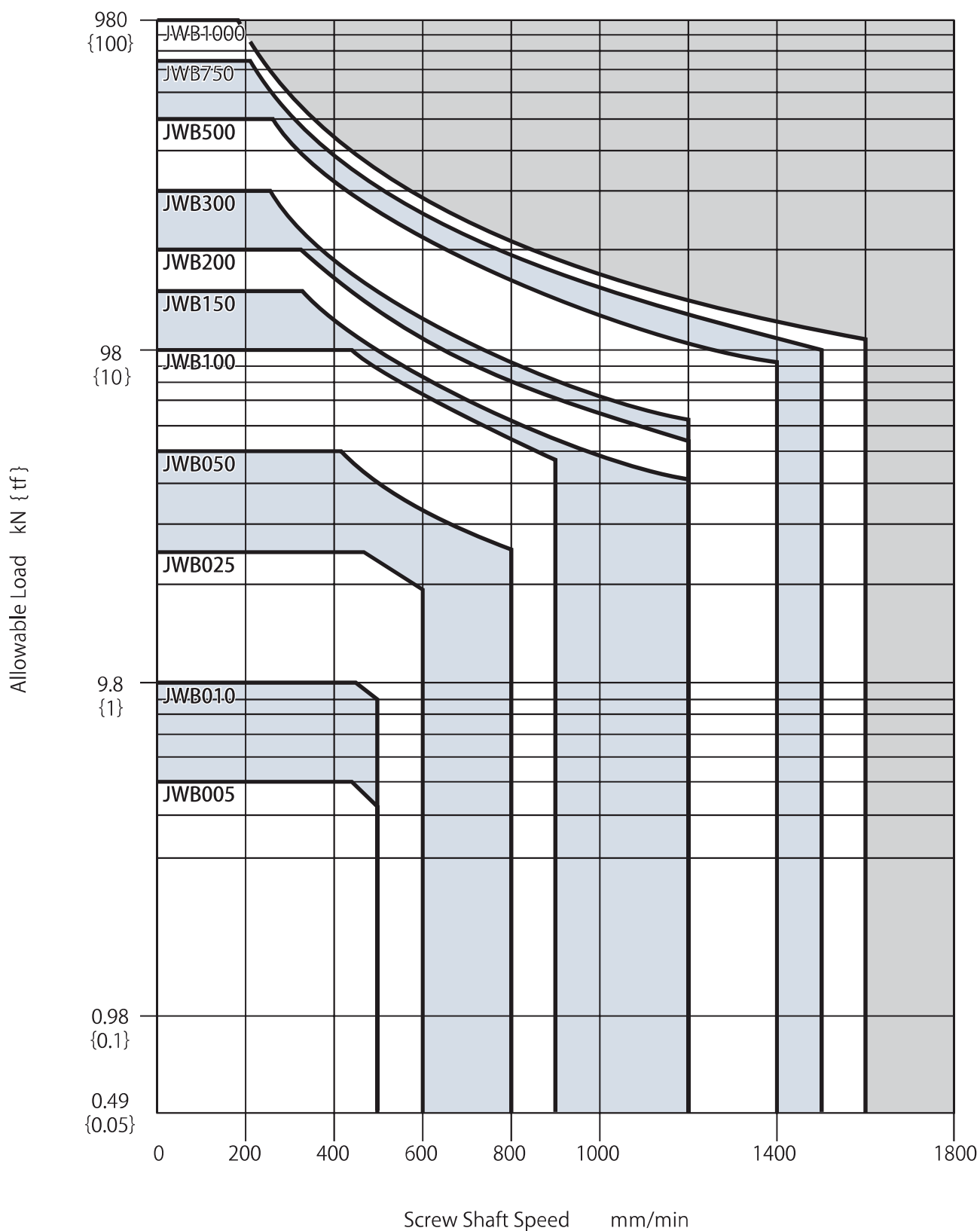
Screw Shaft Speed (Lifting) and Allowable Load for JWB (Ball Screw Type)

This graph illustrates the relationship between screw shaft speed and allowable load for each frame number. Use this graph to select the correct frame number for specific requirements.

■ H Speed



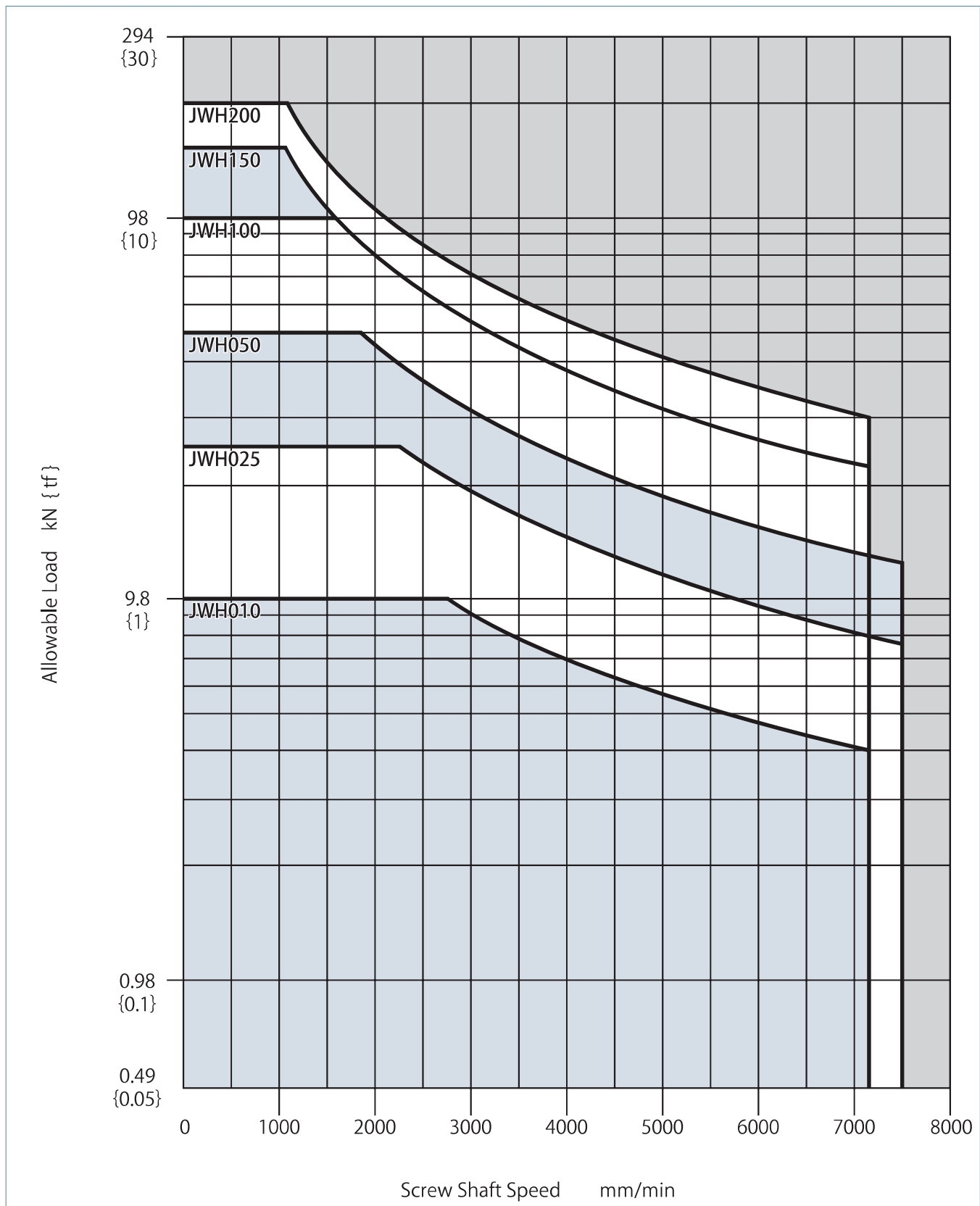
■ L Speed



Screw Shaft Speed (Lifting) and Allowable Load for JWH (High Lead Ball Screw Type)

This graph illustrates the relationship between screw shaft speed and allowable load for each frame number. Use this graph to select the correct frame number for specific requirements.

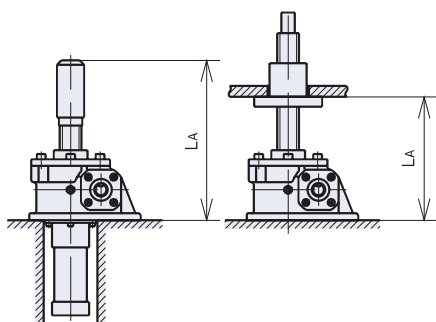
■ H Speed



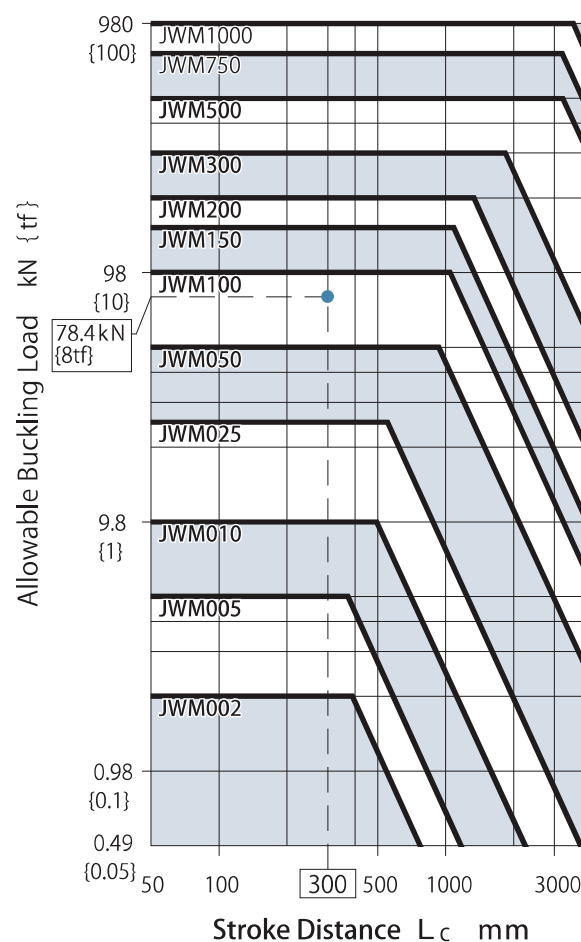
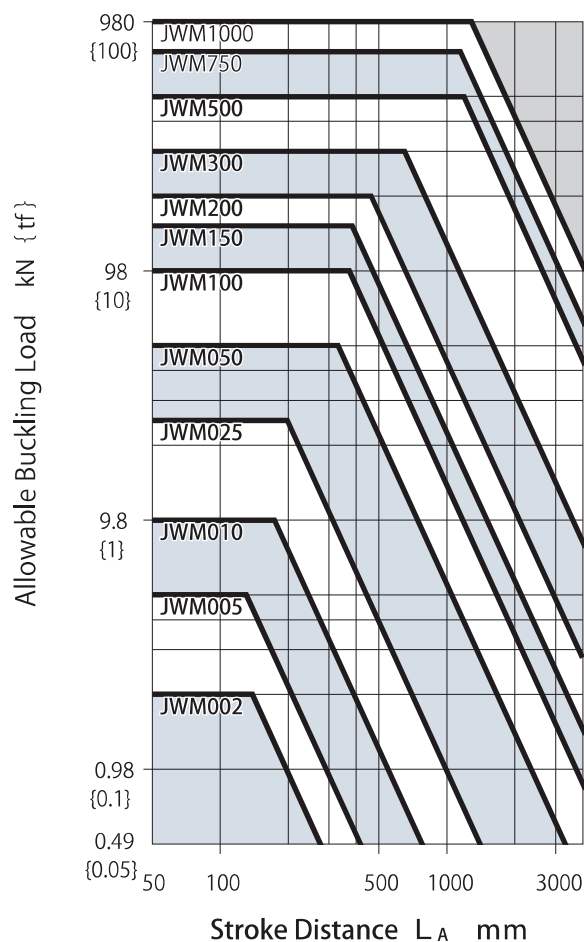
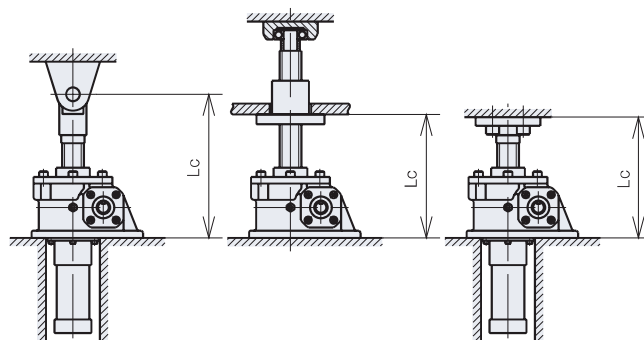
Allowable Buckling Load for JWM (Machine Screw Type)

- Use this graph to select the correct frame number based on a specific buckling load, for compression loads.
The graph for Allowable Buckling Load assumes a load safety rate of $S_f = 4$.
- ① From the installation conditions shown in A and C below, determine the correct distance for L_A and L_C .
- ② The graphs allow you to select the correct frame number based on a specific load W (vertical axis) and stroke distance L_A (horizontal axis).
- Make sure side load does not apply. The graph below assumes no side load.
- If the shaft is loaded in tension buckling can be avoided, and hence be highly economical.

A Fixed base - Shaft end free



C Fixed base - Guided shaft end/Fixed shaft end



Notes)1. The dotted line on the graph represents an example based on $W78.4\text{kN } \{8\text{tf}\}$ load (buckling safety rate of $S_f = 4$) and installation condition C with a distance of 300mm. From this graph, JWM100 is selected as the suitable frame number for these conditions.

Allowable Buckling Load for JWB (Ball Screw Type)

● Use this graph to select the correct frame number based on a specific buckling load, for compression loads.

The graph for Allowable Buckling Load assumes a buckling load safety rate of $S_f = 4$.

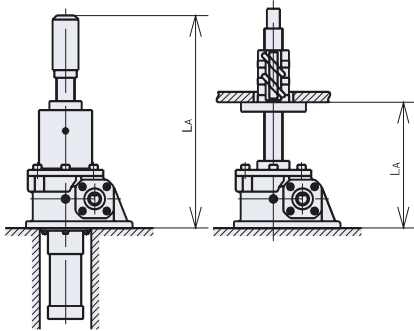
① From the installation conditions shown in A and C below, determine the correct distance for L_A and L_C .

② The graphs allow you to select the correct frame number based on a specific load W (vertical axis) and stroke distance L_A (horizontal axis).

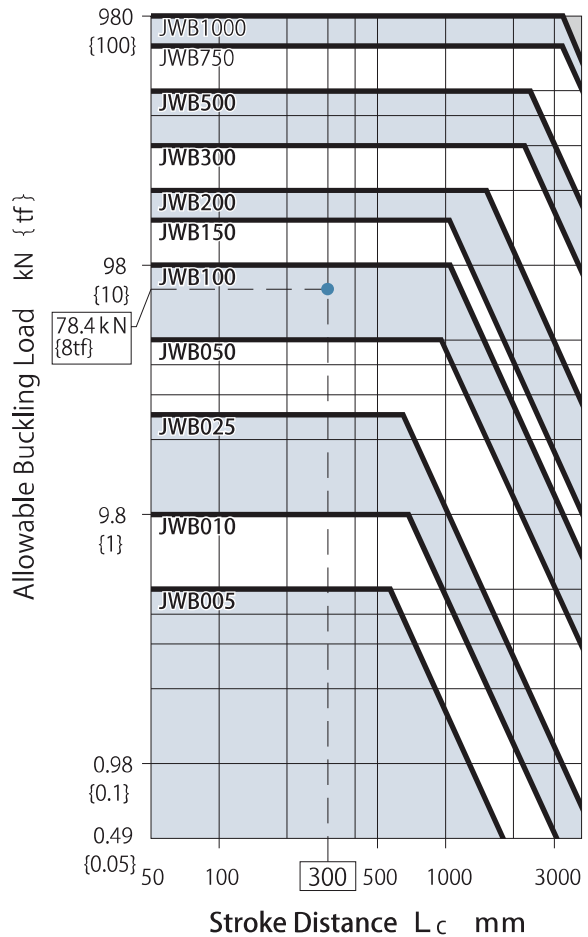
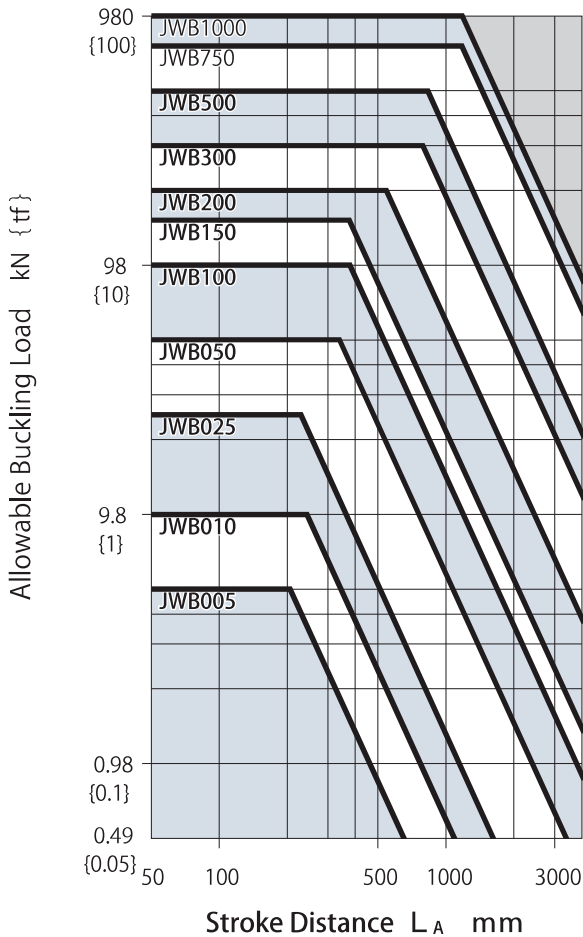
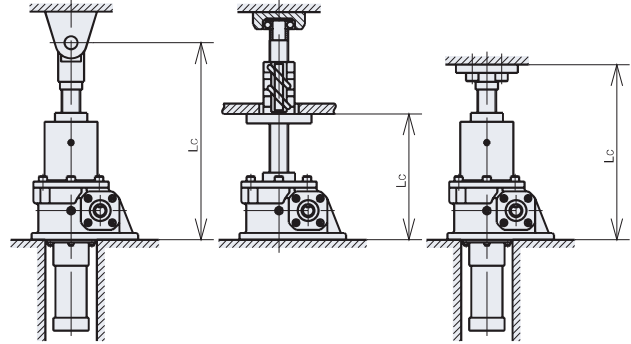
● Make sure side load does not apply. The graph below assumes no side load.

● If the shaft is loaded in tension buckling can be avoided, and hence be highly economical.

A Fixed base - Shaft end free



C Fixed base - Guided shaft end/Fixed shaft end



Notes)1. The dotted line on the graph represents an example based on $W=78.4\text{kN}$ {8tf} load (buckling safety rate of $S_f = 4$) and installation condition C with a distance of 300mm. From this graph, JWB100 is selected as the suitable frame number for these conditions.

Allowable Buckling Load for JWH (High Lead Ball Screw Type)

● Use this graph to select the correct frame number based on a specific buckling load for compression loads.

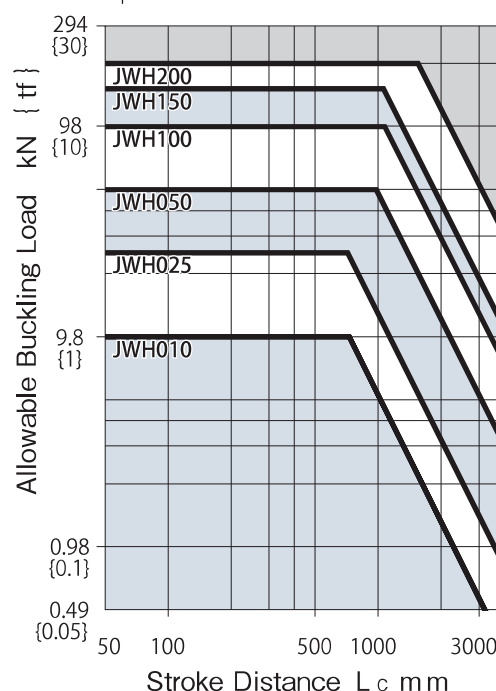
The graph for Allowable Buckling Load assumes a buckling load safety rate of $S_f = 4$.

① From the installation condition shown in C below, determine the correct distance for L_c .

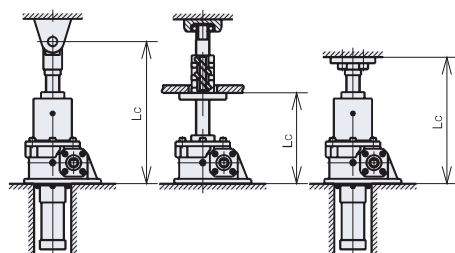
② The graph allows you to select the correct frame number based on a specific load W (vertical axis) and stroke distance L_c (horizontal axis).

● Make sure side load does not apply. The graph below assumes no side load.

● If the shaft is loaded in tension buckling can be avoided, and hence be highly economical.



C Fixed base - Guided shaft end/Fixed shaft end



Note) If a detailed study is required, check by the following formula.

Formula used to calculate Allowable Buckling Load

Formula used to calculate allowable buckling load.

$$P_{CR} = m \times \left(\frac{d^2}{L} \right)^2$$

Make sure $P_{CR} > W \times S_f$

P_{CR} : Allowable buckling load N { kgf }

d : Screw shaft root diameter mm (Refer to pages 215 to 216 for JWM, pages 241 to 242 for JWB and pages 265 to 266 for JWH)

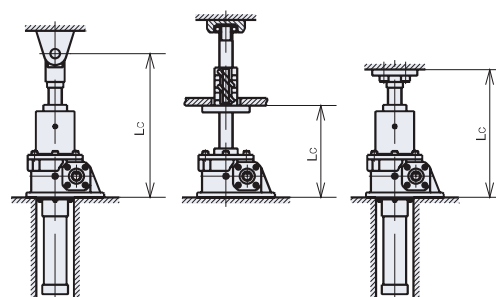
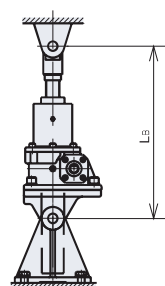
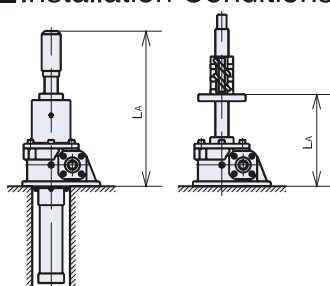
m : Support coefficient
(Select installation condition from the figures below)

L : Screw shaft projection distance mm
(maximum dimension in the dimensions table of each frame No.:
If an end fitting is required, see the dimension of the end fitting.)

W : Load per jack N { kgf }

S_f : Buckling safety rate (Assume 4)

Installation Conditions



A Fixed base-Shaft end free

	m
SI Unit	2.5×10^4
Gravitational Unit	2.5×10^3

B Base and shaft end with clevis

	m
SI Unit	10×10^4
Gravitational Unit	10×10^3

C Fixed base-Guided shaft end/Fixed shaft end

	m
SI Unit	20×10^4
Gravitational Unit	20×10^3

SI Unit

We calculate the P_{CR} of JWM100USH5JI, based on 49000N load and installation condition C (Fixed base and guided shaft end/Fixed shaft end.)

$$P_{CR} = 20 \times 10^4 \times \left(\frac{38.4^2}{791} \right)^2$$

$$= 695027 \text{ N}$$

$$W \times S_f = 49000 \times 4 \text{ (assuming } S_f = 4)$$

$$= 196000 \text{ N}$$

$$P_{CR} > W \times S_f$$

$$695027 > 196000 \dots \text{OK}$$

* $L = 711 + 80$ (I-type end fitting) = 791
from the dimensions table on page 227.

{ Gravitational Unit }

We calculate the P_{CR} of JWM100USH5JI, based on 5000kgf load and installation condition C (Fixed base and guided shaft end/Fixed shaft end.)

$$P_{CR} = 20 \times 10^3 \times \left(\frac{38.4^2}{791} \right)^2$$

$$= 69502 \text{ kgf}$$

$$W \times S_f = 5000 \times 4 \text{ (assuming } S_f = 4)$$

$$= 20000 \text{ kgf}$$

$$P_{CR} > W \times S_f$$

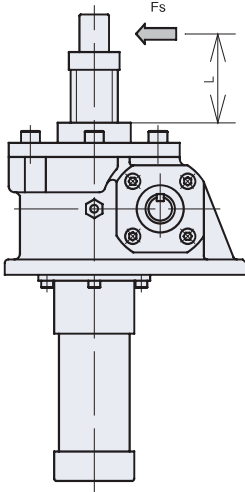
$$69502 > 20000 \dots \text{OK}$$

* $L = 711 + 80$ (I-type end fitting) = 791
from the dimensions table on page 227.

Allowable Side Load for JWM (Machine Screw Type)

Guides are typically used for Machine Screw Types as shown in the diagram below. However, if the shaft projection distance (L) beyond the housing surface is relatively short, a certain amount of side load is acceptable.

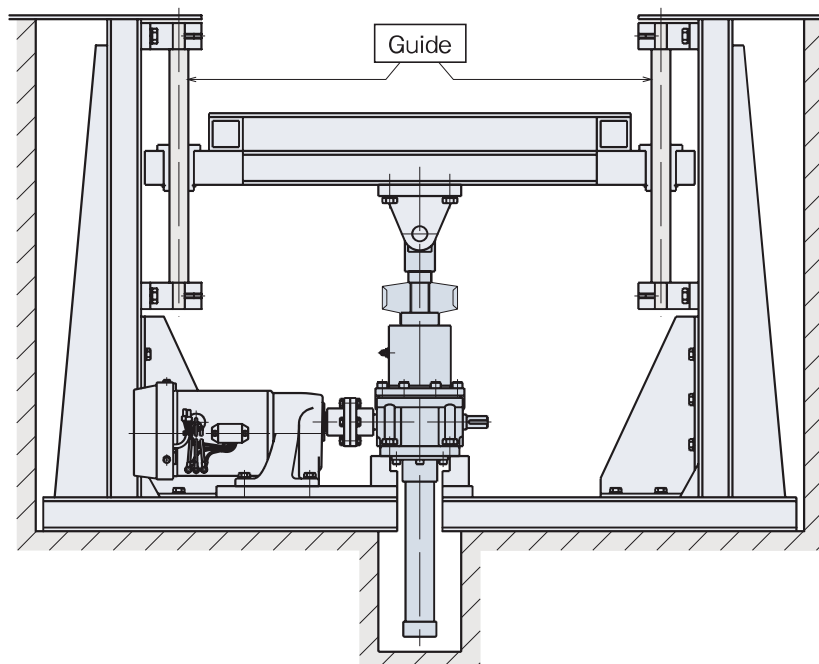
Note) L represents the distance of screw shaft projection that affects side load. It does not refer to stroke distance.



Frame Number Screw Shaft Projection Distance L, mm	Allowable Side Load											
	002	005	010	025	050	100	150	200	300	500	750	1000
100	83	128	318	570	2,500	4,010	4,610	8,210	21,700	85,300	73,500	159,700
	{9}	{13}	{32}	{59}	{255}	{409}	{470}	{838}	{2,210}	{8,700}	{7,500}	{16,300}
200	42	64	159	290	1,250	2,010	2,300	4,110	10,800	50,400	56,700	79,900
	{4}	{7}	{16}	{29}	{128}	{205}	{235}	{419}	{1,110}	{5,150}	{5,780}	{8,150}
300	28	43	106	190	830	1,340	1,540	2,740	7,200	33,600	37,800	53,200
	{3}	{4}	{11}	{20}	{85}	{136}	{157}	{279}	{740}	{3,430}	{3,860}	{5,430}
400	21	32	79	140	620	1,000	1,150	2,050	5,400	25,200	28,300	39,900
	{2}	{3}	{8}	{15}	{64}	{102}	{118}	{210}	{550}	{2,570}	{2,890}	{4,080}
500	—	27	64	110	500	800	920	1,640	4,300	20,200	22,700	31,900
	—	{3}	{6}	{12}	{51}	{82}	{94}	{168}	{440}	{2,060}	{2,310}	{3,260}
600	—	25	53	100	420	670	770	1,370	3,600	16,800	18,900	26,600
	—	{3}	{5}	{10}	{43}	{68}	{78}	{140}	{370}	{1,720}	{1,930}	{2,720}
700	—	23	51	90	360	570	660	1,170	3,100	14,400	16,200	22,800
	—	{2}	{5}	{9}	{36}	{58}	{67}	{120}	{320}	{1,470}	{1,650}	{2,330}
800	—	21	48	90	310	500	580	1,030	2,700	12,600	14,200	20,000
	—	{2}	{5}	{9}	{32}	{51}	{59}	{105}	{280}	{1,290}	{1,450}	{2,040}
900	—	—	45	90	280	450	510	910	2,400	11,200	12,600	17,700
	—	—	{5}	{9}	{28}	{45}	{52}	{93}	{250}	{1,140}	{1,290}	{1,810}
1000	—	—	42	90	250	400	460	820	2,200	10,100	11,300	16,000
	—	—	{4}	{9}	{26}	{41}	{47}	{84}	{220}	{1,030}	{1,160}	{1,630}

Allowable Side Load for JWB and JWH (Ball Screw and High Lead Ball Screw Types)

If side load applies, make consideration so that it does not directly apply the jack by installing a guide as shown below.



Expected Travel Distance for JWB and JWH (Ball Screw and High Lead Ball Screw Types)

Ball screw life is determined by the flaking of the rolling surface due to fatigue.

Verify ball screw life expectancy using the graphs shown. However, note that conditions such as severe shock and failure to conduct regular maintenance can largely affect the life of a ball screw.

Expected travel distance (km) = Actual load stroke (m)
x Usage frequency (times/day) x No. of operating days/yr.
x 10^{-3} x Expected no. of years

The graph on the right is based on life expectancy of B10. B10 represents distance traveled by 90% of the entire unit.

If selecting a jack based on life, use the following graph and determine the frame number first.

Each graph shows the equivalent P_m or 39.2kN {4tf} for the required expected travel distance, 5km. The coordinates of horizontal and vertical axes suggest suitable frame numbers. In this case, jacks JWB050, JWH050 or above are recommended.

If the load largely fluctuates in the middle of a stroke, use the following formula to calculate equivalent load.

$$P_m = \frac{P_{MIN} + 2 \times P_{MAX}}{3}$$

P_m : Equivalent load kN { kgf }

P_{MIN} : Minimum load kN { kgf }

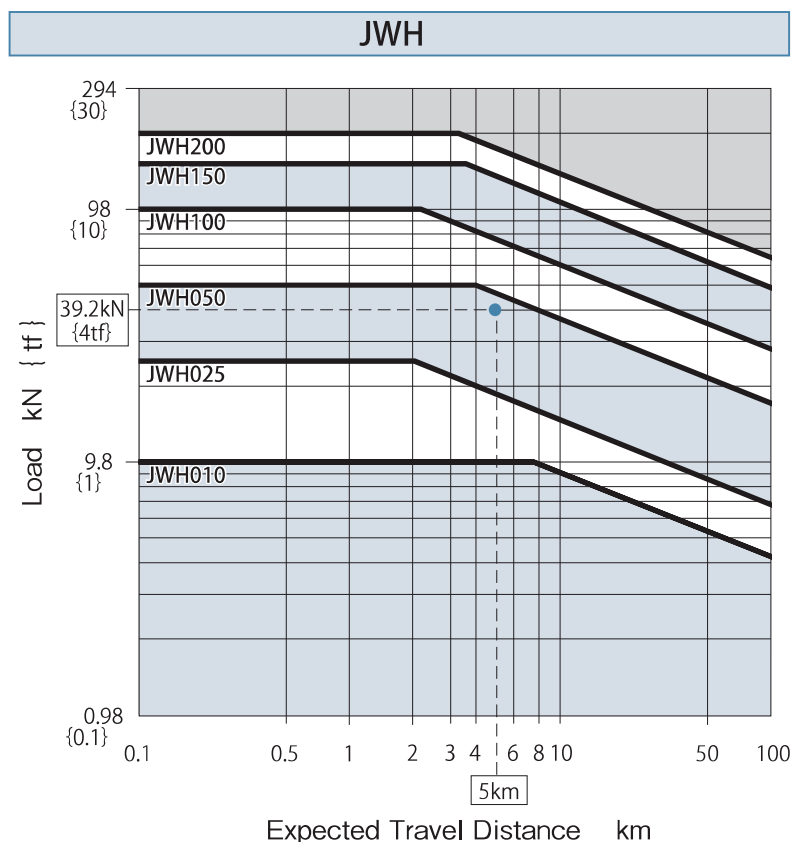
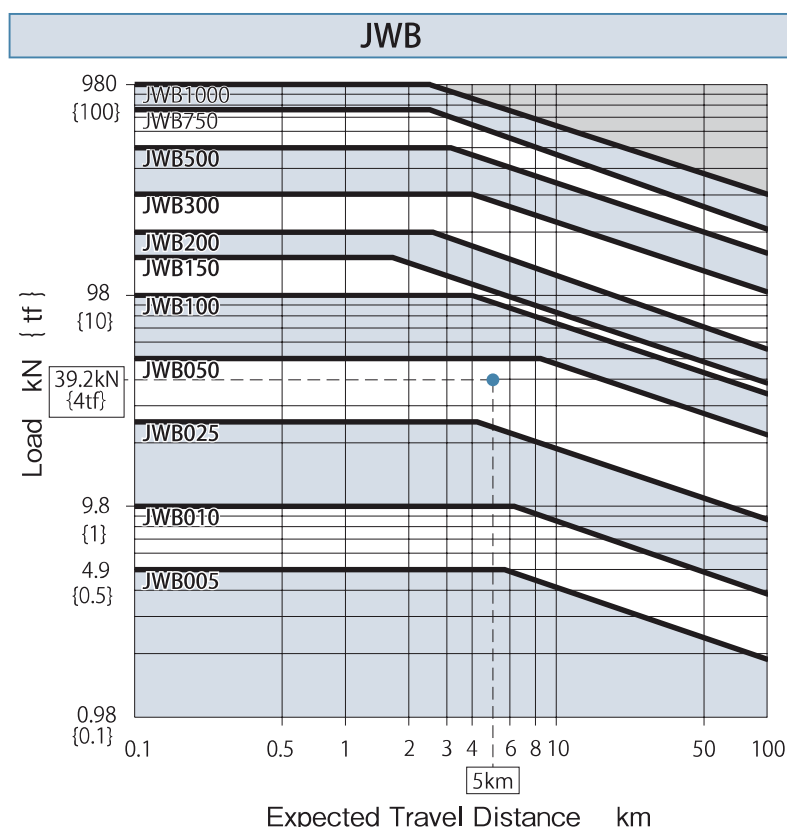
P_{MAX} : Maximum load kN { kgf }

<JWM (Machine Screw Type) Expected Travel Distance>

Machine screw life cannot be determined by the formula used to calculate a ball screw wear life. Use the information below as a reference.

JWM050 and below---5km (Average expected life)

JWM100 and above---1km (Average expected life)



1. Allowable Overhang Load

When installing a sprocket, gear, or belt, use the following formula to verify that any overhang load applied to the shaft falls within the allowable OHL (Table 1).

$$\text{Allowable O. H. L.} \geq \frac{T \times f \times L_f}{R}$$

O.H.L. : Overhang load N {kgf}
 T : Input torque N · m {kgf · m}
 f : Coefficient - power transmission element
 L_f : Coefficient-Load position
 R : Sprocket, Gear, V pulley or Pitch diameter m

Table 2. Coefficient- Power Transmission Element (f)

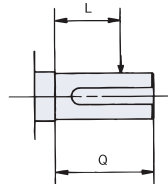
Chain	1.00
Gear	1.25
V Belt	1.50
Flat Belt	2.50

Table 3. Coefficient (L_f) - Load Position

L/Q	Below 0.5	0.75	1
L _f	1	1.5	2

Table 1. Allowable O.H.L.

Frame No.		002	005	010	025	050	100	150	200	300	500	750	1000
JWM (Machine Screw Type)	N	99	200	380	710	1500	2270	3160	4320	6110	10100	13900	18000
H Speed	{ kgf }	{10}	{21}	{39}	{73}	{153}	{232}	{323}	{441}	{624}	{1030}	{1420}	{1840}
JWM (Machine Screw Type)	N	63	120	220	420	820	1430	1950	2800	4400	6650	9390	13200
L Speed	{ kgf }	{6}	{13}	{23}	{44}	{85}	{146}	{200}	{286}	{449}	{678}	{958}	{1350}
JWB (Ball Screw Type)	N	—	130	220	480	870	1290	2030	2490	3450	5240	7200	9790
H Speed	{ kgf }	—	{14}	{23}	{50}	{89}	{132}	{208}	{255}	{352}	{535}	{735}	{998}
JWB (Ball Screw Type)	N	—	82	140	290	500	840	1300	1610	2400	3560	4940	6970
L Speed	{ kgf }	—	{8}	{15}	{31}	{52}	{86}	{133}	{165}	{245}	{363}	{504}	{711}
JWH (High Lead Ball Screw Type)	N	—	—	530	980	1510	2390	3130	3840	—	—	—	—
H Speed	{ kgf }	—	—	{54}	{100}	{154}	{244}	{320}	{392}	—	—	—	—



Q : Shaft Length
 L : Loaded Position

2. Screw Shaft rpm

When using a travel nut with screw shaft rotation, make sure the screw shaft rpm is within the rated value determined by the following formula. In cases where it exceeds the allowable rate, increase the frame number and recalculate.

(Verify the allowable screw shaft rpm if the input rpm is 900 r/min or over with H speed standard stroke, or if the stroke used exceeds the standard value.)

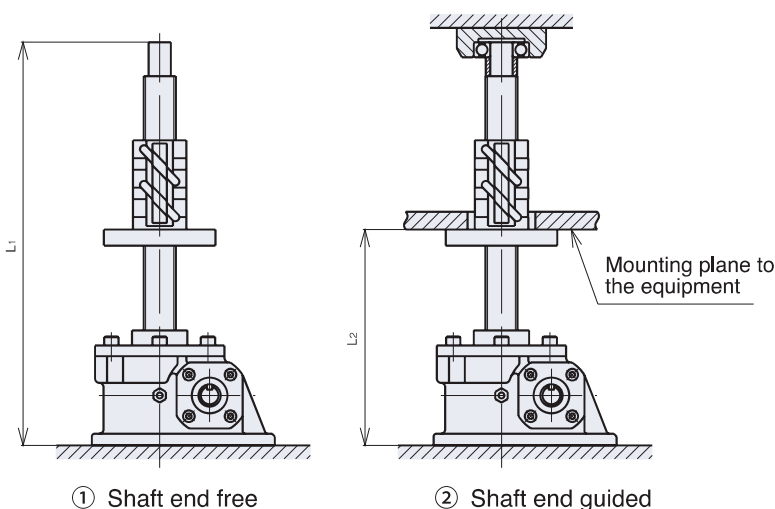
$$NC = \frac{96 \times n \times d \times 10^6}{L^2}$$

NC : Allowable screw shaft rpm r/min
 d : Screw shaft root diameter mm
 (See pages 215 to 216 for JWM, pages 241 to 242 for JWB and pages 265 to 266 for JWH.)
 n : Shaft end support coefficient
 ① Shaft end free: n=0.36
 ② Fixed shaft end: n=1.56
 L : Support space distance mm (See graph for each frame no.)

$$NS = \frac{N}{R}$$

NS : Screw shaft rpm r/min
 N : Input rpm r/min
 R : Worm speed ratio

MAKE SURE NC > NS



(Calculation Example)

Assume JWM200URH20D with input rpm of 1200r/min with fixed shaft end.

Screw shaft rpm Ns is:

$$NS = \frac{1200}{8} = 150\text{r/min}$$

* See dimensions on page 208

$$NC = \frac{96 \times 1.56 \times 51.3 \times 10^6}{2237^2}$$

$$= 1535\text{r/min}$$

$$NC = 1535\text{r/min} > NS = 150\text{r/min} \cdots \text{OK}$$

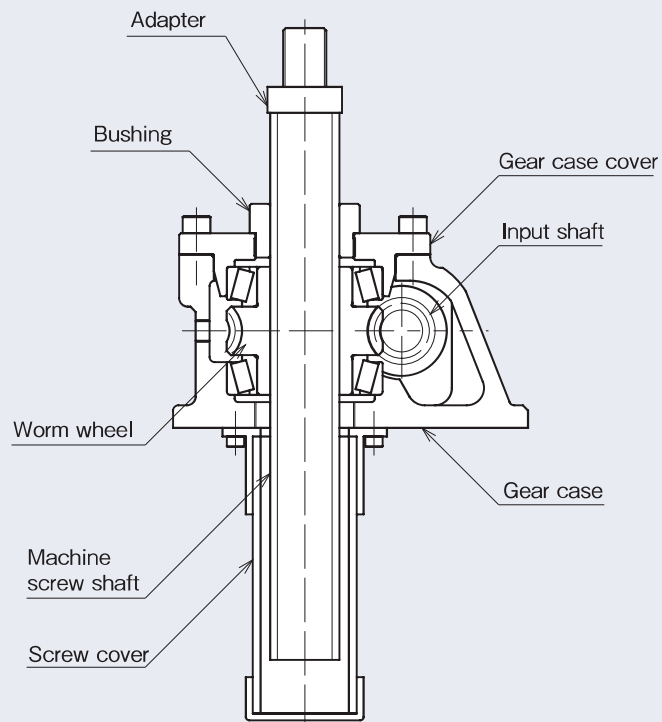
Linipower Jack

JWM (Machine Screw Type)

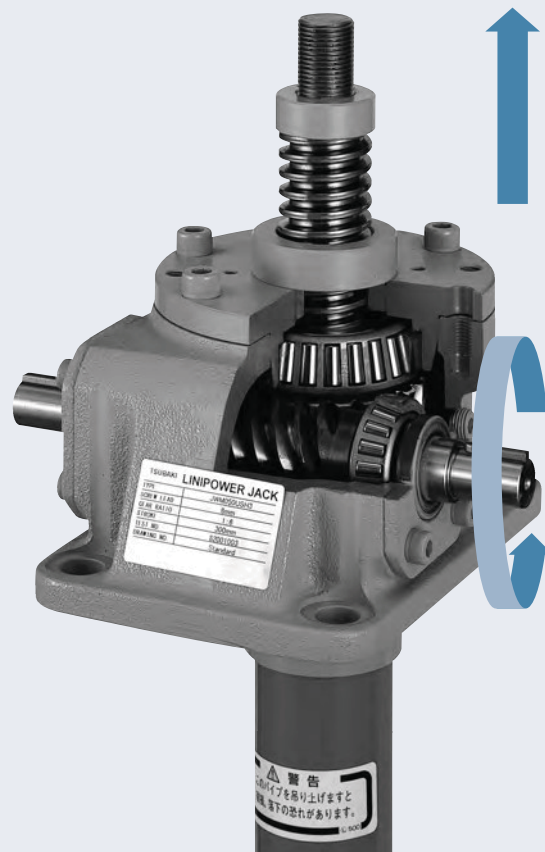
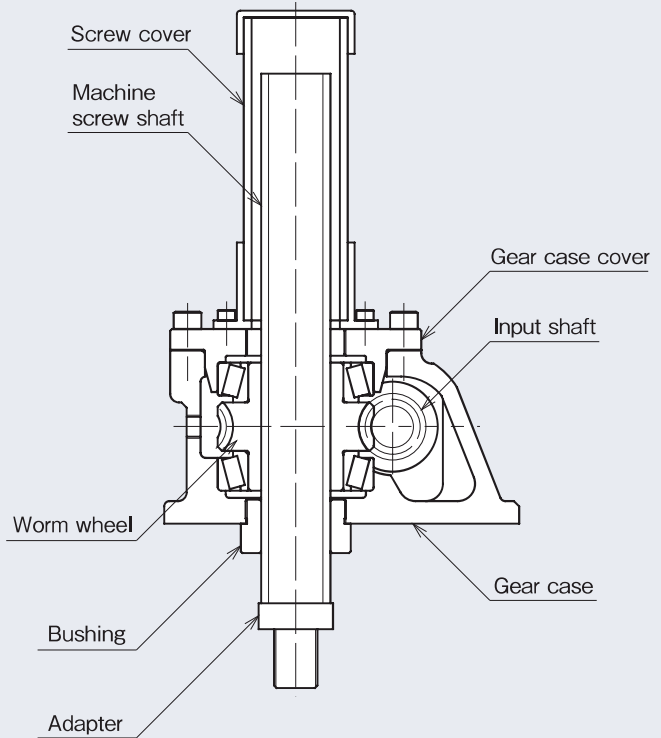


Drawings	P211•212
JWM Reference Number System	P213•214
Reference Table for Standard Use	P215•216
Dimensions	P217 to 234
Precautions	P235

JWM Standard Model for Lifting



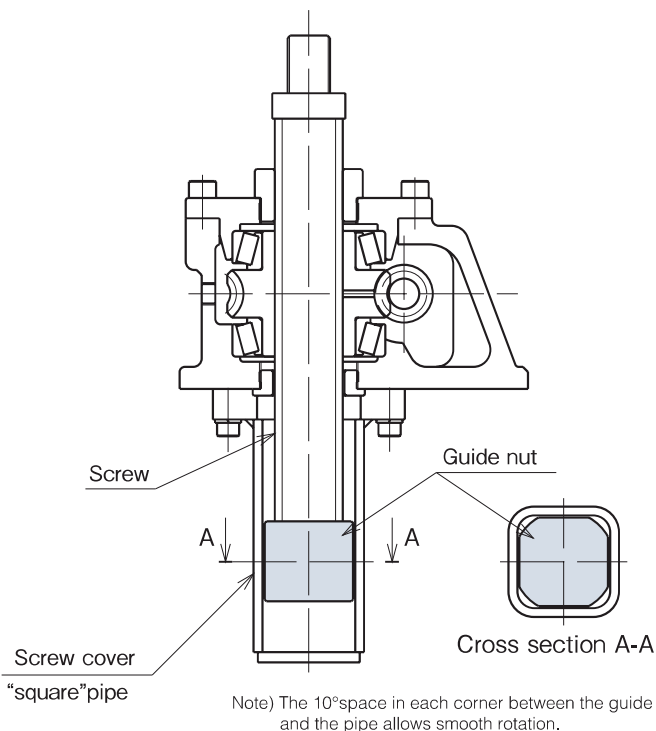
JWM Standard Model for Suspending



JWM (Machine Screw Type) Anti-rotation Type

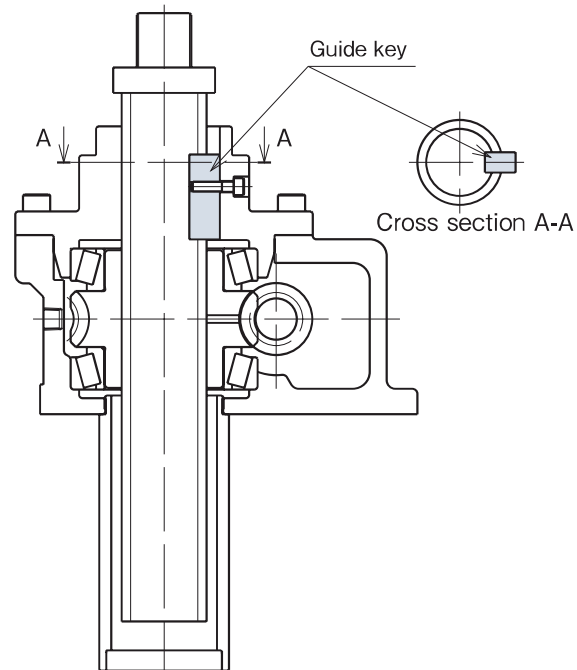
JWM002 to 050

〈Anti-rotation Type with Guide Nut〉

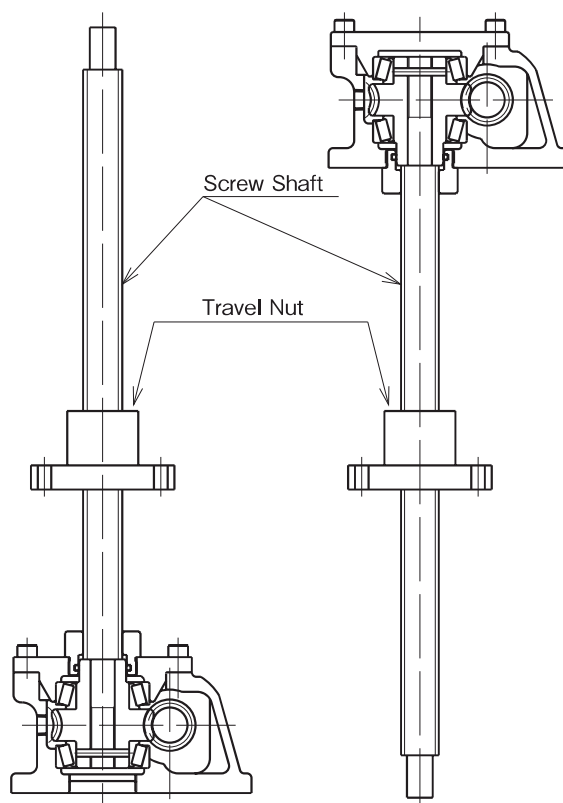


JWM100・150・200

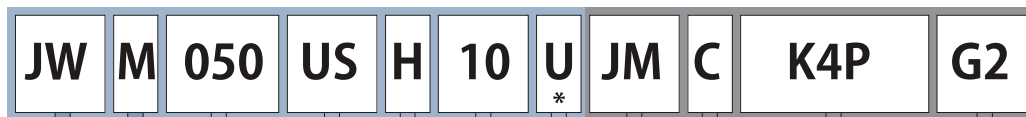
〈Anti-rotation Type with Guide Key〉



JWM (Machine Screw Type) Travel Nut Type



JWM (Machine Screw Type)



Linipower Jack

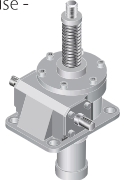
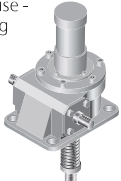
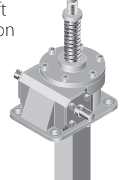
Jack Type
M : Machine screw

Basic Capacity

Frame Size	kN	{tf}
002	1.96	{0.2}
005	4.90	{0.5}
010	9.80	{1}
025	24.5	{2.5}
050	49.0	{5}
100	98.0	{10}
150	147	{15}
200	196	{20}
300	294	{30}
500	490	{50}
750	735	{75}
1000	980	{100}

*Please fill in detail information in 311.

Installation Type

US	Standard use - lifting	
DS	Standard use - suspending	
UM	Screw shaft anti-rotation for lifting	 (See page 212.)
DM	Screw shaft anti-rotation for suspending	 (See page 212.)

Stroke mm

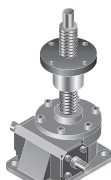
1	100
3	300
6	600
10	1000

*Please fill in detail information in 311.

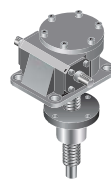
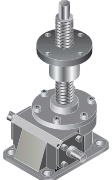
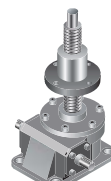
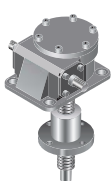
Gear Ratio

Symbol Frame No.	H	L
002	5	20
005	5	20
010	5	20
025	6	24
050	6	24
100	8	24
150	8	24
200	8	24
300	10 ² / ₃	32
500	10 ² / ₃	32
750	10 ² / ₃	32
1000	12	36

Flange Installation

UR	Travel nut - lifting	
DR	Travel nut - suspending	

*Be sure to use the flange installation method U or D with travel nuts.

U		
D		

*Please fill in detail information in 311.

Examples)

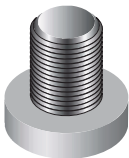
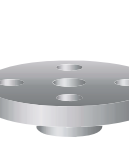
JWM100UMH3

- Machine Screw Type • 98.0kN {10tf} • Rotation prevention (for lifting) • Gear ratio H (1/8) • Stroke 300mm

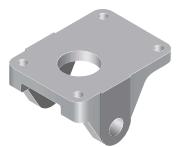
JWM050USH10JMK4PG2

- Machine Screw Type • 49.0kN {5tf} • Standard use (for lifting) • Gear ratio H (1/6) • Stroke 1000mm
- Bellows / Table Type End Fitting • 4 Internal LS • Potentiometer
- 3 Phase motor with brake and gear reducer ratio of 1/10

Output Option

No symbol	Screw Shaft End (standard) 
J	Bellows 
B	Rod Type End Fitting 
I	I Type End Fitting 
M	Table Type End Fitting 

Installation Option

C	Clevis Mounting Adapter  (See page 291) (Note) For standard lifting only.
---	--

Sensor Option

Y	LS Counter   (See page 285)
K2 K4 P R	Position Sensor K2...2 Internal LS K4...4 Internal LS P...Potentiometer R...Rotary Encoder   (See page 287)

*Please fill in the form on page 311.

Input Option

E EV	3 phase motor with brake E...200V 50Hz 200/220V 60Hz EV...400 50Hz 400/440V 60Hz  (See page 279)
G1 G2	3 phase gearmotor with brake G1...Gear ratio 1/5 200V 50Hz 200/220V 60Hz G2...Reducer ratio 1/10 200V 50Hz 200/220V 60Hz  (See page 275)

Accessories

Hand Wheel



(See page 292)

Control Options

Stroke Meter and PCB



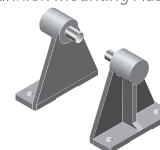
Meter Relay and PCB



(See page 288 to 289)

Others

Trunnion Mounting Adapter



* Use as a set with clevis mounting adapter.

(See page 291)

Note) When travel nuts are used, B, I and M are not available.

Note) Travel nut type with bellows is made-to-order.

*Please fill in the form on page 311.

Reference Table for Standard Use JWM (Machine Screw Type)

Frame Size		JWM002	JWM005	JWM010	JWM025	JWM050
Basic Capacity	kN	1.96	4.90	9.80	24.5	49.0
	{tf}	{0.2}	{0.5}	{1}	{2.5}	{5}
Outer Screw Diameter	mm	12	16	20	26	40
Minor Screw Diameter	mm	8.8	10.8	14.8	19.7	30.5
Screw Lead	mm	3	4	4	5	8
Gear Ratio	H Speed	5	5	5	6	6
	L Speed	20	20	20	24	24
Overall Efficiency	%					
	H Speed	26	26	21	21	22
	L Speed	15	15	12	12	14
Max. Allowable Input Capacity	kW					
	H Speed	0.16	0.39	0.49	1.0	2.0
	L Speed	0.08	0.18	0.36	0.46	0.63
Tare Drag Torque	N • m	0.11	0.11	0.29	0.62	1.4
	{kgf • m}	{0.011}	{0.011}	{0.03}	{0.063}	{0.14}
Allowable Input Torque *Note 1	N • m	9.8	9.8	19.6	49.0	153.9
	{kgf • m}	{1}	{1}	{2}	{5}	{15.7}
Required Input Torque *Note 2 for Basic Capacity	N • m					
	{kgf • m}					
	H Speed	0.83	2.5	6.2	16.1	48.7
	L Speed	0.42	1.1	2.9	7.4	20.0
Screw Movement/ per Revolution of Input Shaft	mm					
	H Speed	0.6	0.8	0.8	0.83	1.33
	L Speed	0.15	0.2	0.2	0.21	0.33
Max. Input rpm	r/min					
	H Speed	1800	1800	1800	1800	1800
	L Speed	1800	1800	1800	1800	1800
Max. Input rpm for Basic Capacity	r/min					
	H Speed	1800	1500	750	600	400
	L Speed	1800	1500	1200	600	300
Screw Shaft Rotational Torque for Basic Capacity	N • m	2.6	8.6	20.1	65.1	201.5
	{kgf • m}	{0.26}	{0.87}	{2.1}	{6.6}	{20.5}
Screw Cover Material *Note 3		Hard Vinyl Chloride				
Lubrication		Shaft: Grease Reducer Unit: Grease Bath				
Color		Tsubaki Olive Grey (Munsell 5GY6/0.5)				
Environment	Operating Temperature Range		— 15 to 80°C (Precautions #2)			
	Relative Humidity		85% or less (no dew condensation)			
	Operating ambient atmosphere		Indoor Environment (Indoor room where rain and water cannot enter. Dust volume should be normal.)			
Duty Cycle *Note 4		Within 20% ED				

Note 1) The allowable torque is for jack input shaft only. (Reconfirm if synchronous drive.)

Note 2) Includes tare drag torque.

Note 3) Rotation prevention types for frames 002 to 050 are steel square pipes.

Note 4) Standard percentage duty cycle is 30 minutes. Thus, driving time is based on 30 minute intervals.

Precautions

1. All loads (static, dynamic or shock) should be within the rated capacity of the jack at sufficient safety levels.
2. Operating Temperature Range refers to the surface temperature of the jack during operation. To check, measure the surface temperature of the input shaft unit or travel nut (if used). Be sure all the rotating parts have completely stopped before proceeding to measure.
3. Be sure to operate within the allowable input rpm of 1800/min.
4. Number of synchronizing jacks which can be connected on the same line is limited by shaft strength. Refer to the allowable input shaft torque on the above table.
5. Activating torque for the drive unit should be maintained at 200% above the required torque.
6. If operating in freezing temperatures, a change in viscosity may reduce the efficiency of the grease. Set the drive unit so as to accommodate this change.

JWM100	JWM150	JWM200	JWM300	JWM500	JWM750	JWM1000
98.0	147	196	294	490	735	980
{10}	{15}	{20}	{30}	{50}	{75}	{100}
50	55	65	85	120	130	150
38.4	43.4	51.3	67	102	112	127
10	10	12	16	16	16	20
8	8	8	10 2/3	10 2/3	10 2/3	12
24	24	24	32	32	32	36
22	20	20	19	15	13	13
15	14	13	11	10	8	8
2.8	3.1	5.0	8.4	13.4	14.4	21.4
1.4	2.2	3.2	4.6	5.7	7.2	9.4
2.0	2.6	3.9	9.8	19.6	29.4	39.2
{0.2}	{0.27}	{0.4}	{1}	{2}	{3}	{4}
292	292.0	292.0	735.0	1372.0	1764.0	2450.0
{29.8}	{29.8}	{29.8}	{75}	{140}	{180}	{250}
90.7	149	238.1	400.1	856.0	1380.5	2040.9
{9.2}	{15.2}	{24.3}	{40.8}	{87.3}	{140.7}	{208.0}
45.3	72.3	124.0	244.0	453.3	761.3	1278.3
{4.6}	{7.4}	{12.6}	{24.9}	{46.2}	{77.6}	{130.3}
1.25	1.25	1.50	1.50	1.50	1.50	1.67
0.42	0.42	0.50	0.50	0.50	0.50	0.56
1800	1800	1800	1800	1800	1800	1800
1800	1800	1800	1800	1800	1800	1800
300	200	200	200	150	100	100
300	290	250	180	120	90	70
503.6	813.2	1287.7	2531.9	5551.3	8921.8	13878.3
{51.3}	{82.9}	{131.3}	{258.1}	{565.9}	{909.5}	{1414.7}
Steel Pipe						
Screw: Grease Reducer Unit: Grease Bath						
Tsubaki Olive Grey (Munsell 5GY6/0.5)						
-15 to 80°C (Precautions #2)						
85% or less (no dew condensation)						
Indoor Environment (Indoor room where rain and water cannot enter. Dust volume should be normal.)						
Within 20% ED						

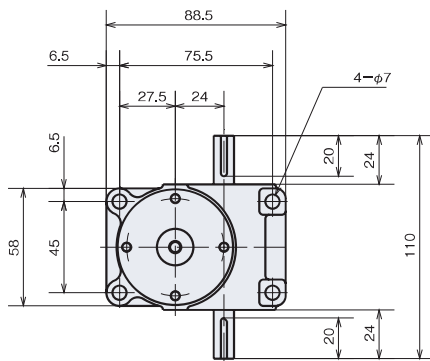
7. Although JWM (Machine Screw Type) comes with a self-locking device, it may not be effective with vibration or shock. Use a brake under such conditions.

⚠8. Be certain that the jack rating exceeds the maximum stroke. Over travel can cause the lift shaft to disengage from the worm wheel. JWM (Machine screw type) is not equipped with a fall stop, therefore, if the stroke range is exceeded, the screw shaft falls.

⚠9. Do not use mechanical stops under any circumstances. This will cause major internal damage.

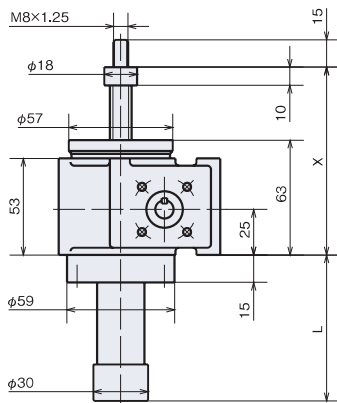
10. Input shaft key is provided with each unit.
(The input shaft key complies with JIS B 1301-1996 (normal grade).)

JWM002 Dimensions - Standard Model

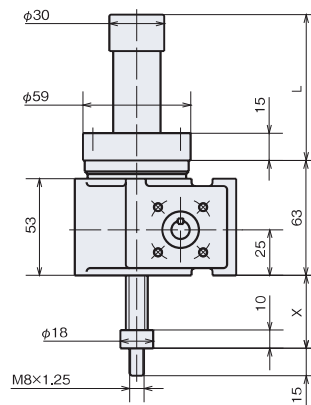


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	73	173	127	227	184	20	120	65	165	184	2.3
200	73	273	127	327	284	20	220	65	265	284	2.4
300	73	373	167	467	424	20	320	105	405	424	2.6
400	73	473	167	567	524	20	420	105	505	524	2.7

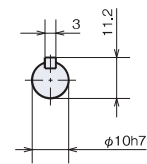
Lift (JWM002US)



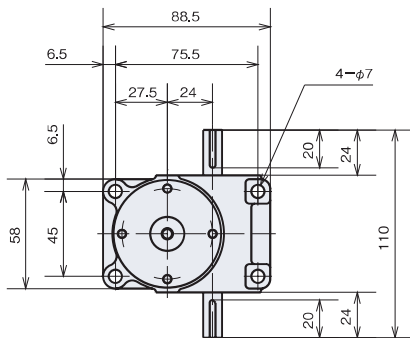
Suspend (JWM002DS)



●Input Shaft

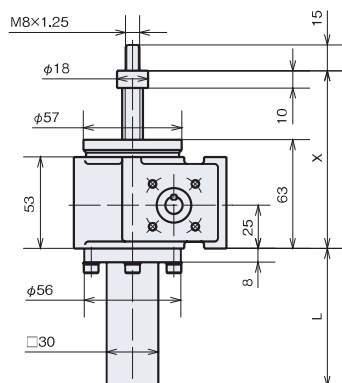


JWM002 Dimensions - Rotation Prevention Type

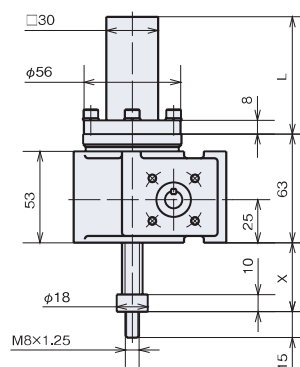


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	73	173	127	227	202	20	120	65	165	202	3.0
200	73	273	127	327	302	20	220	65	265	302	3.4
300	73	373	167	467	442	20	320	105	405	442	3.9
400	73	473	167	567	542	20	420	105	505	542	4.3

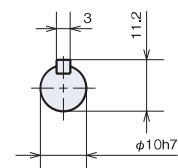
Lift (JWM002UM)



Suspend (JWM002DM)

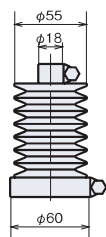


●Input Shaft

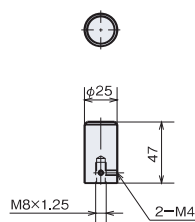


Output Options

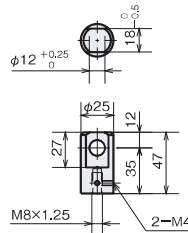
■ Bellows (- J)



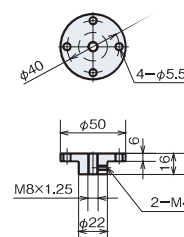
■ Rod Type End Fitting (- B)



■ I Type End Fitting (- I)

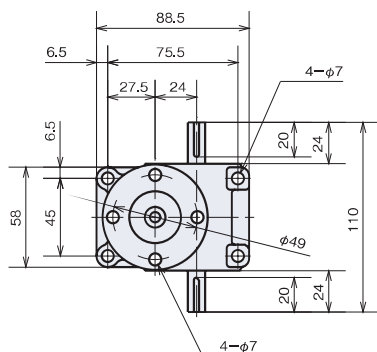


■ Table Type End Fitting (- M)



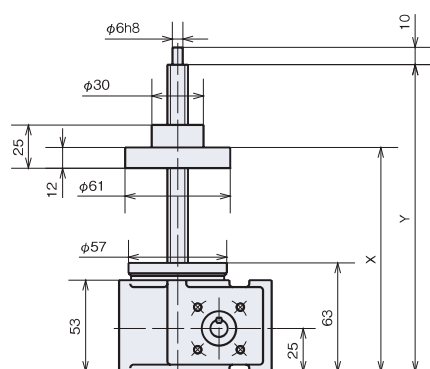
Note) For detailed measurements on units with bellows, see page 294.

JWM002 Dimensions - Travel Nut Type

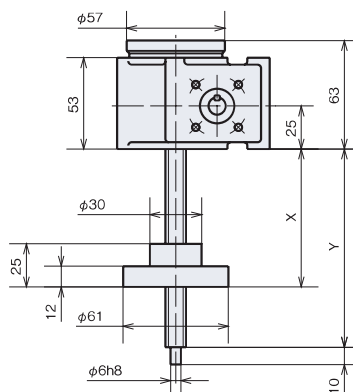


Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	84	184	207	35	135	145	2.6
200	84	284	307	35	235	245	2.6
300	84	384	407	35	335	345	2.7
400	84	484	507	35	435	445	2.8

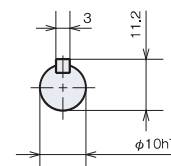
Lift (JWM002UR)



Suspend (JWM002DR)

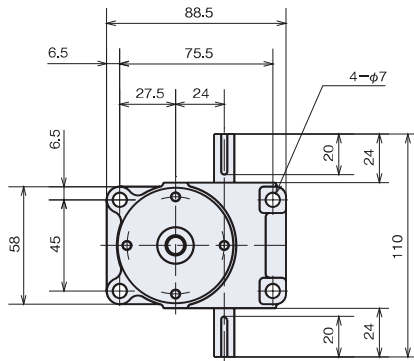


● Input Shaft



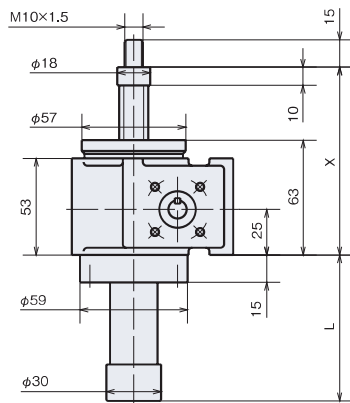
Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWM005 Dimensions - Standard Model

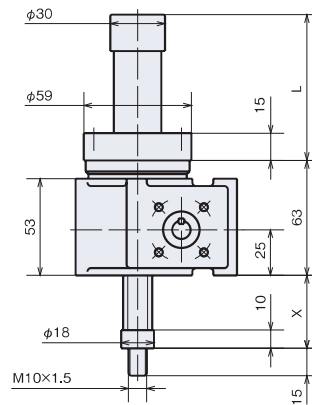


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows		Without Bellows	With Bellows				
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	73	173	127	227	188	20	120	65	165	188	2.5
200	73	273	127	327	288	20	220	65	265	288	2.6
300	73	373	167	467	428	20	320	105	405	428	2.8
400	73	473	167	567	528	20	420	105	505	528	3.0
500	73	573	202	702	663	20	520	140	640	663	3.2
600	73	673	202	802	763	20	620	140	740	763	3.3
800	73	873	237	1037	998	20	820	175	975	998	3.7

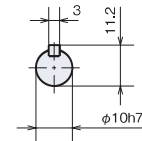
Lift (JWM005US)



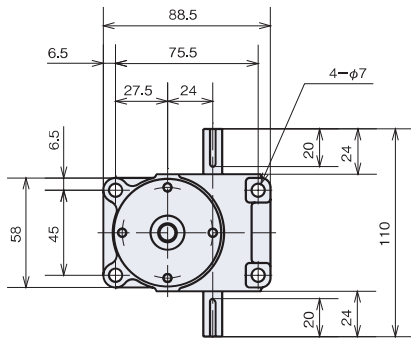
Suspend (JWM005DS)



● Input Shaft

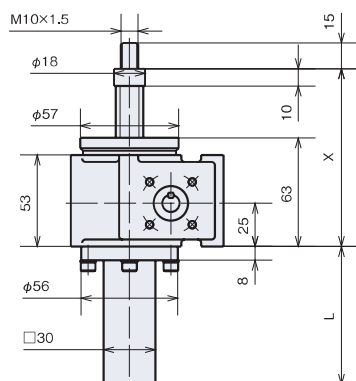


JWM005 Dimensions - Rotation Prevention Type

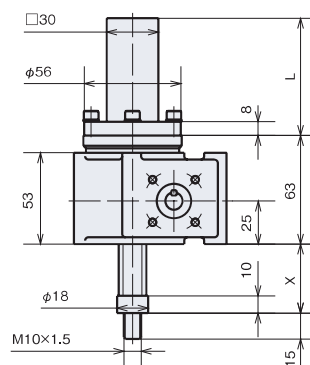


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows		Without Bellows	With Bellows				
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	73	173	127	227	202	20	120	65	165	202	3.1
200	73	273	127	327	302	20	220	65	265	302	3.5
300	73	373	167	467	442	20	320	105	405	442	4.1
400	73	473	167	567	542	20	420	105	505	542	4.6
500	73	573	202	702	677	20	520	140	640	677	5.1
600	73	673	202	802	777	20	620	140	740	777	5.5
800	73	873	237	1037	1012	20	820	175	975	1012	6.5

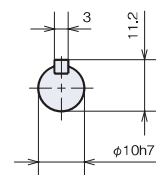
Lift (JWM005UM)



Suspend (JWM005DM)

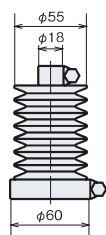


● Input Shaft

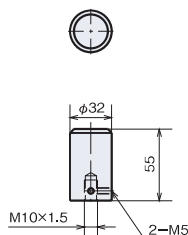


Output Options

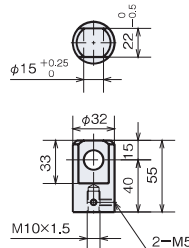
■ Bellows (- J)



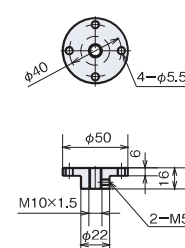
■ Rod Type End Fitting (- B)



■ I Type End Fitting (- I)

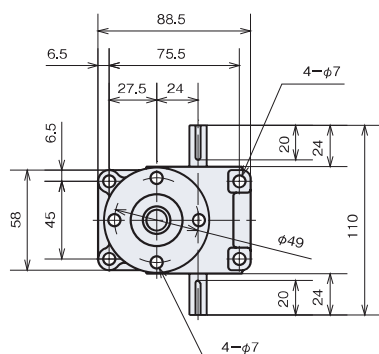


■ Table Type End Fitting (- M)

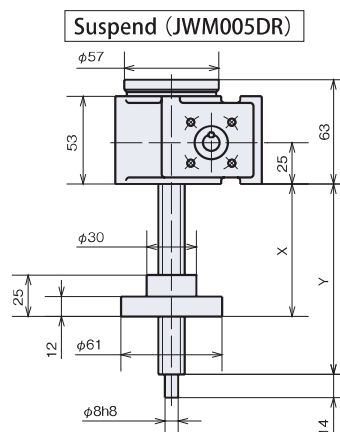
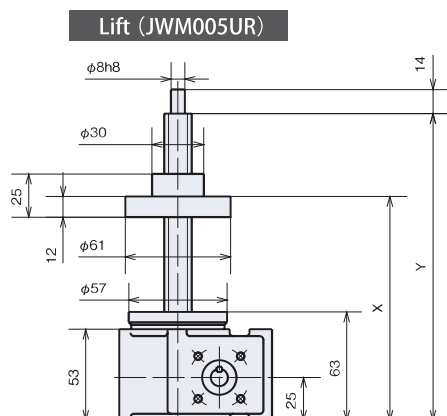


Note) For detailed measurements on units with bellows, see page 294.

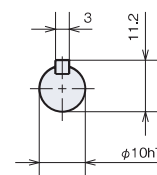
JWM005 Dimensions - Travel Nut Type



Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	84	184	207	35	135	145	2.6
200	84	284	307	35	235	245	2.8
300	84	384	407	35	335	345	2.9
400	84	484	507	35	435	445	3.0
500	84	584	607	35	535	545	3.1
600	84	684	707	35	635	645	3.2
800	84	884	907	35	835	845	3.5

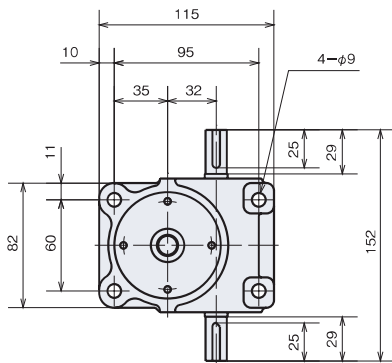


● Input Shaft



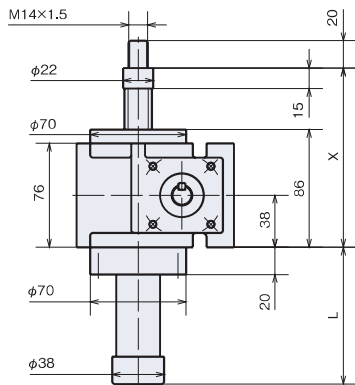
Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWM010 Dimensions - Standard Model

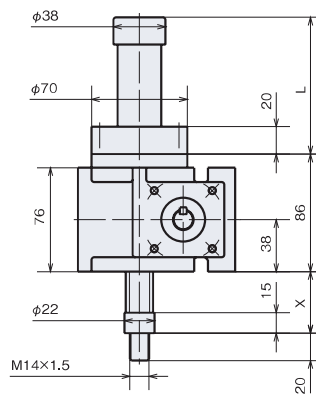


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	101	201	161	261	194	25	125	75	175	194	5.5
200	101	301	161	361	294	25	225	75	275	294	5.7
300	101	401	201	501	434	25	325	115	415	434	6.1
400	101	501	201	601	534	25	425	115	515	534	6.3
500	101	601	236	736	669	25	525	150	650	669	6.6
600	101	701	236	836	769	25	625	150	750	769	6.9
800	101	901	271	1071	1004	25	825	185	985	1004	7.5
1000	101	1101	301	1301	1234	25	1025	215	1215	1234	8.0

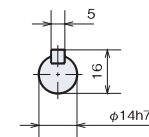
Lift (JWM010US)



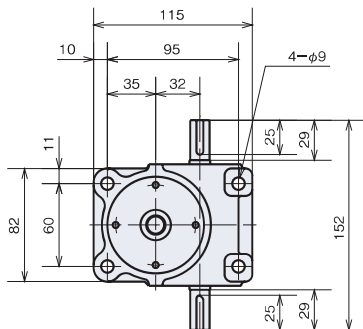
Suspend (JWM010DS)



●Input Shaft

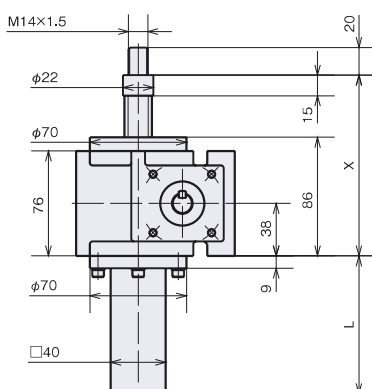


JWM010 Dimensions - Rotation Prevention Type

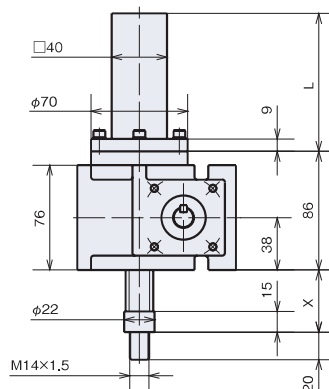


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	101	201	161	261	213	25	125	75	175	213	6.6
200	101	301	161	361	313	25	225	75	275	313	7.2
300	101	401	201	501	453	25	325	115	415	453	8.1
400	101	501	201	601	553	25	425	115	515	553	8.8
500	101	601	236	736	688	25	525	150	650	688	9.6
600	101	701	236	836	788	25	625	150	750	788	11
800	101	901	271	1071	1023	25	825	185	985	1023	12
1000	101	1101	301	1301	1253	25	1025	215	1215	1253	14

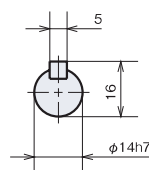
Lift (JWM010UM)



Suspend (JWM010DM)

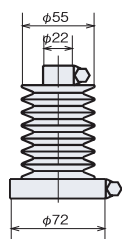


●Input Shaft

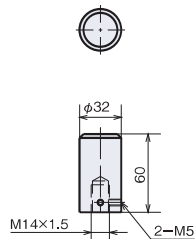


Output Options

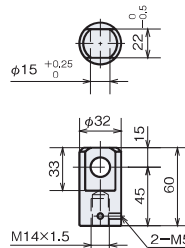
■ Bellows (- J)



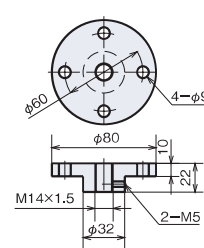
■ Rod Type End Fitting (- B)



■ I Type End Fitting (- I)

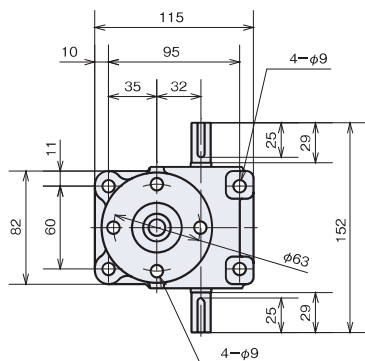


■ Table Type End Fitting (- M)



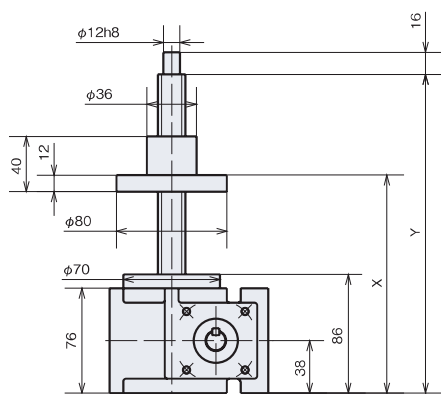
Note) For detailed measurements on units with bellows, see page 294.

JWM010 Dimensions - Travel Nut Type

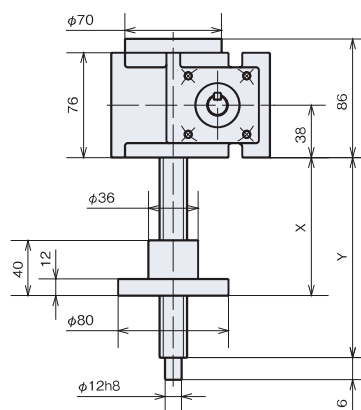


Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	108	208	246	50	150	160	5.9
200	108	308	346	50	250	260	6.1
300	108	408	446	50	350	360	6.2
400	108	508	546	50	450	460	6.4
500	108	608	646	50	550	560	6.6
600	108	708	746	50	650	660	6.8
800	108	908	946	50	850	860	7.2
1000	108	1108	1146	50	1050	1060	7.6

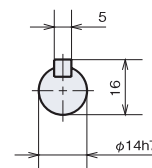
Lift (JWM010UR)



Suspend (JWM010DR)

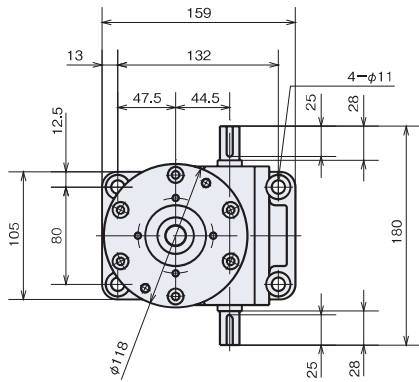


● Input Shaft

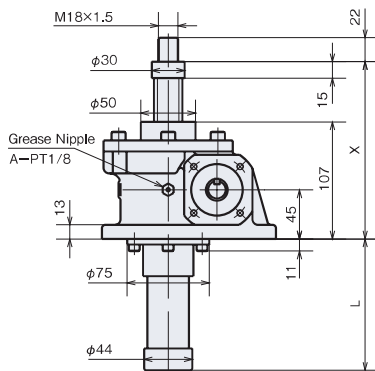


Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

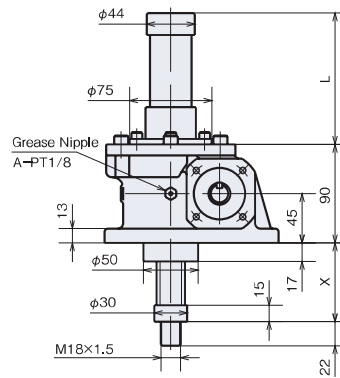
JWM025 Dimensions - Standard Model



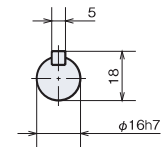
Lift (JWM025US)



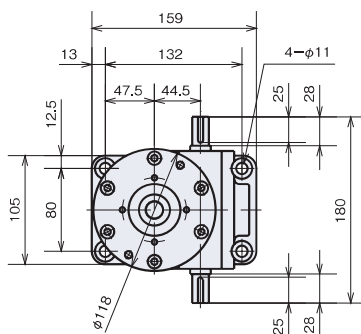
Suspend (JWM025DS)



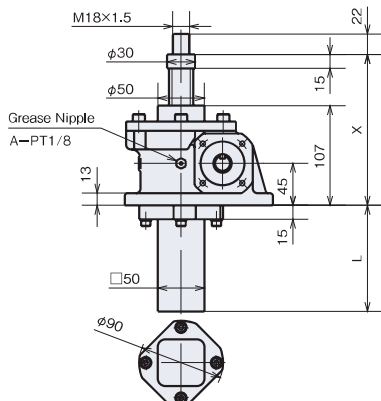
●Input Shaft



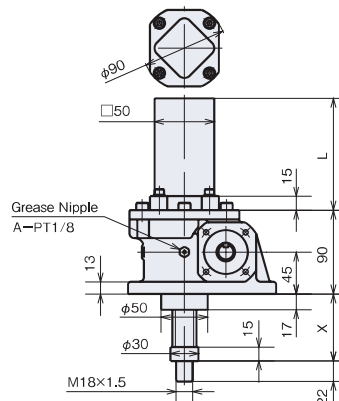
JWM025 Dimensions - Rotation Prevention Type



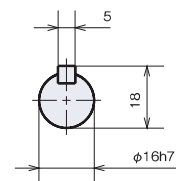
Lift (JWM025UM)



Suspend (JWM025DM)



●Input Shaft

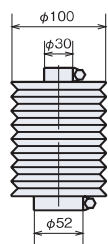


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows		Without Bellows	With Bellows				
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	132	232	147	247	149	42	142	57	157	149	7.7
200	132	332	147	347	249	42	242	57	257	249	8.1
300	132	432	167	467	369	42	342	77	377	369	8.5
400	132	532	167	567	469	42	442	77	477	469	8.9
500	132	632	187	687	589	42	542	97	597	589	9.4
600	132	732	187	787	689	42	642	97	697	689	9.8
800	132	932	207	1007	909	42	842	117	917	909	11
1000	132	1132	227	1227	1129	42	1042	137	1137	1129	12
1200	132	1332	242	1442	1344	42	1242	152	1352	1344	13

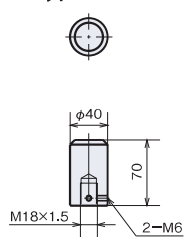
Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X Without Bellows		X With Bellows		L	X Without Bellows		X With Bellows		L	
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	132	232	147	247	181	42	142	57	157	181	10
200	132	332	147	347	281	42	242	57	257	281	12
300	132	432	167	467	401	42	342	77	377	401	13
400	132	532	167	567	501	42	442	77	477	501	14
500	132	632	187	687	621	42	542	97	597	621	15
600	132	732	187	787	721	42	642	97	697	721	17
800	132	932	207	1007	941	42	842	117	917	941	19
1000	132	1132	227	1227	1161	42	1042	137	1137	1161	21
1200	132	1332	242	1442	1376	42	1242	152	1352	1376	24

Output Options

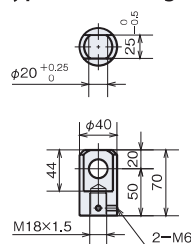
■ Bellows (- J)



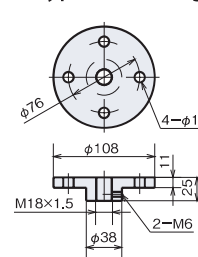
■ Rod Type End Fitting (- B)



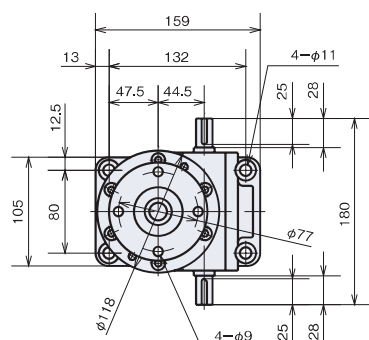
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

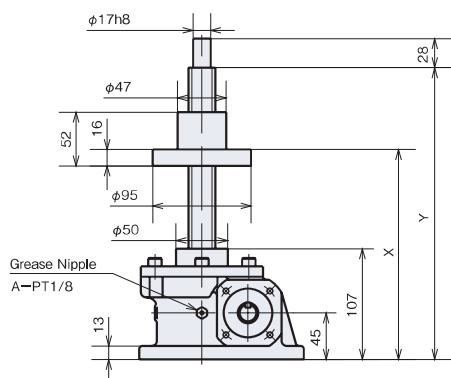


JWM025 Dimensions - Travel Nut Type

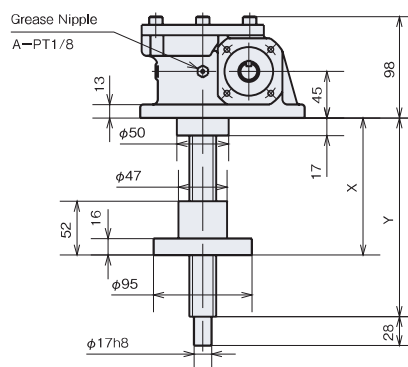


Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	133	233	279	79	179	189	9.2
200	133	333	379	79	279	289	9.5
300	133	433	479	79	379	389	9.9
400	133	533	579	79	479	489	11
500	133	633	679	79	579	589	11
600	133	733	779	79	679	689	11
800	133	933	979	79	879	889	12
1000	133	1133	1179	79	1079	1089	13
1200	133	1333	1379	79	1279	1289	13

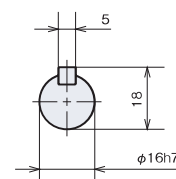
Lift (JWM025UR)



Suspend (JWM025DR)

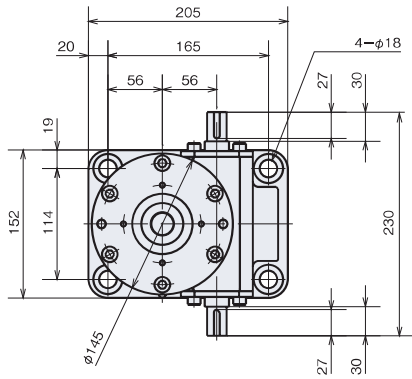


● Input Shaft



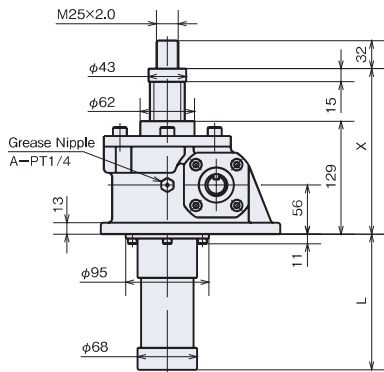
Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWM050 Dimensions - Standard Model

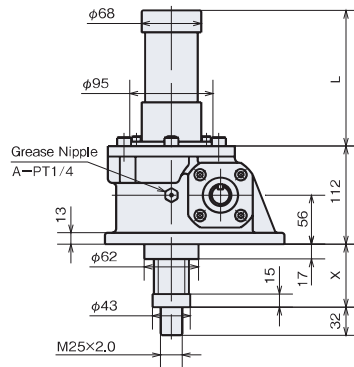


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	154	254	169	269	147	42	142	57	157	147	18
200	154	354	169	369	247	42	242	57	257	247	19
300	154	454	189	489	367	42	342	77	377	367	20
400	154	554	189	589	467	42	442	77	477	467	21
500	154	654	209	709	587	42	542	97	597	587	22
600	154	754	209	809	687	42	642	97	697	687	23
800	154	954	229	1029	907	42	842	117	917	907	25
1000	154	1154	249	1249	1127	42	1042	137	1137	1127	27
1200	154	1354	264	1464	1342	42	1242	152	1352	1342	29
1500	154	1654	289	1789	1667	42	1542	177	1677	1667	32

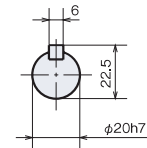
Lift (JWM050US)



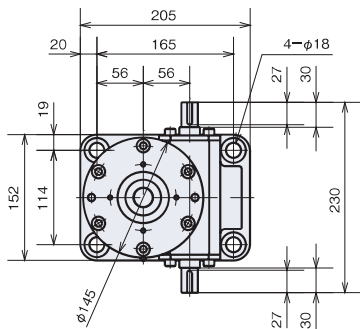
Suspend (JWM050DS)



● Input Shaft

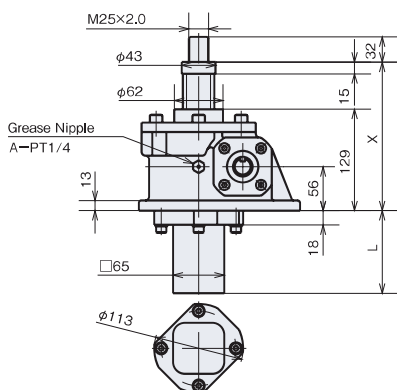


JWM050 Dimensions - Rotation Prevention Type

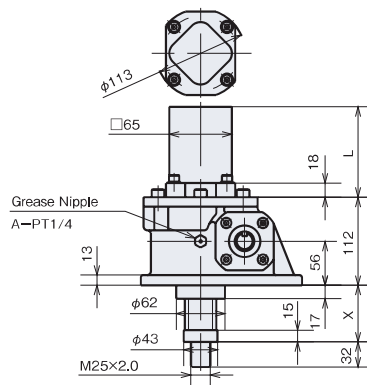


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	154	254	169	269	196	42	142	57	157	196	22
200	154	354	169	369	296	42	242	57	257	296	24
300	154	454	189	489	416	42	342	77	377	416	26
400	154	554	189	589	516	42	442	77	477	516	28
500	154	654	209	709	636	42	542	97	597	636	30
600	154	754	209	809	736	42	642	97	697	736	32
800	154	954	229	1029	956	42	842	117	917	956	36
1000	154	1154	249	1249	1176	42	1042	137	1137	1176	40
1200	154	1354	264	1464	1391	42	1242	152	1352	1391	44
1500	154	1654	289	1789	1716	42	1542	177	1677	1716	50

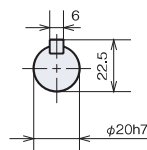
Lift (JWM050UM)



Suspend (JWM050DM)

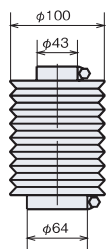


● Input Shaft

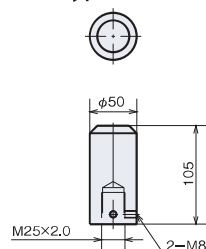


Output Options

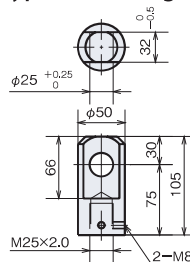
■ Bellows (- J)



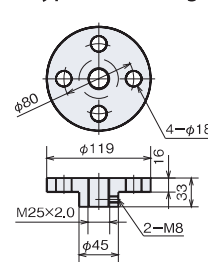
■ Rod Type End Fitting (- B)



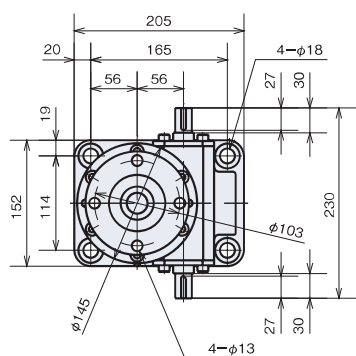
■ I Type End Fitting (- I)



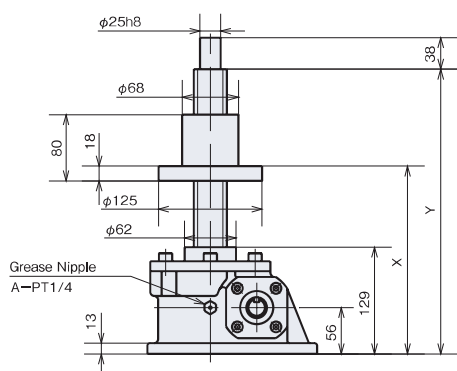
■ Table Type End Fitting (- M)



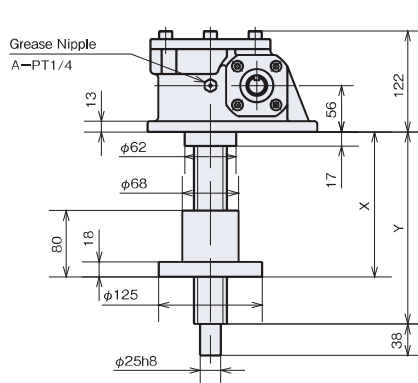
JWM050 Dimensions - Travel Nut Type



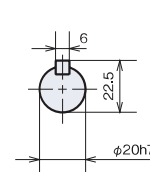
Lift (JWM050UR)



Suspend (JWM050DR)



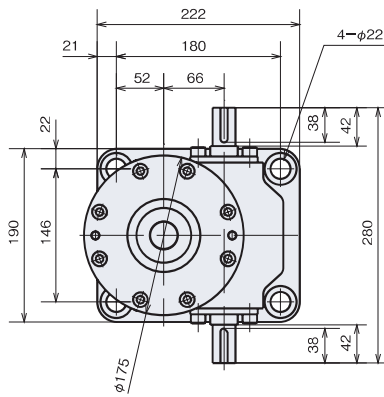
● Input Shaft



Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	157	257	330	107	207	218	22
200	157	357	430	107	307	318	22
300	157	457	530	107	407	418	23
400	157	557	630	107	507	518	24
500	157	657	730	107	607	618	25
600	157	757	830	107	707	718	26
800	157	957	1030	107	907	918	27
1000	157	1157	1230	107	1107	1118	29
1200	157	1357	1430	107	1307	1318	30
1500	157	1657	1730	107	1607	1618	33

Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWM100 Dimensions - Standard Model

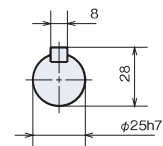
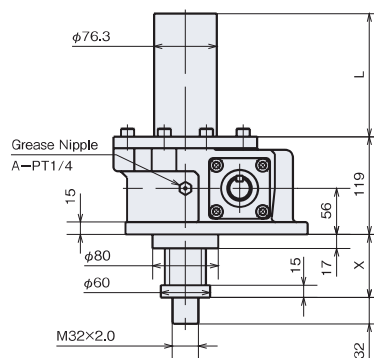
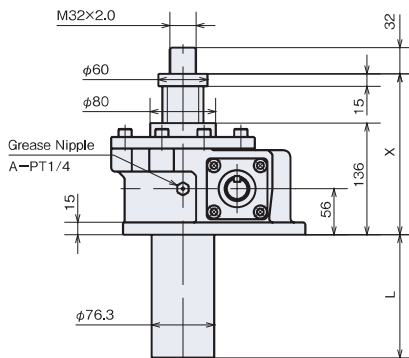


Lift (JWM100US)

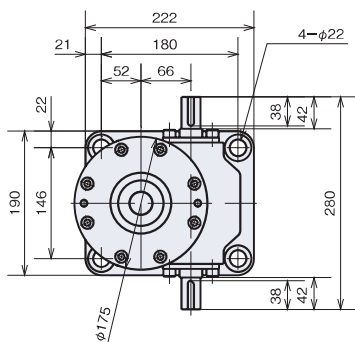
Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	161	261	171	271	151	42	142	52	152	151	27
200	161	361	171	371	252	42	242	52	252	252	29
300	161	461	186	486	366	42	342	67	367	366	32
400	161	561	186	586	466	42	442	67	467	466	34
500	161	661	211	711	591	42	542	92	592	591	37
600	161	761	211	811	691	42	642	92	692	691	40
800	161	961	226	1026	906	42	842	107	907	906	45
1000	161	1161	236	1236	1116	42	1042	117	1117	1116	50
1200	161	1361	261	1461	1341	42	1242	142	1342	1341	56
1500	161	1661	286	1786	1666	42	1542	167	1667	1666	63

Suspend (JWM100DS)

●Input Shaft



JWM100 Dimensions - Rotation Prevention Type

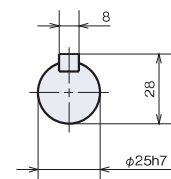
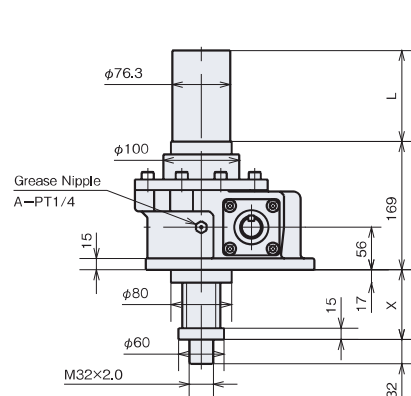
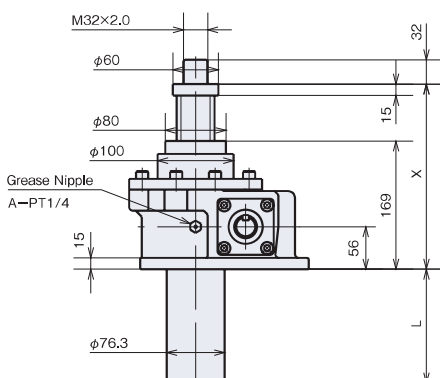


Lift (JWM100UM)

Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	194	294	204	304	151	42	142	52	152	151	30
200	194	394	204	404	252	42	242	52	252	252	32
300	194	494	219	519	366	42	342	67	367	366	35
400	194	594	219	619	466	42	442	67	467	466	37
500	194	694	244	744	591	42	542	92	592	591	40
600	194	794	244	844	691	42	642	92	692	691	43
800	194	994	259	1059	906	42	842	107	907	906	48
1000	194	1194	269	1269	1116	42	1042	117	1117	1116	53
1200	194	1394	294	1494	1341	42	1242	142	1342	1341	58
1500	194	1694	319	1819	1666	42	1542	167	1667	1666	66

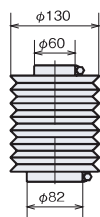
Suspend (JWM100DM)

●Input Shaft

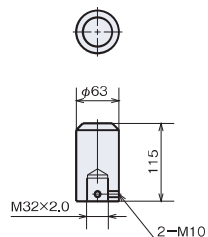


Output Options

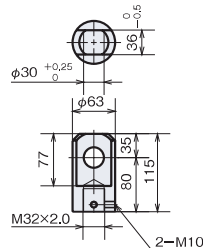
■ Bellows (- J)



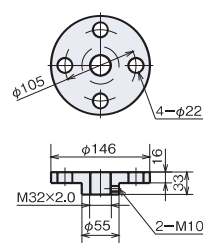
■ Rod Type End Fitting (- B)



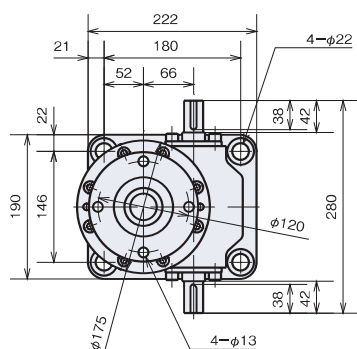
■ I Type End Fitting (- I)



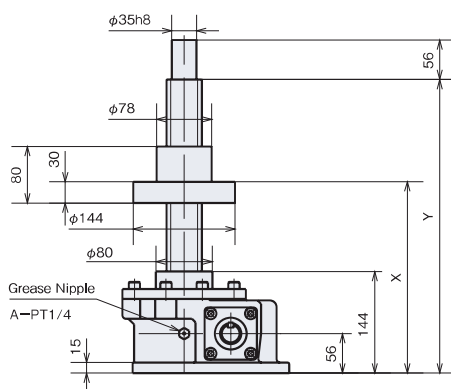
■ Table Type End Fitting (- M)



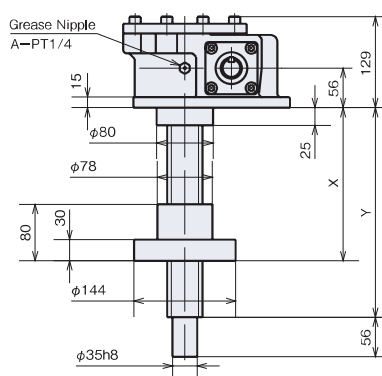
JWM100 Dimensions - Travel Nut Type



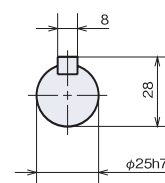
Lift (JWM100UR)



Suspend (JWM100DR)



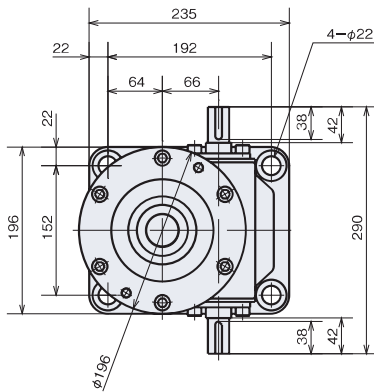
● Input Shaft



Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	184	284	344	115	215	225	32
200	184	384	444	115	315	325	33
300	184	484	544	115	415	425	34
400	184	584	644	115	515	525	36
500	184	684	744	115	615	625	37
600	184	784	844	115	715	725	38
800	184	984	1044	115	915	925	41
1000	184	1184	1244	115	1115	1125	43
1200	184	1384	1444	115	1315	1325	45
1500	184	1684	1744	115	1615	1625	49

Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWM150 Dimensions - Standard Model

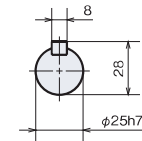
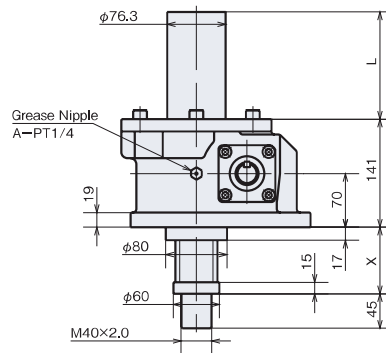
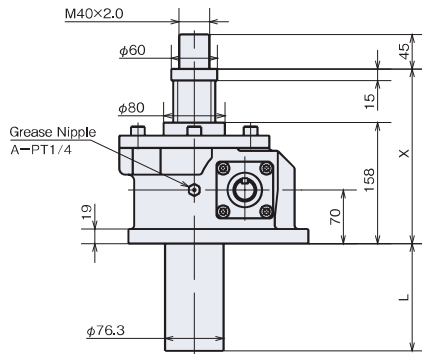


Lift (JWM150US)

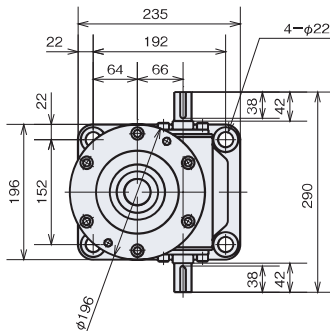
Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
100	183	283	193	293	151	42	142	52	152	151	33
200	183	383	193	393	252	42	242	52	252	252	35
300	183	483	208	508	366	42	342	67	367	366	38
400	183	583	208	608	466	42	442	67	467	466	41
500	183	683	233	733	591	42	542	92	592	591	45
600	183	783	233	833	691	42	642	92	692	691	47
800	183	983	248	1048	906	42	842	107	907	906	53
1000	183	1183	258	1258	1116	42	1042	117	1117	1116	59
1200	183	1383	283	1483	1341	42	1242	142	1342	1341	65
1500	183	1683	308	1808	1666	42	1542	167	1667	1666	74

Suspend (JWM150DS)

● Input Shaft



JWM150 Dimensions - Rotation Prevention Type

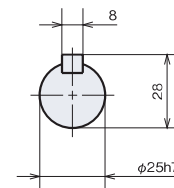
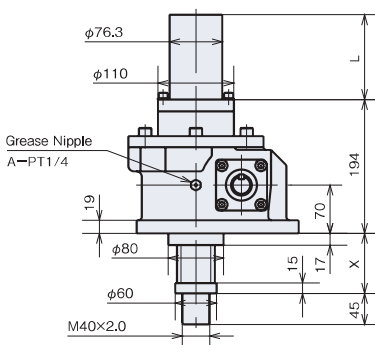
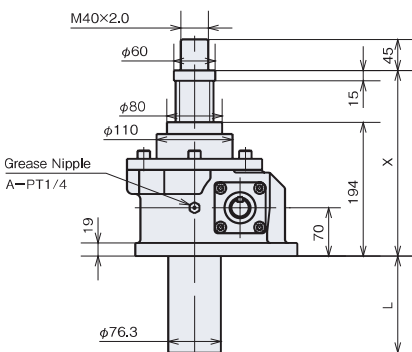


Lift (JWM150UM)

Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	219	319	229	329	151	42	142	52	152	151	37
200	219	419	229	429	252	42	242	52	252	252	40
300	219	519	244	544	366	42	342	67	367	366	43
400	219	619	244	644	466	42	442	67	467	466	46
500	219	719	269	769	591	42	542	92	592	591	49
600	219	819	269	869	691	42	642	92	692	691	52
800	219	1019	284	1084	906	42	842	107	907	906	58
1000	219	1219	294	1294	1116	42	1042	117	1117	1116	64
1200	219	1419	319	1519	1341	42	1242	142	1342	1341	69
1500	219	1719	344	1844	1666	42	1542	167	1667	1666	78

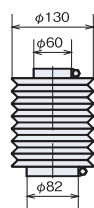
Suspend (JWM150DM)

● Input Shaft

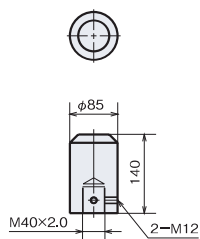


Output Options

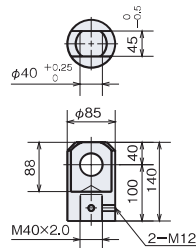
■ Bellows (- J)



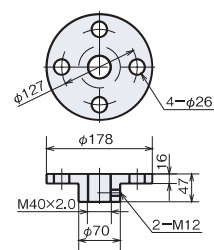
■ Rod Type End Fitting (- B)



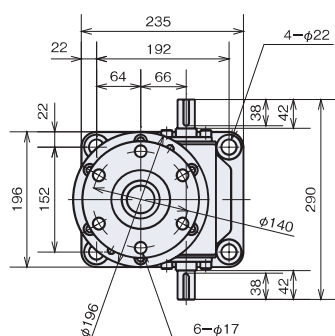
■ I Type End Fitting (- I)



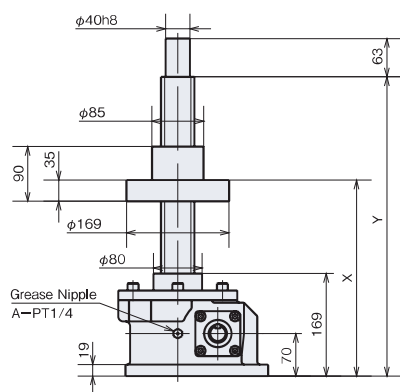
■ Table Type End Fitting (- M)



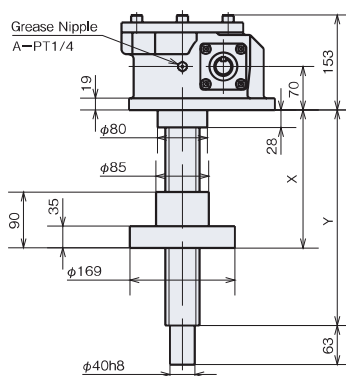
JWM150 Dimensions - Travel Nut Type



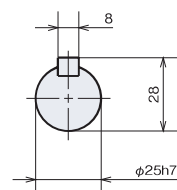
Lift (JWM150UR)



Suspend (JWM150DR)



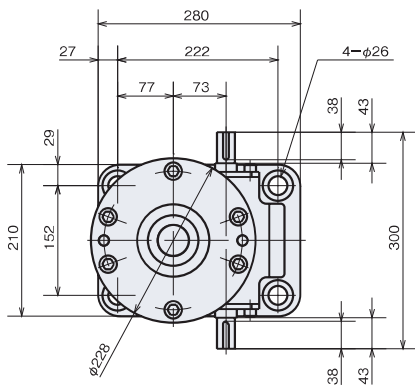
● Input Shaft



Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	214	314	379	128	228	239	40
200	214	414	479	128	328	339	42
300	214	514	579	128	428	439	43
400	214	614	679	128	528	539	45
500	214	714	779	128	628	639	46
600	214	814	879	128	728	739	48
800	214	1014	1079	128	928	939	51
1000	214	1214	1279	128	1128	1139	54
1200	214	1414	1479	128	1328	1339	57
1500	214	1714	1779	128	1628	1639	61

Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWM200 Dimensions - Standard Model

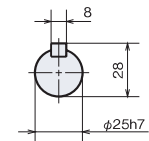
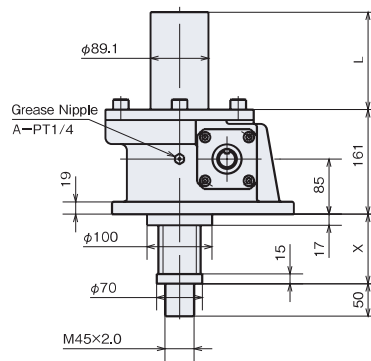
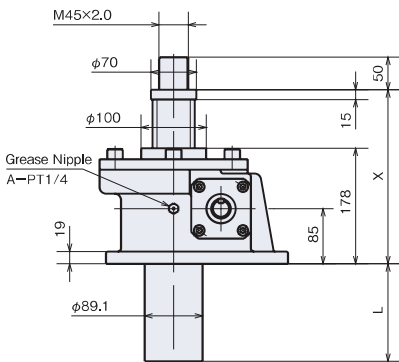


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows		Without Bellows	With Bellows				
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	203	303	213	313	136	42	142	52	152	136	42
200	203	403	213	413	236	42	242	52	252	236	45
300	203	503	228	528	351	42	342	67	367	351	49
400	203	603	228	628	451	42	442	67	467	451	53
500	203	703	253	753	576	42	542	92	592	576	57
600	203	803	253	853	676	42	642	92	692	676	60
800	203	1003	268	1068	891	42	842	107	907	891	67
1000	203	1203	278	1278	1101	42	1042	117	1117	1101	74
1200	203	1403	303	1503	1326	42	1242	142	1342	1326	81
1500	203	1703	328	1828	1651	42	1542	167	1667	1651	92
2000	203	2203	373	2373	2196	42	2042	212	2212	2196	109

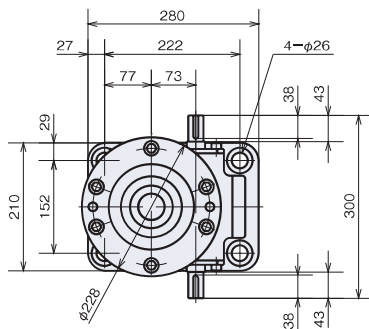
Lift (JWM200US)

Suspend (JWM200DS)

● Input Shaft



JWM200 Dimensions - Rotation Prevention Type

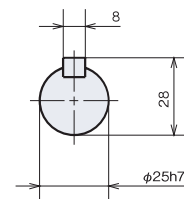
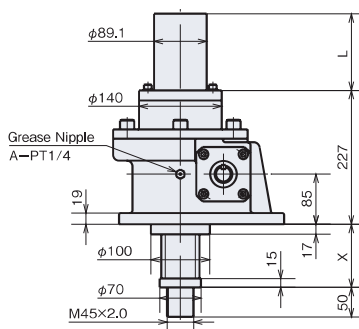
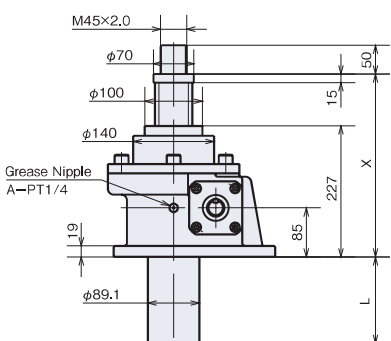


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	252	352	262	362	136	42	142	52	152	136	51
200	252	452	262	462	236	42	242	52	252	236	55
300	252	552	277	577	351	42	342	67	367	351	58
400	252	652	277	677	451	42	442	67	467	451	62
500	252	752	302	802	576	42	542	92	592	576	66
600	252	852	302	902	676	42	642	92	692	676	69
800	252	1052	317	1117	891	42	842	107	907	891	76
1000	252	1252	327	1327	1101	42	1042	117	1117	1101	83
1200	252	1452	352	1552	1326	42	1242	142	1342	1326	90
1500	252	1752	377	1877	1651	42	1542	167	1667	1651	100
2000	252	2252	422	2422	2196	42	2042	212	2212	2196	118

Lift (JWM200UM)

Suspend (JWM200DM)

● Input Shaft

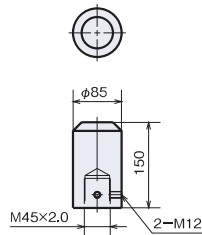


Output Options

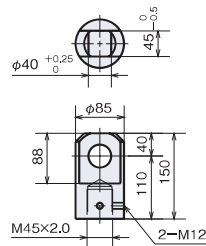
■ Bellows (- J)



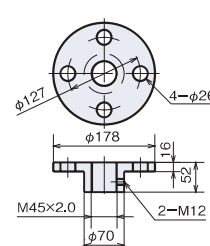
■ Rod Type End Fitting (- B)



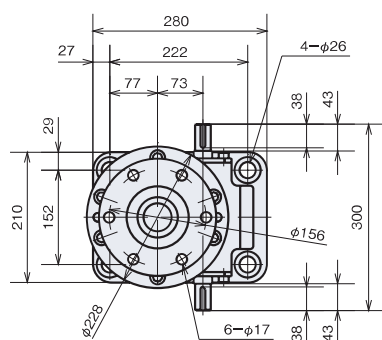
■ I Type End Fitting (- I)



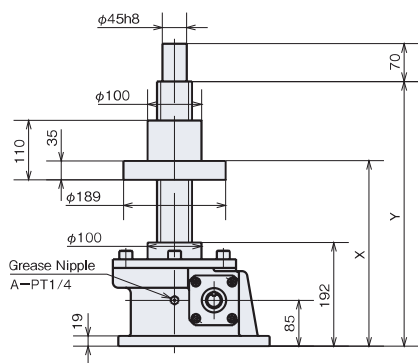
■ Table Type End Fitting (- M)



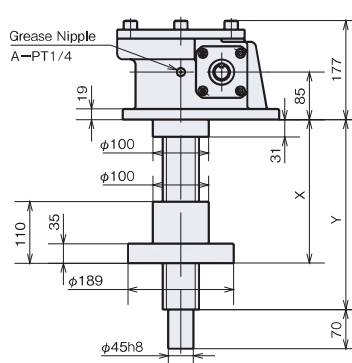
JWM200 Dimensions - Travel Nut Type



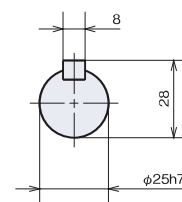
Lift (JWM200UR)



Suspend (JWM200DR)



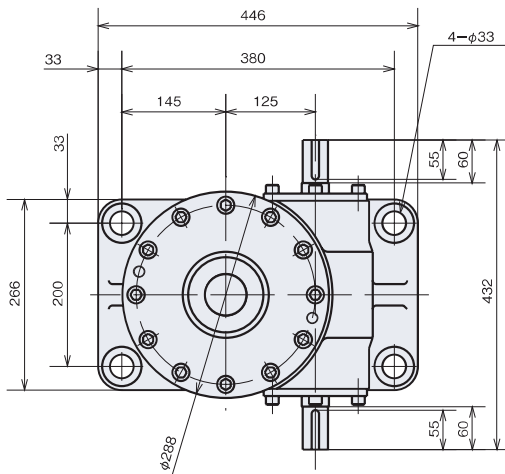
● Input Shaft



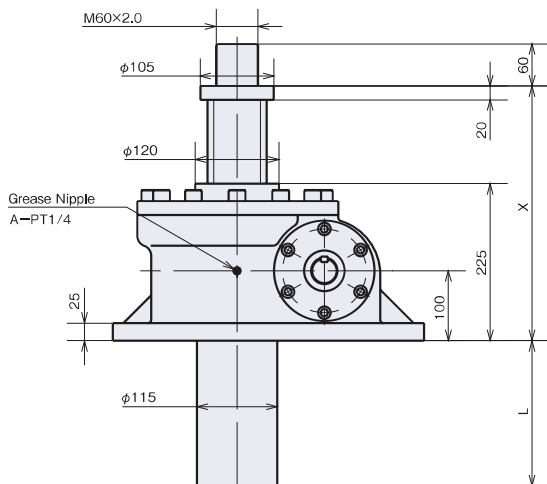
Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	237	337	422	151	251	261	56
200	237	437	522	151	351	361	58
300	237	537	622	151	451	461	60
400	237	637	722	151	551	561	62
500	237	737	822	151	651	661	64
600	237	837	922	151	751	761	66
800	237	1037	1122	151	951	961	71
1000	237	1237	1322	151	1151	1161	75
1200	237	1437	1522	151	1351	1361	79
1500	237	1737	1822	151	1651	1661	85
2000	237	2237	2322	151	2151	2161	96

Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWM300 Dimensions - Standard Model

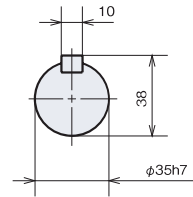


Lift (JWM300US)

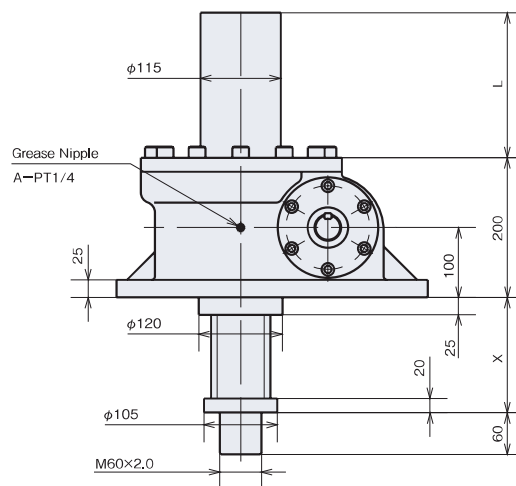


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	255	355	265	365	135	55	155	65	165	135	118
200	255	455	265	465	235	55	255	65	265	235	123
300	255	555	280	580	350	55	355	80	380	350	128
400	255	655	280	680	450	55	455	80	480	450	134
500	255	755	295	795	565	55	555	95	595	565	139
600	255	855	295	895	665	55	655	95	695	665	145
800	255	1055	310	1110	880	55	855	110	910	880	155
1000	255	1255	330	1330	1100	55	1055	130	1130	1100	167
1200	255	1455	340	1540	1310	55	1255	140	1340	1310	177
1500	255	1755	365	1865	1635	55	1555	165	1665	1635	194
2000	255	2255	400	2400	2170	55	2055	200	2200	2170	221

● Input Shaft

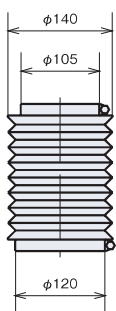


Suspend (JWM300DS)

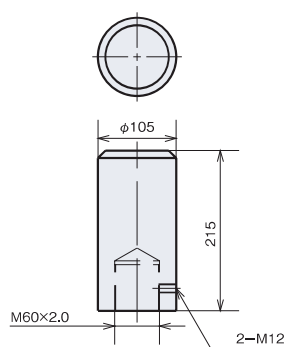


Output Options

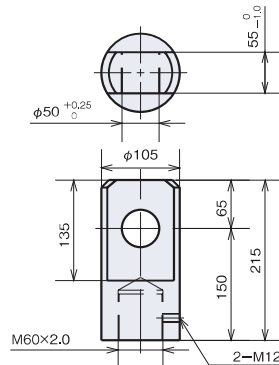
■ Bellows (- J)



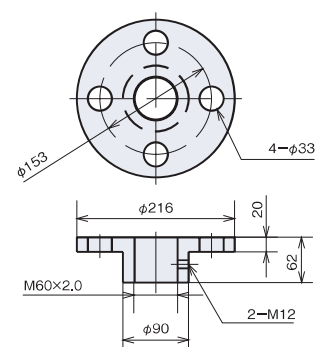
■ Rod Type End Fitting (- B)



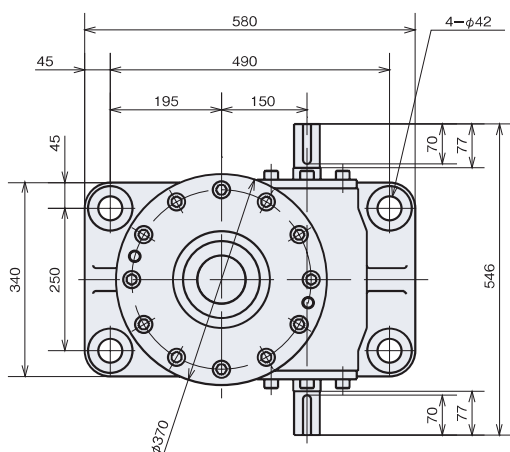
■ I Type End Fitting (- I)



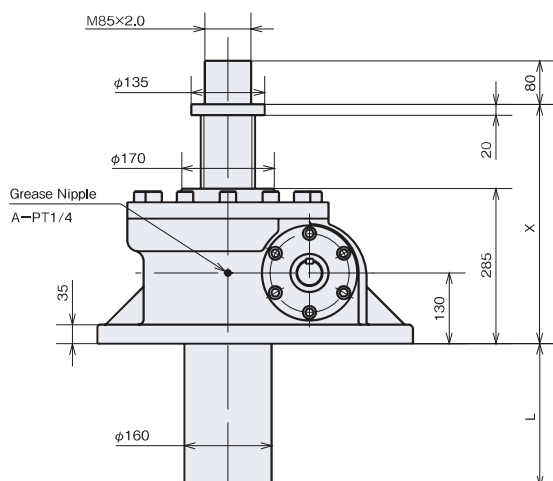
■ Table Type End Fitting (- M)



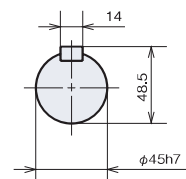
JWM500 Dimensions - Standard Model



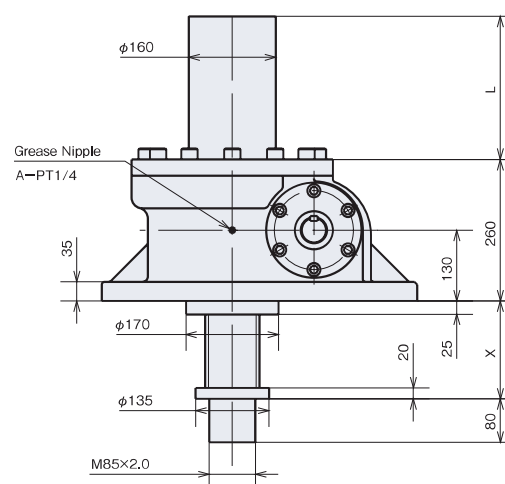
Lift (JWM500US)



● Input Shaft

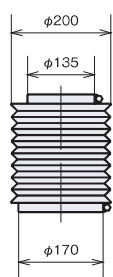


Suspend (JWM500DS)

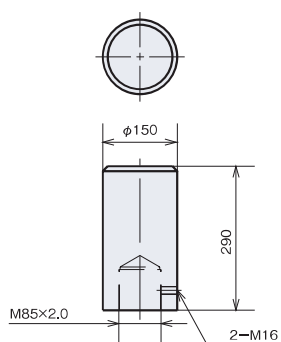


Output Options

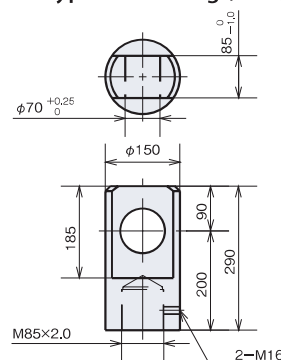
■ Bellows (- J)



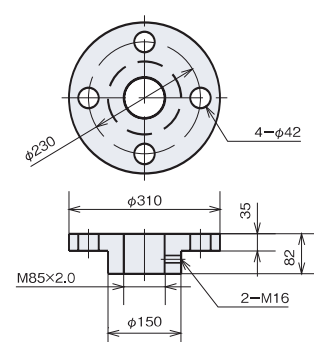
■ Rod Type End Fitting (- B)



■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)





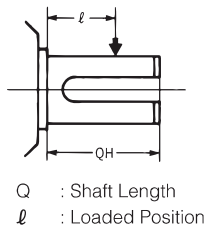
Warning

Cautions for selecting

- Duty cycle of JWM (Machine screw type) is within 20% ED. Duty cycle is a ratio of operating time per 30 min on the basis of 30 min interval.
- Although JWM (Machine screw type) comes with a self-locking device based on calculation, it may not be effective due to vibration or shock. Separately a brake mechanism is required under such conditions.
- Activating torque for the drive unit should be maintained at 200% above the required torque.
- Allowable input rotation speed of linear power jack is 1800 r/min, however, when inputting a speed exceeding the maximum input rotation speed at the basic capacity, check the screw shaft speed (elevation speed) and allowable load related graphs on page 199.
- Select a stroke for the jack with an extra margin with respect to the used stroke.
- Rotating force is generated on the screw shaft (travel nut in the case of travel nut type) with thrust, therefore, rotation prevention is required. Screw rotation torque at the basic capacity is described in the standard specification list. When operating with the end unconnected, and pulling the rope with a sheave installed, use the rotation prevention type. However, the rotation prevention type cannot be manufactured for the travel nut type, therefore, provide a rotation prevention mechanism on the device.
- When installing a sprocket, gear, or belt to the input or output shaft, confirm that any overhang load applied to the shaft decreases to the allowable OHL or less.

$$\text{Allowable O. H. L.} \geq \frac{T \times f \times L_f}{R}$$

O.H.L. : Overhang load N {kgf}
 T : Input torque N • m {kgf • m}
 f : Coefficient - power transmission element
 L_f : Coefficient - Load operating position
 R : Sprocket, Gear, V pulley or Pitch diameter m



Q : Shaft Length
 l : Loaded Position

● Coefficient – Power Transmission Element (f)

Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat belt	2.50

● Coefficient (L_f) – Load Position

l / QH	0.25	0.38	0.5	0.75	1
L _f	0.8	0.9	1	1.5	2

● Allowable O.H.L

Frame No.		002	005	010	025	050	100	150	200	300	500	750	1000
JWM (Machine Screw Type)	N	99	200	380	710	1500	2270	3160	4320	6110	10100	13900	18000
H Speed	{ kgf }	{10}	{21}	{39}	{73}	{153}	{232}	{323}	{441}	{624}	{1030}	{1420}	{1840}
JWM (Machine Screw Type)	N	63	120	220	420	820	1430	1950	2800	4400	6650	9390	13200
L Speed	{ kgf }	{6}	{13}	{23}	{44}	{85}	{146}	{200}	{286}	{449}	{678}	{958}	{1350}

Precautions for installation

- Jacks that range under the basic capacity of 49.0 kN {5tf} or less are provided with screw covers made of hard vinyl chloride pipe. Never suspend or carry a jack by use of the screw cover, which is dangerous.
- JWM (Machine screw type) is not equipped with a fall stop, therefore, if the stroke range is exceeded, the screw shaft falls.
- Take jack coasting amount into consideration to set the stroke adjusting limit switch.

Precautions for use

- Do not use mechanical stops under any circumstances.
- Operating Environment for jack is as follows.

Operating place	Indoor room which cannot be splashed with rain or water.
Ambient atmosphere	Dust volume comparable to general factories.
Operating temperature range	– 15 to 80°C (Refer to section 3 in general precautions.)
Relative humidity	85% or less (no dew condensation)

- Operating part and reducer unit are factory greased. Therefore, use jack as delivered.
- For lubrication grease, lubrication cycle and lubrication amount to the screw shaft and reducer unit, refer to page 299.
- Inspect regularly for general backlash and screw unit condition. Jack life and replacement timing are determined by the following:
 Backlash in the direction of screw shaft and nut reaches 1/4 of the screw pitch.
 Replace gear when its input shaft exceeds 30 rpm with backlash (rattle between input shaft and worm wheel) at H speed, or exceeds 60 rpm at L speed.
 In either case, if it is used at the replacement timing, this may cause rotation failure of screw shaft and input shaft, and further sudden drop of travel nut.

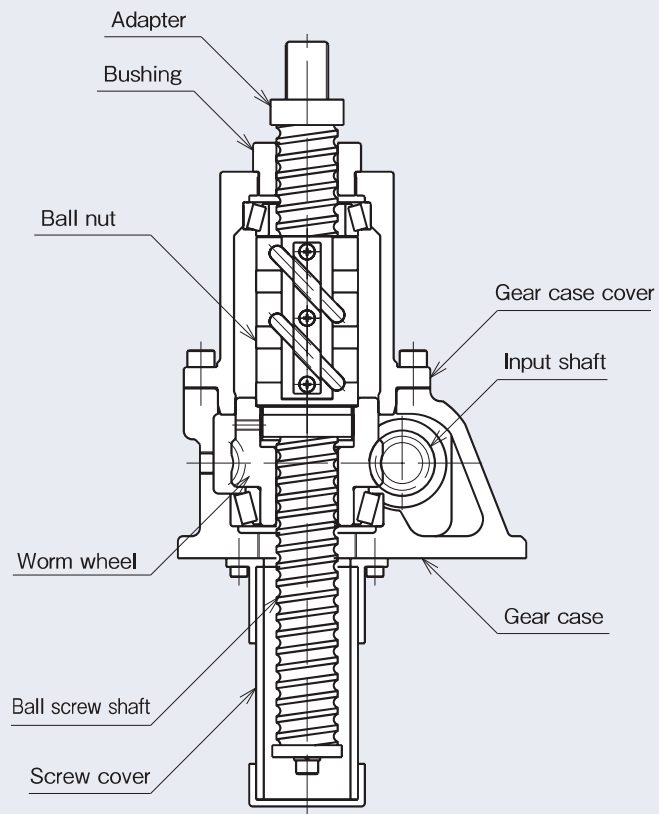
Linipower Jack

JWB (Ball Screw Type)

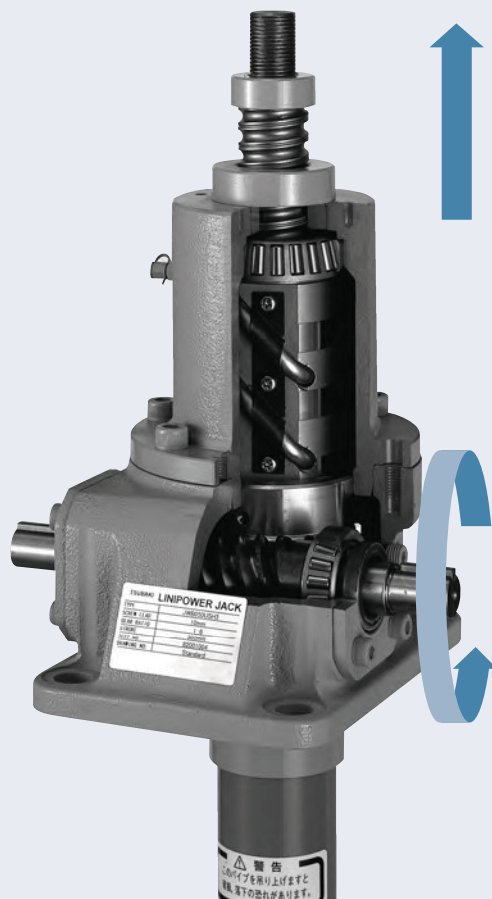
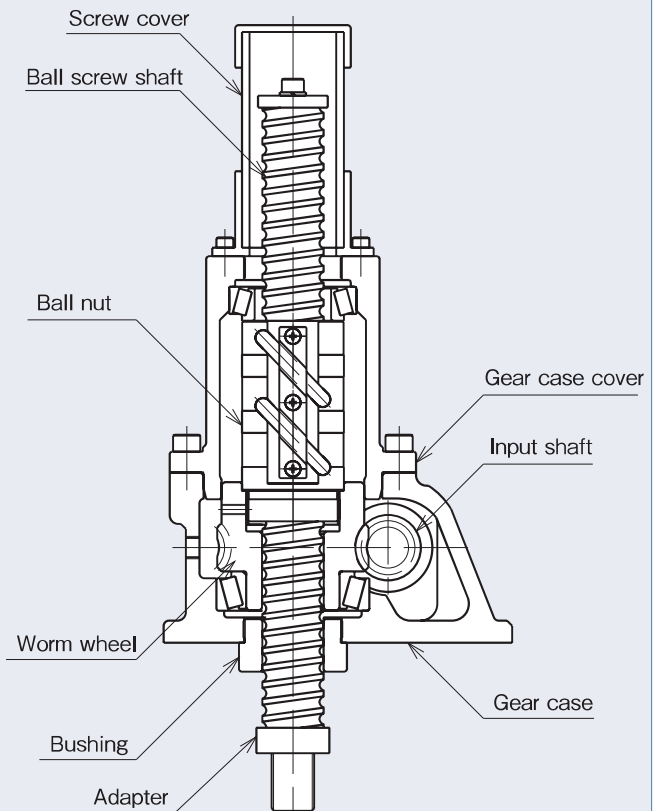


Drawings	P237•238
JWB Reference Number System	P239•240
Reference Table for Standard Use	P241•242
Dimensions	P243 to 258
Precautions	P259

Standard Use for Lifting



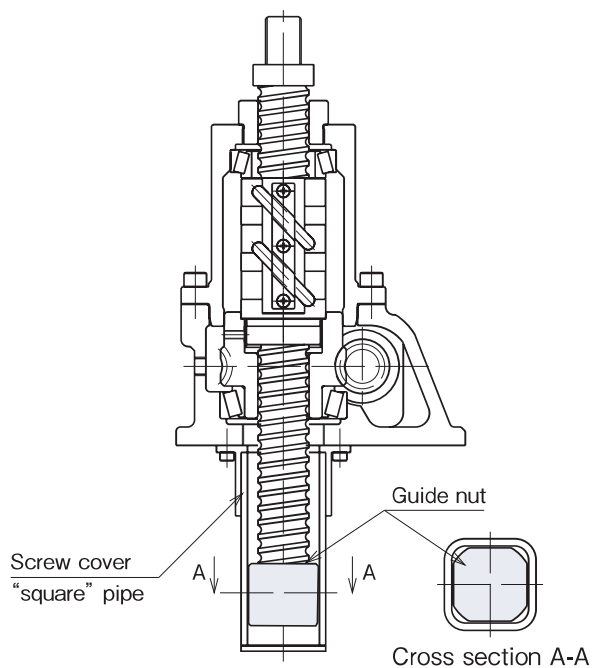
Standard Use for Suspending



JWB (Ball Screw Type) Anti-rotation Type

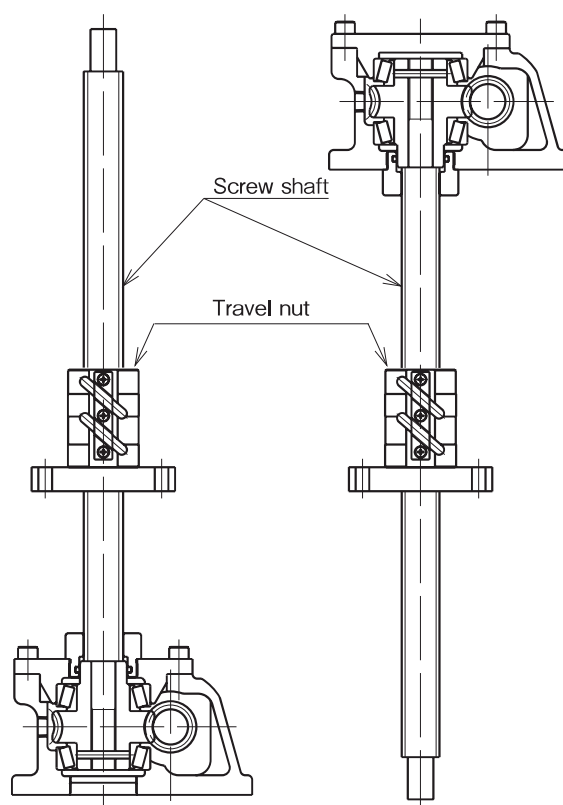
JWB005 to 200

〈Anti-rotation Type with Guide Nut〉

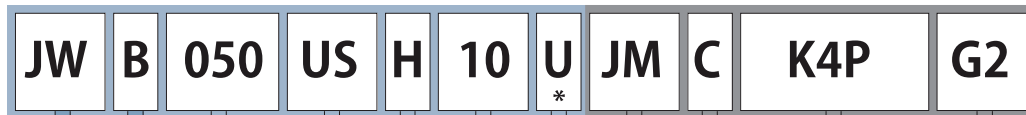


Note) The 10° space in each corner between the guide and the pipe allows smooth rotation.

JWB (Ball Screw Type) Travel Nut Type



JWB (Ball Screw Type)



Linipower Jack

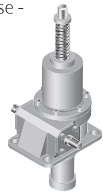
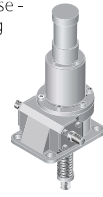
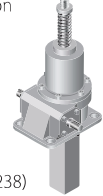
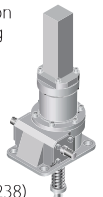
Jack Type
B : Ball screw

Basic Capacity

Frame Size	kN	{tf}
005	4.90	{0.5}
010	9.80	{1}
025	24.5	{2.5}
050	49.0	{5}
100	98.0	{10}
150	147	{15}
200	196	{20}
300	294	{30}
500	490	{50}
750	735	{75}
1000	980	{100}

*Please fill in detail information in 311.

Installation Type

US	Standard use - lifting 
DS	Standard use - suspending 
UM	Anti-rotation lifting  (See page 238)
DM	Anti-rotation suspending  (See page 238)

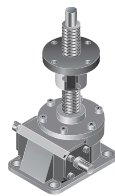
Stroke mm

1	100
3	300
6	600
10	1000

*Please fill in detail information in 311.

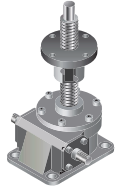
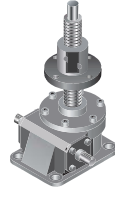
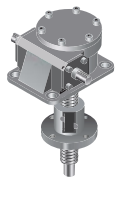
Gear Ratio

Symbol Frame No.	H	L
005	5	20
010	5	20
025	6	24
050	6	24
100	8	24
150	8	24
200	8	24
300	10 ² / ₃	32
500	10 ² / ₃	32
750	10 ² / ₃	32
1000	12	36

UR	Travel nut - lifting 
DR	Travel nut - suspending 

*Be sure to use the flange installation method U or D with travel nuts.

Flange Installation

U		
D		

*Please fill in detail information in 311.

Examples)

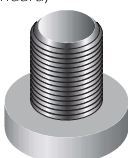
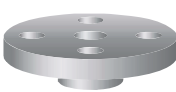
JWB100UMH3

- Machine Screw Type • 98.0kN {10tf} • Rotation prevention (for lifting) • Gear ratio H (1/8) • Stroke 300mm

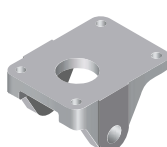
JWB050USH10JMK4PG2

- Machine Screw Type • 49.0kN {5tf} • Standard use (for lifting) • Gear ratio H (1/6) • Stroke 1000mm
- Bellows • Table Type End Fitting • 4 Internal LS • Potentiometer
- 3 Phase motor with brake and gear; reducer ratio of 1/10

Output Option

No symbol	Screw Shaft End (standard) 
J	Bellows 
B	Rod Type End Fitting 
I	I Type End Fitting 
M	Table Type End Fitting 

Installation Option

C	Clevis Mounting Adapter  (See page 291)
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Note) For standard lifting only.

Sensor Option

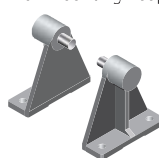
Y	LS Counter  (See page 285)
K2 K4 P R	Position Sensor K2...2 Internal LS K4...4 Internal LS P...Potentiometer R...Rotary Encoder  (See page 287)

*Please fill in the form on page 312.

Input Option

E EV	3 phase motor with brake E...200V 50Hz 200/220V 60Hz EV...400 50Hz 400/440V 60Hz  (See page 279)
G1 G2	3 phase gearmotor with brake G1...Gear ratio 1/5 200V 50Hz 200/220V 60Hz G2...Reducer ratio 1/10 200V 50Hz 200/220V 60Hz  (See page 275)

Accessories

Control Options
Stroke Meter and PCB 
Meter Relay and PCB  (See page 288 to 289)
Others
Trunnion Mounting Adapter  * Use as a set with clevis mounting adapter. (See page 291)

Note) When travel nuts are used, B, I and M are not available.

Note) Travel nut type with bellows is made-to-order.

*Please fill in the form on page 311.

Reference Table for Standard Use JWB (Ball Screw Type)

Frame Size		JWB005	JWB010	JWB025	JWB050	JWB100
Basic Capacity	kN	4.90	9.80	24.5	49.0	98.0
	{tf}	{0.5}	{1}	{2.5}	{5}	{10}
Outer Screw Diameter	mm	16	20	25	36	45
Minor Screw Diameter	mm	13.5	17.5	21.4	31.3	39.1
Screw Lead	mm	5	5	8	10	12
Gear Ratio	H Speed	5	5	6	6	8
	L Speed	20	20	24	24	24
Overall Efficiency	% H Speed	63	61	62	64	63
	L Speed	37	34	35	39	43
Max. Allowable Input Capacity	kW H Speed	0.25	0.54	1.3	2.2	3.6
	L Speed	0.12	0.27	0.63	1.0	1.9
Tare Drag Torque	N•m	0.11	0.29	0.62	1.37	1.96
	{kg•m}	{0.011}	{0.03}	{0.063}	{0.14}	{0.2}
Holding Torque	N•m	0.69	1.27	4.31	10.78	19.6
	{kgf•m}	{0.07}	{0.13}	{0.44}	{1.1}	{2.0}
	L Speed	0.14	0.26	0.91	2.4	5.8
		{0.014}	{0.027}	{0.093}	{0.24}	{0.59}
Allowable Input Torque *Note 1	N•m	9.8	19.6	49.0	153.9	292.0
	{kg•m}	{1}	{2}	{5}	{15.7}	{29.8}
*Note 2 Required Input Torque N • m for Basic Capacity {kgf • m}	H Speed	1.3	2.8	9.0	21.5	39.1
		{0.14}	{0.29}	{0.92}	{2.2}	{4.0}
	L Speed	0.62	1.4	4.3	9.6	20.4
		{0.06}	{0.15}	{0.44}	{0.98}	{2.1}
Screw Movement/ per Revolution of Input Shaft	mm H Speed	1	1	1.33	1.67	1.5
	L Speed	0.25	0.25	0.33	0.42	0.50
Max. Input rpm	r/min H Speed	1800	1800	1800	1800	1800
	L Speed	1800	1800	1800	1800	1800
Max. Input rpm for Basic Capacity	r/min H Speed	1800	1800	1400	1000	890
	L Speed	1800	1800	1400	1000	890
Screw Shaft Rotational Torque for Basic Capacity	N • m	4.3	8.7	34.7	86.7	208.2
	{kgf • m}	{0.44}	{0.88}	{3.5}	{8.8}	{21.2}
Screw Cover Material *Note 3		Hard Vinyl Chloride				Steel Pipe
Lubrication		Shaft: Grease Reducer Unit: Grease Bath				
Color		Tsubaki Olive Grey (Munsell 5GY6/0.5)				
Environment	Operating Temperature Range		— 15 to 80°C (Precautions #2)			
	Relative Humidity		85% or less (no dew condensation)			
	Operating ambient atmosphere		Indoor Environment (Indoor room where rain and water cannot enter. Dust volume should be normal.)			
Duty Cycle *Note 4		Within 30% ED				

Note 1) The allowable torque is for jack input shaft only. (Reconfirm if synchronous drive.)

Note 2) Includes tare drag torque.

Note 3) Rotation prevention types for frames 005 to 050 are steel square pipes.

Note 4) Standard percentage duty cycle is 30 minutes. Thus, driving time is based on 30minute intervals.

Precautions

- 1.All loads (static, dynamic or shock) should be within the rated capacity of the jack at sufficient safety levels.
- 2.Operating Temperature Range refers to the surface temperature of the jack during operation. To check, measure the surface temperature of the input shaft unit or travel nut (if used). Be sure all the rotating parts have completely stopped before proceeding to measure.
- 3.Be sure to operate within the allowable input rpm of 1800/min.
- 4.Number of synchronizing jacks which can be connected on the same line is limited by shaft strength. Refer to the allowable input shaft torque on the above table.
- 5.Activating torque for the drive unit should be maintained at 200% above the required torque.
- 6.If operating in freezing temperatures, a change in viscosity may reduce the efficiency of the grease. Set the drive unit so as to accommodate this change.

JWB150	JWB200	JWB300	JWB500	JWB750	JWB1000
147	196	294	490	735	980
{15}	{20}	{30}	{50}	{75}	{100}
50	63	85	100	125	140
43.1	55.7	74.8	87	112	122
16	16	20	24	25	32
8	8	10 2/3	10 2/3	10 2/3	12
24	24	32	32	32	36
63	62	56	60	57	54
43	41	34	38	36	32
4.0	5.5	8.9	13.3	16.1	21.2
2.1	2.8	4.1	6.5	8.2	10.2
2.65	3.92	9.81	19.6	29.4	39.2
{0.27}	{0.4}	{1}	{2}	{3}	{4}
39.2	51.0	68.6	140.1	210.7	362.6
{4.0}	{5.2}	{7.0}	{14.3}	{21.5}	{37}
11.8	15.0	19.5	41.2	59.8	99.0
{1.2}	{1.53}	{1.99}	{4.2}	{6.1}	{10.1}
292.0	292.0	735.0	1372.0	1764.0	2450.0
{29.8}	{29.8}	{75}	{140}	{180}	{250}
77.0	104.5	169.6	317.5	511.2	810.2
{7.8}	{10.7}	{17.3}	{32.4}	{52.1}	{82.6}
39.6	54.2	98.5	177.9	290.8	486.9
{4.0}	{5.5}	{10.0}	{18.1}	{29.6}	{49.6}
2	2	1.88	2.25	2.34	2.67
0.67	0.67	0.63	0.75	0.78	0.89
1800	1800	1800	1800	1800	1800
1800	1800	1800	1800	1800	1800
500	500	500	400	300	250
500	500	400	350	270	200
416.3	555.1	1040.9	2081.7	3252.7	5551.3
{42.4}	{56.6}	{106.1}	{212.2}	{331.6}	{565.9}
Steel Pipe					
Screw: Grease Reducer Unit: Grease Bath					
Tsubaki Olive Grey (Munsell 5GY6/0.5)					
— 15 to 80°C (Precautions #2)					
85% or less (no dew condensation)					
Indoor Environment (Indoor room where rain and water cannot enter. Dust volume should be normal.)					
Within 30% ED					

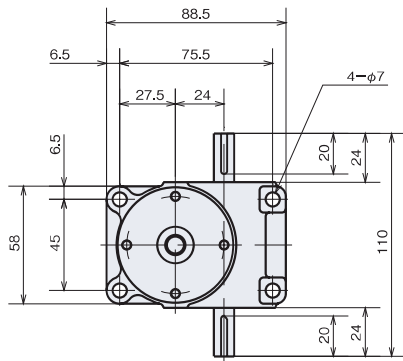
7. Since JWB (Ball Screw Type) is highly efficient, sufficient brake that over powers the “holding torque” is required to sustain its shaft.

- ⚠ 8. Be certain that the jack rating exceeds the maximum stroke. Over travel can cause the lift shaft to disengage from the ball nut. JWB (Ball Screw Type) is supported by a stopper (shaft end). However, this is merely for the purpose of securing the screw shaft during installation. While installing, take caution so that the screw shaft does not rotate by its own weight and

become disengaged. If rotation cannot be avoided, use a model with rotation prevention. (Contact Tsubakimoto chain for details.)

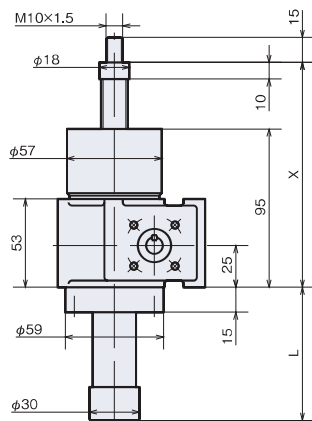
- ⚠ 9. Do not use mechanical stops under any circumstances. This will cause major internal damage.
10. Input shaft key is provided with each unit. (The input shaft key complies with JIS B 1301-1996 (normal grade).)

JWB005 Dimensions - Standard Model

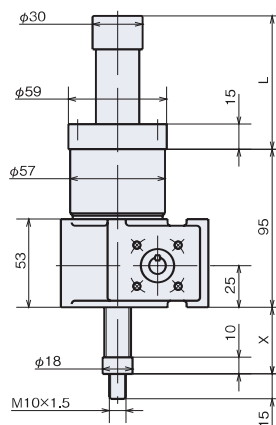


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	115	215	160	260	188	20	120	65	165	188	3.0
200	115	315	160	360	288	20	220	65	265	288	3.2
300	115	415	200	500	428	20	320	105	405	428	3.4
400	115	515	200	600	528	20	420	105	505	528	3.6
500	115	615	235	735	663	20	520	140	640	663	3.8
600	115	715	235	835	763	20	620	140	740	763	4.0
800	115	915	270	1070	998	20	820	175	975	998	4.3

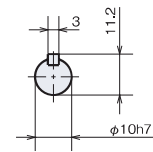
Lift (JWB005US)



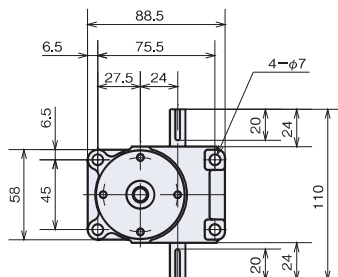
Suspend (JWB005DS)



●Input Shaft

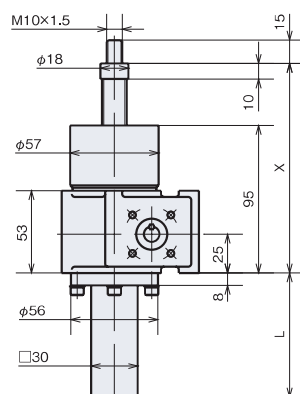


JWB005 Dimensions - Rotation Prevention Type

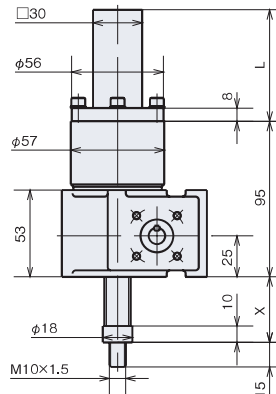


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	115	215	160	260	202	20	120	65	165	202	3.5
200	115	315	160	360	302	20	220	65	265	302	3.9
300	115	415	200	500	442	20	320	105	405	442	4.5
400	115	515	200	600	542	20	420	105	505	542	5.0
500	115	615	235	735	677	20	520	140	640	677	5.5
600	115	715	235	835	777	20	620	140	740	777	6.0
800	115	915	270	1070	1012	20	820	175	975	1012	7.0

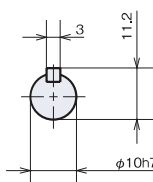
Lift (JWB005UM)



Suspend (JWB005DM)

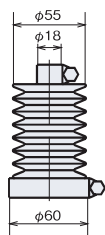


●Input Shaft

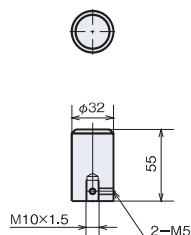


Output Options

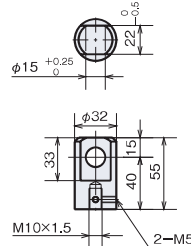
■ Bellows (- J)



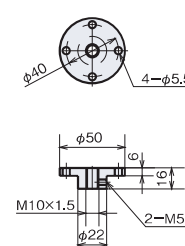
■ Rod Type End Fitting (- B)



■ I Type End Fitting (- I)

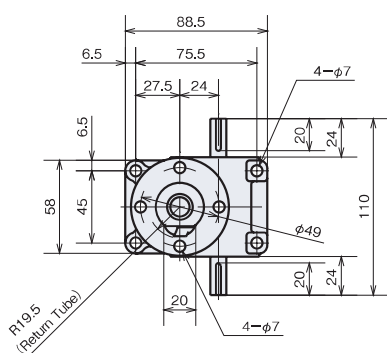


■ Table Type End Fitting (- M)



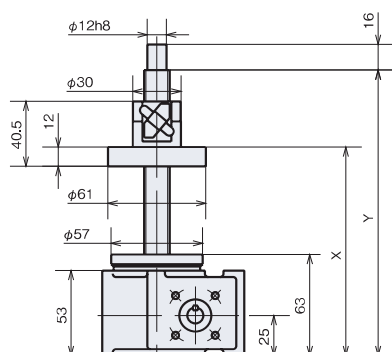
Note) For detailed measurements on units with bellows, see page 294.

JWB005 Dimensions - Travel Nut Type

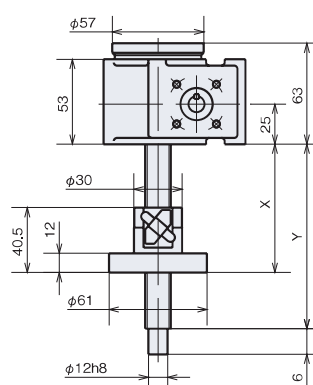


Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	84	184	224	51	151	162	2.7
200	84	284	324	51	251	262	2.8
300	84	384	424	51	351	362	2.9
400	84	484	524	51	451	462	3.1
500	84	584	624	51	551	562	3.2
600	84	684	724	51	651	662	3.3
800	84	884	924	51	851	862	3.6

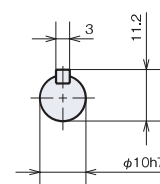
Lift (JWB005UR)



Suspend (JWB005DR)



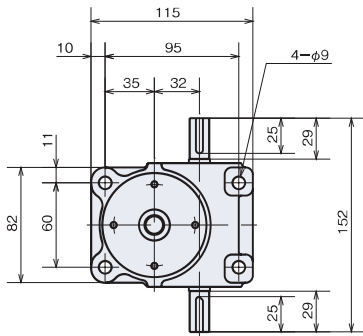
● Input Shaft



Note) Ball nut return tube and travel flange openings may vary from this drawing.
Note the return tube measurements when installing to equipment.

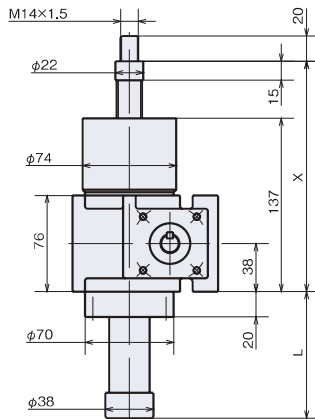
Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWB010 Dimensions - Standard Model

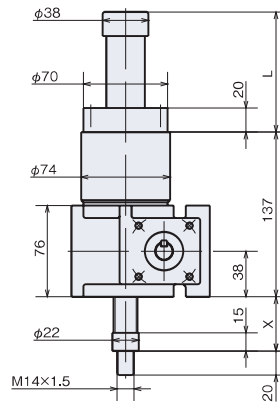


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows		Without Bellows	With Bellows				
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	162	262	212	312	194	25	125	75	175	194	6.7
200	162	362	212	412	294	25	225	75	275	294	7.0
300	162	462	252	552	434	25	325	115	415	434	7.4
400	162	562	252	652	534	25	425	115	515	534	7.6
500	162	662	287	787	669	25	525	150	650	669	8.0
600	162	762	287	887	769	25	625	150	750	769	8.2
800	162	962	322	1122	1004	25	825	185	985	1004	8.9
1000	162	1162	352	1352	1234	25	1025	215	1215	1234	9.5

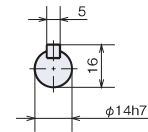
Lift (JWB010US)



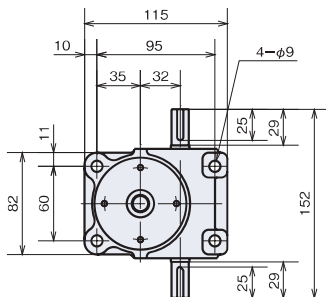
Suspend (JWB010DS)



●Input Shaft

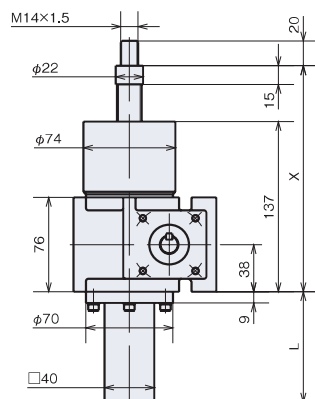


JWB010 Dimensions - Rotation Prevention Type

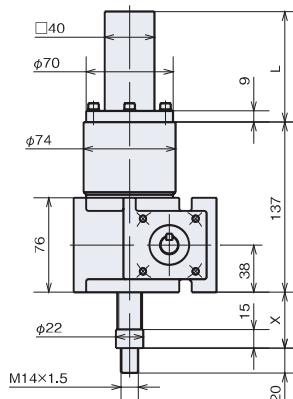


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	162	262	212	312	213	25	125	75	175	213	7.5
200	162	362	212	412	313	25	225	75	275	313	8.2
300	162	462	252	552	453	25	325	115	415	453	9.1
400	162	562	252	652	553	25	425	115	515	553	9.8
500	162	662	287	787	688	25	525	150	650	688	11
600	162	762	287	887	788	25	625	150	750	788	12
800	162	962	322	1122	1023	25	825	185	985	1023	13
1000	162	1162	352	1352	1253	25	1025	215	1215	1253	15

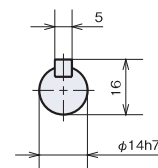
Lift (JWB010UM)



Suspend (JWB010DM)

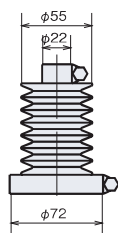


●Input Shaft

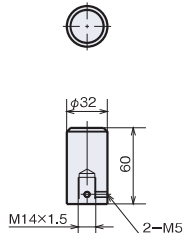


Output Options

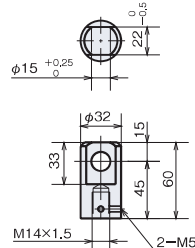
■ Bellows (- J)



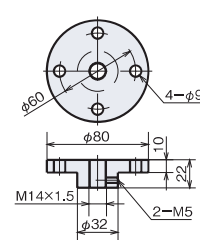
■ Rod Type End Fitting (- B)



■ I Type End Fitting (- I)

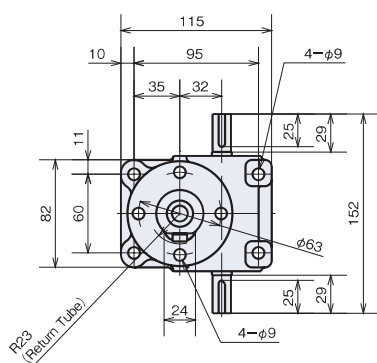


■ Table Type End Fitting (- M)

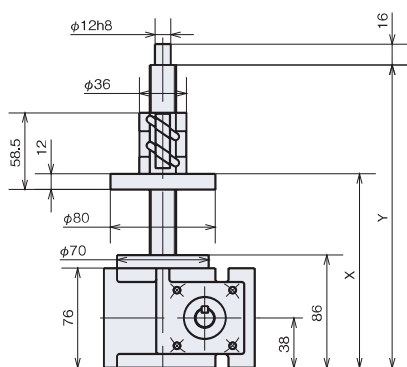


Note) For detailed measurements on units with bellows, see page 294.

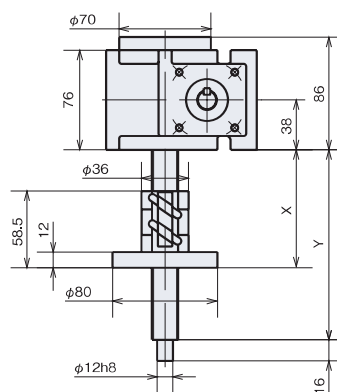
JWB010 Dimensions - Travel Nut Type



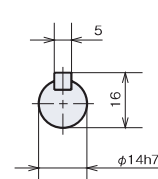
Lift (JWB010UR)



Suspend (JWB010DR)



● Input Shaft

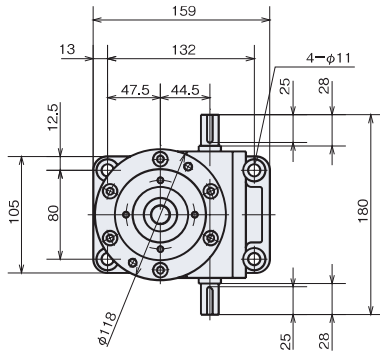


Note) Ball nut return tube and travel flange openings may vary from this drawing.
Note the return tube measurements when installing to equipment.

Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

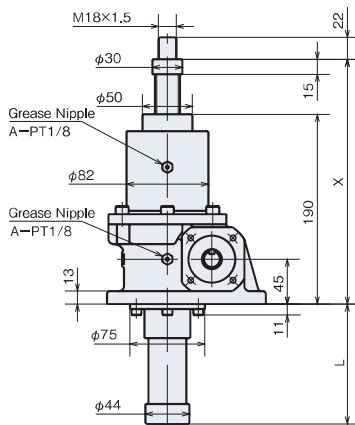
Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	108	208	265	69	169	179	5.9
200	108	308	365	69	269	279	6.1
300	108	408	465	69	369	379	6.4
400	108	508	565	69	469	479	6.6
500	108	608	665	69	569	579	6.8
600	108	708	765	69	669	679	7.0
800	108	908	965	69	869	879	7.4
1000	108	1108	1165	69	1069	1079	7.9

JWB025 Dimensions - Standard Model

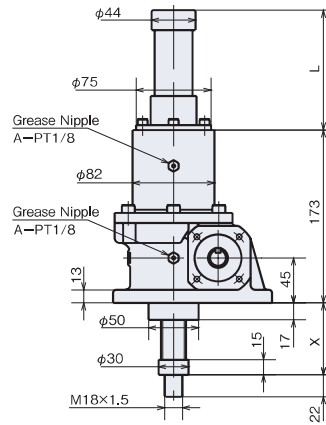


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	215	315	230	330	149	42	142	57	157	149	11
200	215	415	230	430	249	42	242	57	257	249	11
300	215	515	250	550	369	42	342	77	377	369	11
400	215	615	250	650	469	42	442	77	477	469	12
500	215	715	270	770	589	42	542	97	597	589	12
600	215	815	270	870	689	42	642	97	697	689	13
800	215	1015	290	1090	909	42	842	117	917	909	14
1000	215	1215	310	1310	1129	42	1042	137	1137	1129	14
1200	215	1415	325	1525	1344	42	1242	152	1352	1344	15

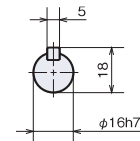
Lift (JWB025US)



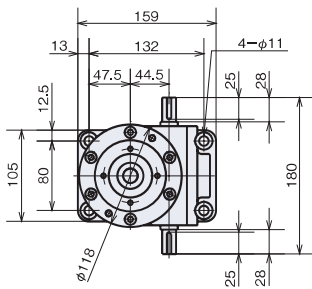
Suspend (JWB025DS)



●Input Shaft

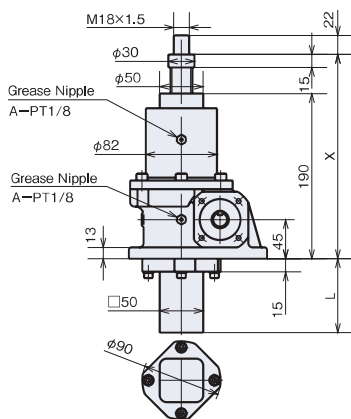


JWB025 Dimensions - Rotation Prevention Type

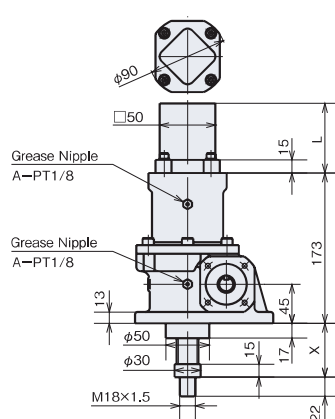


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	215	315	230	330	181	42	142	57	157	181	12
200	215	415	230	430	281	42	242	57	257	281	13
300	215	515	250	550	401	42	342	77	377	401	15
400	215	615	250	650	501	42	442	77	477	501	16
500	215	715	270	770	621	42	542	97	597	621	17
600	215	815	270	870	721	42	642	97	697	721	18
800	215	1015	290	1090	941	42	842	117	917	941	21
1000	215	1215	310	1310	1161	42	1042	137	1137	1161	23
1200	215	1415	325	1525	1376	42	1242	152	1352	1376	26

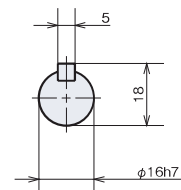
Lift (JWB025UM)



Suspend (JWB025DM)

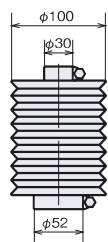


●Input Shaft

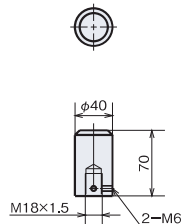


Output Options

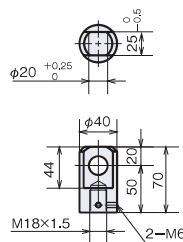
■ Bellows (- J)



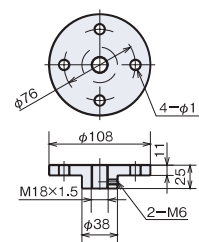
■ Rod Type End Fitting (- B)



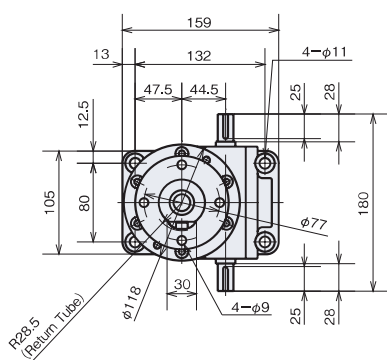
■ I Type End Fitting (- I)



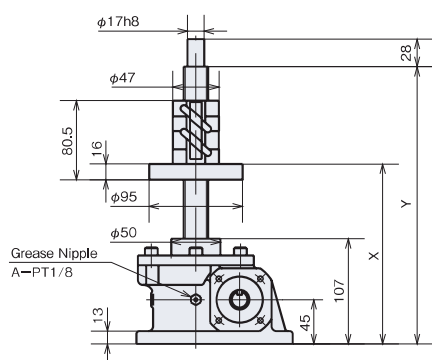
■ Table Type End Fitting (- M)



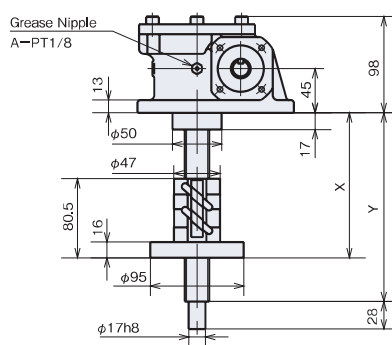
JWB025 Dimensions - Travel Nut Type



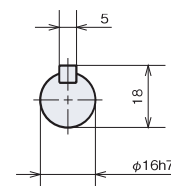
Lift (JWB025UR)



Suspend (JWB025DR)



● Input Shaft

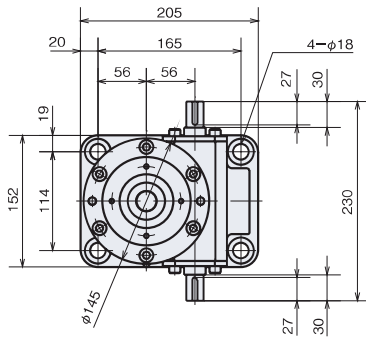


Note) Ball nut return tube and travel flange openings may vary from this drawing.
Note the return tube measurements when installing to equipment.

Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

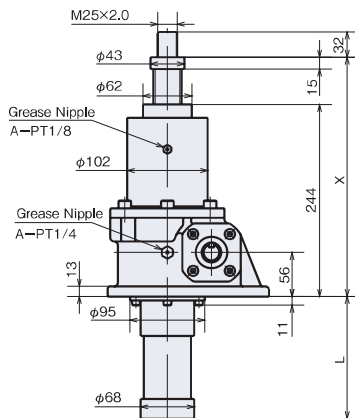
Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	133	233	309	108	208	219	9.2
200	133	333	409	108	308	319	9.5
300	133	433	509	108	408	419	9.8
400	133	533	609	108	508	519	11
500	133	633	709	108	608	619	11
600	133	733	809	108	708	719	11
800	133	933	1009	108	908	919	12
1000	133	1133	1209	108	1108	1119	13
1200	133	1333	1409	108	1308	1319	13

JWB050 Dimensions - Standard Model

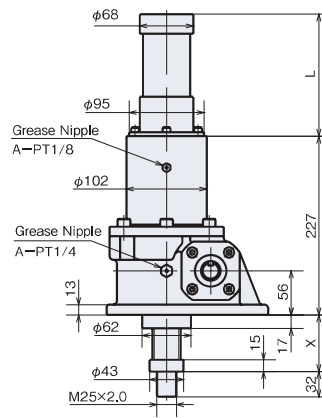


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	269	369	284	384	147	42	142	57	157	147	23
200	269	469	284	484	247	42	242	57	257	247	23
300	269	569	304	604	367	42	342	77	377	367	24
400	269	669	304	704	467	42	442	77	477	467	25
500	269	769	324	824	587	42	542	97	597	587	26
600	269	869	324	924	687	42	642	97	697	687	27
800	269	1069	344	1144	907	42	842	117	917	907	29
1000	269	1269	364	1364	1127	42	1042	137	1137	1127	30
1200	269	1469	379	1579	1342	42	1242	152	1352	1342	32
1500	269	1769	404	1904	1667	42	1542	177	1677	1667	35

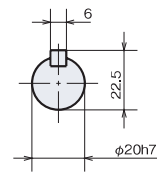
Lift (JWB050US)



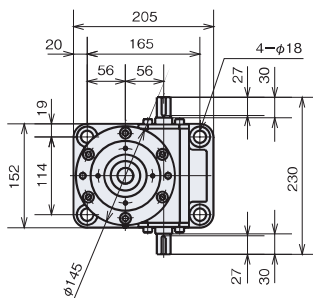
Suspend (JWB050DS)



● Input Shaft

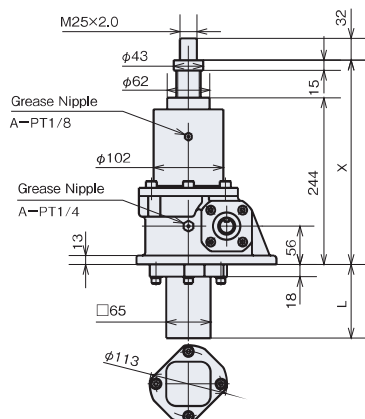


JWB050 Dimensions - Rotation Prevention Type

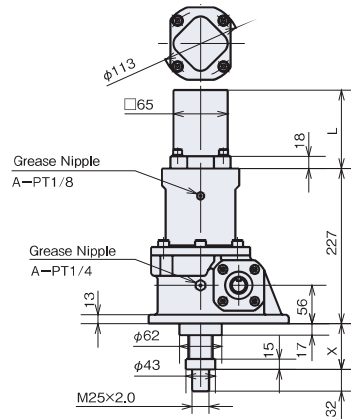


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	269	369	284	384	196	42	142	57	157	196	25
200	269	469	284	484	296	42	242	57	257	296	27
300	269	569	304	604	416	42	342	77	377	416	29
400	269	669	304	704	516	42	442	77	477	516	31
500	269	769	324	824	636	42	542	97	597	636	33
600	269	869	324	924	736	42	642	97	697	736	35
800	269	1069	344	1144	956	42	842	117	917	956	39
1000	269	1269	364	1364	1176	42	1042	137	1137	1176	43
1200	269	1469	379	1579	1391	42	1242	152	1352	1391	47
1500	269	1769	404	1904	1716	42	1542	177	1677	1716	52

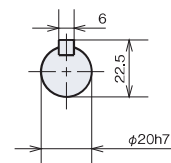
Lift (JWB050UM)



Suspend (JWB050DM)



● Input Shaft

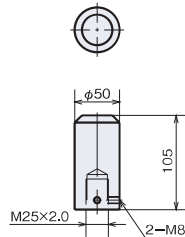


Output Options

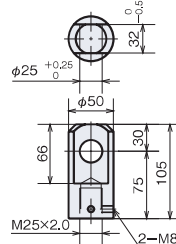
■ Bellows (- J)



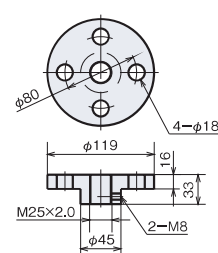
■ Rod Type End Fitting (- B)



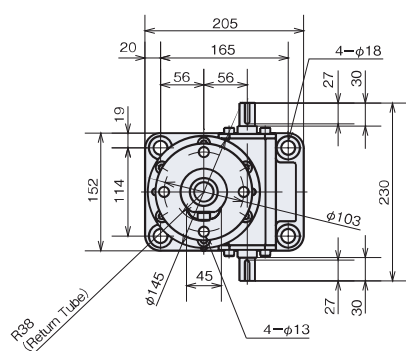
■ I Type End Fitting (- I)



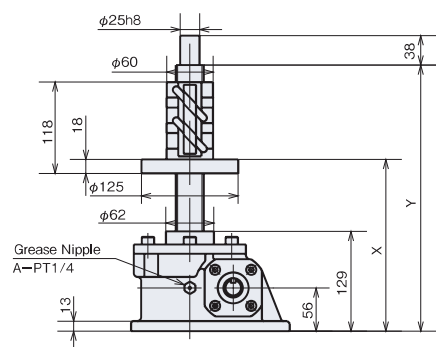
■ Table Type End Fitting (- M)



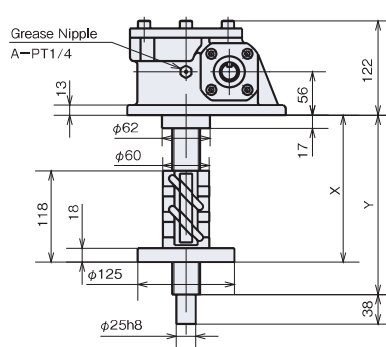
JWB050 Dimensions - Travel Nut Type



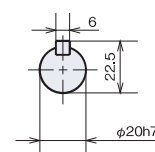
Lift (JWB050UR)



Suspend (JWB050DR)



● Input Shaft

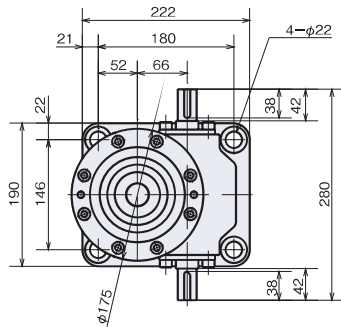


Note) Ball nut return tube and travel flange openings may vary from this drawing.
Note the return tube measurements when installing to equipment.

Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

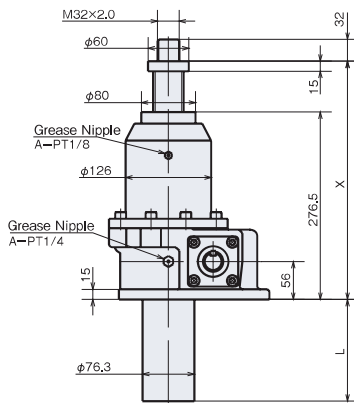
Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	157	257	369	145	245	257	21
200	157	357	469	145	345	357	22
300	157	457	569	145	445	457	22
400	157	557	669	145	545	557	23
500	157	657	769	145	645	657	24
600	157	757	869	145	745	757	24
800	157	957	1069	145	945	957	26
1000	157	1157	1269	145	1145	1157	27
1200	157	1357	1469	145	1345	1357	29
1500	157	1657	1769	145	1645	1657	31

JWB100 Dimensions - Standard Model

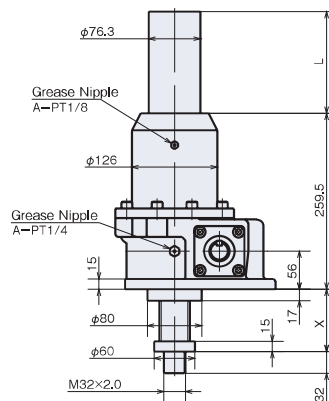


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	302	402	312	412	151	42	142	52	152	151	36
200	302	502	312	512	252	42	242	52	252	252	38
300	302	602	327	627	366	42	342	67	367	366	41
400	302	702	327	727	466	42	442	67	467	466	43
500	302	802	352	852	591	42	542	92	592	591	46
600	302	902	352	952	691	42	642	92	692	691	48
800	302	1102	367	1167	906	42	842	107	907	906	53
1000	302	1302	377	1377	1116	42	1042	117	1117	1116	58
1200	302	1502	402	1602	1341	42	1242	142	1342	1341	63
1500	302	1802	427	1927	1666	42	1542	167	1667	1666	71

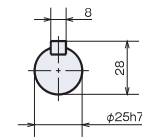
Lift (JWB100US)



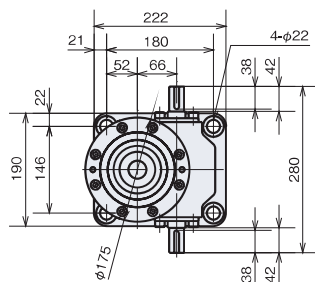
Suspend (JWB100DS)



●Input Shaft

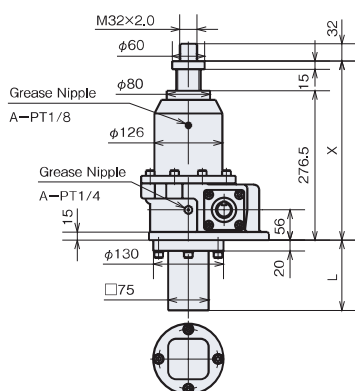


JWB100 Dimensions - Rotation Prevention Type

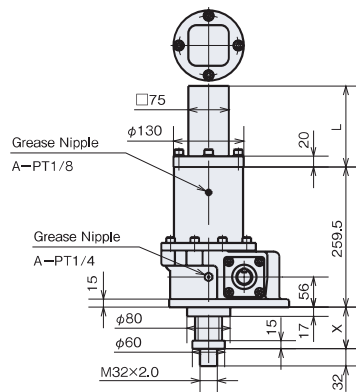


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	302	402	312	412	192	42	142	52	152	192	39
200	302	502	312	512	292	42	242	52	252	292	42
300	302	602	327	627	407	42	342	67	367	407	45
400	302	702	327	727	507	42	442	67	467	507	48
500	302	802	352	852	632	42	542	92	592	632	52
600	302	902	352	952	732	42	642	92	692	732	55
800	302	1102	367	1167	947	42	842	107	907	947	61
1000	302	1302	377	1377	1157	42	1042	117	1117	1157	67
1200	302	1502	402	1602	1382	42	1242	142	1342	1382	74
1500	302	1802	427	1927	1707	42	1542	167	1667	1707	84

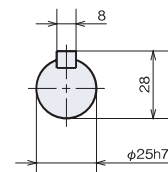
Lift (JWB100UM)



Suspend (JWB100DM)

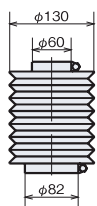


●Input Shaft

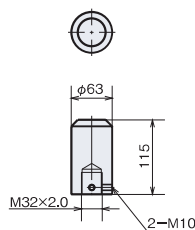


Output Options

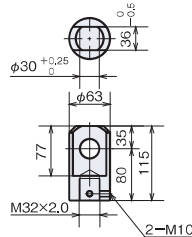
■ Bellows (- J)



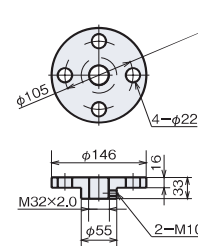
■ Rod Type End Fitting (- B)



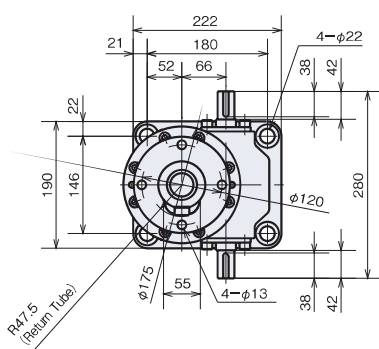
■ I Type End Fitting (- I)



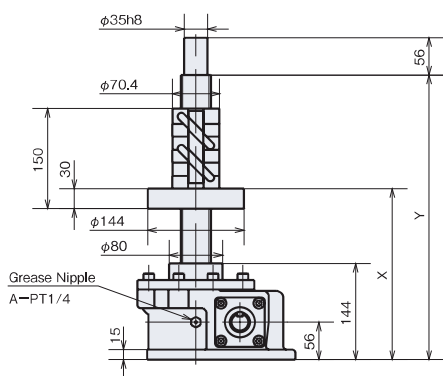
■ Table Type End Fitting (- M)



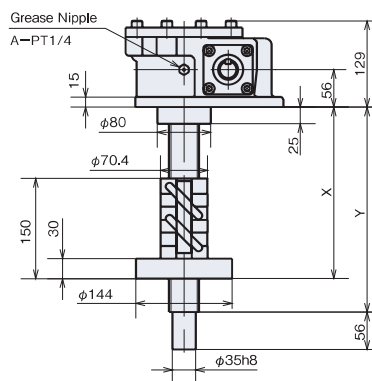
JWB100 Dimensions - Travel Nut Type



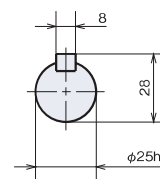
Lift (JWB100UR)



Suspend (JWB100DR)



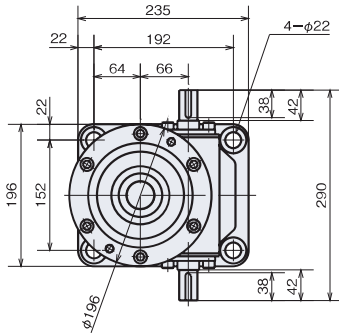
● Input Shaft



Note) Ball nut return tube and travel flange openings may vary from this drawing.
Note the return tube measurements when installing to equipment.

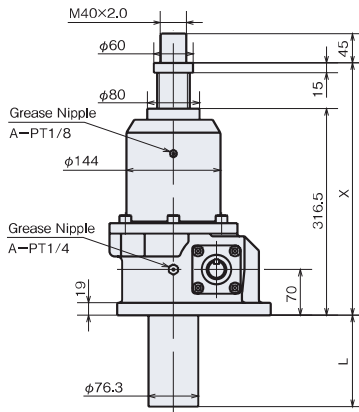
Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWB150 Dimensions - Standard Model

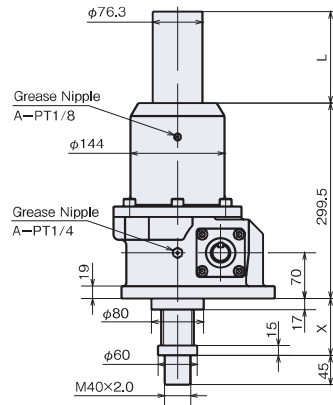


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	342	442	352	452	151	42	142	52	152	151	46
200	342	542	352	552	252	42	242	52	252	252	48
300	342	642	367	667	366	42	342	67	367	366	51
400	342	742	367	767	466	42	442	67	467	466	54
500	342	842	392	892	591	42	542	92	592	591	57
600	342	942	392	992	691	42	642	92	692	691	60
800	342	1142	407	1207	906	42	842	107	907	906	65
1000	342	1342	417	1417	1116	42	1042	117	1117	1116	70
1200	342	1542	442	1642	1341	42	1242	142	1342	1341	76
1500	342	1842	467	1967	1666	42	1542	167	1667	1666	84

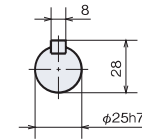
Lift (JWB150US)



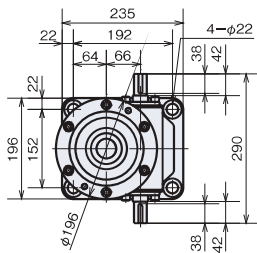
Suspend (JWB150DS)



●Input Shaft

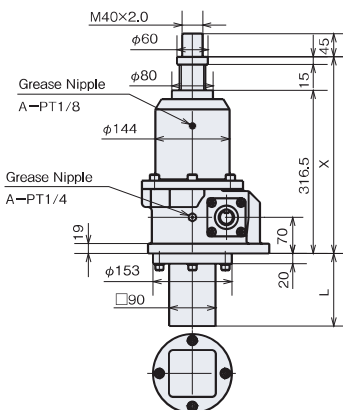


JWB150 Dimensions - Rotation Prevention Type

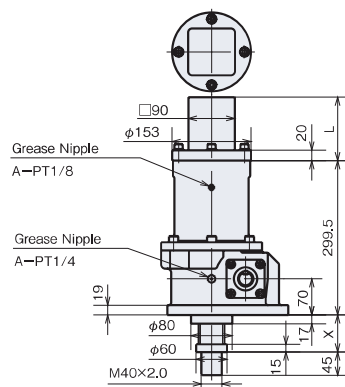


Stroke	UM Rotation Prevention Type for Lifting						DM Rotation Prevention Type for Suspending						Weight kg
	X		X		L	X		X		L			
	Without Bellows		With Bellows			Without Bellows		With Bellows					
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX				
100	342	442	352	452	221	42	142	52	152	221	52		
200	342	542	352	552	321	42	242	52	252	321	55		
300	342	642	367	667	436	42	342	67	367	436	59		
400	342	742	367	767	536	42	442	67	467	536	62		
500	342	842	392	892	661	42	542	92	592	661	66		
600	342	942	392	992	761	42	642	92	692	761	69		
800	342	1142	407	1207	976	42	842	107	907	976	75		
1000	342	1342	417	1417	1186	42	1042	117	1117	1186	82		
1200	342	1542	442	1642	1411	42	1242	142	1342	1411	89		
1500	342	1842	467	1967	1736	42	1542	167	1667	1736	99		

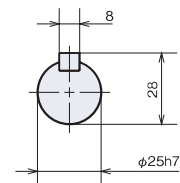
Lift (JWB150UM)



Suspend (JWB150DM)



●Input Shaft

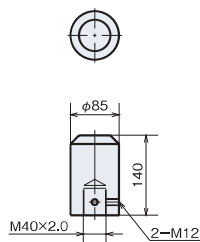


Output Options

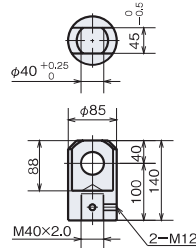
■ Bellows (- J)



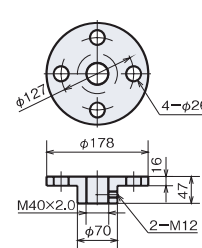
■ Rod Type End Fitting (- B)



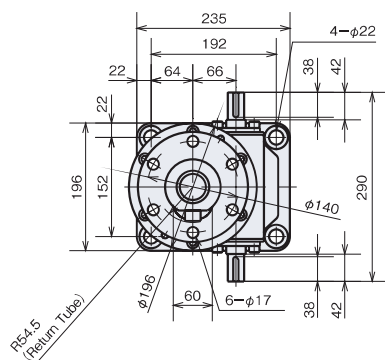
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

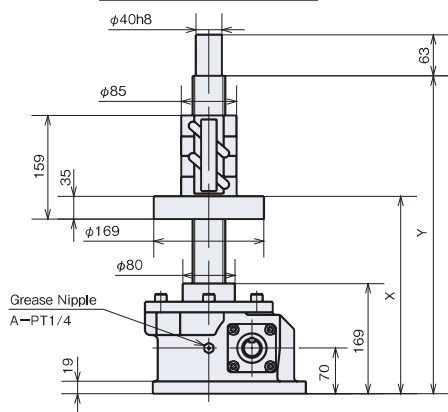


JWB150 Dimensions - Travel Nut Type

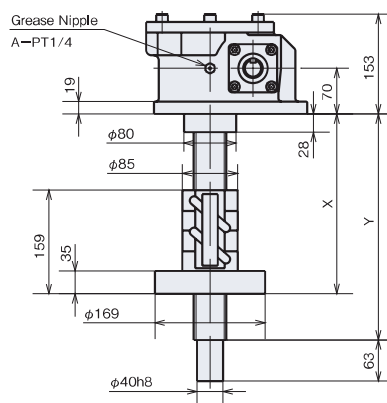


Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	214	314	448	197	297	308	41
200	214	414	548	197	397	408	42
300	214	514	648	197	497	508	43
400	214	614	748	197	597	608	45
500	214	714	848	197	697	708	46
600	214	814	948	197	797	808	47
800	214	1014	1148	197	997	1008	50
1000	214	1214	1348	197	1197	1208	53
1200	214	1414	1548	197	1397	1408	55
1500	214	1714	1848	197	1697	1708	59

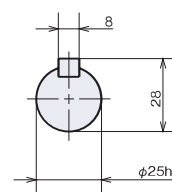
Lift (JWB150UR)



Suspend (JWB150DR)



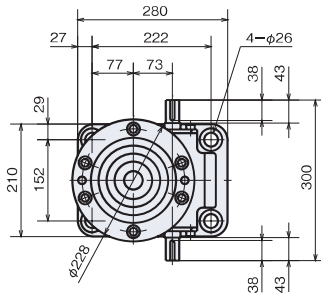
● Input Shaft



Note) Ball nut return tube and travel flange openings may vary from this drawing.
Note the return tube measurements when installing to equipment.

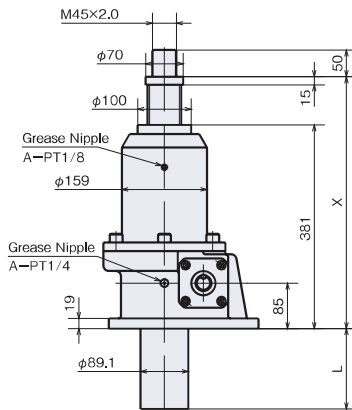
Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWB200 Dimensions - Standard Model

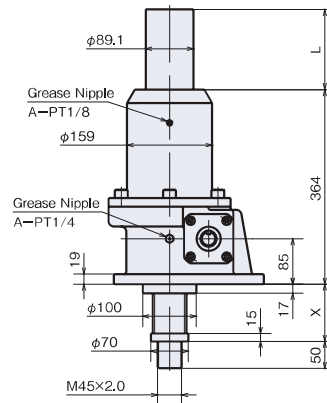


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows		Without Bellows	With Bellows	Without Bellows	With Bellows		
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	406	506	416	516	136	42	142	52	152	136	65
200	406	606	416	616	236	42	242	52	252	236	68
300	406	706	431	731	351	42	342	67	367	351	72
400	406	806	431	831	451	42	442	67	467	451	76
500	406	906	456	956	576	42	542	92	592	576	80
600	406	1006	456	1056	676	42	642	92	692	676	83
800	406	1206	471	1271	891	42	842	107	907	891	90
1000	406	1406	481	1481	1101	42	1042	117	1117	1101	97
1200	406	1606	506	1706	1326	42	1242	142	1342	1326	105
1500	406	1906	531	2031	1651	42	1542	167	1667	1651	115
2000	406	2406	576	2576	2196	42	2042	212	2212	2196	133

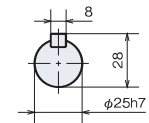
Lift (JWB200US)



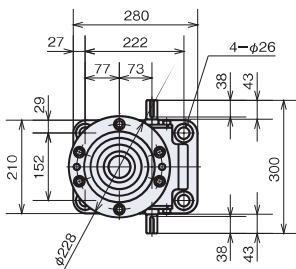
Suspend (JWB200DS)



● Input Shaft

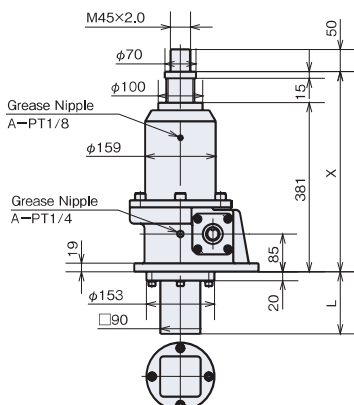


JWB200 Dimensions - Rotation Prevention Type

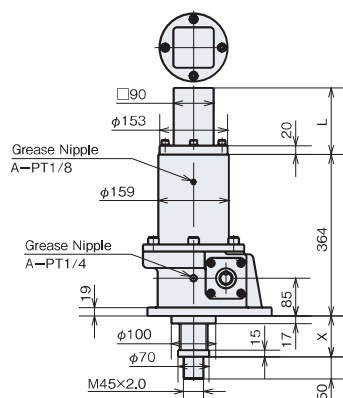


Stroke	UM Rotation Prevention Type for Lifting					DM Rotation Prevention Type for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	406	506	416	516	230	42	142	52	152	230	72
200	406	606	416	616	330	42	242	52	252	330	76
300	406	706	431	731	445	42	342	67	367	445	80
400	406	806	431	831	545	42	442	67	467	545	84
500	406	906	456	956	670	42	542	92	592	670	89
600	406	1006	456	1056	770	42	642	92	692	770	93
800	406	1206	471	1271	985	42	842	107	907	985	102
1000	406	1406	481	1481	1195	42	1042	117	1117	1195	110
1200	406	1606	506	1706	1420	42	1242	142	1342	1420	119
1500	406	1906	531	2031	1745	42	1542	167	1667	1745	131
2000	406	2406	576	2576	2290	42	2042	212	2212	2290	153

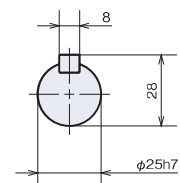
Lift (JWB200UM)



Suspend (JWB200DM)

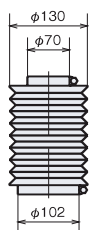


● Input Shaft

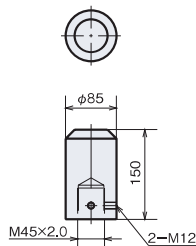


Output Options

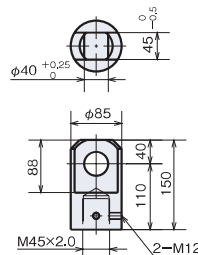
■ Bellows (- J)



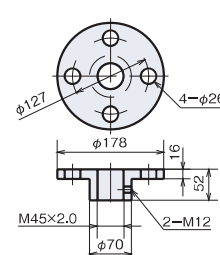
■ Rod Type End Fitting (- B)



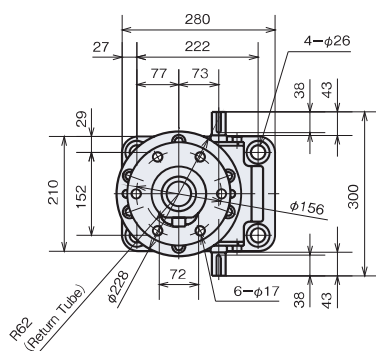
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

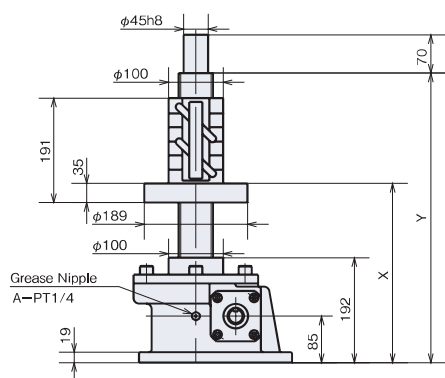


JWB200 Dimensions - Travel Nut Type

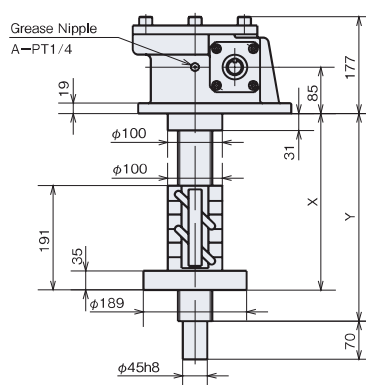


Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	237	337	503	232	332	342	56
200	237	437	603	232	432	442	58
300	237	537	703	232	532	542	60
400	237	637	803	232	632	642	62
500	237	737	903	232	732	742	65
600	237	837	1003	232	832	842	67
800	237	1037	1203	232	1032	1042	71
1000	237	1237	1403	232	1232	1242	76
1200	237	1437	1603	232	1432	1442	80
1500	237	1737	1903	232	1732	1742	86
2000	237	2237	2403	232	2232	2242	97

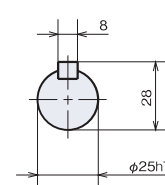
Lift (JWB200UR)



Suspend (JWB200DR)



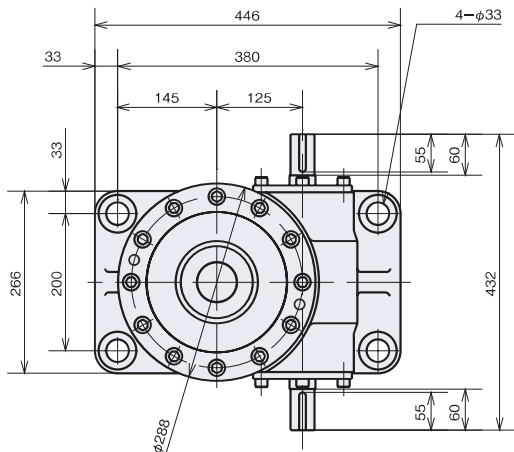
● Input Shaft



Note) Ball nut return tube and travel flange openings may vary from this drawing.
Note the return tube measurements when installing to equipment.

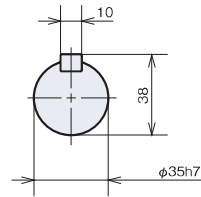
Travel nut type cannot be equipped with optional end fitting (B.I.M).
For types with bellows, refer to page 312.

JWB300 Dimensions - Standard Model

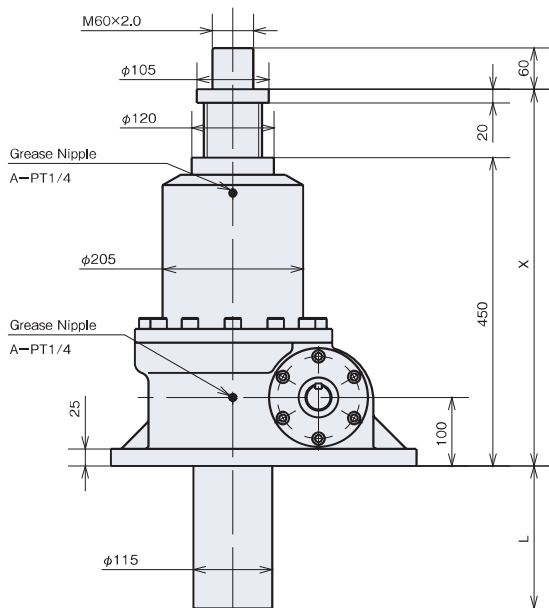


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	480	580	490	590	135	55	155	65	165	135	153
200	480	680	490	690	235	55	255	65	265	235	159
300	480	780	505	805	350	55	355	80	380	350	166
400	480	880	505	905	450	55	455	80	480	450	172
500	480	980	520	1020	565	55	555	95	595	565	178
600	480	1080	520	1120	665	55	655	95	695	665	184
800	480	1280	535	1335	880	55	855	110	910	880	197
1000	480	1480	555	1555	1100	55	1050	130	1130	1100	210
1200	480	1680	565	1765	1310	55	1255	140	1340	1310	223
1500	480	1980	590	2090	1635	55	1555	165	1665	1635	242
2000	480	2480	625	2625	2170	55	2055	200	2200	2170	274

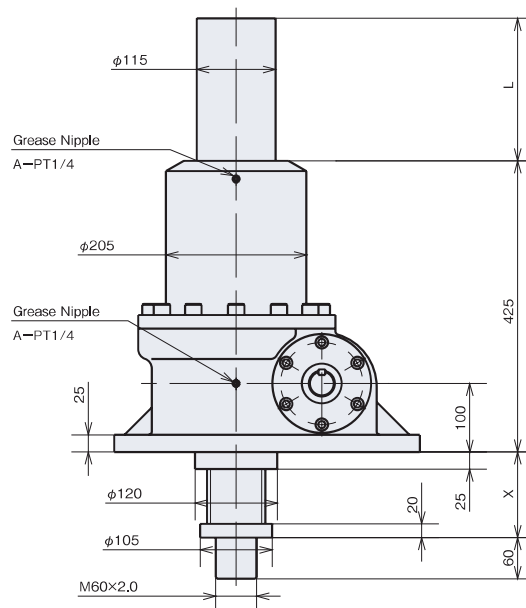
Input Shaft



Lift (JWB300US)

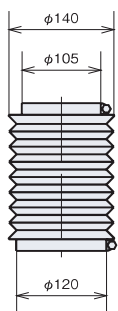


Suspend (JWB300DS)

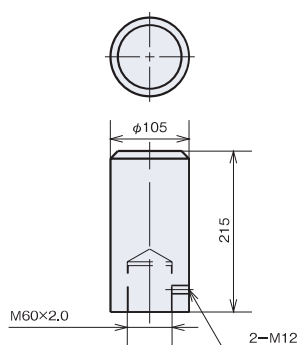


Output Options

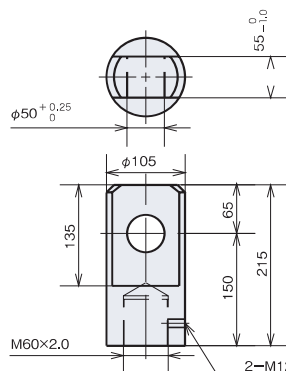
■ Bellows (- J)



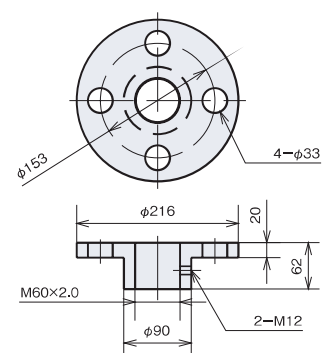
■ Rod Type End Fitting (- B)



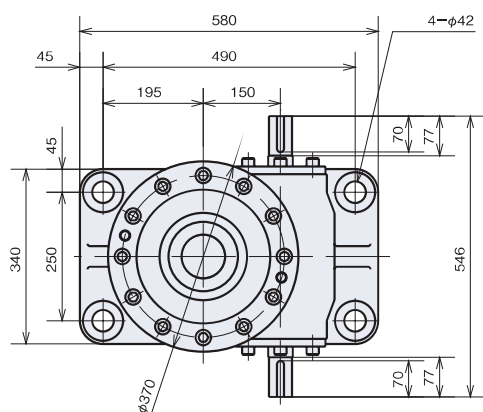
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

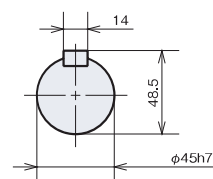


JWB500 Dimensions - Standard Model

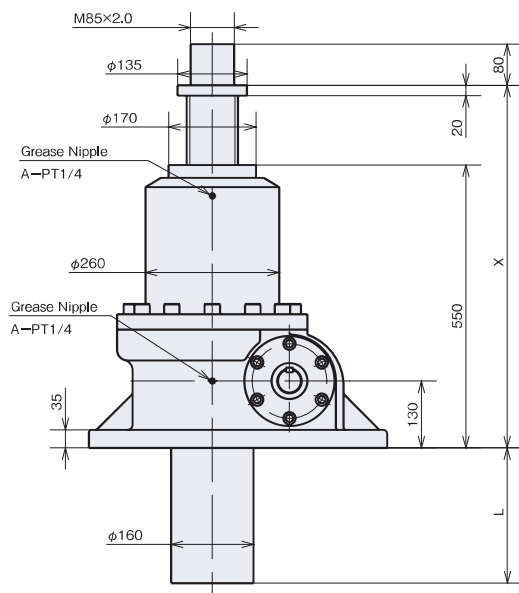


Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows		Without Bellows	With Bellows				
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
100	580	680	585	685	137	55	155	60	160	137	310
200	580	780	585	785	237	55	255	60	260	237	320
300	580	880	605	905	357	55	355	80	380	357	330
400	580	980	605	1005	457	55	455	80	480	457	340
500	580	1080	615	1115	567	55	555	90	590	567	350
600	580	1180	615	1215	667	55	655	90	690	667	359
800	580	1380	630	1430	882	55	855	105	905	882	378
1000	580	1580	645	1645	1097	55	1055	120	1120	1097	398
1200	580	1780	655	1855	1307	55	1255	130	1330	1307	417
1500	580	2080	675	2175	1627	55	1555	150	1650	1627	446
2000	580	2580	710	2710	2162	55	2055	185	2185	2162	495

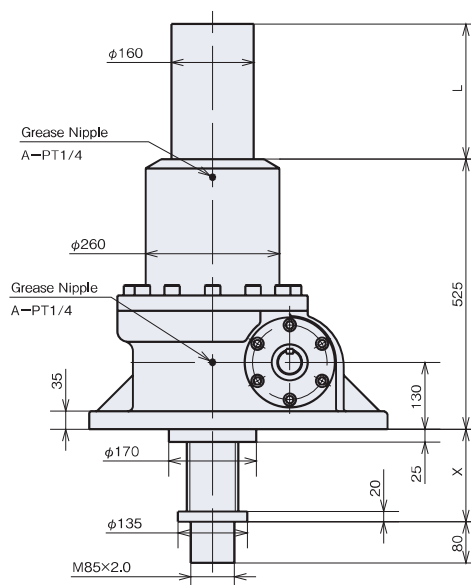
Input Shaft



Lift (JWB500US)

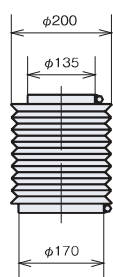


Suspend (JWB500DS)

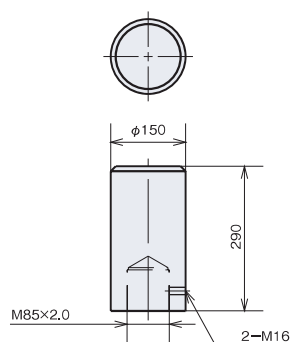


Output Options

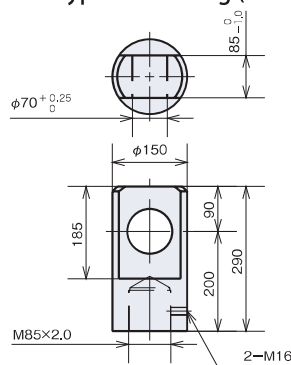
■ Bellows (- J)



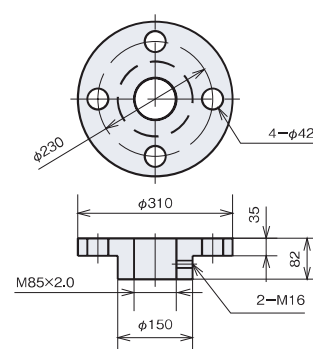
■ Rod Type End Fitting (- B)



■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)





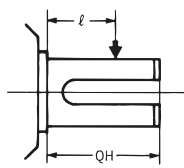
Warning

■ Cautions for selecting

- Duty cycle of JWB (Ball Screw Type) is within 30% ED. Duty cycle is a ratio of operating time per 30 min on the basis of 30 min interval.
- JWB (Ball Screw Type) does not have a self-locking device, therefore, a brake mechanism is required.
- Activating torque for the drive unit should be maintained at 200% above the required torque.
- Allowable input rotation speed of linear power jack is 1800 r/min, however, when inputting a speed exceeding the maximum input rotation speed at the basic capacity, check the screw shaft speed (elevation speed) and allowable load related graphs on page 201.
- Select a stroke for the jack with an extra margin with respect to the used stroke.
- Rotating force is generated on the screw shaft (travel nut in the case of travel nut type) with thrust, therefore, rotation prevention is required. Screw rotation torque at the basic capacity is described in the standard specification list. When operating with the end unconnected, and pulling the rope with a sheave installed, use the rotation prevention type. However, the rotation prevention type cannot be manufactured for the travel nut type, therefore, provide a rotation prevention mechanism on the device.
- When installing a sprocket, gear, or belt to the input or output shaft, confirm that any overhang load applied to the shaft decreases to the allowable OHL or less.

$$\text{Allowable O. H. L.} \geq \frac{T \times f \times L_f}{R}$$

O.H.L. : Overhang load N {kgf}
 T : Input torque N · m {kgf · m}
 f : Coefficient - power transmission element
 L_f : Coefficient - Load operating position
 R : Sprocket, Gear, V pulley or Pitch diameter m



Q : Shaft Length
 l : Loaded Position

● Coefficient – Power Transmission Element (f)

Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat belt	2.50

● Coefficient (L_f) – Load Position

l / QH	0.25	0.38	0.5	0.75	1
L _f	0.8	0.9	1	1.5	2

● Allowable O.H.L

Frame No.		002	005	010	025	050	100	150	200	300	500	750	1000
JWB (Ball Screw Type)	N	—	130	220	480	870	1290	2030	2490	3450	5240	7200	9790
H Speed	{ kgf }	—	{14}	{23}	{50}	{89}	{132}	{208}	{255}	{352}	{535}	{735}	{998}
JWB (Ball Screw Type)	N	—	82	140	290	500	840	1300	1610	2400	3560	4940	6970
L Speed	{ kgf }	—	{8}	{15}	{31}	{52}	{86}	{133}	{165}	{245}	{363}	{504}	{711}

■ Precautions for installation

- Some screw covers of jacks are made of hard vinyl chloride pipe. Do not lift jack and transport with this pipe, which may result in dropping.
- JWB (Ball Screw Type) rotates by self weight of the screw shaft or travel nut, therefore, retract its stroke to the minimum and provide a rotation prevention for installation.
- Take jack coasting amount into consideration to set the stroke adjusting limit switch.

■ Precautions for use

- Do not perform manual operation from the input shaft with load applied. The input shaft is rotated by the load, which is dangerous.
- When JWB (Ball Screw Type) is used in the vertical direction, the jack may be reversed by the load because of its excellent efficiency. Never perform manual operation.
- Do not use mechanical stops under any circumstances.
- Operating Environment for jack is as follows.

Operating place	Indoor room which cannot be splashed with rain or water.
Ambient atmosphere	Dust volume comparable to general factories.
Operating temperature range	— 15 to 80°C (Refer to section 3 in general precautions.)
Relative humidity	85% or less (no dew condensation)

- Operating part and reducer unit are factory greased. Therefore, use jack as delivered.
- For lubrication grease, lubrication cycle and lubrication amount to the screw shaft and reducer unit, refer to page 299.
- Inspect regularly for general backlash and screw unit condition. Jack life and replacement timing are determined by the following:
 Metal particles due to wear on the screw surface are visible.
 Replace gear when its input shaft exceeds 30 rpm with backlash (rattle between input shaft and worm wheel) at H speed, or exceeds 60 rpm at L speed.
 In either case, if it is used at the replacement timing, this may cause rotation failure of screw shaft and input shaft, and further sudden drop of travel nut.

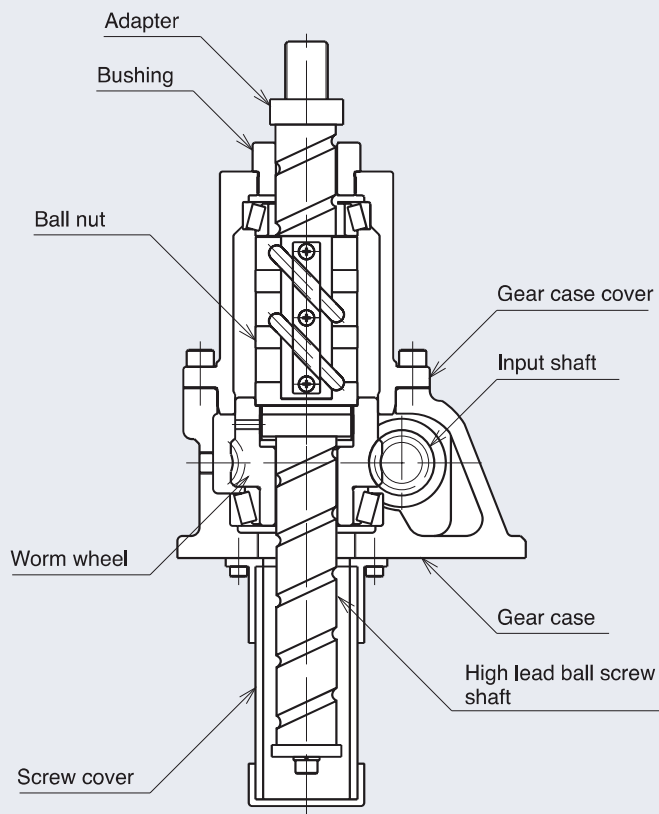
Linipower Jack

JWH (High Lead Ball Screw Type)

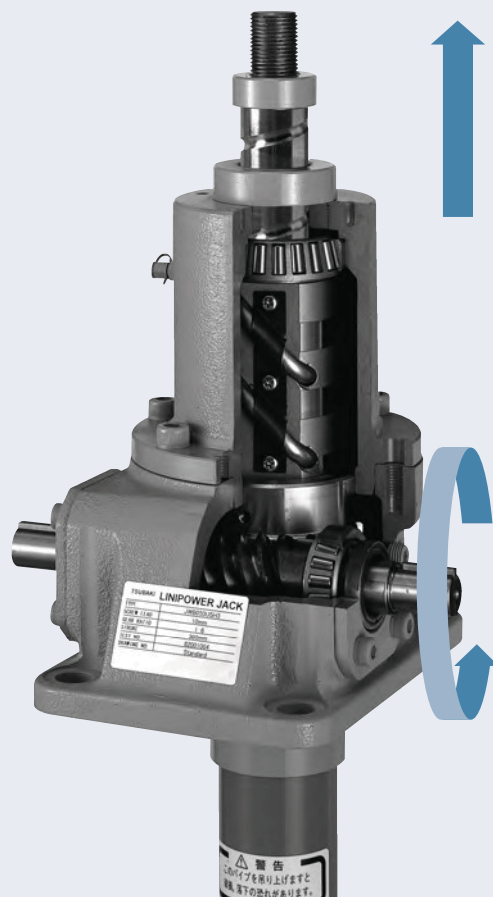
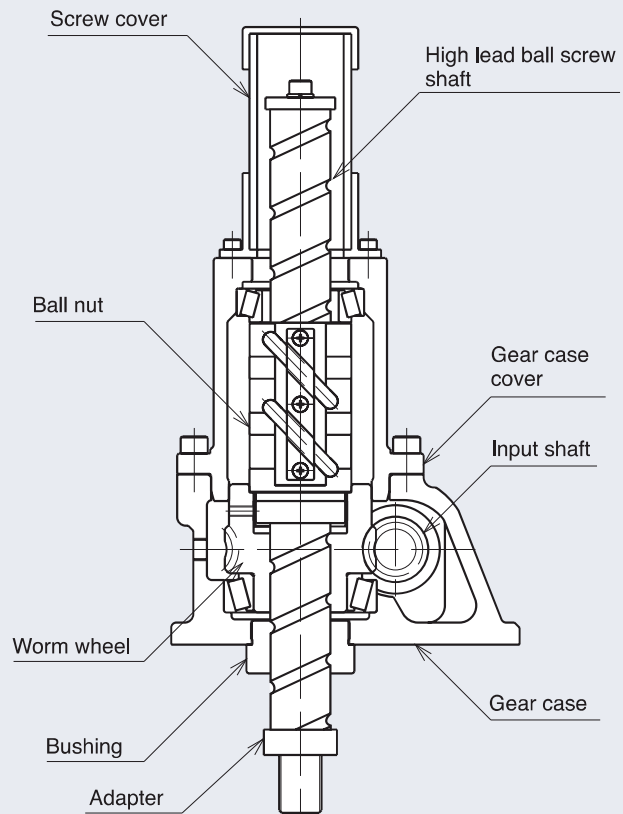


Drawings	P261•262
JWH Reference Number System	P263•264
Reference Table for Standard Use	P265•266
Dimensions	P267 to 272
Precautions	P273

JWH Standard Use for Lifting



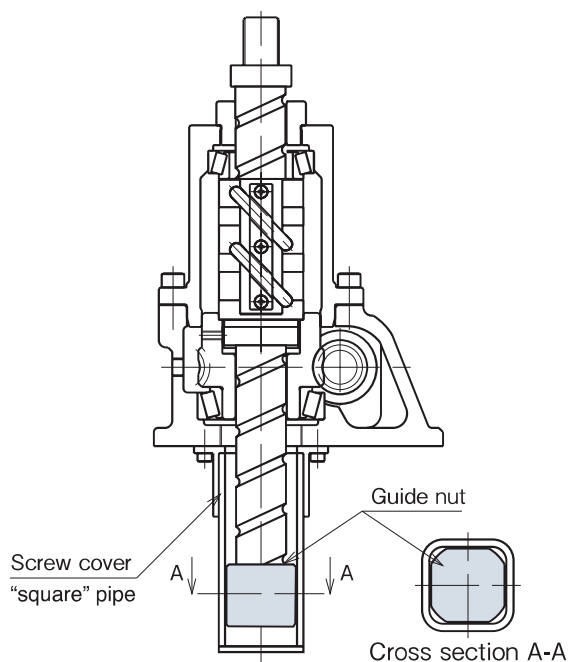
JWH Standard Use for Suspending



JWH (High Lead Ball Screw Type) Rotation Prevention Type

JWH010 to 200

〈With anti-rotation and Guide Nut〉



Note) The 10°space in each corner between the guide and the pipe allows smooth rotation.

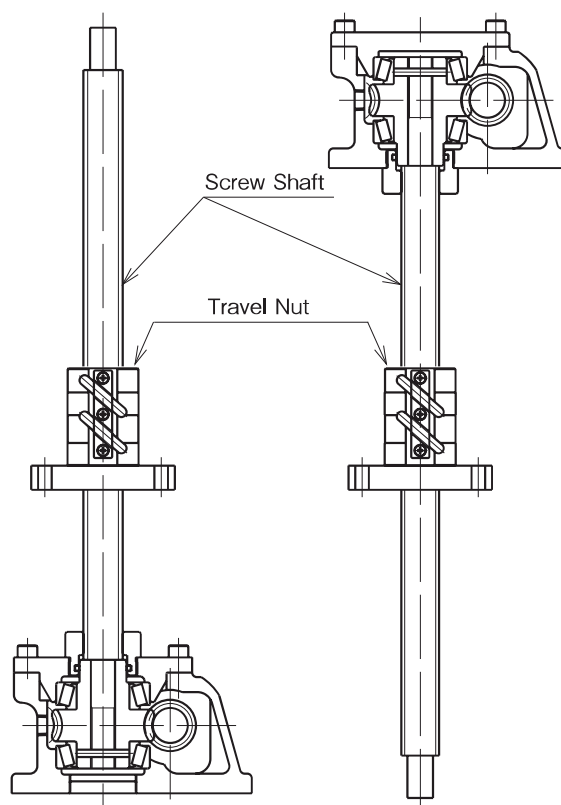
Caution

Each High Lead Ball Screw Jack with anti-rotation is made-to-order based.

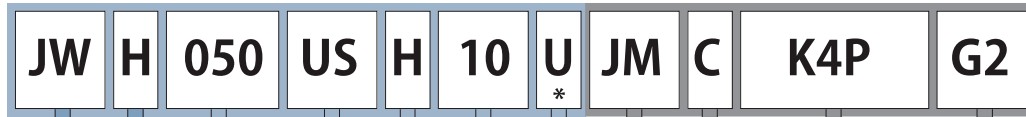
Inform TSUBAKI of operating conditions such as a load per one jack and screw shaft speed of the jack.

We will take the conditions into account.

JWH (High Lead Ball Screw Type) Travel Nut Type



JWH (High Lead Ball Screw Type)



Linipower Jack

Jack Type

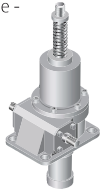
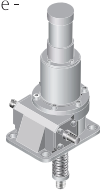
H : High Lead Ball Screw

Basic Capacity

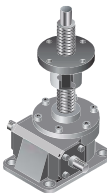
Frame Size	kN	{tf}
010	9.80	{1}
025	24.5	{2.5}
050	49.0	{5}
100	98.0	{10}
150	147	{15}
200	196	{20}

*Please fill in detail information in 311.

Installation Type

US	Standard use - lifting 
DS	Standard use - suspending 

* Anti-rotation type for JWH is made to order please fill in detail in 311.

UR	Travel nut - lifting 
DR	Travel nut - suspending 

* Be sure to use the flange installation method U or D with travel nuts.

Stroke mm

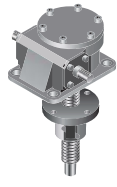
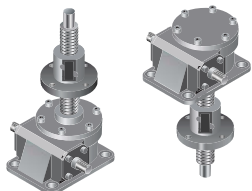
1	100
3	300
6	600
10	1000

*Please fill in detail information in 311.

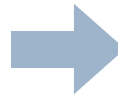
Gear Ratio

symbol Frame No.	H
010	5
025	6
050	6
100	8
150	8
200	8

Flange Installation

U	
D	

*Please fill in detail information in 311.



Examples)

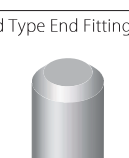
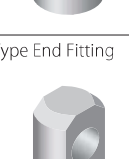
JWH100UMH3

- High Lead Ball Screw Type
- 98.0kN {10tf}
- Standard use (for lifting)
- Gear ratio H (1/8)
- Stroke 300mm

JWH050USH10JMK4P

- High Lead Ball Screw Type
- 49.0kN {5tf}
- Standard use (for lifting)
- Gear ratio H (1/6)
- Stroke 1000mm
- Bellows / Table Type End Fitting
- 4 Internal LS / Potentiometer

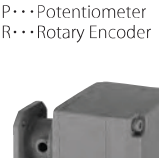
Output Option

No symbol	Screw shaft end (standard) 
J	Bellows 
B	Rod Type End Fitting 
I	I Type End Fitting 
M	Table Type End Fitting 

Installation Option

C	Clevis Mounting Adapter  (See page 291) Note) For standard lifting only.
---	---

Sensor Option

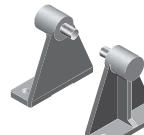
Y	LS Counter  (See page 285)
K2 K4 P R	Position Sensor K2...2 Internal LS K4...4 Internal LS P...Potentiometer R...Rotary Encoder  (See page 287)

*Please fill in the form on page 312.

Input Option

E EV	3 phase motor with brake E...200V 50Hz 200/220V 60Hz EV...400 50Hz 400/440V 60Hz  (Page 279)
G1 G2	3 phase gearmotor with brake G1...Gear ratio 1/5 200V 50Hz 200/220V 60Hz G2...Reducer ratio 1/10 200V 50Hz 200/220V 60Hz  (Page 275)

Accessories

Control Options
Stroke Meter and PCB 
Meter Relay and PCB  (Page 288 to 289)
Others
Trunnion Mounting Adapter  *Use as a set with clevis mounting adapter. (See page 291)

Note) When travel nuts are used, B, I and M are not available.

Note) Bellows is of special specification, therefore contact Tsubakimoto chain.

Note) Travel nut type with bellows is made-to-order.

*Please fill in the form on page 311.

Reference Table for Standard Use JWH (High Lead Ball Screw Type)

Frame No.		JWH010	JWH025	JWH050
Basic Capacity	kN	9.80	24.5	49.0
	{tf}	{1}	{2.5}	{5}
Outer Screw Diameter	mm	20	25	36
Minor Screw Diameter	mm	17.5	21.9	31.1
Screw Lead	mm	20	25	25
Gear Ratio		5	6	6
Overall Efficiency	%	63	65	68
Max. Allowable Input Capacity	kW	0.75	1.5	2.3
Tare Drag Torque	N•m	0.29	0.62	1.37
	{kgf•m}	{0.03}	{0.063}	{0.14}
Holding Torque	N•m	5.22	13.6	27.5
	{kgf•m}	{0.53}	{1.4}	{2.8}
*Note 1 Allowable Input Torque	N•m	19.6	49.0	153.9
	{kgf•m}	{2}	{5}	{15.7}
Required Input Torque for Basic Capacity *Note 2	N•m	10.2	25.6	49.2
	{kgf•m}	{1.0}	{2.6}	{5.0}
Screw Movement/ Per Revolution of Input Shaft	mm	4	4.17	4.17
Max. Input R.P.M.	r/min	1800	1800	1800
Max. Input R.P.M. for Basic Capacity	r/min	700	550	450
Screw Shaft Rotational Torque for Basic Capacity	N•m	33.2	103.8	207.6
	{kgf•m}	{3.4}	{10.6}	{21.2}
Screw Cover Material		Hard Vinyl Chloride		
Lubrication		Shaft: Grease Reducer Unit: Grease Bath		
Color		Tsubaki Olive Grey (Munsell 5GY6/0.5)		
Environment	Operating Temperature Range	-15 to 80°C (Precautions #2)		
	Relative Humidity	85% or less (no dew condensation)		
	Operating ambient atmosphere	Indoor Environment (Indoor room where rain and water cannot enter. Dust volume should be normal.)		
Duty Cycle *Note 3		Within 30% ED		

Note 1) The allowable torque is for jack input shaft only. (Reconfirm if synchronous drive.)

Note 2) Includes tare drag torque.

Note 3) Standard percentage duty cycle is 30 minutes. Thus, driving time is based on 30 minute intervals.

Precautions

- 1.All loads (static, dynamic or shock) should be within the rated capacity of the jack at sufficient safety levels.
- 2.Operating Temperature Range refers to the surface temperature of the jack during operation. To check, measure the surface temperature of the input shaft unit or travel nut (if used). Be sure all the rotating parts have completely stopped before proceeding to measure.
- 3.Allowable input rpm is 1800r/min. Be sure to operate within this allowable capacity.
- 4.Number of synchronizing jacks which can be connected on

the same line is limited by shaft strength. Refer to the allowable input shaft torque on the above table.

- 5.Activating torque for the drive unit should be maintained at 200% above the required torque.
- 6.If operating in freezing temperatures, a change in viscosity may reduce the efficiency of the grease. Set the drive unit so as to accommodate this change.
- 7.Since JWH (High Lead Ball Screw Type) is extremely efficient, sufficient brake that over powers the "holding torque" is required to sustain its shaft.

JWH100	JWH150	JWH200
98.0 {10}	147 {15}	196 {20}
45	50	63
38.9	42.7	55.7
32	32	32
8	8	8
65	65	64
4.1	4.1	5.6
1.96 {0.2}	2.65 {0.27}	3.92 {0.4}
52.8 {5.4}	79.2 {8.1}	105.6 {10.8}
292.0 {29.8}	292.0 {29.8}	292.0 {29.8}
98.0 {10.0}	146.8 {15.0}	199.1 {20.3}
4	4	4
1800	1800	1800
400	270	270
531.5 {54.2}	797.3 {81.3}	1063.0 {108.4}
Steel Pipe		
Screw: Grease Reducer Unit: Grease Bath		
Tsubaki Olive Grey (Munsell 5GY6/0.5)		
-15 to 80°C (Precautions #2)		
85% or less (no dew condensation)		
Indoor Environment (Indoor room where rain and water cannot enter. Dust volume should be normal.)		
Within 30% ED		

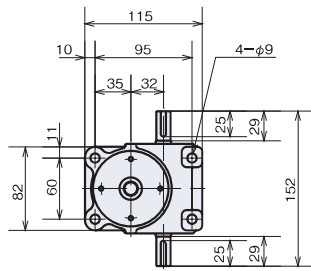
⚠ 8. Be certain that the jack rating exceeds the maximum stroke. Over travel can cause the lift shaft to disengage from the ball nut.

JWH (High Lead Ball Screw Type) is supported by a stopper (shaft end). However, this is merely for the purpose of securing the screw shaft during installation. While installing, take caution so that the screw shaft does not rotate by its own weight and become disengaged. If rotation cannot be avoided, use a model with rotation prevention. (Contact Tsubakimoto chain for details.)

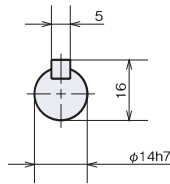
⚠ 9. Do not use mechanical stops under any circumstances. This will cause major internal damage.

10. Input shaft key is provided with each unit.
(The input shaft key complies with JIS B 1301-1996 (normal grade).)

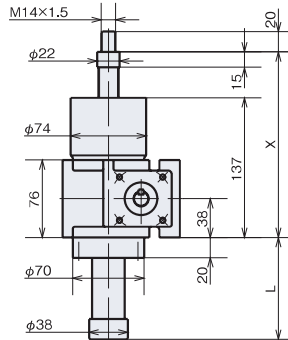
JWH010 Dimensions - Standard Model



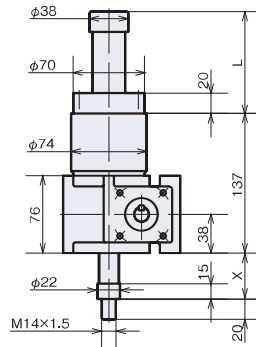
● Input Shaft



Lift (JWH010US)



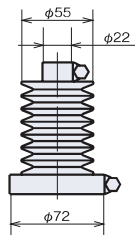
Suspend (JWH010DS)



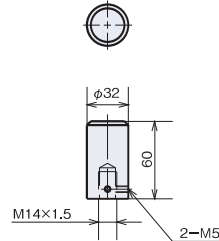
Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
100	162	262	212	312	194	25	125	75	175	194	6.7
200	162	362	212	412	294	25	225	75	275	294	7.0
300	162	462	252	552	434	25	325	115	415	434	7.4
400	162	562	252	652	534	25	425	115	515	534	7.6
500	162	662	287	787	669	25	525	150	650	669	8.0
600	162	762	287	887	769	25	625	150	750	769	8.2
800	162	962	322	1122	1004	25	825	185	985	1004	8.9
1000	162	1162	352	1352	1234	25	1025	215	1215	1234	9.5

Output Option

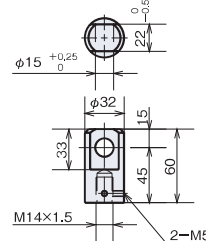
■ Bellows (- J)



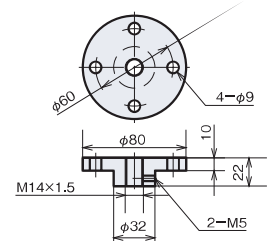
■ Rod Type End Fitting (- B)



■ I Type End Fitting (- I)

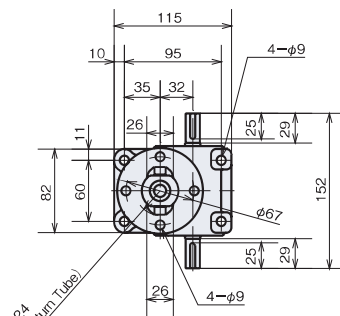


■ Table Type End Fitting (- M)

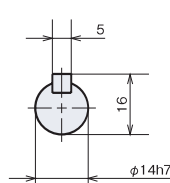


Note) For detailed measurements on units with bellows, see page 294.

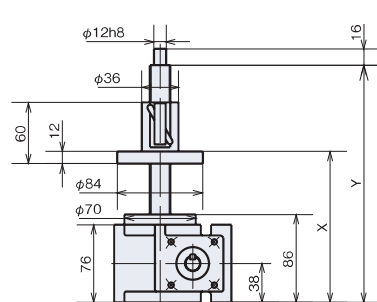
JWH010 Dimensions - Travel Nut Type



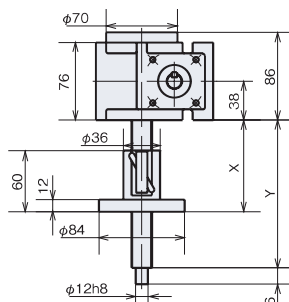
● Input Shaft



Lift (JWH010UR)



Suspend (JWH010DR)



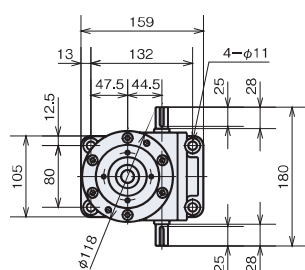
Note) Ball nut return tube and travel flange openings may vary from this drawing. Note the return tube measurements when installing to equipment.

Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	108	208	265	69	169	179	5.9
200	108	308	365	69	269	279	6.1
300	108	408	465	69	369	379	6.4
400	108	508	565	69	469	479	6.6
500	108	608	665	69	569	579	6.8
600	108	708	765	69	669	679	7.0
800	108	908	965	69	869	879	7.4
1000	108	1108	1165	69	1069	1079	7.9

Travel nut type cannot be equipped with optional end fitting (B.I.M). For types with bellows, refer to page 312.

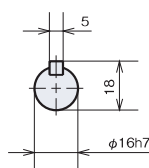
* For dimensions with no tolerances, general tolerances shall apply, and they may be approximately 2-5mm larger than the dimensions shown. For machine design, take margins into consideration.

JWH025 Dimensions - Standard Model



Lift (JWH025US)

● Input Shaft

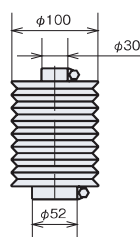


Suspend (JWH025DS)

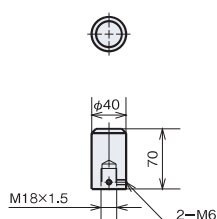
Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	215	315	230	330	149	42	142	57	157	149	11
200	215	415	230	430	249	42	242	57	257	249	11
300	215	515	250	550	369	42	342	77	377	369	11
400	215	615	250	650	469	42	442	77	477	469	12
500	215	715	270	770	589	42	542	97	597	589	12
600	215	815	270	870	689	42	642	97	697	689	13
800	215	1015	290	1090	909	42	842	117	917	909	14
1000	215	1215	310	1310	1129	42	1042	137	1137	1129	14
1200	215	1415	325	1525	1344	42	1242	152	1352	1344	15

Output Option

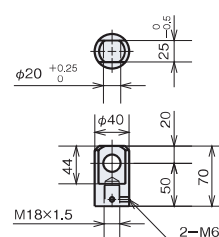
■ Bellows (- J)



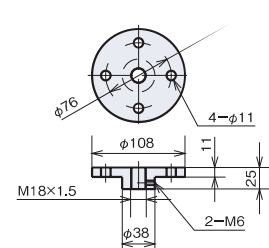
■ Rod Type End Fitting (- B)



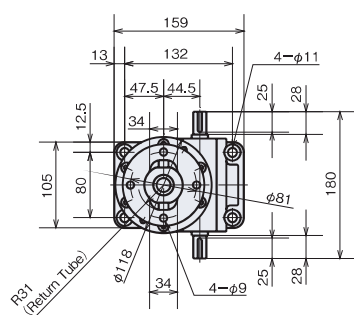
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

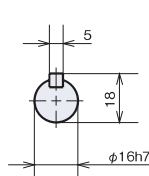


JWH025 Dimensions - Travel Nut Type



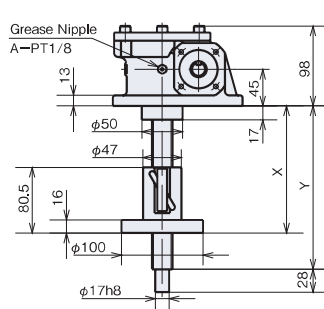
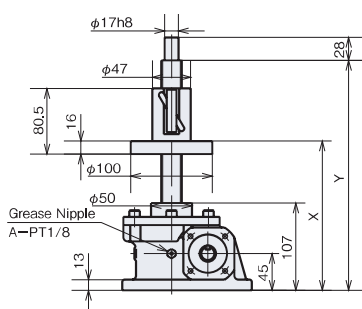
Lift (JWH025UR)

● Input Shaft



Suspend (JWH025DR)

Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	133	233	309	108	208	219	9.2
200	133	333	409	108	308	319	9.5
300	133	433	509	108	408	419	9.8
400	133	533	609	108	508	519	11
500	133	633	709	108	608	619	11
600	133	733	809	108	708	719	11
800	133	933	1009	108	908	919	12
1000	133	1133	1209	108	1108	1119	13
1200	133	1333	1409	108	1308	1319	13

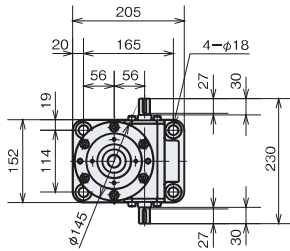


Note) Ball nut return tube and travel flange openings may vary from this drawing. Note the return tube measurements when installing to equipment.

Travel nut type cannot be equipped with optional end fitting (B.I.M). For types with bellows, refer to page 312.

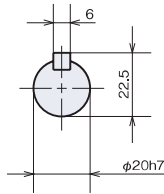
* For dimensions with no tolerances, general tolerances shall apply, and they may be approximately 2 – 5mm larger than the dimensions shown. For machine design, take margins into consideration.

JWH050 Dimensions - Standard Model



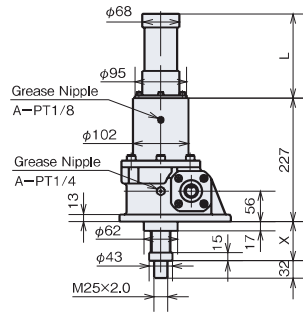
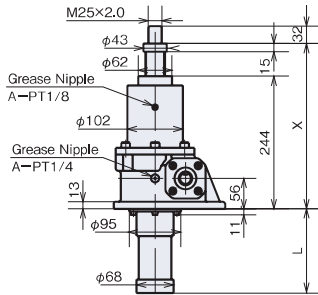
Lift (JWH050US)

● Input Shaft



Suspend (JWH050DS)

Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	269	369	284	384	147	42	142	57	157	147	23
200	269	469	284	484	247	42	242	57	257	247	23
300	269	569	304	604	367	42	342	77	377	367	24
400	269	669	304	704	467	42	442	77	477	467	25
500	269	769	324	824	587	42	542	97	597	587	26
600	269	869	324	924	687	42	642	97	697	687	27
800	269	1069	344	1144	907	42	842	117	917	907	29
1000	269	1269	364	1364	1127	42	1042	137	1137	1127	30
1200	269	1469	379	1579	1342	42	1242	152	1352	1342	32
1500	269	1769	404	1904	1667	42	1542	177	1677	1667	35

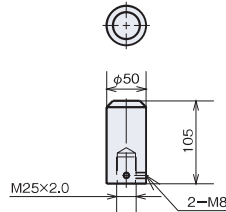


Output Option

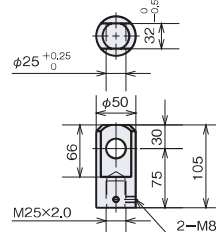
■ Bellows (- J)



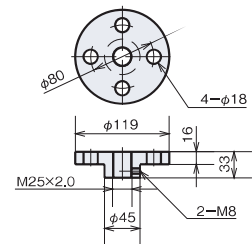
■ Rod Type End Fitting (- B)



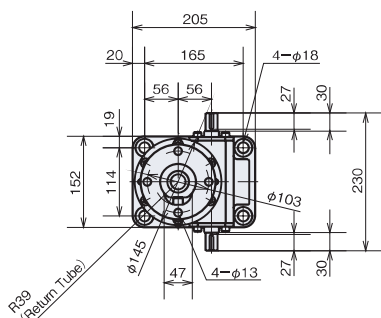
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

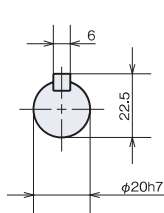


JWH050 Dimensions - Travel Nut Type



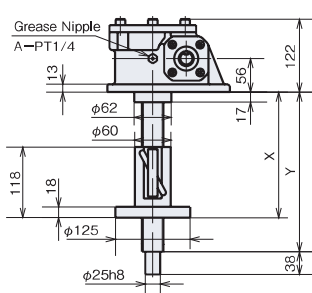
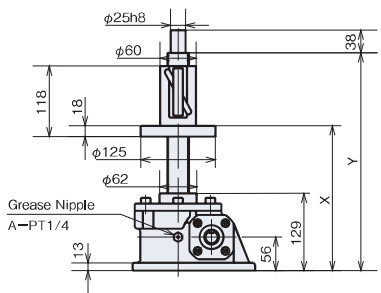
Lift (JWH050UR)

● Input Shaft



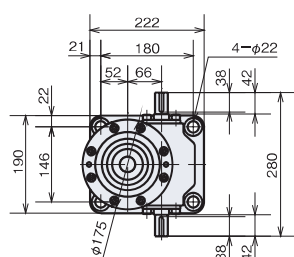
Suspend (JWH050DR)

Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	157	257	369	145	245	257	21
200	157	357	469	145	345	357	22
300	157	457	569	145	445	457	22
400	157	557	669	145	545	557	23
500	157	657	769	145	645	657	24
600	157	757	869	145	745	757	24
800	157	957	1069	145	945	957	26
1000	157	1157	1269	145	1145	1157	27
1200	157	1357	1469	145	1345	1357	29
1500	157	1657	1769	145	1645	1657	31



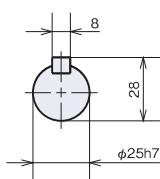
Note) Ball nut return tube and travel flange openings may vary from this drawing. Note the return tube measurements when installing to equipment.

JWH100 Dimensions - Standard Model



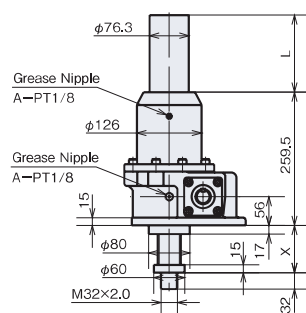
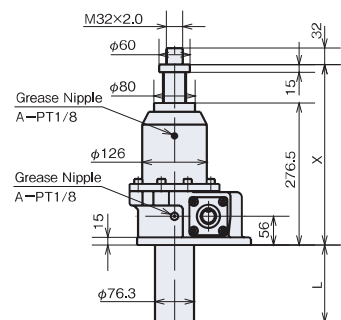
Lift (JWH100US)

● Input Shaft



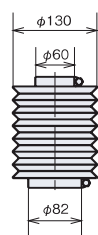
Suspend (JWH100DS)

Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	302	402	312	412	151	42	142	52	152	151	36
200	302	502	312	512	252	42	242	52	252	252	38
300	302	602	327	627	366	42	342	67	367	366	41
400	302	702	327	727	466	42	442	67	467	466	43
500	302	802	352	852	591	42	542	92	592	591	46
600	302	902	352	952	691	42	642	92	692	691	48
800	302	1102	367	1167	906	42	842	107	907	906	53
1000	302	1302	377	1377	1116	42	1042	117	1117	1116	58
1200	302	1502	402	1602	1341	42	1242	142	1342	1341	63
1500	302	1802	427	1927	1666	42	1542	167	1667	1666	71

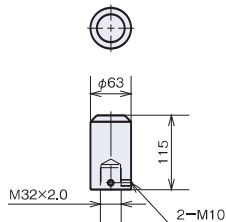


Output Option

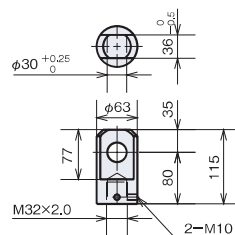
■ Bellows (- J)



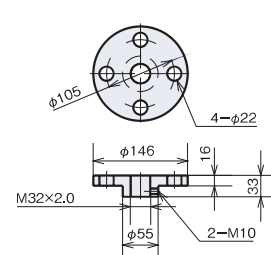
■ Rod Type End Fitting (- B)



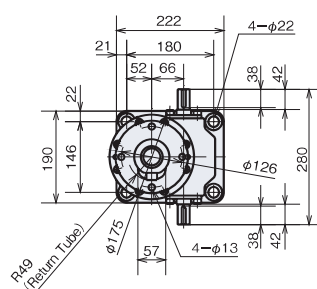
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

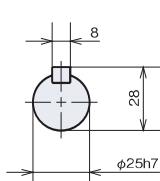


JWH100 Dimensions - Travel Nut Type



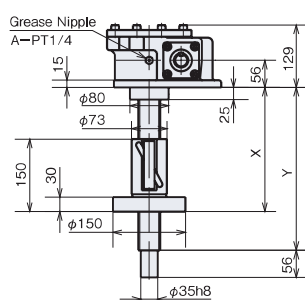
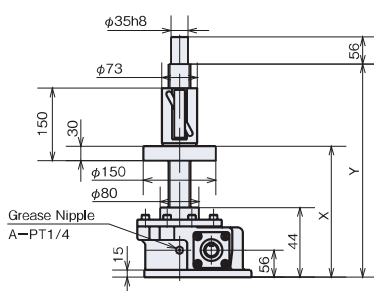
Lift (JWH100UR)

● Input Shaft



Suspend (JWH100DR)

Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	184	284	414	185	285	295	31
200	184	384	514	185	385	395	32
300	184	484	614	185	485	495	33
400	184	584	714	185	585	595	34
500	184	684	814	185	685	695	35
600	184	784	914	185	785	795	36
800	184	984	1114	185	985	995	39
1000	184	1184	1314	185	1185	1195	41
1200	184	1384	1514	185	1385	1395	43
1500	184	1684	1814	185	1685	1695	46

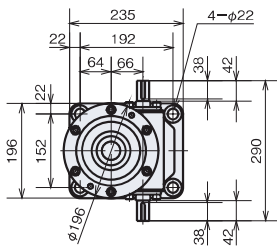


Note) Ball nut return tube and travel flange openings may vary from this drawing. Note the return tube measurements when installing to equipment.

Travel nut type cannot be equipped with optional end fitting (B.I.M). For types with bellows, refer to page 312.

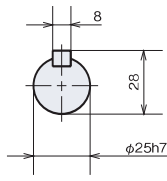
* For dimensions with no tolerances, general tolerances shall apply, and they may be approximately 2 – 5mm larger than the dimensions shown. For machine design, take margins into consideration.

JWH150 Dimensions - Standard Model



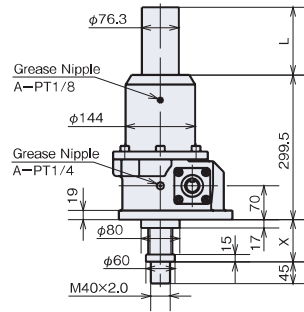
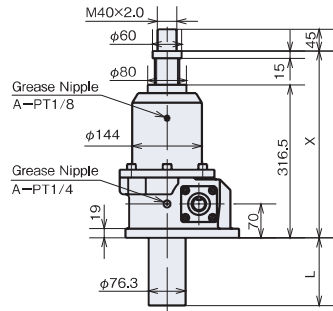
Lift (JWH150US)

● Input Shaft



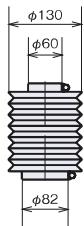
Suspend (JWH150DS)

Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows	With Bellows	Without Bellows	With Bellows							
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		
100	342	442	352	452	151	42	142	52	152	151	46
200	342	542	352	552	252	42	242	52	252	252	48
300	342	642	367	667	366	42	342	67	367	366	51
400	342	742	367	767	466	42	442	67	467	466	54
500	342	842	392	892	591	42	542	92	592	591	57
600	342	942	392	992	691	42	642	92	692	691	60
800	342	1142	407	1207	906	42	842	107	907	906	65
1000	342	1342	417	1417	1116	42	1042	117	1117	1116	70
1200	342	1542	442	1642	1341	42	1242	142	1342	1341	76
1500	342	1842	467	1967	1666	42	1542	167	1667	1666	84

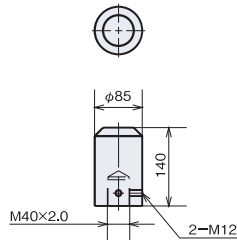


Output Option

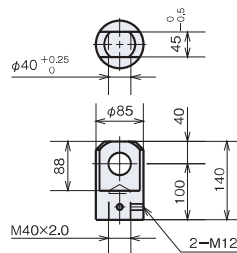
■ Bellows (- J)



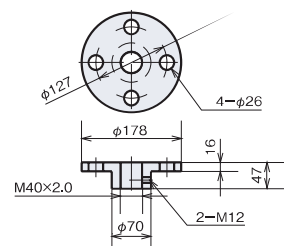
■ Rod Type End Fitting (- B)



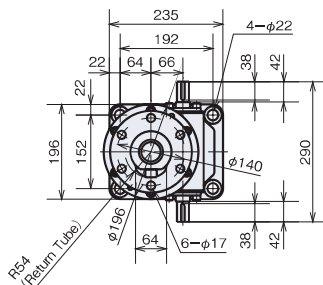
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

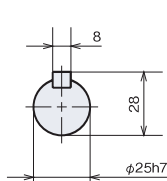


JWH150 Dimensions - Travel Nut Type



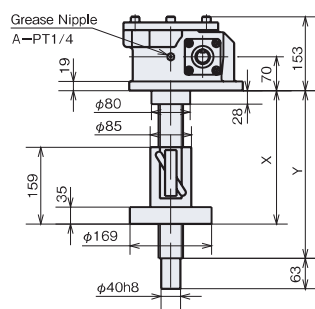
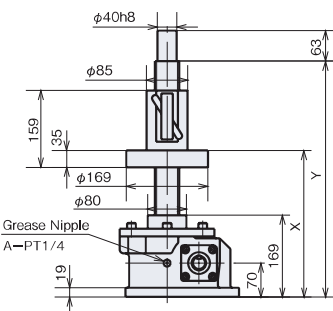
Lift (JWH150UR)

● Input Shaft



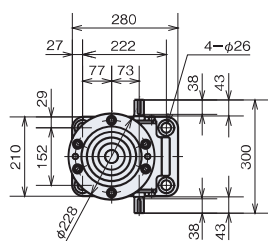
Suspend (JWH150DR)

Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	214	314	448	197	297	308	41
200	214	414	548	197	397	408	42
300	214	514	648	197	497	508	43
400	214	614	748	197	597	608	45
500	214	714	848	197	697	708	46
600	214	814	948	197	797	808	47
800	214	1014	1148	197	997	1008	50
1000	214	1214	1348	197	1197	1208	53
1200	214	1414	1548	197	1397	1408	55
1500	214	1714	1848	197	1697	1708	59

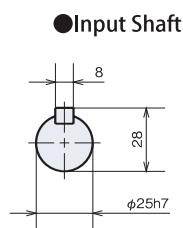


Note) Ball nut return tube and travel flange openings may vary from this drawing. Note the return tube measurements when installing to equipment.

JWH200 Dimensions - Standard Model

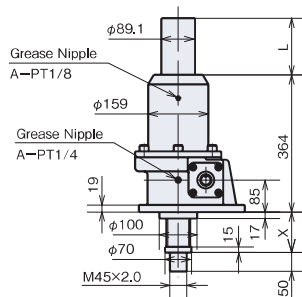
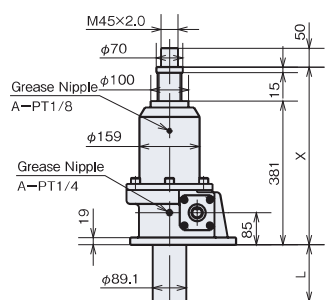


Lift (JWH200US)



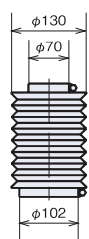
Suspend (JWH200DS)

Stroke	US Standard Model for Lifting					DS Standard Model for Suspending					Weight kg
	X		X		L	X		X		L	
	Without Bellows		With Bellows			Without Bellows		With Bellows			
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
100	406	506	416	516	136	42	142	52	152	136	65
200	406	606	416	616	236	42	242	52	252	236	68
300	406	706	431	731	351	42	342	67	367	351	72
400	406	806	431	831	451	42	442	67	467	451	76
500	406	906	456	956	576	42	542	92	592	576	80
600	406	1006	456	1056	676	42	642	92	692	676	83
800	406	1206	471	1271	891	42	842	107	907	891	90
1000	406	1406	481	1481	1101	42	1042	117	1117	1101	97
1200	406	1606	506	1706	1326	42	1242	142	1342	1326	105
1500	406	1906	531	2031	1651	42	1542	167	1667	1651	115
2000	406	2406	576	2576	2196	42	2042	212	2212	2196	133

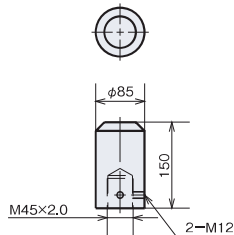


Output Option

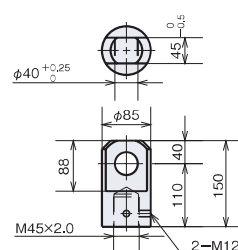
■ Bellows (- J)



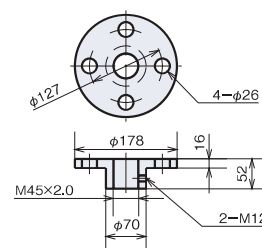
■ Rod Type End Fitting (- B)



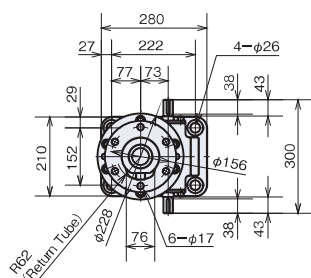
■ I Type End Fitting (- I)



■ Table Type End Fitting (- M)

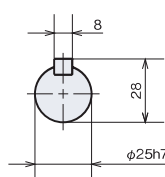


JWH200 Dimensions - Travel Nut Type

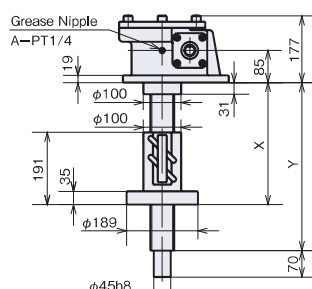
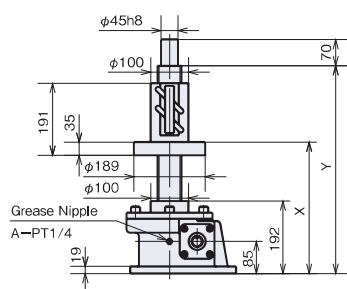


Lift (JWH200UR)

● Input Shaft



Suspend (JWH200DR)



Note) Ball nut return tube and travel flange openings may vary from this drawing. Note the return tube measurements when installing to equipment.

Stroke	UR Travel Nut Type for Lifting			DR Travel Nut Type for Suspending			Weight kg
	X		Y	X		Y	
	MIN	MAX		MIN	MAX		
100	237	337	503	232	332	342	56
200	237	437	603	232	432	442	58
300	237	537	703	232	532	542	60
400	237	637	803	232	632	642	62
500	237	737	903	232	732	742	65
600	237	837	1003	232	832	842	67
800	237	1037	1203	232	1032	1042	71
1000	237	1237	1403	232	1232	1242	76
1200	237	1437	1603	232	1432	1442	80
1500	237	1737	1903	232	1732	1742	86
2000	237	2237	2403	232	2232	2242	97

Travel nut type cannot be equipped with optional end fitting (B.I.M). For types with bellows, refer to page 312.

* For dimensions with no tolerances, general tolerances shall apply, and they may be approximately 2 – 5mm larger than the dimensions shown. For machine design, take margins into consideration.



Warning

■ Cautions for selecting

- Duty cycle of JWH (High Lead Screw Type) is within 30% ED. Duty cycle is a ratio of operating time per 30 min on the basis of 30 min interval.
- JWH (High Lead Screw Type) does not have a self-locking device, therefore, a brake mechanism is required.
- Activating torque for the drive unit should be maintained at 200% above the required torque.
- Allowable input rotation speed of linipower jack is 1800 r/min, however, when inputting a speed exceeding the maximum input rotation speed at the basic capacity, check the screw shaft speed (elevation speed) and allowable load related graphs on page 203.
- Select a stroke for the jack with an extra margin with respect to the used stroke.
JWH (High Lead Screw Type) is equipped with a fall stop, however, if the stroke range is exceeded, the screw shaft falls out.
- Rotating force is generated on the screw shaft (travel nut in the case of travel nut type) with thrust, therefore, rotation prevention is required. Screw rotation torque at the basic capacity is described in the standard specification list. When operating with the end unconnected, and pulling the rope with a sheave installed, use the rotation prevention type.
Rotation prevention type of JWH (High Lead Screw Type) is of special specification, therefore, contact Tsubakimoto chain.
However, the rotation prevention type cannot be manufactured for the travel nut type, therefore, provide a rotation prevention mechanism on the device.
- Bellows is of special specification, therefore, contact Tsubakimoto Chain.
- When installing a sprocket, gear, or belt to the input or output shaft, confirm that any overhang load applied to the shaft decreases to the allowable OHL or less.

$$\text{Allowable O. H. L.} \geq \frac{T \times f \times L_f}{R}$$

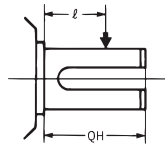
O.H.L. : Overhang load N (kgf)

T : Input torque N · m (kgf · m)

f : Coefficient - power transmission element

L_f : Coefficient - Load operating position

R : Sprocket, Gear, V pulley or
Pitch diameter m



Q : Shaft Length

l : Loaded Position

● Coefficient – Power Transmission Element (f)

Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat belt	2.50

● Coefficient (L_f) – Load Position

l/QH	0.25	0.38	0.5	0.75	1
L _f	0.8	0.9	1	1.5	2

● Allowable O.H.L

Frame No.		002	005	010	025	050	100	150	200	300	500	750	1000
JWH (High Lead Screw Type)	N	—	—	530	980	1510	2390	3130	3840	—	—	—	—
H Speed	{ kgf }	—	—	{54}	{100}	{154}	{244}	{320}	{392}	—	—	—	—

■ Precautions for installation

- Some screw covers of jacks are made of hard vinyl chloride pipe. Do not lift jack and transport with this pipe, which may result in dropping.
- JWH (High Lead Screw Type) rotates by self weight of the screw shaft or travel nut, therefore, retract its stroke to the minimum and provide a rotation prevention for installation.
- Take jack coasting amount into consideration to set the stroke adjusting limit switch.

■ Precautions for use

- Do not perform manual operation from the input shaft with load applied. The input shaft is rotated by the load, which is dangerous.
- When JWH (High Lead Screw Type) is used in the vertical direction, the jack may be reversed by the load because of its excellent efficiency. Never perform manual operation.
- Do not use mechanical stops under any circumstances.
- Operating Environment for jack is as follows.

Operating place	Indoor room which cannot be splashed with rain or water.
Ambient atmosphere	Dust volume comparable to general factories.
Operating temperature range	−15 to 80°C (Refer to section 3 in general precautions.)
Relative humidity	85% or less (no dew condensation)

- Operating part and reducer unit are factory greased. Therefore, use jack as delivered.
- For lubrication grease, lubrication cycle and lubrication amount to the screw shaft and reducer unit, refer to page 299.
- Inspect regularly for general backlash and screw unit condition. Jack life and replacement timing are determined by the following:
Metal particles due to wear on the screw surface are visible.
Replace gear when its input shaft exceeds 30 rpm with backlash (rattle between input shaft and worm wheel) at H speed, or exceeds 60 rpm at L speed.
In either case, if it is used at the replacement timing, this may cause rotation failure of screw shaft and input shaft, and further sudden drop of travel nut.