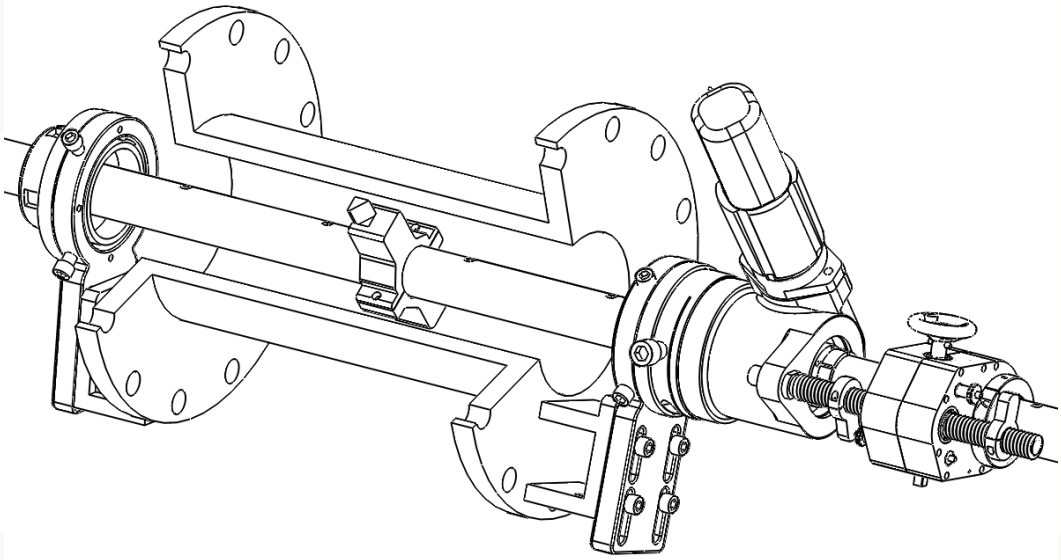
OPERATION MANUAL

TDG60 Portable Line Boring



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Foreword

Portable Line Boring is mainly used in processing for boat rudder hole, stern shaft hole, bore and concentric holes of pump body/valve body, etc.

The instructions applies only to TDG60.

TDG60 installation is using a fixed clamping method. When processing, use different bore heads according to various diameter range. Please confirm hole's diameter before processing，selecting appropriate bore head.

Shenzhen Joysung Machinery Company always attach high importance with R&D and update of our products, and the structure of our products is optimized continually. So the manual may be slightly different with the product in structure and we will try to provide you the latest instructions to enable your efficient using of the machine.

Operating Instructions

Please read carefully instructions before using the machine and check parts accessories.Understanding precautions, machine performance and operating specifications

1. Operators have to be having safety training.
2. Wearing work clothes & protection goggle before operating
3. Confirming electric motor's working voltage before open the equipment.
4. Confirming the systems lock or not before open it.
5. Using hand pull up(no speed）or the lowest speed，Prohibit high speed.
6. Prohibit hand and waste near to the equipment when processing, to avoiding personal injury
7. Electric wire should be keep away from these places of high temperature, greasy, sharp edge.
8. Please close electric through remote control box when equipment error occurred or abnormal sound, then checking and repairing.
9. Prohibit operating when no people beside, when equipment completely stopped, checking whether the systems is on no-speed. Walk away after close electricity.
10. Prohibit use this equipment when beyond or below the equipment's processing capacity.
11. The machine can not exceed the specified maximum cutting capacity，to avoiding equipment damage and personal accident.
12. Prohibit change feed mode after the equipment running.
13. Processing over，please remove oil stains & iron cut on the equipment，spray rust oil on knife arm, boring bar, etc.

➢ Introduction To Equipment

Portable Line Boring is mainly used in processing for Pipe hole, concentric spacing hole and flange repairing, which is involved in excavators, cranes, loaders, cranes earth-moving equipment.

Its portable / modular design can adapt to various processing needs of narrow space and high altitude.

1、Boring bar's customized length available

2、Power: Servo, Hydraulic, etc.

3、Processing depth: 0-500mm。

Portable And Fast Adaptation Method

1. modular design，easily installation and operating.
2. High strength alloy steel boring bar can insure processing accuracy and efficiency.
3. High-precision universal control bearings can insure speedily install.

Rotational Unit

1. Electric motor as power drive,disassemble and install more convenient.
2. Reduction ratio 6:1 or 3:1, increasing the output torque.

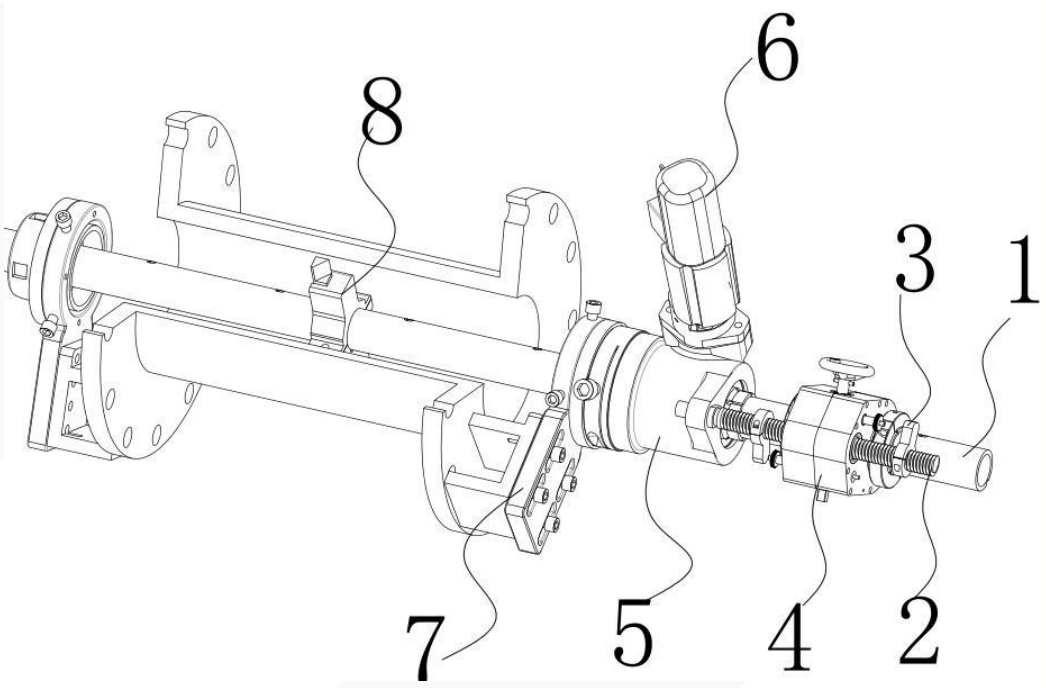
Feed Unit

1、Unique design, small & portable, more speed range.

2、Easily fixed on anywhere of boring bar using screw bolt.

3、Automatic feed mode range 0-0.5mm.

➢ Structure Diagram



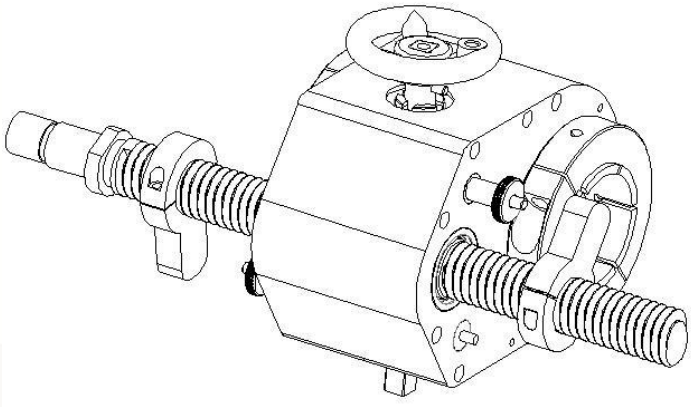
1- Boring Bar 2- Feed Rod/leadscrew 3- Limit Block 4- Feed Unit

5- Rotational Unit 6- Electric Motor 7- Mount Kit 8- Boring Head

➢ Introduction To Main Accessories

1. Feed Unit

Part For Control Tool cutting

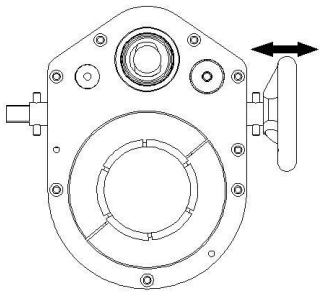


Three Stalls: forward, no load, reversal，

When hand wheel is on middle position, it no load, feed rod no feed.

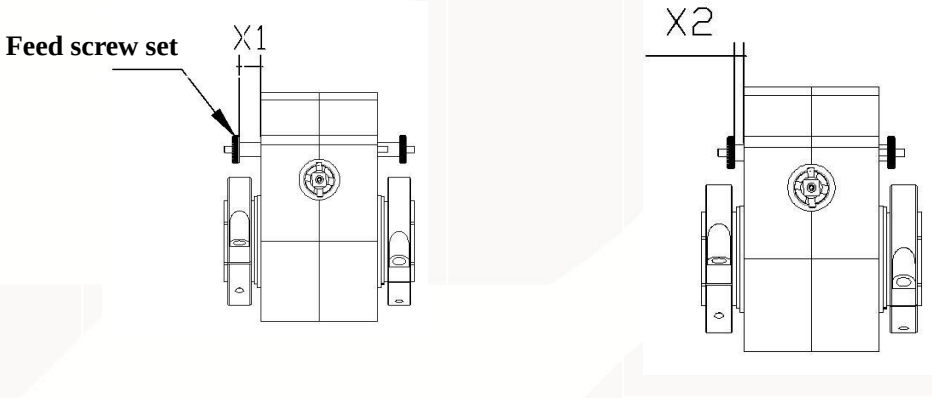
When hand wheel push or pull, can achieve forward or reversal.

When it's no load, can feed by hand.



Set up feed rate

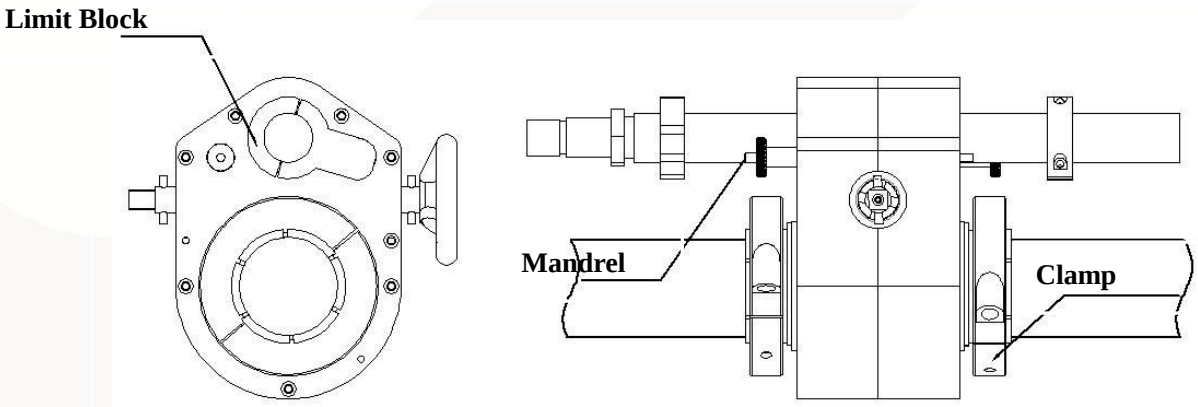
Feed range 0-0.5 through adjust screw set.



Limit Block, Feed Unit Clamp

Limit Block: limit the stroke of the feed.when the mandrel is covered, feed unit is not feed.

Feed Unit Clamp: Fix feed unit on boring bar, lock feed unit using clamp.

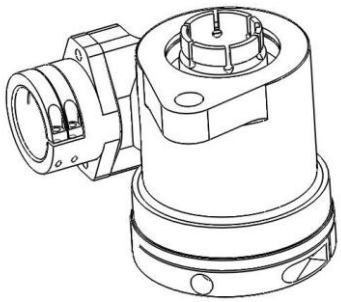


2. Rotational Unit

Drive boring bar running,

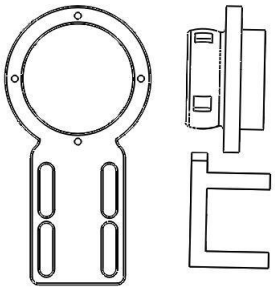
When boring a hole, rotational unit do not need lock using clamp

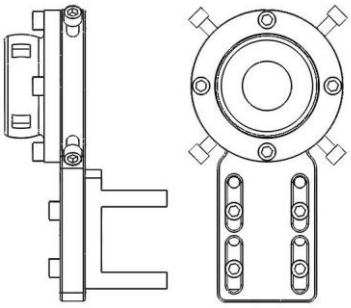
When use facing head, lock rotational unit using clamp, and feed unit is on no load or take it out.



3. Mount Kit

Function: radial fine tuning,to reach the boring bar alignment.



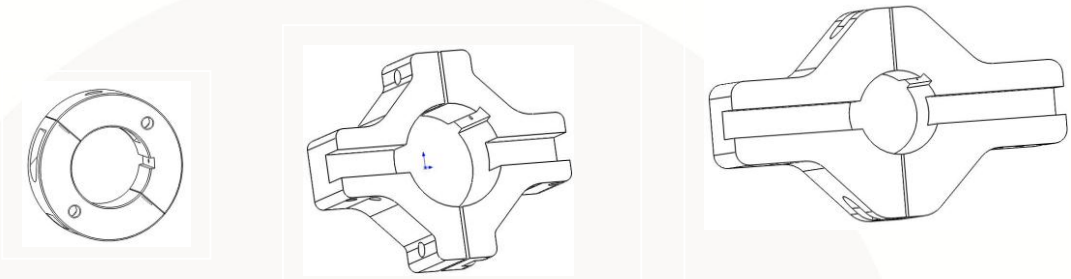


4. Boring Bar Installation Accessories

Two pieces set up cones, three kinds of Taper pieces, 2 pieces taper sets of clamps

According to needs, range capacity 70-300mm.

5. Boring Head



6. Facing Head

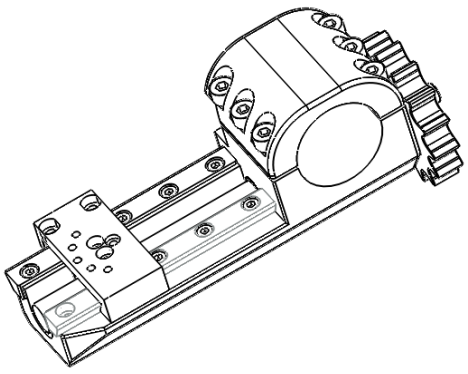
According to work-piece, fix facing head,

Determine the length of the support leg before using it,for make sure facing head running in the space.

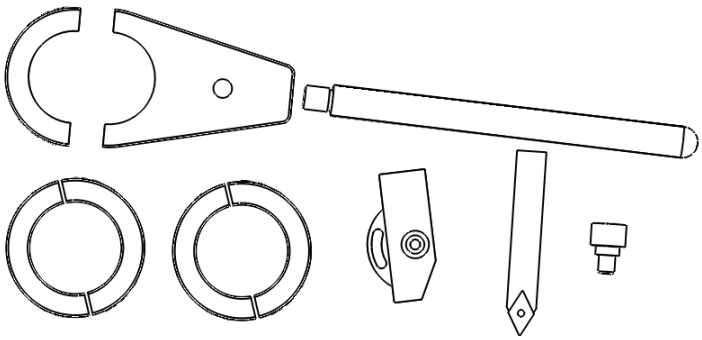
Before processing, first run a few laps for testing for make sure running smooth

Retreat through hand turn sprocket, To achieve fast retreat.

Structure as follow:



Facing Head Main Body



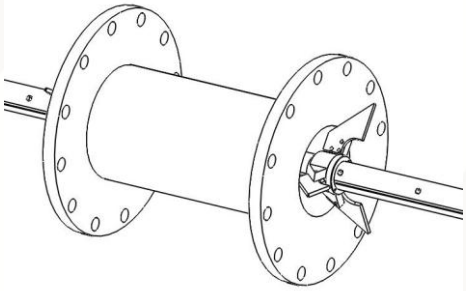
Accessories

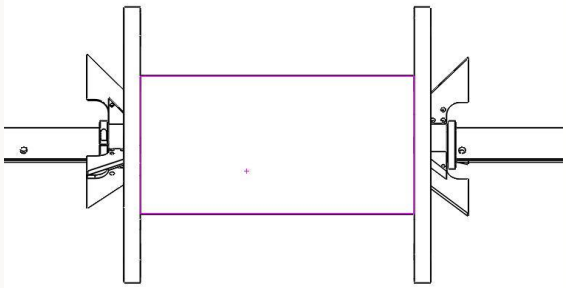
➢ Instructions

1. Modular design, which make installation and calibration more concise and convenient.

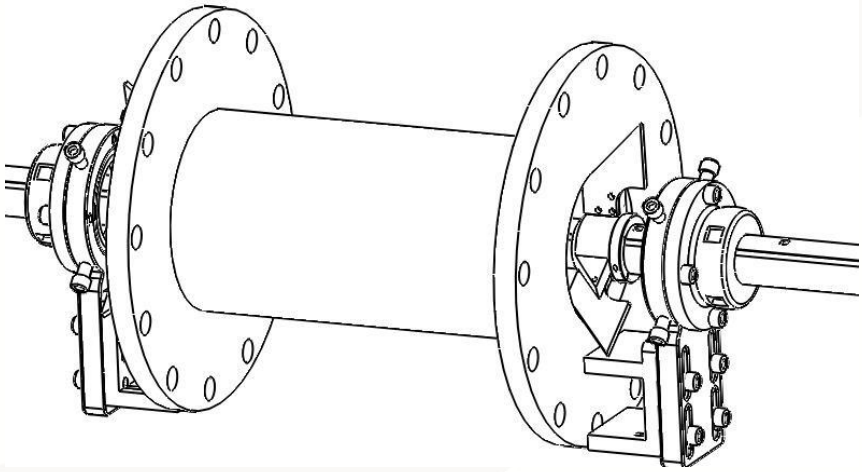
The following figure is processing steps of a group of concentric hole , which can help you quickly grasp the use of methods.

1) Put boring bar inside the hole, position through set up cones on both sides.





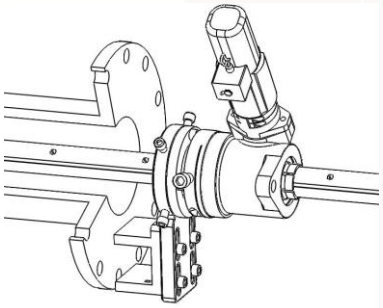
2) Install mount kit on both side, welding on the workpiece, take out set up cones.



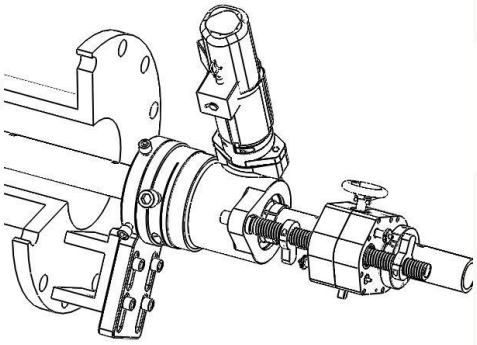
3）Alignment Centered Boring Bar

Magnetic dial indicator adsorbed on boring ba, turn boring bar，adjust screw.

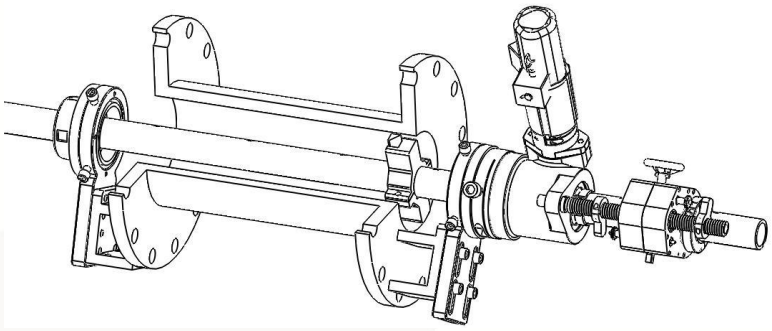
4）Install Rotational Unit On Boring Bar, lock it，install electric motor and lock it,



5）Install Feed Unit, Fix Feed Rod On Rotational Unit, Lock It.



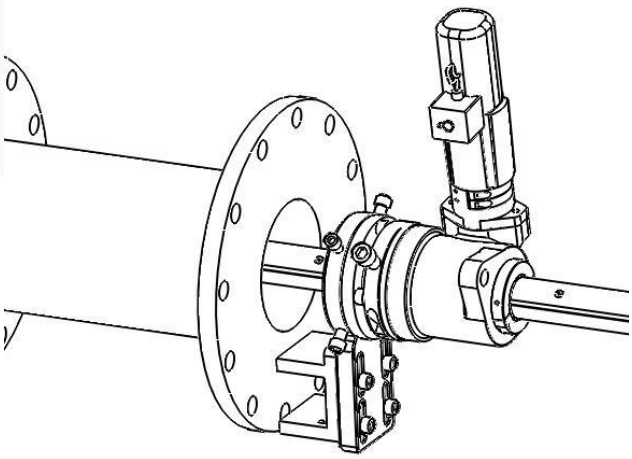
6）According To Hole’s Diameter,Install Cutter, Adjust Appropriate Feed Rate.



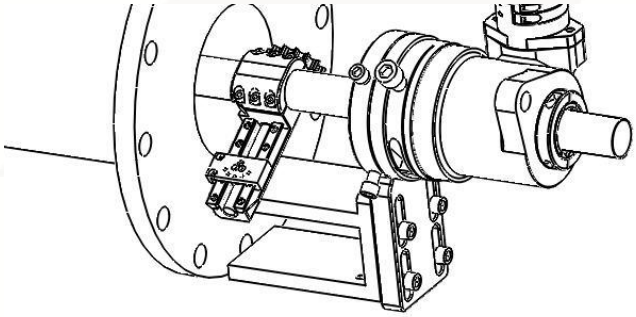
Install Steps For Facing Head

Step by step, same with the first three steps installation of line boring.

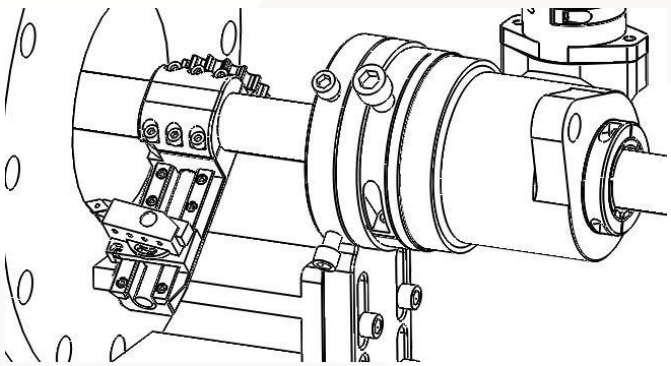
Next, fix rotational unit on on mount kit, lock it, install electric motor and lock, rotational unit lock by clamp.



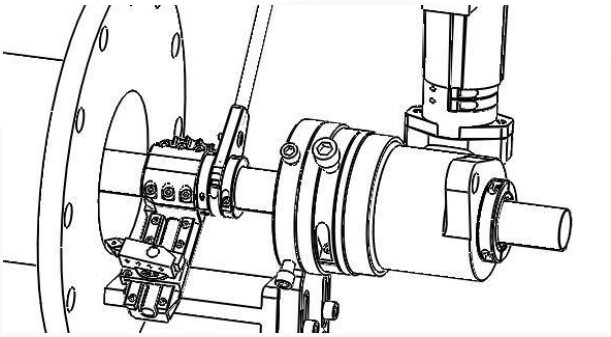
Put on facing head on boring bar, and lock it,

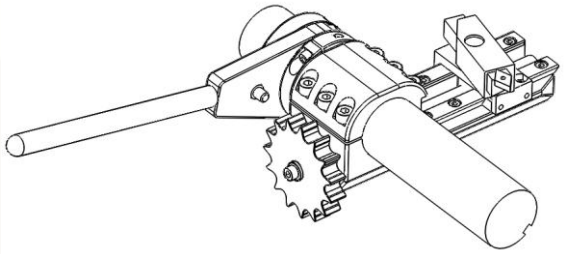


Install cutter holder and cutter toois, choose the right angie and iock it.



Install facing head accessories(clamps, lever, etc.)





- **Technical Data**

1. Max Boring Diameter: 600mm；
2. Min Boring Diameter: 65mm；
3. Standard Stroke/Travel: 300mm（Optional: 600mm, 1000mm）;
4. Max Cutting Depth: 5mm
5. Facing Diameter: Ø80-380mm; Ø200-650mm
6. Surface roughness: Ra3.2
7. Accuracy: ≤0.02mm

- **Equipment Maintenance**

1. Make sure the feed screw can slide smoothly, lubricating oil frequently
2. Make sure each part is complete before use.
3. Spindle sets have to lubricating oil before open.
4. For a long time without using, remove iron cut debris and dust，rotational unit & feed unit sealed keep, put anti rust oil on feed screw.

➢ List Of Wearing Parts And Drawings

Item NO.	Description	Reference Drawing NO.
1	Feed Unit - Worm	60-01-10
2	Feed Unit - Worm Gear	60-01-05
3	Rotational Unit - Worm	60-04-08
4	Rotational Unit - Worm Gear	60-04-03
5	Clamp 1	60-01-04A
6	Clamp 2	60-01-04B