



60AUTO Speed Lathe Manual

Standard Features

- 1 HP Motor
- Dual Air-Collet Closures
- 1800 RPM, Single Speed
- Electric Brake
- Cast Housing
- 5C Collets
- 3 Phase / 240 Volts



DESCRIPTION:

The Crozier Model 60AUTO Automotive Speed Lathe is designed for the production polishing the CS130 rotor. A large OEM asked us to come up with a simple but reliable machine to cut down the handling of this part. The result is the Model 60AUTO. This unit has two side-by-side spindles driven by a common motor. Both collet closures operate of a single foot valve. Each spindle is set up with a different size collet. The rotor is inserted in the first collet and the exposed parts are cleaned and polished. Then the spindle is stopped (1 / 2 second) and the part is reversed and put on the other spindle. The complete process is handled in one setup. This machine is suitable for any armature or rotor with two different shaft sizes.

SPECIFICATIONS:

Collet

Collet Type	5C
Collet Capacity	1.062 inches
Collet Closure Operation	Air

Spindle

Housing Construction	Cast
Bearing Type	Ball
Front Bearing	Double Row
Rear Bearing	Single Row
Rear Lubrication	Sealed
Standard Spindle Speed	1800 RPM
Maximum Spindle Speed	2500 RPM
Center Line	9 inches
Spindle through Hole	1.125 inches
Spindle Brake	Electric

Drive System

Motion	Multi-groove V Belt
Motor Speed	1800 RPM
Motor Horsepower	1 HP
Motor Phase	3

General Notes

Electrical	3 Phase/240 Volts/6 Amps
Base Width	20 inches
Base Depth	17 inches
Machine Height	46 inches
Machine Weight	275 lbs.
Shipping Weight	320 lbs.

UNPACKING

The Crozier Model 60AUTO Speed Lathe is attached to a wooden pallet. The Speed Lathe is attached to the bottom of the container with four carriage bolts. Remove the bolts from the mounting holes. The Speed Lathe is ready for installation. Check the box for all parts. If any damage is noted call the freight company immediately. The freight company is responsible for the safe delivery of the machine and if immediate notification of damage is not reported, you might not be able to file a claim for damages.

INSTALLATION

The Crozier Model 60AUTO Speed Lathe comes mounted on its own stand. Machine mounts or hold down bolts should be used to secure the stand to the floor.

LUBRICATION

The Crozier Model 60AUTO Speed Lathe is designed to operate with sealed bearings. No provision has been made for introducing grease into the bearings. Should it become necessary to change bearings only sealed bearings of electric motor quality C/3 fit with seals or shields on both sides should be used. No bearing spacers are required.

POWER CONNECTION

The Crozier Model 60AUTO Speed Lathe input requirement is 240 Volts, three-phase power. Motor rotation is counter-clockwise, looking directly at the shaft. A qualified electrician is required to install the electrical connection. The machine must have a power disconnect placed near the machine. The electrician must run the wire through conduit from the disconnect to the control box. The incoming power is hooked up to the #1, #2, and #3 terminals. Ground is terminal #4. Make sure all connections are tight before energizing the motor.

AIR REQUIREMENTS

The Crozier Model 60DC Speed Lathe requires 90 PSI dry air for proper operation. The air operates the collet closure. Never operate the Speed Lathe without the air connection hooked up. Under no circumstance should the machine be run with a part in the collet and the air off.

DUAL SPINDLES

The Model 60AUTO Speed Lathe is designed and equipped with two spindles for handling rotors and armatures. A rotor or artmature can be polished in a two-step operation with a single Speed Lathe. The two Speed Lathe spindle collets need to be correctly sized for each end of the rotor or artmature. The part is secured by the first collet and the polishing operation performed. The part is then flipped over and inserted in the second collet for the second polishing operation.

The machine is designed to handle only a single rotor or artmature at a time. The Speed Lathe is not intended for polishing two rotors or artmatues simultaneously. Additionally, the two spindle centers are to close to safely place a rotor or artmature in each spindle simultaneously.

AIR-COLLET CLOSURE

Both collet closures operate at the same time. Wait for the Speed Lathe to come to a complete stop before attempting to open the collet closures. DO NOT open the collet closures with the Speed Lathe running. Make sure the part is secured in one of the two collets and the collet is closed under air pressure before turning the machine on. DO NOT place long parts in the collets that can whip or extremely heavy parts that are not in balance or straight.

The foot pedal activates the air closure, in the text, the valve is referred to as a foot valve. The foot pedal is normally hooked up when the machine is received. If not, it is important to make the right connection. The collet is drawn into the spindle with the foot pedal untouched. When you push down on the foot pedal, the collet is pushed off the taper and the collet opens. If the operation is backwards reverse the two (2) air lines going into the back of the machine. To load the collet, find the collet key in the spindle nose. Check the collet threads and drive slot on the collet. Make sure the collet threads and drive slot are clean. Insert the collet in the spindle nose lining up the key. Press the collet firmly against the draw tube. Turn the draw tube hand wheel clockwise drawing the collet into the nose. When the collet is nearly in the spindle place the part in the collet. Continue turning the hand wheel until the part is tight in the collet. When the part is tight in the collet push down on the pedal at the same time turn the hand wheel two (2) detents clockwise. Release the pedal. The part should now be tight. If not push down again and repeat the procedure turning one (1) detent each time.



COLLETS

If the collet sticks or is hard to open, polish the collet surface that slides into the precision hole. Only high quality collets should be used. For best results, we recommend, Hardinge 5C collets. [Hardinge Collets](#) are available from factory outlets in major cities or from reputable tool houses. If the machine is used in an abrasive environment the spindle hole should be cleaned when you change collets.

The threads on the draw tube can wear from extended use or using worn or undersized collets. If this occurs the collet will not lock into the spindle and the work piece will not be held. The draw tube must be replaced if this happens. Always check the collet threads for damage or foreign material. In an abrasive environment clean the collet threads at regular intervals. If the collet keeps working itself loose check the rotation. If the rotation is correct make sure the drive key has not sheared off. If this happens replacement of the key is necessary.

There should be a minimum of .075 inches in the opening and closing movement of the collet. The standard 5C collet can accept a work piece variance of .005 inches. Any larger variance will cause the collet to distort and not hold the part properly. Do not under any circumstance force the collet to hold a undersized part. Serious damage can result from such actions.

BRAKE

The Speed Lathe is equipped with a mechanical brake that is attached to the back of the drive motor. The brake is released on motor start up and is applied when the motor is stopped. If the spindle needs to be turned by hand, there is a brake release lever on the back of the brake.

GENERAL NOTES

As with all equipment proper care should be taken. Safety glasses must be worn at all times while operating the Speed Lathe. It is the responsibility of the end user to determine the suitability of the Speed Lathe in their application.

This machine is a precision machine tool. The components used in its manufacture are of the highest quality and the machined parts are held to very exact tolerances. If you expect the machine tool to last, you must take proper care of it.

The Crozier Model 60AUTO Speed Lathe can be cycled on and off as fast as you can do the work.

PARTS LIST:

Part #	Description	Qty	Price
PL4-01	Draw Tube	2	\$ 98.00
PL4-02	Hand Wheel	2	\$ 15.00
PL4-03	Adjusting Plate	2	\$ 135.00
PL4-05	Center Cam	2	\$ 145.00
PL4-06	Outer Cam	2	\$ 95.00
PL4-07	Operating Housing	2	\$ 275.00
PL4-08	Inner Cam	4	\$ 95.00
PL4-09	Set Screw	4	\$ 1.75
PL4-10	Spring	4	\$ 1.75
PL4-11	Steel Ball	2	\$ 1.75
PL4-12	Spindle Housing	2	\$ 800.00
PL4-13	Spindle Pulley	2	\$ 75.00
PL4-19	Collet Key	2	\$ 8.50
PL4-20	Collet Insert	2	\$ 105.00
PL4-21	Woodruff Key	2	\$ 1.75
PL4-24	Snap Ring (196)	2	\$ 6.50
PL4-26	Spindle	2	\$ 375.00
PL4-28	Detent Plate	2	\$ 75.00
PL4-32	Snap Ring (177)	2	\$ 6.50
PL4-34	Spiral Lock Ring	2	\$ 5.00
PL4-45	Drive Belt	1	\$ 25.00
PL4-46	Motor Pulley	1	\$ 75.00
PL4-50	Felt Ring	2	\$ 6.00
PL4-54	Front Bearing Cap	2	\$ 125.00
PL4-60	Stand	1	\$ 450.00

Part #	Description	Qty.	Price
M-107	Motor	1	\$ 375.00
A-102	Air Valve	1	\$ 50.00
E-100	Control Box	1	\$ 100.00
E-210	Foot Valve	1	\$ 50.00
E-300	Motor Contactor	2	\$ 75.00
E-577	Power Cord	1	\$ 10.00
E-600	Start Button	1	\$ 25.00
E-601	Stop Button	1	\$ 35.00
E-606	Contact Block N/O	1	\$ 15.00
E-607	Contact Block N/C	1	\$ 15.00
E-610	Label-Start	1	\$ 4.00
E-611	Label-Stop	1	\$ 4.00
B-100	Bearing-6209ZZ	4	\$ 32.00
B-102	Bearing-5210ZZ	2	\$ 65.00
F-100	Set Screw 1/4-20 x 1/4	6	\$ 1.75
F-107	Set Screw 5/16-18 x3/8	2	\$ 1.75
F-204	Allen Cap 5/16-18 x 1/2	8	\$ 1.75
F-209	Allen Cap 3/8-16 x 1/2	4	\$ 1.75
F-301	Allen Flat 8/32 x 3/4	8	\$ 1.75

CONTACT INFORMATION:

New Sales - Parts - Service

Shipping & Billing Address:

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