



60DC Speed Lathe Manual

Standard Features

- 1 HP Belt Drive
- Air-Collet Closure
- Dual Spindles
- 0-3600 RPM, Variable Speed / DC Drive
- Dynamic Brake
- Cast Housing
- 5C Collets
- Stand
- 1 Phase / 120 Volts



DESCRIPTION:

A part requiring a two step operation, can be accomplished with a one machine tool. Each spindle is set up with either an Inside Dimension (ID) collet or an Outside Dimension (OD) collet. Both spindles are driven by the same motor. The motor is a DC drive, variable spindle speeds from 0 to 3600 RPM. Both collet closures operate at the same time. As with all Crozier air-collet closures, you don't have the handle bounce or speed restrictions common in most hand-collet closures. The unit comes mounted on a stand and requires only 90 PSI air and 120 Volt AC. The collet closure is operated by a foot valve.

SPECIFICATIONS:

Collet

Collet Type	5C (2)
Collet Capacity	1.062 inches
Collet Closure Operation	Air

Spindle

Housing Construction	Cast
Rearing Type	Ball
Front Bearing	Double Row
Rear Bearing	Single Row
Bear Lubrication	Sealed
Standard Spindle Speed	0-3600 RPM
Maximum Spindle Speed	3600 RPM
Center Line	9 inches
Spindle through Hole	1.125 inches
Spindle Brake	Dynamic

Drive System

Motion	Multi-groove V Belt
Motor Speed	2500 RPM
Motor Horsepower	1 HP
Motor	Single

General Notes

Electrical	Single Phase/120 Volts/10 Amps
Base Width	20 inches
Base Depth	20 inches
Machine Height on Stand	46 inches
Machine Weight	275 lbs.
Shipping Weight	320 lbs.

OPERATION MANUAL:

UNPACKING

The Crozier Model 60DC 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 60DC 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 60DC 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 60DC Speed Lathe input requirement is 120 Volts, single-phase power. Motor rotation is counter-clockwise, looking directly at the shaft. The machine comes ready from the factory to plug in the wall. The cord supplied is a standard 120 volt plug. No additional electrical work is required. There is no reason for the control box to be opened unless something was damaged in transit.

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 60DC Speed Lathe is designed and equipped with two spindles for polishing and deburring of a single part. A part requiring a two step operation can be accomplished by setting up one spindle with an Inside Dimension (ID) collet and the other spindle with an Outside Dimension (OD) collet. The part is secured by the first collet and the polishing or deburring operation performed. The part is then transferred to the second collet for the second polishing or deburring operation. The machine is designed to handle only one part at a time. The Speed Lathe is not intended for deburring or polishing two parts simultaneously. Additionally, the two spindle centers are to close to place parts in each spindle simultaneously and safely perform two operations.

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.

DC SPEED CONTROL

The 60DC Speed Lathe is equipped with a variable speed drive system. The DC Speed Control consists of a DC motor and a DC speed control package. To vary the speed, turn the speed control knob on the control box. The speed control knob is labeled from 0 - 100 percent. 0 percent is off, while 100 percent is full speed. Choose a speed that is right for your operation. When you vary the speed from a higher speed to a lower speed, it is necessary to wait till the motor stabilizes at the new speed setting before beginning

polishing or cutting. The start/stop buttons are located on the collet end of the Speed Lathe. One common problem when starting the machine is the start button is energized and the spindle does not turn. Check the position of the speed control knob to make sure it is not set at 0 percent.

BRAKE

The Speed Lathe is equipped with dynamic braking. It is automatically activated when the motor is shut off. After the motor stops, the spindle will turn freely. There is no adjustment required on the brake. The motor can be cycled on and off continually without damage to the unit.

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 60DC 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	2	\$ 95.00
PL4-09	Set Screw	4	\$ 1.75
PL4-10	Spring	4	\$ 1.75
PL4-11	Steel Ball	4	\$ 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
PL4-45A	Drive Belt	2	\$ 25.00
PL4-46	Motor Pulley	2	\$ 75.00
PL4-53	Front Seal	2	\$ 25.00
PL4-54	Front Bearing Cap	2	\$ 125.00
PL4-60	Stand	1	\$ 450.00
PL4-66	Plastic Plug	2	\$ 1.00
PL4-69	Motor Mount	1	\$ 75.00
PL4-71	Belt Guard	1	\$ 125.00

Part #	Description	Qty.	Price
A-202	Solenoid	1	\$ 65.00
A-300	Air Fitting	12	\$ 2.00
A-400	"O" Ring	2	\$ 4.00
A-402	"O" Ring	2	\$ 4.00
A-404	"O" Ring	4	\$ 4.00
A-406	"O" Ring	2	\$ 4.00
B-100	Bearing-6209ZZ	4	\$ 32.00
B-102	Bearing-5210ZZ	2	\$ 65.00
E-100	Control Box	1	\$ 100.00
E-210	Foot Switch	1	\$ 100.00
E-300	Motor Contactor	2	\$ 75.00
E-509	Knob Kit	1	\$ 15.00
E-510	Speed Pot	1	\$ 15.00
E-530	Brake Resistor	1	\$ 5.00
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
E-701	DC Control	1	\$ 125.00
F-100	Set Screw 1/4-20 x 1/4	3	\$ 1.75
F-107	Set Screw 5/16-18 x3/8	4	\$ 1.75
F-204	Allen Cap 5/16-18 x 1/2	16	\$ 1.75
F-209	Allen Cap 3/8-16 x 1/2	8	\$ 1.75
F-301	Allen Flat 8/32 x 3/4	16	\$ 1.75
F-400	Allen Hex 1/4-20 x 1/2	8	\$ 1.75
N-100	Front Nut	2	\$ 15.00
M-302	Motor	1	\$ 459.00

CONTACT INFORMATION:

New Sales - Parts - Service

Shipping & Billing Address:

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