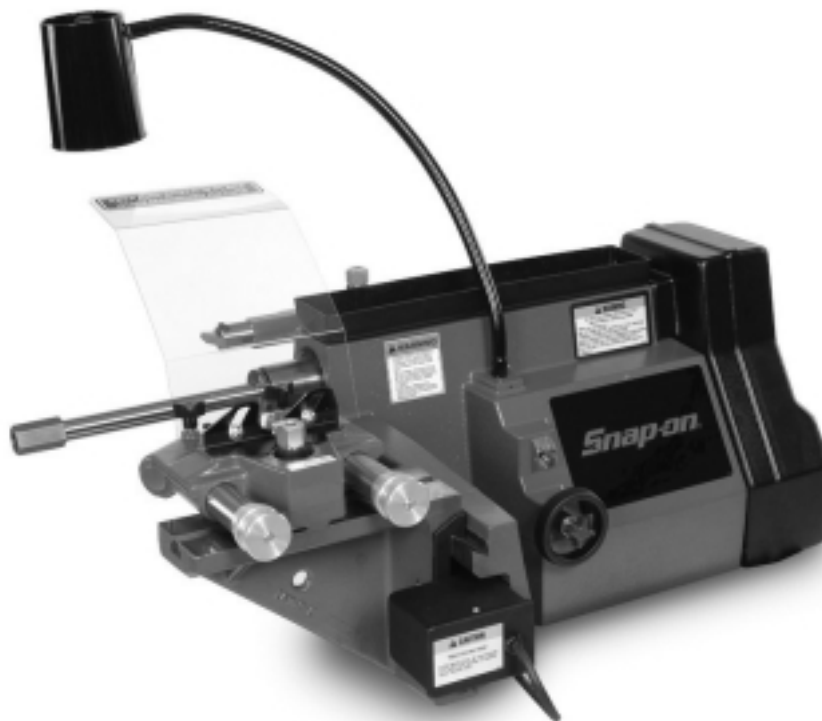


Snap-on[®]

EEBR308A Brake Lathes



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.

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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 and well lighted. Cluttered areas and benches invite accidents.
- 4.** To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
- 5.** Adequate ventilation should be provided when working on operating internal combustion engines.
- 6.** Care must be taken as burns can occur from touching hot parts.
- 7.** Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged—until it has been examined by a qualified serviceman.
- 8.** If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
- 9.** To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.
- 10.** Keep children away. All bystanders should be kept completely away from the work area.
- 11.** Make the workshop kid-proof. Use padlocks and master switches, and remove starter keys.
- 12.** Don't force a tool. It will do the job better and safer at the rate for which it was designed.
- 13.** Use the right tool. Don't force a tool or an attachment to do a job for which it was not designed.
- 14.** Dress properly. Keep hair, loose clothing, neckties, shop rags, jewelry, fingers, and all parts of body away from moving parts. Non-slip footwear is recommended.
- 15.** ALWAYS WEAR SAFETY GLASSES. Everyday eye-glasses only have impact resistant lenses, they are NOT safety glasses. Safety glasses, goggles, or a face shield will help protect the operator from injury. Use a face shield and dust mask during dusty operations.
- 16.** 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.
- 17.** Don't overreach. Keep proper footing and balance at all times when lathe is in operation or when working around the unit.
- 18.** Maintain tools with care. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 19.** 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.
- 20.** 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.
- 21.** Use of improper accessories may cause risk of injury to operator or bystanders. Use only as described in this manual. Use only manufacturer's recommended attachments.
- 22.** Never stand or lean on a lathe. Serious injury could occur if the lathe is tipped or if the cutting tool is unintentionally contacted.
- 23.** 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.
- 24.** 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.
- 25.** Never leave tools running unattended. Turn the power off. Don't leave the tool until it comes to a complete stop.
- 26.** 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.
- 27.** 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.

SAVE THESE INSTRUCTIONS

Brake Lathes

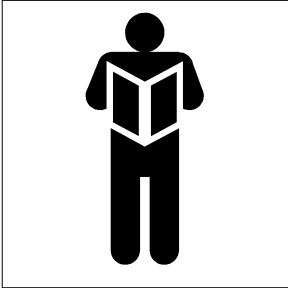
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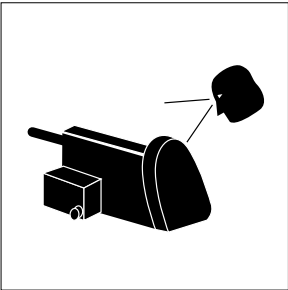
Brake Lathes

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.

WARNING

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.

Warnings

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.

WARNING

For Your Own Safety Read Instruction Manual Before Operating Lathe

- **Wear eye protection.**
- **Do not wear gloves, necktie, or loose clothing.**
- **Tighten all locks before operating.**
- **Rotate workpiece before installing on faceplate.**
- **Risk of injury due to accidental starting.**
- **Do not use in an area where children may be present.**

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Brake Lathes

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.
- Make sure installation conforms to all applicable Local, State, and Federal Codes, Rules, and Regulations; such as 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 the unit clean and visible.
- Do not override safety features.

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!

Brake Lathes

Installation

1. Cut the straps securing the lathe to the shipping pallet. Place the lathe on the bench.

2. Position the lathe over the four (4) holes indicated in Fig. 1. Use the four (4) pilot bolts and washers provided to fasten the lathe to the bench. Wrench tighten the bolts.

3. Before plugging the lathe in, be sure the on/off toggle switch above the drum slide handwheel is in the OFF position.

READ THE OILING INSTRUCTIONS BEFORE OPERATING THE LATHE.

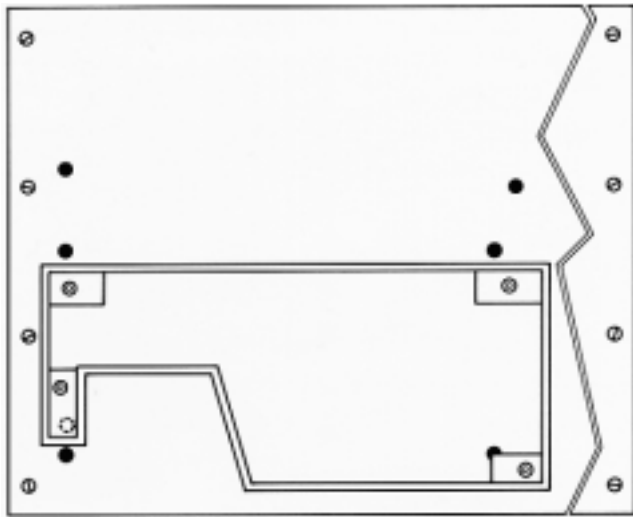
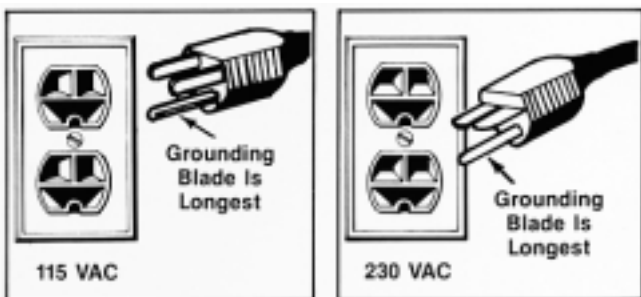


Figure 1

Electrical Wiring Requirements

The lathe should be electrically 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. If your lathe is for use on 115 volts, it has a plug and outlet as illustrated in Fig. 2. Use only 3-wire extension cords which have 3-prong grounding type plugs and 3-pole receptacles which accept the lathe's plug. 230 volt lathes use a plug and outlet like those illustrated in Fig. 3.

Replace or repair damaged or worn cords immediately.



Figures 2 & 3

Operating Specifications

Overall Lathe Height	. . . . .	14.25 in. (362 mm)
Spindle to Floor	. . . . .	.39.25 in. (997 mm)
	(when mounted on bench)	
Spindle Speed	. . . . .	125 RPM
Rotor Slide Feed Rate	. . . . .	.0032 inch per revolution
		(.0813 mm/rev.)
Drum Slide Feed Rate	. . . . .	.0048 inch per revolution
		(.1219 mm/rev.)
Micrometer Graduations	. . . . .	.002 in. (.0508 mm)
Max. Brake Rotor Diameter	. . . . .	15.75 in. (40 cm)
Max. Brake Rotor Thickness	. . . . .	1.75 in. (4.45 cm)
Min. Brake Drum Diameter	. . . . .	.6 in. (15.25 cm)
Max. Brake Drum Diameter	. . . . .	.24 in. (60.96 cm)
Max. Drum Depth	. . . . .	.7 in. (17.78 cm)
Max. Load, 1 in. Arbor	. . . . .	100 lbs. (4536 Kg)
Max. Load, 1-7/8 in. Arbor	. . . . .	200 lbs. (90.72 Kg)
Spindle Motor	. . . . .	.1 HP
Electrical Requirements	. . . . .	115 VAC, 60 Hz, 1 Ph,
		fused at 15 A
Lathe Weight	. . . . .	.312 lbs. (141 Kg)
		(lathe only)
Floor Space	. . . . .	.34.75 in. wide x 48 in. deep
		(822.65 mm x 1,219.22 mm)
		(when mounted on bench)

Brake Lathes

Starting the Lathe

The toggle switch, above the drum slide handwheel, turns the lathe ON and OFF.

Slide Travel

The drive motors of the slides are on when the toggle switch is in the ON position. The slides will move through their full travel with a few turns of the handwheels when the slide engagement knobs are loose. When the slide engagement knobs are tightened, the slides will feed in an outward direction until the slide engagement knobs are loosened or the slides reach the end of their travel.

Note: To prevent undue wear, DO NOT allow the lathe to run for extended periods with the slides at the end of their travel and the feeds engaged. The slide engagement knobs are tight. See how-to-use details under reconditioning disc brake rotors and reconditioning brake drums.

Tool Bar Depth-of-Cut Micrometer Dial

The tool bar depth-of-cut micrometer dial is calibrated with both inch and metric scales. The depth-of-cut dial indicates the amount of material being cut from one side of a drum or rotor.

Inch Scale:

A cut of .002" (one micrometer division) from an 8" drum will result in a refinished diameter of 8.004"

Metric Scale:

A cut of .05 mm (one micrometer division) from a 209 mm drum will result in a refinished diameter of 209.1 mm.

Arbor Installation

The 1" arbor shipped with the lathe has been carefully matched to the spindle of the lathe during final assembly and testing. Witness marks have been etched onto the arbor and spindle for repeatable, precise alignment.

The witness marks should be carefully aligned when installing the arbor. A true running arbor is essential to professional quality brake drum and rotor reconditioning.

The drawbar, which can be tightened or loosened at the rear of the spindle, pulls the hardened and ground taper of the arbor into the ground taper seat of the spindle.

Rotor Mounting

Review the descriptions of typical rotor mounting configurations. 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 in Figure 4 are typical of the many mounting configurations necessary to meet the requirements of brake rotor reconditioning. The adapters, cones, and spacers supplied 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.

Brake Lathes

Typical Rotor Mounting Configurations

Note: Refer to instructions in adapter kit for mounting Hubless drums and rotors.

- Ⓐ - 1" Arbor
- Ⓑ - Arbor Nut
- Ⓒ - Self-Aligning Spacer
- Ⓓ - Spacer
- Ⓔ - Small Double Taper Adapter
- Ⓕ - Large Double Taper Adapter
- Ⓖ - Adapter, Used as Spacer

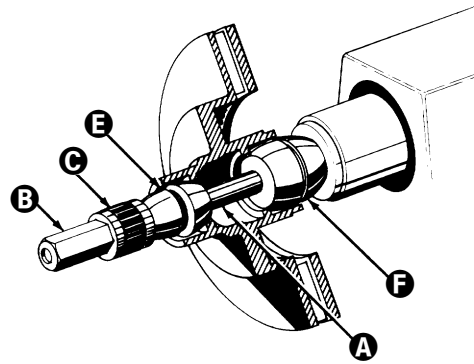
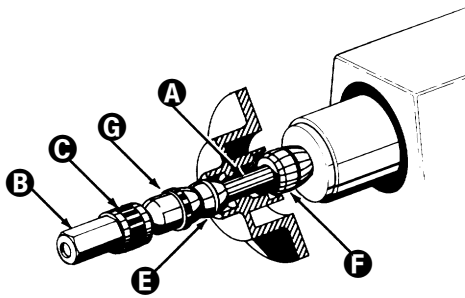
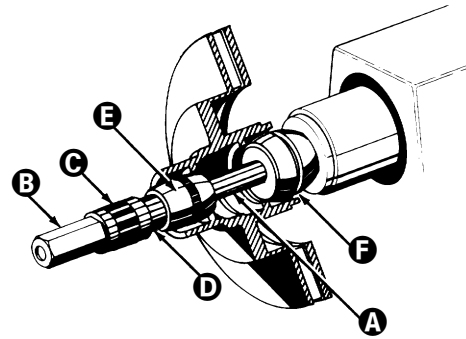


Figure 4

Brake Lathes

Reconditioning Disc Brake Rotors

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 (figure 5) 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.

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

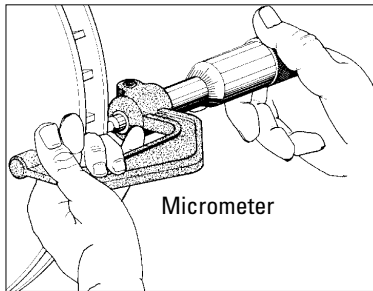


Figure 5

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.

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. Tighten the stud nut firmly.

3. Install the safety shield as shown. 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.

4. Turn the rotor slide handwheel clockwise to position the rotor slide about 1/2" away from the rotor/silencer band (vented rotors), or 1/2" away from the edge of the rotor (non-vented rotors).

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.

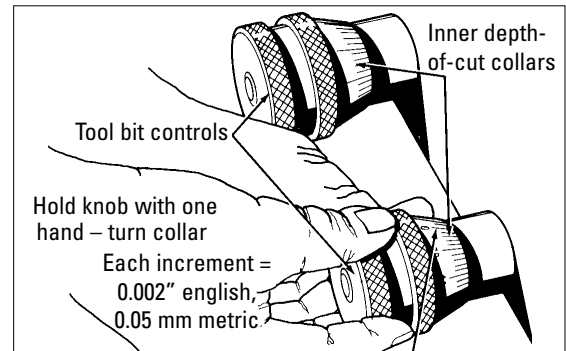


Figure 6

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.

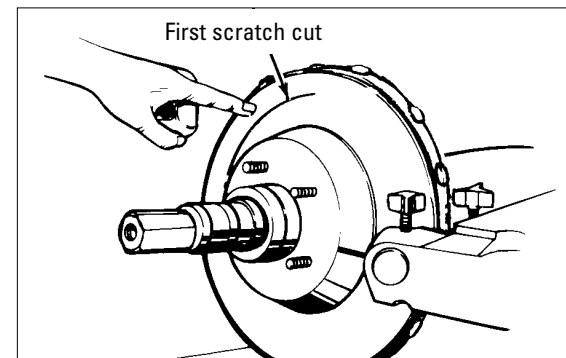


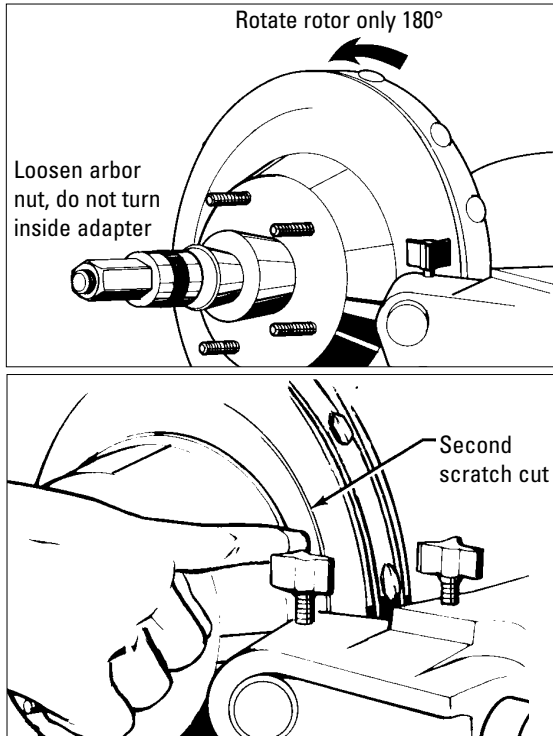
Figure 7

9. Turn the rotor slide 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.

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.

Brake Lathes



Figures 8 & 9

11. 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 rotor slide handwheel back 1/2 turn, turn the lathe ON, and repeat step 10 to make a second scratch cut.

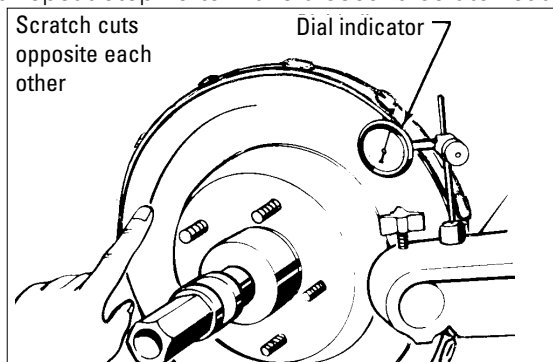


Figure 10

12. 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.

13. 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.

14. Recheck the 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.

15. Turn the rotor slide handwheel clockwise until the tool bits are near the rotor hub.

16. Turn the lathe ON.

17. 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" to 0.010" per side.



Figure 11

18. Tighten the engagement knob in the center, the rotor slide handwheel, to engage rotor slide feed. When the tool bits have cleared the outer edge of the rotor, loosen the engagement knob to stop the feed.

19. Turn the lathe OFF and inspect both surfaces.

20. If part of the brake surface was not cut, leave the twincutter in the locked position. Turn the lathe ON. Slowly turn the rotor slide handwheel clockwise to move the left tool bit to the groove at the bottom of the brake surface.

21. Repeat steps 18, 19, 20, and 21.

Note: If one side of the rotor was fully cut and the other only partially cut, recut the fully cut side at a .002" depth-of-cut, for support, and the partially cut side as needed.

Brake Lathes

Reconditioning Brake Drums

Measure the diameter of the brake drum with a brake drum micrometer. Determine if the drum will be within maximum rebore limits after reconditioning and that its general condition is good.

Note: Most often the discard diameter is cast into the brake drum, not the maximum "machine to" diameter.



Figure 12

Set Up and Machining

1. Turn the end knob of the tool bar counterclockwise until the tool bit is fully retracted. Loosen the tool bar clamp nut and pull or retract the tool bar all the way back into the clamp.

2. Turn the drum slide handwheel counterclockwise to move the slide to its maximum forward position.

3. Mount the drum on the arbor using the proper adaptors, cones, and spacers as described in the preceding DRUM MOUNTING section.

4. Wrap the drum silencer band snugly around the outside of the drum. Be sure the band fully covers the drum.

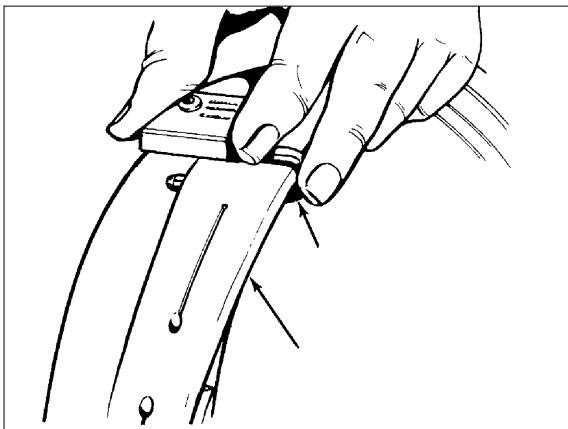


Figure 13

5. Slide the tool bar into the drum. Position the clamp and tool bar so the tool bit almost contacts the brake surface at the back of the drum. Be sure the tool bar is not touching the brake surface at the outer edge of the drum, then tighten the clamp nut to about 25 ft. lbs.

Note: The boring bar position must be changed whenever preparing to machine a drum having a different diameter and/or depth than the previous drum.

6. Turn the drum slide handwheel clockwise to move the tool bit to the outer edge of the brake surface. Turn the lathe ON.

7. Check for drum runout. Runout is evident if the outer edge of the drum moves closer to and then further away from the tool bit while the drum is turning. A very small amount of runout is permissible. A large amount of runout indicates either a bent drum or an incorrect mounting. To determine the cause of the runout a "scratch cut" procedure can be used as outlined in steps 7A, 7B, and 7C.

7A Use the drum slide handwheel to move the tool bit about 1/2" in from the outer edge of the drum. Turn the end knob of the tool bar micrometer clockwise until the tool bit lightly contacts the drum surface making a "scratch cut" approximately .001" deep. Turn the end knob of the micrometer counterclockwise one (1) full turn to move the tool bit away from the brake surface.

7B Turn the lathe OFF. Turn the drum slide handwheel counterclockwise to move the tool bit 1/4" further into the drum. Loosen the arbor nut and turn the drum 180° on the adaptors (do not allow the adaptors to turn on the arbor). Retighten the arbor nut. Turn the lathe ON. Slowly turn the end knob of the micrometer clockwise until a second "scratch cut" is made. Turn the end knob of the micrometer counterclockwise one (1) full turn.

7C Turn the lathe OFF. If the "scratch cuts" are side by side the runout is in the drum and NOT in the mounting. If the drum is not bent and the runout is not severe, continue with step 8. A BENT DRUM MUST BE REPLACED. If the "scratch cuts" are opposite each other (180° apart) the runout is caused by poor mounting. In this case, inspect the mounting for cleanliness and the adaptors for burrs, nicks, and scratches, as well as the bearing races for wear and/or looseness. Remount the drum and check for runout again. If runout has been corrected, proceed to step 8.

Brake Lathes



Figure 14

8. Turn the lathe ON. Turn the drum slide handwheel clockwise until the tool bit is centered over the rust ridge. Turn the end knob of the micrometer clockwise until the tool bit lightly contacts the rust ridge.

9. Turn the drum slide handwheel clockwise until tool bit is 1/8" outside drum. Turn the end knob of the micrometer clockwise to move the tool bit .002" toward the rust ridge.

10. Turn the drum slide handwheel counterclockwise to move the tool bit about 1/4" inside the worn brake surface.

11. If the tool bit is not in contact with the brake surface, repeat steps 9 and 10 until very light contact is made with the brake surface.

12. Turn the drum slide handwheel counterclockwise until the tool bit is about 1/4" away from the shoulder (unworn portion of the brake surface) at the bottom of the drum.

Note: If the cut becomes heavier as the tool bit moves into the drum, turn the end knob of the micrometer counterclockwise to withdraw the tool bit slightly to maintain only light contact.

13. Machine the shoulder away by slowly turning the drum slide handwheel counterclockwise until the tool bit contacts the bottom of the drum making a "scraping" sound. Turn the drum slide handwheel clockwise until the "scraping" stops.

14. Hold the end knob of the tool bar micrometer still, and turn the inner dial to zero.

Note: Drum—depth-of-cut is determined by the condition of the drum:

Ovality

Flatness (taper, bellmouth, barrel shape)

Scoring

Diameter (how close to the max. machining limit)

Cuts may be .002"—.010" deep. A rough cut should be no more than .010", a finish cut should be no less than .002".

A cut of .002" from an 8" drum will result in a refinished diameter of 8.004".

Note: A round, smooth, flat drum may require only a finish cut .002"—.004" deep.

15. Turn the end knob of the tool bar micrometer clockwise to set the tool bit to the desired depth-of-cut (not more than .010" deep).

16. Tighten the engagement knob in the center of the drum slide handwheel, to engage the drum slide feed. When the tool bit has cleared the outer edge of the brake surface, loosen the engagement knob to stop the feed.



Figure 15

17. Turn the lathe OFF to inspect the drum.

18. If the first cut has not cleaned the entire brake surface, leave the tool bar locked in position. Turn the lathe ON. Slowly turn the drum slide handwheel counterclockwise to move the tool bit into the drum making a "scraping" sound. Turn the drum slide handwheel clockwise until the "scraping" stops.

19. Repeat steps 15, 16, 17, and 18.

Brake Lathes

Typical Drum Mounting Configurations

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 boltholes 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.

Note: Refer to instructions in adapter kit for mounting Hubless drums and rotors.

Key to Mounting Adapters, Cones, and Related Parts

- A. 1" Arbor
- B. Flange Plate
- C. Spring
- D. Centering Cone
- E. Rotor, Drum or Flywheel
- F. Flange Plate
- G. Spacer(s)
- H. Self-Aligning Spacer
- I. Arbor Nut

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 1/16 of a turn. DO NOT overtighten the arbor nut.

Hubbed Brake Drums

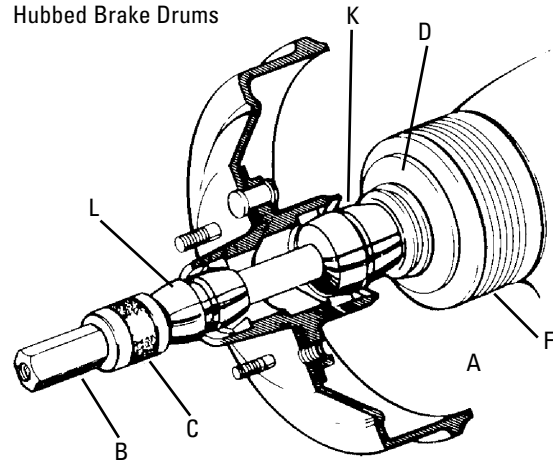


Figure 16

Brake Lathes

Maintenance and Service

Oiling

The bare metal parts are coated with an oil-soluble rust preventative. It is not necessary to clean the rust preventative from these parts. Before using the lathe, all bare metal parts should be wiped down with an oiled rag. Use a light machine oil for the initial and daily wipe downs when oiling the exposed bare metal parts. Do not oil the tool bar clamping surfaces on top of the slides.

Lead Screw Drive: Apply light machine oil to the bronze bushing at the end of the lead screw.

Felt Wipers: Apply light machine oil to the felt way wipers.

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** as chips and dust may be driven between machined parts and into the ways causing undue wear. Wipe dust and chips from the slide clamping surfaces before installing the tool bars.

Care of Arbors and Adaptors



Although the adaptors, arbors, and the 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 nose chip can cause incorrect rotor or drum alignment, resulting in inaccurate machining.

Remove all adaptors from the arbor after machining a drum or rotor and wipe them clean—especially the inboard adaptor. When a finished drum or rotor is removed from the arbor, the inboard adaptor 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 adaptors for nicks and scratches; correct any flaw with a fine stone. If the damage cannot be corrected, replace the adaptor. Handle the adaptors and arbors with care and store them on individual hooks. **DO NOT** throw them into a box. The adaptors are designed for mounting drums and rotors only, **DO NOT** misuse the adaptors.

Spindle V-belt Replacement

1. Disconnect the lathe from the power source.
2. Remove the two (2) screws securing the drive belt cover and remove the cover.
3. Remove the two (2) nuts and washers from the studs supporting the idler bracket tension screw, and completely back off the idler bracket tension screw. Slide the idler bracket off the studs and the pulleys out of the timing belts. Remove the timing belts from the spindle pulleys.
4. Loosen, but do not remove the four (4) screws securing the motor to the main frame. Lift the motor and remove the V-belt.
5. Hang the new V-belt in the spindle pulley, lift the motor and slip the belt into the motor pulley. Adjust the V-belt tension as described in SPINDLE V-BELT ADJUSTMENT below.
6. Hang the timing belts on the spindle pulleys and replace the idler bracket assembly. Lift the idler bracket to slide the timing belts onto the idler pulleys.
7. Replace the washers and nuts on the idler bracket studs. Use a wrench to tighten the nuts, then back the nuts off 1/4 to 1/2 turn. Adjust the timing belt tension as described in SPINDLE TIMING BELT ADJUSTMENT below.
8. Install the drive belt cover, and secure it with two (2) screws and washers.

Spindle V-belt Adjustment

1. Disconnect the lathe from the power source.
2. Remove the two (2) screws and washers securing the drive belt cover and remove the cover.
3. Loosen the four (4) motor mount screws to allow the weight of the motor to rest on the V-belt.
4. Use a finger to press the V-belt in about 1/4" on the left side, between the motor pulley and the spindle.
5. Tighten the motor mount screw to the left while maintaining the 1/4" deflection. Tighten the other motor mount screws.

Brake Lathes

Spindle Timing Belt Replacement

Note: Replace the timing belts in pairs only.

1. Disconnect the lathe from the power source.
2. Remove the two (2) screws and washers securing the drive belt cover and remove the cover.
3. Remove the nuts and washers from the studs supporting the idler bracket. Loosen the lock nut of the idler bracket tension screw, and completely back off the idler tension screw. Slide the idler bracket off the studs and the pulleys out of the timing belts.
4. Hang the new timing belts on the spindle pulleys and replace the idler bracket assembly. Lift the idler bracket to slide the timing belts onto the idler pulleys.
5. Replace the washers and nuts on the idler bracket studs. Use a wrench to tighten the nuts, then back the nuts off 1/4 to 1/2 turn. Adjust the timing belt tension as described in SPINDLE TIMING BELT ADJUSTMENT.
6. Install the drive belt cover and secure it with two (2) screws and washers.

Spindle Timing Belt Adjustment

1. Disconnect the lathe from the power source.
2. Remove the two (2) screws and washers securing the drive belt cover and remove the cover.
3. Determine which timing belt is the tighter of the two. Use the tighter belt to set the tension for both timing belts.
4. Loosen the two (2) nuts securing the jack shaft support to the main frame.
5. Loosen the lock nut of the adjustment screw on the under side of the jack shaft support. Turn the screw to adjust the timing belt tension so it can be deflected 1/8" to 1/4" by pressing against the left side of the belt between the jack shaft and the spindle.
6. When the tension is set, tighten the lock adjustment screw lock nut and then the jack shaft support screws.
7. Replace the yoke cover and secure it with the nut.

Tool Bar Adjustment

1. Turn the micrometer dial counterclockwise to unscrew the dial from the boring bar. Remove the micrometer dial assembly.
2. Unscrew the two (2) allen head cap screws from the tool holder end of the tool bar. Press the tool holder against a solid stop, pull the screws from the boring bar and carefully ease the bar away from the stop.

3. Clean all metal chips and dirty grease from all the working parts.
4. Slip the spring into the bore of the tool bar. Grease the sleeve with white grease and slip it into the bore of the tool bar.
5. Slip the tool holder between the ears of the boring bar, press the tool holder against a solid stop and insert the allen head cap screws. Run the screws all the way in.
7. Fully tighten one of the allen head cap screws, then back the micrometer dial out two turns.
8. Slowly loosen the allen head cap screw until the tool holder slips back.
9. Screw the micrometer all the way in and repeat steps 7 and 8 for the other allen head cap screw.

Gib Adjustment

1. Loosen the eight (8) cap screws (part #906353) on the vertical face of the slide and loosen the four (4) button head screws (part #924759) on the end plate (925772). This allows the lead screw to float in horizontal and vertical directions to insure that the gib tightens across the dovetail, not the lead screw.
2. Tighten the three (3) gib set screws (part #925786) then back off each screw 1/4 turn.
3. Tighten the middle screw while moving the edge of the slide farthest from the machine in an up-and-down motion. Tighten only until vertical motion is eliminated. If more than slight resistance is felt while turning the handwheel, the screw is too tight.
4. Tighten the remaining two (2) gib screws separately, while turning the handwheel to move the slide back and forth on the ways. Tighten until only slight resistance is felt as the handwheel is turned.
5. Turn the lathe ON. Run the slide all the way to the end of its travel (away from the arbor). While exerting slight pressure on the handwheel in the direction of the end-stop, tighten the four (4) cap screws in the vertical face of the slide, opposite the motor. This insures perpendicularity between the end plate and the ways.
6. Tighten the four (4) button head screws in the end plate. This centers the lead screw.
7. Run the slide all the way in (to the arbor). Tighten the four (4) cap screws on the vertical face of the slide, next to the motor. This centers the motor.
8. If a "clicking" sound is heard, loosen the four (4) cap screws on the motor vertically. When the sound stops, tighten the screws. Clicking is heard when the leadscrew/coupling is not running at a constant velocity. Centering the motor eliminates that problem.

Snap-on Tools Company

Limited One (1) Year Warranty

Snap-on Tools Company (the "Seller") warrants only to the original purchaser that under normal use, care and service, the Equipment (except as otherwise provided herein) shall be free from defects in material and workmanship for one year from the date of original invoice. Arbor runout is warranted for 30 calendar days from the date of original purchase. Belts are warranted for 90 calendar days from the date of original purchase.

SELLER'S OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED SOLELY TO THE REPAIR OR, AT SELLER'S OPTION, REPLACEMENT OF EQUIPMENT OR PARTS WHICH TO SELLER'S SATISFACTION ARE DETERMINED TO BE DEFECTIVE AND WHICH ARE NECESSARY, IN SELLER'S JUDGMENT, TO RETURN THIS EQUIPMENT TO GOOD OPERATING CONDITION. NO OTHER WARRANTIES, EXPRESS OR IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY AND ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.

This Warranty does not cover (and separate charges for parts, labor, and related expenses shall apply to) any damage to, malfunctioning, inoperability or improper operation of the Equipment caused by, resulting from or attributable to (A) abuse, misuse or tampering; (B) alteration, modification or adjustment of the Equipment by other than Seller's authorized representatives; (C) installation, repair or maintenance (other than specified operator maintenance) of the Equipment or related equipment, attachments, peripherals or optional features by other than Seller's authorized representatives; (D) improper or negligent use, application, operation, care, cleaning, storage or handling; (E) fire, water, wind, lightning or other natural causes; (F) adverse environmental conditions, including, without limitation, excessive heat, moisture, corrosive elements, dust or other air contaminants, radio frequency interference, electric power failure, power line voltages beyond those specified for the Equipment, unusual physical, electrical or electromagnetic stress and/or any other condition outside of the Seller's environmental specifications; (G) use of the Equipment in combination or connection with other equipment, attachments, supplies or consumables not manufactured or supplied by Seller; or (H) failure to comply with any applicable federal, state or local regulation, requirement or specification governing emission analyzers and related supplies or consumables.

Repairs or replacements qualifying under this Warranty will be performed on regular business days during Seller's normal working hours within a reasonable time following Purchaser's request. All requests for Warranty service must be made during the stated Warranty period. This Warranty is non-transferable.

Brake Lathe EEBR308ABP includes:

EEBR308A Brake Lathe
AMM2500 Bench Kit (Bench, sign, tool board, chip funnel and bucket)
AMM0002 Basic Adapter Kit

Brake Lathe EEBR308ADP includes:

EEBR308A Brake Lathe
AMM2500 Bench Kit (Bench, sign, tool board, chip funnel and bucket)
AMM0005 Deluxe Adapter Kit

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