



4000E Drum & Disc Brake Lathe



** Brake lathe shown on bench with sign, toolboard and accessories.*

Installation Instructions Operating Instructions Safety Instructions Maintenance Instructions

READ these instructions before placing unit in service. KEEP these and other materials delivered with the unit in a binder near the machine for ease of reference by supervisors and operators.

HENNESSY INDUSTRIES, INC.

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HENNESSY INDUSTRIES INC. Manufacturer of AMMCO®, COATS® and BADA® Automotive Service Equipment and Tools.

Manual Part No.: 95000103 01

Revision: 04/08

IMPORTANT SAFETY INSTRUCTIONS

Before operating the lathe, review the warning information on the lathe and the cautions, warnings and dangers in this manual. Also review the following general safety instructions. Failure to follow safety instructions could result in personal injury to operator or bystanders and damage to the lathe or personal property.

READ ALL INSTRUCTIONS

When using your garage equipment, basic safety precautions should always be followed, including the following:

- 1.** Keep guards in place and in working order.
- 2.** Remove adjusting keys and wrenches from the tool before turning it on. Make this a habit.
- 3.** Keep work area clean. Cluttered areas and benches invite accidents.
- 4.** Avoid dangerous operating environments. Do not use power tools in areas where explosive vapors are present or in damp or wet locations. Do not expose them to rain. Keep the work area clean and well lighted.
- 5.** Keep children away. All bystanders should be kept completely away from the work area.
- 6.** Make the workshop kid-proof. Use padlocks and master switches, and remove starter keys.
- 7.** Don't force a tool. It will do the job better and safer at the rate for which it was designed.
- 8.** Use the right tool. Don't force a tool or an attachment to do a job for which it was not designed.
- 9.** Dress properly. Keep loose clothing, gloves, neckties, shop rags or jewelry may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
- 10.** Wear eye protection. Safety glasses, goggles, or a face shield will help protect the operator from injury. Use a face shield and dust mask during dusty operations.
- 11.** Secure the work properly to the unit for setup and tool bit positioning. Do not attempt to hold a drum or rotor steady on the arbor with your hands. Both hands must be free to operate unit.
- 12.** Don't overreach. Keep proper footing and balance at all times when lathe is in operation or when working around the unit.
- 13.** Maintain tools with care. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 14.** Remove power from the unit and disconnect tools before servicing and when changing accessories such as blades, bits, cutters, etc. Follow lock-out and tag-out procedures as required.
- 15.** Avoid unintentional starting. Make sure the switch is in the OFF (O) position before plugging the machine in or performing any maintenance or service work.
- 16.** Use recommended accessories. Consult the manufacturer's catalogs for recommended accessories. Use of improper accessories may cause risk of injury to operator or bystanders.
- 17.** Never stand or lean on a lathe. Serious injury could occur if the lathe is tipped or if the cutting tool is unintentionally contacted.
- 18.** Check damaged parts carefully. Before further use of the lathe, a guard or other part that is damaged should be carefully checked. Immediately replace all damaged, missing, or non-functional parts. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect operation. Guards and other parts that are damaged should be properly repaired or replaced before lathe is used again.
- 19.** Always feed the work into a blade or cutter and against the direction of rotation. Cutters and tool bits are designed to cut from the inside of a drum or rotor to the outer edge. Do not attempt to cut from the outside edge in to the center.
- 20.** Never leave tools running unattended. Turn the power off. Don't leave the tool until it comes to a complete stop.
- 21.** Never use compressed air to blow the tool clean. Chips and dust may be driven between machined parts and into bearings, causing undue wear. They may also contact persons in the area causing personal injury.
- 22.** Operate the lathe in the proper environment. The lathe incorporates parts such as snap switches and power receptacles which tend to produce arcs or sparks. Therefore, when located in a garage, the unit should be in a room or enclosure provided for the purpose, or should be at least 18" or more above the floor to minimize the risk of igniting fuel vapors.
- 23.** In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric shock, this tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug, the plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
- 24.** Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

SAVE THESE INSTRUCTIONS

Table of Contents

Important Safety Instructions	ii
Owner's Responsibility	2
Definitions of Hazard Levels	2
Safety Notices and Decals	3
Cautions and Dangers	3
Principle Operating Parts	4
Know Your Unit	4
Basic Operation	6
Spindle	6
Spindle Jog	6
Spindle Feed Rate	6
Spindle Speed and Adjustment	6
Speed and Feed Reference Chart	6
Cross Feed	6
Cross Feed Handwheel & Feed Lever	7
Twin Cutter	7
Boring Bar	7
Reconditioning Disc Brake Rotors	8
Preparation	8
Model 6950 Twin Cutter	8
Rotor Mounting	9
Double Chuck Adapter	10
Set Up and Reconditioning Rotors	10
Reconditioning Brake Drums	13
Preparation	13
Mounting Drum	13
Maintenance and Service	16
Oiling	16
Cleaning	16
Care of Arbors and Adapters	16
Installation Instructions	17
Receiving	17
Electrical Requirements	17
Setup	17
Connect to Power	17
Operating Specifications	17

Owner's Responsibility

To maintain machine and user safety, the responsibility of the owner is to read and follow these instructions:

- Follow all installation instructions and make sure installation conforms to all applicable Local, State, and Federal OSHA Regulations and Electrical Codes.
- Carefully check the unit for correct initial function.
- Read and follow the safety instructions. Keep them readily available for machine operators.
- Make certain all operators are properly trained, know how to safely and correctly operate the unit, and are properly supervised.
- Allow unit operation only with all parts in place and operating safely.
- Carefully inspect the unit on a regular basis and perform all maintenance as required.
- Service and maintain the unit only with authorized or approved replacement parts.
- Keep all instructions permanently with the unit and all decals/labels/notices on unit clean and visible.
- If ownership of the unit is transferred, provide new owner all information, manuals, and provide AMMCO new ownership information.

Definitions of Hazard Levels

Identify the hazard levels used in this manual with the following definitions and signal words:

DANGER Watch for this symbol:



It Means: Immediate hazards, which will result in severe personal injury or death.

WARNING Watch for this symbol:



It Means: Hazards or unsafe practices, which could result in severe personal injury or death.

CAUTION Watch for this symbol:



It Means: Hazards or unsafe practices, which may result in minor personal injury or product or property damage.



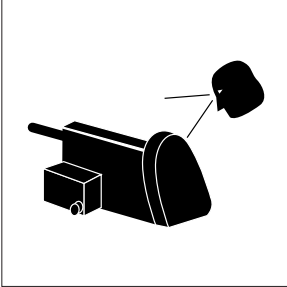
Watch for this symbol! It means BE ALERT!
Your safety, or the safety of others, is involved!

Safety Notices and Decals

For your safety, and the safety of others, read and understand all of the safety notices and decals included here and on the unit.



Read entire manual before installing, operating, or servicing this equipment.



Proper maintenance and inspection is necessary for safe operation.



Do not operate a damaged lathe

⚠ CAUTION ⚠		
Prevent accidents and injury, read and follow instructions.		
<ol style="list-style-type: none"> 1. Read and follow instructions. 2. Always wear eye protection, avoid loose clothing and jewelry. 3. Keep all guards, shields, and covers in place and in working order. 4. Keep bystanders out of work area. 5. Unplug unit from power source before servicing or adjusting. 6. Maintain unit properly, keep work surfaces and work area clean. 		

This equipment incorporates parts such as snap switches and power receptacles which tend to produce arcs or sparks. Therefore, when located in a service facility, the unit should be in a room or enclosure provided for the purpose, or should be at least 18" or more above floor to minimize the risk of igniting fuel vapors.

Cautions and Dangers

1. Eye and face protection requirements:

"Protective eye and face equipment is required to be used where there is a reasonable probability of injury that can be prevented by use of such equipment." OSHA 1910.133 (a).

Protective goggles, safety glasses, or a face shield must be provided by the purchaser/user and worn by the operator of the equipment. Make sure all eye and face safety precautions are followed by the operator(s). Keep bystanders out of the area.

2. Do not remove any safety equipment, belt guards, or shortcut controls or operations.
3. Make sure drums and rotors are properly and squarely mounted before starting lathe, and that all parts are secure.
4. Do not wear loose clothing, jewelry, or gloves when operating or working around a lathe.
5. Do not overload the lathe. Read and understand the lathe specifications. Overloading is poor machine tool practice, shortens the life of the lathe, and could cause a failure resulting in personal injury.



Failure to follow danger, warning, and caution instructions may lead to serious personal injury or death to operator or bystander or damage to property. Do not operate this machine until you read and understand all the dangers, warnings and cautions in this manual. For additional copies of either, or further information, contact:

Hennessy Industries, Inc.

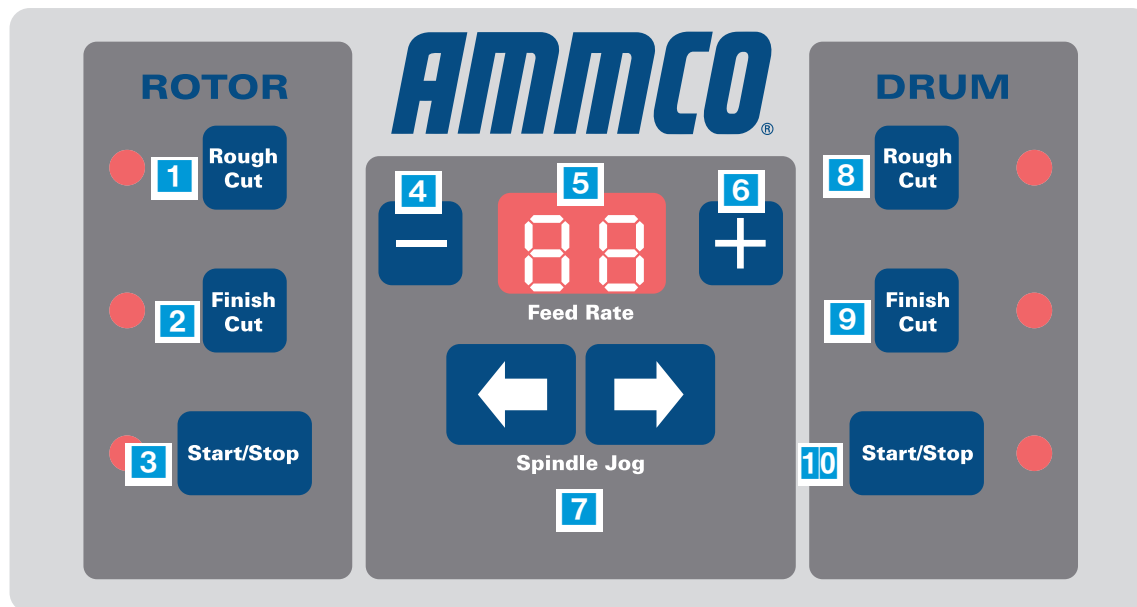
1601 J.P. Hennessy Drive
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 (615) 641-7533 or (800) 688-6359
www.ammcoats.com

Principal Operating Parts

Know Your Unit

Compare this illustration with the unit before placing it into service. Maximum performance and safety will be obtained only when all persons using the unit are fully trained in its parts and operation. Each user should learn the function and location, of all controls.

Prevent accidents and injuries by ensuring the unit is properly installed, operated and maintained.



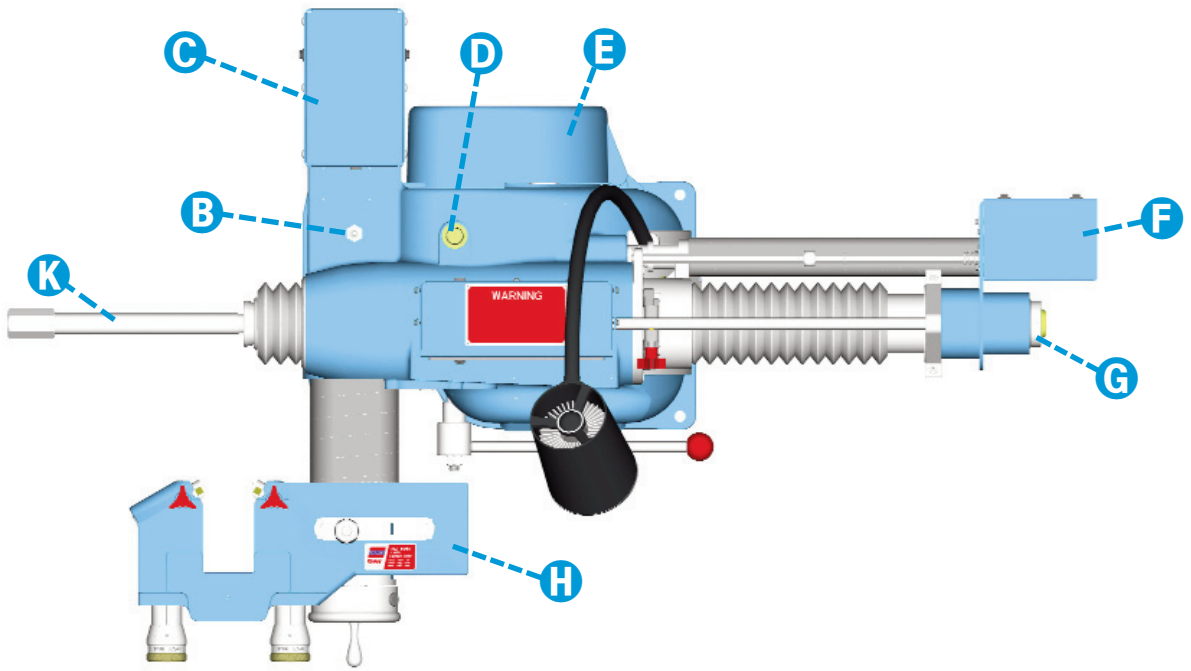
Control Console

- 1 Rotor Rough Cut** – press to activate.
- 2 Rotor Finish Cut** – press to activate.
- 3 Rotor Start/Stop** – press to start or stop feed.
- 4 - (Minus)** – press to decrease feed rate value displayed.
- 5 Feed Rate Display** – indicates the value selected for rough and finish feed rates.
- 6 + (Plus)** – press to increase the feed rate value displayed.
- 7 Spindle Jog** – moves the spindle in the direction indicated. Only active in drum mode.
- 8 Drum Rough Cut** – press to activate.
- 9 Drum Finish Cut** – press to activate.
- 10 Drum Start/Stop** – press to start or stop feed.

4100E Brake Lathe

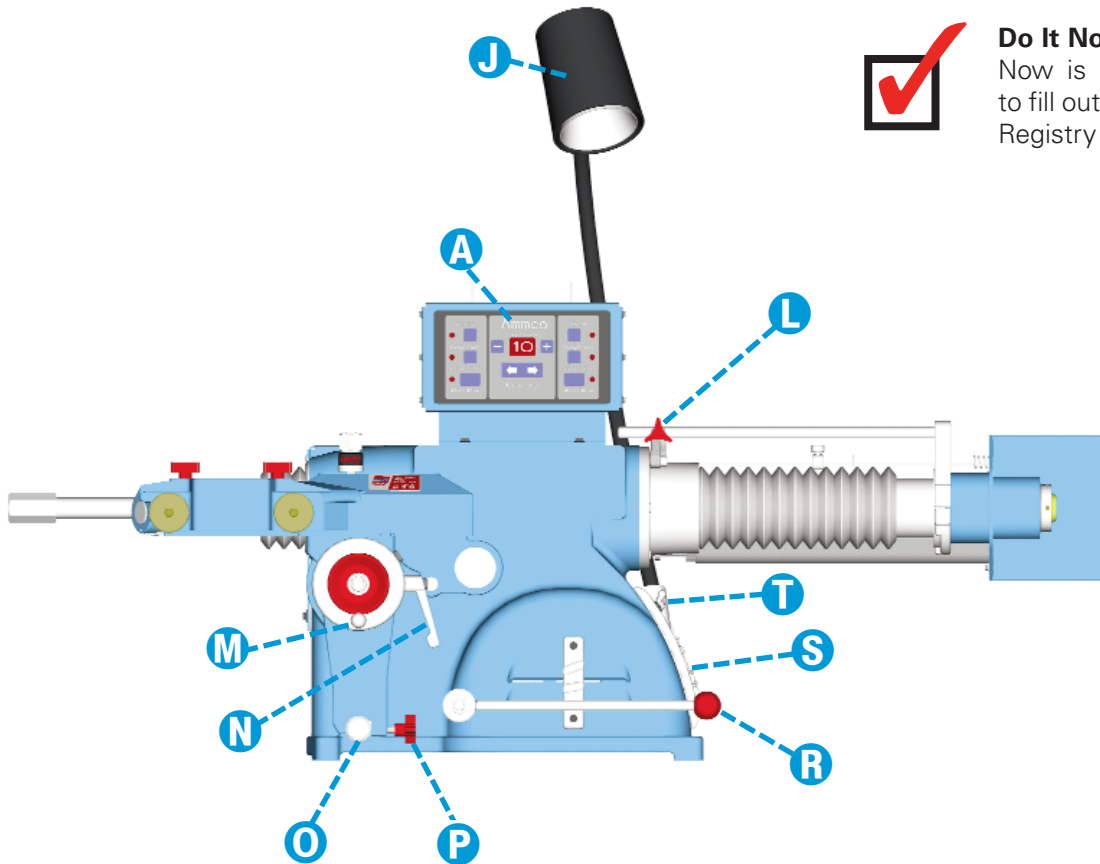
- A Control Console**
- B Grease Fitting**
- C Cross Feed Gearbox**
- D Oil Dipstick**
- E Drive Motor Pulley Guard**
- F Drum Feed Gearbox Assembly**
- G Draw Bar**
- H Twin Cutter**
- J Work Light**
- K Spindle Arbor**
- L Spindle Lock Knob**
- M Cross Feed Handwheel**
- N Feed Lever**
- O Cross Feed Lock**
- P Cross Feed Lock Knob**
- R Spindle Speed Adjusting Lever**
- S Power Cord**
- T ON/OFF Switch**
- V Boring Bar and Boring Clamp**

Top View



V Not Shown

Front View



Do It Now!
Now is a good time to fill out the Owner's Registry Card.

Basic Operation

To completely understand drum and rotor turning you must have a knowledge of the lathe itself.

Spindle

The spindle is a motor driven shaft that turns the arbor upon which the brake drum or rotor is mounted. By turning the drum and holding a cutting tool against the inner braking surface, metal can be removed.



Do not move or adjust the spindle speed lever without the drive motor running. Damage may occur to the unit.

Spindle Jog

By operating the spindle jog buttons, the spindle will move to the left or right as desired to position the workpiece. Note that the spindle jog is active only in the drum mode of operation.

Spindle Feed Rate

Spindle feed rate refers to the amount of movement the spindle travels per revolution. This feed rate is electronically controlled using +/- buttons on the control console drum feed adjustments.

Spindle Speed and Adjustment

Spindle speed is measured in RPM (revolutions per minute) and is adjustable using the 3-position speed lever at the front of the machine.

Spindle speed adjustment is accomplished by moving the 3-position speed adjustment lever up or down to achieve 100, 150, or 200 RPM choices.

Important: Do not adjust the spindle speed unless the lathe is running.

Cross Feed

The cross feed draws the tool bit across the face of a brake rotor or flywheel when the cross feed drive is engaged. The cross feed may also be operated manually using the cross feed handwheel.

Feed speed refers to the rate of movement that the cutting tools move per revolution of the spindle. The cross feed speed is variable as indicated on the control console.

Note: The cross feed has a rough and finish setting. Both are variable using the control console.

Speed and Feed Reference Chart

Refer to the chart on the lathe for typical speed and feed rates. Use this guideline as a starting point and then fine tune the settings according to your specific application.

Note: These are only suggested speed and feed ranges. Adjust settings as needed to find the optimum setting for your application.

Workpiece Diameter (inches)	6 to 9	8 to 15	15 & Up
Spindle RPM	200	150	100
Rough Feed	80	50	30
Finish Feed	16	14	12

Cross Feed Handwheel & Feed Lever

Clockwise rotation of the cross feed handwheel moves the cutting tool in towards the lathe.

Counterclockwise rotation of the cross feed handwheel moves the cutting tool away from the lathe.

Engaging the feed lever completes the feed cycle.

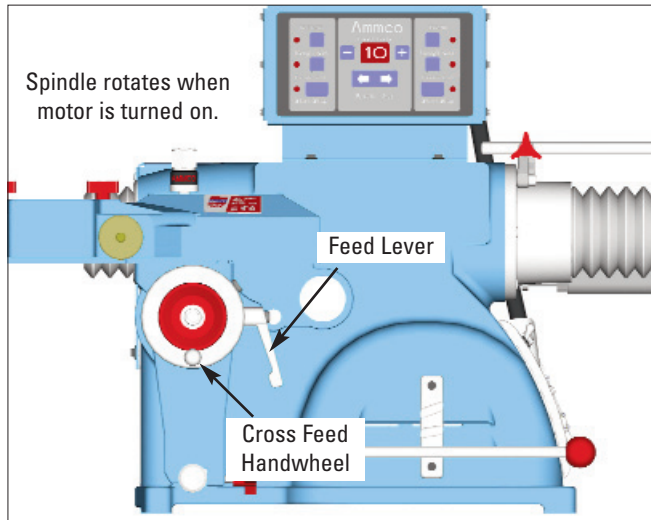


Figure 1 – Rotation of handwheels & Feed Lever

Boring Bar

A boring bar is used to recondition a brake drum. Clean the slide and bottom of the boring bar clamp. Install the boring bar and boring bar clamp onto slide, over the stud bolt and secure with self-aligning nut. Handtighten the nut only at this point. Make sure the tool bit is clean and sharp. Replace as necessary to ensure smooth reconditioning.

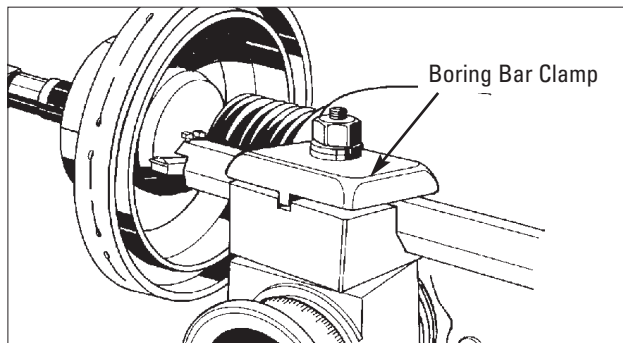


Figure 2 - Boring Bar

Twin Cutter

A twin cutter tool is used on to recondition both surfaces of a brake rotor at the same time. The twin cutter replaces the boring bar on top of the cross feed after removing the upper and lower tool bar clamps.

1. Mount the twin cutter on the cross feed with the stud bolt extending through the cast slot. The slot helps center the twin cutter to the rotor.

2. Secure the twin cutter to the cross feed with self-aligning nut and washer assembly. Tighten the nut firmly.

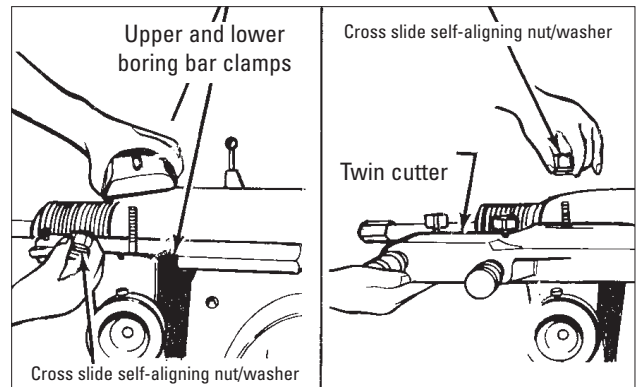


Figure 3 – Install the Twin Cutter

Reconditioning Disc Brake Rotors

Preparation

1. Inspect the rotor carefully for scoring, rust ridges (at the inner and outer circumference of the rotor), and hard spots. Any excessive wear or deformity should be noted and, if not within acceptable limits, the rotor should be replaced.

2. Use a micrometer to check the thickness of the rotor at no less than 3 points around the circumference about 1" (2.54 mm) in from the outer diameter.

If the rotor thickness varies between readings, it should be reconditioned. However, if the thickness is less than the minimum established by the manufacturer, or if it will be less after reconditioning, the rotor should be replaced.

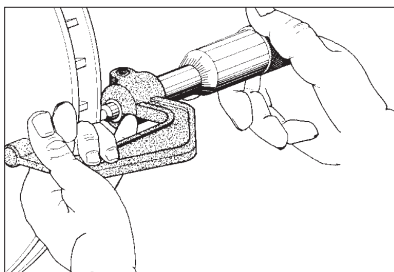


Figure 4 – Measure Rotor Thickness

Note: Most often the DISCARD thickness dimension is cast or stamped into the rotor, not the minimum machine-to thickness.

Model 6950 Twin Cutter

The 6950 twin cutter mounts on the cross feed tool post to resurface both rotor surfaces simultaneously. Each tool bar is individually adjustable (in thousandths of an inch or millimeters) to permit precise depth-of-cut settings.

The tool bars mount on top of the tool bar support, carbide tips up, and are used to recondition both brake surfaces of a rotor at the same time.



Figure 5 – 6950 Twin Cutter Controls

Installation

1. Remove the self-aligning nut/washer assembly retaining the boring bar clamp.

2. Remove the clamp and boring bar.

Note: Older lathes have a tool post pivot screw which must be loosened before the lower clamp can be removed.

3. Place the tool bar support over the cross feed tool post stud and replace self-aligning nut/washer assembly.

4. Align the tool bar support parallel with the arbor and wrench tighten the nut.

Preparation

1. Inspect the rotor carefully for scoring, rust ridges (at the inner and outer circumference of the rotor), and hard spots. Any excessive wear or deformity should be noted and, if not within acceptable limits, the rotor should be replaced.

2. Use a micrometer to check the thickness of the rotor at no less than 3 points around the circumference about 1" (2.54 mm) in from the outer diameter.

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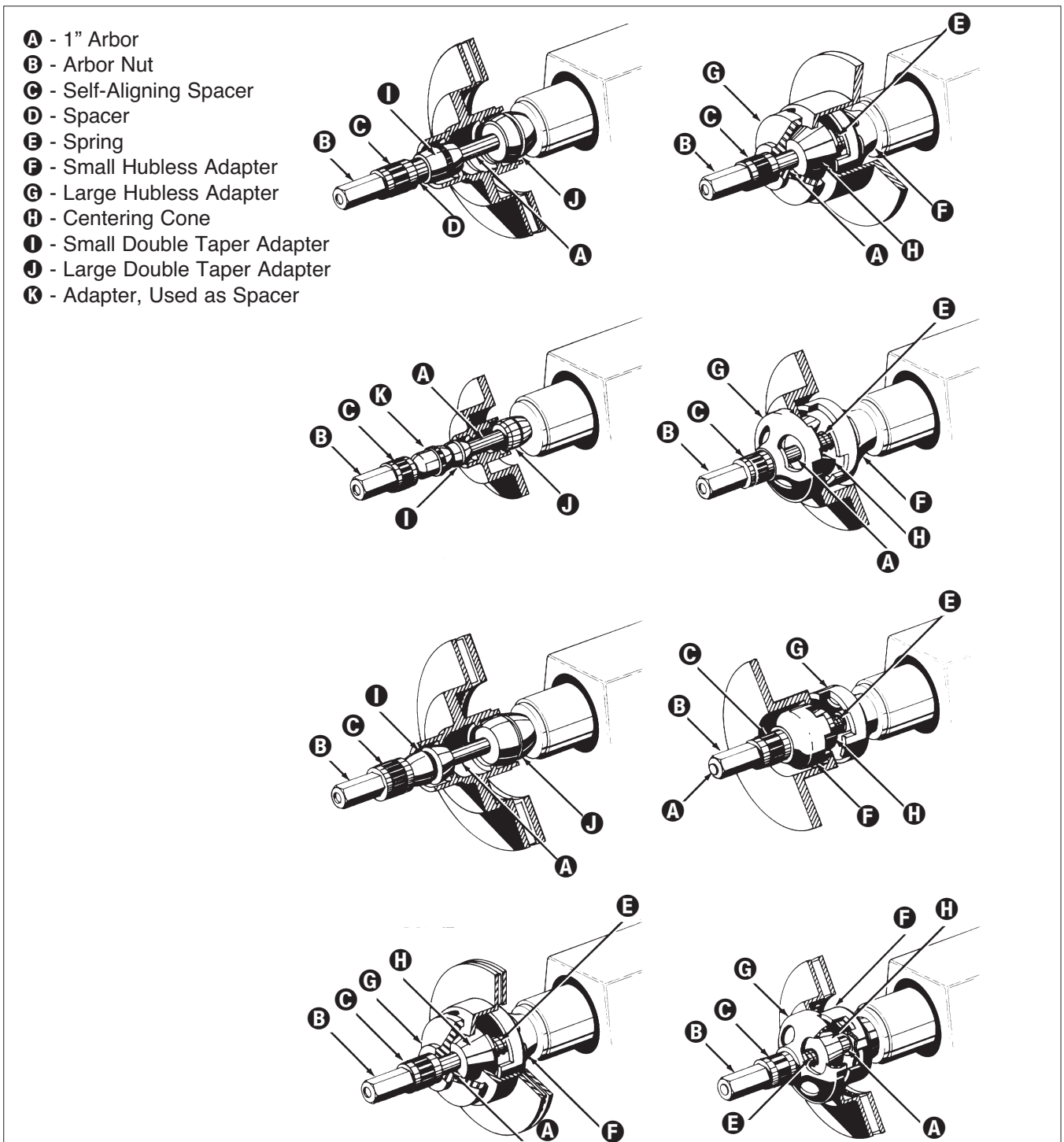
Rotor Mounting

Review the descriptions of mounting drums on page 13. The same directions apply when mounting a brake rotor. Hubbed rotors are mounted on adapters that fit into the bearing races. Hubless rotors use a cone in the center hole and a hubless adapter on each side of the rotor. Spacers are used to fill out the arbor shaft so that the arbor nut can be tightened. The setups illustrated below are typical of the many mounting configurations necessary to meet the requirements of brake rotor reconditioning. The adapters, cones, and spacers sup-

plied with the lathe will allow reconditioning of the majority of the rotors found on current production vehicles. Optional adapters, cones, and spacers are available to meet special needs.

Note: Adapters may also be used as spacers to fill out the arbor shaft if care is taken to prevent damage to their machined surfaces.

The patented self-aligning spacer prevents diagonal thrust on the adapters. The self-aligning spacer should always be used adjacent to the arbor nut.



Double Chuck Adapter

Mounting drums or rotors using the Ammco double chuck adapter.



Figure 6 – Double Chuck Adapter

1. Thoroughly clean the surface of the rotor or drum that will be mounted on the double chuck.
2. Place the hubless rotor or drum on a flat clean surface. Install the double chuck by positioning the appropriate jaws in the center hole. Tighten the jaws by inserting the key into one of the key slots in the side of the chuck turning counterclockwise. The double chuck will automatically self center the rotor or drum.

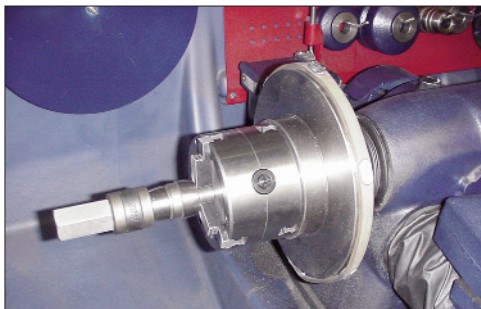
Note: Make sure that the chuck jaws are tight.



Do not leave the key in the key slot when starting the brake lathe.

3. Install the backing plate onto the brake lathe arbor with offset facing outward.
4. Install the double chuck, with rotor or drum installed, onto the 1-inch arbor. Use the spacers supplied with the brake lathe so that it extends out to the arbor threads.
5. Use the arbor nut supplied with the machine and tighten the nut against the spacers.
6. After tightening the double chuck, turn on the brake lathe to check for runout of the rotor or brake drum. Machine the rotor or drum.

Note: Always use the backing plate to help eliminate rotor or drum vibration during turning. If necessary, use a small spacer before the installation of the backing plate.



Set Up and Reconditioning Rotors

1. Install a silencer band on the mounted rotor. Stretch the band around the rotor and hook the metal loop over a lead weight.

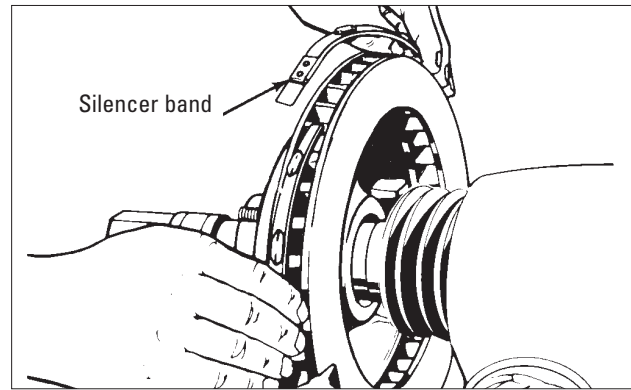


Figure 7 – Attach Silencer Band

2. Center the twin cutter to the rotor. Loosen the stud nut and adjust the twin cutter so that the rotor is centered between the tool bits. The slot of the twin cutter should be approximately parallel to the lathe spindle. Tighten the stud nut firmly.

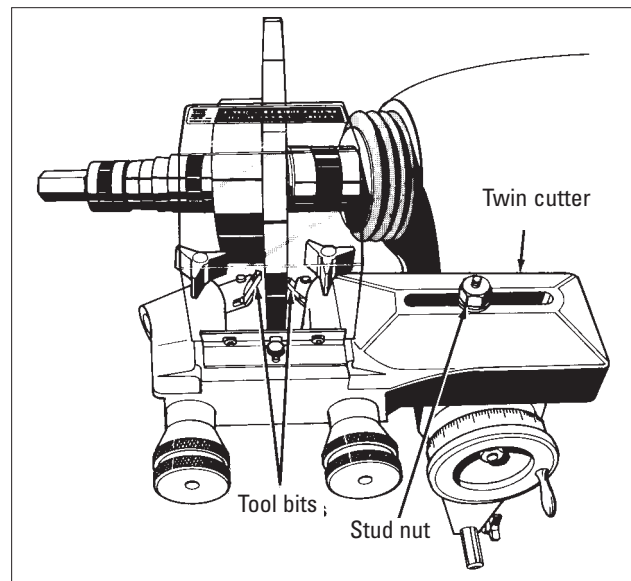


Figure 8 – Center the Twin Cutter

3. Install the safety shield. Review the cautions and dangers section and the general safety information at the beginning of this manual. The safety shield is easily screwed onto the twin cutter in the threaded mounting hole provided.



Always wear safety glasses or a face shield. Cutting or grinding on an exposed surface such as a rotor will produce flying chips and debris.

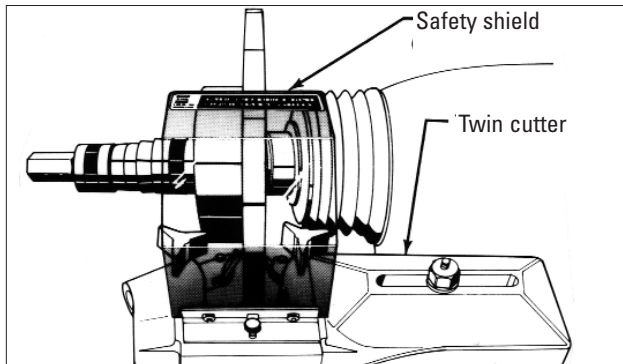


Figure 9 – Attach the Safety Shield

4. Adjust the spindle speed to match the rotor size. Use the faster speeds for passenger car and most light duty truck rotors. Choose lower speeds when machining medium duty and larger truck rotors and some solid rotors. (Refer to the “Speed and Feed Reference Chart” located on front of the lathe for suggested settings.)

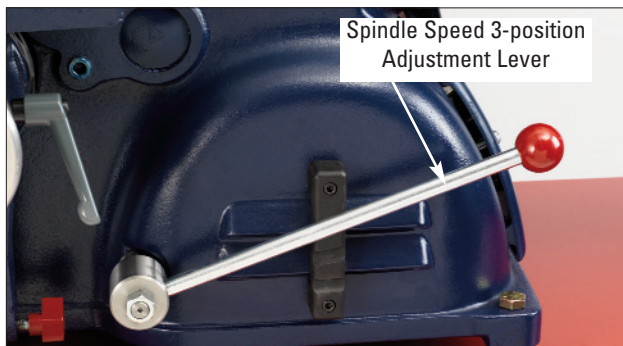


Figure 10 – Adjust Spindle Speed

5. Make sure that the tool bits clear the rotor surfaces and the silencer band. Give the rotor a full turn by hand and watch for clearance all the way around.

6. Turn the lathe ON.

7. Turn each tool bit control (the outer knurled knobs) clockwise until the tool bits just contact the rotor surfaces.

8. When the tool bits make contact, rotate each of the inner depth-of-cut collars to zero and back the tool bits away from the rotor.

From this point on, all tool adjustments will be made with the tool bit controls. Then inner depth-of-cut collars will be the reference and should not be moved.

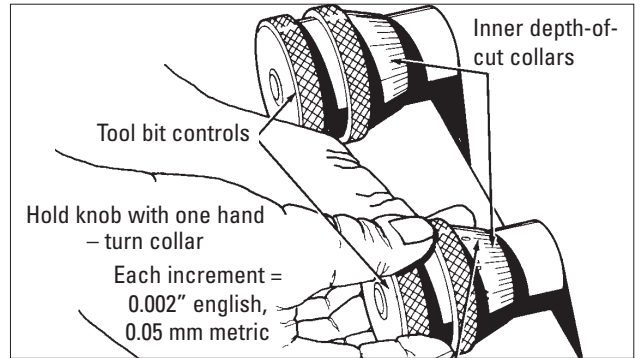


Figure 11 – Tool bit controls

9. Turn the cross feed handwheel until the tool bits are at mid-point of the rotor face.

10. Turn the left hand tool bit control until the tool bit contacts the rotor surface and makes a scratch cut. After the cut is made, back the tool bits off and turn the lathe OFF.

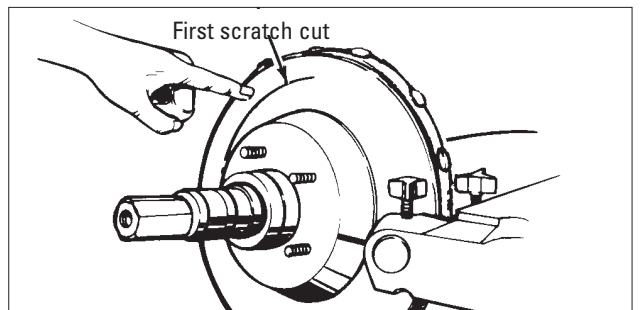


Figure 12 – First scratch cut

The scratch will usually appear as an incomplete circle. This is caused by runout or wobble due to rotor condition, or by the way the rotor is mounted on the arbor.

11. If you see excessive runout on the rotor:

A. Check rotor mounting by loosening the arbor nut and turning the rotor 180° by hand on the arbor. Make sure the inside adapter does not rotate along with the rotor. Then retighten the arbor nut, turn the cross feed handwheel back 1/2 turn, turn the lathe ON, and repeat step 10 to make a second scratch cut.

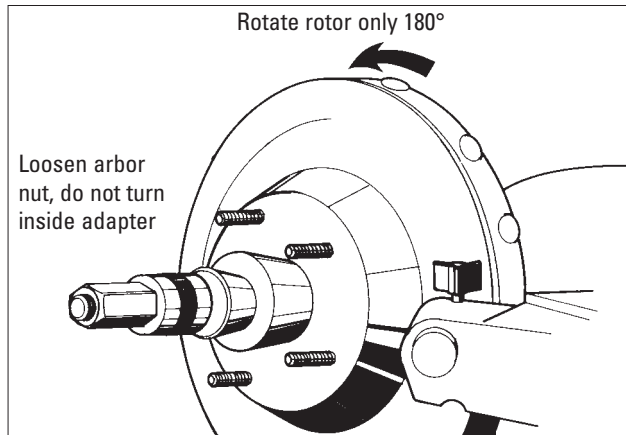


Figure 13 – Rotate rotor 180°

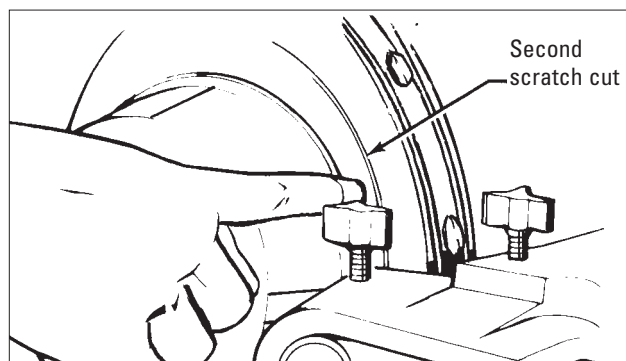


Figure 14 – Second scratch cut

B. If the scratch cuts are side-by-side, the runout or wobble is caused by rotor condition. A dial indicator may be used to compare rotor runout with manufacturer's specifications.

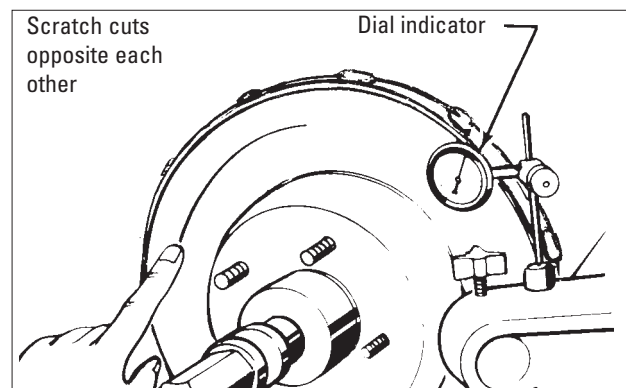


Figure 15 – Using a dial indicator

C. If the scratch cuts are opposite one another (180°), the rotor may not be properly mounted on the arbor. Remove the rotor and examine the arbor and all adapters for nicks, burrs, chips, dirt, or rust. Inspect the rotor hub for loose or damaged bearing cups. Clean, repair, remount, or replace as necessary.

D. Recheck setting of the depth-of-cut collars which were set to zero earlier by moving the tool bits inward until they just contact the surfaces of the rotor. The collars should be at zero. Reset the collars if necessary.

12. Turn the cross feed handwheel clockwise until the tool bits are near the rotor hub.

13. Turn the lathe ON.

14. Turn both tool bit controls to the desired depth-of-cut and lock them in position by tightening the red lock knobs above the tool bits.

Note: Either rough or finish cuts may be taken to resurface a rotor. Generally, finish cuts should be 0.004" (0.10 mm) to 0.006" (0.15 mm) per side. Very shallow cuts of less than 0.004" (0.10 mm) per side tend to reduce tool bit life because the heat generated during reconditioning isn't transferred to the rotor efficiently. Rough cuts may be taken from 0.006" (0.15 mm) to 0.010" (0.25 mm) per side.

15. Press the rotor start button on the control console and then engage the feed lever that is located on the right side of the cross feed handwheel.

Note: The rotor feed rate may be changed by pressing either the + or - button on the control console.

16. When the lathe has finished machining the rotor. Turn the lathe off and loosen the cutting engagements.

Reconditioning Brake Drums

Preparation

1. Measure the diameter of the brake drum with a brake drum micrometer.

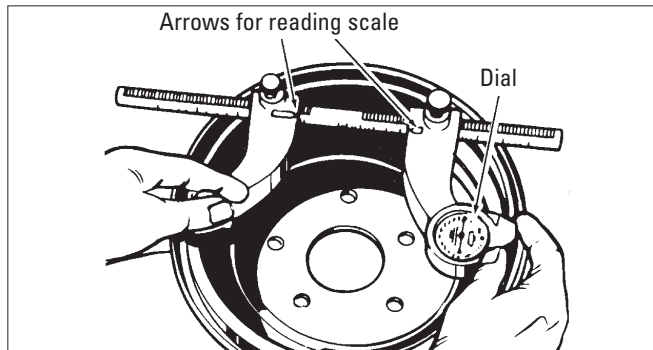


Figure 16 – Measure drum diameter

2. Determine if the drum will be within maximum rebore limits after reconditioning.

Note: Most often, the DISCARD diameter is cast into the brake drum, not the maximum machining diameter.

3. Inspect brake drum. Do not attempt to machine a drum that is damaged or in poor condition.

Mounting Drums

1. Loosen the boring bar clamp nut and push the boring bar all the way into the clamp.

2. Mount the drum on the arbor using the proper adapters, cones, and spacers. Use examples in Figure 18 for guidance.

3. Wrap the drum silencer band snugly around the drum. Be sure it covers up to the right-hand edge.

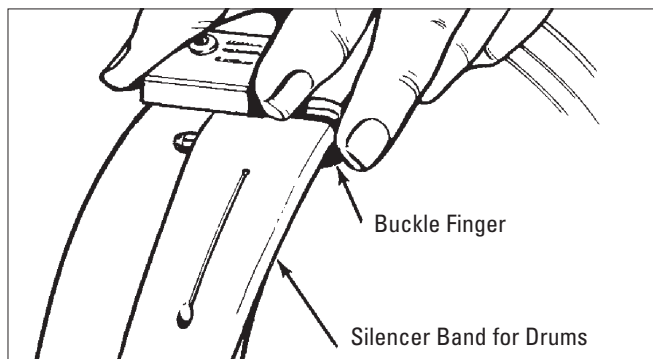
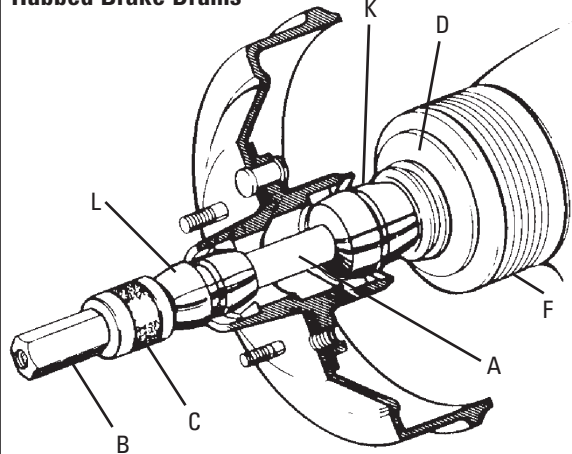


Figure 17 – Attach silencer band

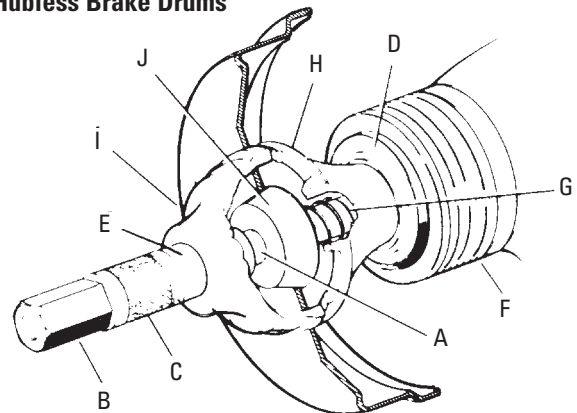
4. Position the cross slide by turning the cross feed handwheel to its maximum clockwise (in) position. Then back off the cross feed handwheel 2 complete turns.

Hubbed Brake Drums



Tapered cone adapters fit in the bearing seats, making contact near the middle of the bearing race whenever possible rather than near an edge. Various adapters and spacers may be used to fill out the shaft of the arbor.

Hubless Brake Drums



A cone fits into the center hole of the drum from the inside to center the drum on the arbor. Select a hubless adapter which will fit inside the drum, against the flat lug hole surface and either straddle the bolt holes to avoid mounting against a burr, or remove the burrs. Slip the hubless adapter onto the arbor followed by a spring, the cone, the drum, and another hubless adapter. Fill out the shaft with spacers as needed.

Key to Mounting Adapters, Cones, and Related Parts

- | | |
|-------------------------|-----------------------------------|
| A. 1" Arbor | G. Spring |
| B. Arbor Nut | H. Inside Floating Adapter (sm.) |
| C. Self-Aligning Spacer | I. Outside Floating Adapter (lg.) |
| D. Lathe Spindle Nose | J. Centering Cone |
| E. Spacer | K. Large Double Taper Adapter |
| F. Protective Boot | L. Small Double Taper Adapter |

Note: The self-aligning spacer should always be used next to the arbor nut when tightening. To avoid overtightening, wrench tighten the arbor nut counterclockwise until the drum and adapters begin to turn on the arbor, then continue to advance the wrench $\frac{1}{16}$ of a turn. DO NOT overtighten the arbor nut.

Figure 18 - Mounting the Drum

Note: Also refer to the Double Chuck Adapter section (page 10) when mounting drums or rotors using the Ammco® double chuck.

5. Position the boring bar by loosening the boring bar clamp nut and sliding the boring bar inward toward the drum until the tool bit is close to the drum.

The boring bar position is changed whenever a drum of different diameter is machined.

The entire boring bar clamp may also be swiveled to achieve the best cutting position.

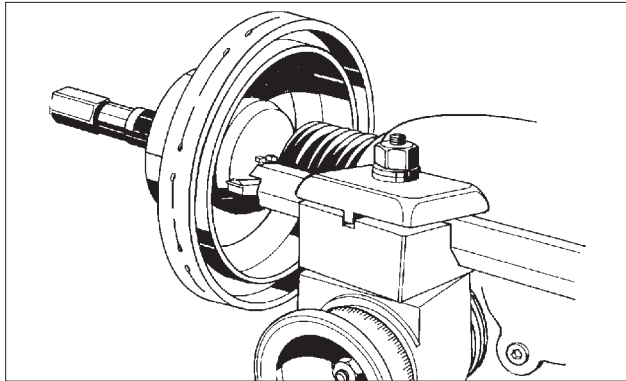


Figure 19 – Positioning the boring bar

6. Turn the drum by hand to make sure that everything is clear.

7. Turn the lathe ON.

8. Advance the tool bit using the cross feed hand-wheel until it just contacts the drum surface momentarily and makes a scratch cut.

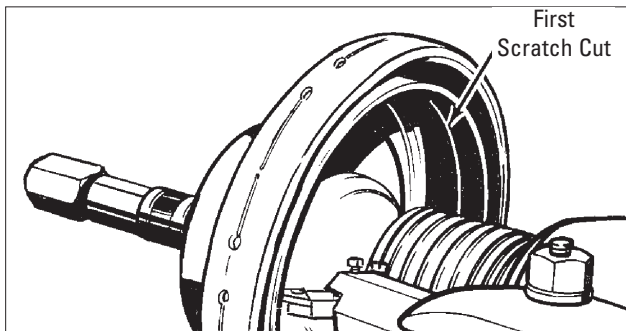


Figure 20 – First scratch cut

9. Loosen the dial lock screw on the cross feed hand-wheel and set the dial to the diameter of the drum as measured with the micrometer. Tighten the lock screw.

This setting will be the reference used to help determine the drum recondition diameter.

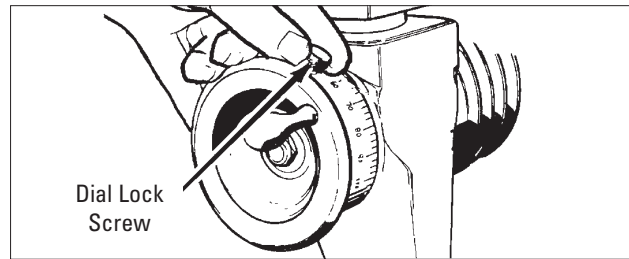


Figure 21 – Set drum diameter measurement

10. Back the tool bit off and turn the lathe OFF.

11. Loosen the arbor nut, rotate the drum 1/2 turn (180°) on the arbor and inner adapter, and retighten the nut.

12. Turn the lathe ON.

13. Turn the workpiece on the spindle 1/2 turn in either direction and make a second scratch cut.

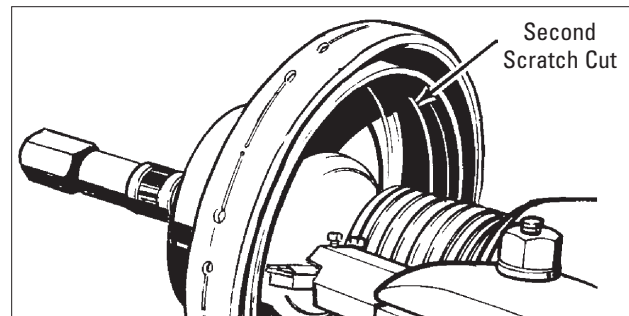


Figure 22 – Second scratch cut

14. Turn the lathe OFF.

15. Examine the scratch cuts.

If the first and second cuts are opposite one another (180° apart), remove the drum from the arbor, check the mounting adapters and arbor for nicks, burrs, or chips, remount the drum, and repeat scratch cut process.

If the scratches are side by side, proceed to step 16.

16. Turn the lathe on and use spindle jog button to position the tool bit until the deepest worn groove of the drum lines up with the point of the tool bit.

17. Advance the tool bit into the bottom of the groove by rotating the cross feed handwheel counter-clockwise.

Note: These operations may be done with the lathe running.

The depth of cut dial will show the approximate reconditioned diameter of the drum. This measurement must be compared with:

- A.** The maximum rebores limits cast into the drum.
- B.** The measured diameter to determine the best amount of material to be removed in one pass.

18. Determine the depth-of-cut by these general guidelines:

- Roughing cuts should be no deeper than 0.020" (0.50mm).
- Finish cuts should be no shallower than 0.004" (0.10 mm) deep.

19. With the lathe running, set the depth-of-cut dial to the depth desired and lock the cross feed by tightening the lock knob.

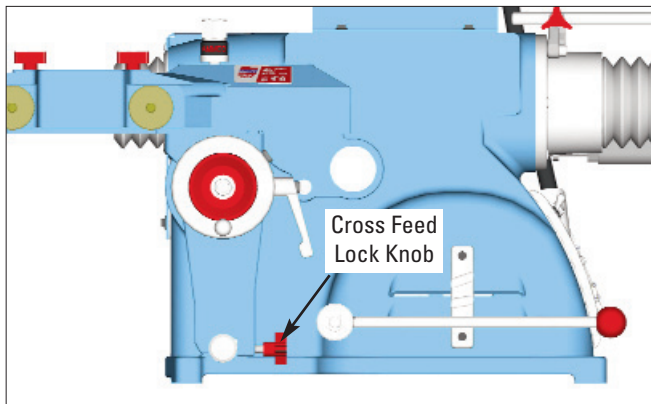


Figure 23 – Lock cross feed

20. At the control console, select to activate either the drum rough cut or drum finish cut button. The drum feed rate may be changed by pressing either + or - button on the control console.

21. Set the feed shut-off by sliding it on the shaft to a point that approximately equals the depth of the drum and tightening it in place. The feed will stop when it reaches this point.

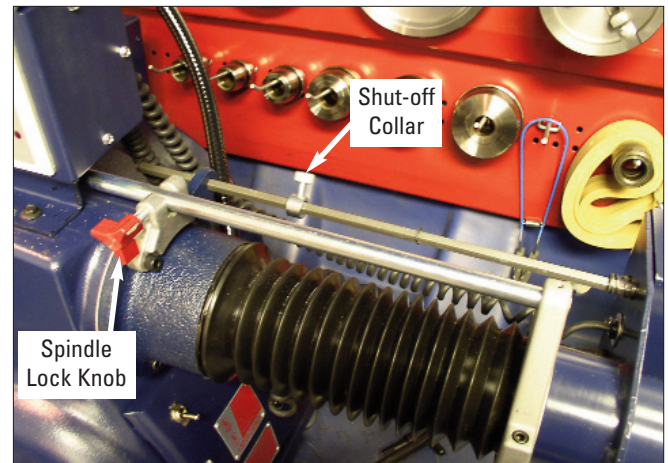


Figure 24 – Set spindle feed shut-off

22. Press the drum start button to begin.

Maintenance and Service

Oiling

The lathe is shipped from the factory with the correct amount and type of oil. Check oil level frequently, and refill as necessary with EP-80-90 gear oil.

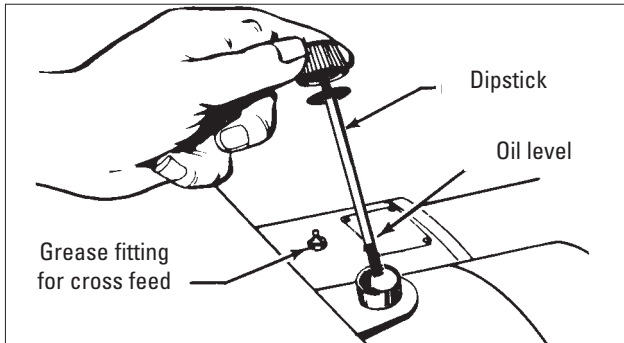


Figure 25 – Oiling

After every 500 hours of use, drain the oil and refill to the appropriate level on the dipstick with clean EP-80-90 gear oil. Use the oil drain plug on the front of the lathe to drain the old oil.

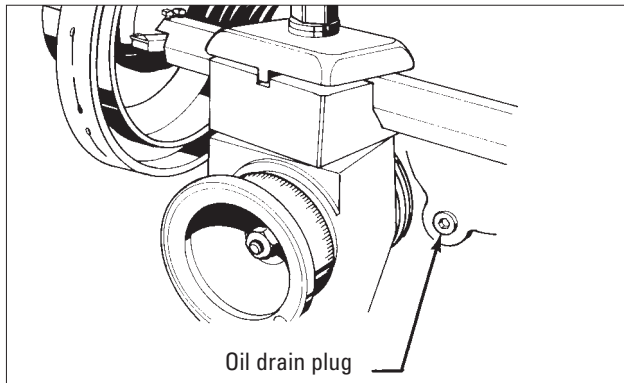


Figure 26 – Drain plug location

The variable feed gearbox and the disc brake feed mechanism assemblies do not require lubricant.

Lubricate the cross feed once each month with an automotive chassis grease. Pump the grease into the fitting until clean grease comes out the relief slot at the base of the fitting.

Use a hand pump grease gun only. A high pressure gun can burst the lathe casting.

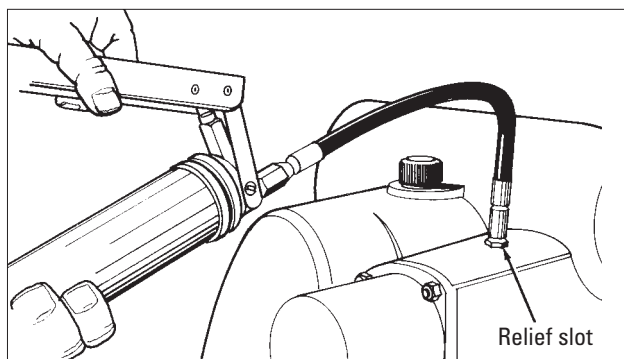


Figure 27 – Cross feed grease fitting

Grease the lead screw drive monthly. Locate the lead screw drive by pulling the protective boot back.

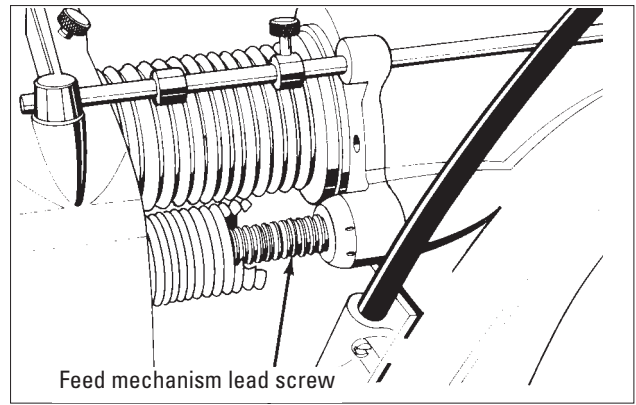


Figure 28 – Lead screw drive

Oil exposed metal parts periodically to prevent rust.

Cleaning

Keep the lathe as clean as possible for trouble-free operation, as well as safety and longer lathe life. Use a brush to sweep metal chips and dust off the lathe.

Do not use compressed air to blow the lathe clean. Chips and dust may be driven between machined parts and into bearings, causing undue wear.

Care of Arbors and Adapters

Although the adapters, arbors, and spindle are made of top grade steel and are turned, hardened, and precision ground to close tolerances, great care should be taken in their use, handling, and storage. Even the smallest nick, scratch, or loose chip can cause incorrect rotor or drum alignment, resulting in inaccurate reconditioning.

Remove all adapters from the arbor after reconditioning a drum or rotor and wipe them clean – especially the inboard adapter. When a finished drum or rotor is removed from the arbor, the inboard adapter may move slightly away from the face of the arbor and allow metal chips to fall into the opening, causing a poor mounting for the next drum or rotor.

Regularly inspect the faces and seating tapers of the adapters for nicks and scratches, correct any flaw with a fine stone. If the damage cannot be corrected, replace the adapter. Handle the adapters and arbors with care and store them on individual hooks. Do not throw them into a box. The adapters are designed for mounting drums and rotors only. Do not misuse the adapters.

Installation Instructions

Receiving

The shipment should be thoroughly inspected as soon as it is received. The signed bill of lading is acknowledgement by the carrier of receipt in good condition of shipment covered by our invoice.

If any of the goods called for on this bill of lading are shorted or damaged, do not accept them until the carrier makes a notation on the freight bill of the shorted or damaged goods. Do this for your own protection.

NOTIFY THE CARRIER AT ONCE if any hidden loss or damage is discovered after receipt and request the carrier to make an inspection. If the carrier will not do so, prepare a signed statement to the effect that you have notified the carrier (on a specific date) and that the carrier has failed to comply with your request.

IT IS DIFFICULT TO COLLECT FOR LOSS OR DAMAGE AFTER YOU HAVE GIVEN THE CARRIER A CLEAR RECEIPT.

File your claim with the carrier promptly. Support your claim with copies of the bill of lading, freight bill, invoice, and photographs, if available.

Although AMMCO's responsibility ceases upon delivery of the shipment to the carrier, we will gladly assist in tracing lost shipments. Our willingness to assist in every possible manner does not make AMMCO responsible for collection of claims or replacement of lost or damaged materials. Shipping damage claims will not be handled under warranty.

Electrical Requirements

The lathe must be properly grounded to protect the operator from shock. The lathe is equipped with an approved 3-conductor cord and a 3-prong grounding type plug to fit the proper grounding-type receptacle. Should an extension cord be required, use 3-conductor cords with 3-prong grounding plug and 3-prong grounding receptacle properly rated to handle this electrical power tool only. Do not modify a cord or plug to match a receptacle; have a qualified electrician install an appropriate outlet to match the lathe requirements. Repair or replace any worn or damaged power cords immediately.

Verify that the lathe plug and grounding-type receptacle match as shown in Figure 29.

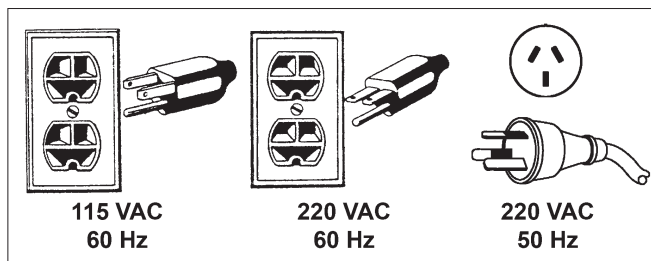


Figure 29 - Power Cord Plug and Receptacle Types

Setup

A factory trained COATS® Service Technician must perform the install, setup, and initial test procedures on your brake lathe. Do not attempt to install and setup the unit yourself. Accurate and reliable operation of your unit depends on proper installation. Please contact COATS® directly at 1-800-688-9240 for the Certified Service Partner nearest you.

Connect to Power

Your factory trained COATS® Service Technician should do the final check to verify the power installation before connecting the brake lathe to a power supply. Failure due to improper power connection may void the warranty.

Operating Specifications

- Overall Lathe Height17.25" [438 mm]
- Lathe Shipping Weight410 lbs [186 kg]
- Floor Space Requirements:
 - Width48" [1219.20 mm]
 - Deep34.5" [901.70 mm]
 - Spindle to Floor39.375" [1000 mm] (*mounted to optional bench*)
- Electrical Requirements (*unless otherwise specified*):
 - Standard: 115 VAC, 60 Hz, single-phase, fused at 20 amps
 - Optional: 220 VAC, 60 Hz, single-phase, fused at 15 amps
- Spindle Motor1 HP, 60 Hz, 115/230 VAC
- Spindle Travel9.875" [251 mm]
- Spindle Speed Lever Positions:
 - Lower Groove100
 - Middle Groove150
 - Upper Groove200
- Spindle Feed SpeedsVariable
- Cross Feed SpeedVariable
- Handwheel Graduations0.002 [0.050 mm]
- Maximum Brake Rotor:
 - Diameter15" [381.0 mm]
 - Thickness1.9" [48.26 mm]
- Brake Drum Diameter:
 - Minimum6" [152 mm]
 - Maximum28" [711 mm]
- Maximum Drum Depth9.875" [251 mm]
- Maximum Load:
 - 1" Arbor200 lbs [90.72 kg]
 - 1.875" Arbor200 lbs [90.72 kg]

