


**C-SERIES**  
**S-SERIES**

Metric Machine  
Screw Jacks





Power Jacks  
More than just a screw jack



Power Jacks are a manufacturer focused on providing customers with the best engineered solution for precision linear actuation, power transmission and mechanical jacking.

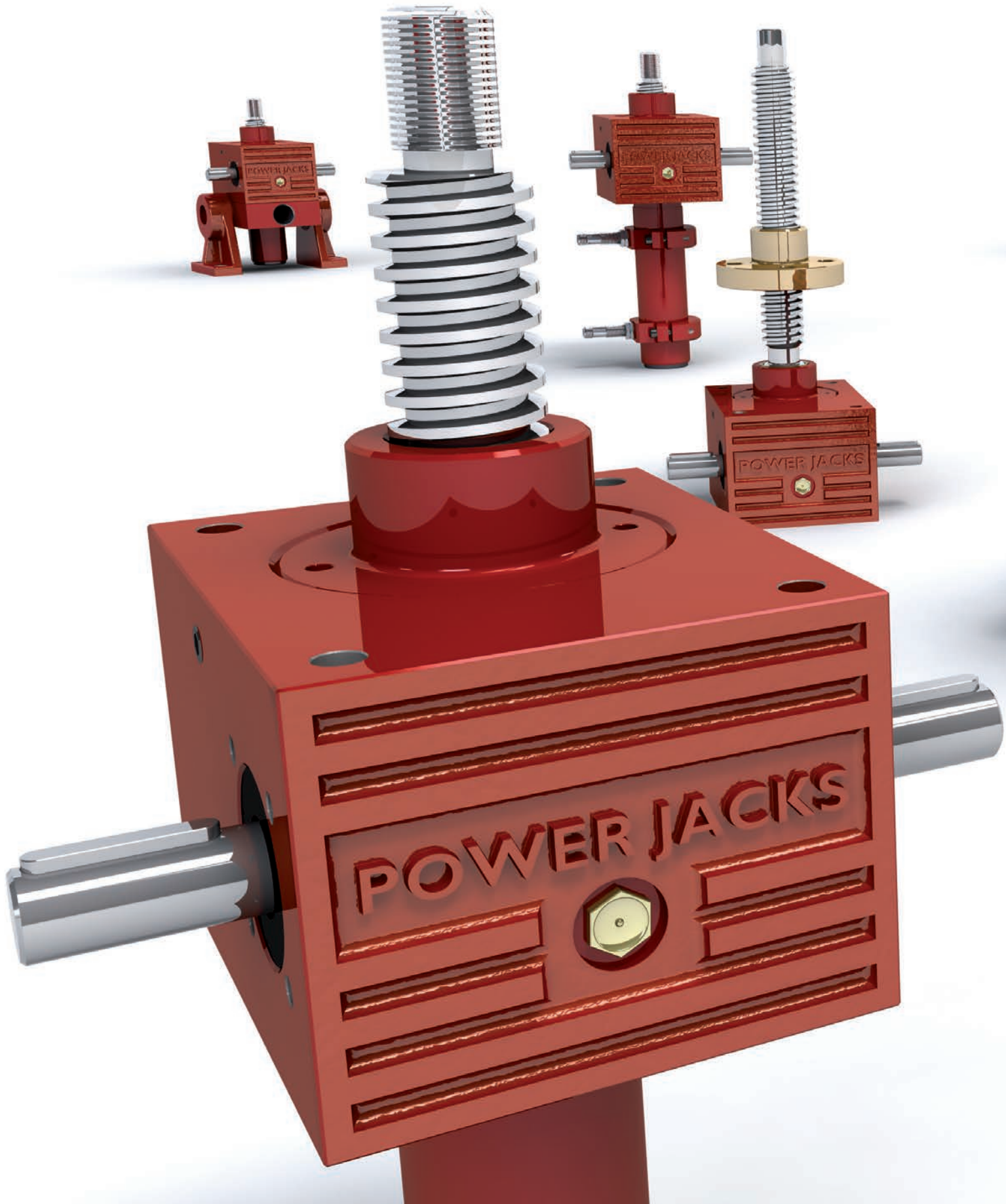
Our expertise has been built on a history of engineering craftsmanship and design dating back to 1903. The facility in Scotland is the UK's largest screw jack manufacturing facility, that uses the latest engineering technologies to deliver quality products (BS EN ISO 9001:2008) that offer reliability, performance and economy.

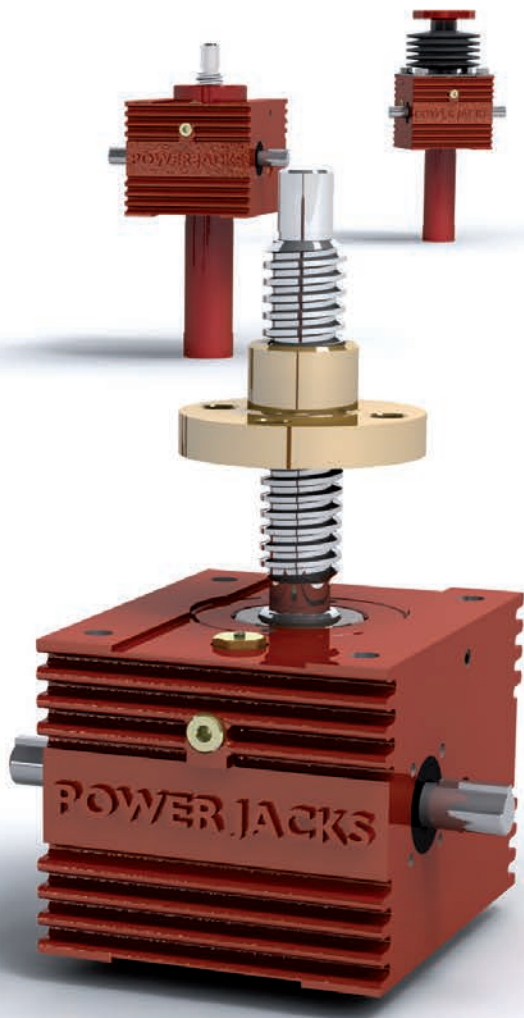
Power Jacks is synonymous with screw jack technology and its development. We have been involved with Screw Jacks since the product was invented in the late 1930's and this gives us unparalleled experience in the design and manufacture of both standard and special designs.

Complimenting the screw jacks the Power Jacks portfolio also includes the design and manufacture of spiral bevel gearboxes, electric linear actuators and planetary roller screws. This enables us to offer our customers a complete linear motion and power transmission system and solution.

We know our customers demand our engineering expertise to help find a solution for their applications. We take pride in designing and delivering the best solution. This is what defines the Power Jacks range.

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Introducing the new C-Series Screw Jack range from Power Jacks, delivering new levels of versatility and quality.

Created by a team of experienced design engineers, the focus was to provide our customers with a new compact cubic Screw Jack, which offers versatility in mounting methods. In addition to this, we wanted to design a jack that had the perfect combination of excellent performance, a long lasting service life, durability, flexibility and an extensive accessory list. Perfect for industrial applications operating individually or as a multi unit jacking system.

Over 140 Million Standard Configurations.

#### 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

Is one of the most functional features of the C-Series screw jack. Using a rugged cast housing made of either a highly durable SG Iron or Aluminium. This provides a strong housing that firmly and accurately holds the gear set in a reservoir of chosen lubricant suited to the most industrial demands.

#### Reliable Worm Gear set

Proven design used in millions of screw jacks.

#### Forced Grease Lubrication

Of lead screw. Radial lubrication holes on the worm gear allow the worm shaft to force grease through directly onto the lead screw threads. This lowers friction and operating temperature while increasing life.

#### Corrosion Protection

To suit all economic needs.

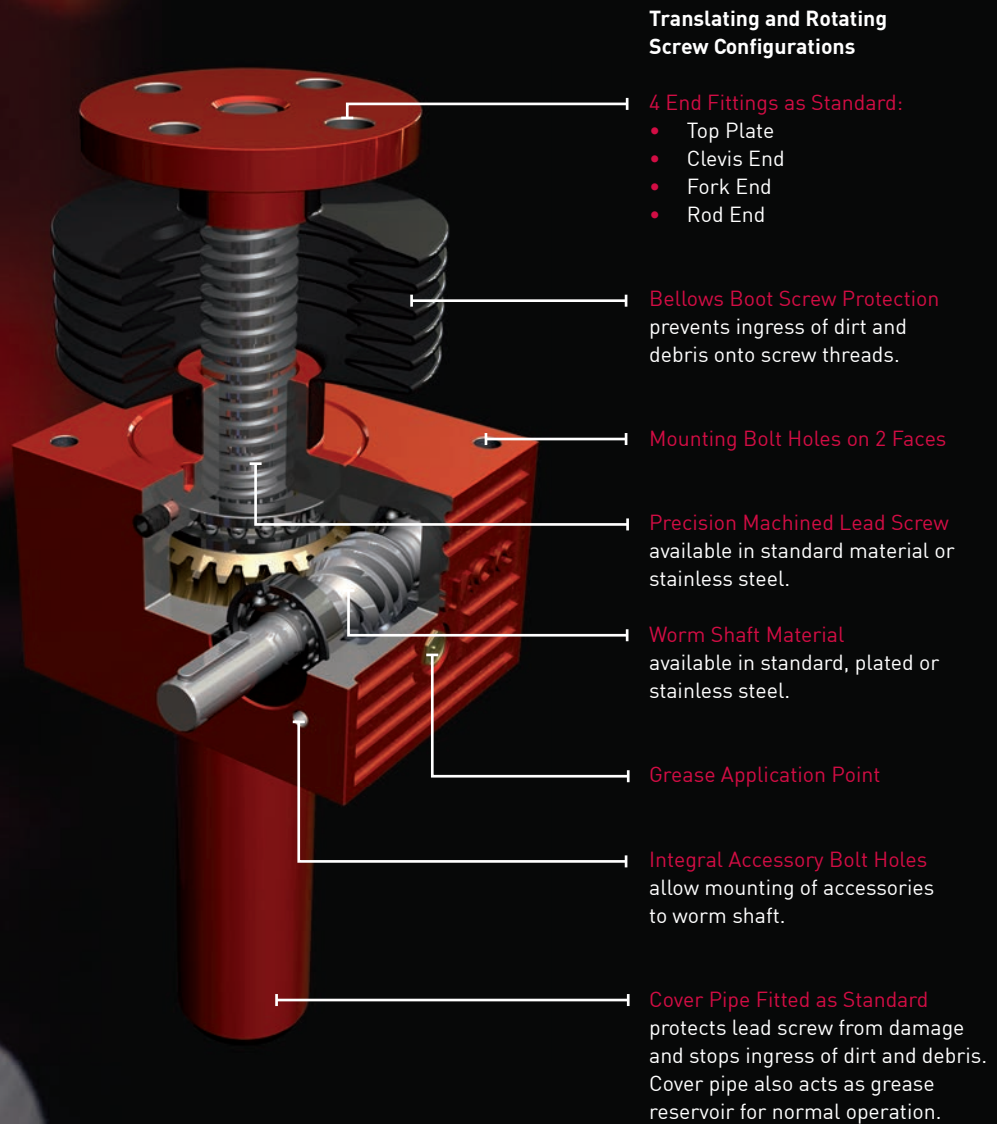
- Standard Industrial Paint Finish
- Arduous Environment Paint Finish
- Customer Specified Paint
- Plated Finish

Compact  
Durable  
Versatile  
Dynamic



# C-SERIES

## Features



### Translating and Rotating Screw Configurations

#### 4 End Fittings as Standard:

- Top Plate
- Clevis End
- Fork End
- Rod End

**Bellows Boot Screw Protection** prevents ingress of dirt and debris onto screw threads.

**Mounting Bolt Holes on 2 Faces**

**Precision Machined Lead Screw** available in standard material or stainless steel.

**Worm Shaft Material** available in standard, plated or stainless steel.

**Grease Application Point**

**Integral Accessory Bolt Holes** allow mounting of accessories to worm shaft.

**Cover Pipe Fitted as Standard** protects lead screw from damage and stops ingress of dirt and debris. Cover pipe also acts as grease reservoir for normal operation.

## Special Features



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

**Over 140 million standard configurations**



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



**2 Gear Ratio Options**  
for each screw jack size

**Aluminium Bronze Worm Gear**  
accurately hobbled for greater gear contact

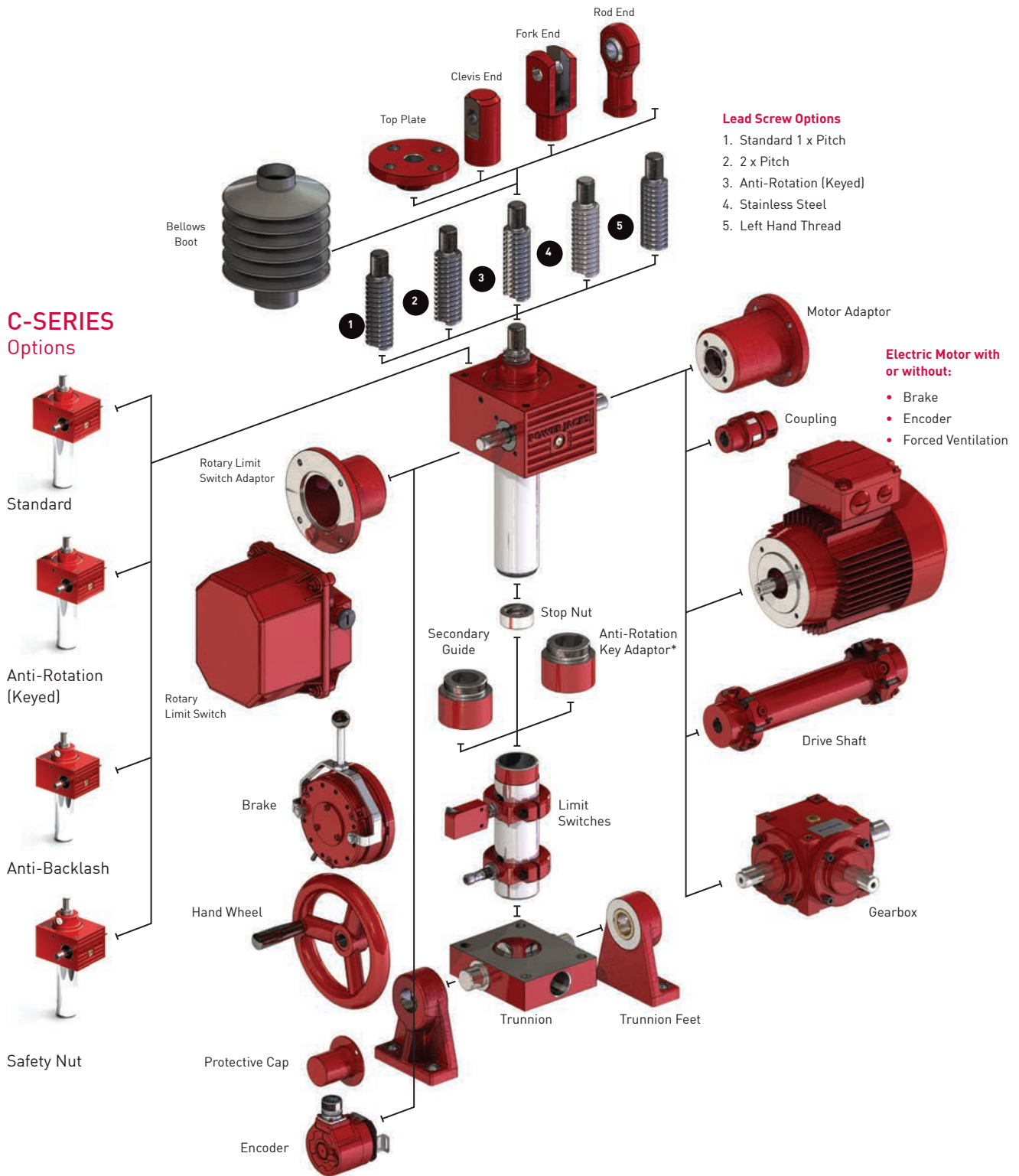
**Optimum lubrication**  
via 2 integrated systems

**Delivering impressive rotary**  
to linear motion performance

# C-SERIES

## Translating Screw Jack Building System

### C-SERIES Options

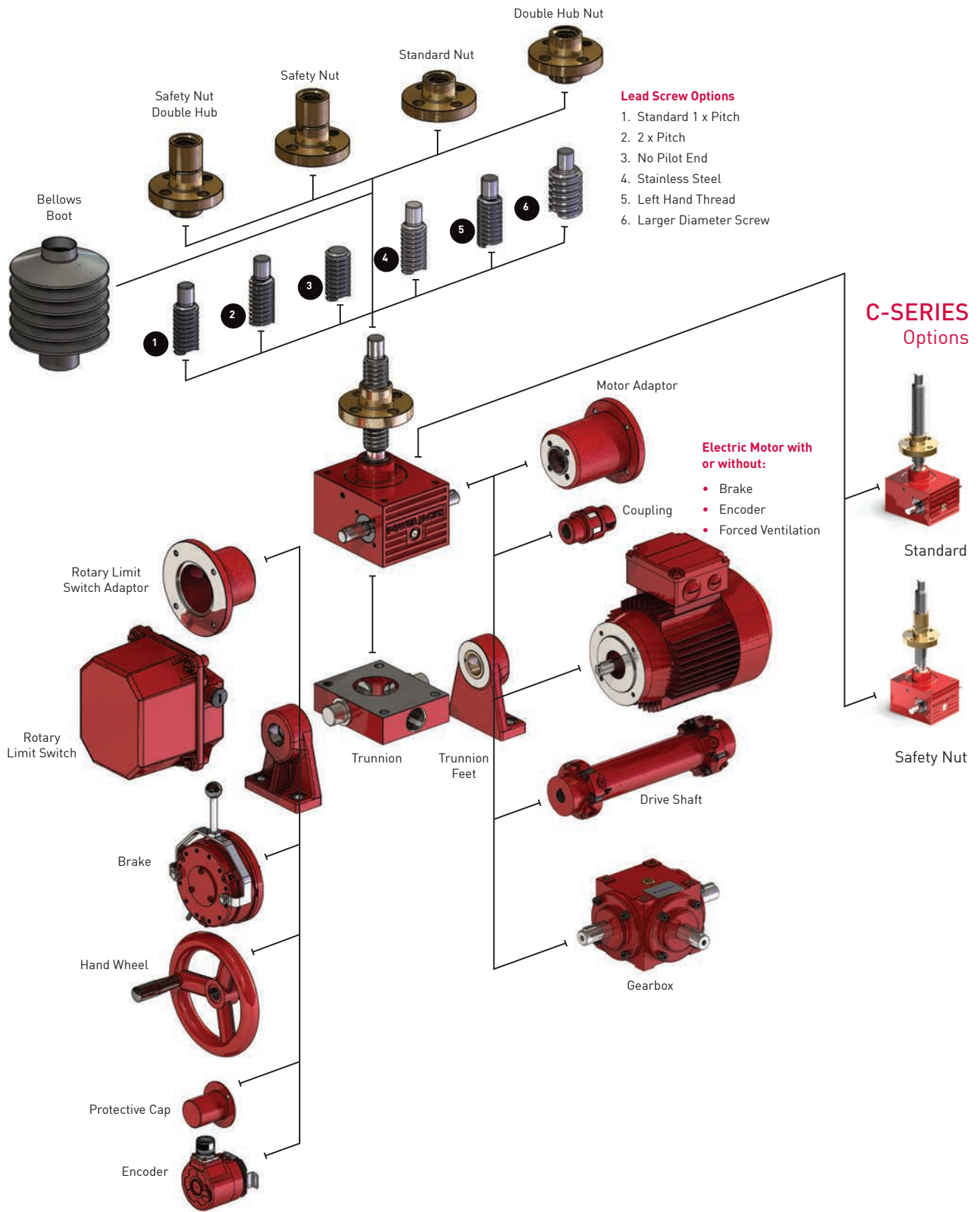


\*For use with Anti-Backlash and some safety nut models only.



# C-SERIES

## Rotating Screw Jack Building System



# C-SERIES

## Screw Jack Product Code

### Example

#### CMT0050-C001100-0520-CB00-0000

C-Series, Machine Screw Jack, Translating Screw, 50kN capacity, 6:1 gear ratio, 9mm lead on lifting screw, 520mm stroke, clevis end on lifting screw, standard base mount on gearbox, standard paint, standard lubrication.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	M	T	0	0	5	0	-	C	0	0	1	1	0	0	-	0	5	2	0	-	C	B	0	0	-	0	0	0	0

#### GROUP-1 - Screw Jack Gearbox Definition

#### GROUP-2 - Screw Jack Features

#### GROUP-3 - Accessories

#### GROUP-1 - Screw Jack Gearbox Definition

<b>1-Screw Jack Series</b>		<b>2-Screw Type</b>					
C	Series	M	Machine Screw				
S	Series	B	Ball Screw				
<b>3-Screw Configuration</b>		<b>4-7 - Capacity</b>					
R	Rotating Screw	0010	0025	0050	0100	0200	
T	Translating Screw	kN	10	25	50	100	200
<b>8 - Character Space</b>							
<b>9-Gearbox Type</b>							
C	Cubic						
<b>10-Gearbox Feature - 1</b>		<b>11-Gearbox Feature - 2</b>					
0	None	0	None				
K	Anti-Rotation (Keyed)	A	Anti-Backlash (this option is zero backlash for ball screws)				
C	Secondary Guide	B	Anti-Backlash with wear monitor - Visual				
E	Anti-Rotation (keyed) with Secondary Guide	R	Safety Nut Tension				
H	Double Hub Nut #1	S	Safety Nut Compression				
		T	Safety Nut Tension with Wear Monitor - visual				
		U	Safety Nut Compression with wear monitor - visual				
<b>12-Gearbox</b>		<b>13-Lifting Screw Lead</b>					
1	Option 1 Ratio	1	Option 1 Lead - Right Hand (Standard) #4				
2	Option 2 Ratio	2	Option 2 Lead - Right Hand #4				
A	Option 1 Ratio with gear rotation monitor	3	Option 1 Lead - Left Hand #5				
B	Option 2 Ratio with gear rotation monitor	4	Option 2 Lead - Left Hand #5				
<b>14-Worm Shaft Type</b>		<b>15-Worm Shaft Ends</b>					
0	Standard Material	0	Both				
N	Nickel Plated Worm Shaft	L	Left Hand Only				
S	Stainless Steel Worm Shaft	R	Right Hand Only				
		X	Both with Protective Cap on LHS #9				
		Y	Both with Protective Cap on RHS #9				
<b>16 - Character Space</b>							

# C-SERIES

## Metric Machine Screw Jacks

### GROUP-2 - Screw Jack Features

<b>17-20 - Stroke</b>	0000
<b>Stroke in mm</b>	0-9999

<b>21 - Character Space</b>
-----------------------------

<b>22 - End Type</b>	
E	Threaded End
C	Clevis End
T	Top Plate
F	Fork End (standard available up to 200KN)
R	Rod End (standard available up to 200KN)
J	Plain End (Future)
P	Pilot End #1
N	No Pilot End #1

<b>23 - Gearbox Mounting</b>	
B	Base Mount
C	Second Clevis on Cover Pipe Standard #6 #8
E	Second Clevis on Cover Pipe 90 degree #8
T	Trunnion Mount Standard #2
U	T + Trunnion Feet
X	Trunnion Mount 90 degree #3
Y	X + Trunnion Feet

<b>24 - Lifting Screw Material</b>	
0	Standard
S	Stainless Steel
M	Standard with Low Friction Coating (Molycote)
A	Standard with Protective Coating (Armaloy)

<b>25 - Lifting Screw Covers</b>	
0	Cover Pipe & No Bellows Boot #10
B	Cover Pipe & Fabric Bellows Boot #8
F	Fabric Bellows Boot x 2 - Rotating Screw
R	Cover Pipe & Rubber Bellows Boot #8
S	Rubber Bellows Boot x 2 - Rotating Screw
N	No Cover Pipe & No Bellows Boot #8

26 - Character Space
----------------------

### GROUP-3 - Accessories

<b>27 - Drive Type</b>			
0	None, Standard Features (tapped holes on gearbox side if present)	H	Hand Wheel - LHS
A	Motor Adapter Only, B14 - LHS	J	Hand Wheel - RHS
B	Motor Adapter Only, B14 - RHS	R	Rotation Indicator (Visual) on worm shaft - LHS
C	Motor Adapter B14 & Coupling - LHS	T	Rotation Indicator (Visual) on worm shaft - RHS
E	Motor Adapter B14 & Coupling - RHS		

<b>28- Motor Frame Size / Drive Interface Size</b>			
0	Not Applicable	F	112
A	63	G	132
B	71	H	160
C	80	I	180
D	90	J	200
E	100		

<b>29 - Mounting Kit for Limit Switches &amp; Stop Nuts #7</b>			
0	None	P	Inductive Proximity Sensor, 2, End of Stroke, Adjustable #9
C	RLS-51 Rotary Cam Limit Switch - RHS	S	SKA Rotary Cam Limit Switch - RHS
D	RLS-51 Rotary Cam Limit Switch - LHS	T	SKA Rotary Cam Limit Switch - LHS
E	RLS-51 Rotary Cam Limit Switch - RHS with Stop Nut	U	SKA Rotary Cam Limit Switch - RHS with Stop Nut
F	RLS-51 Rotary Cam Limit Switch - LHS with Stop Nut	V	SKA Rotary Cam Limit Switch - LHS with Stop Nut
M	Electro-Mechanical Limit Switch, 2, End of Stroke, Adjustable #9	W	Stop Nut

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## Screw Jack Product Code

<b>30 - Paint, Lubricant, Seals</b>	
0	Standard Paint, Lubricant & Seals
1	Standard Paint & Food Grade Lubricant & Standard Seals
2	Standard Paint, Nuclear Grade Lubricant & Seals
3	Standard Paint, High Temperature Lubricant & Seals
4	Standard Paint, Low Temperature Lubricant & Seals
5	Standard Paint, Biodegradable Lubricant & Standard Seals
A	No Paint, Standard Lubricant & Seals
B	No Paint & Food Grade Lubricant & Standard Seals
C	No Paint, Nuclear Grade Lubricant & Seals
D	No Paint, High Temperature Lubricant & Seals
E	No Paint, Low Temperature Lubricant & Seals
F	No Paint, Biodegradable Lubricant & Standard Seals
G	Standard Primer, Lubricant & Seals
H	Standard Primer & Food Grade Lubricant & Standard Seals
I	Standard Primer, Nuclear Grade Lubricant & Seals
J	Standard Primer, High Temperature Lubricant & Seals
K	Standard Primer, Low Temperature Lubricant & Seals
L	Standard Primer, Biodegradable Lubricant & Standard Seals
M	Epoxy Paint, Standard Lubricant & Seals
N	Epoxy Paint & Food Grade Lubricant & Standard Seals
P	Epoxy Paint, Nuclear Grade Lubricant & Seals
R	Epoxy Paint, High Temperature Lubricant & Seals
S	Epoxy Paint, Low Temperature Lubricant & Seals
T	Epoxy Paint, Biodegradable Lubricant & Standard Seals

### Notes:

- #1 Rotating screw models only.
- #2 Trunnions on same side as worm shaft (standard).
- #3 Trunnions at 90° to worm shaft.
- #4 Standard right hand thread form. Worm shaft turns clockwise to extend screw.
- #5 Left hand thread form. Worm shaft turns anti-clockwise to extend screw.
- #6 Standard is clevis axis parallel to worm shaft.
- #7 Limit switch mounting included.
- #8 Translating screw models only.
- #9 All models except E-Series 5 kN & 10 kN models.
- #10 For Rotating Screw Jacks the "Cover Pipe" may actually be a "Plug"

# C-SERIES

## Metric Machine Screw Jacks

### Performance

Screw Jack Model <sup>4</sup>	CM-0010		CM-0025		CM-0050		CM-0100			
Capacity	kN		10		25		50		100	
Lead Screw <sup>1</sup>	Diameter (mm)		20		30		40		55	
	Lead	Option	1	2	1	2	1	2	1	2
		mm	5	10	6	12	9	18	12	24
Gear Ratios	Option 1		5:1		6:1		6:1		8:1	
	Option 2		20:1		24:1		24:1		24:1	
Turn of worm for travel of lead screw	Option 1	1 Turn	1mm	2mm	1mm	2mm	1.5mm	3mm	1.5mm	3mm
	Option 2	4 Turn	1mm	2mm	1mm	2mm	1.5mm	3mm	2mm	4mm
Maximum Input Power (kW)	Option 1		0.375		1.5		3		3.75	
	Option 2		0.19		0.375		0.55		1.125	
Start up torque at full load (Nm) <sup>2</sup>	Option 1		6.8	9.4	19.8	26.4	56.0	76.0	115.9	156.6
	Option 2		3.0	4.1	8.7	11.7	25.5	34.7	60.5	81.9
Maximum Through Torque (Nm) <sup>7</sup>	Option 1		20.4		59.4		168.0		347.7	
	Option 2		9.0		26.1		76.5		181.5	
Static Efficiency <sup>3</sup>	Option 1		0.236	0.339	0.201	0.302	0.213	0.314	0.206	0.305
	Option 2		0.133	0.192	0.113	0.171	0.117	0.172	0.132	0.195
Dynamic Efficiency <sup>3</sup>	Option 1		0.306	0.424	0.264	0.383	0.281	0.398	0.272	0.388
	Option 2		0.194	0.268	0.167	0.242	0.172	0.244	0.190	0.271
Lead Screw Restraining Torque (Nm) <sup>5</sup>	-		22	30	76	102	210	290	575	780
Worm Shaft Radial Load (N) <sup>6</sup>	-		325		380		740		1000	
Maximum Input Speed (rpm)	-		1800		1800		1800		1800	
Gear Case Material	-		Aluminium		SG Iron		SG Iron		SG Iron	
Weight (kg) – stroke = 150mm	Translating		3.0		8.3		19.5		36.0	
	Rotating		3.1		8.7		20.2		40.2	
Weight (kg) – per extra 25mm	Translating		0.11		0.21		0.32			
	Rotating		0.05		0.11		0.19		0.36	

### 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 grease lubricated worm gear box and lifting screw.
4. All C-Series screw jacks have grease lubricated gearbox and lead screw as standard.
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.

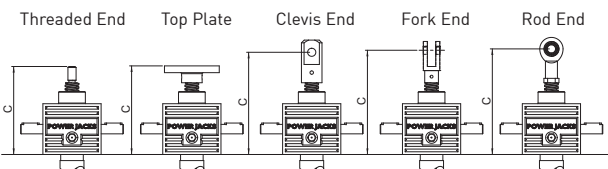
# C-SERIES

## Translating Screw Jack 10kN

### Performance

Screw Jack Model	CM-0010		
Capacity	kN		10
Lead Screw	Diameter (mm)		20
	Lead (mm)		5   10
Gear Ratios	Option 1		5:1
	Option 2		20:1
Turn of worm for travel of lead screw	Option 1	1 Turn	1mm   2mm
	Option 2	4 Turn	1mm   2mm
Maximum Input Power (kW)	Option 1		0.375
	Option 2		0.19
Start up torque at full load (Nm)	Option 1		6.8   9.4
	Option 2		3.0   4.1
Maximum Through Torque (Nm)	Option 1		20.4
	Option 2		9.0
Static Efficiency	Option 1		0.236   0.339
	Option 2		0.133   0.192
Dynamic Efficiency	Option 1		0.306   0.424
	Option 2		0.194   0.268
Lead Screw Restraining Torque (Nm)	-	22	30
Worm Shaft Radial Load (N)	325		
Maximum Input Speed (rpm)	1800		
Gear Case Material	Aluminium		
Weight (kg) – stroke = 150mm	Translating		3.0
	Rotating		3.1
Weight (kg) – per extra 25mm	Translating		0.11
	Rotating		0.05

### CMT0010 Closed Heights



Closed Height 'C'	Threaded End	Top Plate	Clevis End	Fork End	Rod End
CMT0010	130	130	150	153	155
Stroke (mm)	With Bellow Boots (B)				
0 - 500	150	150	170	173	175
501 - 1000	180	180	200	203	205
1001 - 1500	210	210	230	233	235
1501 - 2000	290	290	310	313	315

### CMT0010 Stop Nut



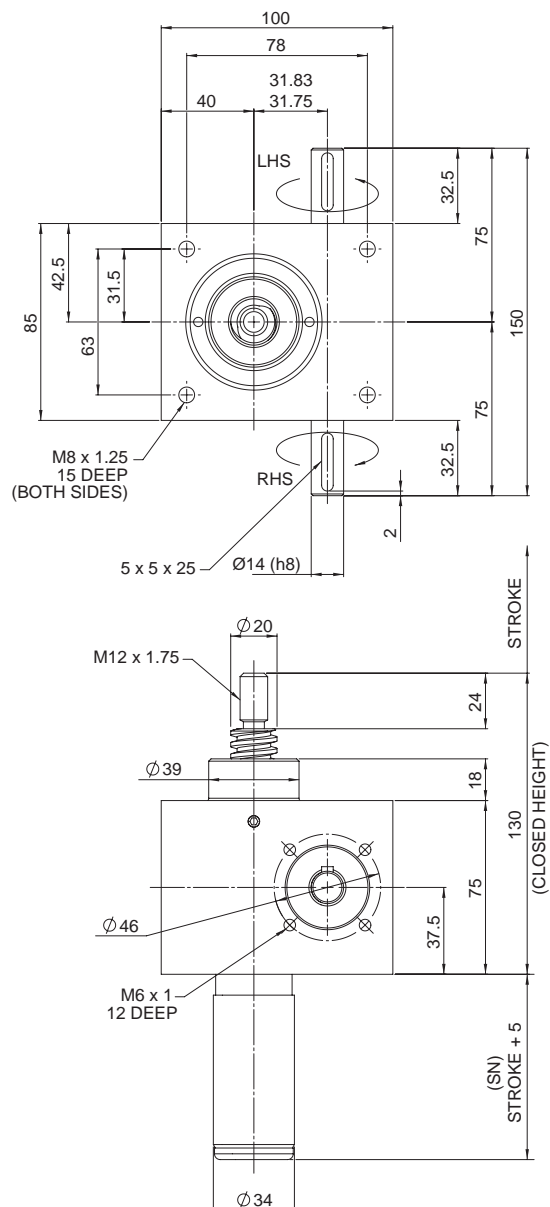
Stop nut provides a full power mechanical stop at the end of the lead screw. To be used as a safety feature in emergency conditions.

SN = Stroke + 25mm

#### Note:

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

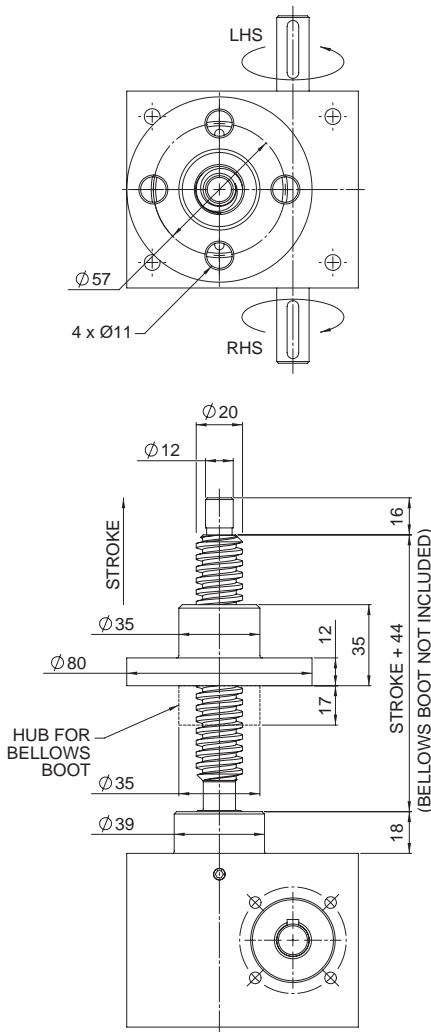
### CMT0010-C00



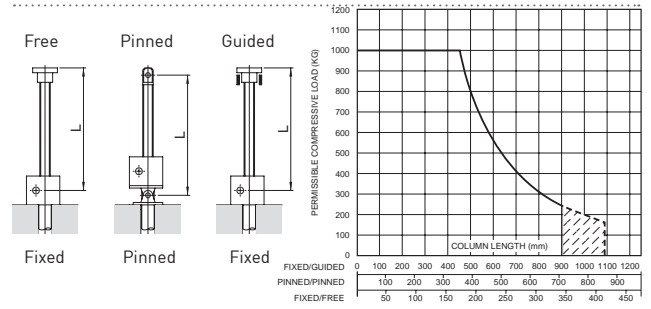
# C-SERIES

Rotating Screw Jack 10kN

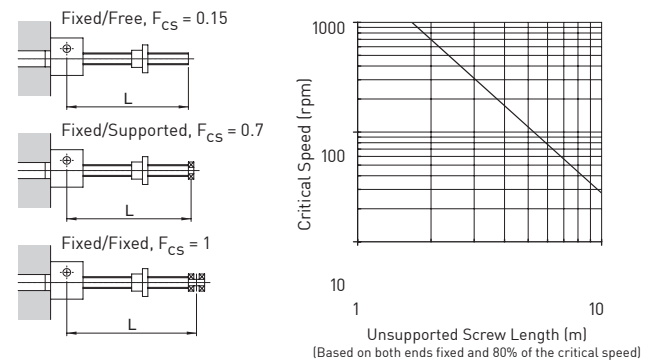
CMR0010-C00



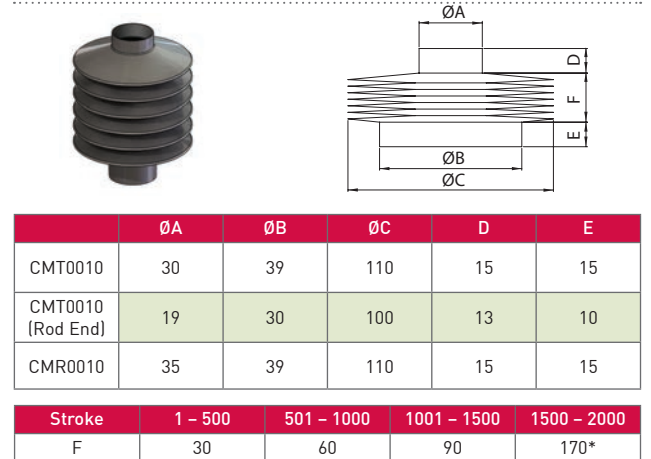
## Column Strength



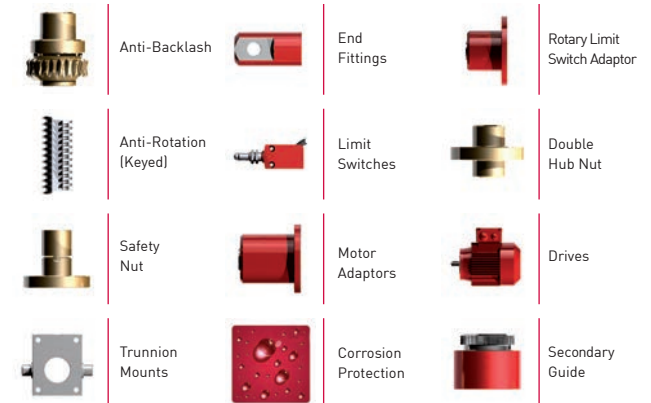
## Critical Screw Speed



## Bellows Boot



## Accessories & Options



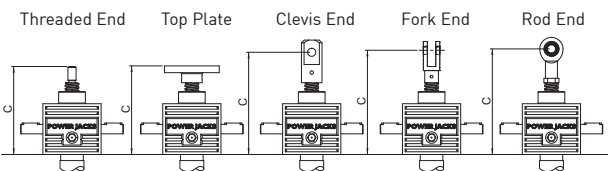
# C-SERIES

## Translating Screw Jack 25kN

### Performance

Screw Jack Model	CM-0025	
Capacity	kN 25	
Lead Screw	Diameter (mm)	30
	Lead (mm)	6 12
Gear Ratios	Option 1	6:1
	Option 2	24:1
Turn of worm for travel of lead screw	Option 1   1 Turn	1mm 2mm
	Option 2   4 Turn	1mm 2mm
Maximum Input Power (kW)	Option 1	1.5
	Option 2	0.375
Start up torque at full load (Nm)	Option 1	19.8 26.4
	Option 2	8.7 11.7
Maximum Through Torque (Nm)	Option 1	59.4
	Option 2	26.1
Static Efficiency	Option 1	0.201 0.302
	Option 2	0.113 0.171
Dynamic Efficiency	Option 1	0.264 0.383
	Option 2	0.167 0.242
Lead Screw Restraining Torque (Nm)	-	76 102
Worm Shaft Radial Load (N)	380	
Maximum Input Speed (rpm)	1800	
Gear Case Material	SG Iron	
Weight (kg) – stroke = 150mm	Translating	8.3
	Rotating	8.7
Weight (kg) – per extra 25mm	Translating	0.21
	Rotating	0.11

### CMT0025 Closed Heights



Closed Height 'C'	Threaded End	Top Plate	Clevis End	Fork End	Rod End
CMT0025	145	145	170	195	192
Stroke (mm)	With Bellow Boots (B)				
0 - 500	165	165	190	215	212
501 - 1000	190	190	215	240	237
1001 - 1500	215	215	240	265	262
1501 - 2000	245	245	270	295	292

### CMT0025 Stop Nut



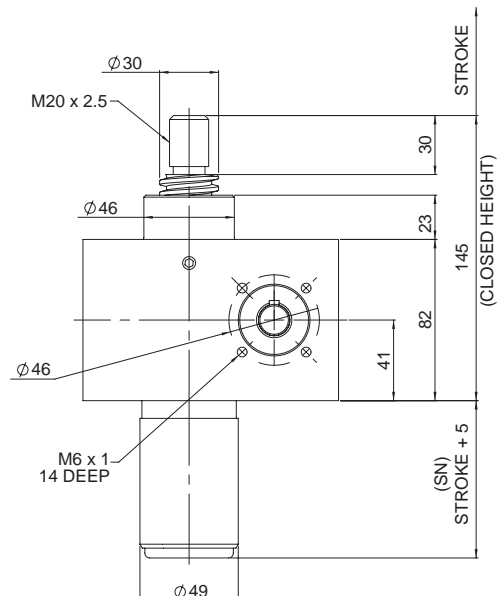
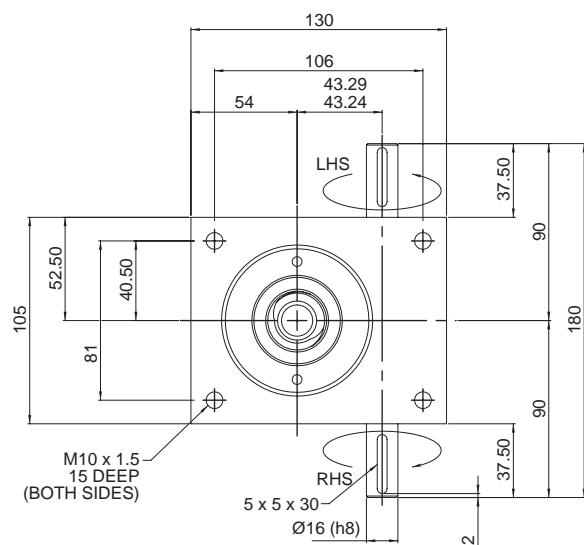
Stop nut provides a full power mechanical stop at the end of the lead screw. To be used as a safety feature in emergency conditions.

$$SN = \text{Stroke} + 21\text{mm}$$

Note:

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

### CMT0025-C00

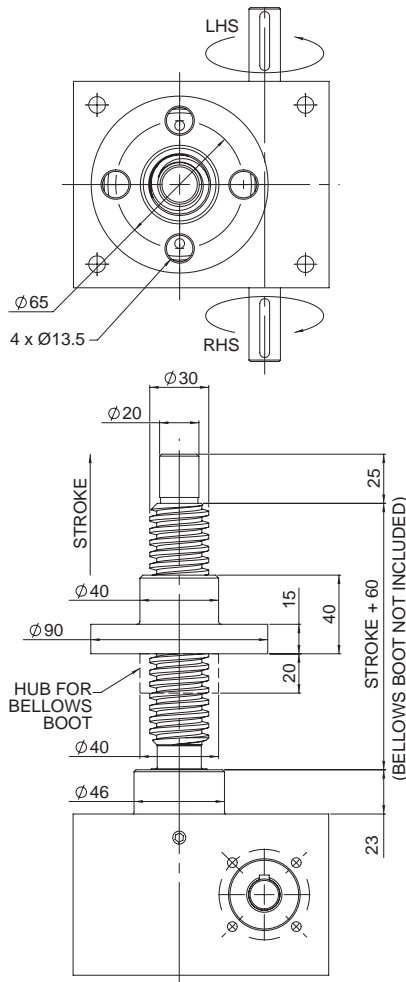
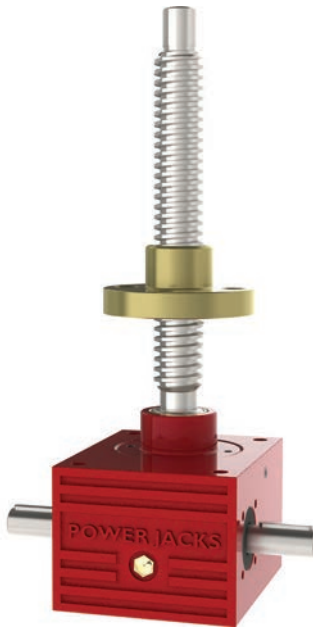




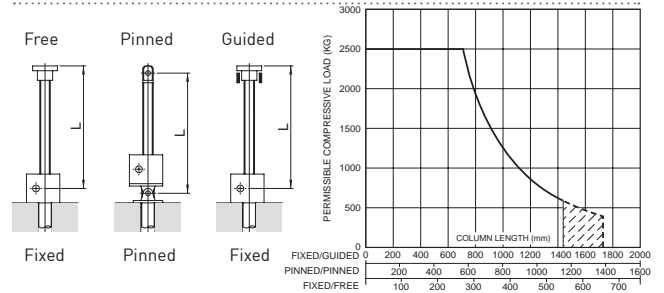
# C-SERIES

Rotating Screw Jack 25kN

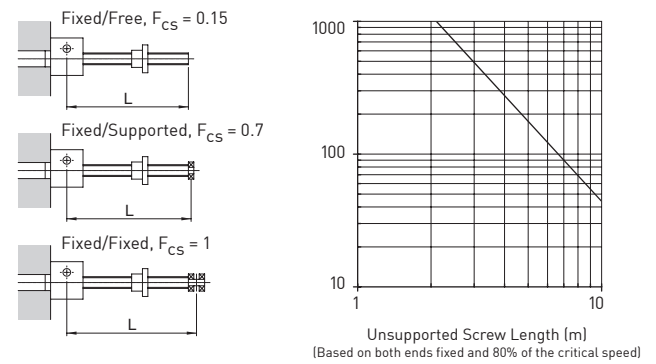
CMR0025-C00



## Column Strength



## Critical Screw Speed

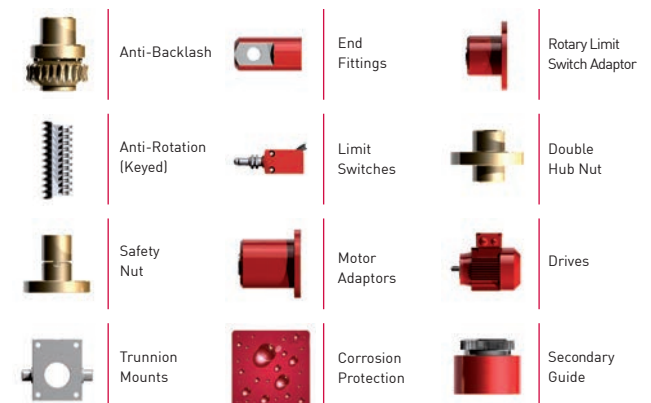


	ØA	ØB	ØC	D	E
CMT0025	40	46	120	15	15
CMT0025 (Rod End)	19	30	100	13	10
CMR0025	40	46	120	15	15

Stroke	1 - 500	501 - 1000	1001 - 1500	1500 - 2000
F	30	55	80	110*

## Accessories & Options



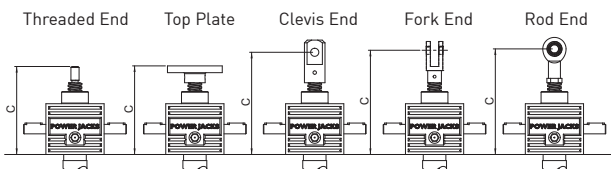
# C-SERIES

## Translating Screw Jack 50kN

### Performance

Screw Jack Model		CM-0050	
Capacity	kN	50	
Lead Screw	Diameter (mm)	40	
	Lead (mm)	9	18
Gear Ratios	Option 1	6:1	
	Option 2	24:1	
Turn of worm for travel of lead screw	Option 1	1 Turn	1.5mm 3mm
	Option 2	4 Turn	1.5mm 3mm
Maximum Input Power (kW)	Option 1	3	
	Option 2	0.55	
Start up torque at full load (Nm)	Option 1	56.0	76
	Option 2	25.5	34.7
Maximum Through Torque (Nm)	Option 1	168.0	
	Option 2	76.5	
Static Efficiency	Option 1	0.213	0.314
	Option 2	0.117	0.172
Dynamic Efficiency	Option 1	0.281	0.398
	Option 2	0.172	0.244
Lead Screw Restraining Torque (Nm)	-	210	290
Worm Shaft Radial Load (N)		740	
Maximum Input Speed (rpm)	-	1800	
Gear Case Material		SG Iron	
Weight (kg) – stroke = 150mm	Translating	19.5	
	Rotating	20.2	
Weight (kg) – per extra 25mm	Translating	0.32	
	Rotating	0.19	

### CMT0050 Closed Heights



Closed Height 'C'	Threaded End	Top Plate	Clevis End	Fork End	Rod End
CMT0050	195	195	220	260	254
Stroke (mm)	With Bellow Boots (B)				
0 - 500	215	215	240	280	274
501 - 1000	235	235	260	300	294
1001 - 1500	260	260	285	325	319
1501 - 2000	325	325	350	390	384

### CMT0050 Stop Nut



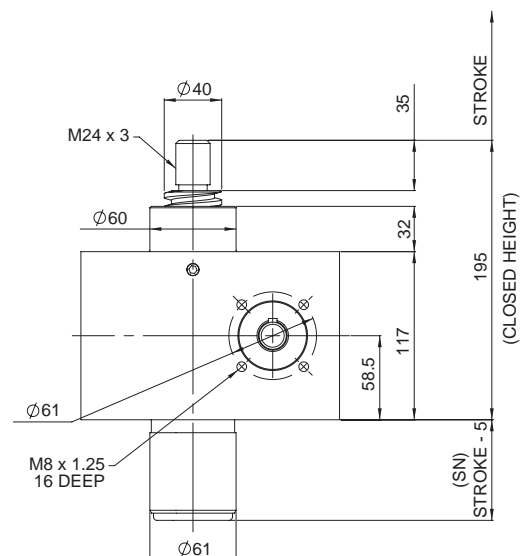
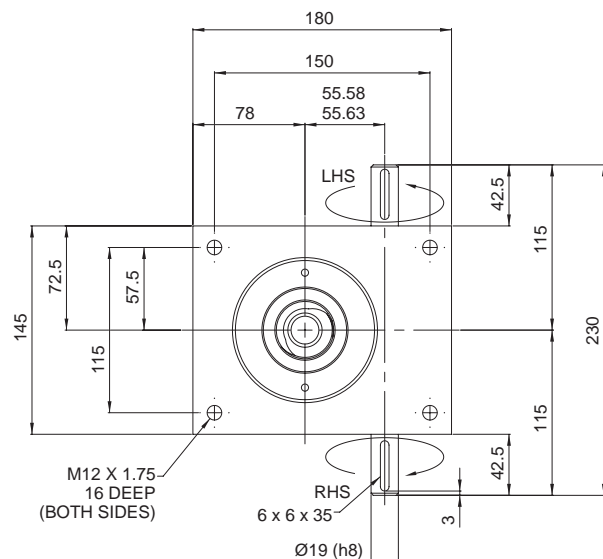
Stop nut provides a full power mechanical stop at the end of the lead screw. To be used as a safety feature in emergency conditions.

$$SN = \text{Stroke} + 34\text{mm}$$

Note:

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

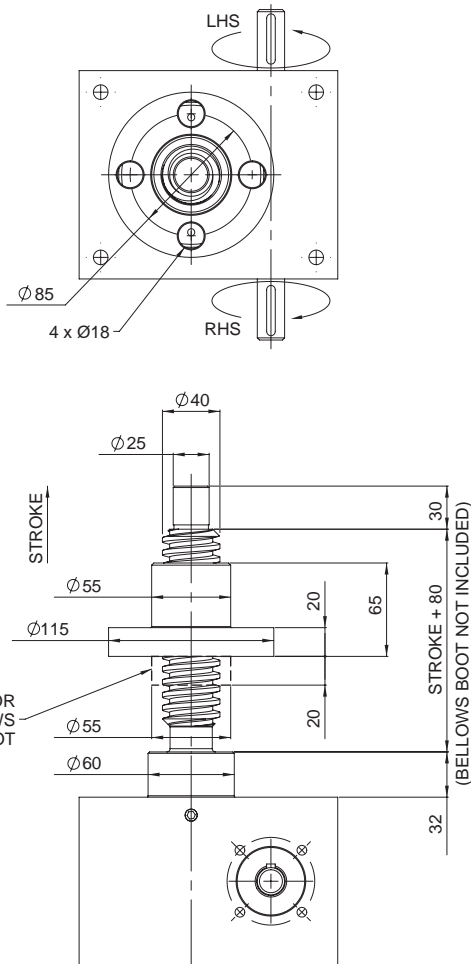
### CMT0050-C00



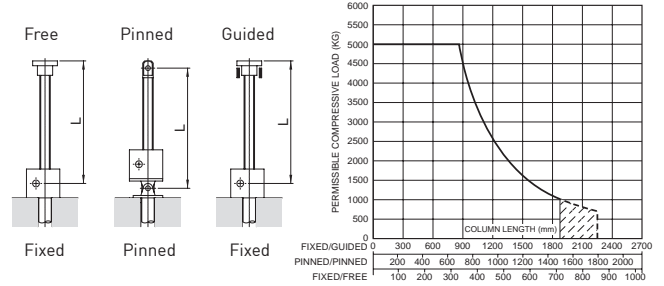
# C-SERIES

Rotating Screw Jack 50kN

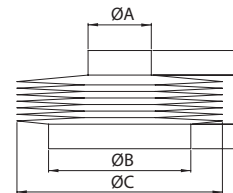
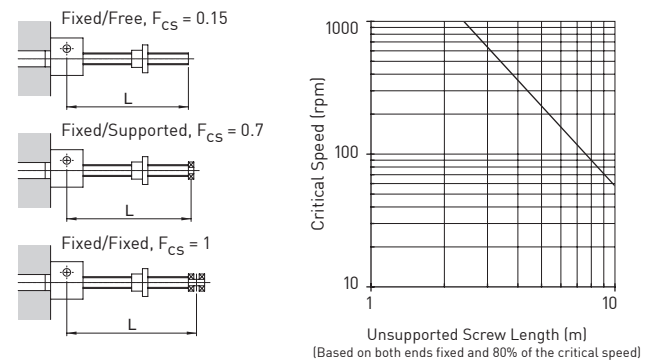
CMR0050-C00



## Column Strength



## Critical Screw Speed



	ØA	ØB	ØC	D	E
CMT0050	50	60*	140	15	15
CMT0050 (Rod End)	19	30	100	13	10
CMR0050	55	60	140	15	15

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

## 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

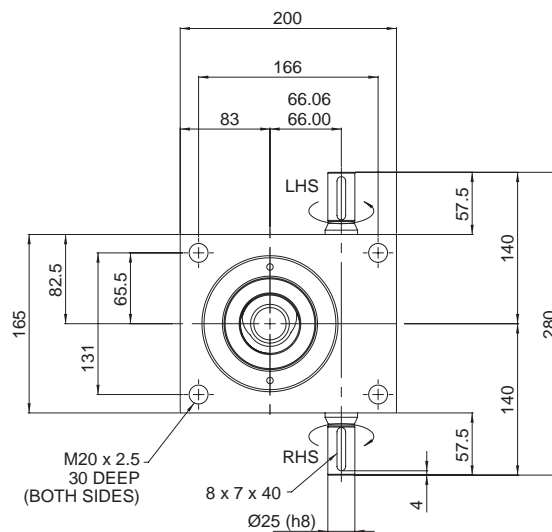
# C-SERIES

## Translating Screw Jack 100kN

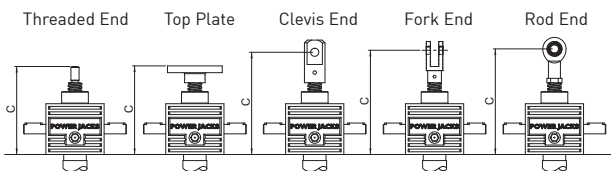
### Performance

Screw Jack Model	CM-0100	
Capacity	kN	100
Lead Screw	Diameter (mm)	55
	Lead (mm)	12   24
Gear Ratios	Option 1	8:1
	Option 2	24:1
Turn of worm for travel of lead screw	Option 1   1 Turn	1.5mm   3mm
	Option 2   4 Turn	2mm   4mm
Maximum Input Power (kW)	Option 1	3.75
	Option 2	1.125
Start up torque at full load (Nm)	Option 1	115.9   156.6
	Option 2	60.5   81.9
Maximum Through Torque (Nm)	Option 1	347.7
	Option 2	181.5
Static Efficiency	Option 1	0.206   0.305
	Option 2	0.132   0.195
Dynamic Efficiency	Option 1	0.272   0.388
	Option 2	0.190   0.271
Lead Screw Restraining Torque (Nm)	-	575   780
Worm Shaft Radial Load (N)		1000
Maximum Input Speed (rpm)	-	1800
Gear Case Material		SG Iron
Weight (kg) – stroke = 150mm	Translating	19.5
	Rotating	20.2
Weight (kg) – per extra 25mm	Translating	0.32
	Rotating	0.19

### CMT0100-C00



### CMT0100 Closed Heights



Closed Height 'C'	Threaded End	Top Plate	Clevis End	Fork End	Rod End
CMT0100	250	250	295	354	335
Stroke (mm)	With Bellow Boots (B)				
0 - 500	270	270	315	374	355
501 - 1000	290	290	335	394	375
1001 - 1500	315	315	360	419	400
1501 - 2000	380	380	425	484	465

### CMT0100 Stop Nut

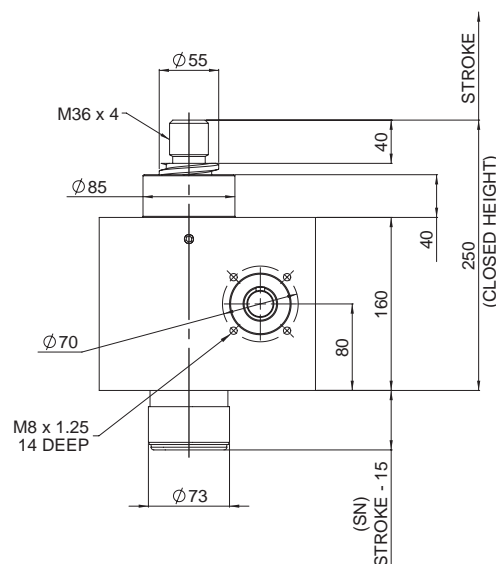


Stop nut provides a full power mechanical stop at the end of the lead screw. To be used as a safety feature in emergency conditions.

$$SN = \text{Stroke} + 37\text{mm}$$

Note:

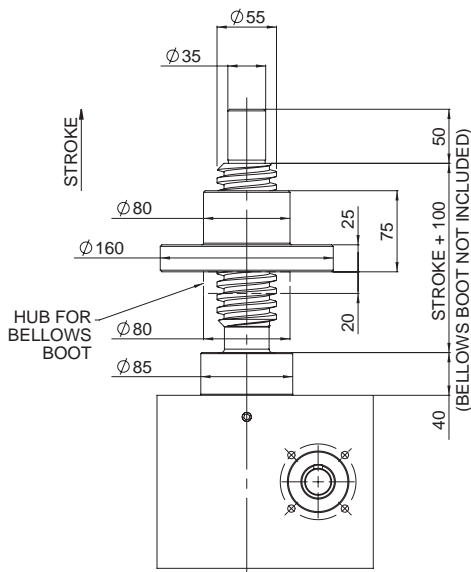
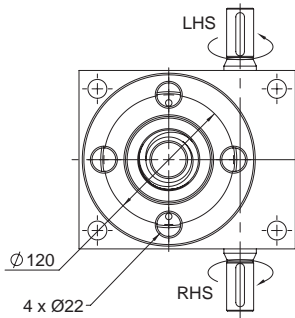
- All dimension in millimetres unless otherwise stated.
- Designs subject to change without notice.



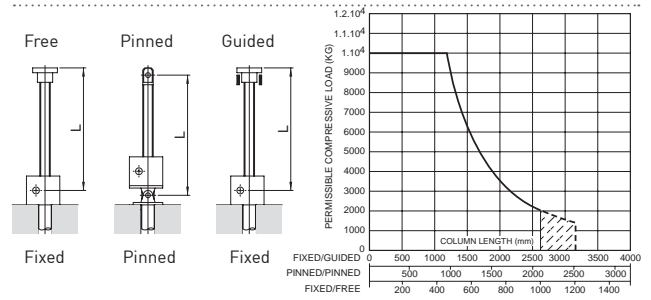
# C-SERIES

Rotating Screw Jack 100kN

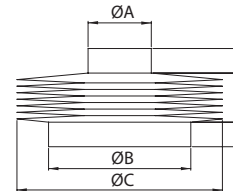
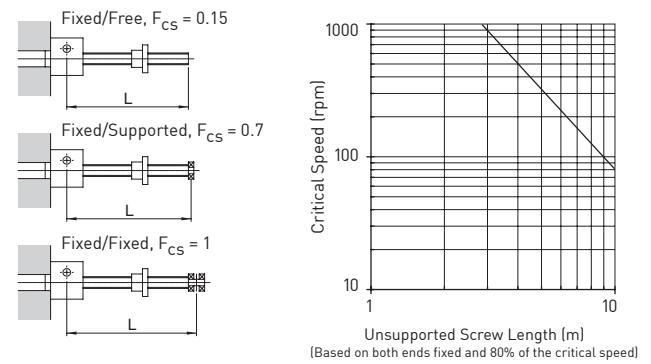
CMR0100-C00



## Column Strength



## Critical Screw Speed



	ØA	ØB	ØC	D	E
CMT0100	65	85	150	15	15
CMT0100 (Rod End)	19	30	100	13	10
CMR0100	80	85	150	15	15

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

## 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

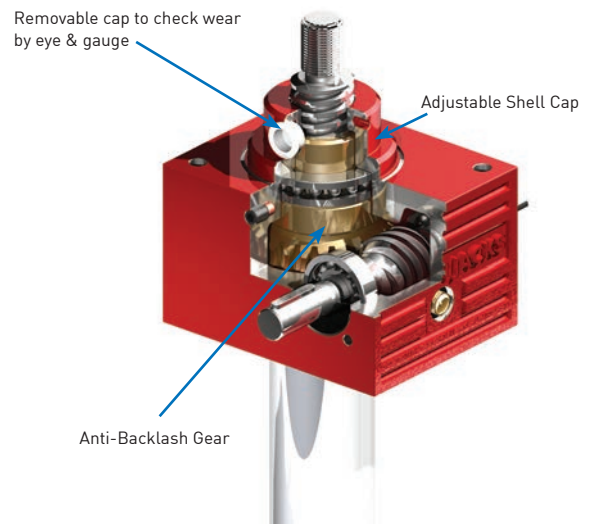
# C-SERIES

## 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.

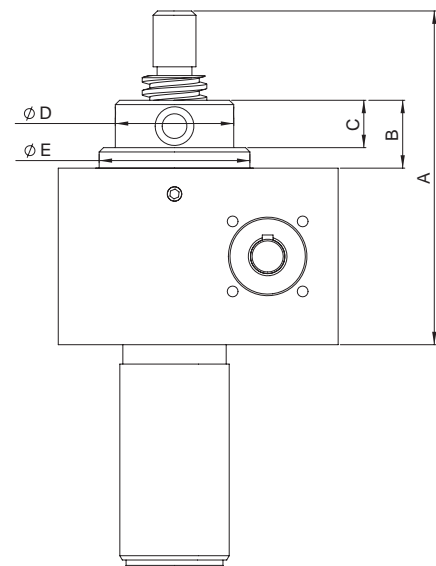
A visual wear indicator is included as standard on all models and a "feeler" gauge can be used to measure the wear. This can be upgraded to use a sensor on request (consult Power Jacks).



### Dimensions for Anti-Backlash

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

Model	CMT0010	CMT0025	CMT0050	CMT0100
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



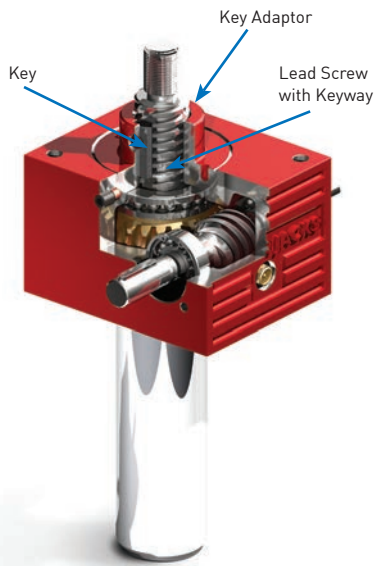
### Performance for Anti-Backlash

Model		CMT0010		CMT0025		CMT0050		CMT0100	
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

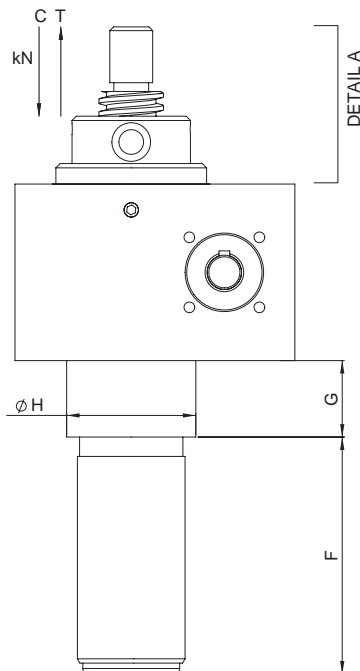
## Performance for Anti-Rotation

Model		CMT0010		CMT0025		CMT0050		CMT0100	
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	CMT0010	CMT0025	CMT0050	CMT0100
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	CMT0010	CMT0025	CMT0050	CMT0100
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	CMT0010	CMT0025	CMT0050	CMT0100
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		CMT0010		CMT0025		CMT0050		CMT0100	
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	CMT0010	CMT0025	CMT0050	CMT0100
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	CMT0010	CMT0025	CMT0050	CMT0100
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	CMT0010	CMT0025	CMT0050	CMT0100
Weight (kg)	2.9	8.0	18.6	34.7

### Rotating Screw Jack with Safety Nut

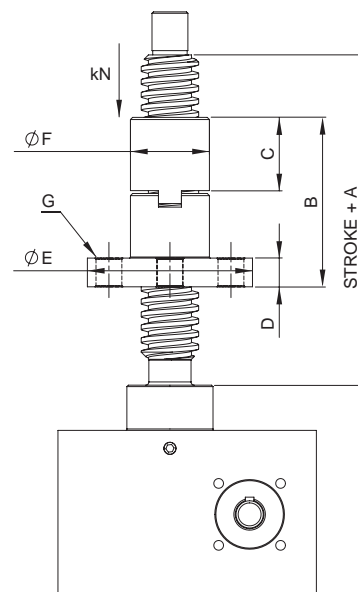
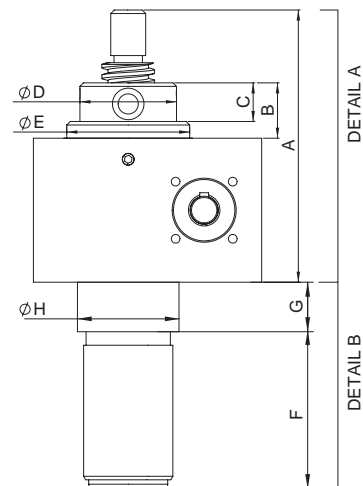
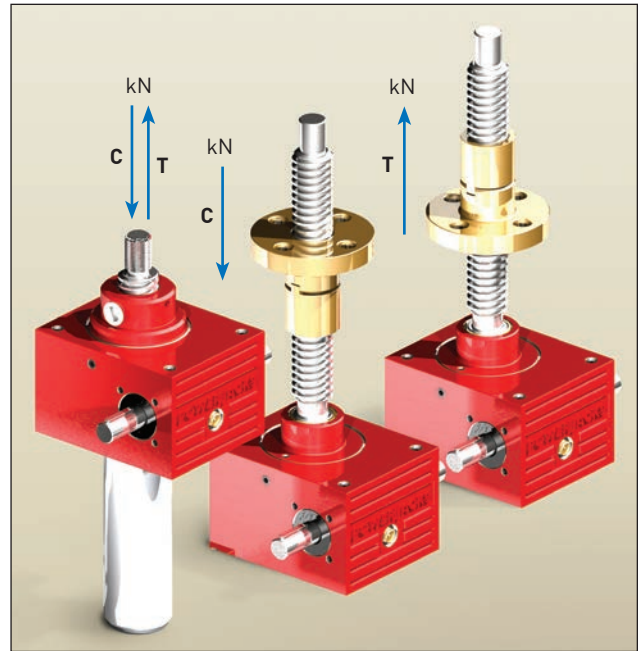
The dimensions for these screw jacks are the same as the standard units except those detailed below. A bellows boot hub can be provided on the flanged half of the safety nut.

Model	CMR0010	CMR0025	CMR0050	CMR0100
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	CMR0010	CMR0025	CMR0050	CMR0100
Weight (kg)	3.3	9.0	21.1	42.2

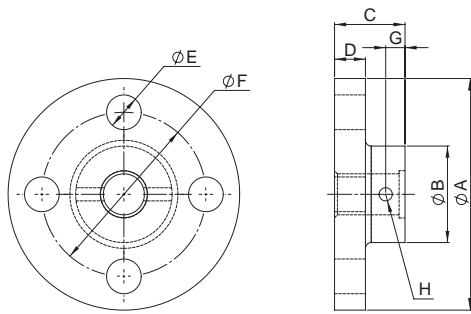




# C-SERIES

## End Fittings for Translating Screw

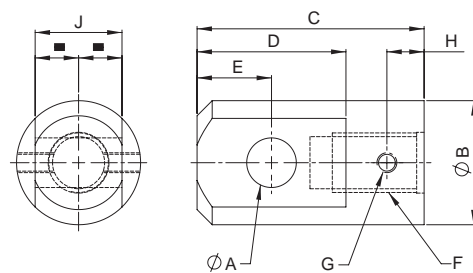
### Top Plate



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

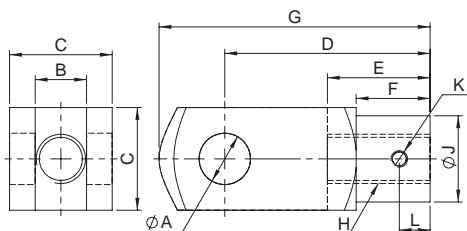
PCD = Pitch Circle Diameter

### Clevis End



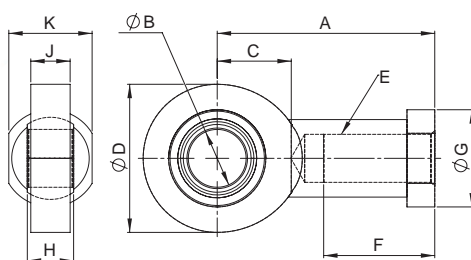
Capacity	10kN	25kN	50kN	100kN
ØA	Ø12	Ø16	Ø20	Ø22
ØB	Ø30	Ø40	Ø50	Ø65
C	63	79.5	91.5	120
D	36	46	60	66
E	18	23	30	33
F	M12 x 1.75 26 Deep	M20 x 2.5 32 Deep	M24 x 3 37 Deep	M36 x 4 42 Deep
G	M6 x 1	M8 x 1.25	M8 x 1.25	M10 x 1.5
H	15	15	15	20
J	20	30	35	40
Weight (kg)	0.26	0.57	1.0	2.1

### 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

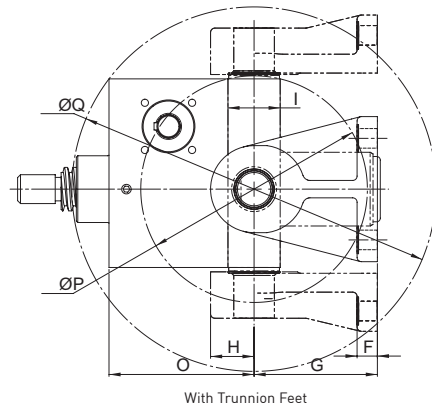
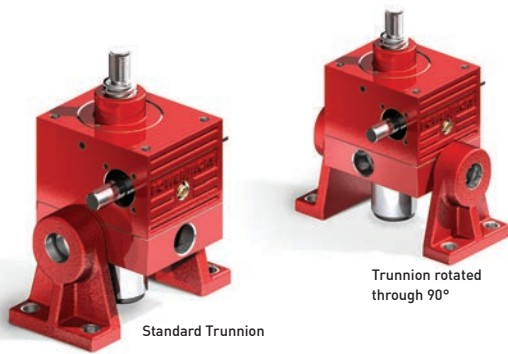


Capacity	10kN	25kN	50kN	100kN
A	50	77	94	125
ØB	12	20	25	35
C	18	27	32	42
ØD	34	53	64	82
E	M12 x 1.75	M20 x 1.5	M24 x 2	M36 x 3
F	23	40	48	60
ØG	22	35	42	58
H	10	16	20	25
J	8	13	17	21
K	19	32	36	50
Weight (kg)	0.1	0.35	0.64	1.3

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

# C-SERIES

## Trunnion Mounts

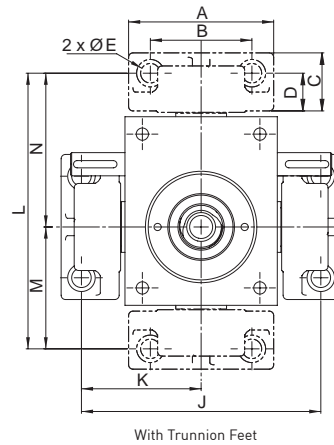


Trunnion mounts provide a pivot point at the gearbox of the screw jack.

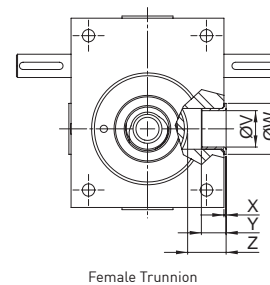
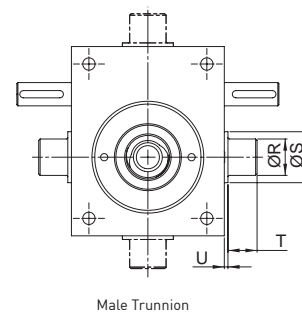
- 2 Pivot Plane Options
- Supplied with or without Trunnion Feet
- Option of Male or Female Trunnions
- Trunnion mounts can be mounted on either side of the screw jacks gearbox

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.

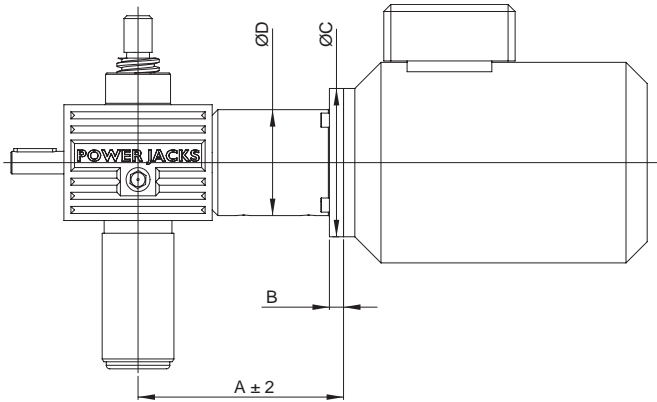


Model	C-0010	C-0025	C-0050	C-0100
A	70	100	140	170
B	42	70	100	120
C	34	40	55	70
D	21	26	35.5	43.5
ØE	11	13.5	18	22
F	12	14	20	25
G	65	85	120	130
H	20	30	42.5	47.5
I	30	36	50	60
J	134	164	226	265
K	67	82	113	132.5
L	149	189	261	300
M	64.5	83.5	118.5	133
N	84.5	105.5	142.5	167
O	90	100	142	190
ØP	124	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-0010					
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-0025					
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-0050					
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)

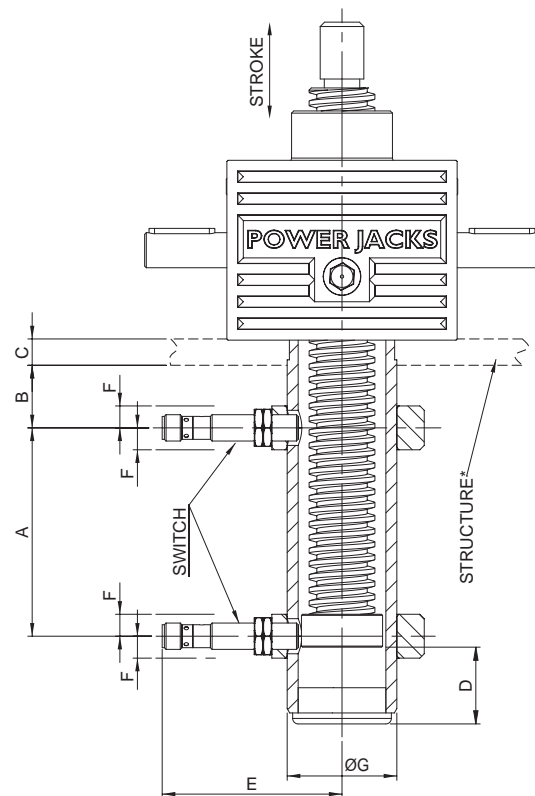


## C-Series Screw Jack

Model	CMT0010	CMT0025	CMT0050	CMT0100
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

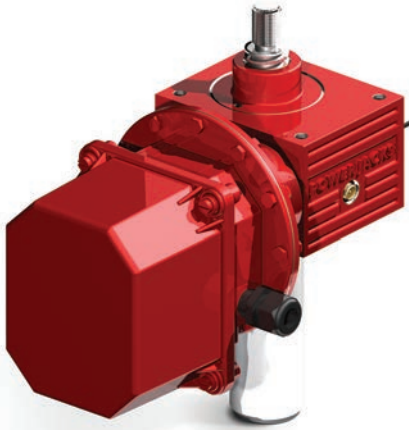
### Note:

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

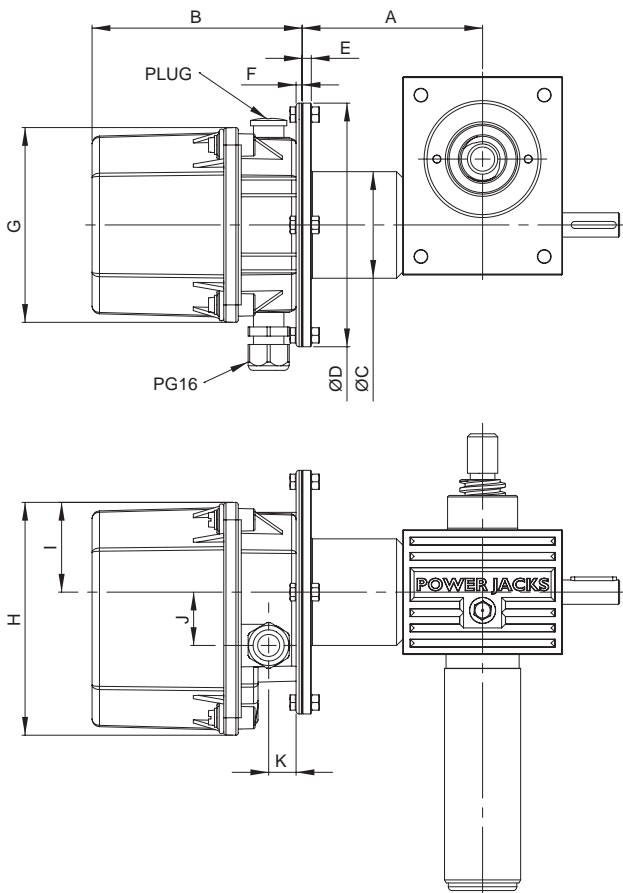


RLS-51 Rotary cam limit switches can be used as end of travel limit switches with the option of intermediate switches. Each limit switch is individually adjustable over the entire stroke of the screw jack.

- 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-0010	C-0025	C-0050	C-0100
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**

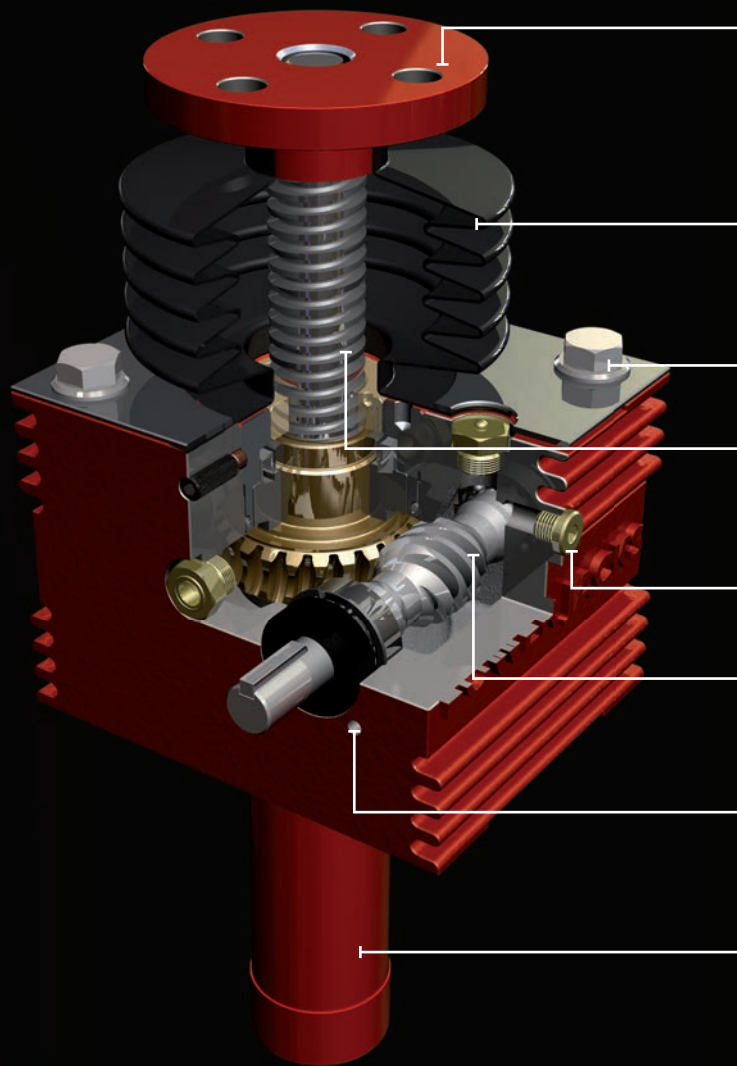
To suit all economic needs.

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

High  
Performance  
Reliable  
Durable  
Versatile  
Dynamic

# S-SERIES

## Features



### Translating and Rotating Screw Configurations

#### 4 End Fittings as Standard:

- Top Plate
- Clevis End
- Fork End
- Rod End

**Bellows Boot Screw Protection** prevents ingress of dirt and debris onto screw threads.

**Mounting Bolt Holes on 2 Faces**

**Precision Machined Lead Screw** available in standard material or stainless steel.

**Oil Fitting in all Sides**

**Worm Shaft Material** available in standard, plated or stainless steel.

**Integral Accessory Bolt Holes** allow mounting of accessories to worm shaft.

**Cover Pipe Fitted as Standard** protects lead screw from damage and stops ingress of dirt and debris. Cover pipe also acts as grease reservoir for normal operation.

## 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.

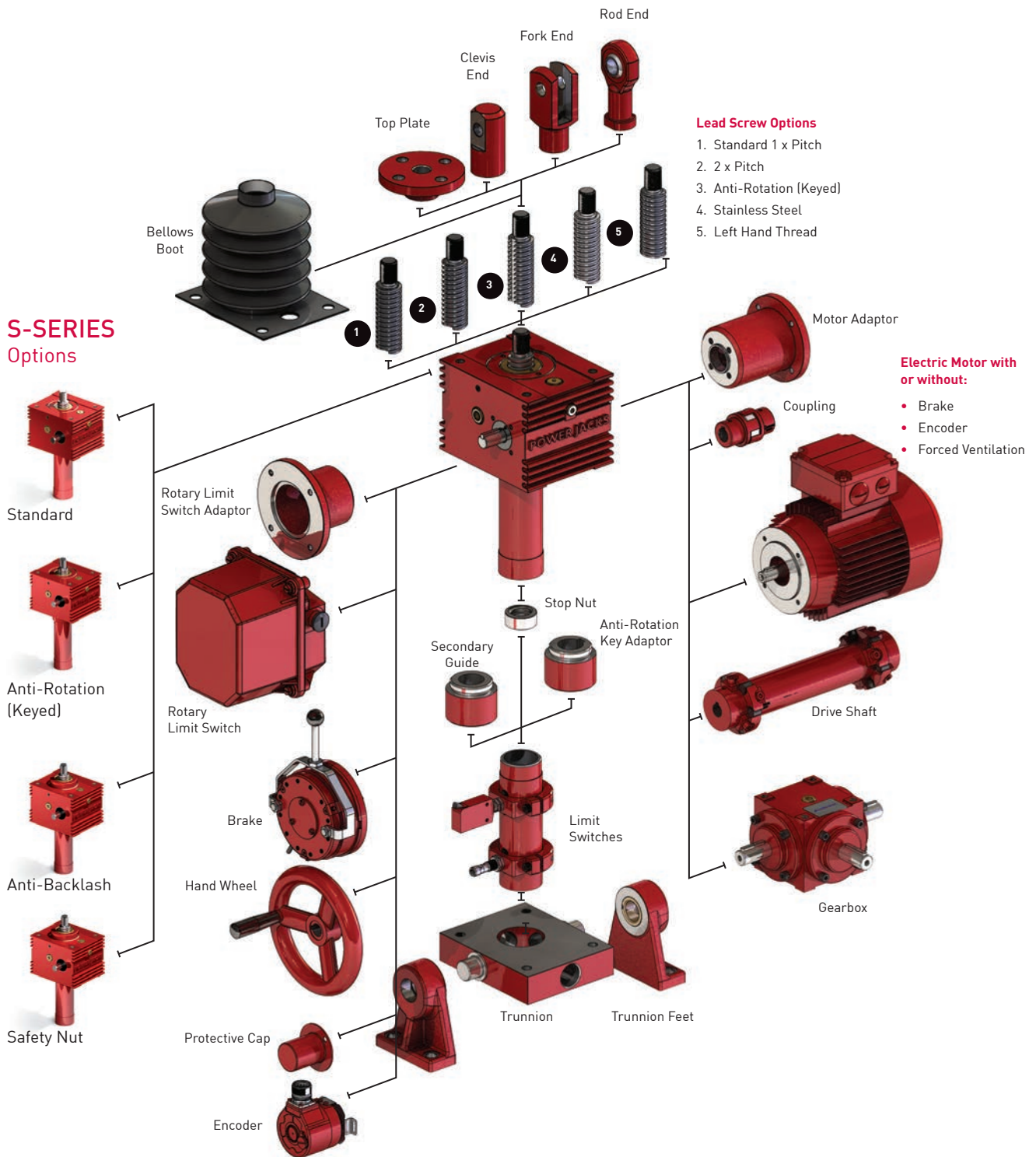
**Aluminium Bronze Worm Gear** accurately hobbled for greater gear contact.

**Optimum lubrication** via 2 dedicated systems

**Outstanding rotary** to linear motion performance

# S-SERIES

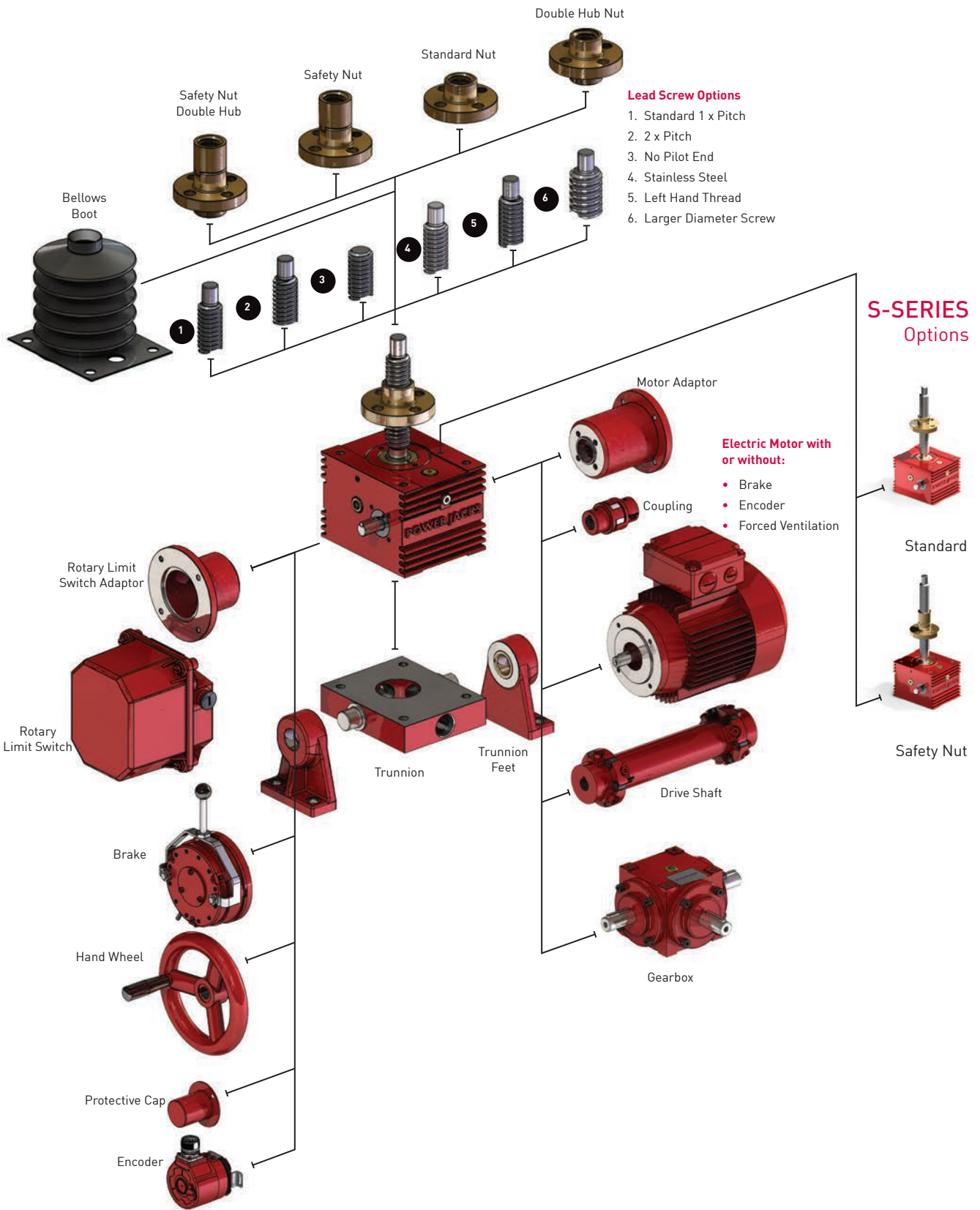
Translating Screw Jack Building System





# S-SERIES

## Rotating Screw Jack Building System



# S-SERIES

## Screw Jack Product Code

### Example

**SMT0100-C001100-1650-TB00-0000** S-Series, Machine Screw Jack, Translating Screw, 100kN capacity, 8:1 gear ratio, 12mm lead on lifting screw, 1650mm stroke, top plate on lifting screw, standard base mount on gearbox, standard paint, standard lubrication.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
S	M	T	0	1	0	0	-	C	0	0	1	1	0	0	-	1	6	5	0	-	T	B	0	0	-	0	0	0	0

#### GROUP-1 - Screw Jack Gearbox Definition

#### GROUP-2 - Screw Jack Features

#### GROUP-3 - Accessories

#### GROUP-1 - Screw Jack Gearbox Definition

<b>1-Screw Jack Series</b>		<b>2-Screw Type</b>					
C	Series	M	Machine Screw				
S	Series	B	Ball Screw				
<b>3-Screw Configuration</b>		<b>4-7 - Capacity</b>					
R	Rotating Screw	0010	0025	0050	0100	0200	
T	Translating Screw	kN	10	25	50	100	200
<b>8 - Character Space</b>							
<b>9-Gearbox Type</b>							
C	Cubic						
<b>10-Gearbox Feature - 1</b>		<b>11-Gearbox Feature - 2</b>					
0	None	0	None				
K	Anti-Rotation (Keyed)	A	Anti-Backlash (this option is zero backlash for ball screws)				
C	Secondary Guide	B	Anti-Backlash with wear monitor - Visual				
E	Anti-Rotation (keyed) with Secondary Guide	R	Safety Nut Tension				
H	Double Hub Nut #1	S	Safety Nut Compression				
		T	Safety Nut Tension with Wear Monitor - visual				
		U	Safety Nut Compression with wear monitor - visual				
<b>12-Gearbox</b>		<b>13-Lifting Screw Lead</b>					
1	Option 1 Ratio	1	Option 1 Lead - Right Hand (Standard) #4				
2	Option 2 Ratio	2	Option 2 Lead - Right Hand #4				
A	Option 1 Ratio with gear rotation monitor	3	Option 1 Lead - Left Hand #5				
B	Option 2 Ratio with gear rotation monitor	4	Option 2 Lead - Left Hand #5				
<b>14-Worm Shaft Type</b>		<b>15-Worm Shaft Ends</b>					
0	Standard Material	0	Both				
N	Nickel Plated Worm Shaft	L	Left Hand Only				
S	Stainless Steel Worm Shaft	R	Right Hand Only				
		X	Both with Protective Cap on LHS #9				
		Y	Both with Protective Cap on RHS #9				
<b>16 - Character Space</b>							

### GROUP-2 - Screw Jack Features

<b>17-20 - Stroke</b>	0000
<b>Stroke in mm</b>	0-9999

<b>21 - Character Space</b>
-----------------------------

<b>22 - End Type</b>	
E	Threaded End
C	Clevis End
T	Top Plate
F	Fork End (standard available up to 200KN)
R	Rod End (standard available up to 200KN)
J	Plain End (Future)
P	Pilot End #1
N	No Pilot End #1

<b>23 - Gearbox Mounting</b>	
B	Base Mount
C	Second Clevis on Cover Pipe Standard #6 #8
E	Second Clevis on Cover Pipe 90 degree #8
T	Trunnion Mount Standard #2
U	T + Trunnion Feet
X	Trunnion Mount 90 degree #3
Y	X + Trunnion Feet

<b>24 - Lifting Screw Material</b>	
0	Standard
S	Stainless Steel
M	Standard with Low Friction Coating (Molycote)
A	Standard with Protective Coating (Armaloy)

<b>25 - Lifting Screw Covers</b>	
0	Cover Pipe & No Bellows Boot #10
B	Cover Pipe & Fabric Bellows Boot #8
F	Fabric Bellows Boot x 2 - Rotating Screw
R	Cover Pipe & Rubber Bellows Boot #8
S	Rubber Bellows Boot x 2 - Rotating Screw
N	No Cover Pipe & No Bellows Boot #8

26 - Character Space
----------------------

### GROUP-3 - Accessories

<b>27 - Drive Type</b>			
0	None, Standard Features (tapped holes on gearbox side if present)	H	Hand Wheel - LHS
A	Motor Adapter Only, B14 - LHS	J	Hand Wheel - RHS
B	Motor Adapter Only, B14 - RHS	R	Rotation Indicator (Visual) on worm shaft - LHS
C	Motor Adapter B14 & Coupling - LHS	T	Rotation Indicator (Visual) on worm shaft - RHS
E	Motor Adapter B14 & Coupling - RHS		

<b>28- Motor Frame Size / Drive Interface Size</b>			
0	Not Applicable	F	112
A	63	G	132
B	71	H	160
C	80	I	180
D	90	J	200
E	100		

<b>29 - Mounting Kit for Limit Switches &amp; Stop Nuts #7</b>			
0	None	P	Inductive Proximity Sensor, 2, End of Stroke, Adjustable #9
C	RLS-51 Rotary Cam Limit Switch - RHS	S	SKA Rotary Cam Limit Switch - RHS
D	RLS-51 Rotary Cam Limit Switch - LHS	T	SKA Rotary Cam Limit Switch - LHS
E	RLS-51 Rotary Cam Limit Switch - RHS with Stop Nut	U	SKA Rotary Cam Limit Switch - RHS with Stop Nut
F	RLS-51 Rotary Cam Limit Switch - LHS with Stop Nut	V	SKA Rotary Cam Limit Switch - LHS with Stop Nut
M	Electro-Mechanical Limit Switch, 2, End of Stroke, Adjustable #9	W	Stop Nut

### Example

<b>30 - Paint, Lubricant, Seals</b>	
0	Standard Paint, Lubricant & Seals
1	Standard Paint & Food Grade Lubricant & Standard Seals
2	Standard Paint, Nuclear Grade Lubricant & Seals
3	Standard Paint, High Temperature Lubricant & Seals
4	Standard Paint, Low Temperature Lubricant & Seals
5	Standard Paint, Biodegradable Lubricant & Standard Seals
A	No Paint, Standard Lubricant & Seals
B	No Paint & Food Grade Lubricant & Standard Seals
C	No Paint, Nuclear Grade Lubricant & Seals
D	No Paint, High Temperature Lubricant & Seals
E	No Paint, Low Temperature Lubricant & Seals
F	No Paint, Biodegradable Lubricant & Standard Seals
G	Standard Primer, Lubricant & Seals
H	Standard Primer & Food Grade Lubricant & Standard Seals
I	Standard Primer, Nuclear Grade Lubricant & Seals
J	Standard Primer, High Temperature Lubricant & Seals
K	Standard Primer, Low Temperature Lubricant & Seals
L	Standard Primer, Biodegradable Lubricant & Standard Seals
M	Epoxy Paint, Standard Lubricant & Seals
N	Epoxy Paint & Food Grade Lubricant & Standard Seals
P	Epoxy Paint, Nuclear Grade Lubricant & Seals
R	Epoxy Paint, High Temperature Lubricant & Seals
S	Epoxy Paint, Low Temperature Lubricant & Seals
T	Epoxy Paint, Biodegradable Lubricant & Standard Seals

#### Notes:

- #1 Rotating screw models only.
- #2 Trunnions on same side as worm shaft (standard).
- #3 Trunnions at 90° to worm shaft.
- #4 Standard right hand thread form. Worm shaft turns clockwise to extend screw.
- #5 Left hand thread form. Worm shaft turns anti-clockwise to extend screw.
- #6 Standard is clevis axis parallel to worm shaft.
- #7 Limit switch mounting included.
- #8 Translating screw models only.
- #9 All models except E-Series 5 kN & 10 kN models.
- #10 For Rotating Screw Jacks the "Cover Pipe" may actually be a "Plug"

### Performance

Screw Jack Model <sup>4</sup>			S-0025		S-0050		S-0100		S-0200	
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.

# C-SERIES

## Translating Screw Jack 25kN

### Performance

Screw Jack Model <sup>4</sup>		SM-0025		
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		

### SMT0025 Closed Height

	Threaded End	Top Plate	Clevis End	Fork End	Rod End
Closed Height 'C'	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

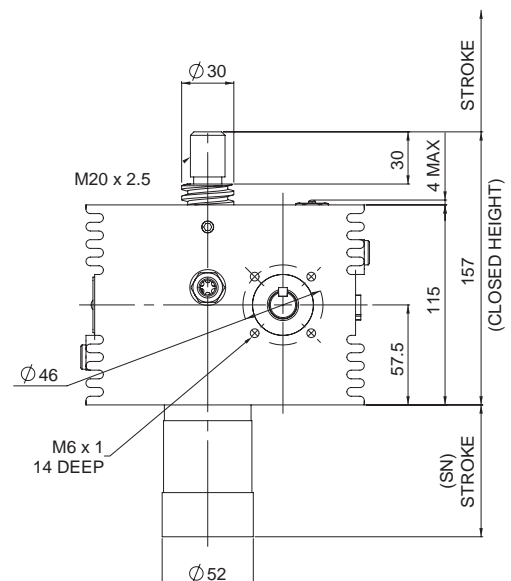
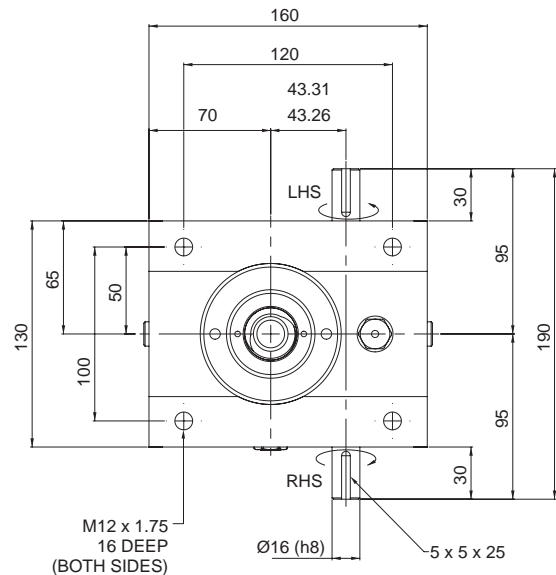
### SMT0025 Stop Nut



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.

$$SN = \text{Stroke} + 21\text{mm}$$

### SMT0025-C00



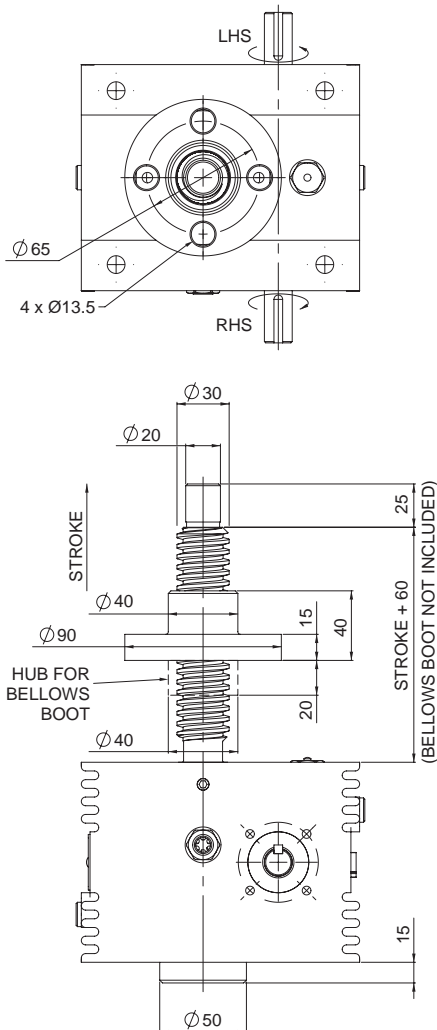
#### Note:

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

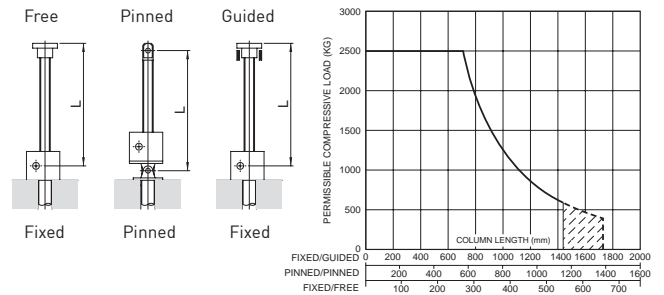
# C-SERIES

Rotating Screw Jack 25kN

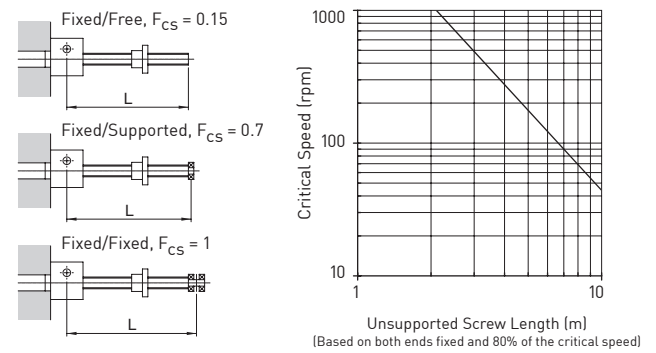
SMR0025-C00



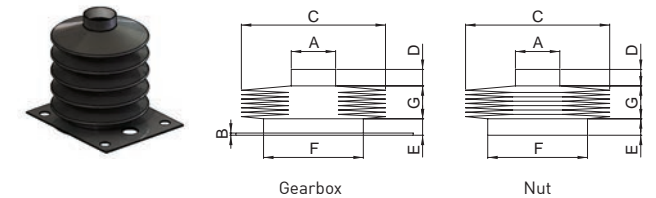
## Column Strength



## Critical Screw Speed



## Bellows Boot

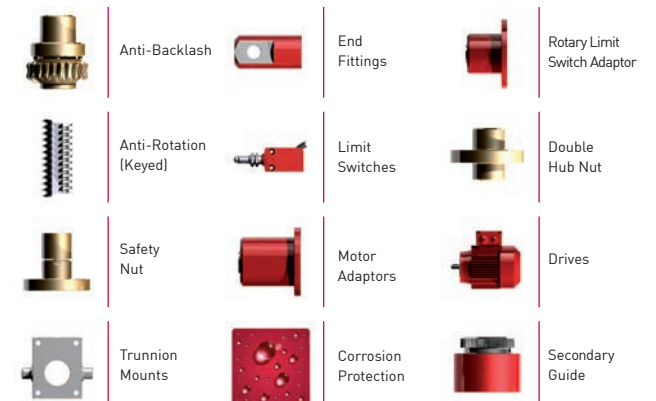


	ØA	B	ØC	D	E	ØF
STM0025	40	2	130	10	10	45
SMR0025	40	2	130	10	15	40

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

\*control tapes fitted ØC=150

## Accessories & Options



# S-SERIES

## Translating Screw Jack 50kN

### Performance

Screw Jack Model <sup>4</sup>		SM-0050		
Capacity	kN	50		
Lead Screw <sup>1</sup>	Diameter (mm)	40		
	Lead (mm)	9	18	
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	6mm	12mm	
	Option 2	1.5mm	3mm	
	Option 3	4.5mm	9mm	
Maximum Input Power (kW)	Option 1	3.0		
	Option 2	0.550		
	Option 3	3.0		
Start up torque at full load (Nm) <sup>2</sup>	Option 1	54	73	
	Option 2	24	33	
	Option 3	44	59	
Maximum Through Torque (Nm) <sup>7</sup>	Option 1	168.0		
	Option 2	76.5		
	Option 3	168.0		
Static Efficiency <sup>3</sup>	Option 1	0.222	0.325	
	Option 2	0.125	0.184	
	Option 3	0.206	0.302	
Dynamic Efficiency <sup>3</sup>	Option 1	50rpm	0.281	0.398
	Option 1	750rpm	0.324	0.460
	Option 1	1500rpm*	0.337	0.477
	Option 2	50rpm	0.171	0.242
	Option 2	750rpm	0.238	0.337
	Option 2	1500rpm*	0.263	0.372
	Option 3	50rpm	0.264	0.374
	Option 3	750rpm	0.312	0.442
	Option 3	1500rpm*	0.328	0.465
Maximum Input Speed (rpm)	-	3000		
Gear Case Material	-	SG Iron		
Weight (kg) – stroke = 150mm	ST050	25.5		
	SR050	27.9		
Weight (kg) – per extra 25mm	ST050	0.24		
	SR050	0.19		

### SMT0050 Closed Height

	Threaded End	Top Plate	Clevis End	Fork End	Rod End
Closed Height 'C'	192	192	217	257	251
Stroke (mm)	With Bellow Boots (B)				
0 - 300	192	192	217	257	251
301 - 600	206	206	231	271	265
601 - 1050	224	224	249	289	283
1051 - 1500	244	244	269	309	303
1501 - 1800	258	258	283	323	317

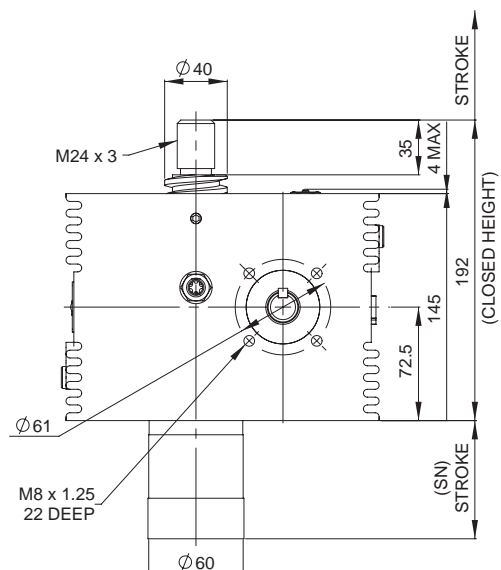
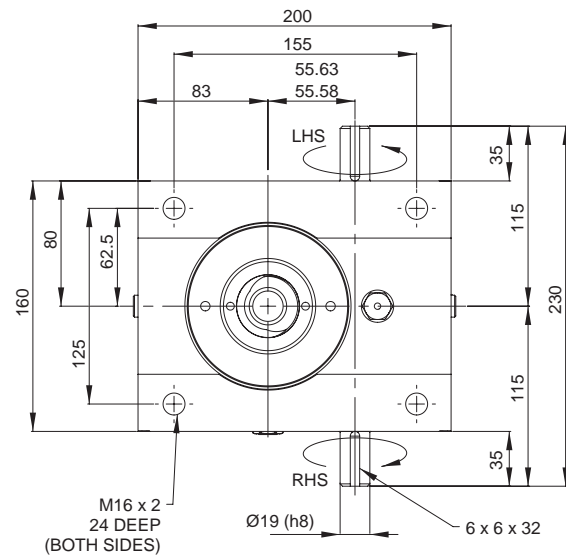
### SMT0050 Stop Nut



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.

$$SN = \text{Stroke} + 34\text{mm}$$

### SMT0050-C00



#### Note:

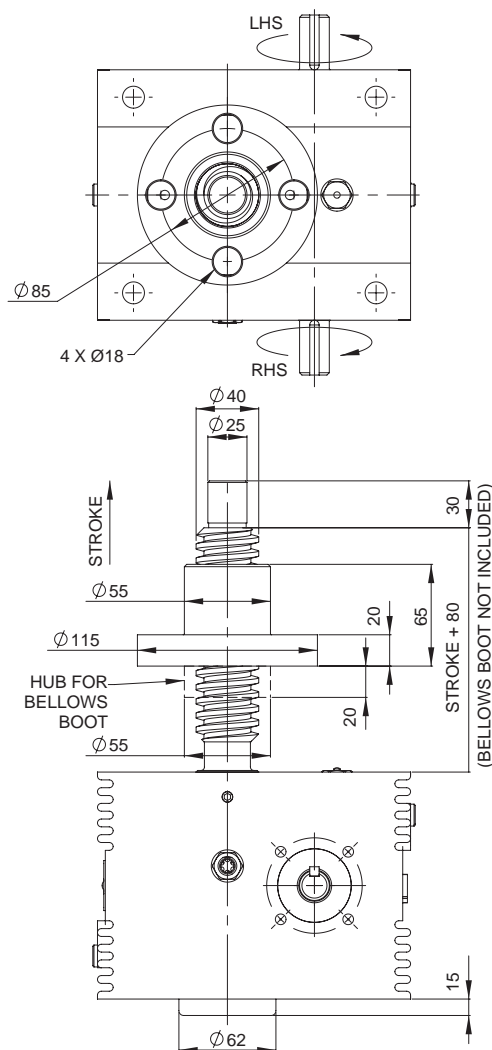
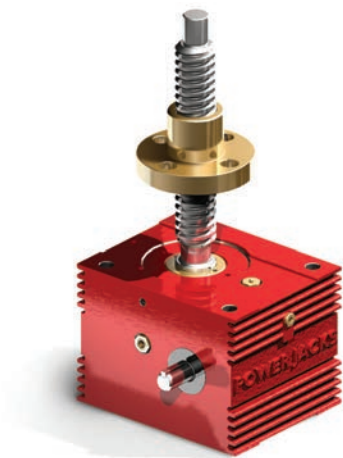
1. All dimension in millimetres unless otherwise stated.
2. Designs subject to change without notice.



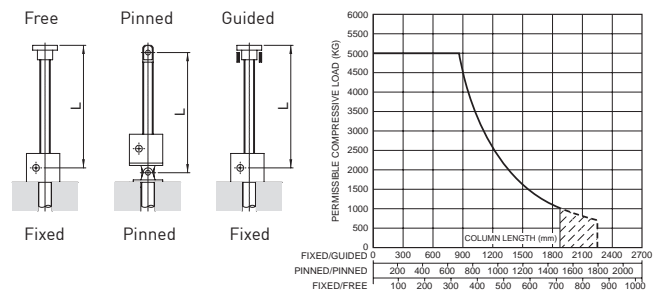
# S-SERIES

Rotating Screw Jack 50kN

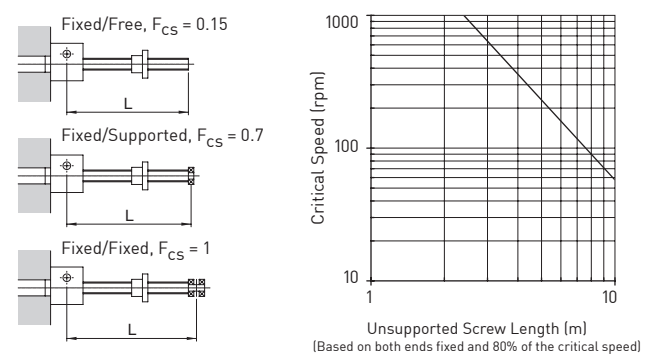
SMR0050-C00



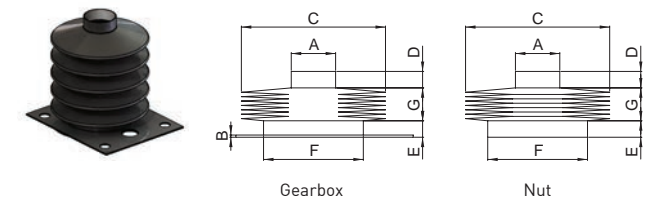
## Column Strength



## Critical Screw Speed



## Bellows Boot



	ØA	B	ØC	D	E	ØF
SMT0050	50	2	140	10	10	50
SMR0050	55	2	140	10	15	50

Stroke	1 - 300	301 - 600	601 - 1050	1051 - 1500	1501 - 1800
G	14	28	46	66	80*

\*control tapes fitted ØC=160

## Accessories & Options



# S-SERIES

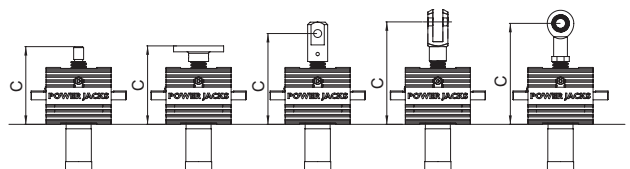
## Translating Screw Jack 100kN

### Performance

Screw Jack Model <sup>4</sup>		SM-0100		
Capacity	kN	100		
Lead Screw <sup>1</sup>	Diameter (mm)	55		
	Lead (mm)	12	24	
Gear Ratios	Option 1	8:1		
	Option 2	24:1		
	Option 3	6:1 (AOR)		
4 x Turns of worm for travel of lead screw	Option 1	6mm	12mm	
	Option 2	2mm	4mm	
	Option 3	8mm	16mm	
Maximum Input Power (kW)	Option 1	3.75		
	Option 2	1.125		
	Option 3	3.75		
Start up torque at full load (Nm) <sup>2</sup>	Option 1	111	151	
	Option 2	57	77	
	Option 3	140	190	
Maximum Through Torque (Nm) <sup>7</sup>	Option 1	347.7		
	Option 2	181.5		
	Option 3	347.7		
Static Efficiency <sup>3</sup>	Option 1	0.214	0.317	
	Option 2	0.140	0.207	
	Option 3	0.227	0.336	
Dynamic Efficiency <sup>3</sup>	Option 1	50rpm	0.272	0.389
	Option 1	750rpm	0.315	0.450
	Option 1	1500rpm*	0.328	0.468
	Option 2	50rpm	0.188	0.269
	Option 2	750rpm	0.252	0.359
	Option 2	1500rpm*	0.274	0.391
	Option 3	50rpm	0.285	0.407
	Option 3	750rpm	0.324	0.462
	Option 3	1500rpm*	0.336	0.479
Maximum Input Speed (rpm)	-	3000		
Gear Case Material	-	SG Iron		
Weight (kg) – stroke = 150mm	ST100	47.7		
	SR100	53.9		
Weight (kg) – per extra 25mm	ST100	0.47		
	SR100	0.36		

### SMT0100 Closed Height

Threaded End
Top Plate
Clevis End
Fork End
Rod End



Closed Height 'C'	Threaded End	Top Plate	Clevis End	Fork End	Rod End
ST100	224	224	269	328	309
Stroke (mm)	With Bellow Boots (B)				
0 - 300	224	224	269	328	309
301 - 600	238	238	283	342	323
601 - 1050	256	256	301	360	341
1051 - 1500	275	275	320	379	360
1501 - 1800	295	295	340	399	380

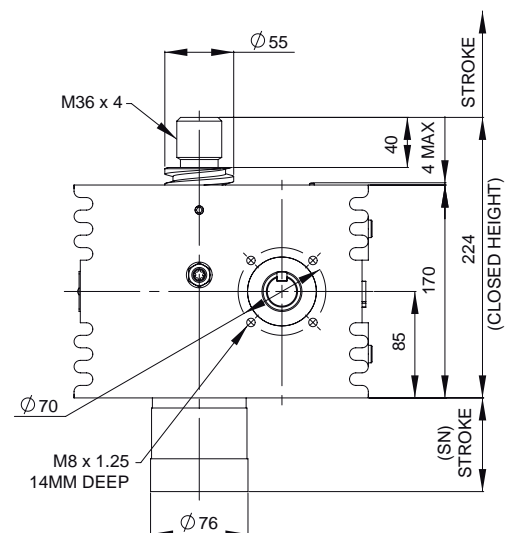
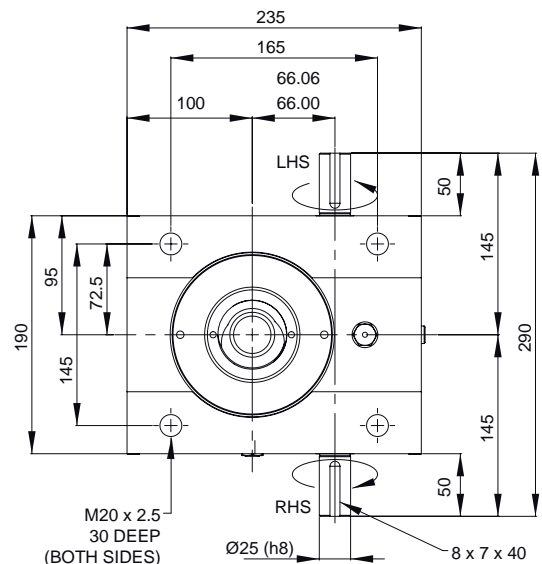
### SMT0100 Stop Nut



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.

$$SN = \text{Stroke} + 37\text{mm}$$

### SMT0100-C00



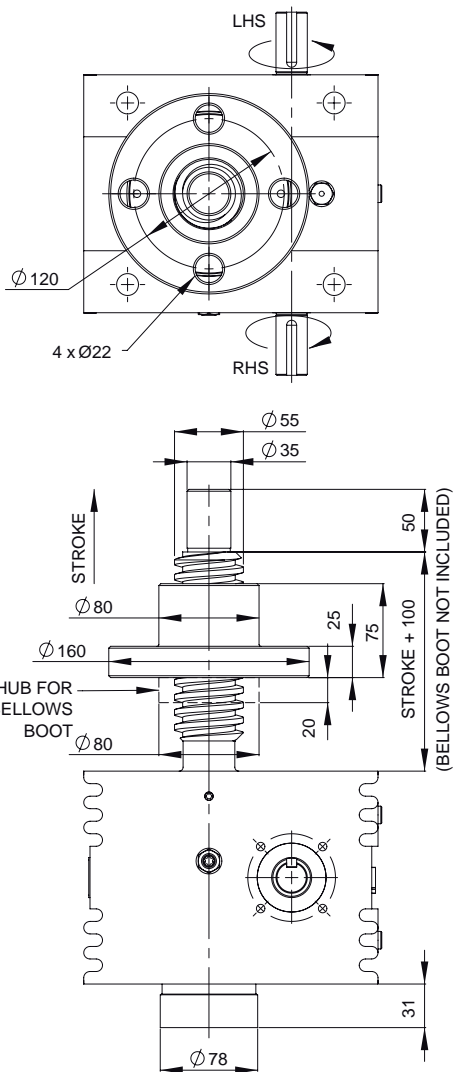
#### Note:

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

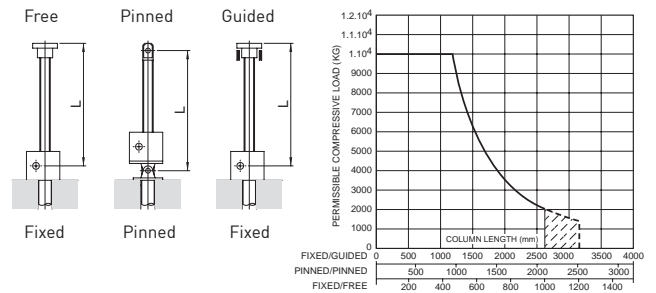
# S-SERIES

Rotating Screw Jack 100kN

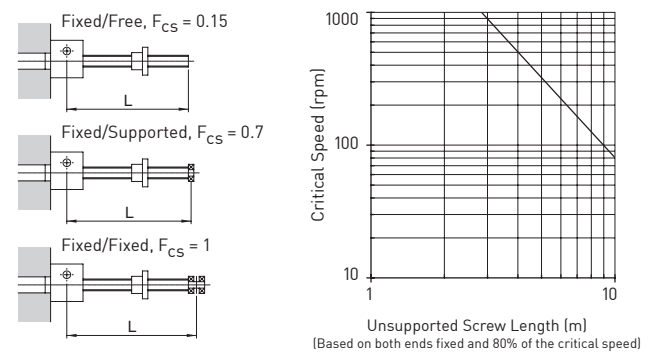
SMR0100-C00



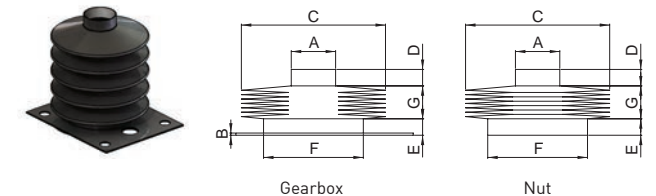
## Column Strength



## Critical Screw Speed



## Bellows Boot



	ØA	B	ØC	D	E	ØF
SMT0100	65	3	150	10	10	70
SMR0100	80	3	150	10	15	70

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

\*control tapes fitted ØC=170

## Accessories & Options



# S-SERIES

## Translating Screw Jack 200kN

### Performance

Screw Jack Model <sup>4</sup>	SM-0200	
Capacity	kN	200
Lead Screw <sup>1</sup>	Diameter (mm)	65
	Lead (mm)	12   24
Gear Ratios	Option 1	8:1
	Option 2	24:1
	Option 3	6:1 [AOR]
4 x Turns of worm for travel of lead screw	Option 1	6mm   12mm
	Option 2	2mm   4mm
	Option 3	8mm   16mm
Maximum Input Power (kW)	Option 1	3.75
	Option 2	1.125
	Option 3	3.75
Start up torque at full load (Nm) <sup>2</sup>	Option 1	252   330
	Option 2	129   168
	Option 3	317   416
Maximum Through Torque (Nm) <sup>7</sup>	Option 1	525
	Option 2	275
	Option 3	525
Static Efficiency <sup>3</sup>	Option 1	0.190   0.290
	Option 2	0.214   0.189
	Option 3	0.201   0.307
Dynamic Efficiency <sup>3</sup>	Option 1   50rpm	0.243   0.358
	Option 1   750rpm	0.282   0.415
	Option 1   1500rpm*	0.293   0.431
	Option 2   50rpm	0.168   0.248
	Option 2   750rpm	0.225   0.331
	Option 2   1500rpm*	0.245   0.361
	Option 3   50rpm	0.255   0.375
	Option 3   750rpm	0.289   0.426
	Option 3   1500rpm*	0.300   0.442
Maximum Input Speed (rpm)	-	3000
Gear Case Material	-	SG Iron
Weight (kg) – stroke = 150mm	ST025	67.8
	SR025	76.9
Weight (kg) – per extra 25mm	ST025	0.72
	ST025	0.53

### SMT0200 Closed Height

	Threaded End	Top Plate	Clevis End	Fork End	Rod End
Closed Height 'C'	265	265	310	402	370
Stroke (mm)	With Bellow Boots (B)				
0 - 300	265	265	310	402	370
301 - 600	279	279	324	416	384
601 - 1050	297	297	342	434	402
1051 - 1500	317	317	362	454	422
1501 - 1800	331	331	376	468	436

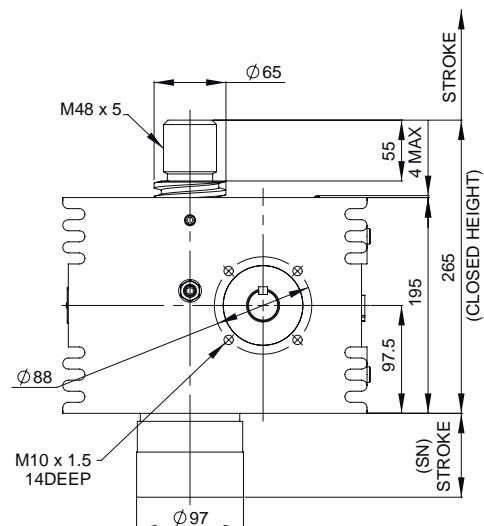
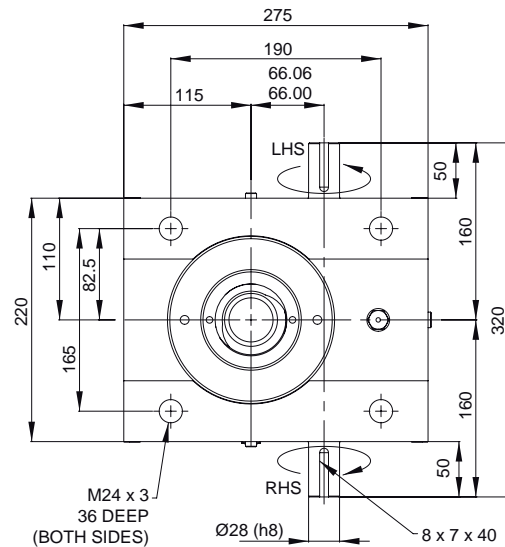
### SMT0200 Stop Nut



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 + 37mm

### SMT0200-C00



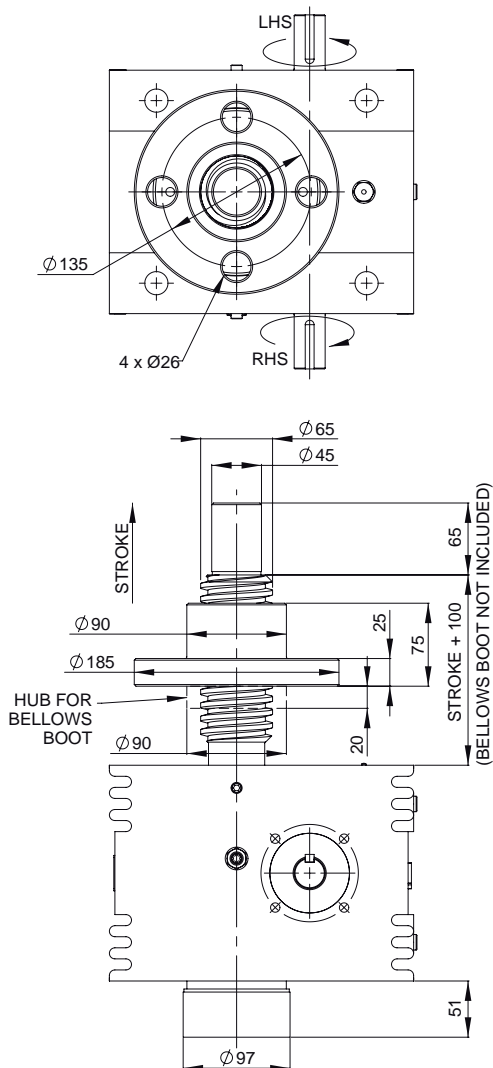
#### Note:

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

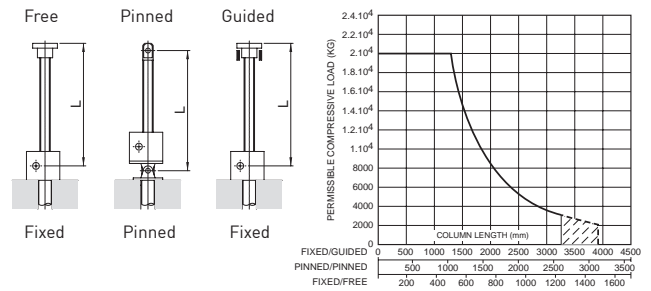
# S-SERIES

Rotating Screw Jack 200kN

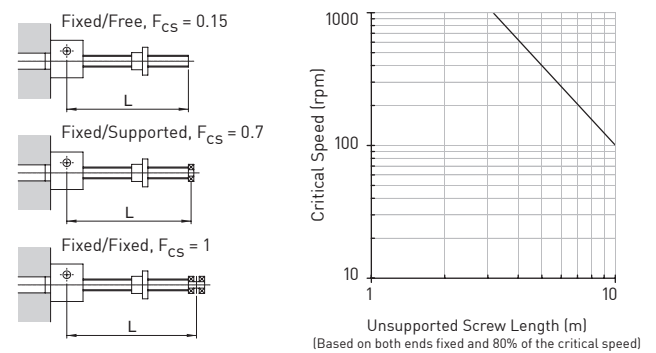
SMR0200-C00



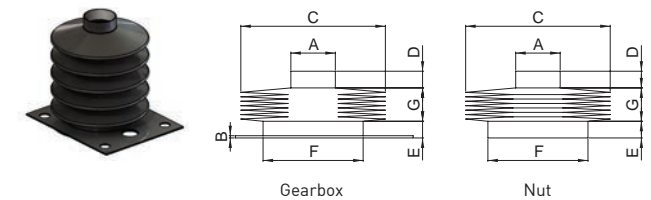
## Column Strength



## Critical Screw Speed



## Bellows Boot



	ØA	B	ØC	D	E	ØF
SMT0200	75	3	170	15	10	80
SMR0200	90	3	170	15	15	80

Stroke	1 - 300	301 - 600	601 - 1050	1051 - 1500	1501 - 1800
G	14	28	46	66	80*

\*control tapes fitted ØC=190

## Accessories & Options



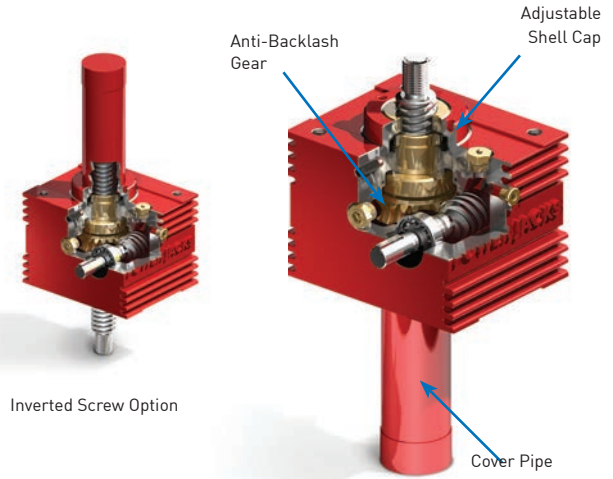
# S-SERIES

## 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. It can also be fitted with a wear indicator for critical applications. This can be further upgraded to use a sensor for automatic detection (consult Power Jacks).

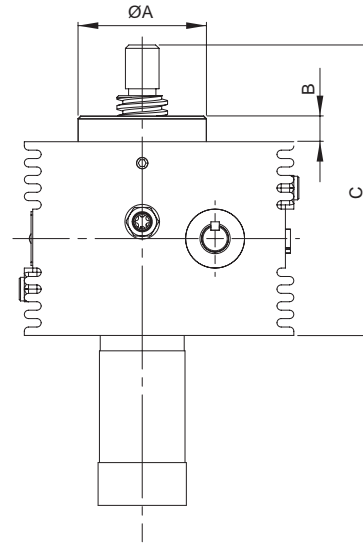
The S-Series Anti-Backlash screw jacks are available with an inverted screw design for maximum design flexibility (refer to diagram on the left).



### Dimensions for Anti-Backlash

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

Model	SMT0025	SMT0050	ST0100	SMT0200
ØA	76	100	127	145
B	15	25	28	34
C	172	217	252	299



### Performance for Anti-Backlash

Screw Jack Model <sup>4</sup>		SMT0025		SMT0050		SMT0100		SMT0200		
Lead Screw	Lead (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)		
Start up torque at full load (Nm)	Option 1	21	28	60	82	124	167	280	366	
	Option 2	9	12	27	36	63	85	143	187	
	Option 3	17	23	48	66	156	211	353	462	
Static Efficiency	Option 1	0.188	0.283	0.200	0.293	0.193	0.285	0.171	0.261	
	Option 2	0.109	0.164	0.112	0.165	0.126	0.186	0.112	0.170	
	Option 3	0.175	0.263	0.185	0.272	0.204	0.302	0.181	0.276	
Dynamic Efficiency	Option 1	50rpm	0.237	0.344	0.253	0.358	0.245	0.350	0.219	0.322
		750rpm	0.269	0.391	0.292	0.414	0.284	0.405	0.254	0.373
		1000rpm	0.272	0.394	0.296	0.419	0.288	0.411	0.257	0.379
		1500rpm+	0.278	0.403	0.303	0.430	0.295	0.421	0.264	0.388
	Option 2	50rpm	0.148	0.214	0.153	0.218	0.169	0.242	0.151	0.223
		750rpm	0.198	0.288	0.213	0.302	0.227	0.323	0.202	0.298
		1000rpm	0.203	0.295	0.220	0.312	0.234	0.333	0.209	0.307
		1500rpm+	0.215	0.313	0.237	0.335	0.247	0.352	0.220	0.325
	Option 3	50rpm	0.222	0.322	0.237	0.336	0.257	0.367	0.229	0.338
		750rpm	0.259	0.376	0.281	0.398	0.291	0.416	0.260	0.383
		1000rpm	0.263	0.382	0.286	0.406	0.296	0.422	0.264	0.389
		1500rpm+	0.271	0.392	0.295	0.418	0.302	0.431	0.270	0.397
Weight (kg) – stroke = 150mm		14.2		26.7		50.3		70.8		

**Note:** Values for standard oil lubricated worm gear box and grease lubricated lead screw.

# S-SERIES

## Anti-Rotation (Keyed) for Screw Jacks

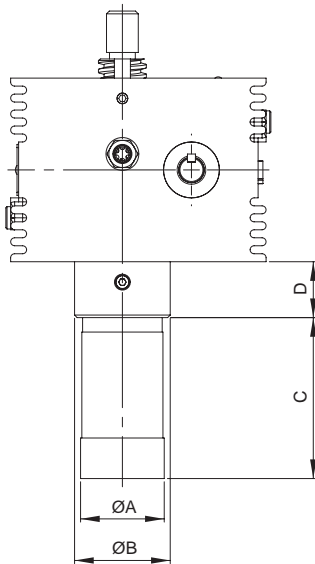


The Anti-Rotation feature for translating screw jacks stops the lead screw from rotating without the need for end pinning. This is done by keying the lead screw. However the keyway in the screw will cause greater than normal wear on the internal threads of the worm gear.

### Dimensions for Anti-Rotation

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

Model	SMT0025	SMT0050	SMT0100	SMT0200
ØA	60	75	90	102
ØB	50	60	76	95
C	Stroke	Stroke	Stroke	Stroke
D	35	42	52	63



### Performance for Anti-Rotation

Screw Jack Model <sup>4</sup>		SMT0025		SMT0050		SMT0100		SMT0200		
Lead Screw	Lead (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]		
Start up torque at full load (Nm)	Option 1	20	27	57	77	117	159	265	347	
	Option 2	9	11	25	34	60	81	135	177	
	Option 3	16	21	46	62	148	200	334	437	
Static Efficiency	Option 1	0.199	0.297	0.211	0.309	0.203	0.301	0.180	0.275	
	Option 2	0.115	0.174	0.119	0.175	0.133	0.197	0.118	0.180	
	Option 3	0.185	0.278	0.196	0.287	0.215	0.318	0.191	0.291	
Dynamic Efficiency	Option 1	50rpm	0.249	0.360	0.267	0.378	0.259	0.369	0.231	0.340
		750rpm	0.284	0.413	0.308	0.437	0.300	0.428	0.268	0.394
		1000rpm	0.287	0.416	0.312	0.443	0.304	0.434	0.271	0.400
		1500rpm+	0.294	0.426	0.320	0.454	0.312	0.445	0.278	0.410
	Option 2	50rpm	0.156	0.226	0.162	0.230	0.179	0.255	0.160	0.235
		750rpm	0.209	0.304	0.226	0.320	0.239	0.341	0.214	0.315
		1000rpm	0.215	0.311	0.234	0.332	0.247	0.352	0.220	0.324
		1500rpm+	0.227	0.330	0.250	0.354	0.260	0.372	0.233	0.343
	Option 3	50rpm	0.235	0.340	0.250	0.355	0.271	0.387	0.242	0.357
		750rpm	0.274	0.397	0.296	0.420	0.308	0.439	0.275	0.405
		1000rpm	0.278	0.403	0.302	0.428	0.312	0.446	0.279	0.411
		1500rpm+	0.286	0.414	0.311	0.441	0.319	0.455	0.285	0.419
Weight (kg) – stroke = 150mm		14.6		26.8		50.3		71.6		

**Note:** Values for standard oil lubricated worm gear box and grease lubricated lead screw.

# S-SERIES

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

The anti-rotation feature can be combined with the Anti-Backlash or Safety Nut mechanism into one screw jack. For this option the anti-rotation device is located in-line with the cover pipe. As with the standard anti-backlash screw jack these are also available with an inverted screw design for maximum design flexibility (refer to diagram below).

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

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

Model	SMT0025	SMT0050	SMT0100	SMT0200
ØD	60	75	90	102
ØE	50	60	76	95
F	Stroke	Stroke	Stroke	Stroke
G	35	38	52	63

Detail A = Same as Anti-Backlash screw jack

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

Load Direction - Tension (T)

Model	SMT0025	SMT0030	SMT0100	SMT0200
ØD	55	70	89	110
ØE	50	60	76	95
F	Stroke	Stroke	Stroke	Stroke
G	50	60	60	65

Detail A = Same as standard S-Series screw jack

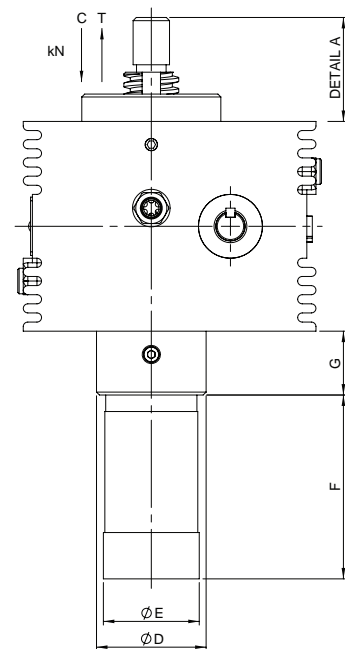
Load Direction - Compression (C)

Model	SMT0025	SMT0030	SMT0100	SMT0200
ØD	60	75	90	110
ØE	50	60	76	95
F	Stroke	Stroke	Stroke	Stroke
G	35	38	52	63

Detail A = Same as Safety Nut screw jack with compression load



Inverted Screw Option



### Performance for Anti-Backlash with Anti-Rotation

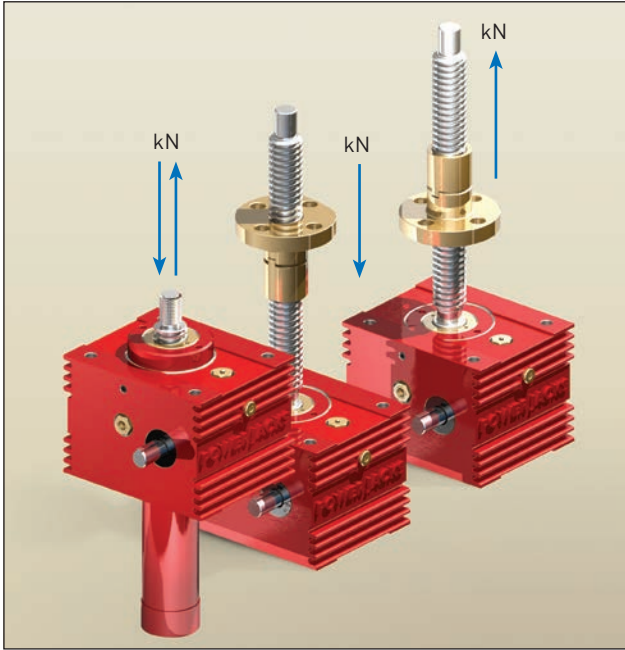
Screw Jack Model <sup>4</sup>		SMT0025		SMT0050		SMT0100		SMT0200		
Lead Screw	Lead (mm)	6	12	9	18	12	24	12	24	
	Gear Ratios	Option 1	6:1		6:1		8:1		8:1	
		Option 2	24:1		24:1		24:1		24:1	
Option 3		8:1 (AOR)		8:1 (AOR)		6:1 (AOR)		6:1 (AOR)		
Start up torque at full load (Nm)	Option 1	22	30	63	86	130	176	294	385	
	Option 2	10	13	28	38	67	90	150	197	
	Option 3	18	24	51	69	164	222	371	486	
Static Efficiency	Option 1	0.179	0.269	0.190	0.278	0.183	0.271	0.162	0.248	
	Option 2	0.104	0.156	0.107	0.156	0.120	0.177	0.106	0.162	
	Option 3	0.166	0.250	0.176	0.258	0.194	0.287	0.172	0.262	
Dynamic Efficiency	Option 1	50rpm	0.225	0.326	0.240	0.340	0.233	0.332	0.208	0.306
		750rpm	0.257	0.371	0.277	0.393	0.270	0.385	0.241	0.355
		1000rpm	0.258	0.374	0.281	0.398	0.273	0.390	0.244	0.360
		1500rpm <sup>+</sup>	0.264	0.383	0.288	0.408	0.280	0.400	0.250	0.369
	Option 2	50rpm	0.140	0.204	0.145	0.206	0.161	0.230	0.144	0.212
		750rpm	0.188	0.273	0.202	0.286	0.215	0.307	0.192	0.283
		1000rpm	0.193	0.280	0.209	0.297	0.222	0.317	0.198	0.292
		1500rpm <sup>+</sup>	0.205	0.297	0.225	0.317	0.234	0.335	0.209	0.308
	Option 3	50rpm	0.211	0.306	0.225	0.319	0.244	0.348	0.218	0.321
		750rpm	0.246	0.357	0.266	0.378	0.277	0.395	0.247	0.364
		1000rpm	0.250	0.363	0.272	0.386	0.281	0.401	0.251	0.370
		1500rpm <sup>+</sup>	0.257	0.373	0.280	0.397	0.287	0.410	0.256	0.378
Weight (kg) - stroke = 150mm		15		28		52.7		75.1		

Note: Values for standard oil lubricated worm gear box and grease lubricated lead screw



# S-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.

## 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	SMT0025	SMT0050	SMT0100	SMT0200
ØA	76	100	127	145
B	15	25	28	34
C	172	217	252	299

Dimensions F, G, ØD not applicable

Detail A = As per table

Detail B = Same as standard S-Series screw jack

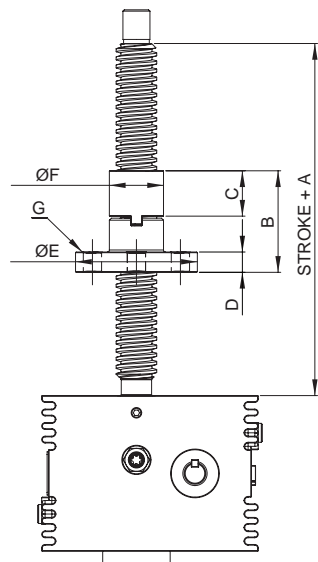
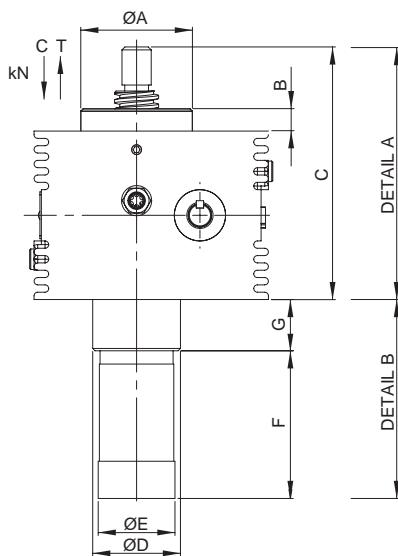
### Load Direction - Tension (T)

Model	SMT0025	SMT0050	SMT0100	SMT0200
ØD	55	70	89	110
F	Stroke	Stroke	Stroke	Stroke
G	50	60	60	65

Dimensions A, B, C not applicable

Detail A = Same as standard S-Series screw jack

Detail B = As per table



## 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	SMR0025	SMR0050	SMR0100	SMR0200
A	Stroke +95	Stroke +140	Stroke +170	Stroke +170
B	75	125	145	145
C	33.5	58	67	67
D	15	20	25	25
ØE	90	115	160	185
ØF	40	55	80	90
G	4 x Ø13.5 Ø65 PCD	4 x Ø18 Ø85 PCD	4 x Ø22 Ø120 PCD	4 x Ø26 Ø135 PCD
Weight (kg)	15.4	28.8	55.9	79.5

PCD = Pitch Circle Diameter

Model	SMT0025	SMT0050	SMT0100	SMT0200
Weight (kg)	15.2	28.4	54.9	78.8

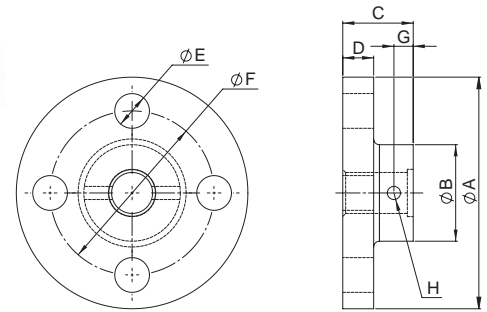
# S-SERIES

## End Fittings for Translating Screw

### Top Plate

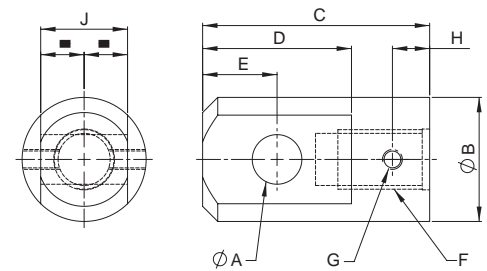
Capacity	25kN	50kN	100kN	200kN
ØA	Ø100	Ø120	Ø150	Ø170
ØB	Ø40	Ø50	Ø65	Ø75
C	31.5	36.5	42	58
D	12	16	20	25
ØE	Ø13.5	Ø18	Ø22	Ø26
ØF (PCD)	Ø70	Ø85	Ø110	Ø120
G	10	10	12	16
H	M8 x 1.25	M8 x 1.25	M10 x 1.5	M12 x 1.75
Weight (kg)	0.79	1.5	2.82	4.5

PCD = Pitch Circle Diameter



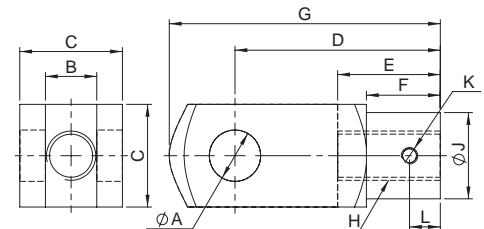
### Clevis End

Capacity	25kN	50kN	100kN	200kN
ØA	Ø16	Ø20	Ø22	Ø30
ØB	Ø40	Ø50	Ø65	Ø75
C	79.5	91.5	120	143
D	46	60	66	80
E	23	30	33	40
F	M20 x 2.5 32 Deep	M24 x 3 37 Deep	M36 x 4 42 Deep	M48 x 5 58 Deep
G	M8 x 1.25	M8 x 1.25	M10 x 1.5	M12 x 1.75
H	15	15	20	25
J	30	35	40	50
Weight (kg)	0.57	1.0	2.1	3.1



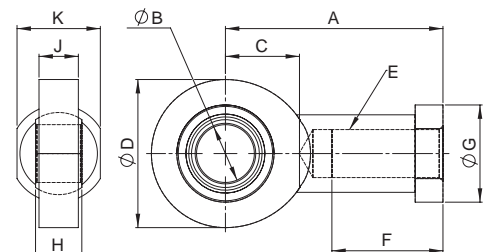
### Fork End

Capacity	25kN	50kN	100kN	200kN
ØA	Ø20	Ø25	Ø35	Ø50
B	20	25	35	50
C	40	50	70	96
D	80	100	144	192
E	40	50	72	96
F	30	36	54	73
G	105	132	188	265
H	M20 x 2.5	M24 x 3	M36 x 4	M48 x 5
ØJ	34	42	60	82
K	M8 x 1.25	M8 x 1.25	M10 x 1.5	M12 x 1.75
L	10	15	20	25
Weight (kg)	0.55	1.1	2.93	7.86



### Rod End

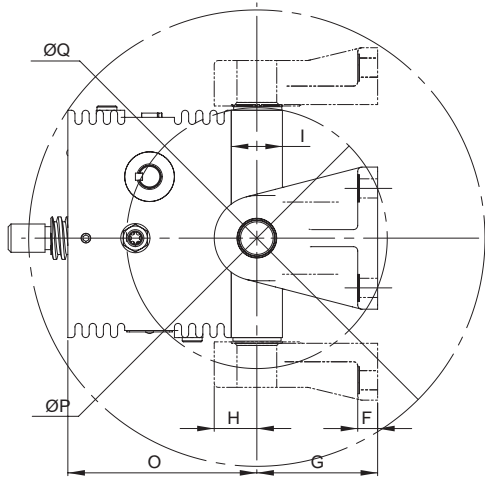
Capacity	25kN	50kN	100kN	200kN
A	77	94	125	160
ØB	20	25	35	50
C	27	32	42	60
ØD	53	64	82	112
E	M20 x 1.5	M24 x 2	M36 x 3	M45 x 3
F	40	48	60	68
ØG	35	42	58	75
H	16	20	25	35
J	13	17	21	30
K	32	36	50	65
Weight (kg)	0.35	0.64	1.3	3.5



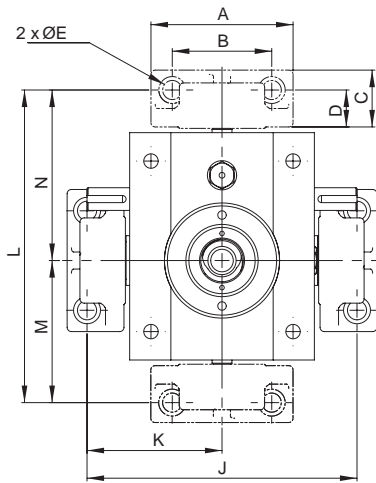
**Note:** Lead screw threaded end made to suit rod end.

# S-SERIES

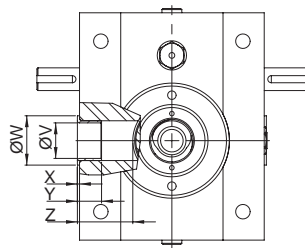
## Trunnion Mounts



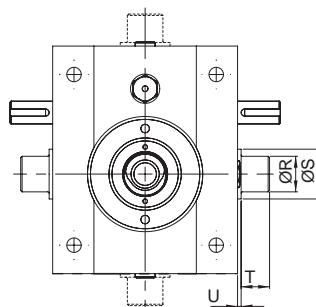
With Trunnion Feet



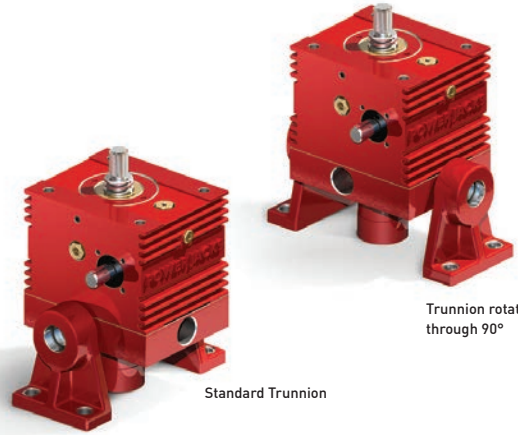
With Trunnion Feet



Male Trunnion



Female Trunnion



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	SM-0025	SM-0050	SM-0100	SM-0200
A	100	140	170	220
B	70	100	120	150
C	40	55	70	90
D	26	35	44	58
ØE	13.5	18	22	30
F	14	20	25	25
G	85	120	130	170
H	30	42.5	47.5	59
I	36	50	60	75
J	190	240	292	352
K	95	120	146	176
L	220	280	337	407
M	100	123	151	181
N	120	157	186	226
O	133	170	200	232.5
ØP	184	240	277	329
ØQ	321	413	483	565
ØR	25 f7	35 f7	45 f7	60 f7
ØS	35	47	58	74
T	20	20	35	40
U	2.5	3	5	5
ØV	25	35	45	60
ØW	35	47	58	75
X	1.5	2	2.5	4
Y	17	26	26	50
Z	39	47	55	59

# S-SERIES

## Motor Adaptor

Mount an electric motor to the S-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	SM-0025				
IEC Frame	A	B	ØC	ØD	Coupling
71 B5 D160	158	10	160	75	19/24 A16 A14
71 B14 C105	158	10	105	75	19/24 A16 A14
80 B5 D200	158	10	200	75	19/24 A16 A19
80 B14 C120	158	10	120	75	19/24 A16 A19
90 B5 D200	175	10	200	75	24/30 A16 A24
90 B14 C140	175	10	140	75	24/30 A16 A24
100 B5 D250	185	10	250	75	24/30 A16 B28
100 B14 C160	185	10	160	75	24/30 A16 B28
112 B5 D250	-	-	-	-	-
112 B14 C160	-	-	-	-	-
132 B5 D300	-	-	-	-	-
132 B14 C200	-	-	-	-	-

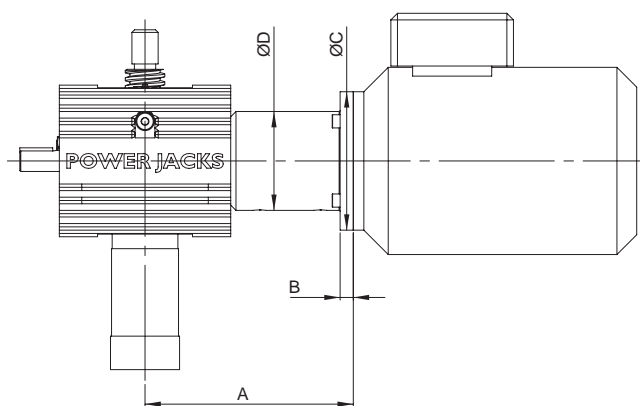
Model	SM-0050				
IEC Frame	A	B	ØC	ØD	Coupling
71 B5 D160	-	-	-	-	-
71 B14 C105	-	-	-	-	-
80 B5 D200	180	10	200	86	19/24 A19 A19
80 B14 C120	180	10	120	86	19/24 A19 A19
90 B5 D200	200	10	200	95	24/30 A19 A24
90 B14 C140	200	10	140	95	24/30 A19 A24
100 B5 D250	200	10	250	95	24/30 A19 B28
100 B14 C160	200	10	160	95	24/30 A19 B28
112 B5 D250	200	10	250	95	24/30 A19 B28
112 B14 C160	200	10	300	95	24/30 A19 B28
132 B5 D300	200	10	300	95	28/38 A19 B38
132 B14 C200	230	10	200	95	28/38 A19 B38

Model	SM-0100				
IEC Frame	A	B	ØC	ØD	Coupling
80 B5 D200	-	-	-	-	-
80 B14 C120	-	-	-	-	-
90 B5 D200	221	10	200	100	24/30 A25 B24
90 B14 C140	221	10	140	100	24/30 A25 B24
100 B5 D250	221	10	250	100	24/30 A25 B28
100 B14 C160	221	10	160	100	24/30 A25 B28
112 B5 D250	221	10	250	100	24/30 A25 B28
112 B14 C160	221	10	160	100	24/30 A25 B28
132 B5 D300	252	10	160	100	28/38 A25 B38
132 B14 C200	252	10	200	100	28/38 A25 B38

Model	SM-0200				
IEC Frame	A	B	ØC	ØD	Coupling
80 B5 D200	-	-	-	-	-
80 B14 C120	-	-	-	-	-
90 B5 D200	236	10	200	120	24/30 B28 A24
90 B14 C140	On Request				
100 B5 D250	246	10	250	120	24/30 B28 B28
100 B14 C160	On Request				
112 B5 D250	246	10	250	120	24/30 B28 B28
112 B14 C160	On Request				
132 B5 D300	267	10	300	120	28/38 A28 B38
132 B14 C200	267	10	200	120	28/38 A28 B38

### Note:

1. NEMA Motor adaptors available on request.
2. Motor adaptors are for the support of motor weight only.



# S-SERIES

## Limit Switches on Screw Jack Cover Pipe

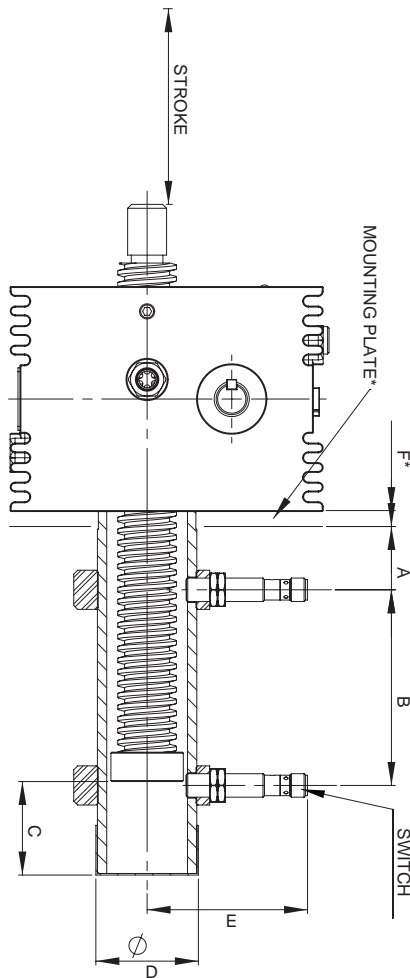


Limit switches can be mounted on the screw jacks cover pipe to signal stroke positions such as end of travel. The switch is triggered by a cam or target disc on the end of the lead screw.

### 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)

## S-Series Screw Jack



Model	SMT0025	SMT0050	SMT0100	SMT0200
Switch Size	M12	M12	M18	M18
A (mm)	50	50	50	50
B (mm)	Stroke + 15	Stroke + 18	Stroke + 24	Stroke + 24
C (mm)	25	35	50	55
ØD (mm)	50	60	76	95
E (mm)±5	83	90	103	110
F (mm)	15	15	20	20
Switch Adjustment (mm)	±10	±10	±10	±10

### Note:

1. \*Mounting Plate (F) 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.

# S-SERIES

## Rotary Limit Switches for Screw Jacks

Rotary limit switches can be used as end of travel limit switches with the option of intermediate switches as well. 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 and 80VDC
- Operating temperature  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- Options for potentiometer, anti-condensation heaters and encoders are available
- Stage technology version to VBG70 available

These units are mounted onto a screw jacks free worm shaft and offer 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)



Model	SM-0025	SM-0050	SM-0100	SM-0200
A	138	151	172	201
$\varnothing\text{C}$	86	86	100	125
E	10	10	11	13
$\varnothing\text{D}$	120	120	160	160

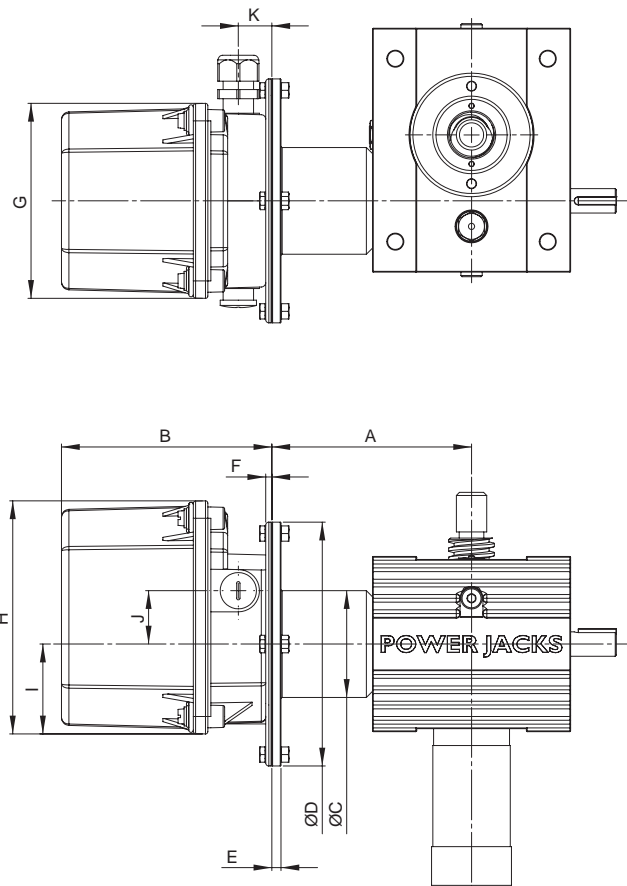
B		Switches			
Size	Revolutions	2	4	6	8
1	4.1, 6.5, 11	132	132	157	157
2	17.5, 29, 48	132	132	157	182
3	75, 125, 205	132	132	157	182
4	323, 540, 880	132	157	182	207
5	1384, 2288, 3735	132	157	182	207
6	5900, 9800, 16000	157	157	182	207

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

Maximum speed of RLS-51 input shaft is 1800rpm.  
The mounting kit includes the flexible coupling and worm shaft adaptor.

**Note:**

1. All dimensions are in millimetres (mm) unless otherwise stated.
2. Dimensions are subject to change without notice.





### Single Face Screw Jacks

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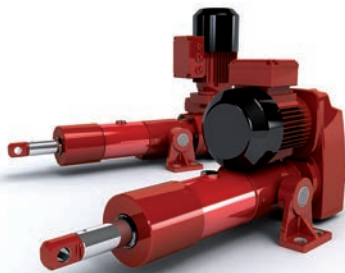
- Metric Machine Screw Jacks 10kN to 3500kN
- Metric Ball Screw Jacks 10kN to 500kN
- Metric Stainless Steel Screw Jacks 10kN to 300kN
- Imperial (inch) Machine Screw Jacks 1/4Ton to 250Ton
- Imperial (inch) Ball Screw Jacks 1/2Ton to 50Ton
- Imperial (inch) Stainless Steel Screw Jacks 2Ton to 100Ton
- Special Designs Available



### EMA Linear Actuators

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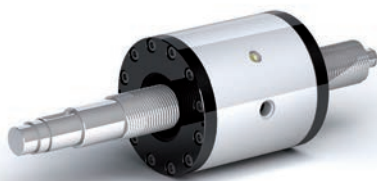
- Machine Screw & Ball Screw
- Low load, Medium Duty, High Speed
- Dynamic Load Ratings up to 10kN
- Linear Speeds up to 5500 mm/min
- 3-phase AC, 1-phase AC, and DC types
- Special Designs Available



### Rolaram Linear Actuators

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- Ball Screw & Roller Screw
- High load, High Duty, High Speed
- Very High Accuracy
- Dynamic Load Ratings up to 400kN
- Linear Speeds up to 7000 mm/min
- 3-phase AC, 1-phase AC, and DC types
- Special Designs Available



### Spiracon Roller Screws

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- High Dynamic Loads up to 1200kN
- High Efficiency
- High Positional Accuracy
- Long Life
- Low Maintenance
- Low Noise
- Robust Design for Harsh Environments
- Special Designs Available



### Neeter Drive Bevel Gearboxes

---

- 2-way, 3-way and 4-way Designs
- Solid Shaft & Hollow Shaft
- Motor Adaptors
- Gear Ratios 1:1, 1.5:1, 2:1, 3:1 and 4:1
- Torque Ratings up to 3000Nm
- Special Gear Ratios and Designs Available

PRECISION SCREW JACKS . ELECTRIC LINEAR ACTUATORS .  
PLANETARY ROLLER SCREWS . SPIRAL BEVEL GEARBOXES .

DESIGN WITH POWER



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