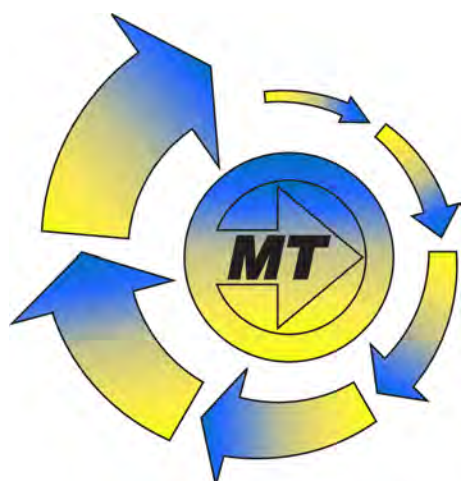


# JTB

## Ball Screw Jack

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2D/3D  
CAD

JACTON<sup>®</sup>





## Product Description

**JACTON JTB Series Ball Screw Jack** are born from the experience in machine screw jacks.

They have the greater efficiency and rolling action, the ball screw jacks can operate at higher speeds or increased duty cycle when compared with the machine screw jacks. The addition of a high efficiency ball screw and nut reduces the required input torque. Required approximately two-thirds less input torque to move the load than similarly rated machine screw jacks. They are NOT self-locking so a brake motor or external locking device needs to be included in the drive system and hand wheels are not a recommended option. Can be mounted in any attitude. Generally maintenance free.

### ● Features:

- \* High accuracy ball screw, high efficiency, high performance, high duty cycle, low backlash, long service life, and uniform lifting speed
- \* Available in 7 sizes from JTB-1T to JTB-35T.
- \* Maximum static load capacity from 1 Ton to 35 Ton.
- \* Ball screw diameter from 20 mm to 100 mm.
- \* Standard ball screw maximum length 6000 mm, custom longer stroke.
- \* Upright or Inverted mounting. Available in tension or compression loads.
- \* Translating, Ant-rotation, and Rotating designs.
- \* Models JTB-1T to JTB-10T have THREE gear ratios (High ratio, Medium ratio, Slow ratio). Models JTB-20T to JTB-35T have TWO gear ratios (High ratio, Slow ratio).
- \* Standard with 1-start ball screw, custom 2-starts ball screw which offers increased travel speed. Both of them require a brake or external locking device to hold position.
- \* Custom-made machine screw diameter and pitch, gear ratios, and worm shaft sizes.
- \* Ball Screw Ends: top plate, clevis end, plain end, threaded end, fork end, rod end.
- \* Can be operated by manually operated or by electrical motor driven.
- \* Single unit use, or complete jacking system including gear motors, bevel gearboxes, connecting shafts



## Product Description

and couplings for dual or multiple jack arrangements.

- \* Custom-made double clevis screw jack, anti-backlash screw jack.
- \* Can be used as alternatives to hydraulic and pneumatic systems.

### ● **Materials:**

- \* Ball Screw: SCM 450, S55C, Hardness: HRC 58-62
- \* Ball Nut: SCM415H, Hardness: HRC 58-62
- \* Steel Ball: SUJ2, Hardness: HRC 60 UP
- \* Worm(Input Shaft): Hardened worm, carbon steel #45. Custom stainless steel.
- \* Worm Gear(Wheel): High strength bronze.
- \* Travelling Nut: High strength bronze.
- \* Housing(Gearbox): Ductile Iron or Stainless steel, available in both of them.

### ● **Accessories:**

- \* Motorized driven (AC or DC) by asynchronous motors (normal, YEJ brake, YVP variable frequency, B explosion proof, D multi-speed), stepper motors, servo motors with encoders and controllers. IEC motor flange or NEMA C-Face motor adapter for connect with motors. Frequency inverters.
- \* Manually operated by Aluminum handwheels, or Cast iron handwheels.
- \* Connection Devices: Couplings. Universal joints. Telescopic universal joints. Connecting shafts.
- \* Screw Protective Devices: Bellows boot. Telescopic spring covers. Protective tubes.
- \* Safety Devices: Limit switches. Proximity switches. Safety nuts. Anti-backlash nut. Overload safety couplings. Stop nuts. Position Encoders. Overload clutch. Brake motor. Linear braking elements. Wear detection/monitors. Linear guides and rails. Potentiometer. Pressure sensor.
- \* Others Accessories: Travel nuts. Position indicators. Trunnion adapter plates. Trunnion mounting brackets. Pillow blocks. Flange blocks. Rod end bearings.



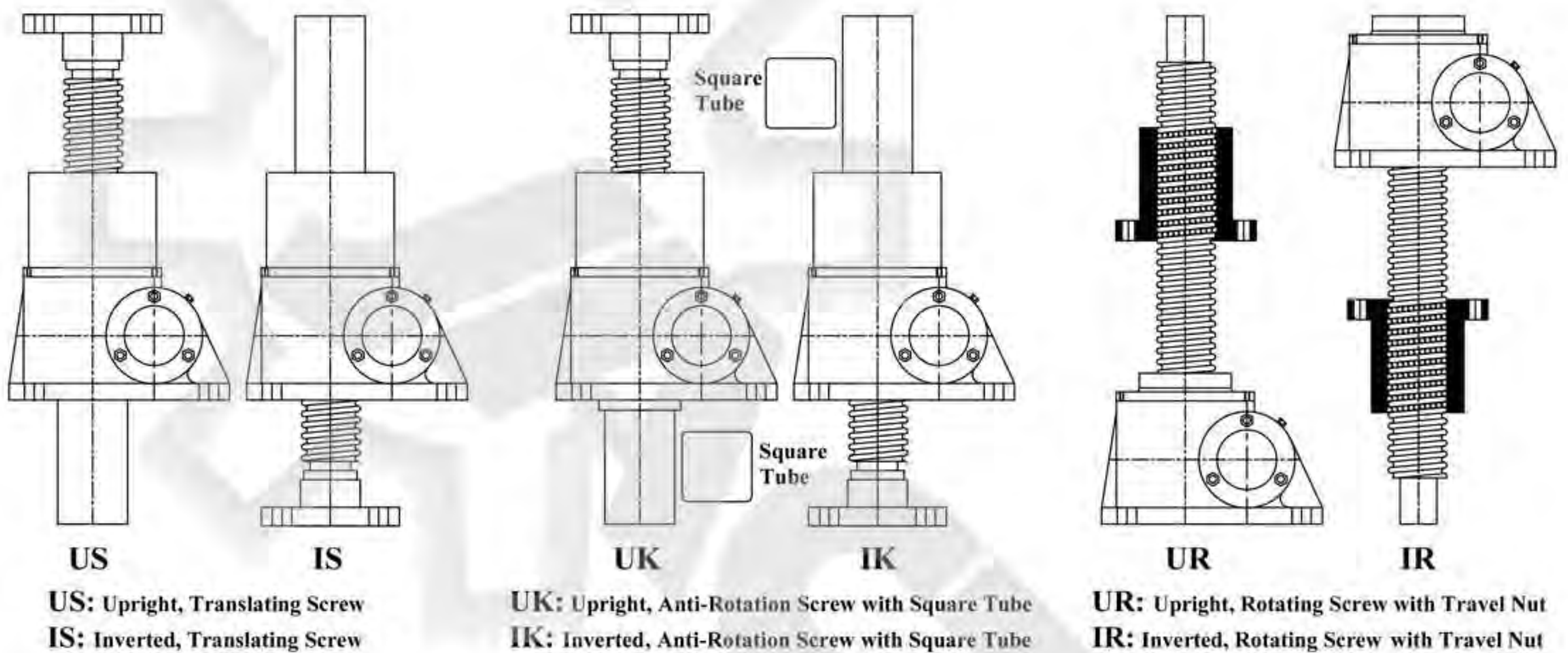
## Sample Part Number

Sample Part Number:  $\frac{JT\text{B-}5\text{T}}{(1)} - \frac{US}{(2)} - \frac{300}{(3)} - \frac{H}{(4)} - \frac{1}{(5)} - \frac{C}{(6)} - \frac{PP}{(7)}$

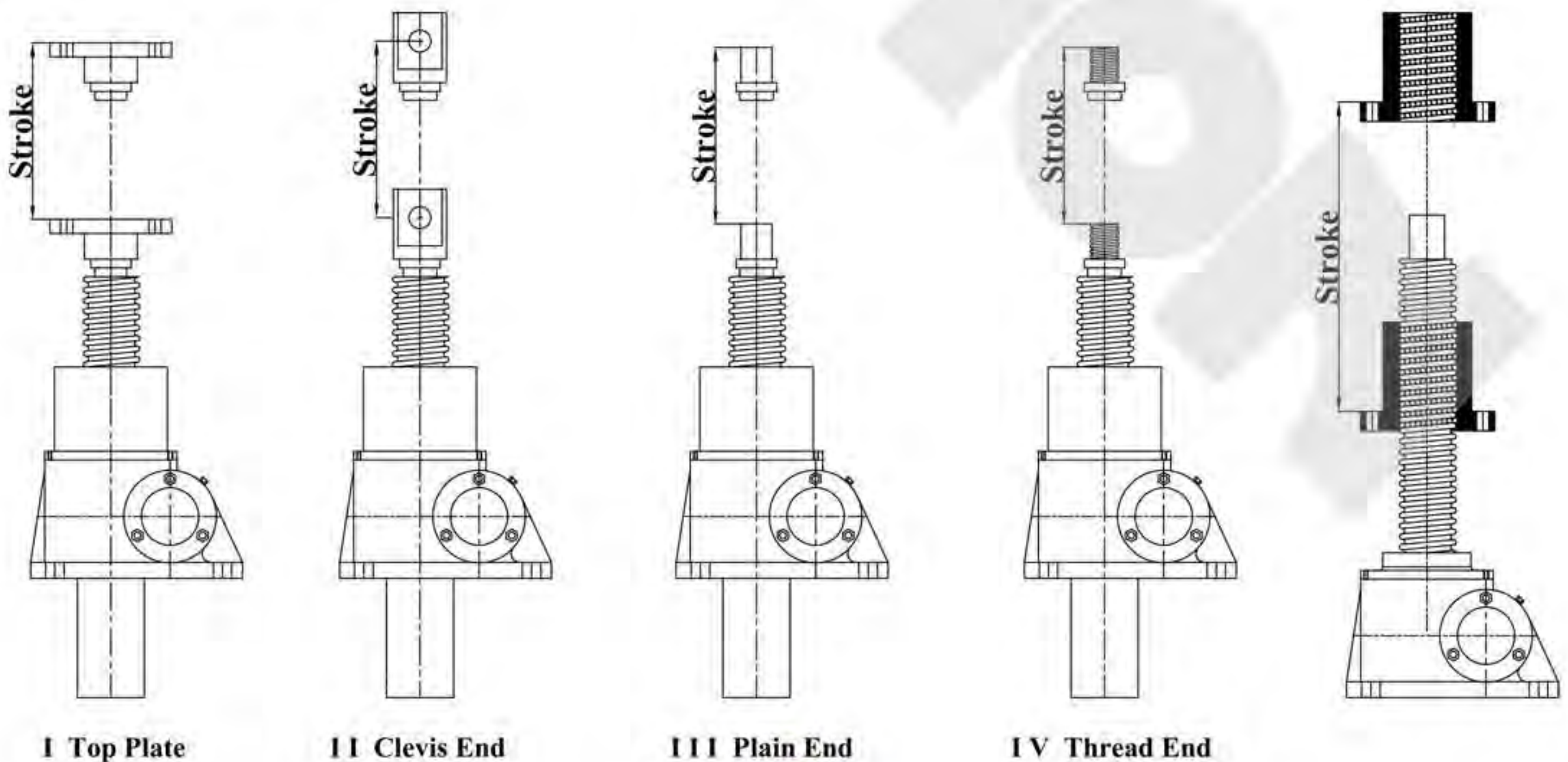
### (1) Models & (4) Ratios

|  |   |  |  |
|--|---|--|--|
| JT $\text{B-}1\text{T}$ (Ball Screw 20 x 5)<br>H: 6:1, L: 24:1   | JT $\text{B-}2.5\text{T}$ (Ball Screw 25 x 5)<br>H: 6:1, L: 24:1      | JT $\text{B-}5\text{T}$ (Ball Screw 40 x 10)<br>H: 6:1, L: 24:1        | JT $\text{B-}10\text{T}$ (Ball Screw 50 x 10)<br>H: 8:1, L: 24:1 |
| JT $\text{B-}20\text{T}$ (Ball Screw 63 x 10)<br>H: 8:1, L: 24:1 | JT $\text{B-}25\text{T}$ (Ball Screw 80 x 16)<br>H: 10-2/3:1, L: 32:1 | JT $\text{B-}35\text{T}$ (Ball Screw 100 x 20)<br>H: 10-2/3:1, L: 32:1 | H: High Gear Ratios, L: Slow Gear Ratios                         |

### (2) Jack Designs and Configurations



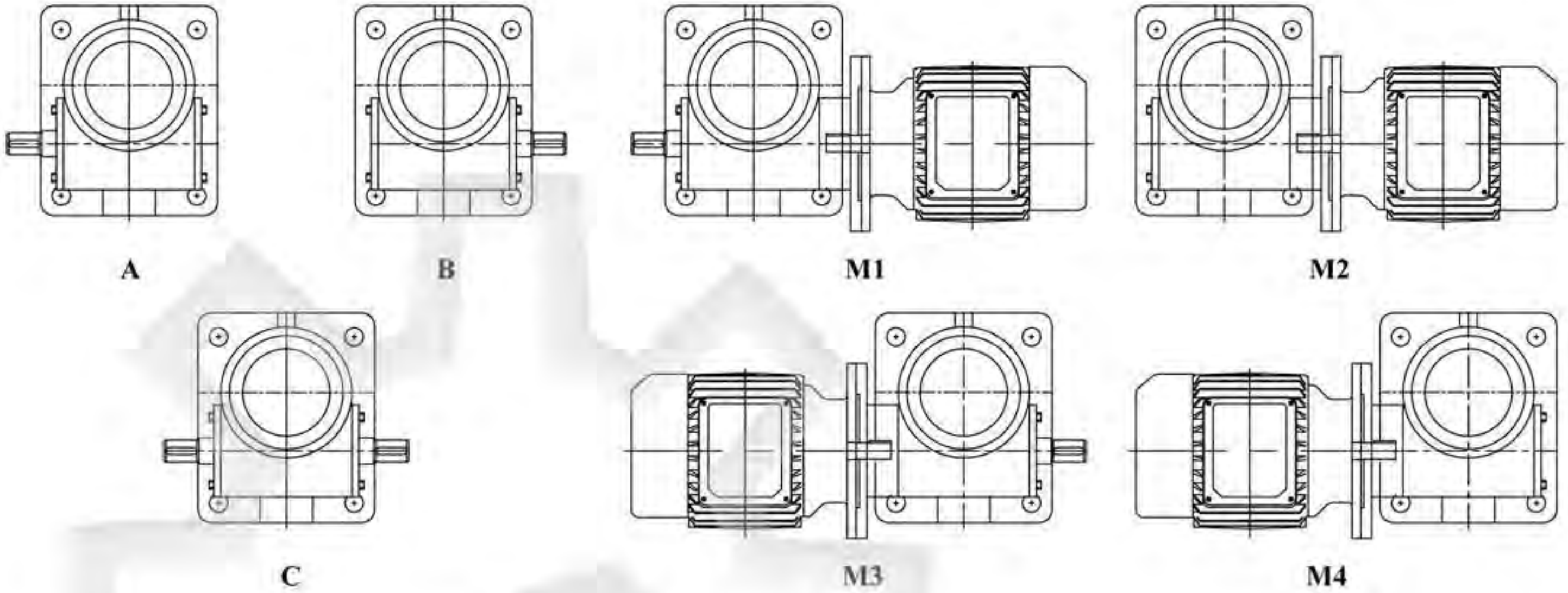
### (3) Stroke & (5) Screw End Fittings



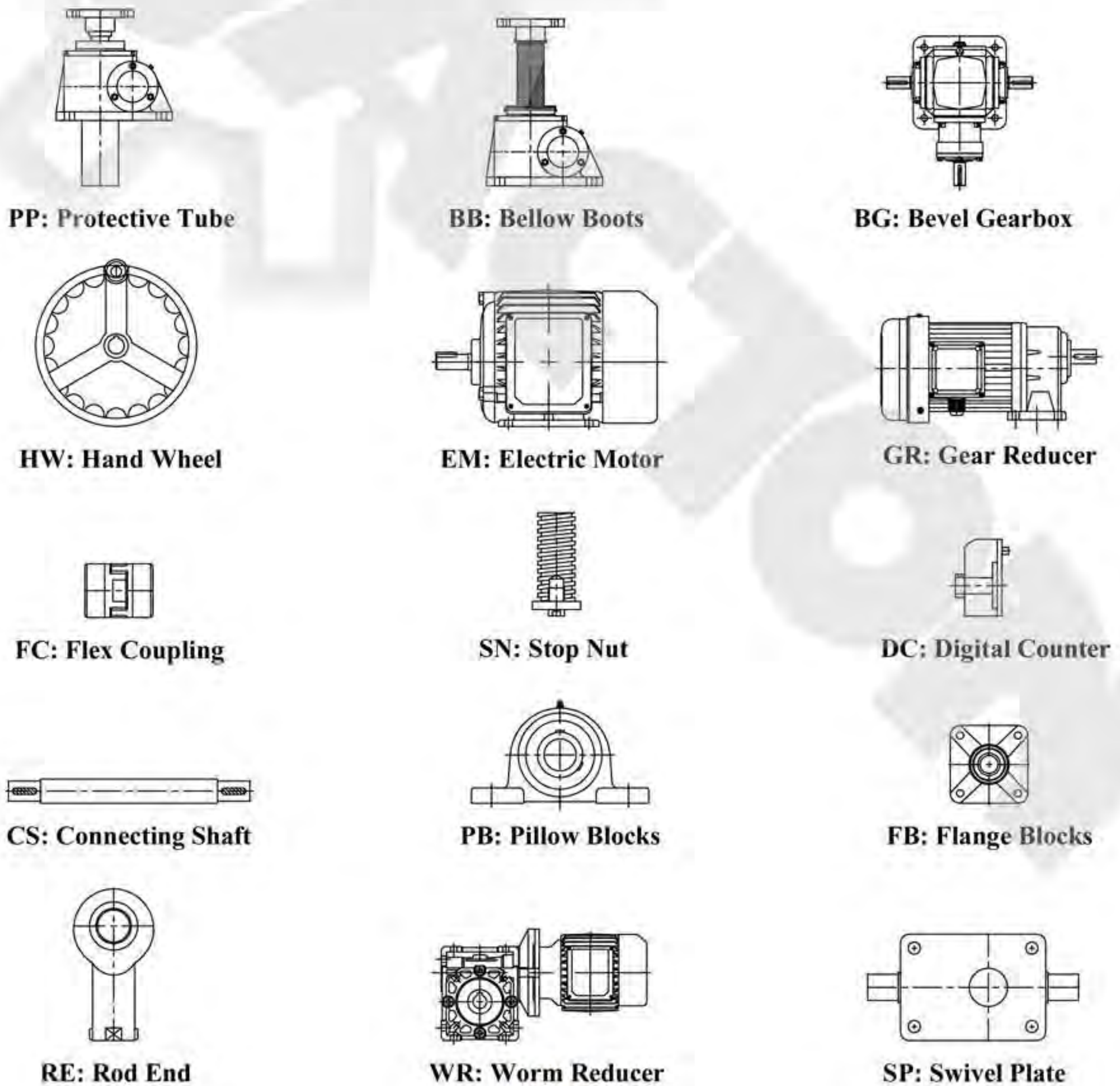


**Sample Part Number**

**(6) Input Shafts Types & Motor Flange Types**



**(7) Accessories**





## Specifications

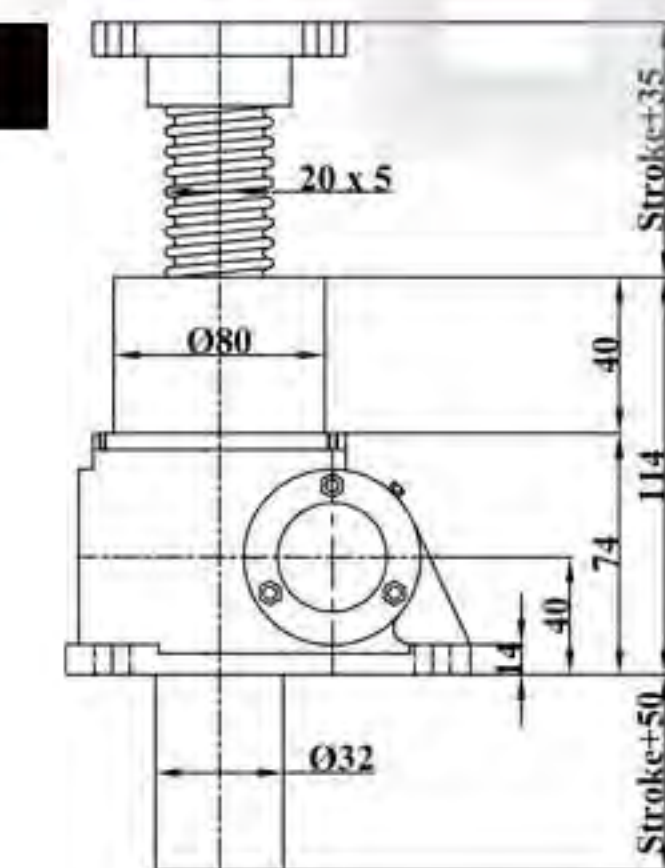
### Remarks:

- 1) H: High ratio, L: Slow ratio
- 2) Max. allowable power is under the conditions that ambient temperature 20 degree C, duty cycle 20%h and input speed 1500rpm
- 3) Overall efficiency is under grease lubrication.
- 4) Without self-locking, locking mechanisms or brake motors are required.

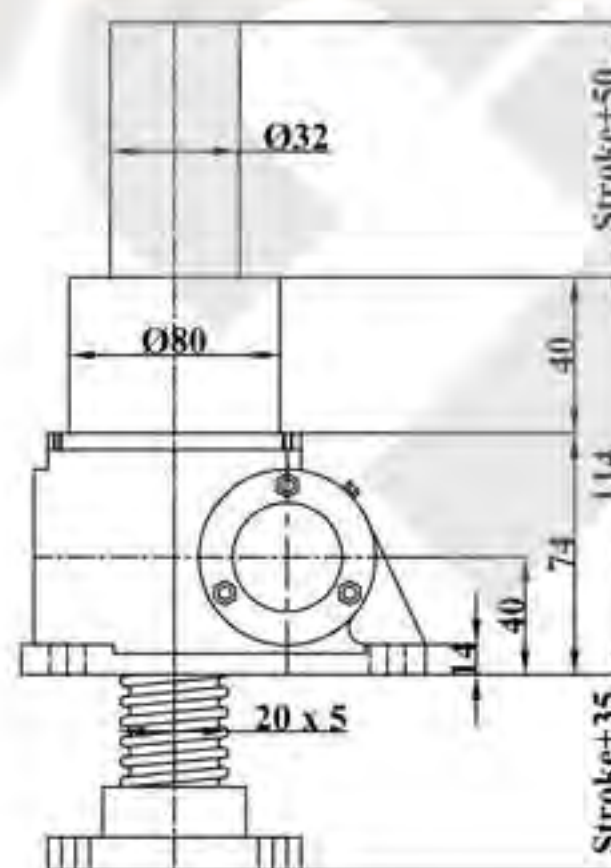
| Model   | JTB-1T | JTB-2.5T | JTB-5T  | JTB-10T | JTB-20T | JTB-25T | JTB-35T  |
|---|--------|----------|---------|---------|---------|---------|----------|
| Maximum load capacity (Ton)                                   | 1      | 2.5      | 5       | 10      | 20      | 25      | 35       |
| Ball screw diameter x lead (mm)                               | 20 x 5 | 25 x 5   | 40 x 10 | 50 x 10 | 63 x 10 | 80 x 16 | 100 x 20 |
| Gear ratio  | H      | 6:1      | 6:1     | 6:1     | 8:1     | 8:1     | 10-2/3:1 |
|   | L      | 24:1     | 24:1    | 24:1    | 24:1    | 24:1    | 32:1     |
| Lift screw travel (mm), per turn of input shaft               | H      | 0.83     | 0.83    | 1.67    | 1.25    | 1.25    | 1.5      |
|   | L      | 0.21     | 0.21    | 0.42    | 0.42    | 0.42    | 0.5      |
| Overall Efficiency %  | H      | 56       | 55      | 56      | 55      | 56      | 51       |
|   | L      | 30       | 30      | 34      | 38      | 36      | 30       |
| Maximum permissible power (kW)                                | H      | 0.54     | 1.3     | 2.2     | 3.6     | 5.5     | 8.9      |
|   | L      | 0.27     | 0.63    | 1.0     | 1.9     | 2.8     | 4.1      |
| Idling torque (Nm)  |        | 0.29     | 0.62    | 1.37    | 1.96    | 3.92    | 9.81     |
| Holding torque (Nm)   | H      | 1.27     | 4.31    | 10.8    | 19.6    | 51.0    | 68.6     |
|   | L      | 0.26     | 0.91    | 2.4     | 5.8     | 15.0    | 19.5     |
| Permissible input torque (Nm)                                 |        | 19.6     | 49      | 153.9   | 292     | 292     | 735      |
| Required torque of input shaft at maximum load (Nm)           | H      | 2.8      | 9.0     | 21.5    | 39.1    | 104.5   | 169.6    |
|   | L      | 1.4      | 4.3     | 9.6     | 20.4    | 54.2    | 98.5     |
| Permissible maximum speed (RPM) of lift screw at maximum load | H      | 1500     | 1400    | 1000    | 890     | 500     | 500      |
|   | L      | 1500     | 1400    | 1000    | 890     | 500     | 400      |
| Lift screw rotational torque (Nm) at maximum load             |        | 8.7      | 34.7    | 86.7    | 208.2   | 555.1   | 1040.9   |

## Dimensions

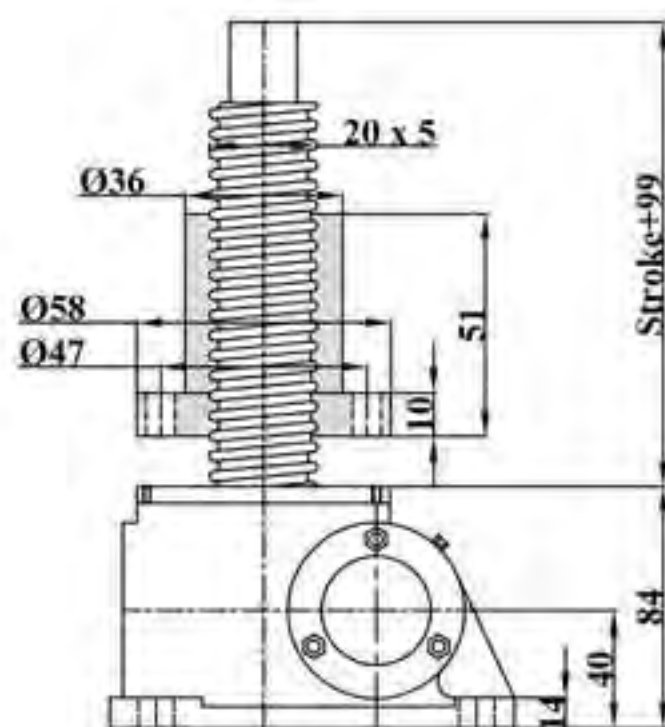
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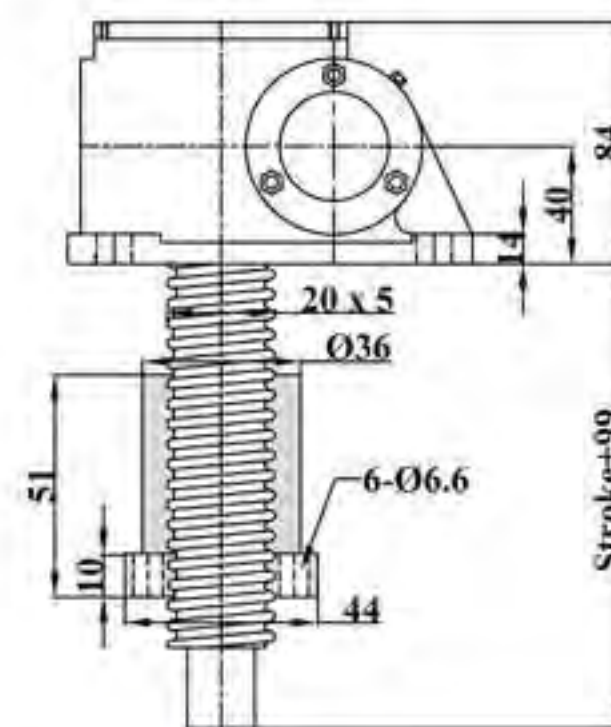
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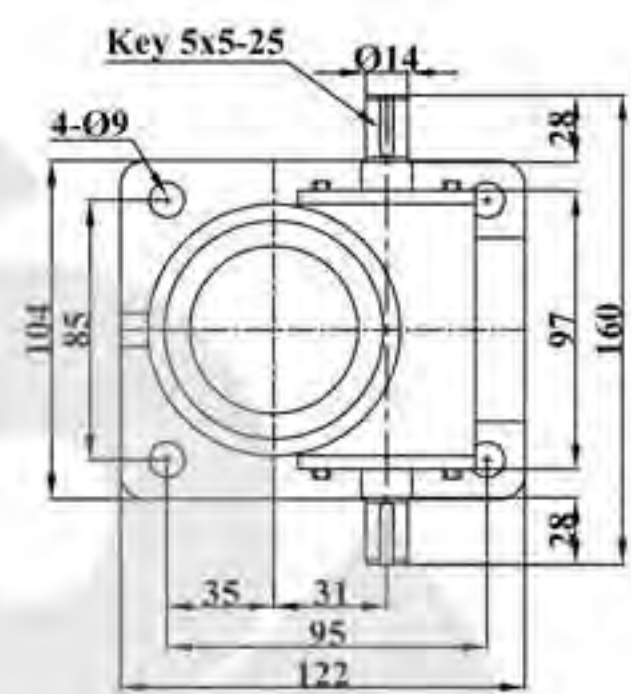
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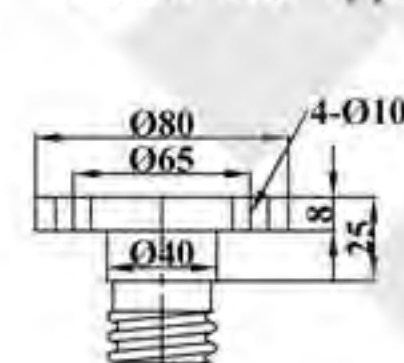
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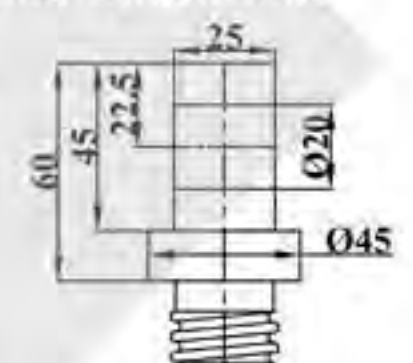
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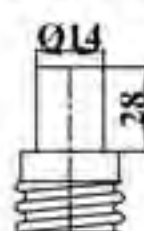
Screw End Types and Dimensions



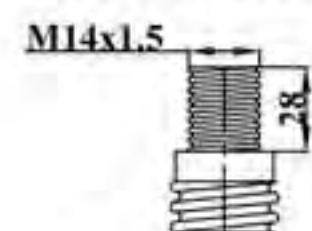
I Top Plate



II Clevis End



III Plain End



IV Thread End

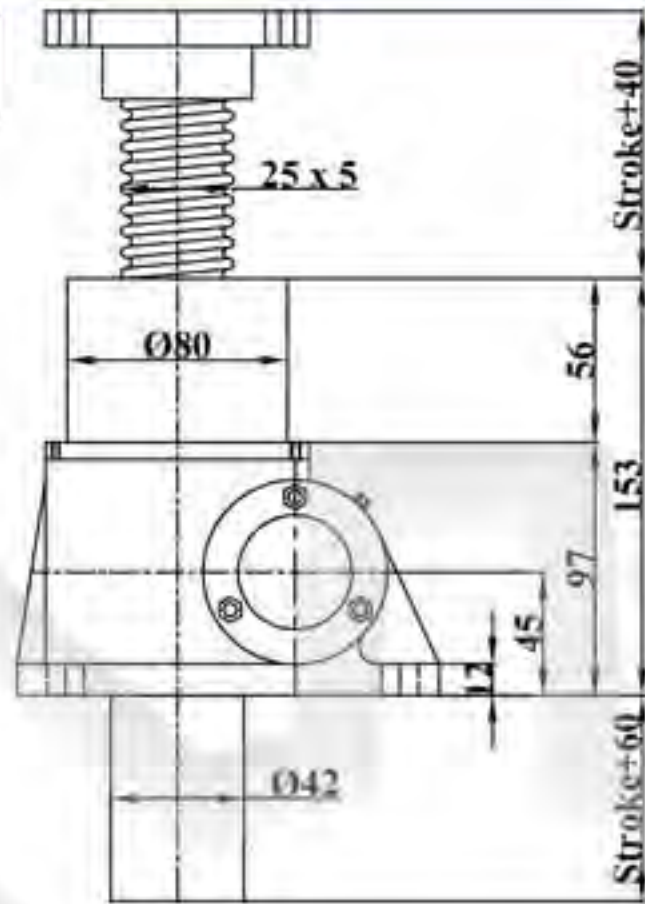


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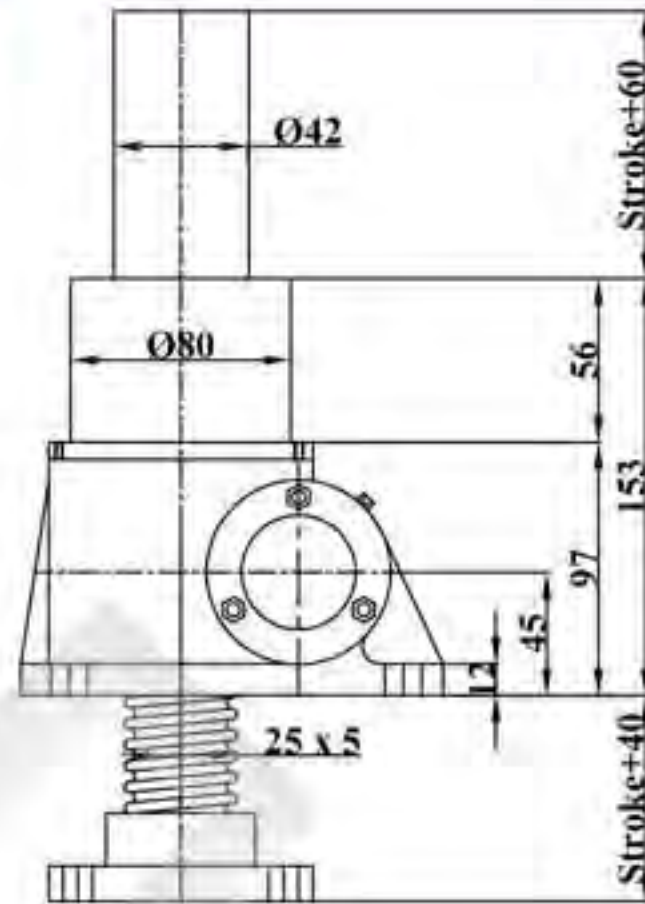


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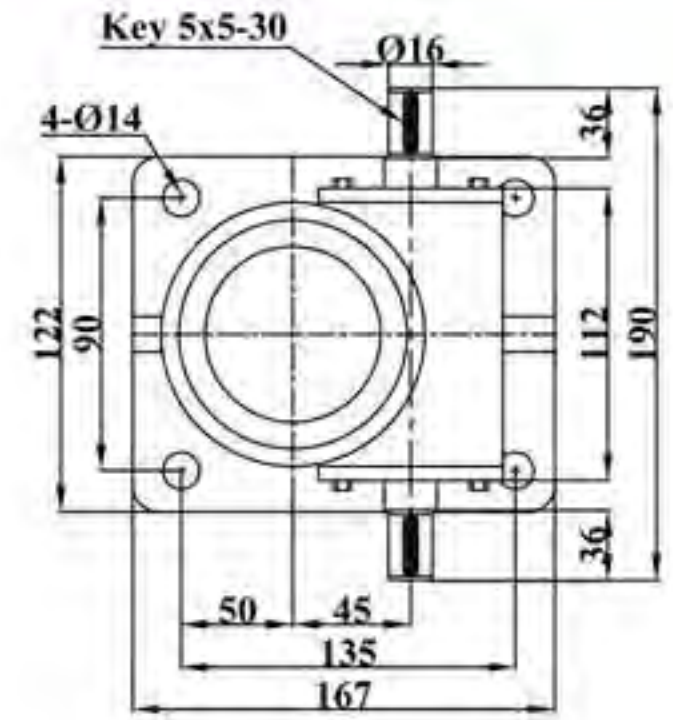
**JTB-2.5T**



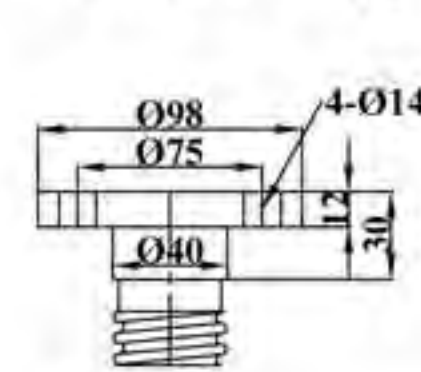
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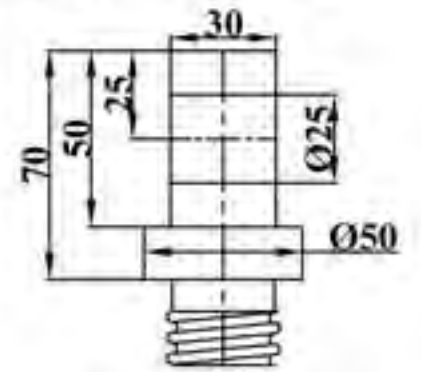
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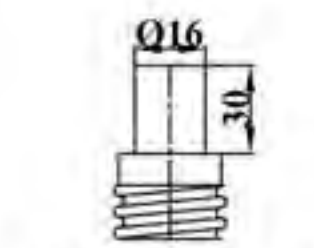
Screw End Types and Dimensions



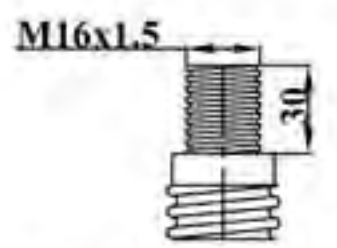
I Top Plate



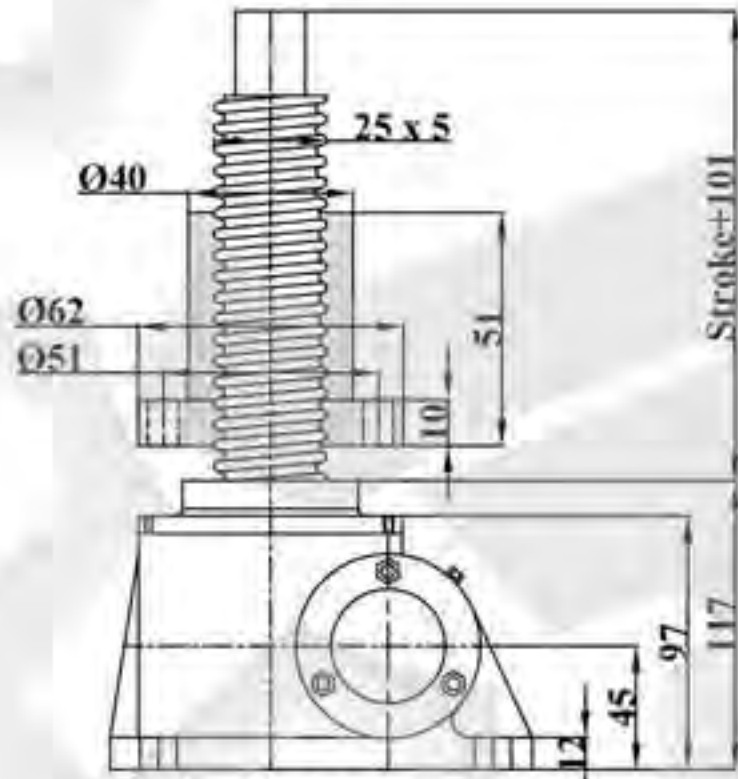
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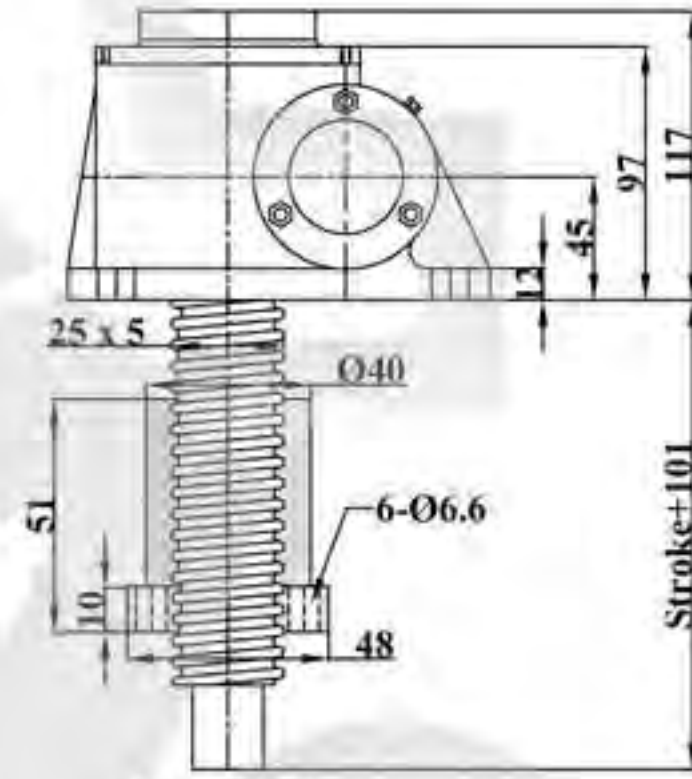
III Plain End



IV Thread End

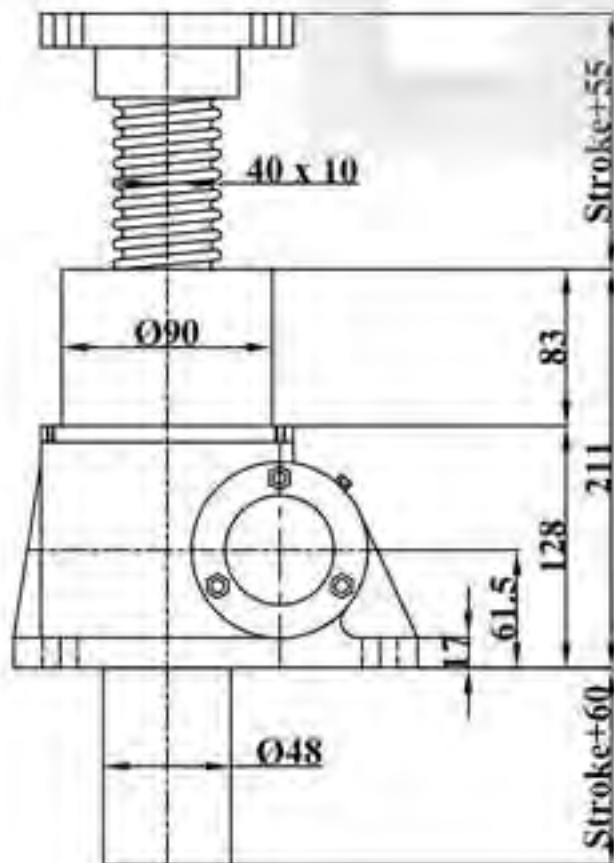


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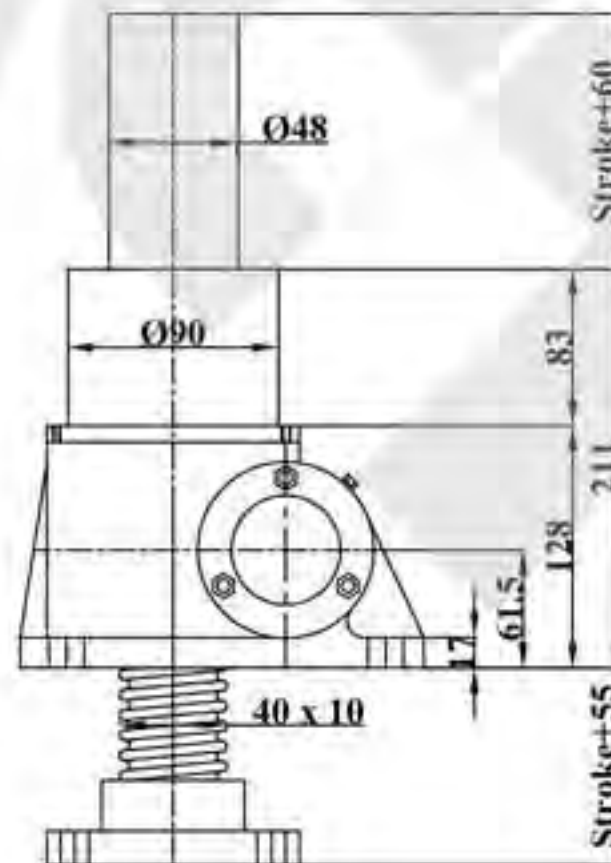


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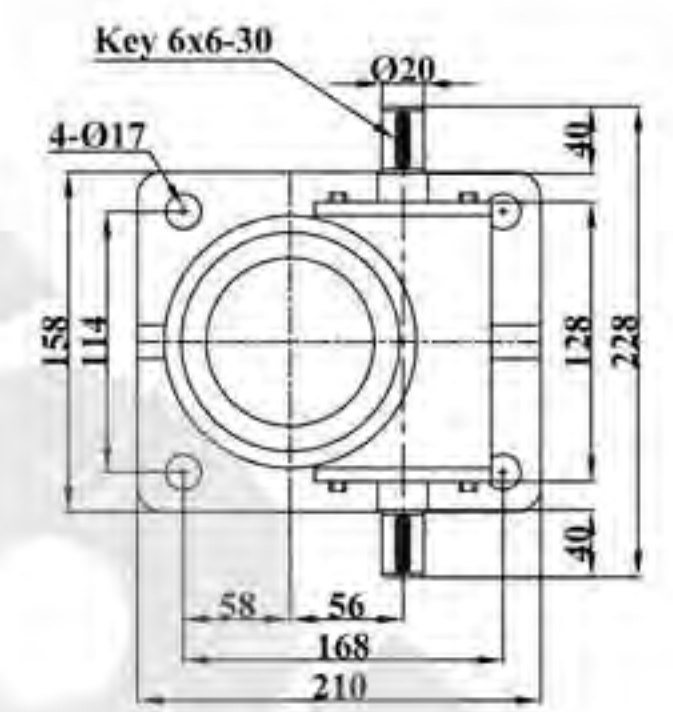
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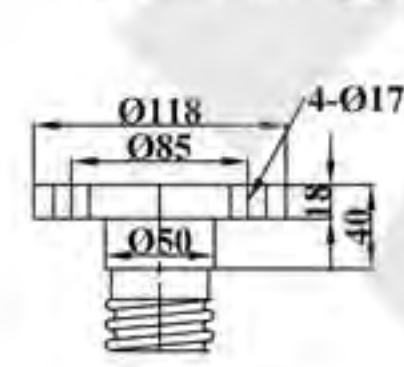
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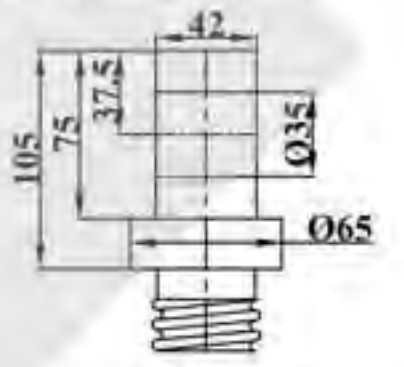
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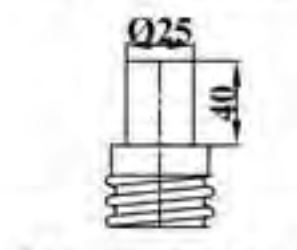
Screw End Types and Dimensions



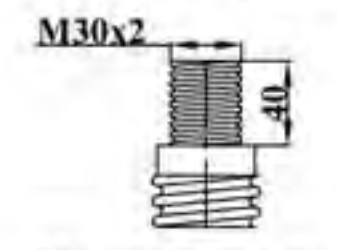
I Top Plate



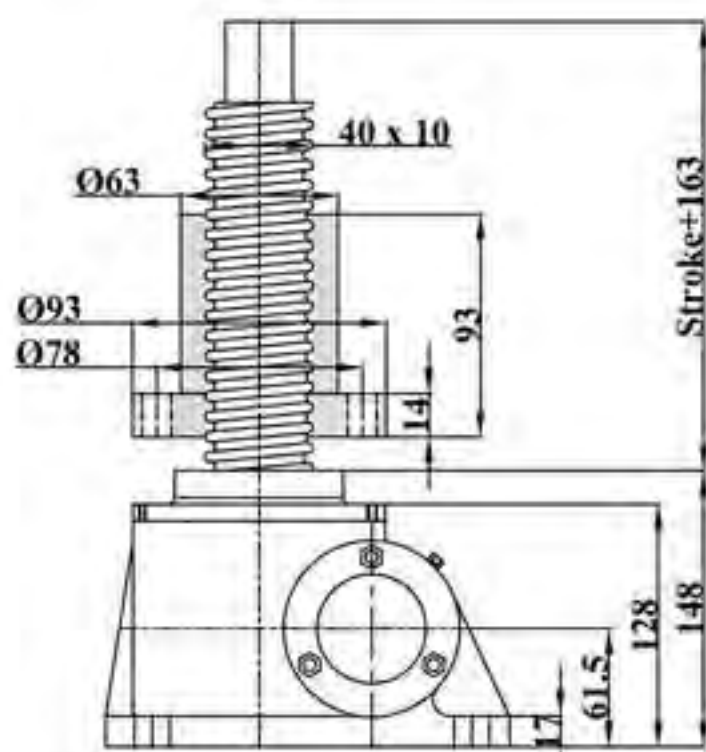
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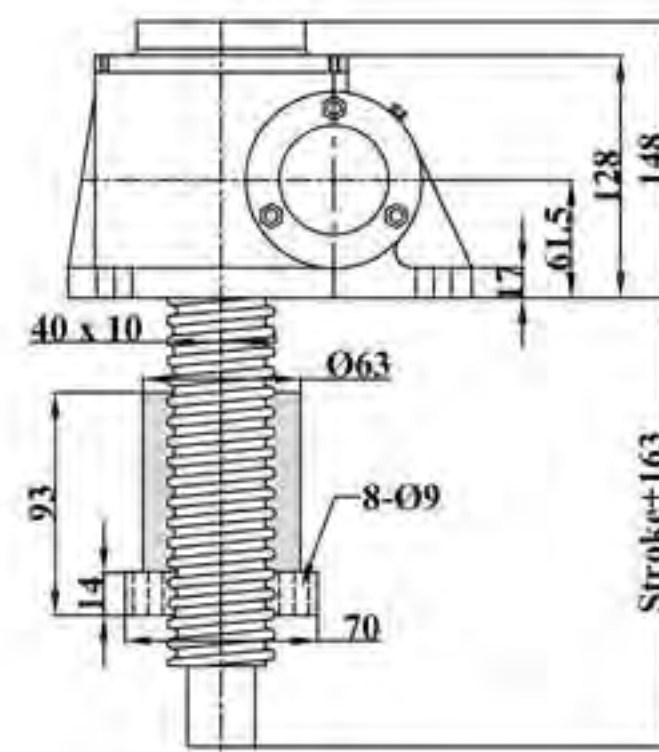
III Plain End



IV Thread End



Upright



Inverted

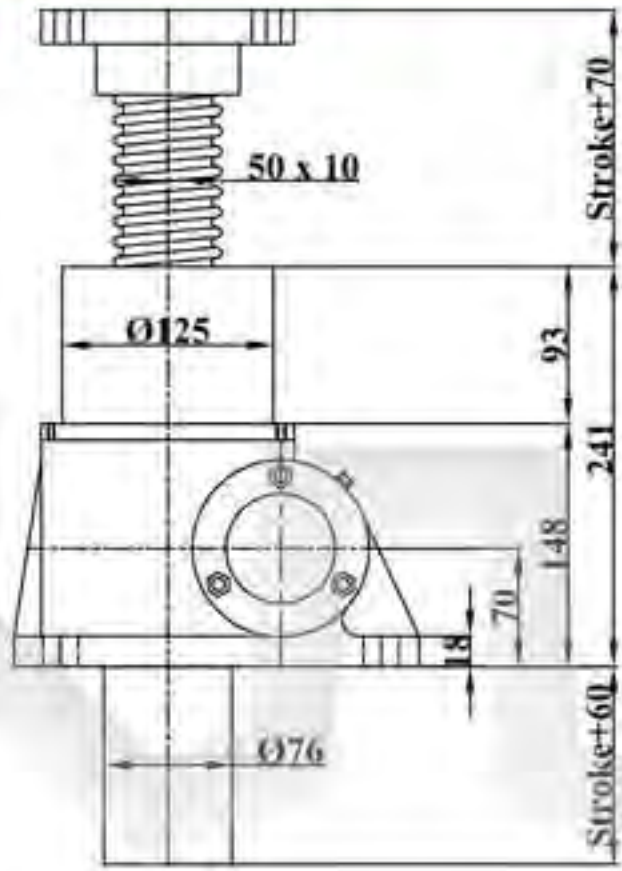


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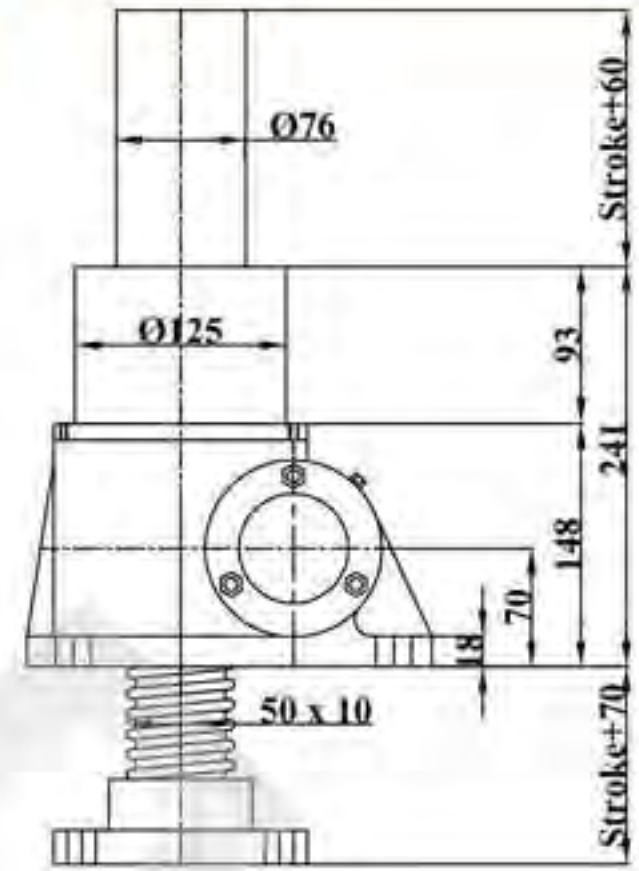


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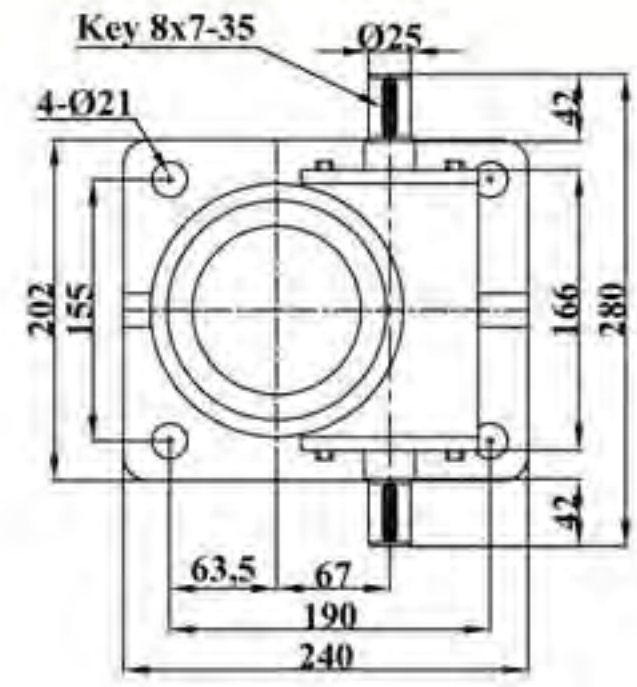
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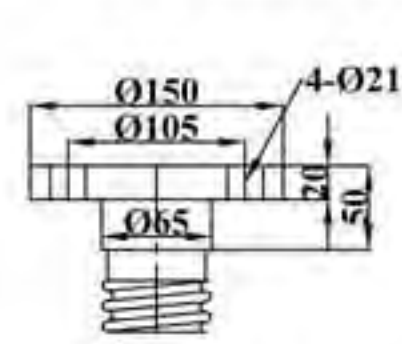
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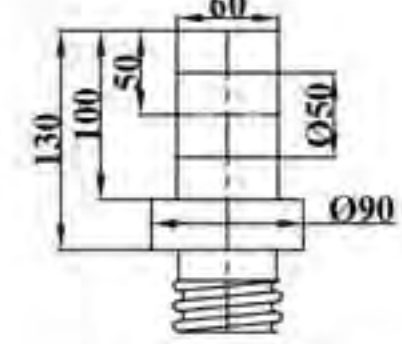
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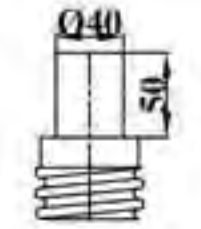
Screw End Types and Dimensions



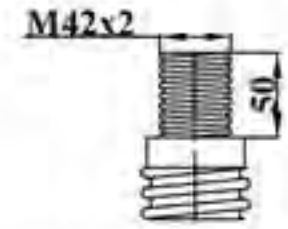
I Top Plate



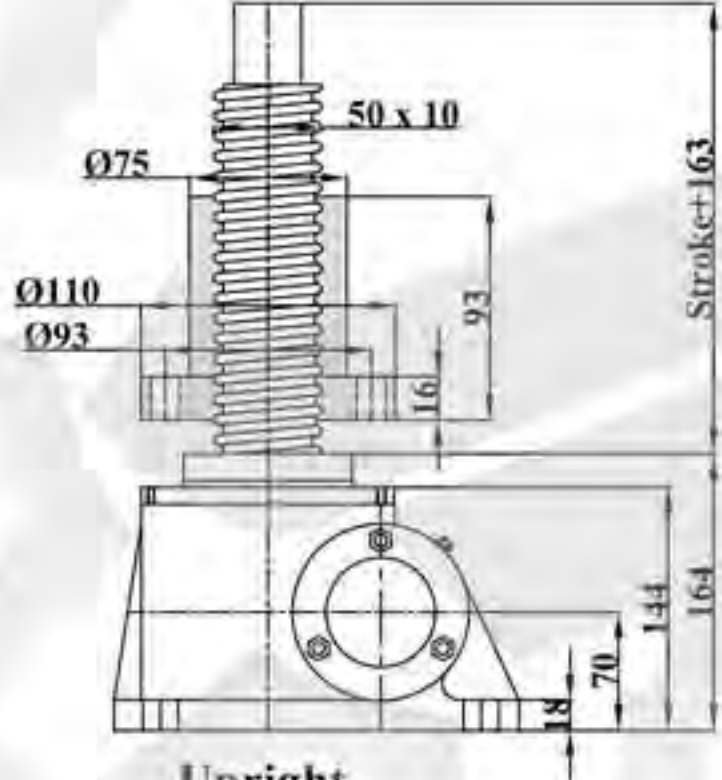
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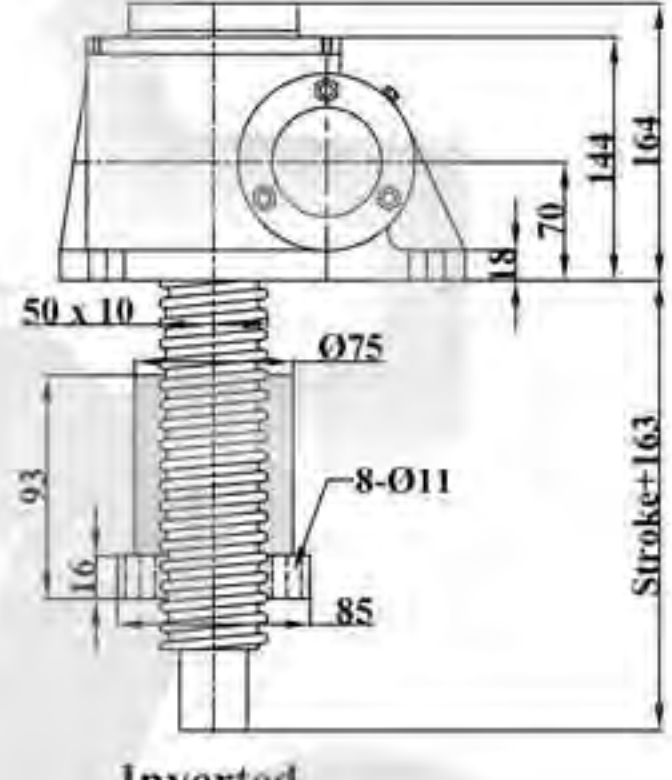
III Plain End



IV Thread End

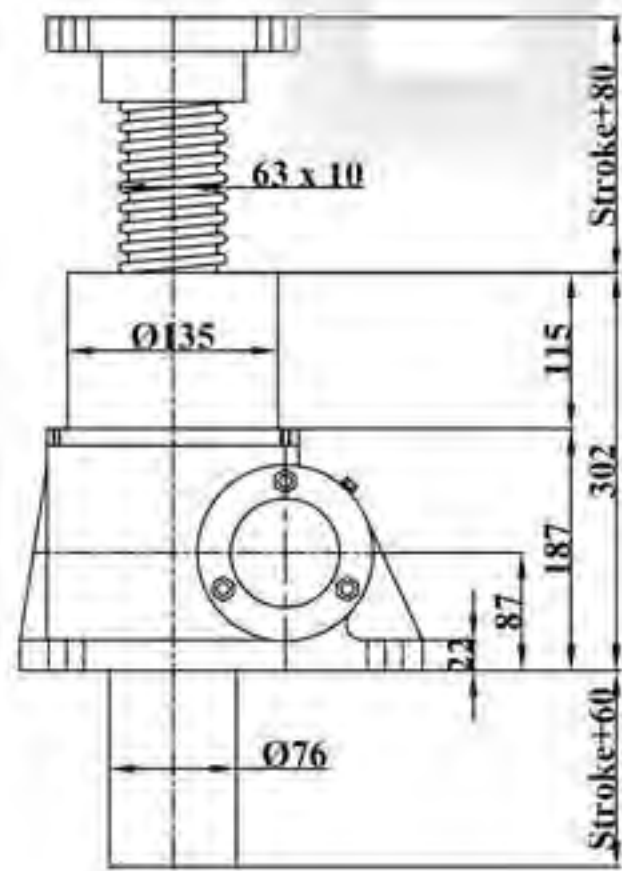


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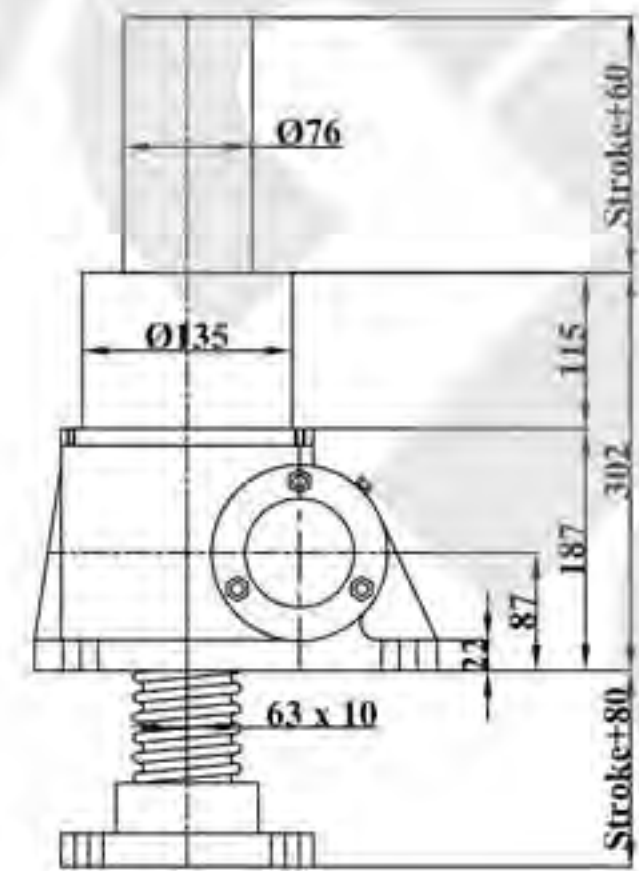


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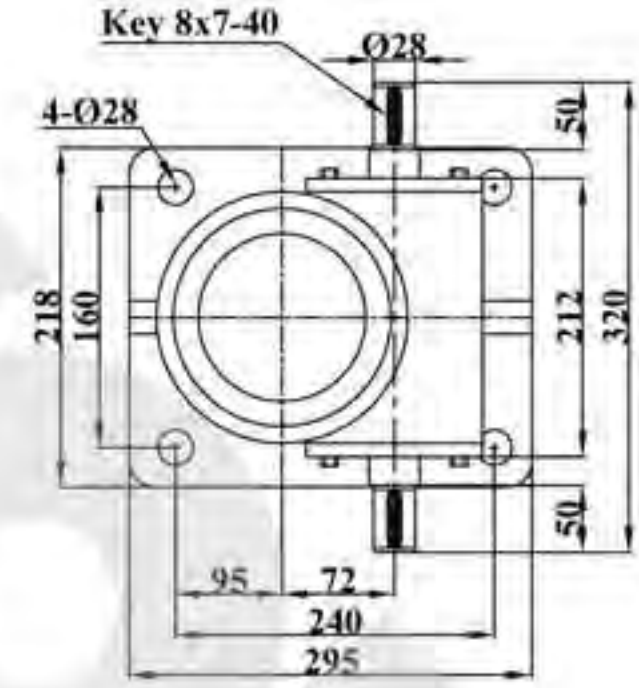
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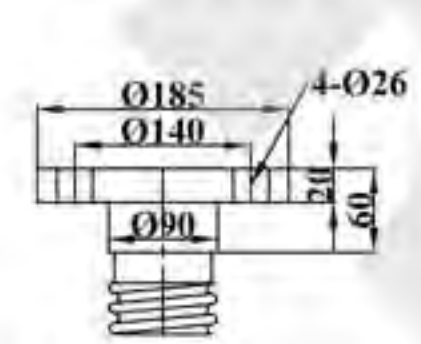
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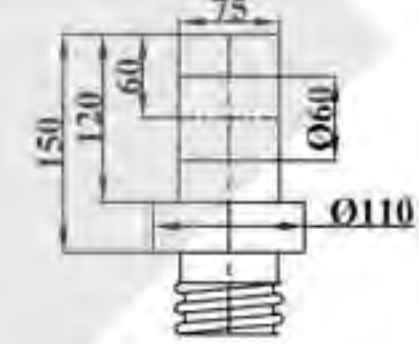
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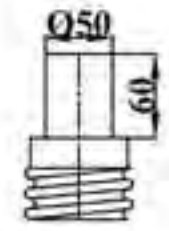
Screw End Types and Dimensions



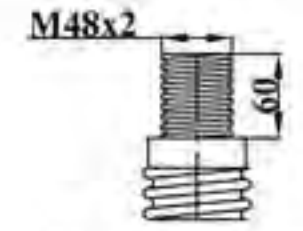
I Top Plate



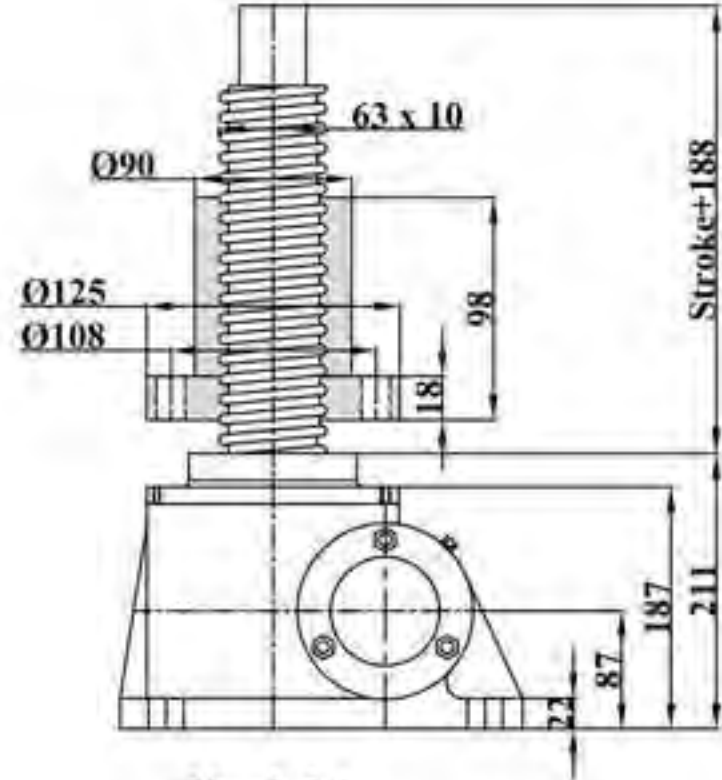
II Clevis End



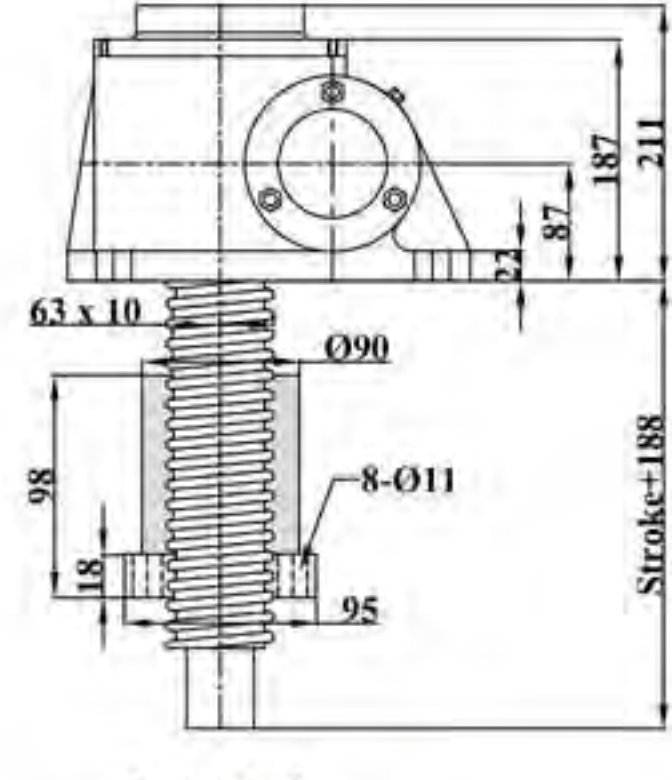
III Plain End



IV Thread End



Upright

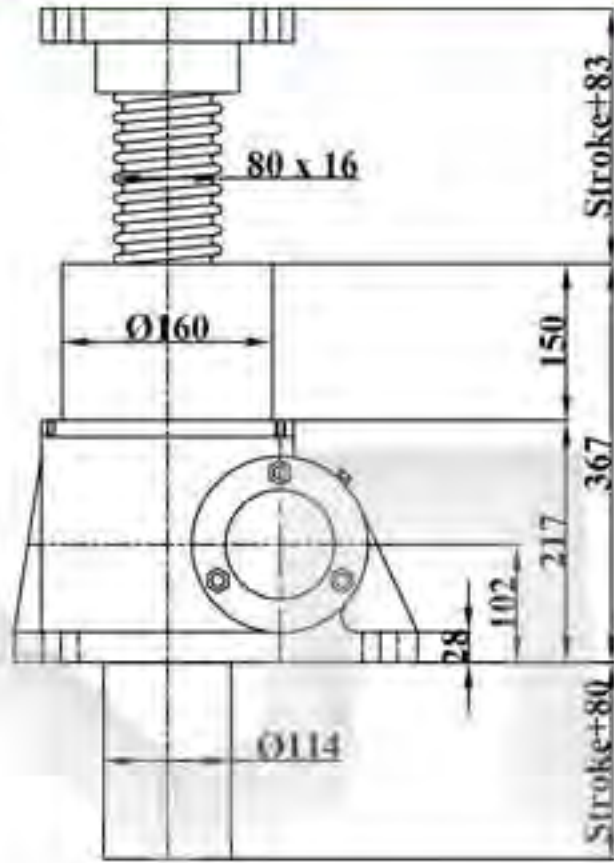


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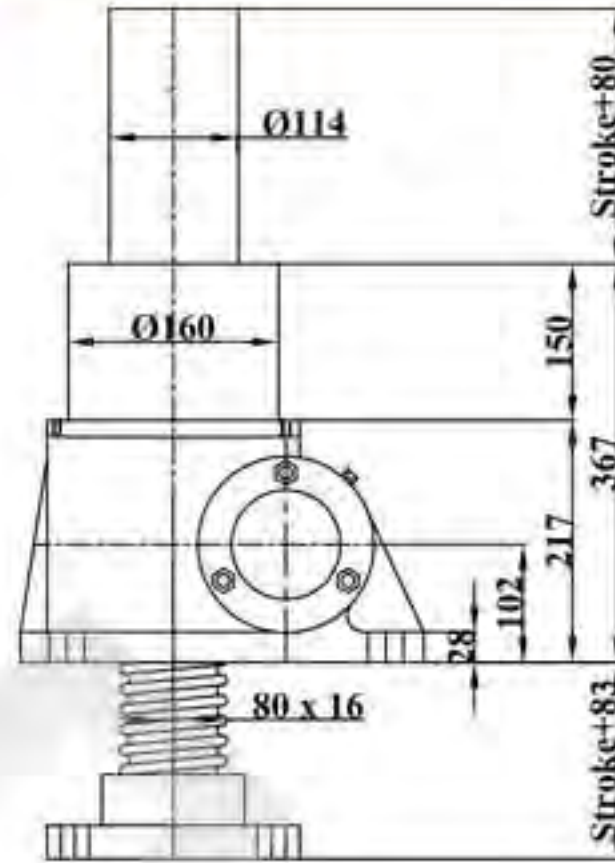


**Dimensions**

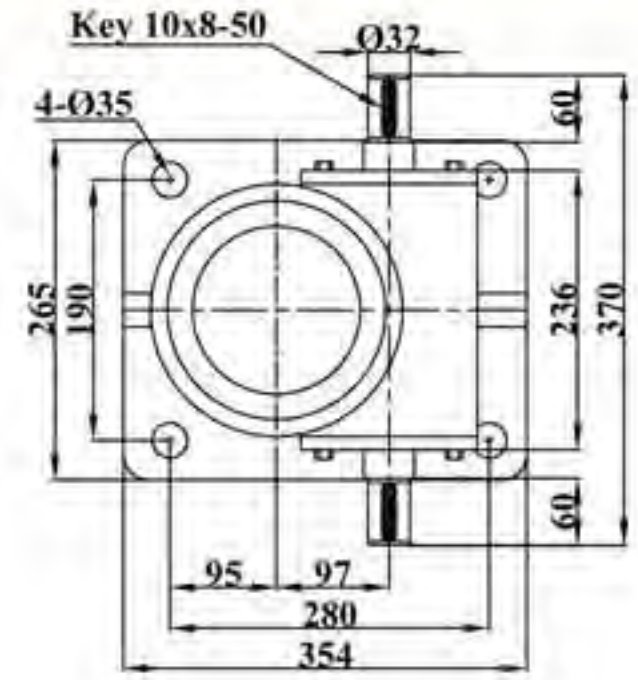
**JTB-25T**



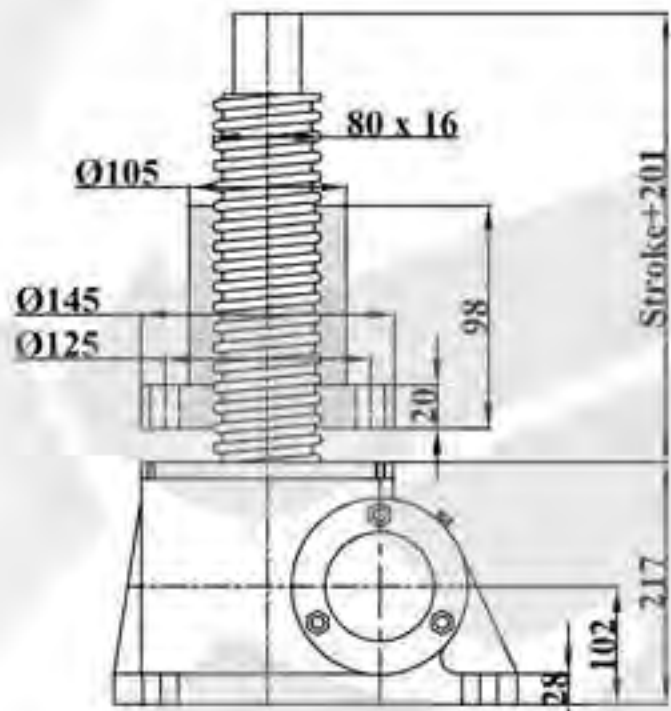
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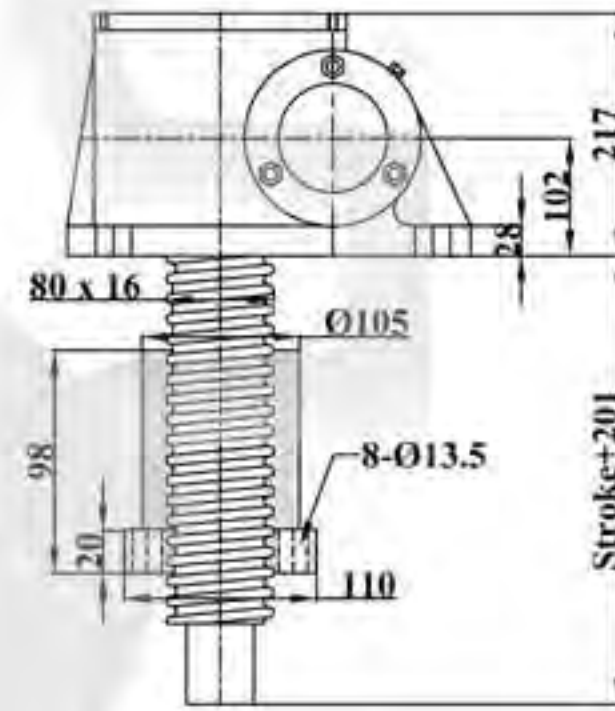
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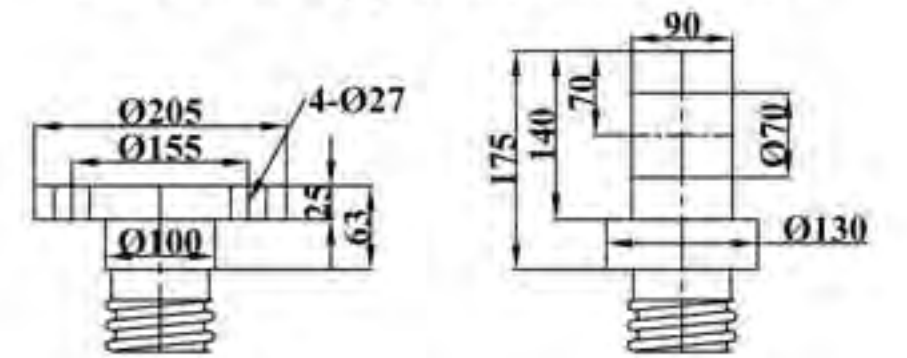
Screw End Types and Dimensions



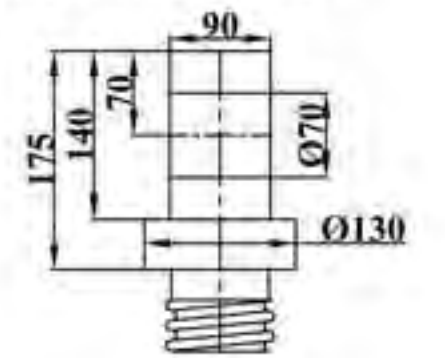
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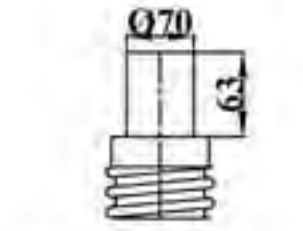
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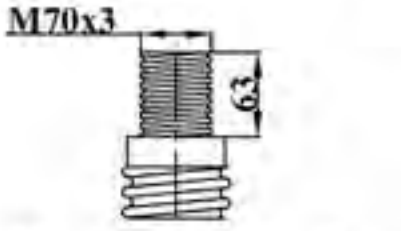
I Top Plate



II Clevis End

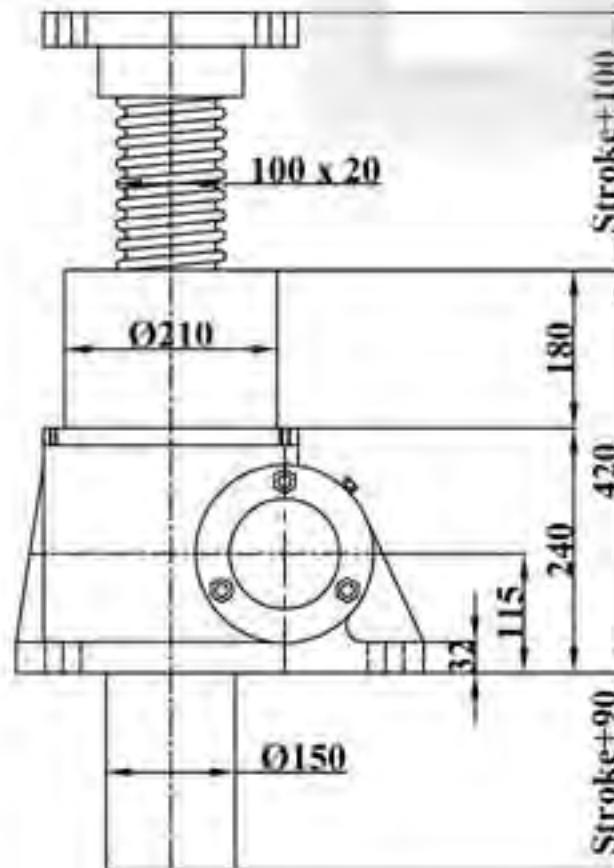


III Plain End

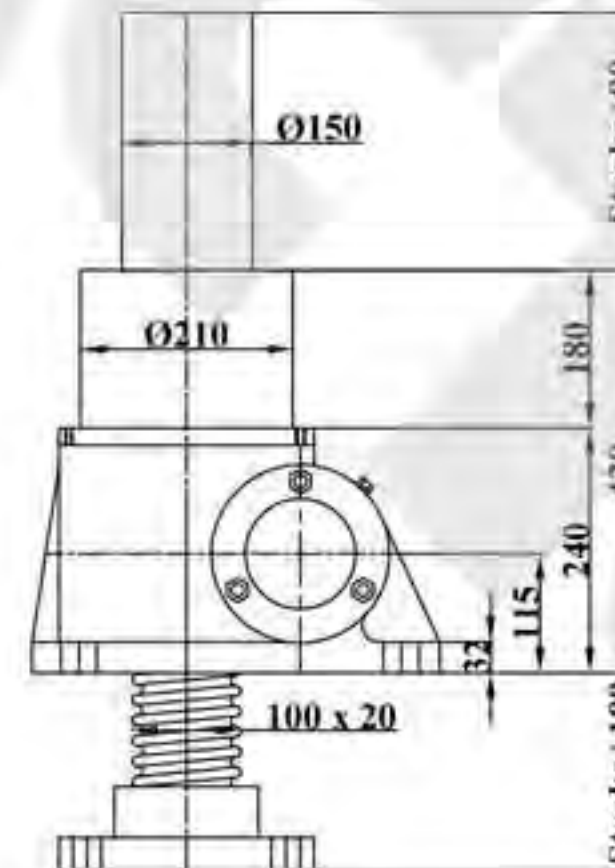


IV Thread End

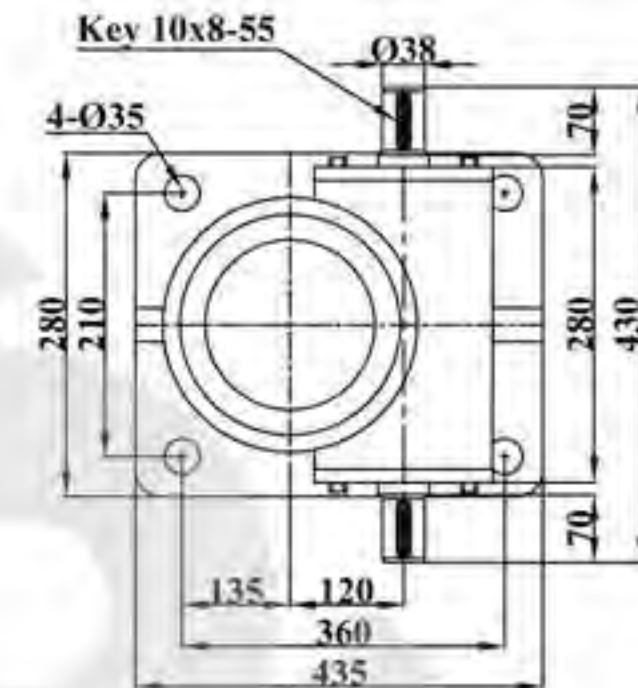
**JTB-35T**



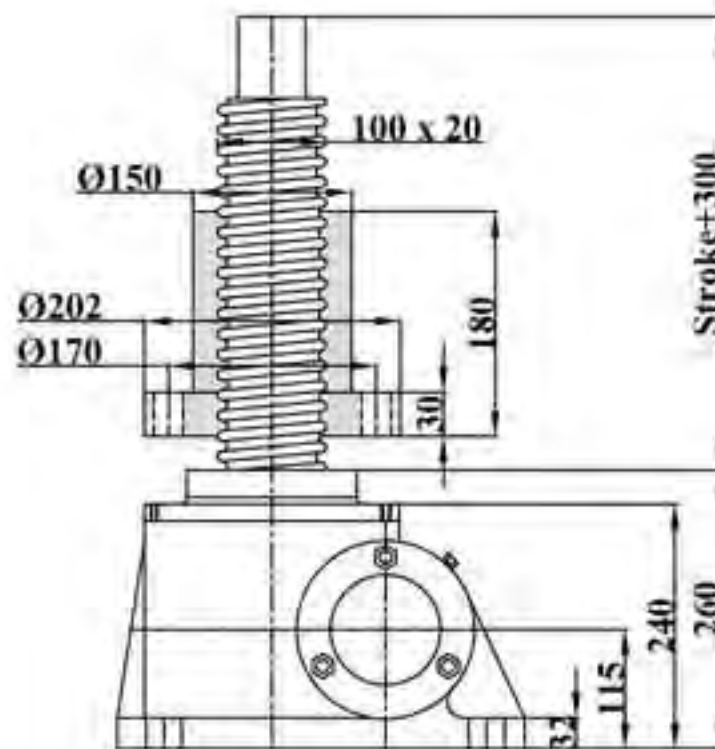
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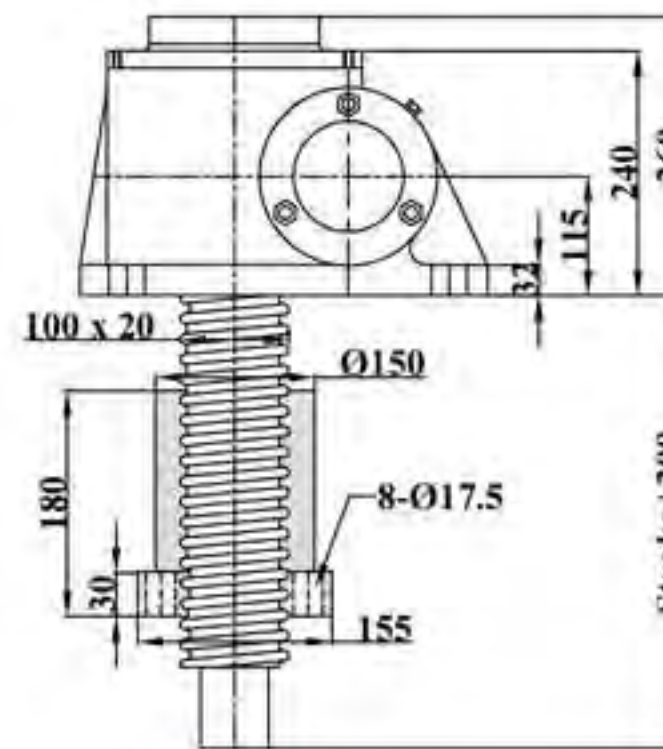
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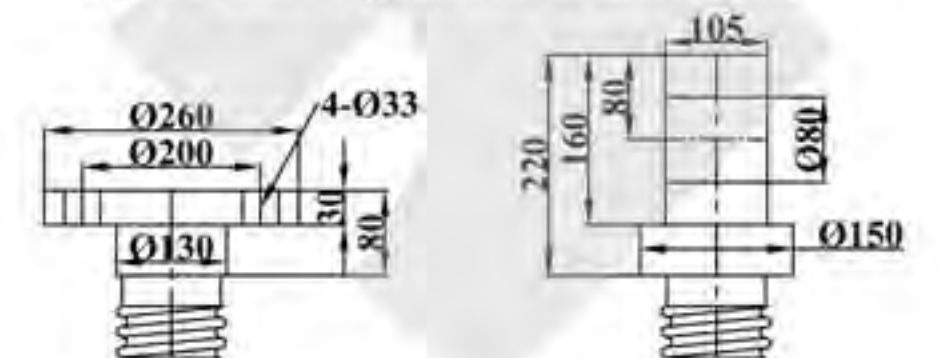
Screw End Types and Dimensions



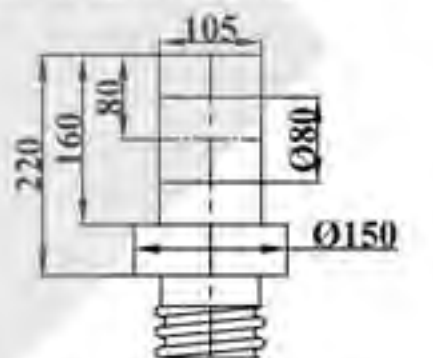
Upright



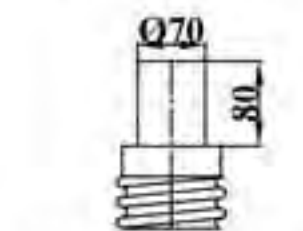
Inverted



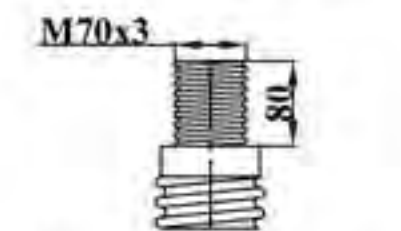
I Top Plate



II Clevis End



III Plain End



IV Thread End



\*. Dimensions are subject to change without notice