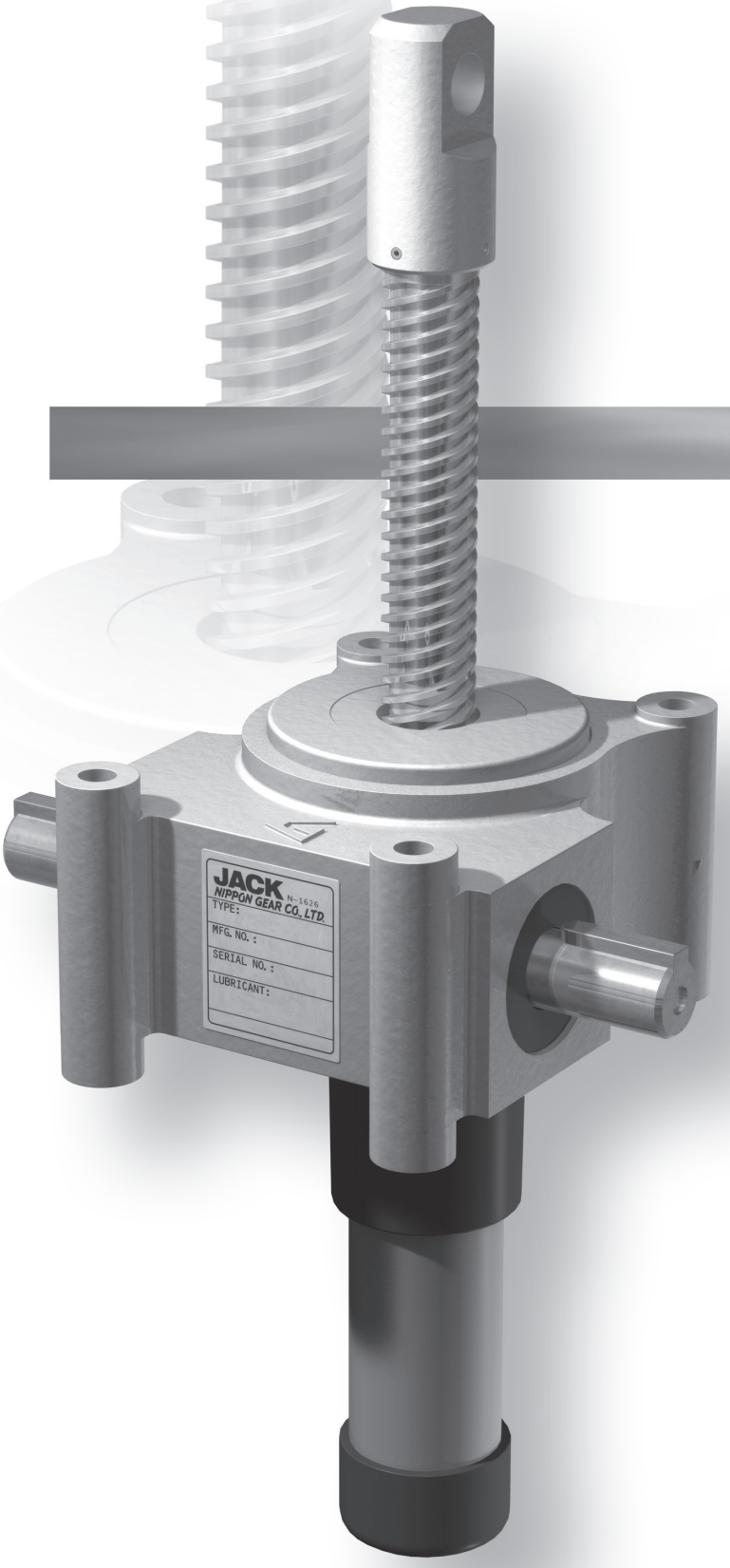
High-Lead Screw Jack

Using a 4-start thread

05

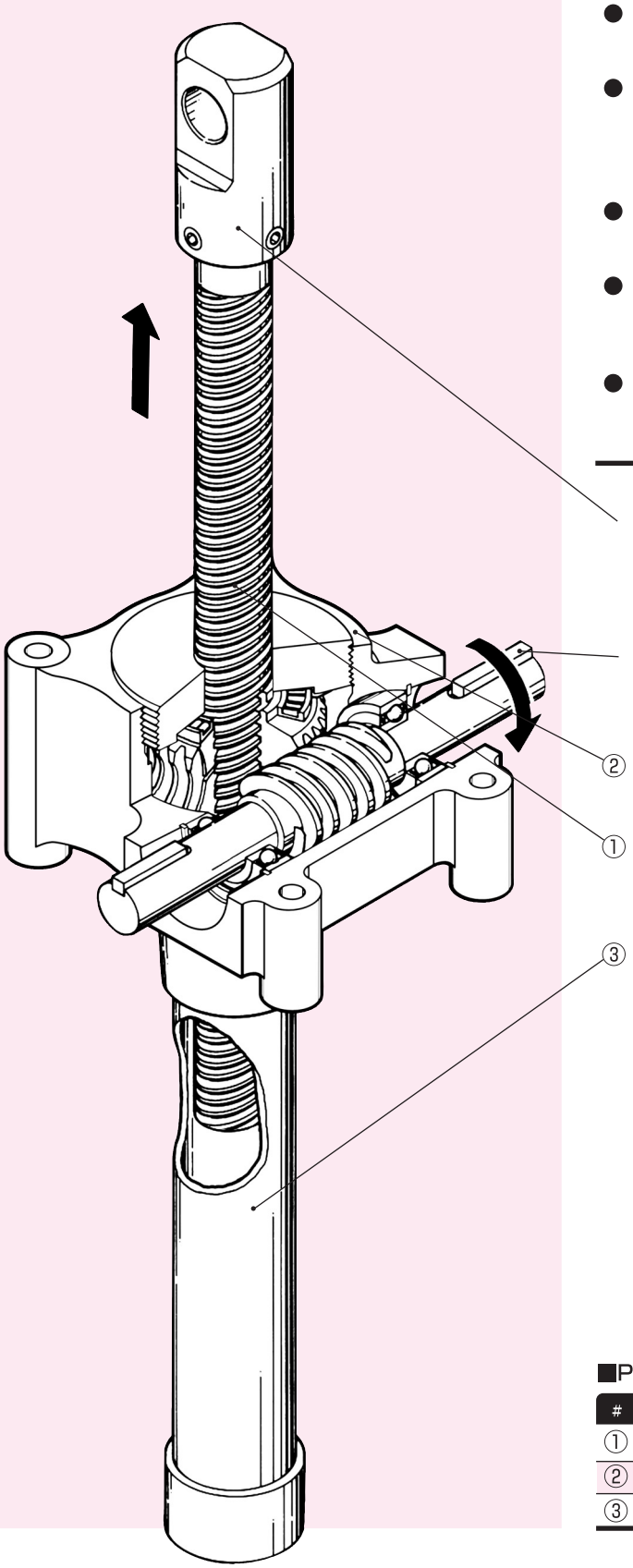


Structure & Features

High-Lead Screw Jack:Structure & Features

This type of jack is compact and lightweight, yet delivers high performance similar to standard screw jacks; it is easy to use, while realizing high efficiency and high speed.

■Structural Drawing:
Upright Translating High-Lead Screw Jack



- The adoption of a 4-start screw (quadruple-thread) and high-lead model enables high-speed operation.
- The speed is 2-5 times faster than that of conventional screw jacks (H) at the same input rotation speed.
- The housing is compact and space-efficient; and its shape and mounting holes are designed to allow either its upper or lower surface to be attached to your device.
- This type of jack does not have a self-locking function, so it is required to install a brake.
- Maintenance-free design (disassembly of components inside of the housing is not allowed); however, please apply grease to the lifting screw on a regular basis.
- Wide-ranging options are available, including dustproof bellows to protect the lifting screw, limit switch for control, and RC encoder.

The lifting screw end is designed to allow attaching two types of end fittings (e.g. clevis in the drawing) in order to prevent the lifting screw from drag turning on the side of your device.

The Input shaft key is new JIS compliant.
As for RMY type, the shape of the input shaft is D cut.

② The housing is made of lightweight aluminum alloy (color of the main body: silver).

① The lifting screw is made of carbon steel. (right-hand thread) 4-start screw shaft.

■Part Names

#	Part name
①	4-start screw shaft
②	Sub-assy
③	Lifting screw cover

Specification

Standard Specifications

Series/size code	RMY	RSY	JOY
Capacity	2kN	5kN	10kN
Lifting screw diameter	16mm	20mm	25mm
Lifting screw lead	12mm	16mm	20mm
Worm gear ratio	3	5	5
Efficiency	0.45	0.44	0.44
Maximum allowable power per jack	0.32kW	0.63kW	0.75kW
Input shaft torque at no load (b)	0.07N·m	0.15N·m	0.3N·m
Torque coefficient (a)	1.43	1.17	1.46
Required input torque at maximum load	2.9N·m	6.0N·m	14.9N·m
Holding torque at maximum load	0.6N·m	1.2N·m	3.0N·m
Speed coefficient (c) (screw lead per rotation of input shaft)	4mm	3.2mm	4mm
Maximum allowable input rotation speed	2000min^{-1}	2000min^{-1}	1800min^{-1}
Maximum rotation speed at maximum road	1020min^{-1}	990min^{-1}	475min^{-1}
Anti-rotation key torque at maximum load	2.3N·m	7.1N·m	17.6N·m
Input shaft allowable overhang load	117.6N	294N	294N
Amount of filled grease	Maintenance-free	Maintenance-free	0.1kg
Operating temperature range	−15~80℃	−15~80℃	−15~80℃

1. Jack's life depends on installed conditions, loading conditions, frequency of use, operating conditions, lubrication conditions, surrounding environment, maintenance conditions. Please take those factors into account to estimate the product lifetime. Screw jack adopts a trapezoidal screw for its lifting shaft, so it is not possible to calculate its lifetime (estimated travel distance). An indication of the lifetime (estimated travel distance) is
   · RMY and RSY…10km · JOY…5km
2. If your conditions of use are severe, please upsize your model or contact us for special-purpose product.

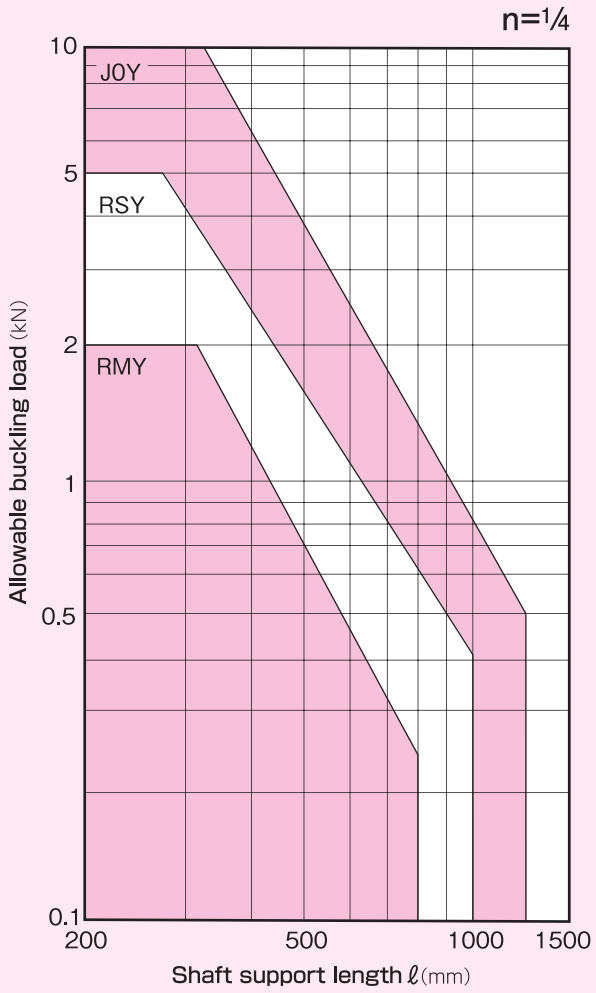
Allowable buckling load

Allowable Buckling Load

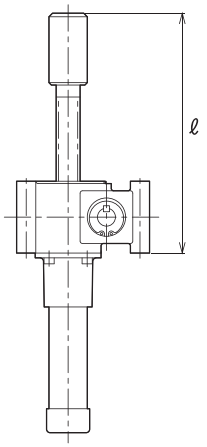
Longer stroke lengths with loads in compression are subject to buckling. Buckling loads differ depending on screw ends and whether the main part is fixed or supported. Please refer to the following graphs, and select the series/size at the intersection of load (vertical axis) and shaft support length (horizontal axis) or above it. To calculate the allowable buckling load, please refer to p.216.

* When loaded in tension, there is no need to consider buckling.

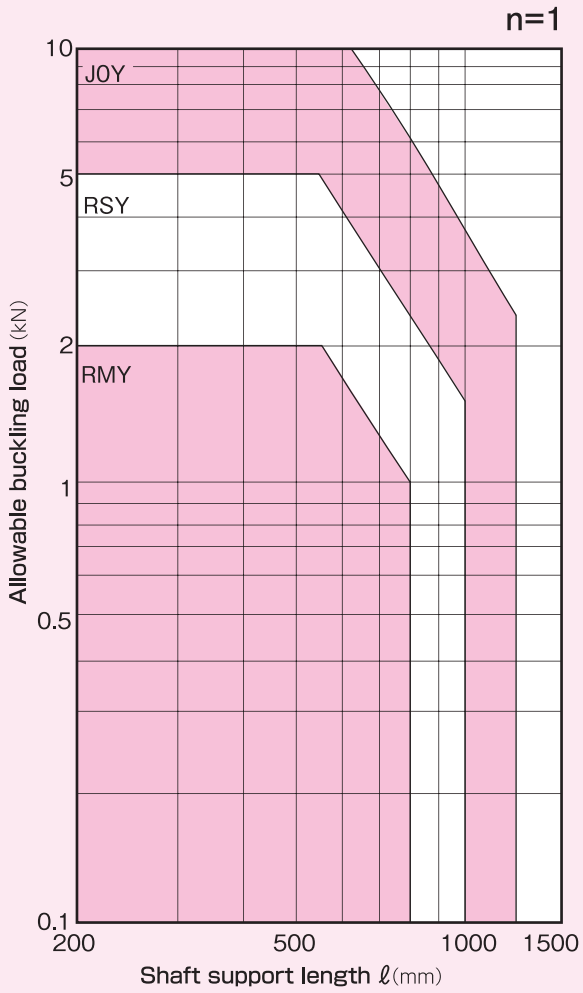
Jack fixed / shaft end free n=1/4



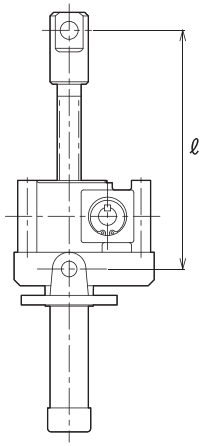
n=¼



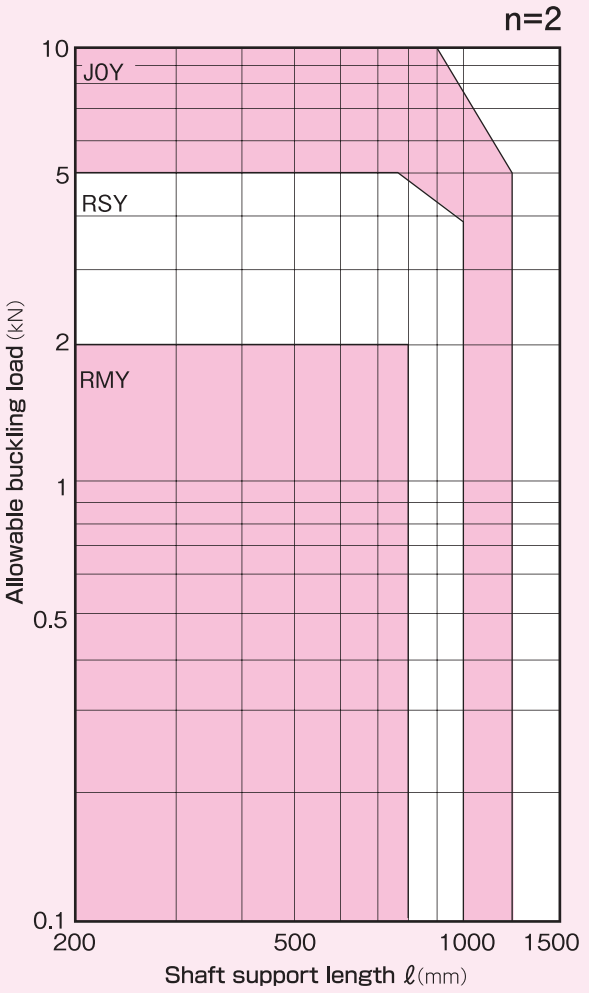
Jack supported / shaft end supported n=1



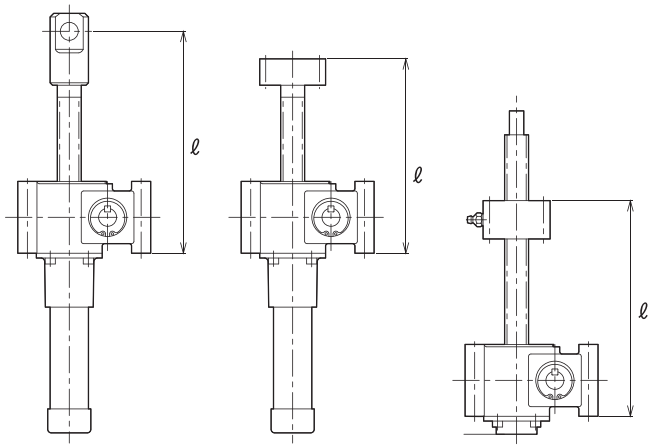
n=1



Jack fixed / shaft end supported n=2

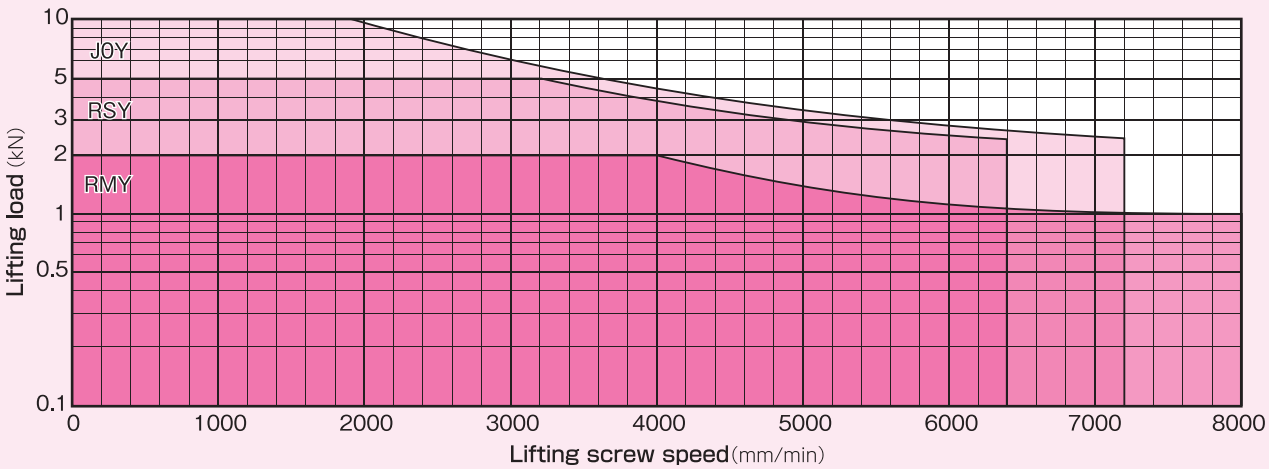


n=2



Lifting load/ Lifting screw speed graphs

Lifting Load / Lifting Screw Speed Graph

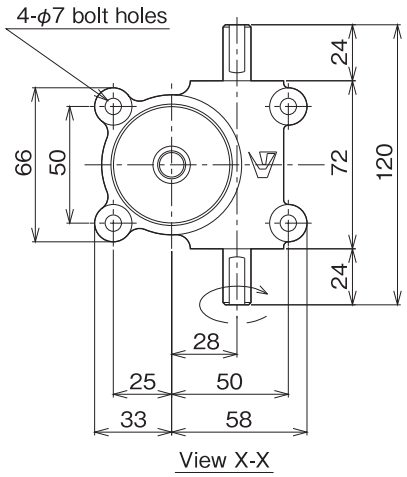


RMY Dimensional Drawing

Dimensional Drawing: RMY Translating High-Lead Screw Jack

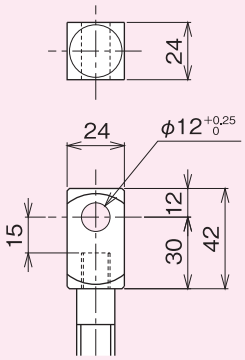
When the input shaft rotates in the direction indicated by an arrow, the lifting screw ascends.

Two-dimensional drawing

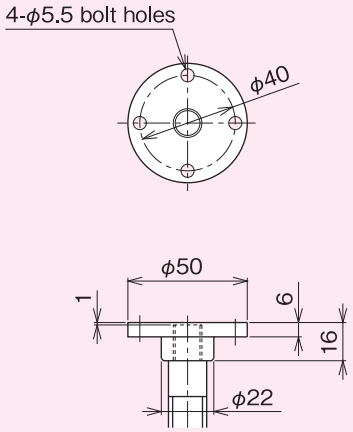


Dimensional drawing of screw end fittings

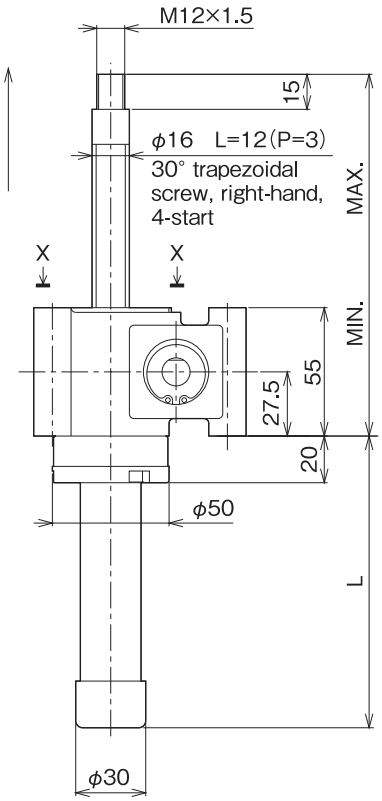
Clevis



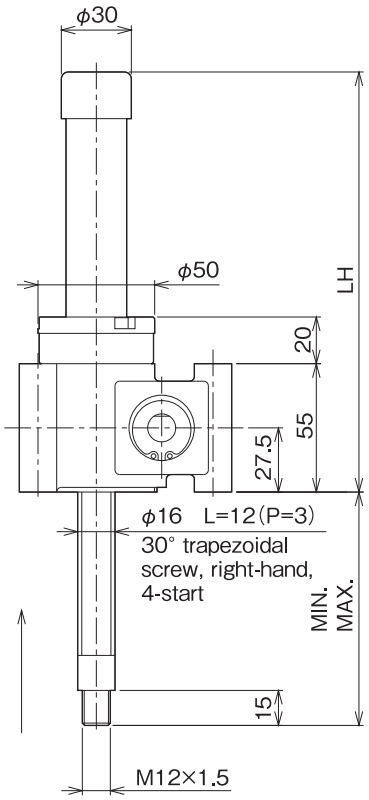
Flange



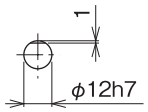
Upright



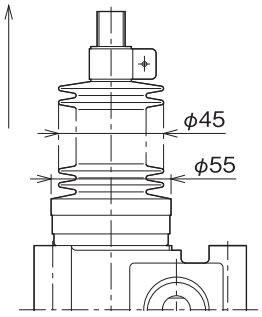
Inverted



Dimensional drawing of input shaft end



Outer diameter of bellows



■RMY High-Lead Screw Jack Measurement Table

Stroke	U: Upright					I: Inverted				
	N: Without bellows		B: With bellows		L	N: Without bellows		B: With bellows		LH
	MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.	
100	80	180	125	225	145	25	125	70	170	200
200	80	280	140	340	245	25	225	85	285	300
300	80	380	155	455	345	25	325	100	400	400
400	80	480	180	580	445	25	425	125	525	500

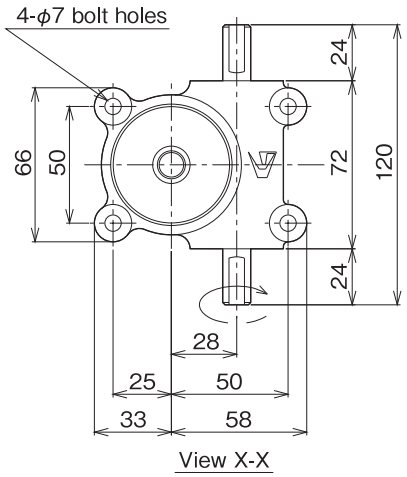
· If your required stroke is not shown in the above table, please consult with us, as we can manufacture what you need.

RMY
Dimensional Drawing

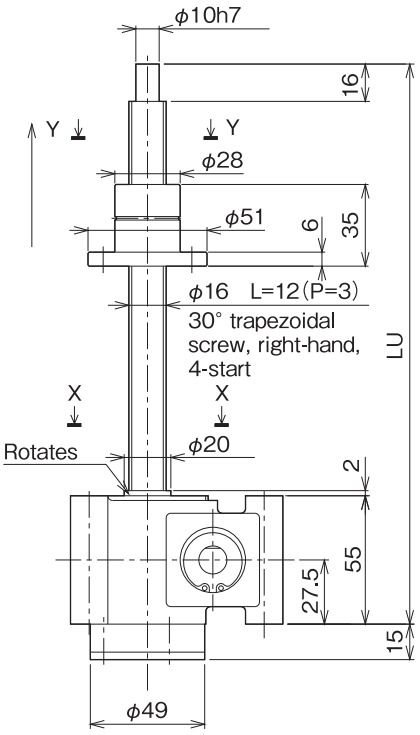
Dimensional Drawing: RMY Traveling Nut Type High-Lead Screw Jack

When the input shaft rotates in the direction indicated by an arrow, the traveling nut ascends.
For information on sizes of the jack with bellows, please contact us.

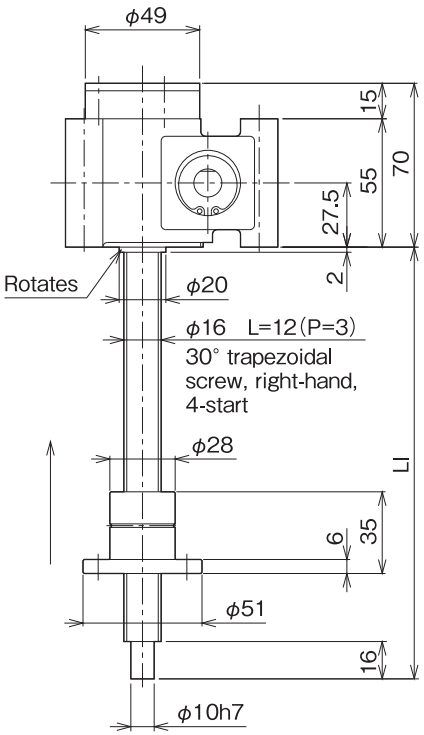
Two-dimensional drawing



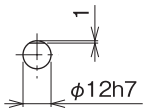
Upright



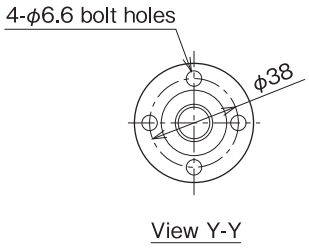
Inverted



Dimensional drawing of input shaft end



Traveling Nut



■Approximate Weight (kg)

Stroke	Translating		Traveling nut type
	Without bellows	With bellows	
100	1.1	1.3	1.4
200	1.3	1.5	1.6
300	1.4	1.7	1.7
400	1.6	1.9	1.9

■RMY

Stroke	Traveling nut type	
	U: Upright	I: Inverted
	LU	LI
100	240	185
200	340	285
300	440	385
400	540	485

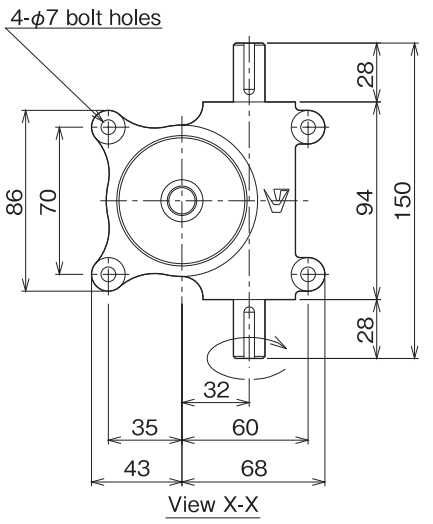
· If your required stroke is not shown in the above table, please consult with us, as we can manufacture what you need.

RSY Dimensional Drawing

Dimensional Drawing: RSY Translating High-Lead Screw Jack

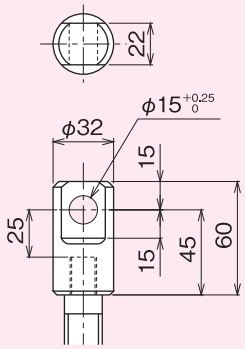
When the input shaft rotates in the direction indicated by an arrow, the lifting screw ascends.

Two-dimensional drawing

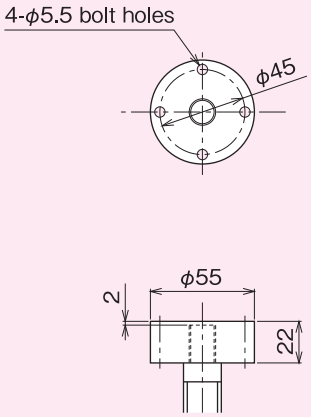


Dimensional drawing of screw end fittings

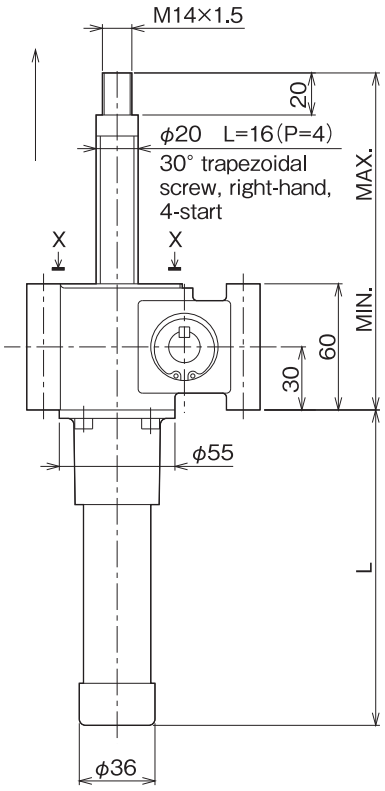
Clevis



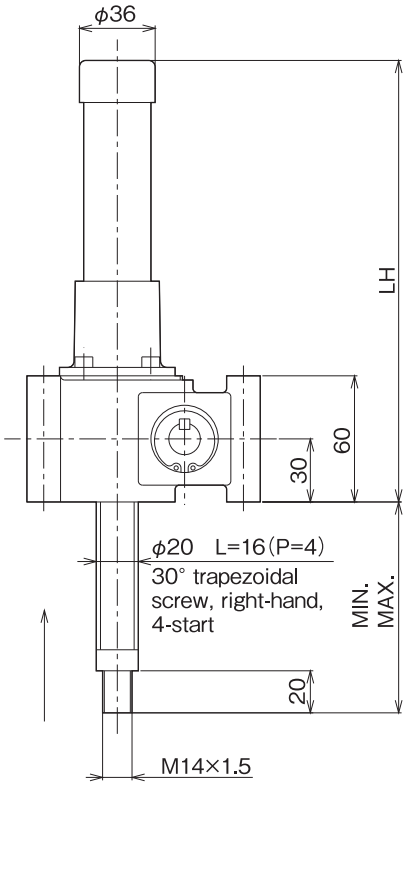
Flange



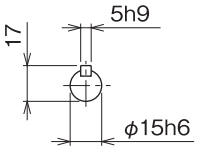
Upright



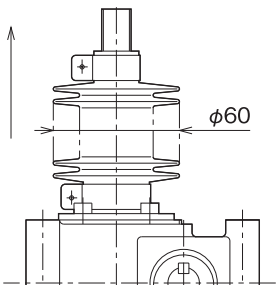
Inverted



Dimensional drawing of input shaft end



Outer diameter of bellows



■RSY High-Lead Screw Jack Measurement Table

Stroke	U: Upright					I: Inverted				
	N: Without bellows		B: With bellows		L	N: Without bellows		B: With bellows		LH
	MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.	
100	90	190	150	250	150	30	130	90	190	210
200	90	290	150	350	250	30	230	90	290	310
300	90	390	180	480	350	30	330	120	420	410
400	90	490	180	580	450	30	430	120	520	510

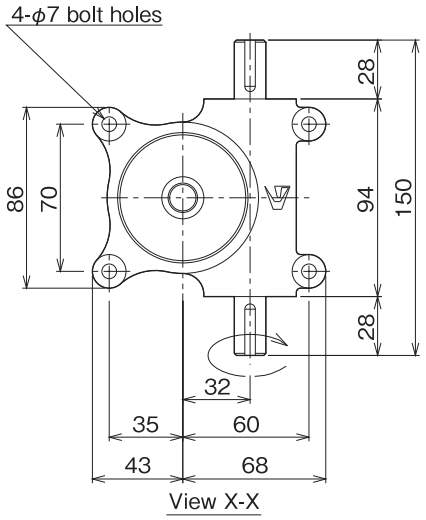
· If your required stroke is not shown in the above table, please consult with us, as we can manufacture what you need.

RSY
Dimensional Drawing

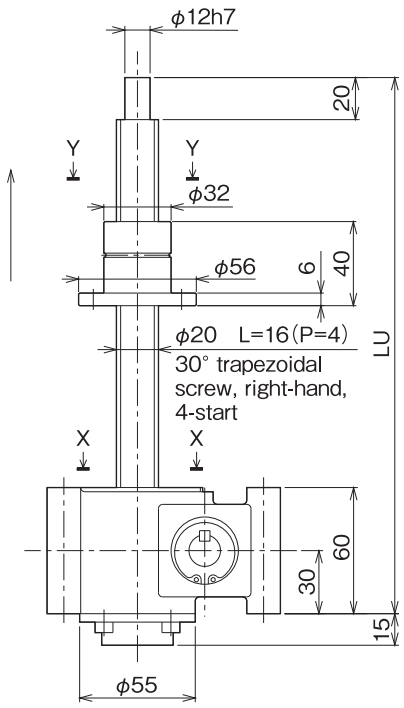
Dimensional Drawing: RSY Traveling Nut Type High-Lead Screw Jack

When the input shaft rotates in the direction indicated by an arrow, the traveling nut ascends.
For information on sizes of the jack with bellows, please contact us.

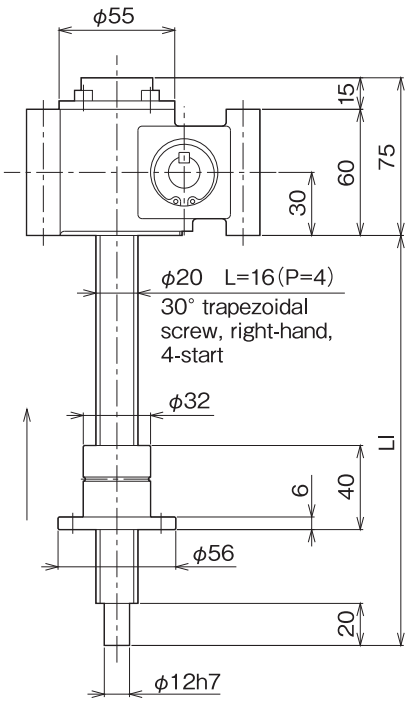
Two-dimensional drawing



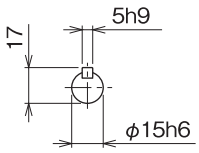
Upright



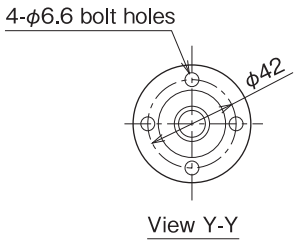
Inverted



Dimensional drawing of input shaft end



Traveling Nut



■Approximate Weight (kg)

Stroke	Translating		Traveling nut type
	Without bellows	With bellows	
100	1.9	2.2	2.6
200	2.1	2.4	2.8
300	2.3	2.7	3.1
400	2.5	2.9	3.3

■RSY

Stroke	Traveling nut type	
	U: Upright	I: Inverted
	LU	LI
100	260	200
200	360	300
300	460	400
400	560	500

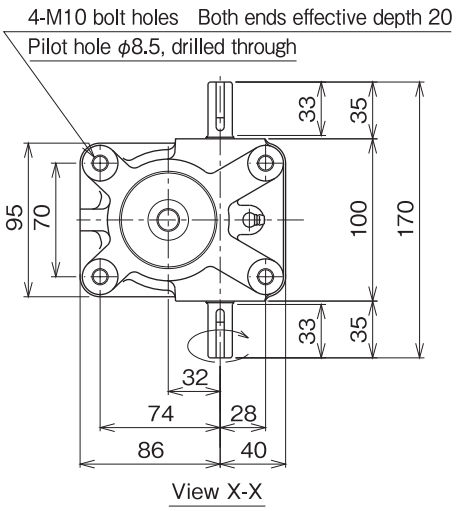
· If your required stroke is not shown in the above table, please consult with us, as we can manufacture what you need.

JOY Dimensional Drawing

Dimensional Drawing: JOY Translating High-Lead Screw Jack

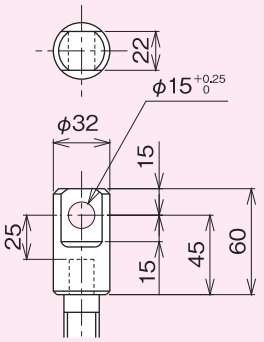
When the input shaft rotates in the direction indicated by an arrow, the lifting screw ascends.

Two-dimensional drawing

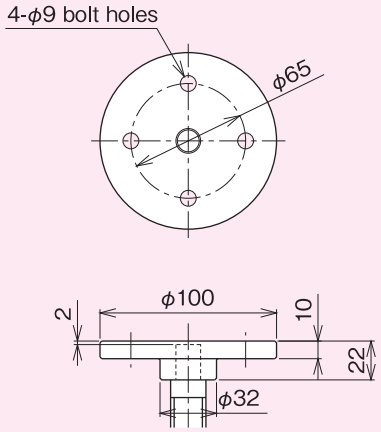


Dimensional drawing of screw end fittings

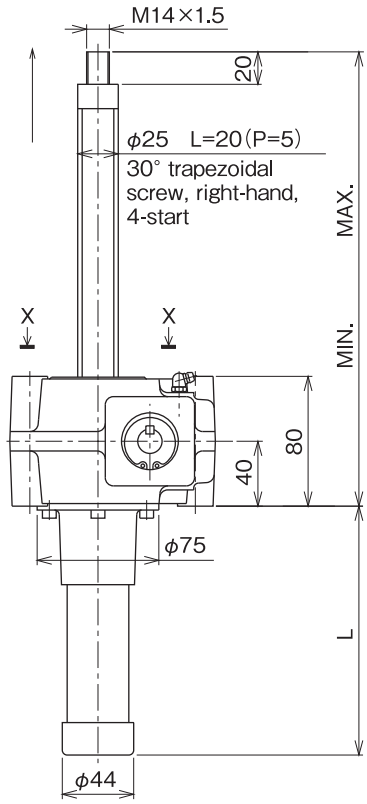
Clevis



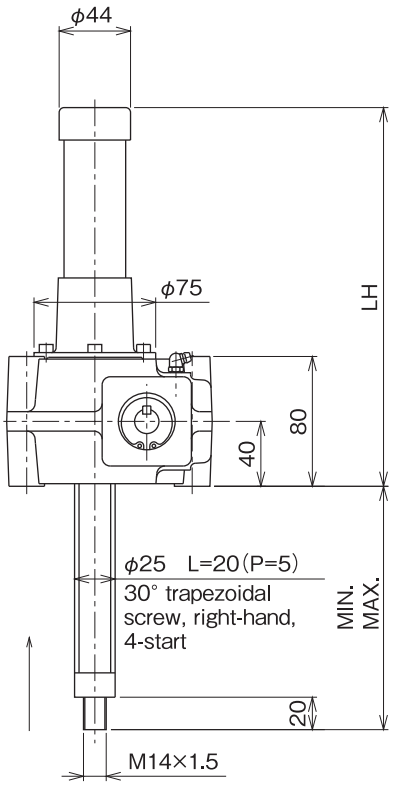
Flange



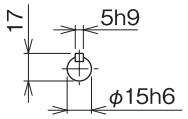
Upright



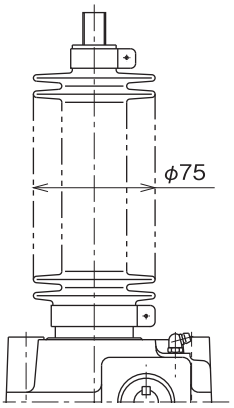
Inverted



Dimensional drawing of input shaft end



Outer diameter of bellows



■JOY High-Lead Screw Jack Measurement Table

Stroke	U: Upright					I: Inverted				
	N: Without bellows		B: With bellows		L	N: Without bellows		B: With bellows		LH
	MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.	
100	118	218	160	260	150	38	138	80	180	230
200	118	318	160	360	250	38	238	80	280	330
300	118	418	195	495	350	38	338	115	415	430
400	118	518	195	595	450	38	438	115	515	530
500	118	618	195	695	550	38	538	115	615	630
600	118	718	235	835	650	38	638	155	755	730
800	118	918	235	1035	850	38	838	155	955	930

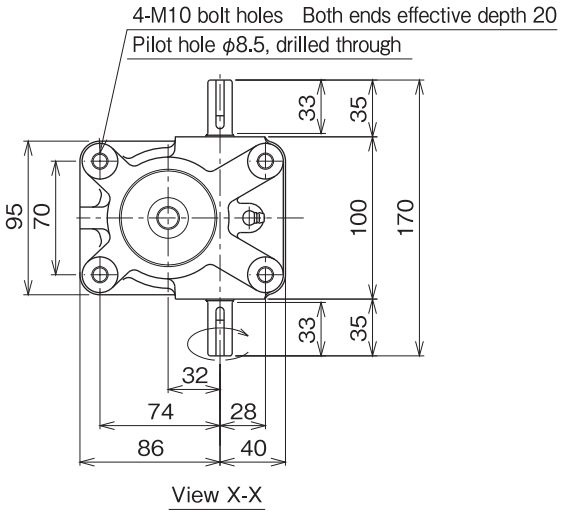
· If your required stroke is not shown in the above table, please consult with us, as we can manufacture what you need.

JOY
Dimensional Drawing

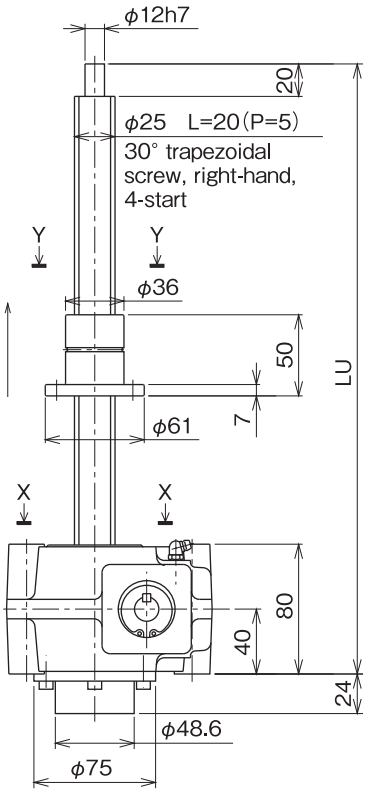
Dimensional Drawing: JOY Traveling Nut Type High-Lead Screw Jack

When the input shaft rotates in the direction indicated by an arrow, the traveling nut ascends.
For information on sizes of the jack with bellows, please contact us.

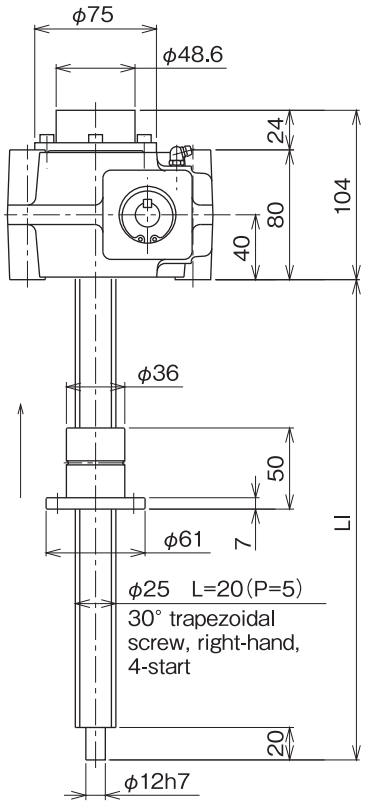
Two-dimensional drawing



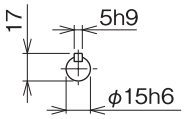
Upright



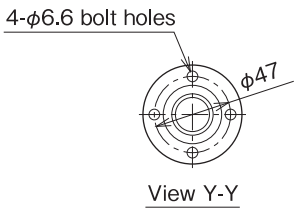
Inverted



Dimensional drawing of input shaft end



Traveling Nut



■Approximate Weight (kg)

Stroke	Translating		Traveling nut type
	Without bellows	With bellows	
100	3.5	3.8	4.1
200	4	4.3	4.3
300	4.5	4.9	4.5
400	5	5.4	4.7
500	5.5	5.9	4.9
600	6	6.4	5.1
800	7	7.4	5.5

■JOY

Stroke	Traveling nut type	
	U: Upright	I: Inverted
	LU	LI
100	290	210
200	390	310
300	490	410
400	590	510
500	690	610
600	790	710
800	990	910

· If your required stroke is not shown in the above table, please consult with us, as we can manufacture what you need.