

Small Screw Jack

High-performance, lightweight and compact

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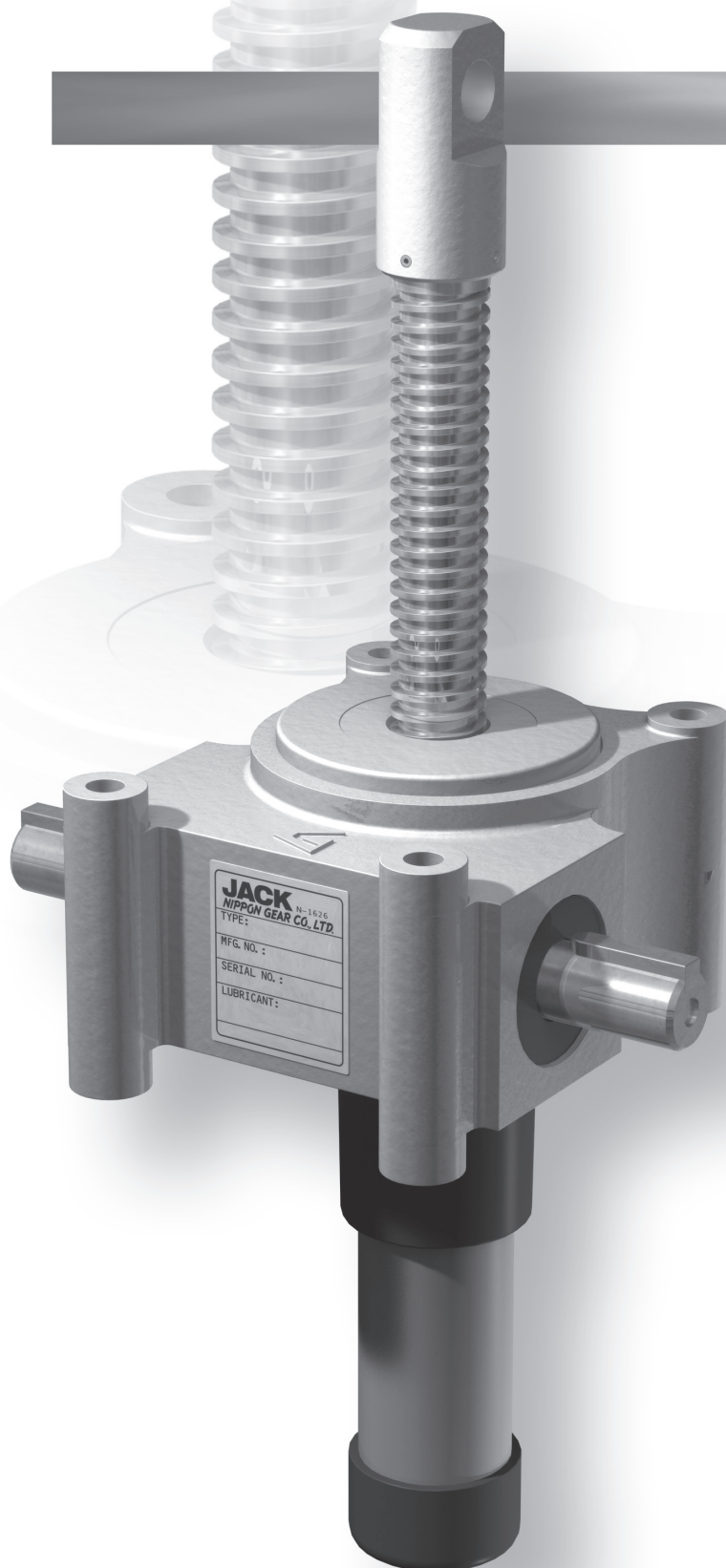
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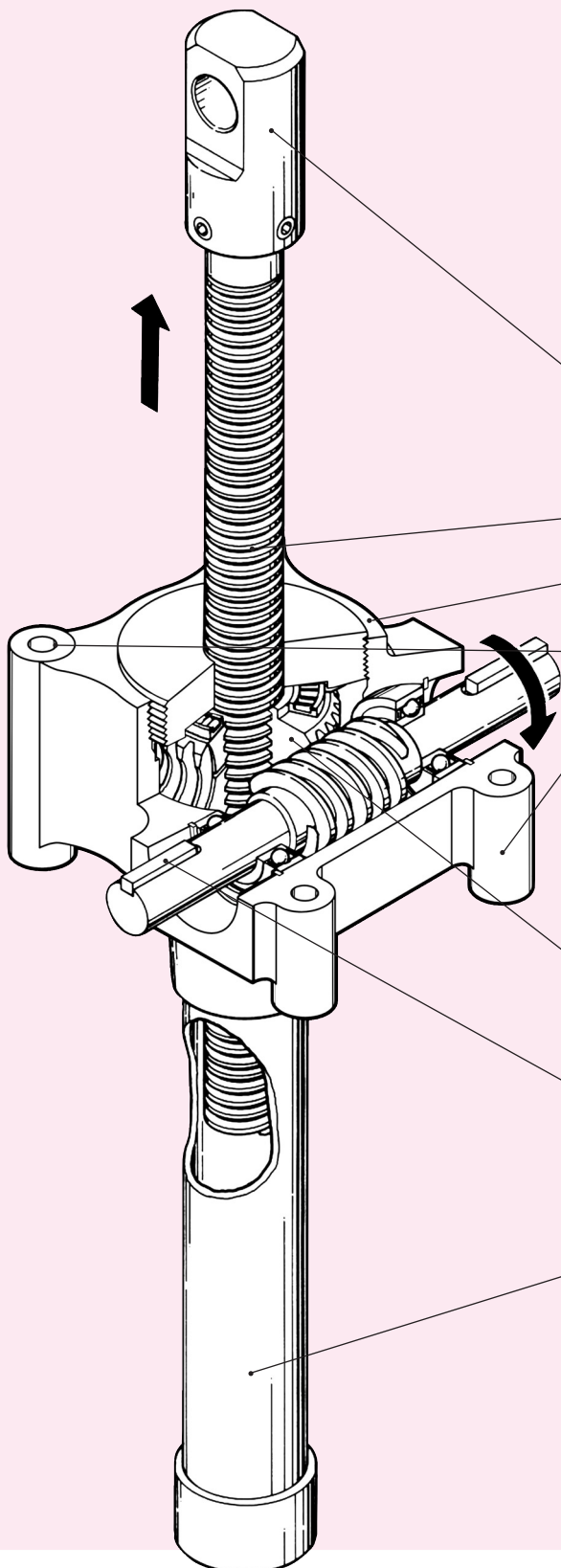
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Small Screw Jack: Structure & Features

Extremely compact, lightweight, and easy-to-use jacks, delivering high performance similar to standard screw jack

Structural Drawing: Upright Translating Small Screw Jack



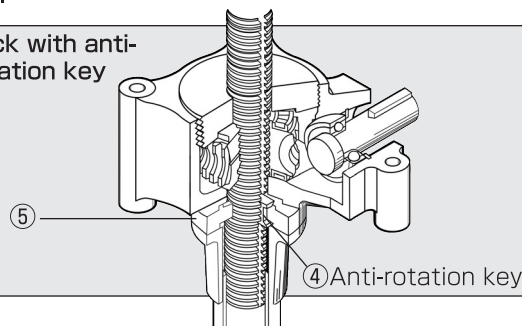
- The lightest weight possible is achieved, while securing sufficient strength.
- The housing is compact and space-efficient; and its shape and mounting holes are designed to allow either its upper or lower surface to be attached to your device.
- The jack consists of a high-precision worm gear and a trapezoidal screw; and its self-locking function works at any position within a stroke.
- 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.

At the lifting screw end, various end fittings (e.g. clevis in the drawing) can be attached.

- ① The lifting screw is made of carbon steel (right-hand thread).
- ② The housing is made of lightweight aluminum alloy (the main body not painted; silver color).

Mounting bolts can be attached to either the upper or lower surface.

Jack with anti-rotation key



The adoption of the worm wheel using special copper alloy significantly increased the input rotation speed, allowable power, and product lifetime (right-hand thread).

The shape of the Input shaft of RMG series: D-cut
The Input shaft key of RSG series: compliant to the new JIS

Part Names

#	Part name
①	Lifting screw
②	Sub-assy
③	Lifting screw cover
④	Anti-rotation key
⑤	Key block

Specification

Standard Specifications

Series/size code		RMG	RSG
Capacity		2kN	5kN
Lifting screw diameter		16mm	20mm
Lifting screw lead		3mm	4mm
Worm gear ratio	H	3	5
	L	—	24
Efficiency	H	0.22	0.22
	L	—	0.13
Maximum allowable power per jack	H	0.32kW	0.63kW
	L	—	0.25kW
Input shaft torque at no load (b)		0.07N·m	0.15N·m
Torque coefficient (a)	H	0.73	0.57
	L	—	0.21
Required input torque at maximum load	H	1.5N·m	3.0N·m
	L	—	1.2N·m
Speed coefficient (c) (screw lead per rotation of input shaft)	H	1.0mm	0.8mm
	L	—	0.17mm
Maximum allowable input rotation speed	H	2000min ⁻¹	2000min ⁻¹
	L	—	2000min ⁻¹
Maximum input rotation speed at maximum load	H	2000min ⁻¹	2000min ⁻¹
	L	—	2000min ⁻¹
Anti-rotation key torque at maximum load		3.5N·m	7.5N·m
Input shaft allowable overhang load		120N	300N
Amount of filled grease		Maintenance-free	Maintenance-free
Operating temperature range		-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

· RMG and RSG...10km

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

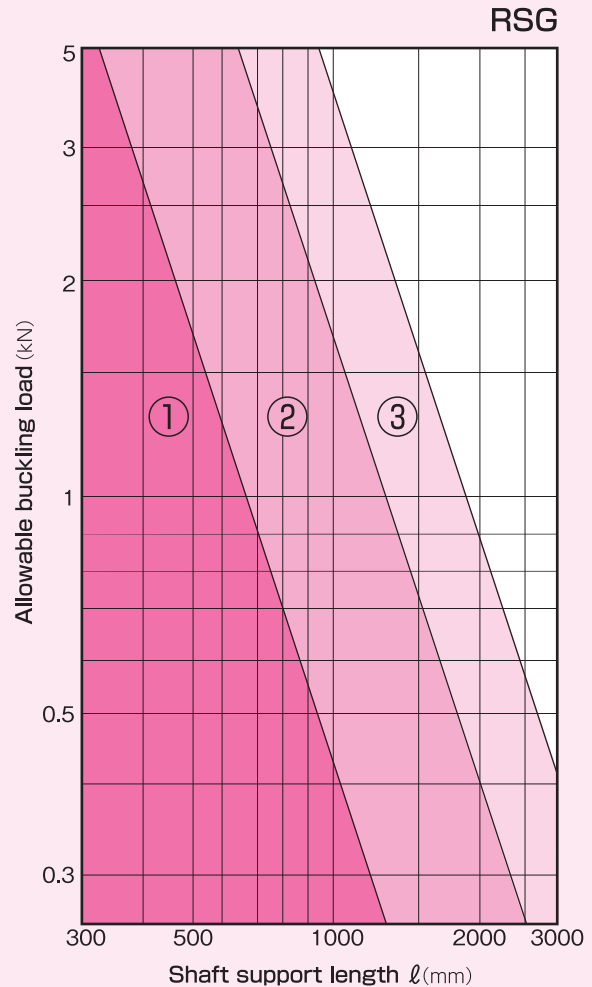
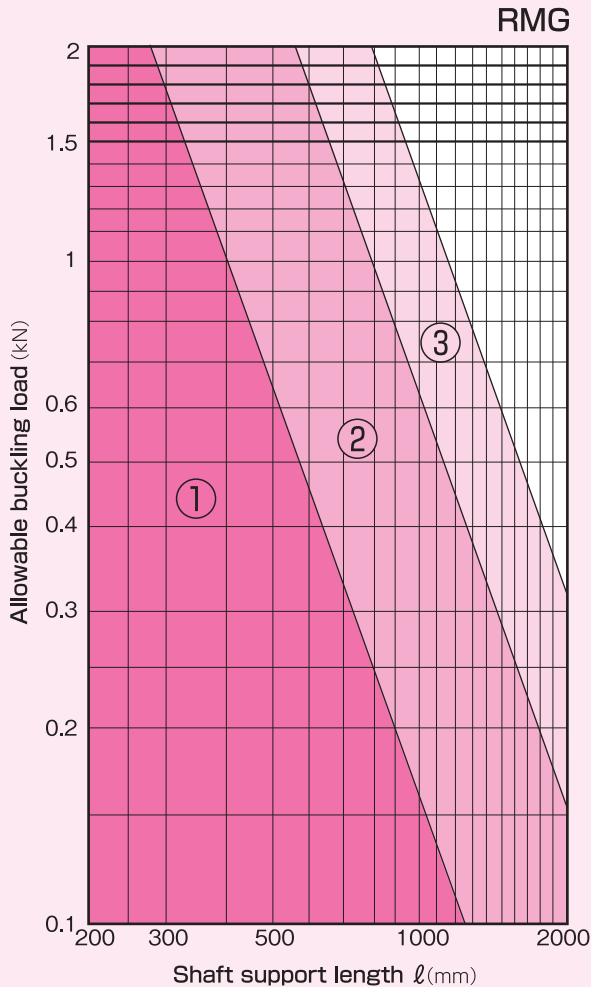
Longer stroke lengths with loads in compression are subject to buckling. Buckling loads differ depending on screw ends and whether the main part is fixed or supported. Please refer to the following graphs, and select the series/size at the intersection of load (vertical axis) and shaft support length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

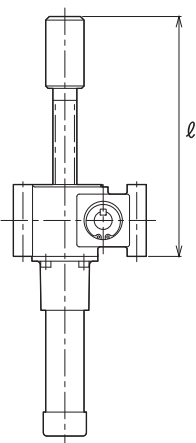
①: Jack fixed / shaft end free $n=1/4$

②: Jack supported / shaft end supported $n=1$

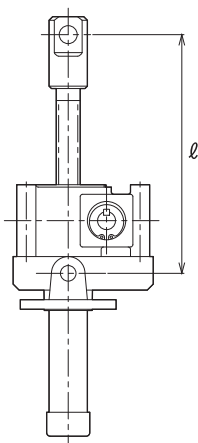
③: Jack fixed / shaft end supported $n=2$



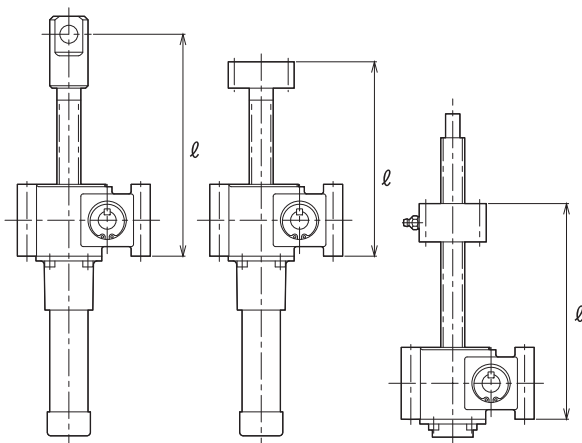
$n=1/4$



$n=1$

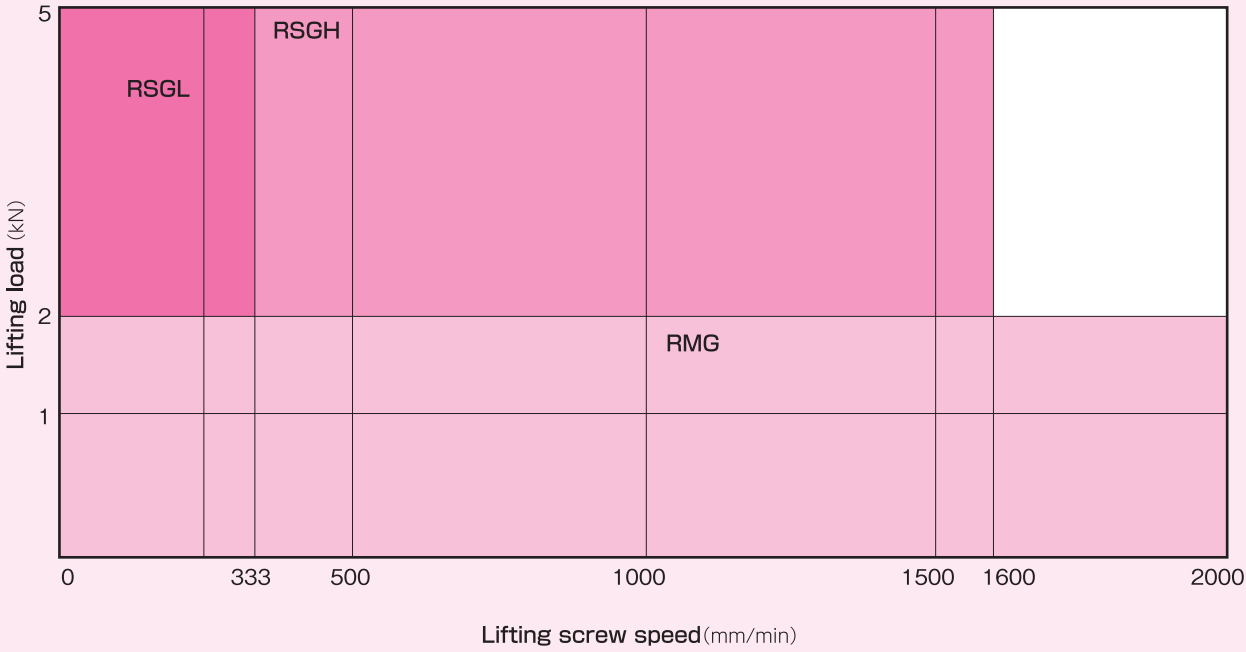


$n=2$



Lifting load/
Lifting screw
speed
graphs

Lifting Load / Lifting Screw Speed Graph



Allowable
side force

Allowable Side Force

■ Upright (N)

Stroke (mm)	100	200	300	400	500
Series					
RMG	120	80	60	50	—
RSG	200	130	90	70	60

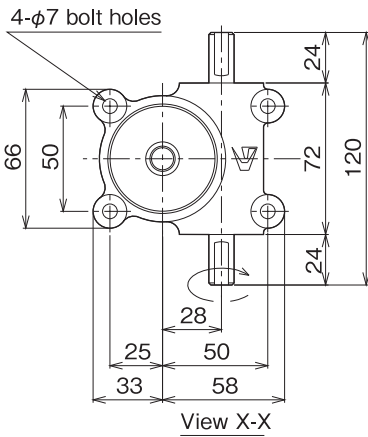
■ Inverted (N)

Stroke (mm)	100	200	300	400	500
Series					
RMG	120	80	60	50	—
RSG	170	110	80	60	50

Dimensional Drawing: RMG Translating Small Screw Jack

When the input shaft rotates in the direction indicated by an arrow, the lifting screw ascends.
 Figures in brackets are for the model with anti-rotation key.

Two-dimensional drawing

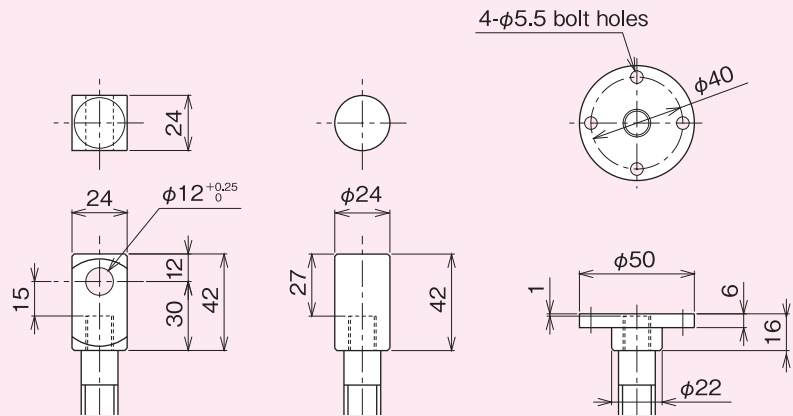


Dimensional drawing of screw end fittings

Clevis

Plain end

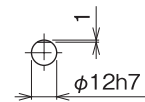
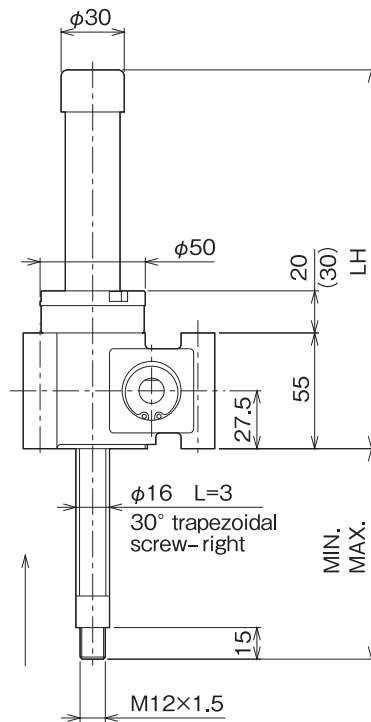
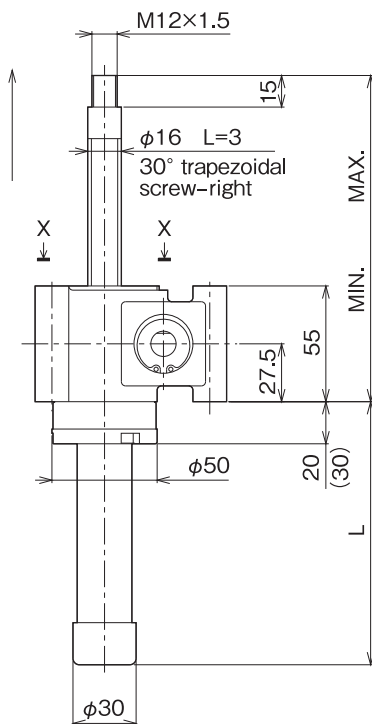
Flange



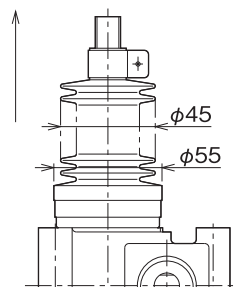
Upright

Inverted

Dimensional drawing of input shaft end



Outer diameter of bellows



RMG Screw Jack Measurement Table

Stroke	U: Upright										I: Inverted									
	N: Without anti-rotation key					K: With anti-rotation key					N: Without anti-rotation key					K: With anti-rotation key				
	N: Without bellows		B: With bellows		L	N: Without bellows		B: With bellows		L	N: Without bellows		B: With bellows		LH	N: Without bellows		B: With bellows		LH
	MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.	
100	80	180	125	225	125	80	180	125	225	135	25	125	70	170	180	25	125	70	170	190
200	80	280	140	340	225	80	280	140	340	235	25	225	85	285	280	25	225	85	285	290
300	80	380	155	455	325	80	380	155	455	335	25	325	100	400	380	25	325	100	400	390
400	80	480	180	580	425	80	480	180	580	435	25	425	125	525	480	25	425	125	525	490

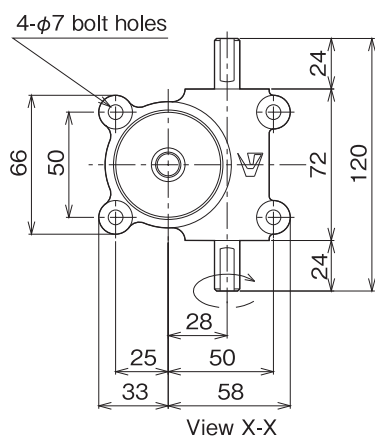
If your required stroke is not shown in the above table, please consult with us, as we can manufacture what you need.

RMG
 Dimensional
 Drawing

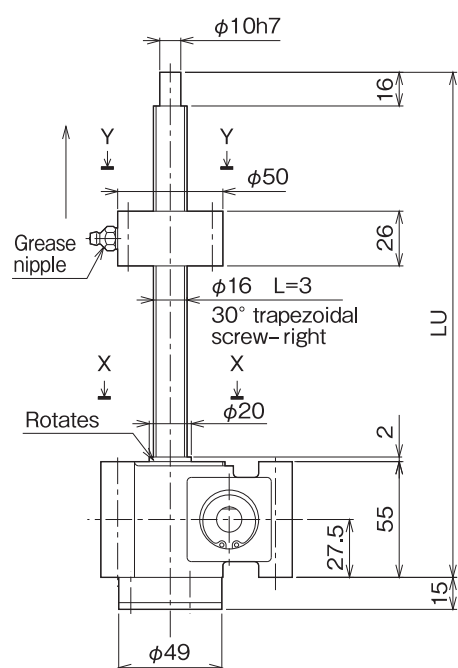
Dimensional Drawing: RMG Traveling Nut Type Small Screw Jack

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.

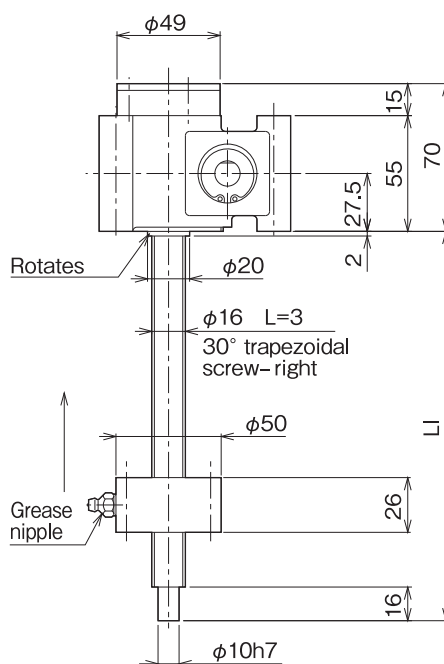
Two-dimensional drawing



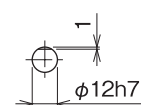
Upright



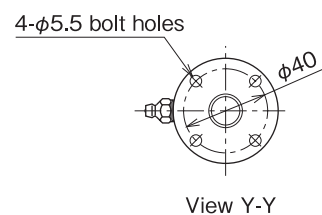
Inverted



Dimensional drawing of input shaft end



Traveling Nut



Approximate Weight (kg)

Stroke	Translating				Traveling nut type
	Without bellows		With bellows		
	Without anti-rotation key	With anti-rotation key	Without anti-rotation key	With anti-rotation key	
100	1	1.1	1.1	1.2	1.5
200	1.2	1.3	1.3	1.4	1.7
300	1.4	1.5	1.5	1.6	1.9
400	1.6	1.7	1.7	1.8	2.1

RMG

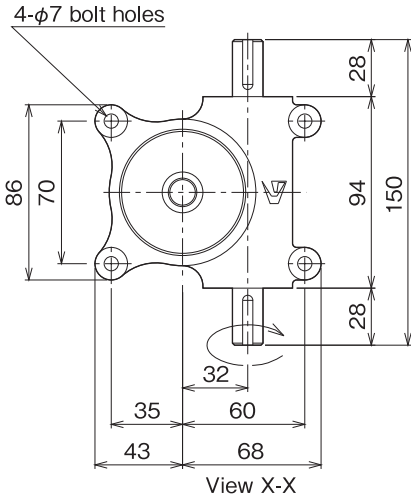
Stroke	Traveling nut type	
	U: Upright	I: Inverted
	LU	LI
100	240	185
200	340	285
300	440	385
400	540	485

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

Dimensional Drawing: RSG Translating Small Screw Jack

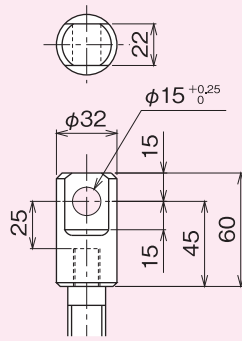
When the input shaft rotates in the direction indicated by an arrow, the lifting screw ascends.

Two-dimensional drawing

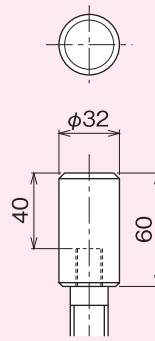


Dimensional drawing of screw end fittings

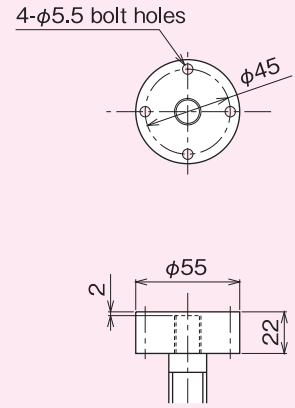
Clevis



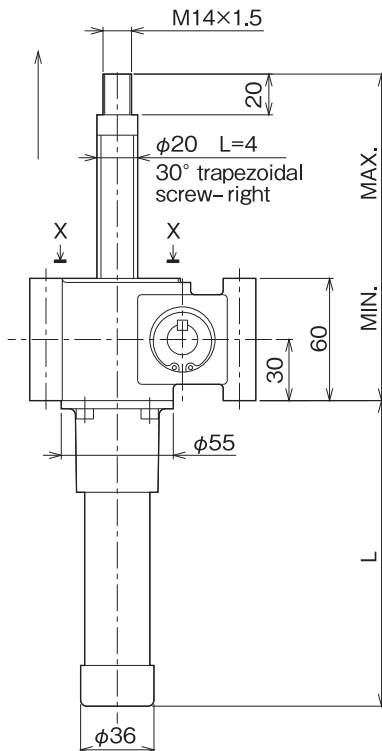
Plain end



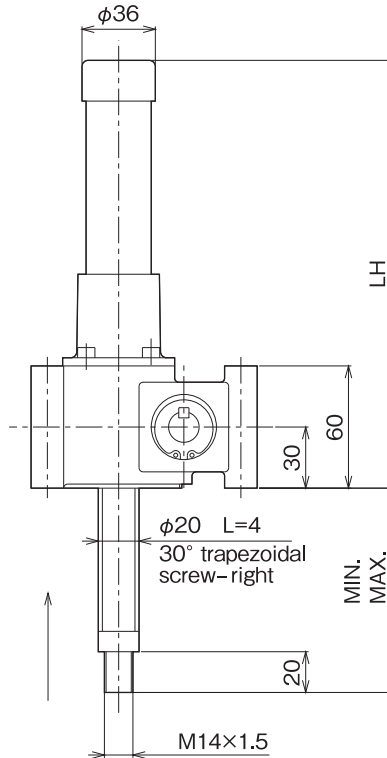
Flange



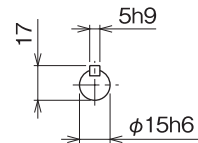
Upright



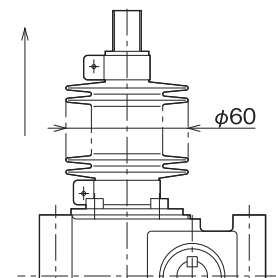
Inverted



Dimensional drawing of input shaft end



Outer diameter of bellows



RSG Screw Jack Measurement Table

Stroke	U: Upright										I: Inverted									
	N: Without anti-rotation key					K: With anti-rotation key					N: Without anti-rotation key					K: With anti-rotation key				
	N: Without bellows		B: With bellows		L	N: Without bellows		B: With bellows		L	N: Without bellows		B: With bellows		LH	N: Without bellows		B: With bellows		LH
	MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.	
100	90	190	150	250	150	90	190	150	250	160	30	130	90	190	210	30	130	90	190	220
200	90	290	150	350	250	90	290	150	350	260	30	230	90	290	310	30	230	90	290	320
300	90	390	180	480	350	90	390	180	480	360	30	330	120	420	410	30	330	120	420	420
400	90	490	180	580	450	90	490	180	580	460	30	430	120	520	510	30	430	120	520	520

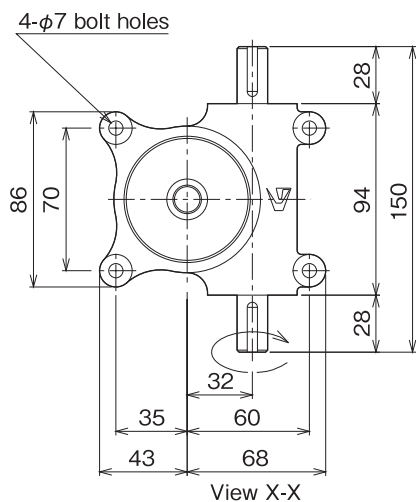
If your required stroke is not shown in the above table, please consult with us, as we can manufacture what you need.

RSG
Dimensional
Drawing

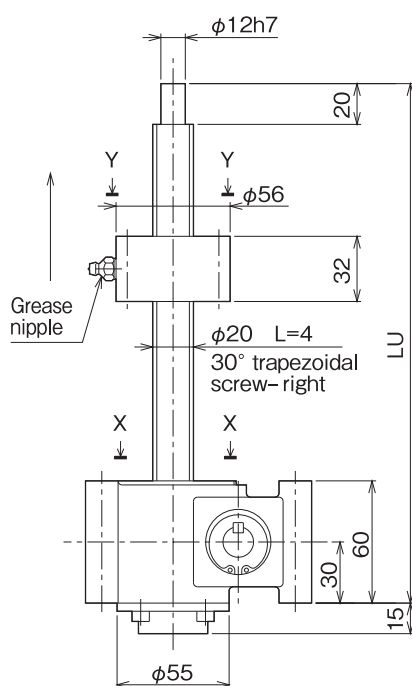
Dimensional Drawing: RSG Traveling Nut Type Small Screw Jack

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.

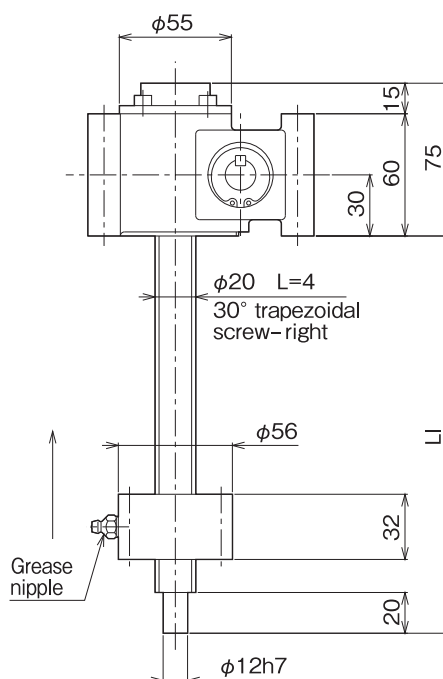
Two-dimensional drawing



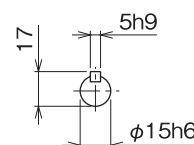
Upright



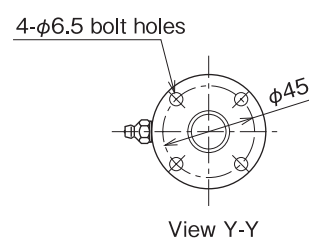
Inverted



Dimensional drawing of input shaft end



Traveling Nut



■ Approximate Weight (kg)

Stroke	Translating				Traveling nut type
	Without bellows		With bellows		
	Without anti-rotation key	With anti-rotation key	Without anti-rotation key	With anti-rotation key	
100	1.7	1.9	2	2.1	2.6
200	1.9	2.1	2.2	2.3	2.8
300	2.1	2.3	2.5	2.6	3.1
400	2.3	2.5	2.7	2.8	3.3

■ RSG

Stroke	Traveling nut type	
	U: Upright	I: Inverted
	LU	LI
100	255	195
200	355	295
300	455	395
400	555	495

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

