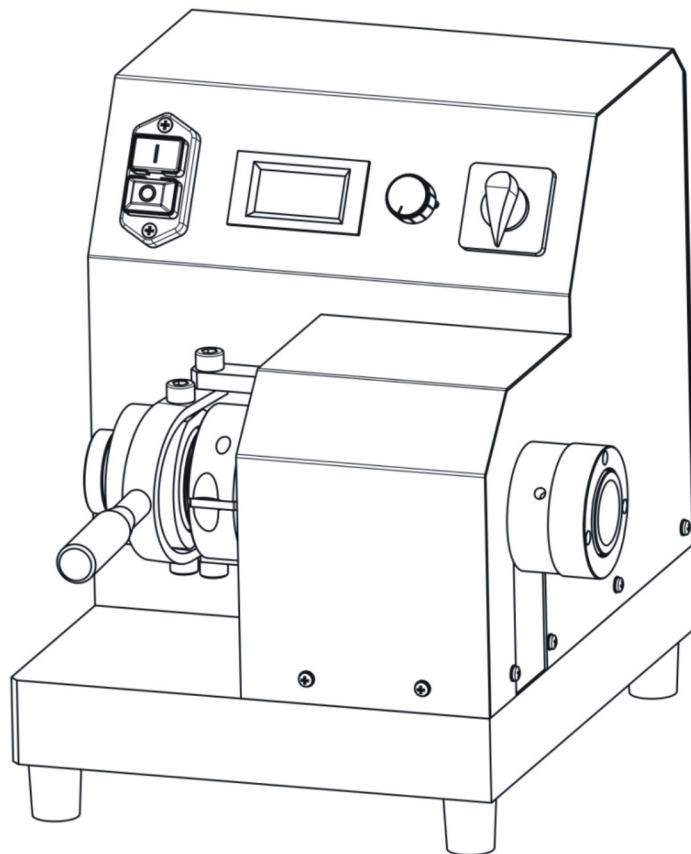


# **OTMT**

## **SPEED LATHE**



**ITEM NO. 69-105-036**  
**MODEL NO. 4160**

Version date: 06/23/2017

Please Read These Instructions Before Operating Your Machine  
Contents Subject To Change Without Notice

# CONTENTS

|   |   |
|---|---|
| <b>Warning</b> .....                    | 1 |
| <b>Identification</b> .....             | 2 |
| <b>Specifications</b> .....             | 2 |
| <b>Inventory</b> .....                  | 3 |
| <b>Optional 5C Collets</b> .....        | 3 |
| <b>Safety</b> .....                     | 3 |
| <b>Setup</b> .....                      | 5 |
| <b>Operate</b> .....                    | 5 |
| <b>Parts List</b> .....                 | 7 |
| <b>Electrical Circuit Diagram</b> ..... | 9 |



## WARNING

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury – including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

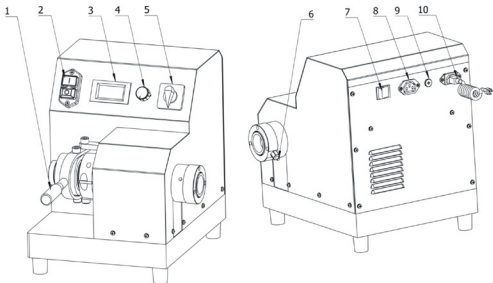
Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

## IDENTIFICATION

The following is a list of controls and components on the lathe. Please take time to become familiar with each term and its location. These terms will be used throughout the manual and knowing them is essential to understanding the instructions and terminology used in this manual.



|   |                          |    |                        |
|---|--------------------------|----|------------------------|
| 1 | Locking/Releasing Handle | 6  | Spindle Key            |
| 2 | Power Switch             | 7  | Run/Foot Change Switch |
| 3 | Speed Display (RPM)      | 8  | Socket for Foot Switch |
| 4 | Speed Control Knob       | 9  | Fuse                   |
| 5 | Forward/Reverse Switch   | 10 | Cable                  |

## SPECIFICATIONS

|                        |                     |
|------------------------|---------------------|
| Motor power .....      | 800w                |
| Speed of spindle.....  | 0-3600rpm(variable) |
| Spindle taper.....     | 5C                  |
| Weight(Net/Gross)..... | 48/55kg             |
| Packing size.....      | 590 x 430 x 450mm   |

## INVENTORY

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|                            |        |
|----------------------------|--------|
| Fuse 15A.....              | 1      |
| Spring Collet 5C-5/8"..... | 1      |
| Instruction Manual.....    | 1      |
| Hex Wrenches 3, 5mm.....   | 1 Each |

## OPTIONAL 5C COLLETS

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| Type   | mm     | Inch         |
|--------|--------|--------------|
| Round  | 1 ~ 28 | 1/32 ~ 1-1/8 |
| Square | 3 ~ 19 | 1/8 ~ 3/4    |
| Hex    | 3 ~ 22 | 1/8 ~ 7/8    |

Materials of collets: copper/steel/ nylon



### SAFETY

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#### STANDARD SAFETY INSTRUCTIONS

- 1. Thoroughly read the Instruction Manual before operating your machine.** Learn the applications, limitations and potential hazards of this machine. Keep the manual in a safe and convenient place for future reference.
- 2. Keep work area clean and well lighted.** Clutter and inadequate lighting invite potential hazards.
- 3. Ground all tools.** If a machine is equipped with a three-prong plug, it must be plugged into a three-hole grounded electrical receptacle or grounded extension cord. If using an adapter to aid in accommodating a two-hole receptacle, ground using a screw to a known ground.
- 4. Wear eye protection at all times.** Use safety glasses with side shields or safety goggles that meet the appropriate standards of the American National Standards Institute (ANSI).
- 5. Avoid dangerous environments.** Do not operate this machine in wet or open flame environments. Airborne dust particles could cause an explosion and severe fire hazard.
- 6. Ensure all guards are securely in place** and in working condition.

7. **Make sure switch is in the OFF position** before connecting power to machine.
8. **Keep work area clean**, free of clutter, grease, etc.
9. **Keep children and visitors away.** Visitors must be kept at a safe distance while operating unit.
10. **Childproof your workshop** with padlocks, master switches or by removing starter keys.
11. **Stop and disconnect the machine when cleaning, adjusting or servicing.**
12. **Do not force tool.** The machine will do a safer and better job at the rate for which it was designed.
13. **Use correct tool.** Do not force machine or attachment to do a job for which it was not designed.
14. **Wear proper apparel.** Do not wear loose clothing, neck ties, gloves, jewelry, and secure long hair away from moving parts.
15. **Remove adjusting keys, rags, and tools.** Before turning the machine on, make it a habit to check that all adjusting keys and wrenches have been removed.
16. **Avoid using an extension cord.** But if you must use one, examine the extension cord to ensure it is in good condition. Immediately replace a damaged extension cord. Always use an extension cord that uses a ground pin and connected ground wire. Use an extension cord that meets the amp rating on the motor nameplate. If the motor is dual voltage, be sure to use the amp rating for the voltage you will be using. If you use an extension cord with an undersized gauge or one that is too long, excessive heat will be generated within the circuit, increasing the chance of a fire or damage to the circuit.
17. **Keep proper footing and balance** at all times.
18. **Lock your mobile base, if used, to prevent the machine from moving during operation.**
19. **Do not leave machine unattended.** Wait until it comes to a complete stop before leaving the area.
20. **Perform machine maintenance and care.** Follow lubrication and accessory attachment instructions in the manual.
21. **If at any time you are experiencing** difficulties performing the intended operation, stop using the machine! Then contact our technical support or ask a qualified expert how the operation should be performed.
22. **Habits good and bad are hard to break.** Develop good habits in your shop and safety will become second-nature to you.
23. **Be aware that certain metal shavings and cutting fluids may cause an allergic reaction in people and animals,** especially when cutting fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.

## SETUP

This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine! Wear safety glasses during the entire setup process!

### UNPACKING

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. Save the containers and all packing materials for possible inspection by the carrier or its agent. Otherwise, filing a freight claim can be difficult. When you are completely satisfied with the condition of your shipment, inventory the contents.



### CLEAN UP

The unpainted surfaces are coated with a waxy oil to prevent corrosion during shipment. Remove this protective coating with a solvent cleaner or degreaser. For thorough cleaning, some parts must be removed. **For optimum performance, clean all moving parts or sliding contact surfaces.** Avoid chlorine-based solvents, such as acetone or brake parts cleaner that may damage painted surfaces. Always follow the manufacturer's instructions when using any type of cleaning product.

### WARNING

**The oil on the pulley must be clean, otherwise slipping of the belt will cause damage to the motor.**

## OPERATE

### INSTALL FOOT SWITCH

You can choose to use the foot switch.

When using the foot switch, please insert the plug of the foot switch into the socket, and put the "Change switch" in "Foot switch" position. When you step on the foot switch, the machine will stop running.

### WARNING!

When you release the switch, the machine will run right away.

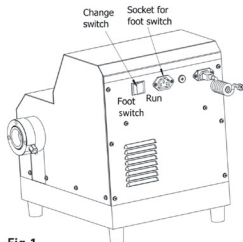


Fig.1

## TEST RUN MACHINE

Before operating, test run the machine to make sure it runs properly.

To test run the lathe, follow these steps:

1. Turning the "Rolling handle" is normal (by hand).
2. Turning on the "On/Off" switch, the "speed display" will light.
3. Turn the "Speed control knob" counter-clockwise to the end.
3. Put the "For/Rev switch" on "For".
4. Turn the "Speed control knob" slowly, the spindle is rotating, then rotate speed to the highest RPM.
5. Repeat step 3
6. Put the "For/Rev switch" on Rev.
7. Repeat step 4

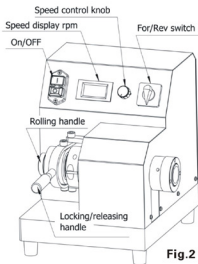


Fig.2

## REPLACE COLLET

For easier understanding, please refer to Fig.3 against parts diagram and list.

"1" is part #201.

"2" is part #204.

"3" is part #218.

"4" is part #235.

"5" is a observation hole on part #117.

Part #240 (partial view under "5") also has a hole on it for alignment. As the collet "6" has a slot matching a key (part #241) on the spindle (part #241), so these holes' aligning requirement is for inserting collet "6" purpose.

"7" is part #119. Press "7" to hold spindle when you remove/mount collet "6".

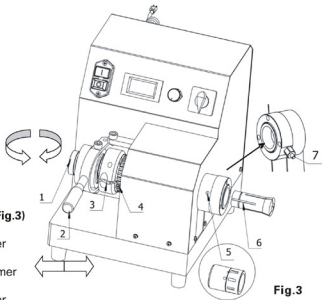


Fig.3

Here are the steps to replace collet (Fig.3)

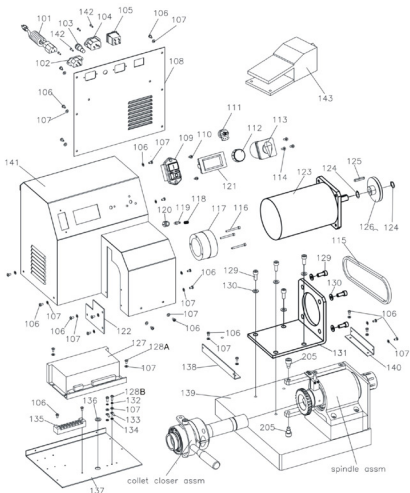
- a. Set "2" to the right.
- b. Keep pressing "7" and turn "1" counter clockwise three or four circles.
- c. Pat end of "1" by a wood/plastic hammer to loose the collet "6" a little.
- d. Keep pressing "7" and turn "1" counter clockwise to the end. Then, take out the collet "6".
- e. Align hole "5" with the hole on #240 (as the key #241 is in line with the hole on #240).
- f. Insert a new collet and keep collet slot in line with hole "5".
- g. Keep pressing "7" and turn "1" clockwise to tighten the new collet.
- h. Set "2" to the left and right to check locking status of the new collet. If the new collet does not clamp /hold workpiece tighten enough, press and slide "3" to the left, turn #214 clockwise to tighten the new collet further. Then press and slide "3" to the right for positioning ("3" must sit in the slot on "4").

## WARNING:

1. Make sure the workpiece is secured before starting.
2. Make sure "7" does pop out and spindle turns freely by hand.

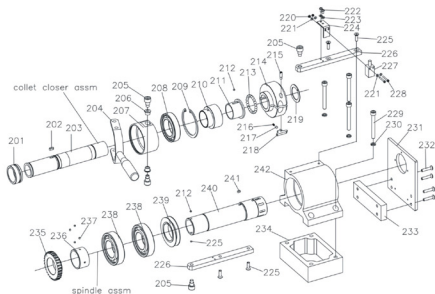


## PARTS LIST



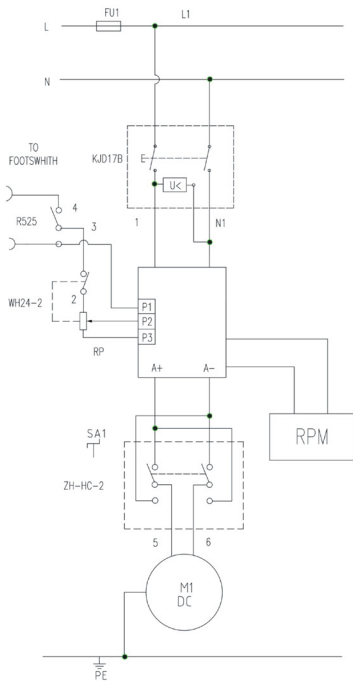
| No. | Code              | Qty. | No.  | Code                     | Qty. |
|-----|-------------------|------|------|--------------------------|------|
| 101 | CABLE C13         | 1    | 118  | CS50111                  | 1    |
| 102 | LZ14-1            | 1    | 119  | CS50112                  | 1    |
| 103 | MF527             | 2    | 120  | CS50104                  | 1    |
| 104 | SS-8B             | 1    | 121  | SX01                     | 1    |
| 105 | R525KKETOFS       | 1    | 122  | CS50105                  | 1    |
| 106 | GB/T 818 M4 X 8   | 21   | 123  | ZYT-800                  | 1    |
| 107 | GB/T 97.1 4       | 25   | 124  | GB 894.1-86 - 16         | 2    |
| 108 | CS50108           | 1    | 125  | GB/T 1096 - A 5 X 5 X 32 | 1    |
| 109 | KJD17B            | 1    | 126  | CS50110                  | 1    |
| 111 | WH24-2            | 1    | 127  | 6A110V                   | 1    |
| 112 | Φ35 KNOB          | 1    | 128A | GB/T 819.1 M4 X 12       | 3    |
| 113 | ZH-HC-2           | 1    | 128B | GB/T 818 M4 X 12         | 8    |
| 115 | O-560             | 1    | 129  | GB/T 70.1 M8 X 20        | 7    |
| 116 | GB/T 70.1 M4 X 40 | 3    | 130  | GB/T 97.1 8              | 4    |
| 117 | CS50103           | 1    | 131  | C6B0902 MOTOR SEAT       | 1    |

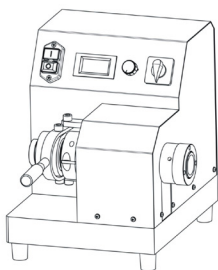
## PARTS LIST



| No. | Code                     | Qty. | No.   | Code                   | Qty. |
|-----|--------------------------|------|-------|------------------------|------|
| 132 | GB 93-87 4               | 2    | 217   | CS5020211              | 1    |
| 133 | φ 4 GROUND               | 2    | 218   | CS5020210              | 1    |
| 134 | GB 861.1-87 4            | 2    | 219   | CS5020203              | 1    |
| 135 | TB1508L                  | 1    | 220   | GB/T 6170 M3           | 2    |
| 136 | Φ 12 RUBBER RING         | 1    | 221   | GB/T 97.1 3            | 4    |
| 137 | CS50109                  | 1    | 222   | GB/T 818 M4 X 8        | 2    |
| 138 | CS50106                  | 1    | 223   | GB/T 97.1 4            | 2    |
| 139 | CS50101A                 | 1    | 224   | CS5020106              | 1    |
| 140 | CS50107                  | 1    | 225   | GB/T 70.3-2000 M6 X 20 | 4    |
| 141 | CS50102                  | 1    | 226   | CS5020107              | 2    |
| 142 | GB/T 819.1 M3 X 12       | 2    | 227   | RC43                   | 1    |
| 143 | H3-6                     | 1    | 228   | GB/T 818 M3 X 25       | 2    |
| 201 | CS5020202                | 1    | 229   | GB/T 70.1 M8 X 70      | 4    |
| 202 | GB/T 1096 - A 5 X 5 X 12 | 1    | 230   | GB 93-87 8             | 4    |
| 203 | CS5020201                | 1    | 231   | CS5020109              | 1    |
| 204 | CS5020204                | 1    | 232   | GB/T 70.3-2000 M6 X 30 | 4    |
| 205 | CS5020111                | 4    | 233   | CS5020110              | 1    |
| 206 | CS5020207                | 2    | 234   | CS5020105              | 1    |
| 207 | CS5020208                | 1    | 235   | CS5020102              | 1    |
| 208 | 6009-2LS GB/T 276-94     | 1    | 236   | CS5020104              | 1    |
| 209 | GB 893.1-86 - 75         | 1    | 237   | Φ4X2                   | 4    |
| 210 | CS5020206                | 1    | 238   | 6209-2LS GB/T 276-94   | 2    |
| 211 | CS5020205                | 1    | 239   | CS5020108              | 1    |
| 212 | Φ 4 BALL                 | 3    | 240   | CS5020103              | 1    |
| 213 | Φ 6.35 BALL              | 21   | 241   | GB/T 1096-A 4 X 4 X 8  | 1    |
| 214 | CS5020209                | 1    | 242   | CS5020101              | 1    |
| 215 | CS5020212                | 1    | 20100 | SPINDLE ASSM           | 1    |
| 216 | CS5020213                | 1    | 20200 | COLLET CLOSER ASSM     | 1    |

# ELECTRICAL CIRCUIT DIAGRAM





**OTMT**