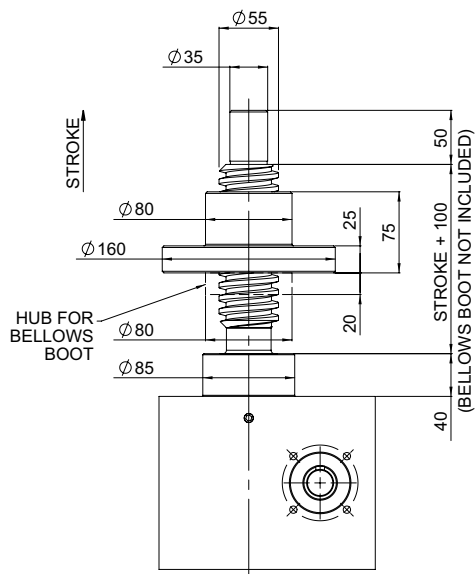
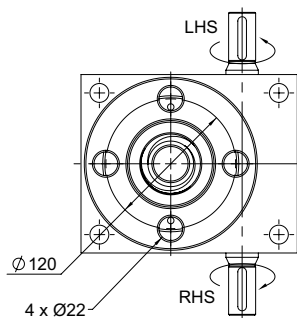
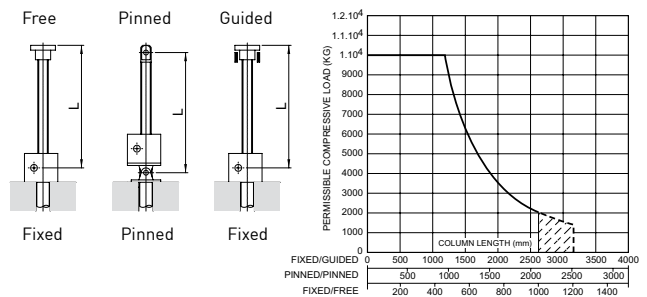


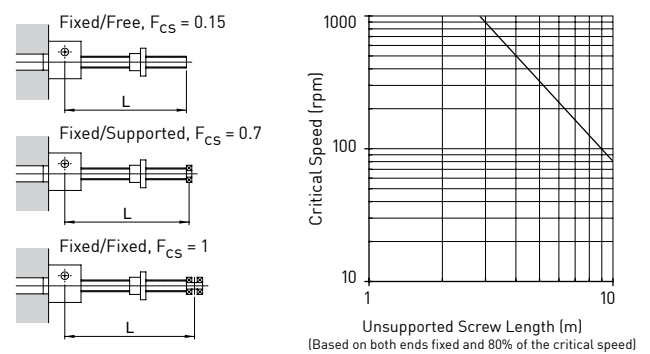
CMR100



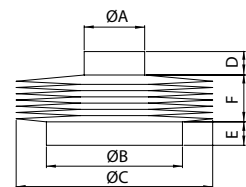
Column Strength



Critical Screw Speed



Bellows Boot



	ØA	ØB	ØC	D	E
CMT100	65	85	150	15	15
CMT100	80	85	150	15	15

Stroke	1 - 500	501 - 1000	1001 - 1500	1500 - 2000
F	30	50	75	140*

\*control tapes fitted ØC=150

Accessories & Options

	Anti-Backlash		End Fittings		Rotary Limit Switch Adaptor
	Anti-Rotation (Keyed)		Limit Switches		Double Hub Nut
	Safety Nut		Motor Adaptors		Drives
	Trunnion Mounts		Corrosion Protection		Secondary Guide

Any questions? Please contact us.

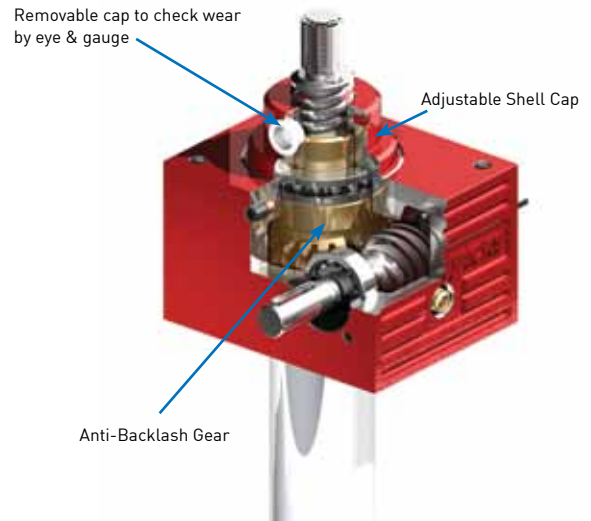
# C-SERIES

## Anti-Backlash for Screw Jacks

The Anti-Backlash feature provides a reliable method to regulate the axial backlash in a screw jack for applications where there is a reversal of loading from tension to compression. The amount of backlash between the screw and worm gear nut can be adjusted (adjust shell cap) to a desired amount or a practical minimum. To avoid binding and excessive wear do not adjust backlash to less than 0.025mm.

The Anti-Backlash feature also acts as a safety device, providing dual nut load carrying unit, when the worm gear becomes worn.

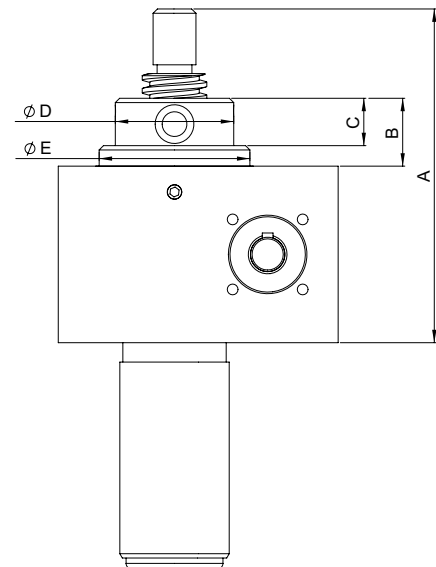
A visual wear indicator is included as standard on all models and a "feeler" gauge can be used to measure the wear. This can be upgraded to use a sensor on request (consult Power Jacks).



### Dimensions for Anti-Backlash

The dimensions for these screw jacks are the same as the standard units except those detailed below.

Model	CMT010-R	CMT025-R	CMT050-R	CMT100-R
A	140	155	205	260
B	32	32	40	50
C	10	22	28	37
ØD	39	55	70	85
ØE	54	70	95	110



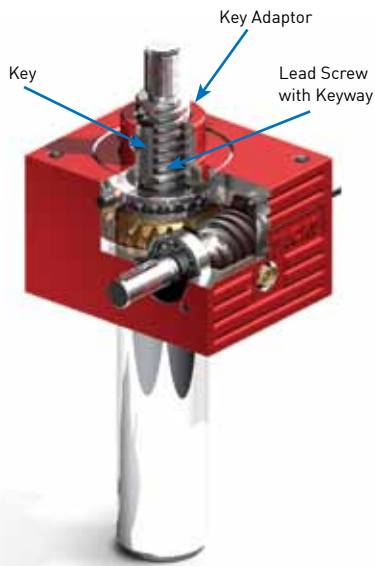
### Performance for Anti-Backlash

Model		CMT010-R		CMT025-R		CMT050-R		CMT100-R	
Lead Screw	Lead (mm)	5	10	6	12	9	18	12	24
Start-Up Torque at Full Load (Nm)	Option 1	7.5	10.4	21.9	29.2	62	85	129	175
	Option 2	3	4.6	9.8	13.0	28	39	67	90
Static Efficiency	Option 1	0.212	0.305	0.181	0.272	0.192	0.283	0.185	0.274
	Option 2	0.120	0.173	0.102	0.154	0.105	0.154	0.119	0.175
Dynamic Efficiency	Option 1	0.275	0.381	0.238	0.344	0.253	0.358	0.245	0.349
	Option 2	0.174	0.242	0.151	0.218	0.155	0.219	0.171	0.244
Weight (kg) – stroke = 150mm		3.4		8.8		20.2		36.8	

**Note:** Efficiency values for standard grease lubricated worm gear box and lifting screw.

# C-SERIES

## Anti-Rotation (Keyed) for Screw Jacks



The Anti-Rotation feature for translating screw jacks stops the lead screw from rotating without the need for end fixing. This is done by keying the lead screw. However the keyway in the screw will cause slightly greater than normal wear on the internal threads of the worm gear.

### Benefits:

- Compact unit integrates anti-rotation into gearbox
- Dimensions are the same as the standard translating screw jack
- Standard round cover pipe for easy installation
- Proven industrial anti-rotation design

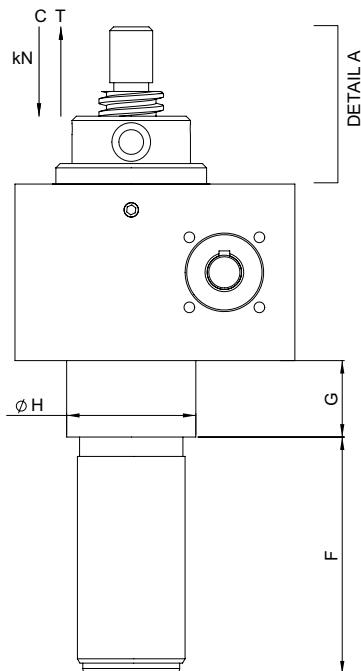
## Performance for Anti-Rotation

Model		CMT010-K		CMT025-K		CMT050-K		CMT100-K	
Lead Screw	Lead (mm)	5	10	6	12	9	18	12	24
Start-Up Torque at Full Load (Nm)	Option 1	7.2	9.9	20.8	27.7	59	80	122	165
	Option 2	3.2	4.4	9.2	12.2	27	37	64	86
Static Efficiency	Option 1	0.224	0.322	0.191	0.287	0.203	0.299	0.196	0.290
	Option 2	0.124	0.182	0.107	0.162	0.111	0.163	0.125	0.185
Dynamic Efficiency	Option 1	0.291	0.403	0.251	0.364	0.267	0.378	0.258	0.368
	Option 2	0.184	0.255	0.159	0.230	0.164	0.232	0.180	0.257

**Note:** Efficiency values for standard grease lubricated worm gear box and lifting screw. Weight is the same as standard unit.

## Anti-Rotation with Anti-Backlash or Safety Nut

The anti-backlash and safety nut features can be combined with the anti-rotation feature into one screw jack. For this option the anti-rotation device is located in-line with the cover pipe.



## Dimensions for Anti-Backlash with Anti-Rotation (Keyed)

Model	CMT010-Y	CMT025-Y	CMT050-Y	CMT100-Y
F	Stroke +5	Stroke +10	Stroke +15	Stroke +20
G	30	35.5	40	48
ØH	42.5	60	75	90

## Dimensions for Safety Nut with Anti-Rotation (Keyed)

### Load Direction - Tension (T)

Model	CMT010-KT	CMT025-KT	CMT050-KT	CMT100-KT
F	Stroke +5	Stroke +10	Stroke +15	Stroke +20
G	35	50	59	57
ØH	45	55	70	89

Detail A = Same as standard CMT screw jack

### Load Direction - Compression (C)

Model	CMT010-KC	CMT025-KC	CMT050-KC	CMT100-KC
F	Stroke +5	Stroke +10	Stroke +15	Stroke +20
G	30	35.5	40	48
ØH	42.5	60	75	90

Detail A = Same as standard safety nut screw jack with compression load (Refer P22)

## Performance for Anti-Backlash with Anti-Rotation

Model		CMT010-Y		CMT025-Y		CMT050-Y		CMT100-Y	
Lead Screw	Lead (mm)	5	10	6	12	9	18	12	24
Start-Up Torque at Full Load (Nm)	Option 1	8.3	11.5	24.8	33.0	65.6	89.3	136	184
	Option 2	3.8	5.3	10.3	13.7	30.0	40.9	70.3	95.2
Static Efficiency	Option 1	0.201	0.290	0.172	0.258	0.182	0.269	0.176	0.263
	Option 2	0.114	0.164	0.097	0.146	0.100	0.146	0.113	0.166
Dynamic Efficiency	Option 1	0.261	0.362	0.226	0.330	0.240	0.340	0.233	0.332
	Option 2	0.165	0.230	0.143	0.207	0.147	0.208	0.162	0.232
Weight (kg) - stroke = 150mm		3.15		8.75		20		37.3	

**Note:** Efficiency values for standard grease lubricated worm gear box and lifting screw. Anti-Rotation with Safety Nut performance is the same as the Anti-Rotation unit.

# C-SERIES

## with Safety Nut

Power Jacks metric machine screw jacks can be fitted with a safety nut, which provides 2 safety roles:

1. In the event of excessive wear on the nut thread the load will be transferred from the standard nut to the safety nut. This will also provide visual wear indication as the gap between the safety nut decreases to zero as the standard lifting nut wears.
2. In the unlikely event of catastrophic nut thread failure the safety nut will sustain the load. The safety of industrial and human cargo is therefore improved.

There are several configurations for each safety nut device as they only work in one load direction. For this reason when ordering please supply a sketch of your application showing load directions.

C = Load direction - Compression  
T = Load direction - Tension

### Translating Screw Jack with Safety Nut

The dimensions for these screw jacks are the same as the standard units except those detailed below.

Load Direction - Compression (C)

Model	CMT010-C	CMT025-C	CMT050-C	CMT100-C
A	140	155	205	250
B	32	33	40	40
C	10	22	28	40
ØD	39	55	70	85
ØE	54	70	95	85

Dimension F, G, ØH not applicable

Detail A = As per table

Detail B = Same as standard CMT screw jack

Load Direction - Tension (T)

Model	CMT010-T	CMT025-T	CMT050-T	CMT100-T
F	Stroke + 5	Stroke + 10	Stroke + 15	Stroke + 20
G	35	50	59	57
ØH	45	55	70	89

Dimension A, B, C, ØD, ØE not applicable

Detail A = Same as standard CMT screw jack

Detail B = As per table

Model	CMT010	CMT025	CMT050	CMT100
Weight (kg)	2.9	8.0	18.6	34.7

### Rotating Screw Jack with Safety Nut

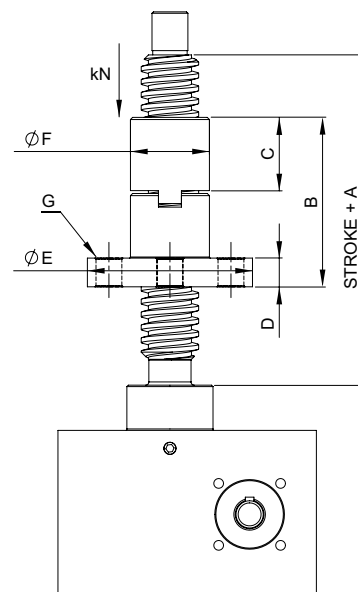
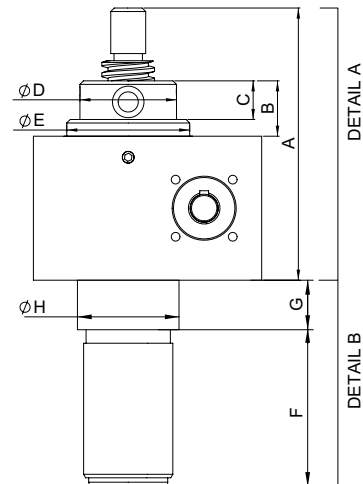
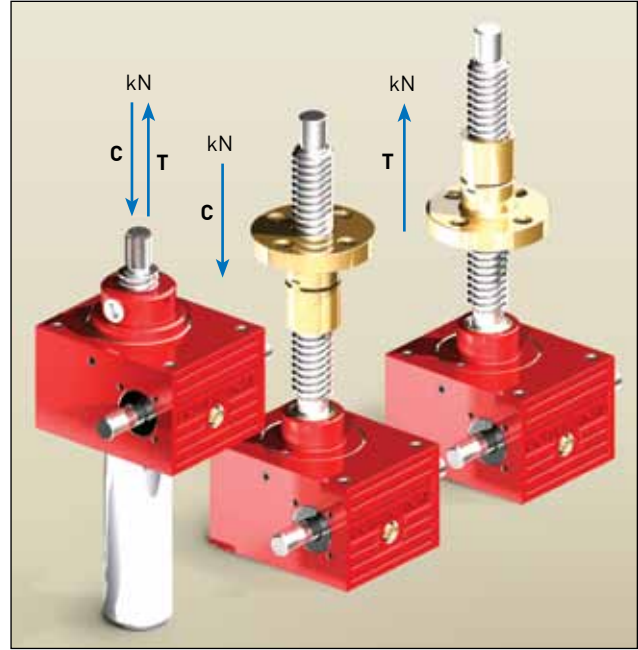
The dimensions for these screw jacks are the same as the standard units except those detailed below. A bellows boot hub can be provided on the flanged half of the safety nut.

Model	CMR010	CMR025	CMR050	CMR100
A	Stroke +76	Stroke +95	Stroke +140	Stroke +170
B	66.5	75	125	145
C	30	33.5	58	67
D	12	15	20	25
ØE	80	90	115	160
ØF	35	40	55	80
G	4 x Ø11 Ø57 PCD	4 x Ø13.5 Ø65 PCD	4 x Ø18 Ø85 PCD	4 x Ø22 Ø120 PCD

PCD = Pitch Circle Diameter

Nut must be orientated correctly for load direction

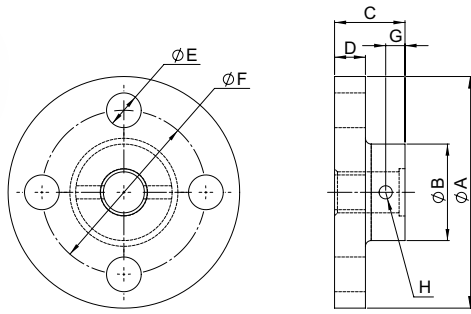
Model	CMR010	CMR025	CMR050	CMR100
Weight (kg)	3.3	9.0	21.1	42.2



# C-SERIES

## End Fittings for Translating Screw

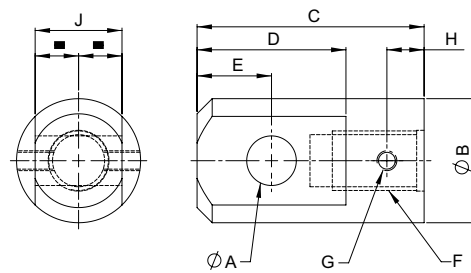
### Top Plate



Capacity	10kN	25kN	50kN	100kN
ØA	Ø80	Ø100	Ø120	Ø150
ØB	Ø30	Ø40	Ø50	Ø65
C	25	31.5	36.5	42
D	10	12	16	20
ØE	Ø11	Ø13.5	Ø18	Ø22
ØF (PCD)	Ø55	Ø70	Ø85	Ø110
G	8	10	10	12
H	M6 x 1	M8 x 1.25	M8 x 1.25	M10 x 1.5
Weight (kg)	0.43	0.79	1.5	2.82

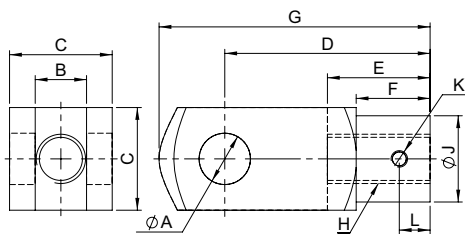
PCD = Pitch Circle Diameter

### Clevis End



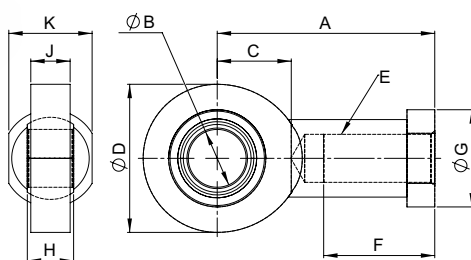
Capacity	10kN	25kN	50kN	100kN
ØA	Ø12	Ø16	Ø20	Ø22
ØB	Ø30	Ø40	Ø50	Ø65
C	63	79.5	91.5	120
D	36	46	60	66
E	18	23	30	33
F	M12 x 1.75 26 Deep	M20 x 2.5 32 Deep	M24 x 3 37 Deep	M36 x 4 42 Deep
G	M6 x 1	M8 x 1.25	M8 x 1.25	M10 x 1.5
H	15	15	15	20
J	20	30	35	40
Weight (kg)	0.26	0.57	1.0	2.1

### Fork End



Capacity	10kN	25kN	50kN	100kN
ØA	Ø12	Ø20	Ø25	Ø35
B	12	20	25	35
C	24	40	50	70
D	48	80	100	144
E	24	40	50	72
F	18	30	36	54
G	62	105	132	188
H	M12 x 1.75	M20 x 2.5	M24 x 3	M36 x 4
ØJ	20	34	42	60
K	M6 x 1	M8 x 1.25	M8 x 1.25	M10 x 1.5
L	10	10	15	20
Weight (kg)	0.12	0.55	1.1	2.93

### Rod End

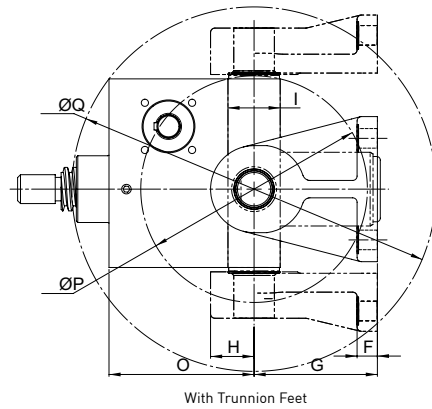


Capacity	10kN	25kN	50kN	100kN
A	50	77	94	125
ØB	12	20	25	35
C	18	27	32	42
ØD	34	53	64	82
E	M12 x 1.75	M20 x 1.5	M24 x 2	M36 x 3
F	23	40	48	60
ØG	22	35	42	58
H	10	16	20	25
J	8	13	17	21
K	19	32	36	50
Weight (kg)	0.1	0.35	0.64	1.3

**Note:** Lead screw threaded end made to suit rod end.

# C-SERIES

## Trunnion Mounts

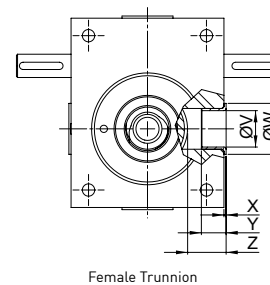
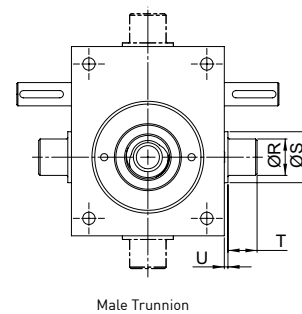
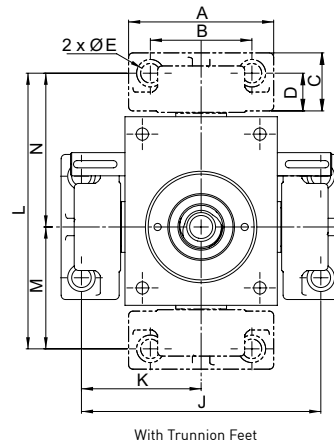


Trunnion mounts provide a pivot point at the gearbox of the screw jack.

- 2 Pivot Plane Options
- Supplied with or without Trunnion Feet
- Option of Male or Female Trunnions
- Trunnion mounts can be mounted on either side of the screw jacks gearbox

When the trunnions are on the same side as the worm shaft multiple screw jacks can be linked in line with a drive shaft and pivot around a common axis.

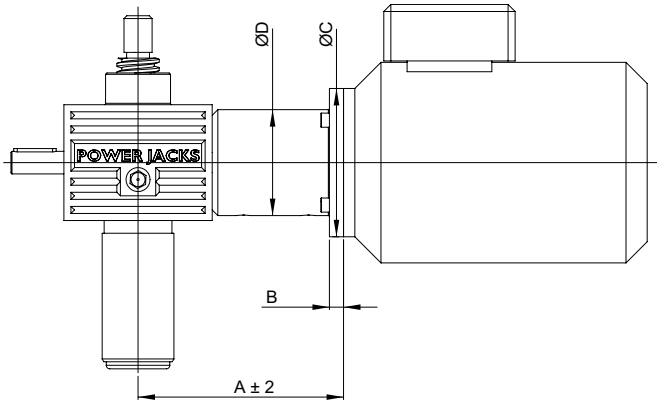
The trunnion mounts are connected to the screw jacks gearbox with 4 bolts.



Model	C-010	C-025	C-050	C-100
A	70	100	140	170
B	42	70	100	120
C	34	40	55	70
D	21	26	35.5	43.5
ØE	11	13.5	18	22
F	12	14	20	25
G	65	85	120	130
H	20	30	42.5	47.5
I	30	36	50	60
J	134	164	226	265
K	67	82	113	132.5
L	149	189	261	300
M	64.5	83.5	118.5	133
N	84.5	105.5	142.5	167
O	90	100	142	190
ØP	124	156.5	210	242
ØQ	216.5	251.5	350	446.5
ØR	20 f7	25 f7	35 f7	45 f7
ØS	30	35	47	58
T	20	20	20	35
U	2.5	2.5	2.5	5
ØV	20	25	35	45
ØW	30	35	47	74
X	1.5	1.5	2	2
Y	16.5	16.5	26	32
Z	22	26	39	40

# C-SERIES

## Motor Adaptor



Mount an electric motor to the C-Series screw jack with the extensive range of motor adaptors designed to be used in conjunction with a flexible jaw coupling that connects the motor drive shaft to the screw jacks worm shaft.

Model	C-010					
IEC Frame	A	B	ØC	ØD	Coupling	Available
63 B5 D140	122.5	10	140	65	19/24 A14 A11	OR
63 B14 C90	122.5	10	90	65	19/24 A14 A11	S
71 B5 D160	122.5	10	160	65	19/24 A14 A14	OR
71 B14 C105	122.5	10	105	65	19/24 A14 A14	S
80 B5 D200	132.5	12	200	65	19/24 A14 A19	OR
80 B14 C120	132.5	12	120	65	19/24 A14 A19	S

Model	C-025					
IEC Frame	A	B	ØC	ØD	Coupling	Available
71 B5 D160	145.5	10	160	75	19/24 A16 A14	OR
71 B14 C105	145.5	10	105	75	19/24 A16 A14	S
80 B5 D200	145.5	12	200	75	19/24 A16 A19	OR
80 B14 C120	145.5	12	120	75	19/24 A16 A19	S
90 B5 D200	162.5	12	200	75	24/30 A16 A24	OR
90 B14 C140	162.5	12	140	75	24/30 A16 A24	S
100 B5 D250	174.5	12	250	75	24/30 A16 B28	OR
100 B14 C160	174.5	12	160	75	24/30 A16 B28	S

Model	C-050					
IEC Frame	A	B	ØC	ØD	Coupling	Available
80 B5 D200	172.5	12	200	86	19/24 A19 A19	OR
80 B14 C120	172.5	12	120	86	19/24 A19 A19	OR
90 B5 D200	192.5	12	200	95	24/30 A19 A24	OR
90 B14 C140	192.5	12	140	95	24/30 A19 A24	S
100 B5 D250	192.5	12	250	95	24/30 A19 B28	OR
100 B14 C160	192.5	12	160	95	24/30 A19 B28	S
112 B5 D250	192.5	12	250	95	24/30 A19 B28	OR
112 B14 C160	192.5	12	160	95	24/30 A19 B28	S
132 B5 D300	222.5	12	300	95	28/38 A19 B38	OR
132 B14 C200	222.5	12	200	95	28/38 A19 B38	S

Model	C-0100					
IEC Frame	A	B	ØC	ØD	Coupling	Available
90 B5 D200	208.5	12	200	100	24/30 A25 B24	OR
90 B14 C140	208.5	12	140	100	24/30 A25 B24	S
100 B5 D250	218.5	12	250	100	24/30 A25 B28	OR
100 B14 C160	218.5	12	160	100	24/30 A25 B28	S
112 B5 D250	218.5	12	250	100	24/30 A25 B28	OR
112 B14 C160	218.5	12	160	100	24/30 A25 B28	S
132 B5 D300	239.5	12	300	100	28/38 A25 B38	OR
132 B14 C200	239.5	12	200	100	28/38 A25 B38	S

### Note:

1. NEMA Motor adaptors available on request
2. Motor adaptors are for the support of motor weight only
3. OR = On Request
4. S = Standard

# C-SERIES

## Limit Switches on Screw Jack Cover Pipe

Limit switches can be mounted on the screw jacks cover pipe to signal stroke positions such as end of travel. The switch is triggered by a cam or target disc on the end of the lead screw.

### Features:

1. Inductive Proximity Sensors as standard. Others including electro-mechanical and safety rated available on request.
2. No contact, so no wearing parts.
3. 2 Wire sensor 24VDC for either Normally Closed (NC) or Normally Open (NO) switching.
4. Sensor has rugged one-piece Metal housing.
5. Optical setting aid
6. M12 Plug in connection for fast change-ability.
7. Sensor kit includes–sensor, mounting ring, target ring and modification to screw jack cover pipe.
8. Switch can have a fixed or adjustable mounting.
9. For full sensor details request Power Jacks design guide catalogue or download it from [www.powerjacks.com](http://www.powerjacks.com)

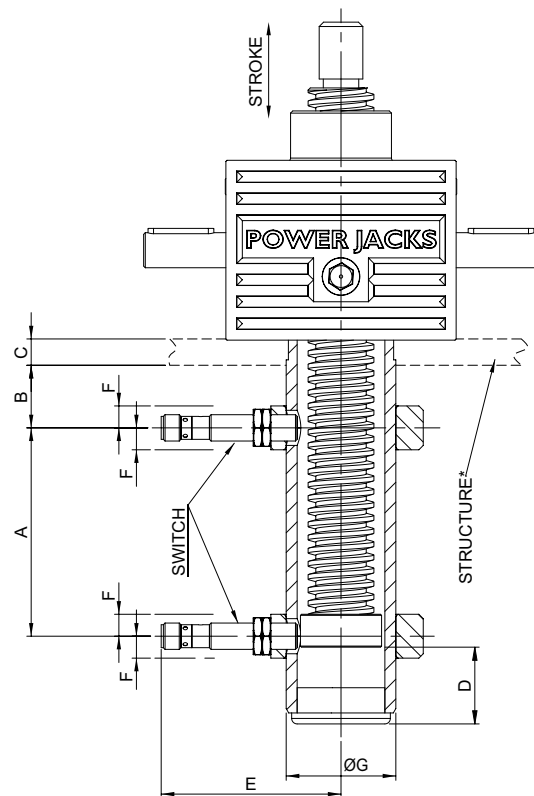


## C-Series Screw Jack

Model	CMT010	CMT025	CMT050	CMT100
Switch Size	M8	M12	M12	M12
A (mm)	Stroke + 15	Stroke + 15	Stroke + 12	Stroke + 24
B (mm)	50	50	50	50
C (mm)	10	15	15	20
D (mm)	34	36	41	46
E (mm)± 5	78.5	84	89	100
F Adjustment (mm)	5	5	5	5
ØG (mm)	34	49	61	73

### Note:

1. \*Structure dimension (C) only required when screw jack is secured on this face. Not required if secured on opposite face.
2. All dimensions in mm unless otherwise stated.
3. Dimensions subject to change without notice.





# C-SERIES

## Rotary Limit Switches for Screw Jacks

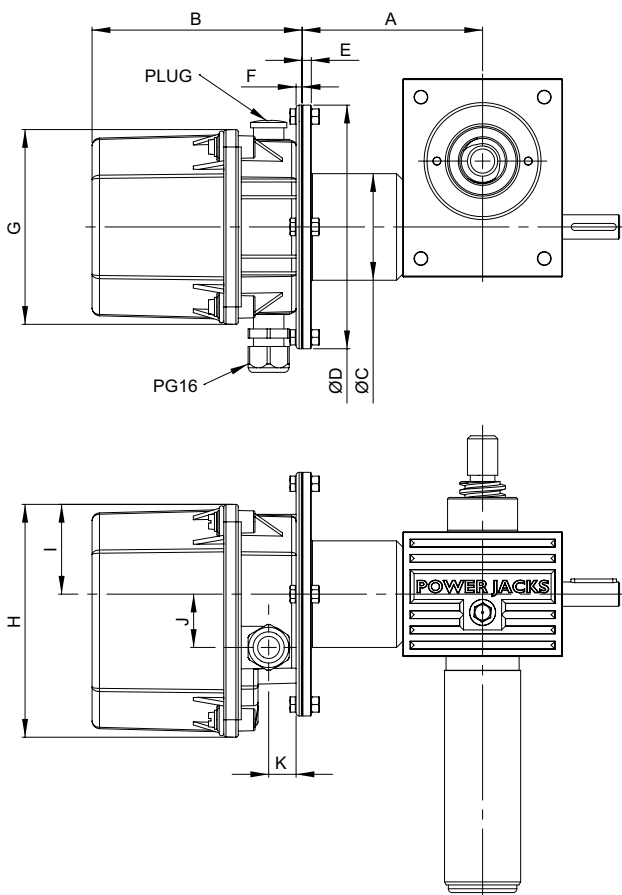


RLS-51 Rotary cam limit switches can be used as end of travel limit switches with the option of intermediate switches. Each limit switch is individually adjustable over the entire stroke of the screw jack.

- 2 to 8 limit switches in one unit
- Useable revolutions from 4 to 16000
- Switch types include:  
Changeover (Normally Closed/Open), Normally Closed, Gold or Silver contacts
- Maintenance free rotary cam gearbox
- Enclosure IP66 as standard
- Mounting options for B14 (face), B5 (flange) and B3 (foot)
- Available in 3 voltages 250VAC, 24VDC & 80VDC
- Maximum input speed 1800rpm
- Operating temperature  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- Options for potentiometer, anti-condensation heaters and encoders
- Stage technology option to VBG70

Mounted onto a screw jacks free worm shaft as an alternative where cover pipe mounted limit switches are not possible e.g. rotating screw jacks.

For full details on the RLS-51 limit switch request a brochure from Power Jacks or download details from [www.powerjacks.com](http://www.powerjacks.com)



Type	C-010	C-025	C-050	C-100
A	109	119	139	154
ØC	86	86	86	100
ØD	120	120	120	160
E	11	11	11	10

Size	Revolutions	Switches			
		2	4	6	8
1	4.1, 6.5, 11	132	132	157	157
2	17.5, 29, 48	132	132	157	182
3	75, 125, 205	132	132	157	182
4	323, 540, 880	132	157	182	207
5	1384, 2288, 3735	132	157	182	207
6	5900, 9800, 16000	157	157	182	207

All Units					
F	G	H	I	J	K
4	128	153	59	35	18

**Note:**

1. All dimension in millimetres unless otherwise stated.
2. Designs subject to change without notice.

## Introducing the high performance S-Series screw jack range from Power Jacks.

To meet the increasing industrial demands on machine screw jacks our team of experienced design engineers set out to provide our customers with a new high performance cubic machine screw jack.

It has typically 50% higher duty cycle capabilities than standard machine screw jacks, thus reducing the need for ball screw jacks or larger de-rated machine screw jacks in high duty applications. In addition the range is engineered to have a long lasting service life, high durability, large selection of configurations, versatile mounting and an extensive accessory list. Ideal for applications that demand more from a machine screw jack, but do not warrant a ball screw jack. Installed singularly or as part of multi-unit jacking systems.

### **Over 350 Million Standard Configurations per Model Type.**

#### **4 Standard Screw Jack Designs**

- Standard
- Anti-Backlash\*
- Anti-Rotation\*
- Safety Nut

Anti-Rotation can be combined with standard, anti-backlash and safety nut designs.

\* Translating screw configurations.

#### **Gearbox Housing**

Design optimised for high thermal efficiency. Recognisable by the exterior fins, which increase surface area. The housing is cast using a highly durable SG Iron.

This provides a strong housing that firmly and accurately holds the gear set in a reservoir of chosen lubricant suited to most industrial demands.

#### **Reliable Worm Gear Set**

Proven gear geometry used in millions of screw jacks.

#### **Oil Filled Gearbox**

For optimum lubrication and cooling of the worm gear set at up to 3000 rpm input.

#### **Lead Screw Grease**

Rated for extreme pressure to ensure correct lubrication at all rated loads.

#### **Corrosion Protection**

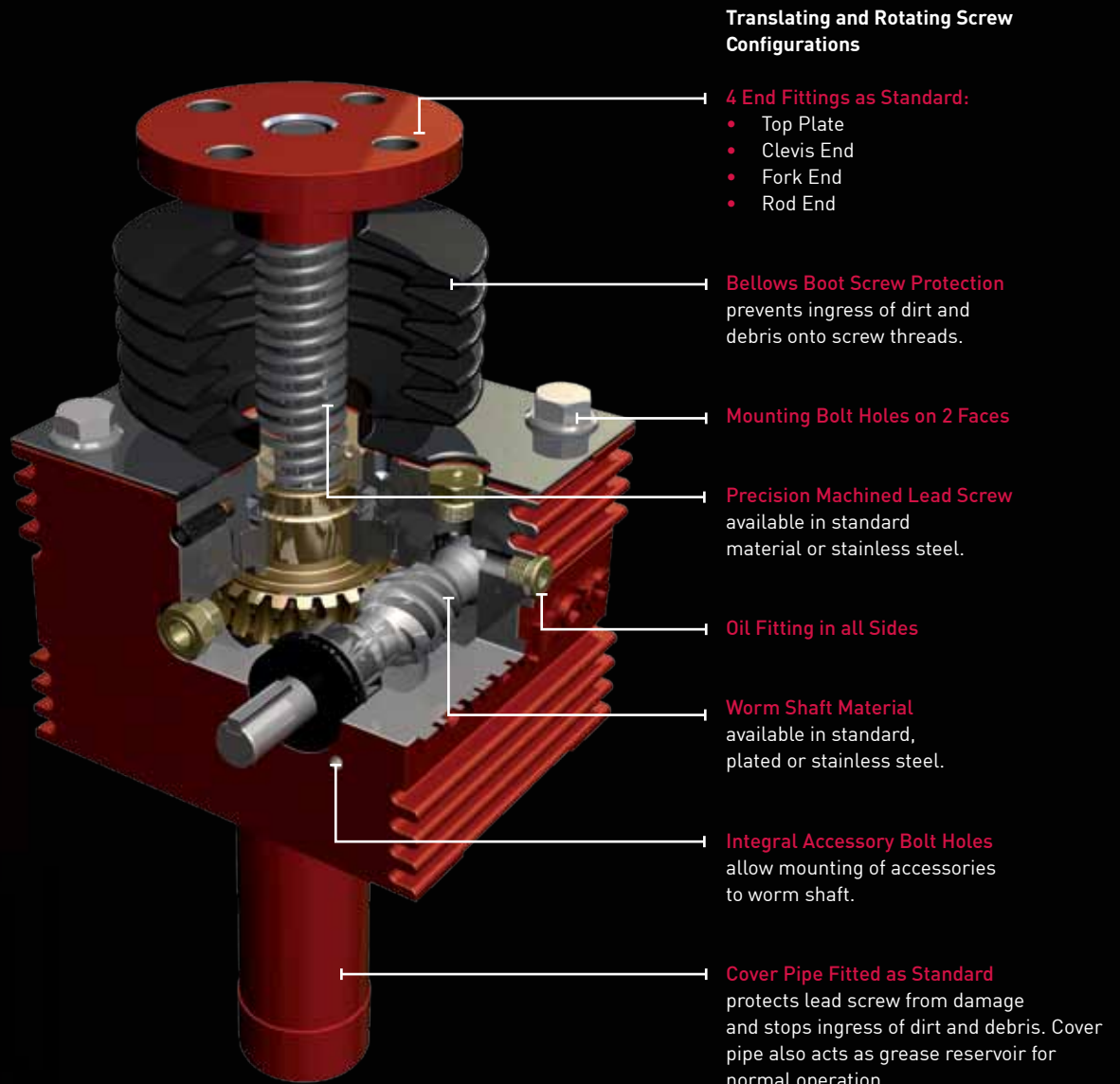
To suit all economic needs.

- Standard Industrial Paint Finish
- Arduous Environment Paint Finish
- Customer Specified Paint
- Plated Finish

High  
Performance  
Reliable  
Durable  
Versatile  
Dynamic

# S-SERIES

## Features

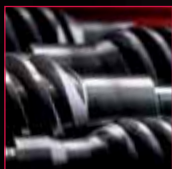


## Special Features



**2 Screw Lead Options**  
for each screw jack size.

**Over 350 million**  
standard configurations



**Worm Shaft Extensions**  
as standard double (both sides) or  
optionally single extension (one side).

**High thermal efficiency**



**3 Gear Ratio Options**  
for each screw jack size.

**Aluminium Bronze Worm Gear**  
accurately hobbed for greater  
gear contact.

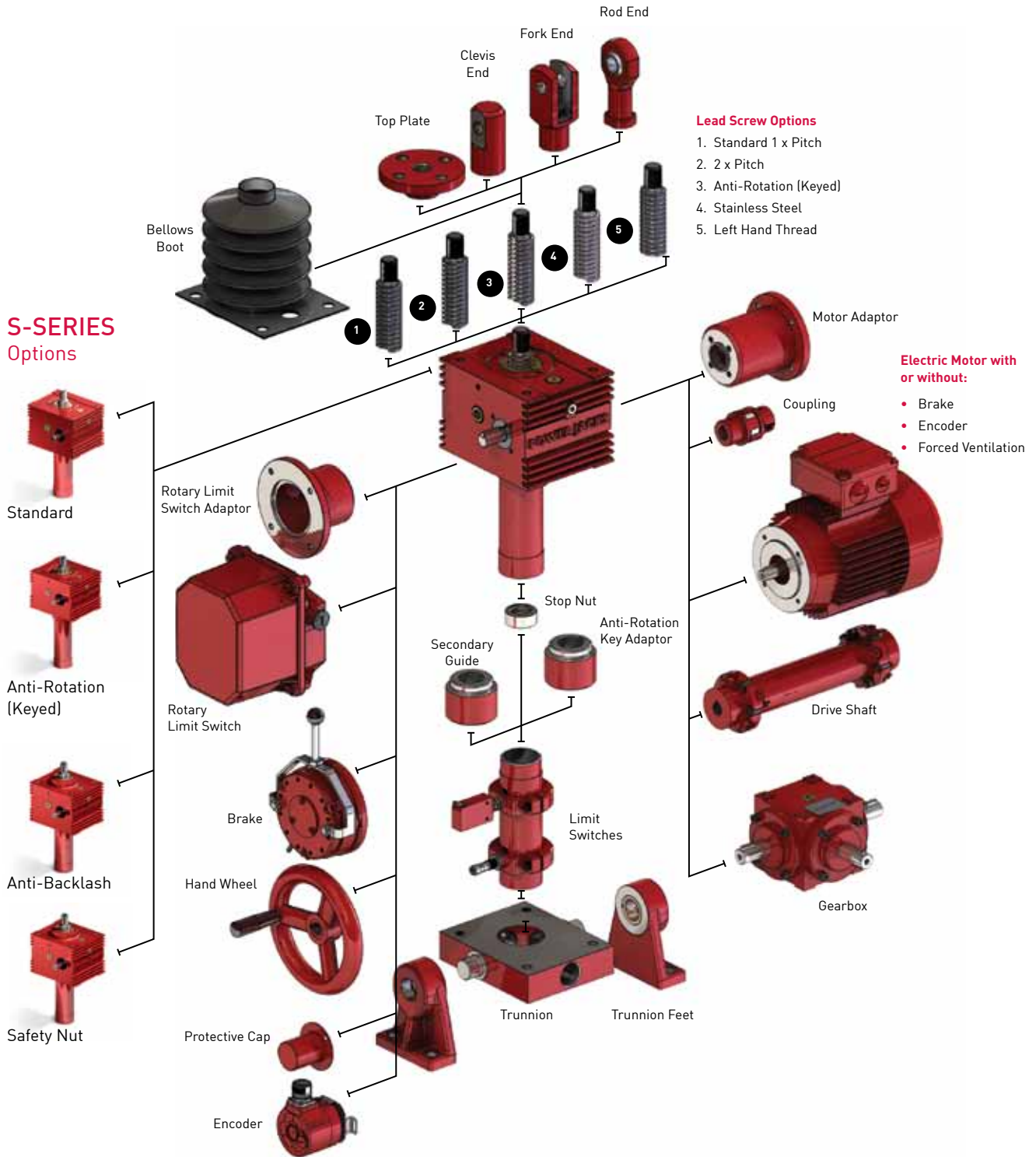
**Optimum lubrication**  
via 2 dedicated systems

**Outstanding rotary**  
to linear motion performance

# S-SERIES

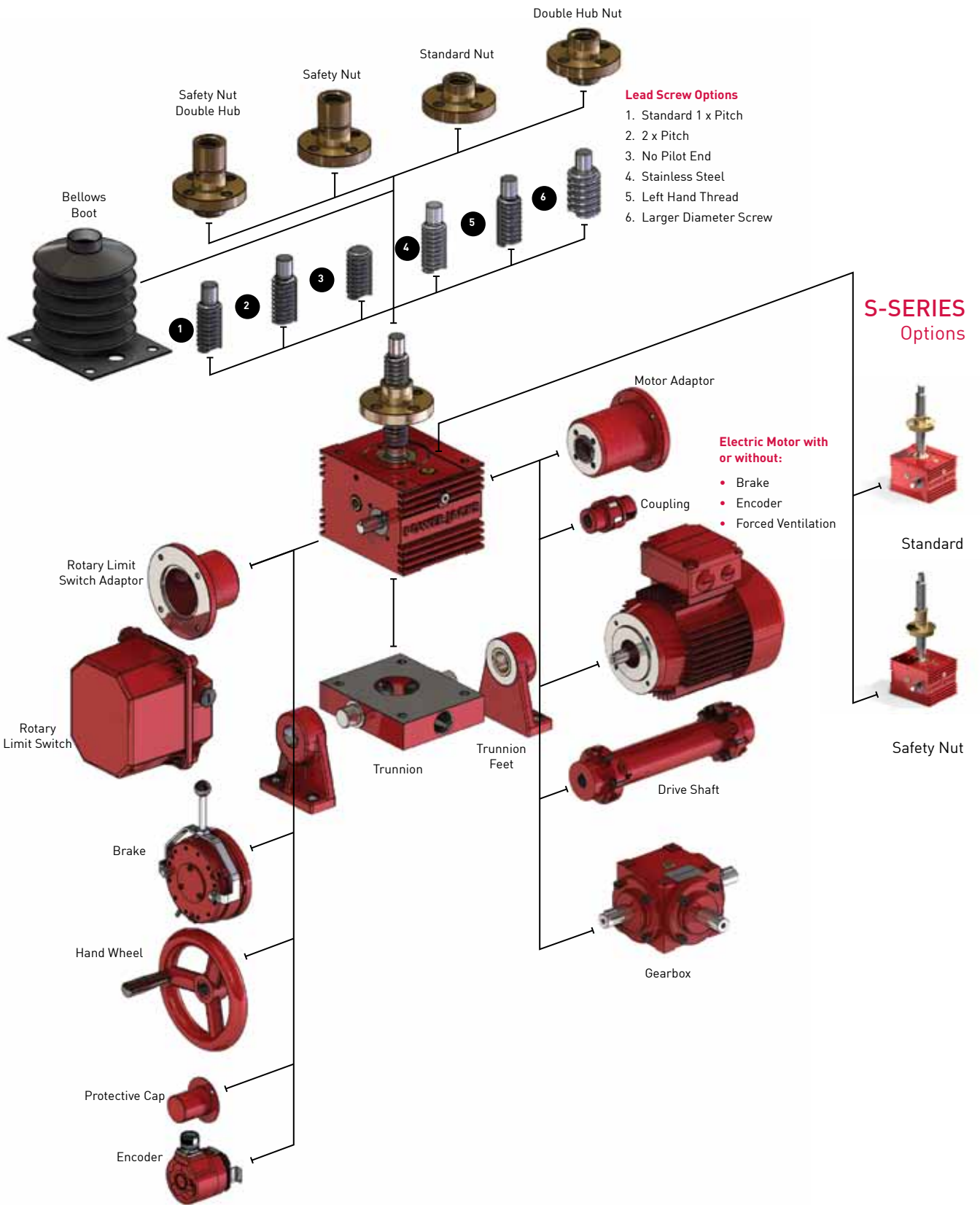
Translating Screw Jack Building System

## S-SERIES Options



# S-SERIES

## Rotating Screw Jack Building System



# S-SERIES

## Screw Jack Product Code

### Example

1	2	3	4	5
S	T	0	2	5

6	7	8	9
1	5	0	0

10	11	12	13
C	1	R	K

14	15	16	17	18	19	20
C	P	C	1	B	3	B

21	22	23	24	25
0	0	0	B	0

#### 1 Screw Jack Type

**S** = S-Series Screw Jack

#### 2 Screw Configuration

**T** = Translating Screw

**R** = Rotating Screw

#### 3,4,5 Capacity (kN)

**025** = 25kN

**050** = 50kN

**100** = 100kN

**200** = 200kN

#### 6,7,8,9 Stroke (mm)

e.g. **1500** = 1500mm

#### 10 End Type

**E** = Threaded End

**C** = Clevis

**T** = Top Plate

**F** = Fork End

**R** = Rod End

**A** = Plain End<sup>#11</sup>

**P** = Pilot End<sup>#1</sup>

**N** = No Pilot<sup>#1</sup>

#### 11 Lead Screw Pitch

**1** = Option 1 Lead

**2** = Option 2 Lead

#### 12 Gear Ratio

**1** = Option 1 Ratio

**2** = Option 2 Ratio

**3** = Option 3 Ratio

**X** = Special Ratio

#### 13 Features

**0** = None

**K** = Anti-Rotation (keyed)

**C** = Secondary Guide

**R** = Anti-Backlash

**V** = Inverted Screw  
Anti-Backlash

**Y** = Anti-Backlash &  
Anti-Rotation (keyed)

**W** = Inverted Screw  
Anti-Backlash &  
Anti-Rotation (keyed)

**H** = Double Hub Nut<sup>#1</sup>

#### 14 Designation

**F** = Factory Designated<sup>#4</sup>

**C** = Oil Filled Gearbox

**A** = Grease Filled Gearbox<sup>#5</sup>

#### 15 Cover Pipe

**P** = Cover Pipe

**F** = No Cover Pipe

#### 16 Lead Screw Thread

**C** = Right Hand (Clockwise)<sup>#2</sup>

**A** = Left Hand  
(Anti-Clockwise)<sup>#3</sup>

#### 17 Lead Screw Material

**1** = Carbon Steel (Standard)

**2** = Stainless Steel

**L** = Large Diameter<sup>#1 #10</sup>

**T** = Large Diameter  
Stainless Steel<sup>#1 #10</sup>

#### 18 Lead Screw Cover

**0** = None

**B** = Bellows Boot (fabric)

**T** = Telescopic Spiral (metal)

#### 19 Drive

**0** = No Side Bolt Holes

**1** = Side Bolt Holes – LHS

**2** = Side Bolt Holes – RHS

**3** = Side Bolt Holes  
(both sides)

**M** = Motor<sup>#6, #10</sup>

**B** = Brake Motor<sup>#6, #10</sup>

**H** = Hand Wheel

**A** = Motor Adaptor<sup>#6, #10</sup>

#### 20 Worm Shaft Ends

**0** = Both

**L** = Left Hand Side Only

**R** = Right Hand Side Only

#### 21 Worm Shaft Type

**0** = Standard Material

**N** = Nickel Plated

**C** = Chrome Plated

**S** = Stainless Steel

#### 22 Stop Nut

**0** = No Stop Nut

**P** = Full Power Stop Nut

#### 23 Safety Nut

**0** = No Safety Nut

**T** = Safety Nut Tension

**C** = Safety Nut Compression

#### 24 Gearbox Mounting

**B** = Base Mount

**T** = Trunnion Mount  
Standard<sup>#7</sup>

**U** = T + Trunnion Feet

**X** = Trunnion Mount 90°<sup>#8</sup>

**Y** = X + Trunnion Feet

#### 25 Limit Switch<sup>#9, #10</sup>

**0** = None

**L** = Electro-Mechanical  
Limit Switch

**R** = Rotary Cam Limit Switch

**P** = Proximity Sensor

#### Notes:

#1. Rotating screw models only.

#2. Standard right hand thread form. Worm shaft turns clockwise to extend screw.

#3. Left hand thread form. Worm shaft turns anti-clockwise to extend screw.

#4. Factory designated number for special design.

#5. Grease filled gearbox recommended for normal running input speed below 500rpm.

#6. Includes motor adaptor and coupling. IEC motor adaptor is standard.

#7. Trunnions on same side as worm shaft (standard).

#8. Trunnions at 90° to worm shaft.

#9. Limit switch mounting included.

#10. Design notes required to detail device/item specification.

#11. Plain end "A" has same dimensions as "E – threaded end" except no thread form.

# S-SERIES

## Metric Machine Screw Jacks

### Performance

Screw Jack Model <sup>4</sup>			S-025		S-050		S-100		S-200	
Capacity	kN		25		50		100		200	
Lead Screw <sup>1</sup>	Diameter (mm)		30		40		55		65	
	Lead	Option	1	2	1	2	1	2	1	2
		mm	6	12	9	18	12	24	12	24
Gear Ratios	Option 1		6:1		6:1		8:1		8:1	
	Option 2		24:1		24:1		24:1		24:1	
	Option 3		8:1 (AOR)		8:1 (AOR)		6:1 (AOR)		6:1 (AOR)	
4 x Turns of worm for travel of lead screw	Option 1		4mm	8mm	6mm	12mm	6mm	12mm	6mm	12mm
	Option 2		1mm	2mm	1.5mm	3mm	2mm	4mm	2mm	4mm
	Option 3		3mm	6mm	4.5mm	9mm	8mm	16mm	8mm	16mm
Maximum Input Power (kW)	Option 1		1.5		3.0		3.75		3.75	
	Option 2		0.375		0.550		1.125		1.125	
	Option 3		1.5		3.0		3.75		3.75	
Start up torque at full load (Nm) <sup>2</sup>	Option 1		19	26	54	73	111	151	252	330
	Option 2		8	11	24	33	57	77	129	168
	Option 3		15	20	44	59	140	190	317	416
Maximum Through Torque (Nm) <sup>7</sup>	Option 1		59.4		168.0		347.7		525	
	Option 2		26.1		76.5		181.5		275	
	Option 3		59.4		168.0		347.7		525	
Static Efficiency <sup>3</sup>	Option 1		0.209	0.314	0.222	0.325	0.214	0.317	0.190	0.290
	Option 2		0.121	0.183	0.125	0.184	0.140	0.207	0.124	0.189
	Option 3		0.194	0.293	0.206	0.302	0.227	0.336	0.201	0.307
Dynamic Efficiency <sup>3</sup>	Option 1	50rpm	0.262	0.379	0.281	0.398	0.272	0.389	0.243	0.358
	Option 1	750rpm	0.299	0.434	0.324	0.460	0.315	0.450	0.282	0.415
	Option 1	1000rpm	0.302	0.438	0.329	0.466	0.320	0.456	0.286	0.421
	Option 1	1500rpm <sup>+</sup>	0.309	0.448	0.337	0.477	0.328	0.468	0.293	0.431
	Option 2	50rpm	0.164	0.238	0.171	0.242	0.188	0.269	0.168	0.248
	Option 2	750rpm	0.220	0.320	0.238	0.337	0.252	0.359	0.225	0.331
	Option 2	1000rpm	0.226	0.328	0.246	0.349	0.260	0.370	0.232	0.341
	Option 2	1500rpm <sup>+</sup>	0.239	0.347	0.263	0.372	0.274	0.391	0.245	0.361
	Option 3	50rpm	0.247	0.358	0.264	0.374	0.285	0.407	0.255	0.375
	Option 3	750rpm	0.288	0.418	0.312	0.442	0.324	0.462	0.289	0.426
	Option 3	1000rpm	0.293	0.424	0.318	0.451	0.329	0.469	0.294	0.432
	Option 3	1500rpm <sup>+</sup>	0.301	0.436	0.328	0.465	0.336	0.479	0.300	0.442
Lead Screw Restraining Torque (Nm) <sup>5</sup>	-		76	102	210	290	575	780	1300	1705
Worm Shaft Radial Load (N) <sup>6</sup>	-		440		1100		1200		1600	
Maximum Input Speed (rpm)	-		3000		3000		3000		3000	
Gear Case Material	-		SG Iron		SG Iron		SG Iron		SG Iron	
Weight (kg) – stroke = 150mm	Translating		13.8		25.5		47.7		67.8	
	Rotating		15.0		27.9		53.9		76.9	
Weight (kg) – per extra 25mm	Translating		0.16		0.24		0.47		0.72	
	Rotating		0.11		0.19		0.36		0.53	

### Axial Backlash

Typical Axial Backlash Values:

- Standard Screw Jack is 0.12mm to 0.23mm
- Screw Jack with Anti-Backlash feature is adjustable to a minimum of 0.025mm.

### Useful Formulae

$$\text{Input Speed (rpm)} = \frac{\text{Linear Speed (mm/min)} * \text{Gear Ratio}}{\text{Lead of Screw (mm)}}$$

$$\text{Input Power (kW)} = \frac{\text{Load (kN)} * \text{Lead (mm)} * \text{Input Speed (rpm)}}{60000 * \text{Efficiency} * \text{Gear Ratio}}$$

$$\text{Input Torque (Nm)} = \frac{\text{Load (kN)} * \text{Lead (mm)}}{2 * \pi * \text{Efficiency} * \text{Gear Ratio}}$$

#### Notes:

1. All metric machine screws have a trapezoidal thread form.
2. For loads of 25% to 100% of screw jack capacity, torque requirements are approximately proportional to the load.
3. Efficiency values for standard lubricated worm gearbox and lead screw.
4. For normal running speeds above 500 rpm the gearbox is oil lubricated and grease lubricated below 500 rpm. The lead screw is grease lubricated in both cases.
5. Torque required to prevent the lead screw or lead nut from rotating if no anti-rotation device fitted.
6. Radial force applied midway along worm shaft key at 90° to key.
7. Maximum transmittable torque through worm shaft, not through gear set.
8. Available on request (AOR), consult Power Jacks.

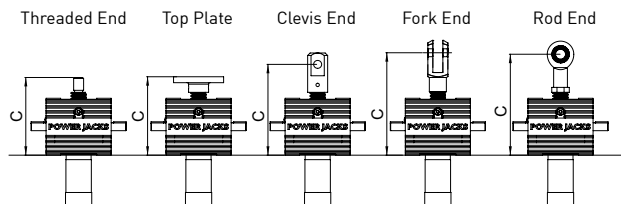
# S-SERIES

## Translating Screw Jack 25kN

### Performance

Screw Jack Model <sup>4</sup>		S-025		
Capacity	kN	25		
Lead Screw <sup>1</sup>	Diameter (mm)	30		
	Lead (mm)	6	12	
Gear Ratios	Option 1	6:1		
	Option 2	24:1		
	Option 3	8:1 (AOR)		
4 x Turns of worm for travel of lead screw	Option 1	4mm	8mm	
	Option 2	1mm	2mm	
	Option 3	3mm	6mm	
Maximum Input Power (kW)	Option 1	1.5		
	Option 2	0.375		
	Option 3	1.5		
Start up torque at full load (Nm) <sup>2</sup>	Option 1	19	26	
	Option 2	8	11	
	Option 3	15	20	
Maximum Through Torque (Nm) <sup>7</sup>	Option 1	59.4		
	Option 2	26.1		
	Option 3	59.4		
Static Efficiency <sup>3</sup>	Option 1	0.209	0.314	
	Option 2	0.121	0.183	
	Option 3	0.194	0.293	
Dynamic Efficiency <sup>3</sup>	Option 1	50rpm	0.262	0.379
	Option 1	750rpm	0.299	0.434
	Option 1	1500rpm*	0.309	0.448
	Option 2	50rpm	0.164	0.238
	Option 2	750rpm	0.220	0.320
	Option 2	1500rpm*	0.239	0.347
	Option 3	50rpm	0.247	0.358
	Option 3	750rpm	0.288	0.418
	Option 3	1500rpm*	0.301	0.436
Maximum Input Speed (rpm)	-	3000		
Gear Case Material	-	SG Iron		
Weight (kg) – stroke = 150mm	ST025	13.8		
	SR025	15.0		
Weight (kg) – per extra 25mm	SR025	0.16		
	ST025	0.11		

### ST025 Closed Height



Closed Height 'C'	Threaded End	Top Plate	Clevis End	Fork End	Rod End
ST025	157	157	182	207	204
Stroke (mm)	With Bellows Boots (B)				
0 - 300	157	157	182	207	204
301 - 600	171	171	196	221	218
601 - 1050	189	189	214	239	236
1051 - 1500	208	208	233	258	255
1501 - 1800	228	228	253	278	275

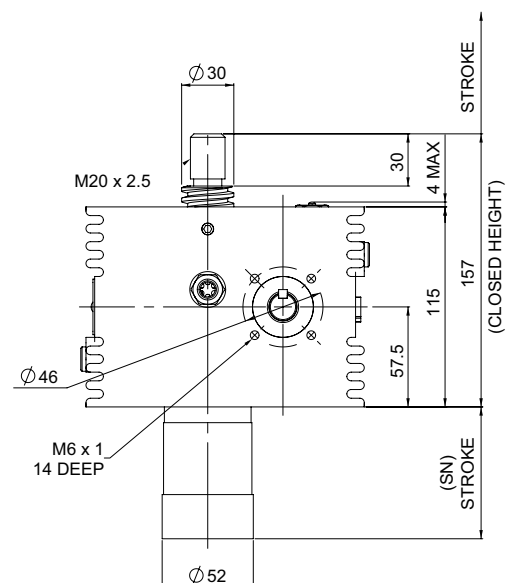
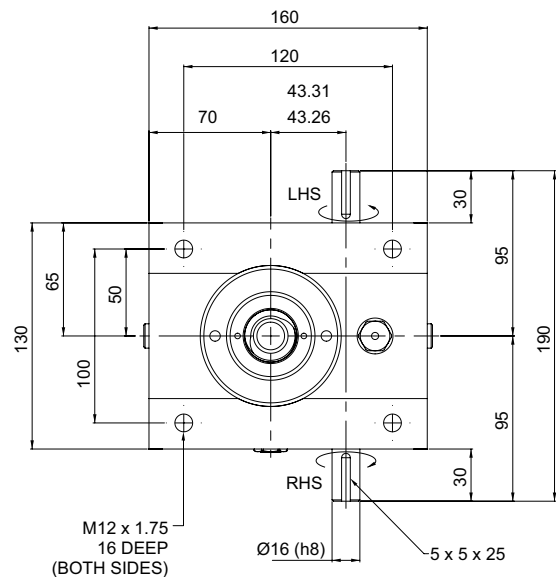
### ST025 Stop Nut



Stop nut provides a full power mechanical stop at the end of the lead screw. To be used as a safety feature in emergency conditions.

SN = Stroke + 21mm

### ST025



#### Note:

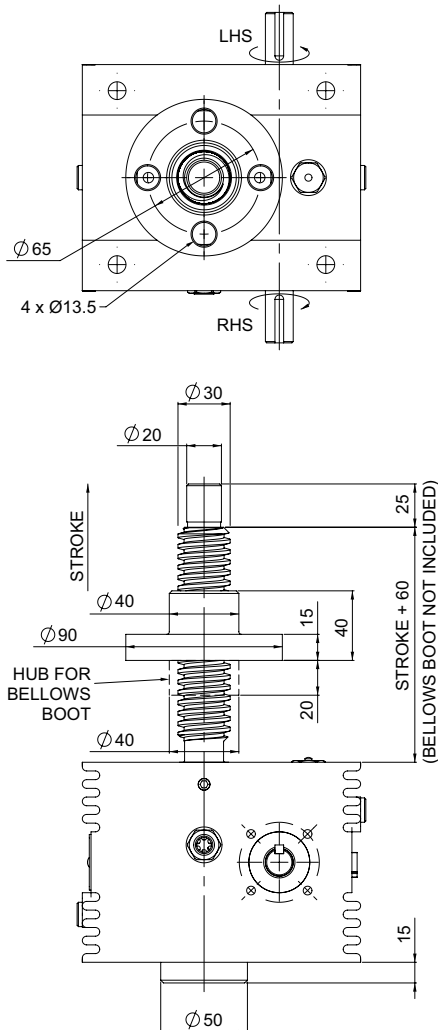
1. All dimension in millimetres unless otherwise stated.
2. Designs subject to change without notice.



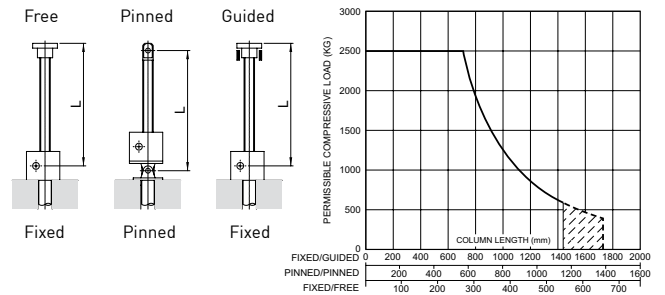
# S-SERIES

Rotating Screw Jack 25kN

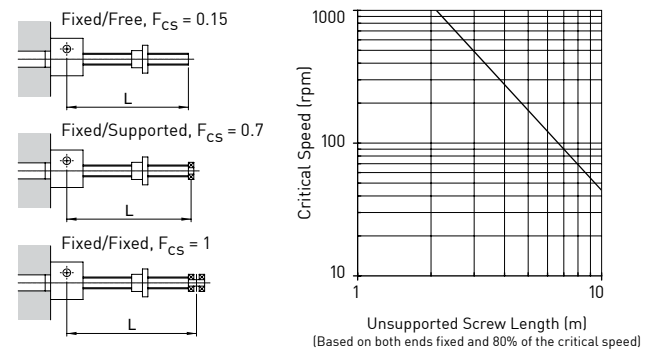
SR025



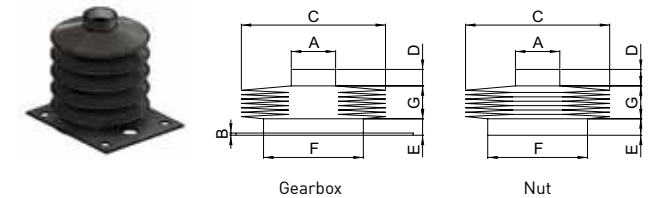
## Column Strength



## Critical Screw Speed



## Bellows Boot



	ØA	B	ØC	D	E	ØF
ST025	40	2	130	10	10	45
SR025	40	2	130	10	15	40

Stroke	1 - 300	301 - 600	601 - 1050	1051 - 1500	1501 - 1800
G	14	28	46	65	85*

\*control tapes fitted ØC=150

## Accessories & Options

