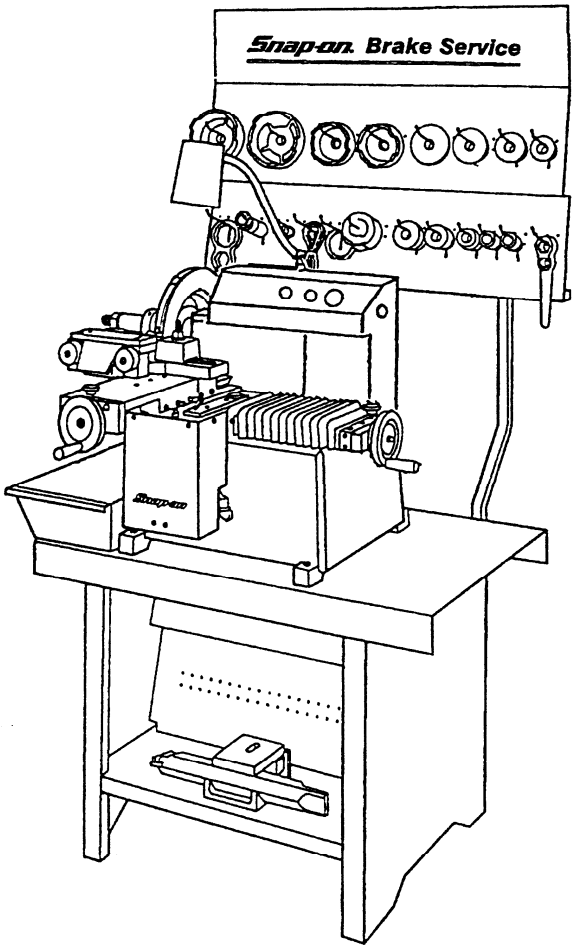
Snap-on®

EEBR301A

Disc & Drum Brake Lathe Operating & Service Manual



Form #ZEEBR301A

- ❑ EEBR301AHV — Combination Disc and Drum Lathe 230V, 60/50 Hz, 1 Ph
- ❑ EEBR302A — Deluxe Bench Assembly
- ❑ EEBR303A — Basic Shop including:
  - EEBR301A Combination Lathe
  - EEBR302A Deluxe Bench
- ❑ EEBR304A — Deluxe Shop including:
  - EEBR303A Basic Shop
  - EEBR301A7 Light Truck Set
  - EEBR301A6 Hubless Adapter Kit
- ❑ EEBR305A — Heavy Duty Shop including:
  - EEBR303A Basic Shop
  - EEBR301A7 Light Truck Set
  - EEBR301A4 Arbor, 2"
  - EEBR301A8 Medium Truck Kit

Serial Number _____

Purchase Date _____

Purchaser's Name _____

Address _____

_____

Set-Up Date _____

Set-Up By _____

tional and service principles outlined in this manual are essential for operation of your machine. Maximum benefit will be gained from the initial set up and training session if all prospective operators have read and are familiar with this manual. The more you know about your EEBR301A Disc & Drum Brake Lathe– the more profitable it will be. Please specify the Model and Serial Number of the machine in any correspondence referring to this machine.

For Service or Technical Support call 1-800-225-5786

The following symbols are used for emphasis throughout this manual:

⚠DANGER Situations which require Danger labels indicate immediate hazards which will, without question, result in death.

⚠WARNING Situations which require Warning labels indicate hazards or unsafe actions which may result in severe equipment or property damage and/or personal injury or death.

⚠CAUTION Situations which require Caution labels indicate hazards or unsafe actions which may result in minor equipment or property damage and/or personal injury.

⚠ NOTICE Situations which require Notice labels indicate procedures or operating instructions. Notice labels do not take the place of danger, warning or caution labels.

RECEIVING MACHINE

1. For **Professional** use only!
2. Always inspect the shipment of your machine for evidence of damage before signing the bill of lading. A signed bill of lading indicates the shipment was received in good condition.
3. If any of the equipment is received damaged, or if the number of pieces being delivered are in question, ask the freight company to make a notation on the freight bill. Do this for your own protection.
4. If you discover any HIDDEN DAMAGE after receipt of the shipment, ask the freight company to make an inspection promptly and file a claim with that company as soon as possible. Furnish as much supporting evidence as possible, such as a copy of the bill of lading, copy of the original invoice, and photographs.
5. Snap-on will cooperate and assist in the preparation and filing of claims on the customers behalf, however we cannot assume the responsibility for damage in transit nor will we be responsible for the actual collection of claims or replacement of lost or damaged merchandise.

DO THE FOLLOWING

WORK AREA

1. **Keep Work Areas Clean.**
   Cluttered areas and benches invite accidents.
2. **Avoid Dangerous Environment.**
   Don't use equipment in damp or wet locations.
   Keep work area well lit.
   Do not expose equipment to rain or caustic fumes.
3. **Keep non-operators away from the work area, especially children.**
4. **If necessary, temporarily shut off the machine until the area is clear.**

PERSONAL MATTERS

1. **Dress properly.** Do not wear loose clothing. They can be caught in moving parts. Non-skid footwear with metal reinforcement is recommended. Wear protective hair covering to contain long hair.
2. **Use safety glasses.** Face or Dust masks should be used because machining may create metalic dust.
3. **Stay alert.** Watch what you are doing.
   Use common sense.
   Do not operate machine when you are tired or while using medication.
4. **Disconnect equipment.** Before servicing and when changing blades and bits
5. **Avoid accidental starting.**
   Make sure switch is OFF when the machine is being plugged in.
6. **Don't overreach.**
   Keep proper footing and balance at all times.
7. **Check damaged parts.** Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is missing or damaged should be properly repaired or replaced before the lathe is used.
8. The use of any other accessories not specified in this manual may create a hazard.
9. Before connecting the lathe to a power source, be sure the voltage supplied is the same as that specified on the Serial Plate of the machine.

⚠WARNING

1. All operators should read and understand the complete operation manual before attempting to operate this machine. If any portion of this manual is unclear, contact the manufacturer for additional instructions before operating machine.
2. For Professional use only!
3. Never allow unskilled or improperly trained personnel to operate this equipment.
4. DO NOT operate this equipment under the influence of alcohol, drugs or medication which may alter judgement or physical performance.
5. All machine operators should wear proper clothing and eye protection.
6. All electrical installation and maintenance should be performed by a licensed electrician only. Use of unqualified personnel to perform electrical maintenance may result in unsafe conditions causing personal injury.
7. Electrical installation must conform to all national electrical codes as well as any state and local codes governing this machine.
8. Turn off and lock out electrical power before opening door or removing cover.
9. DO NOT operate this machine without covers and guards. Always replace and secure covers after any maintenance work is completed.
10. Never use cracked or damaged tool bits.
11. Keep hair and body parts out of rotating parts, belts and gearing.
12. DO NOT use this machine for turning or grinding any items other than, brake drums, discs or automotive related flywheels.
13. Never go under manufacturers recommended minimum thickness on rotors.
14. Never go over manufacturers recommended diameter on drums.
15. Maximum cut allowed .015 (.38mm).
16. Never allow non-operators to stand in designated machine work area, during machine operation.
17. Inspect all workpieces for cracks, defects or loose parts prior to refinishing. If defects are found do not mount on machine.
18. Check for runout or imbalance of all work pieces prior to machine start up.
19. DO NOT over tighten arbor nuts when mounting work pieces. Always mount and secure workpiece with tooling provided.
20. Never run machine unattended.
21. Always keep hands and fingers away from spindle while operating this machine.
22. Use only manufacturers recommended replacement parts and tooling.
23. Maintain this machine per the lubrication and maintenance sections of the manual.
24. It is your responsibility to keep this warning label in place and legible. Replacement labels are available from the manufacturer Order Part No. NVE 863389
25. Failure to heed these warnings may result in damage to the equipment, or failure resulting in property damage, personal or fatal injury.

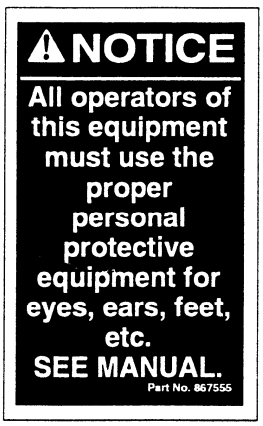
Part No.VNE 863389

Part No. VNE814485

Part No. VNE862302

Part No. VNE863266

Part No. VNE863261

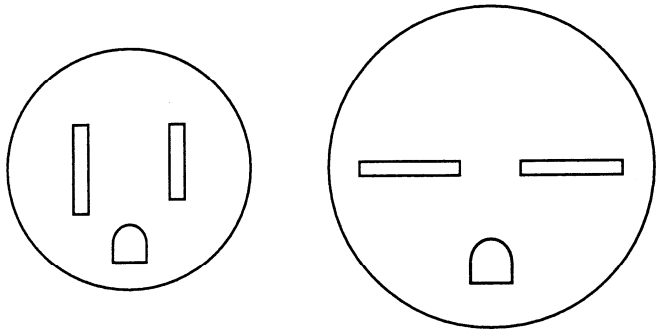


Part No. VNE867555

Part No. VNE867049

tions: 115V, 60 Hz, 1 Ph; 230V, 50/60 Hz, 1 Ph.
IMPORTANT: Before connecting the lathe to a power source (receptacle, outlet, etc.), be sure the power switch is in the "Off" position and the voltage source available is the same as that specified on the Serial plate of the lathe. A power source with voltage greater than that specified for the machine can result in **SERIOUS INJURY** to the user -- as well as damage to the lathe.

2. The 115 volt machine is equipped with a standard 3 conductor cord with a 3 prong grounding type plug that fits into the standard grounding type receptacle. Never do anything to defeat the grounding terminal on this machine. Replace only with the same style plug. If an extension cord is required, use a heavy duty type with a 3 prong grounding type plug. An under-sized cord will cause a drop in line voltage, resulting in loss of power and over-heating.
NOTE: Export machines will not have a plug. Only a pigtail will be provided — contact an electrical professional for proper plug connection.



115V **230V**

3. One of the following fused service lines is required for this machine — check the serial no. plate located at rear of your machine:
115V, 60 Hz, 1 Ph: 20 amp, 12 gage wire
230V, 50/60 Hz, 1 Ph: 15 amp, 14 gage wire

not protect any supply source equipment.

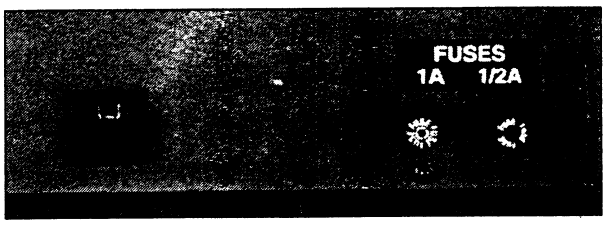


Figure 1

5. The 1 HP motor is protected by a thermal overload limit switch that must be manually reset if an overload occurs. Access to the reset button is through a hole in the base casting **(Figure 2).**

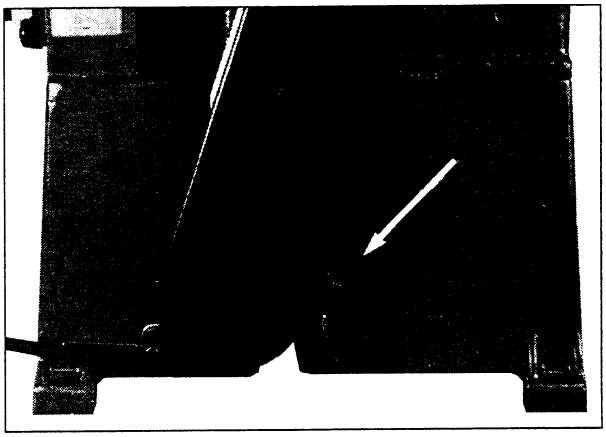


Figure 2

STANDARD EQUIPMENT (with EEBR301A or EEBR301AHV)

Part No.	
VNE869140	Disc Rotor Claw Assembly
VNE867110	Tool Bar for Drums
VNE302171	Tool Bit Holder for Drums
VNE866563	Carbide Bit Package
	4 Rotor Bit (3 cutting egdes)
	2 Drum Bits (2 cutting edges)
	Arbor Components
VNE204042	1" Arbor with Nut & Washer
VNE780300	Spring
VNE204210	Spacer, 1" Long
VNE204209	Spacer, 2" Long
VNE866390	Draw Bar

Part No.	
VNE866500	**Cone Set: Solid Type,1" Arbor**
VNE866446	Cone, 1.70 - 2.35
VNE866447	Cone, 2.25 - 2.90
VNE866448	Cone, 2.80 - 3.45
VNE866449	Cone, 3.35 - 4.00
VNE865822	**Cone Set for 1" Arbor Double Ended Cones, Solid Type**
VNE865823	Cone, 1.32 x 1.67
VNE865824	Cone, 1.36 x 1.71
VNE865825	Cone, 1.71 x 2.07
VNE865826	Cone, 2.07 x 2.44
VNE865827	Cone, 2.44 x 2.89

Part No.	
	Clamp Bells
VNE864366	4.25 O.D. (2 included)
VNE300108	5.75 O.D. (2 included)
	Miscellaneous
VNE111485	Vented Rotor Silencer
VNE866541	Solid Rotor Silencer
	Magnetic Band,1/4" x 4'
VNE111486	Automotive Drum Silencer
VNE105317	Hex Key .187 Short
VNE105378	Hex Key .125 Short
VNE105771	Hex Key .312 Short
VNE866443	Wrench, Draw Bolt
VNE780335	Wrench, Arbor Nut

- EEBR301A Combination Lathe
- EEBR302A Deluxe Bench Assembly

❑ **EEBR304A** **Deluxe Shop**
- EEBR301A Combination Lathe
- EEBR302A Deluxe Bench Assembly
- EEBR301A7 Light Truck Set
- EEBR301A6 Hubless Adapter Kit

❑ **EEBR305A** **Heavy Duty Shop**
- EEBR301A Combination Lathe
- EEBR302A Deluxe Bench Assembly
- EEBR301A7 Light Truck Set
- EEBR301A4 Arbor, 2"
- EEBR301A8 Medium Truck Kit

OPTIONAL EQUIPMENT

Part No.	
EEBR301A3	**11/16" Arbor** with Nut, Cone & Washer Bore Range .875 to 1.250 Drums & Rotors
VNE866546	**1 7/8" Arbor** with Nut & Washer (for Ammco Adapters)
EEBR301A4	**2" Arbor** with Nut & Washer
VNE865959	**Hubless Adapter Set Small Size for 1" Arbor Bore Range 1.87 - 3.00**
VNE865960	Rotor Locator
VNE865961	Cone, 1.875 x 3.125
VNE865962	Spacer
VNE865963	Locator Nut
VNE125110	Wrench, Spanner
VNE201023	**Hubless Adapter Set Std. Size for 1" Arbor Bore Range 2.03 - 3.93**
VNE415177	Rotor Locator
VNE415185	Cone, 2.12 x 4.00
VNE415186	Spacer
VNE201022	Locator Nut
VNE125110	Wrench, Spanner
EEBR301A5	**Hubless Adapter Set Large Size for 1" Arbor Bore Range 4.00 - 5.75**
VNE202023	Rotor Locator
VNE416185	Cone, 3.68 x 5.93
VNE416186	Spacer
VNE202022	Locator Nut
VNE116849	Wrench, Spanner
VNE862614	**Hubless Adapter Set Large Size for 2" Arbor Bore Range 4.00 - 5.75**
VNE865708	Rotor Locator
VNE416185	Cone, 3.68 x 5.93
VNE416186	Spacer
VNE202022	Locator Nut
VNE116849	Wrench, Spanner
EEBR301A6	**Hubless/Composite Rotor Adapter Kit**
VNE201023	Hubless Adapter Set, Std. Size
VNE863185	Backing Plate for 863186, 863187, 865712, 865698
VNE863186	Adapter Plate, Taurus/Sable
VNE863187	Adapter Plate, G.M. "W-Body"/Lincoln
VNE863188	Backing Plate, Chevy 1500 (for 863189)
VNE863189	Adapter Plate, Chevy 1500

Part No.	
	Composite Rotor Backing Plates for 201023 Adapters
VNE863189	Adapter Plate, Chevy 1500
VNE863188	Backing Plate, Chevy 1500 (for 863189)
VNE863186	Adapter Plate, Taurus/Sable
VNE863187	Adapter Plate, G.M. "W-Body"/Lincoln
VNE865712	Adapter Plate, Eagle Premier
VNE865698	Adapter Plate, Jeep Cherokee
VNE863185	Backing Plate for 863186, 863187, 865712, 865698
VNE865695	Cone, Toyota/Nova Rotor
VNE865696	Cone, Porsche Rotor
VNE865697	Cone, Saab Rotor
	Cones, Double Ended for 1" Arbor
VNE865823	Cone, 1.32 x 1.67
VNE865824	Cone, 1.36 x 1.71
VNE865825	Cone, 1.71 x 2.07
VNE865826	Cone, 2.07 x 2.44
VNE865827	Cone, 2.44 x 2.89
VNE866515	Cone, 2.82 x 3.18
VNE866516	Cone, 3.20 x 3.56
	Cones, Solid Type for 1" Arbor
VNE866445	Cone, 1.15 -1.80
VNE866446	Cone, 1.70 - 2.35
VNE866447	Cone, 2.25 -2.90
VNE866448	Cone, 2.80 -3.45
VNE866449	Cone, 3.35 -4.00
VNE866450	Cone, 3.90 -4.55
VNE866451	Cone, 4.45 -5.10
VNE866452	Cone, 5.00 -5.65
EEBR301A7	**Light Truck Set for 1" Arbor** Bore Range 3.90 - 5.65 **for Hubless Drums / Discs**
VNE866450	Cone, 3.90 - 4.55
VNE866451	Cone, 4.45 - 5.10
VNE866452	Cone, 5.00 - 5.65
VNE780300	Spring
VNE205301	Clamp Bell, 6.25 " (2 included)
VNE205300	Clamp Bell, 7.75"
EEBR301A8	**Medium Truck Set for 2" Arbor** Bore Range 2.15 - 6.10 **for Hubless Drums / Discs**
VNE866453	Cone, 2.15 - 2.80
VNE866454	Cone, 2.70 - 3.35
VNE866455	Cone, 3.25 - 3.90
VNE866456	Cone, 3.80 - 4.45
VNE866457	Cone, 4.35 - 5.00
VNE866458	Cone, 4.90 - 5.55
VNE866459	Cone, 5.45 - 6.10
VNE300085	Spring
VNE866202	Clamp Bell, 7.75 (2 included)
VNE780305	Spacer, 2" Long
VNE780301	Spacer, 3" Long

Part No.	
EEBR301A9	**Heavy Truck Set for 2" Arbor** Bore Range 5.45 - 8.30 **for Hubless Drums / Discs**
VNE866459	Cone, 5.45 - 6.10
VNE866460	Cone, 6.00 - 6.65
VNE866461	Cone, 6.55 - 7.20
VNE866462	Cone, 7.10 - 7.75
VNE866463	Cone, 7.65 - 8.30
VNE300085	Spring
VNE300084	Clamp Bell, 9.25 (2 included)
VNE780305	Spacer, 2" Long
VNE780301	Spacer, 3" Long
	Carbide Bits / Tool Holders
EEBR301A1	Rotor Bits - Pkg/10 PositiveRake (3 cutting edges)
EEBR301A11	Drum Bits - Pkg/10 (2 cutting edges)
VNE140822	Heavy Duty Tool Holder & Bit
VNE129005	Tool Bit for 140822
VNE780318	Solid Carbide Bit with .375 Shank
EEBR301A2	Mixed Rotor/Drum Bits (Pkg 4 Drum, 6 Rotor)
	Accessories
VNE866547	**Basic Bench**, Heavy Gauge, 22"W x 38"L x 71"H with Lower Tool Board, Chip Tray and Adaptor Hooks
EEBR302A	**Deluxe Bench**, Heavy Gauge, 22"W x 38"L x 71"H with 2 Tool Boards, Chip Tray and Adaptor Hooks
VNE866542	Truck Drum Silencer, 2 3/4" wide
VNE866543	Brake Drum Wear Limit Gage Range 6" - 22"
VNE866544	Rotor Micrometer, Range .30 - 1.30
VNE866545	Safety Shield
VNE302949	Tool Bar Extension, Small Drum Adap.
VNE111485	Vented Rotor Silencer
VNE866541	Solid Rotor Silencer Magnetic Band, 1/4" x 4'
VNE111486	Automotive Drum Silencer
VNE204969	T-Bar Holder
VNE866808	Disc Rotor Swirl Finisher, Non-Directional
VNE866809	Replacement Pads, 25 Count, 80 Grit
VNE866810	Replacement Pads, 25 Count, 120 Grit
EEBR301A12	Replacement Dampener Pads (Qty 2)
EEBR301A10	**Outboard Support Assembly**, w/Extended Length 2" Arbor

MOUNTING ON BENCH

1. If the optional deluxe bench Part No. EEBR302A was purchased, assemble per instructions on Page 18. Otherwise, select a bench that is about 30 inches tall and capable of supporting an operating brake lathe with its dynamic forces assume 425 lbs. static weight.

2. Remove the 4 bolts holding the lathe to the shipping pallet. Lift the lathe using the eye bolt provided **(Figure 3)**. Do not lift the machine by the spindle, belt pulley cover, or either of the disc or drum cross slides. This could damage the lathe and would void the warranty on the unit.

3. Mount lathe to the bench using 3/8" bolts thru the four feet of the lathe. Secure with washers and nuts from the bottom side of the bench.

4. Replace eye bolt with 1/2-13 set-screw provided **(Figure 4)**. Turn until flush with surface.

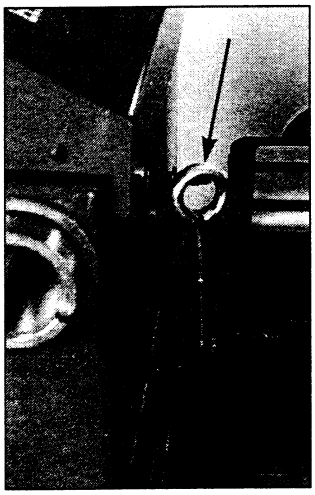


Figure 3

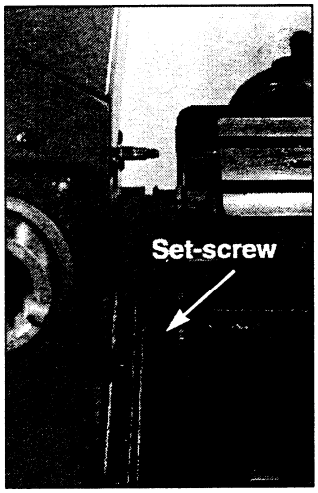


Figure 4

5. Install handwheel handles and motor bracket handle.

PREPARING FOR USE

1. Remove the rust-preventative on the machine ways with an approved commercial solvent. The dove tail ways should be kept dry and should always be free from grease, oils, etc.

2. Unwrap all adapters and accessories. Clean with an approved commercial solvent. Check for any damage during shipment such as burrs, nicks, scratches, etc. Remove minor niches and scratches with a fine file or sharpening stone. Apply a protective coat of very light oil to prevent parts from rusting.

3. Hang adapters on a tool board to protect from damage while not in use.

4. Unpack work light. Mount on top of spindle housing **(Figure 5)**. Plug into outlet provided on rear of electrical control box.

5. Plug machine into appropriate electrical outlet. Refer to the Electrical Requirement Section if there is any doubt regarding the correct procedure. To turn on the lathe, pull the POWER switch **(Figure 5)**. The spindle should turn clock-wise when viewing the tapered end.

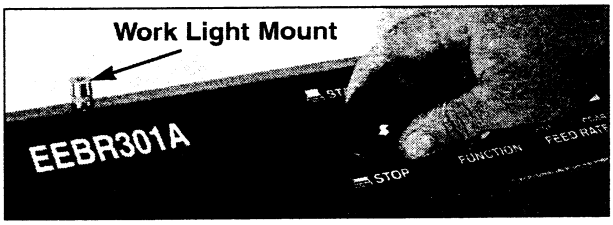
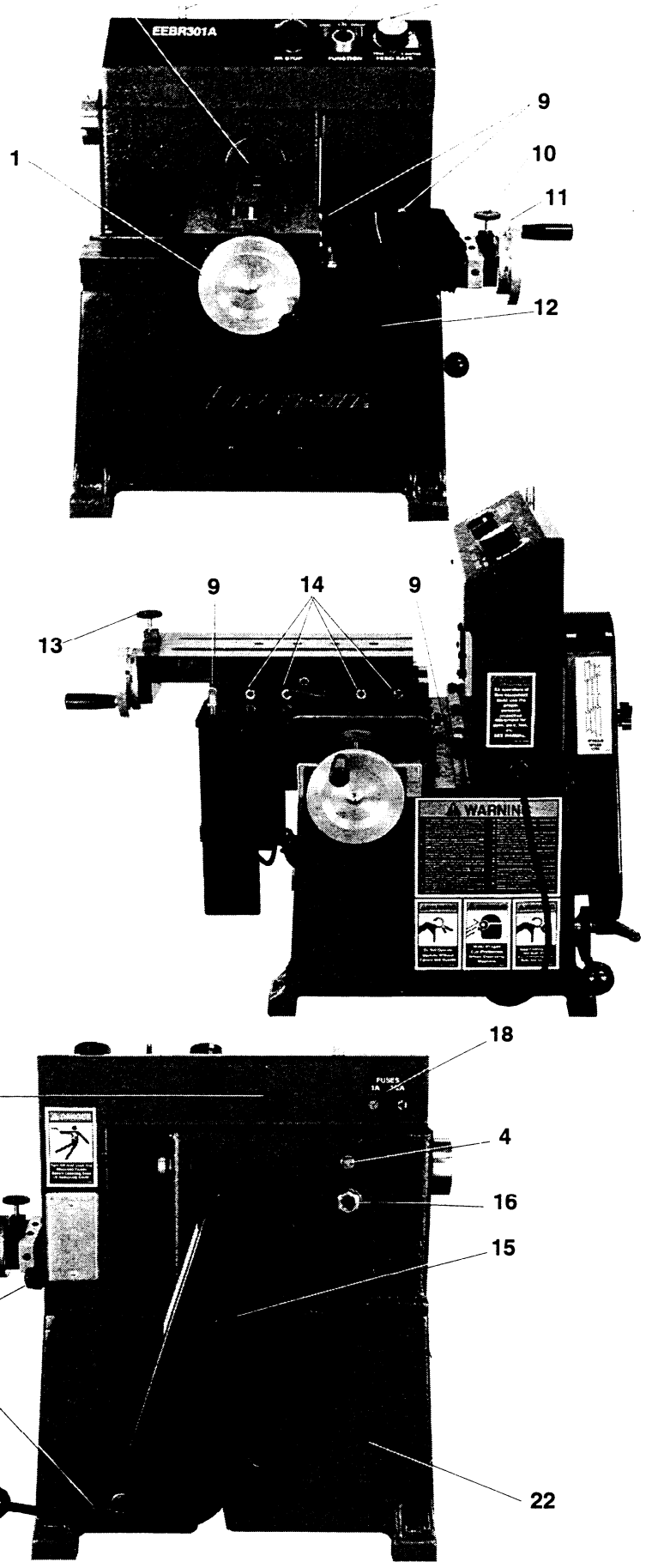


Figure 5

1. **Disc Slide Handwheel** (cross feed)
2. **Spindle**
3. **Drum Slide Gib Adjustment Screws and Lock** (behind slide)
4. **Oil Fill Plug**
5. **Work Light Mount**
6. **Main Power Switch & Emergency Stop**
7. **Function Switch** — selects the drum or disc slides
8. **Feed Rate Control** for both drum and disc
9. **Limit Switches** — one for the drum slide and one for the disc slide to prevent overtravel during power feed operation.
10. **Drum Slide Feed Screw Lock**
11. **Drum Slide Handwheel** (traverse feed)
12. **Variable Speed DC Gear motors** (behind cover)
13. **Disc Slide Feed Screw Lock**
14. **Disc Slide Gib Adjustment Screws & Lock**
15. **Belt Guard and Knob**
16. **Oil Level Sight Glass**
17. **Outlet for Work Light**
18. **Fuses for DC Circuit Board**
19. **Power Cord**
20. **Motor Bracket Clamp**
21. **Motor Bracket Handle**
22. **Spindle Motor** (inside base)



SPECIFICATIONS

Motor.....1 HP
Spindle speeds.....60, 120, 170 RPM
Feed speeds, infinitely variable 0 to —
- **Per min.**.....1.62" (41 mm)
- **Per rev. @ 60 RPM**.....0.027"
- **Per rev. @ 120 RPM**.....0.013"
- **Per rev. @ 170 RPM**.....0.009"

Rotor size
- **Maximum diameter**.....24" (609 mm)
- **Maximum thickness**.....2.5" (63 mm)

Drum size
- **Minimum diameter**.....6" (152 mm)
- **Maximum diameter**.....28" (711 mm)
- **Maximum depth**.....9" (229 mm)

Machine Net weight.....405 lbs. (184 kg)
- **Shipping weight**.....535 lbs. (243 kg)

Lathe Bench (optional)
- **Size**.....22" x 38" x 71"
- .....(559 x 965 x 1803 mm)

Weight.....140 lbs. (64 kg)

Snap-on is committed to product innovation and improvement and therefore reserves the right to change product specifications without notice.

EEBR301A as standard equipment and is capable of handling work pieces up to 150 lbs. If the work piece is heavier the 150 lbs, it will be necessary to use the optional 2" Heavy Duty Arbor.

2. Insert arbor into spindle taper **(Figure 6)**. **IMPORTANT:** Both the arbor and the spindle taper must be clean, otherwise arbor will have run out and the taper may be damaged. Align pin in arbor with slot in main spindle. Screw in draw bar **(Figure 7)** and tighten **(Figure 8)**. **DO NOT** tighten excessively. Driver pin will prevent arbor from slipping. To remove arbor easily (arbor has a non-locking taper) loosen draw bar slightly and tap lightly on the end of the draw bar. Hold the arbor with one hand to prevent arbor from falling while unscrewing draw bar.

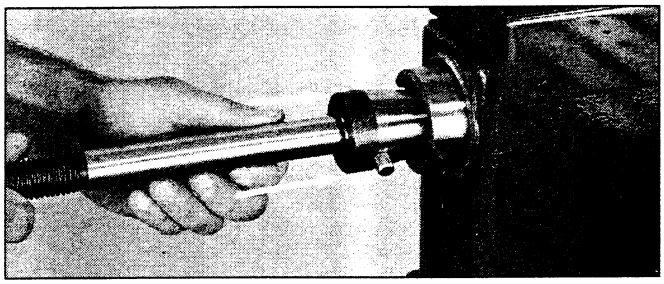


Figure 6

Figure 7

Figure 8

⚠ NOTICE

3. Don't hammer upward or downward on draw bar as damage may occur to both arbor and draw bar.

MAKE CERTAIN POWER SWITCH IS IN THE OFF POSITION before changing the spindle speed.

1. The 3 spindle speeds on the EEBR301A are 60, 120, & 170 RPM's. To select the desired speed, remove the belt guard by unscrewing the belt guard knob at the rear of machine **(Figure 9)**. Loosen the belt tensioning lock handle **(Figure 10)**. Lift the motor bracket handle which will raise the motor and allow the belt to be moved to a different pulley groove **(Figure 11)**.

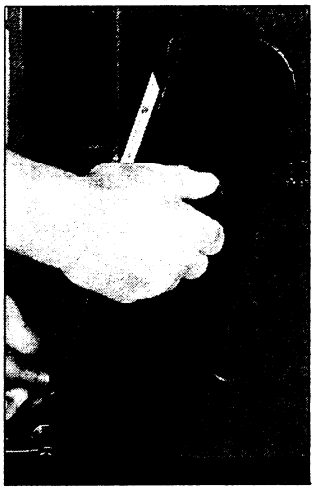


Figure 9

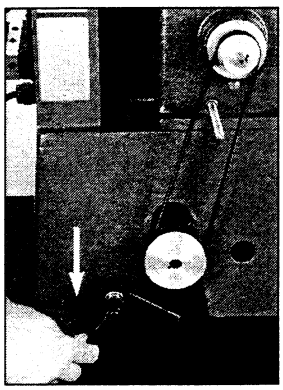


Figure 10

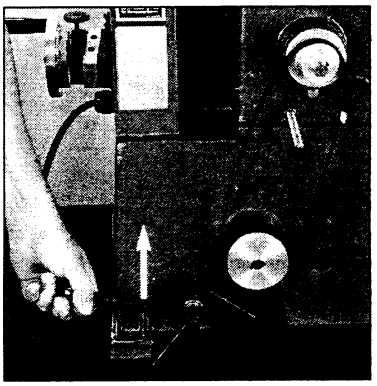


Figure 11

2. The outer pulley groove (high speed) is for the smaller rotors and drums, and the inner pulley groove (low speed) is for the very large rotors and drums. Snap-On recommends that the operator start out in the middle pulley groove **(Figure 12)** and then adjust the desired spindle speed upward or downward from that point. Belt must be aligned in the same upper and lower pulley groove position

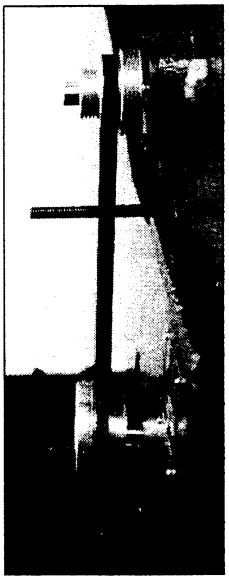
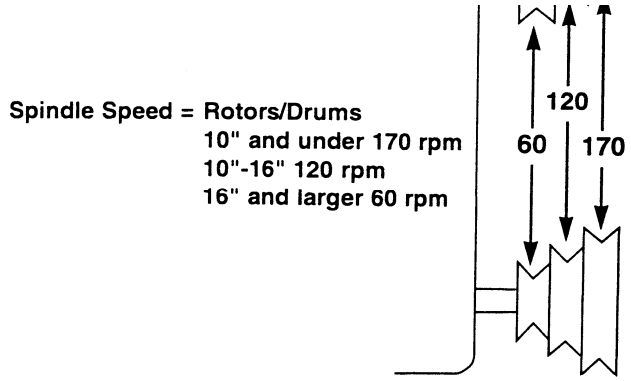


Figure 12

3. Proper tension is applied to the belt by lowering the motor bracket handle and allowing the weight of the motor to tension the belt. No additional downward force is required. Tighten the motor bracket clamp by moving the lever upward. **DO NOT** overtighten belt.

4. Before starting the lathe replace the belt guard and belt guard knob.



SELECTING THE FEED DIRECTION

1. The 800 Series Function Switch selects the proper feed direction **(Figure 13)**. With the switch setting on **DISC**, the machine will feed across the face of the rotors. When the switch is set on **DRUM** the slide will feed left to right for machining drums.

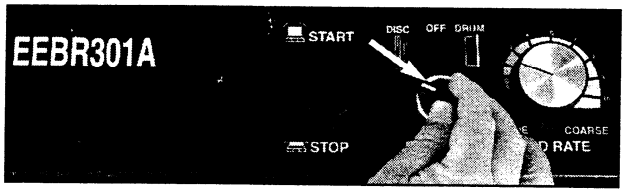


Figure 13

2. Whenever the machining operation has been completed, always move the switch into the neutral "OFF" position.

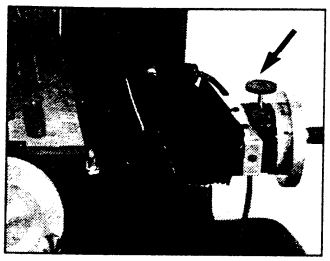
SELECTING THE FEED RATE

1. The EEBR301A features an infinitely variable feed on both the disc slide and the drum slide. This will allow the operator to totally control surface finish and machining time for drums and discs. Refer to chart below for the spindle speed/feed rate ratio to determine the optimum feed rate.

2. The Feed Rate Knob **(Figure 14)** can be adjusted from a setting of "0" (no feed) to "10" (fast feed), or any position in between. The lower the number, the slower the feed, and the smoother the finish -- the higher the number, the faster the feed, and the coarser the finish.

Figure 14

lowing:



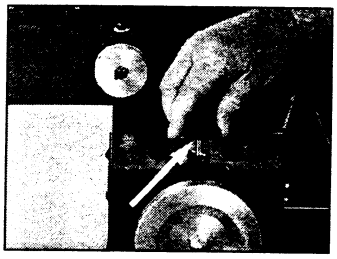


Figure 15 **Figure 16**

1. Using the knob, position (lift and rotate) the cross pin in the upper groove (perpendicular to leadscrew axis).
2. The handwheel will rotate freely. Position the start of the tool for the cutting operation.
3. Turn the drum/disc switch to the desired position.
4. Using the knob, position (lift and rotate) the cross pin in the lower groove (parallel to leadscrew axis).
5. The tensioned stem will engage and movement will begin. The handwheel will not rotate in the feed mode.
6. When cut is complete, turn off disc/drum feed switch. Position cross pins in the unlocked position and move slide with handwheel.

DEPTH OF CUT DIAL

1. The drum depth-of-cut micrometer is located on the cross slide handwheel **(Figure 17)**. This handwheel is used for moving the tool bit into the brake drum. The dial has a scale to indicate amount of material to be removed from the drum diameter.

2. The divisions on the handwheel dial are 0.002" and the scale is direct reading. For example, if the scale is increased .016" (8 divisions) there will be .008" removed from the side of the drum increasing the diameter by .016". No calculations have to be made by the operator.

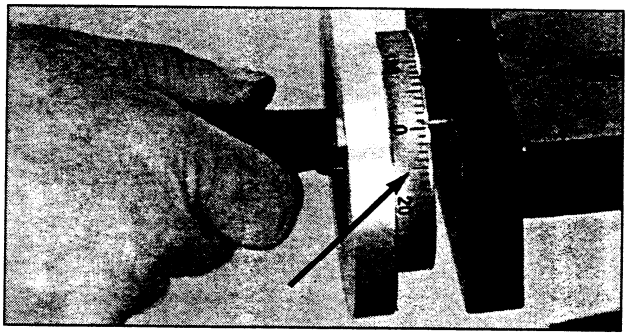


Figure 17

The Drum Bar is machined at both ends. The end of the bar with the machined slot and the two set screws is used for larger drums and flywheels. The end of the bar that is reduced in width is for machining small drums. Two drums bits are included with the the lathe, therefore is is recommended that a bit is installed in each end.

1. Insert the drum bit in the Tool Bit Holder, Part Number 302171 **(Figure 18)**.
2. Assemble the bit clamp and set screw **(Figure 19)**. Tighten securely.

Figure 18

Figure 19

3. Place the Tool Bit Holder Assembly in the end slot of the drum bar and tighten the two set screws **(Figure 20).**
4. Insert the other drum bit in the slot provided in the narrow end of the drum bar. Make certain the bit is inserted as far as possible **(Figure 21)**.
5. Tighten set screw **(Figure 22)**.

Figure 20

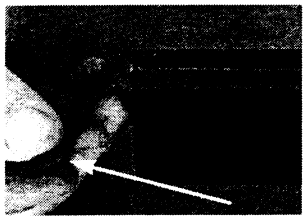


Figure 21

Figure 22

PREPARING DRUMS FOR MACHINING

1. First, measure the diameter of the drum with a micrometer to determine that the drum will be within maximum reboring limits after reconditioning. The drum should also be in good general condition. **THE MAXIMUM REBORING LIMIT DIMENSION IS CAST INTO THE DRUM BY THE MANUFACTURER. NEVER EXCEED THIS LIMIT OR THE DRUM COULD FAIL IN USE RESULTING IN BRAKE FAILURE.**
   IMPORTANT: Clean the drum before mounting. Use a wire brush or a rotary wire brush in a drill to thoroughly clean all mounting surfaces. Make certain all rust is removed from both inside and outside bolt patterns and that the inside diameter of the center bore is absolutely clean and free from any burrs.

clamps of the same size, a tapered cone, a spring, and spacers. Make certain the mounting pads of the bell clamps are clean and free of nicks, burrs, etc. Mount the drum as shown:

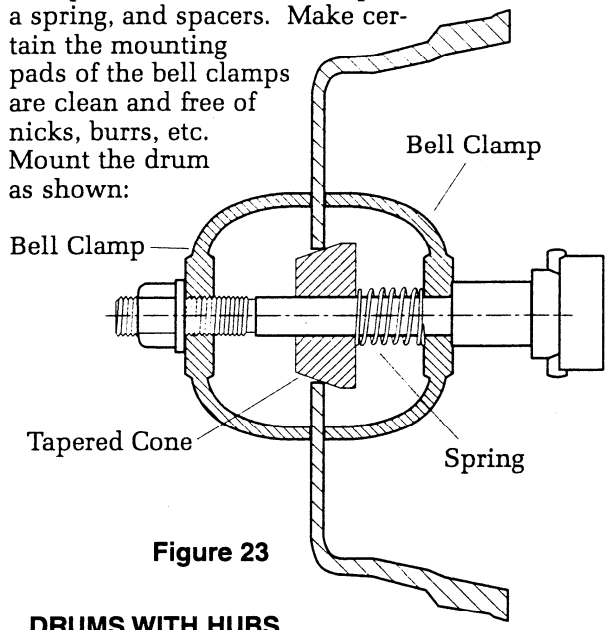


Figure 23

2. **DRUMS WITH HUBS** are mounted using 2 double ended cones.

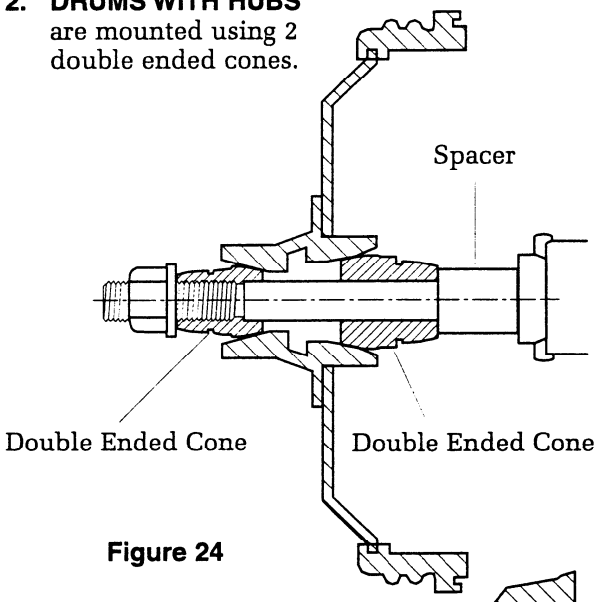


Figure 24

3. **Optional Hubless Adapter Set**

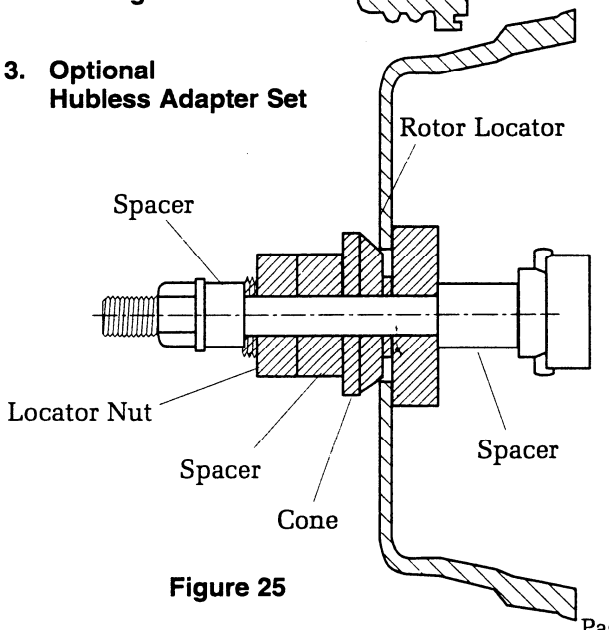


Figure 25

⚠WARNING

Wear proper eye protection when operating machine.

1. After the drum is mounted on the arbor, wrap and secure the drum silencer band tightly around the drum **(Figure 26)**. Cover as much of the outside of the drum as possible.

2. Assemble and mount the drum tool bar on the slide as illustrated **(Figure 27 & 28)**.

Figure 26

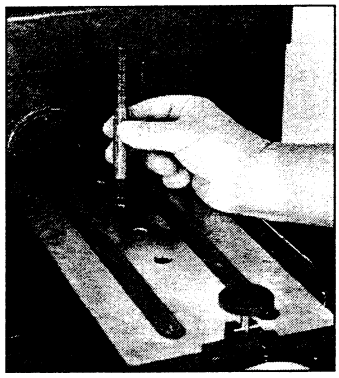


Figure 27

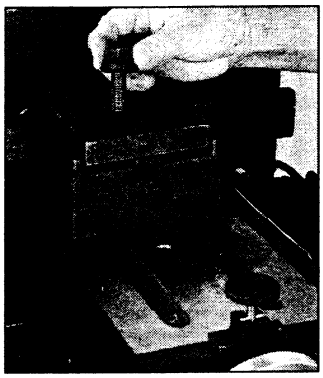


Figure 28

3. Position the tool bar by loosening the tool bar clamp nut **(Figure 29)** and sliding the tool bar inward toward the drum until the tool bit is close to the surface that is going to be machined. The entire tool bar assembly may also be swiveled to achieve the best cutting position.

⚠CAUTION

Make certain the set screws and tool bar clamp nut are tight before machining.

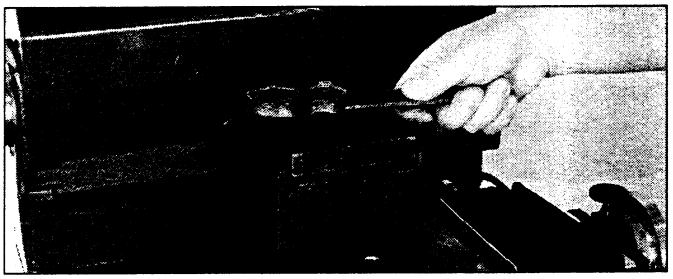


Figure 29

4. On smaller drums position the tool bar and bit at the outer edge of the drum to insure that the tool bar will not contact the spindle housing during machining. It may be necessary to use spacers to position the drum further out on the arbor to allow clearance for the tool bar.

Loosen the arbor nut and rotate the drum one-half turn. Retighten the nut, turn the lathe on and make a second scratch cut, stop the lathe. If the first and the second scratch cuts are opposite each other (180° apart) remove the drum from the arbor. Check the mounting adapters and the arbor for nicks, burrs, or chips. Clean if necessary. If the first and second scratches are side by side, proceed in machining the drum.

6. Turn the traverse feed handwheel **(Figure 30)** until the deepest worn groove of the drum is aligned with the point of the tool bit. Start the MOTOR, advance the tool bit into the bottom of the groove by turning the cross feed handwheel **(Figure 31)** counterclockwise. Note handwheel reading then back off (clockwise) 1/2 turn. Move cutter to inside edge of surface to be machined using the traverse feed handwheel.

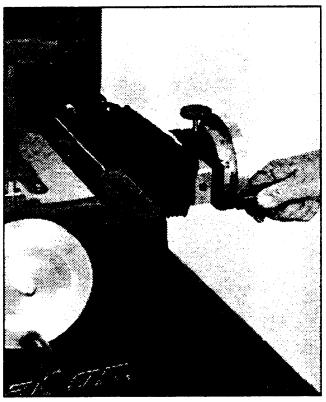


Figure 30

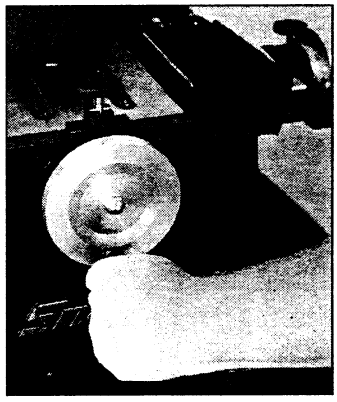


Figure 31

7. Reset the depth of cut by turning the cross feed handwheel to the reading obtained in **"No. 6"** above plus .003". Maximum depth of cut is .015" per pass. Lock the cross feed slide lock **(Figure 32)**. This will keep the slide in a fixed position for an accurate machining job.

Figure 32

8. Engage the drum feed screw lock. Set feed rate to "0" and position function switch to **DRUM**. Slowly increase feed rate until desired feed is obtained.

9. After cut is complete turn function switch to "Off" and shut off main power. Examine drum for complete clean-up. If additional cuts are required repeat steps 7 and 8.

10. If the drum is to be finished in a single pass use a slow feed rate. If a roughing cut is being made then a faster feed rate may be used for the first cut and a slow feed rate for the final cut.

1. Before machining, each disc rotor should be carefully inspected 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. Using a micrometer check the thickness of the rotor in at least three points around the circumference about 1" (2.54 cm) in from the outer diameter. If the rotor thickness varies between readings it should be machined. However, if the thickness is less than the minimum established by the rotor manufacturer, or it will be after resurfacing, the rotor should be replaced.
THE MINIMUM REFINISHED THICKNESS DIMENSION IS CAST INTO THE ROTOR. NEVER MACHINE BEYOND THIS LIMIT OR THE DISC COULD FAIL IN USE RESULTING IN VEHICLE BRAKE FAILURE.

IMPORTANT: Clean the disc before mounting. Use a wire brush or a rotary wire brush in a drill to thoroughly clean all mounting surfaces. Make certain all rust is removed from both inside and outside bolt patterns and that the inside diameter of the center bore is absolutely clean and free from any burrs.

MOUNTING DISC ROTORS

1. **HUBLESS DISCS** are mounted using 2 bell clamps of the same size, a tapered cone, a spring, and spacers. Make certain the mounting pads of the bell clamps are clean and free of nicks, burrs, etc. Disc Rotors should be mounted as close to the spindle as possible.
THE ARBOR NUT SHOULD NOT BE OVER-TIGHTENED.

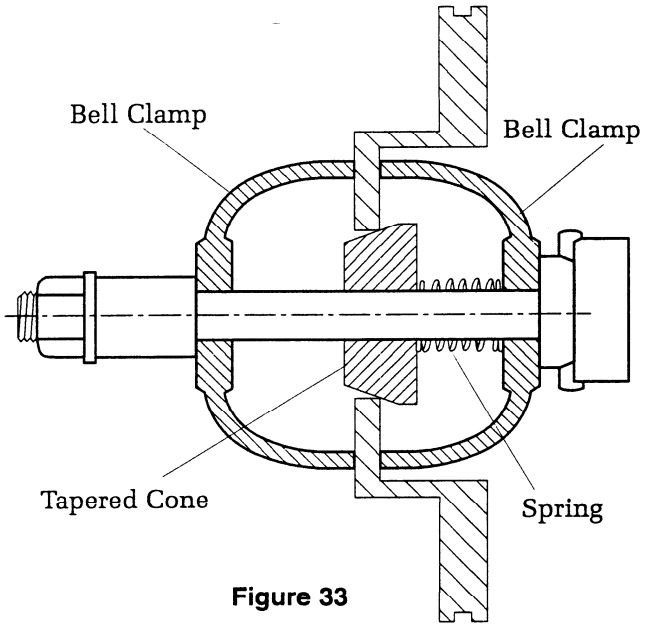


Figure 33

2. **DISCS WITH HUBS** are mounted using 2 double ended cones.

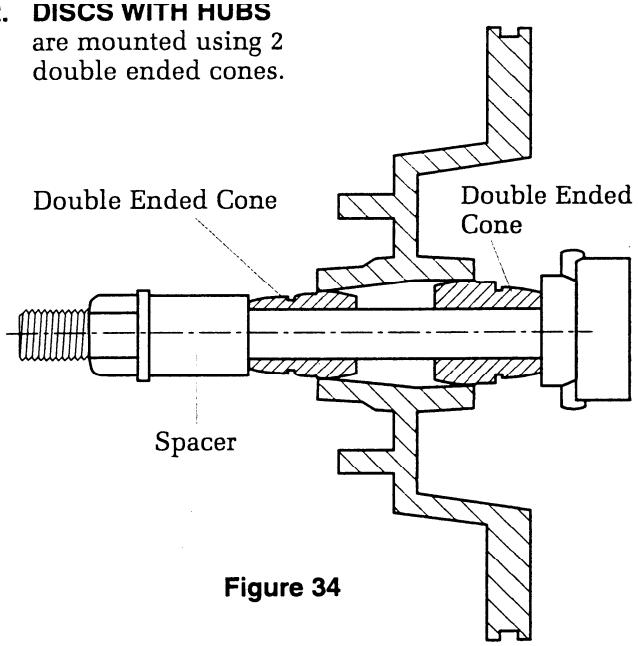


Figure 34

3. **Optional Hubless Adapter Set**

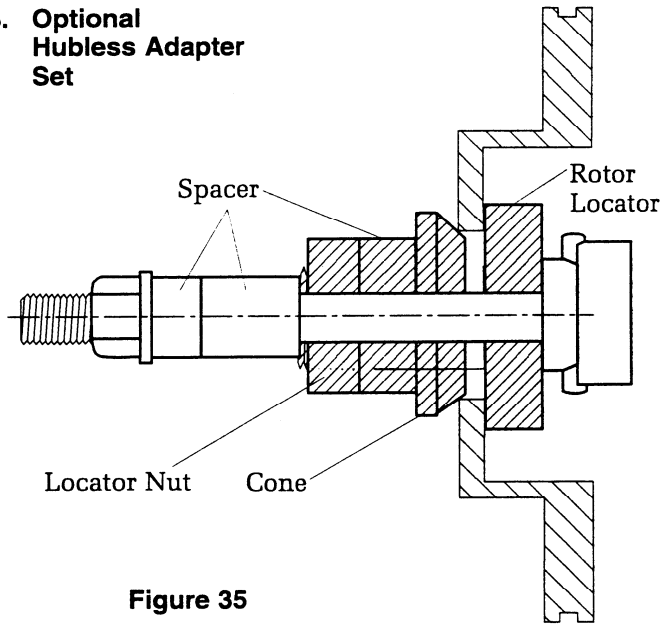


Figure 35

Wear proper eye protection when operating machine.

MOUNTING TWIN CUTTER ASSEMBLY

1. The Twin Cutter Assembly with Dampener, Part Number VNE869140, is shipped assembled. Position traverse slide to the extreme left **(Figure 36)** and the cross slide in toward the spindle housing.

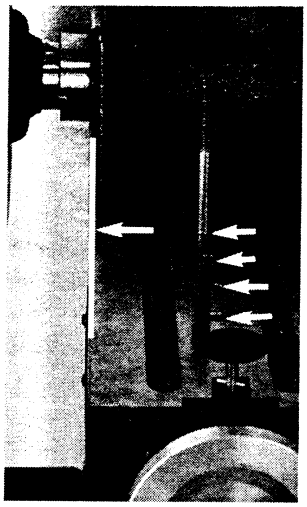


Figure 36

2. Before mounting the twin cutter assembly be sure the twin cutter arms are positioned wide enough to straddle the disc rotor. **(Figure 37)** Mount the twin cutter assembly to the slide using the stud, spacer block and flange nut. **(Figure 38).** Select the hole that allows the cutters to be just inside the smallest diameter to finish and still be square with the slide. **(Figure 36)** Tighten flange nut to hold twin cutter assembly securely. **(Figure 38).**

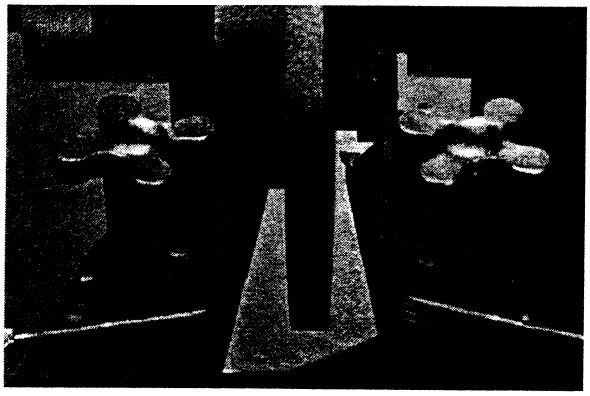


Figure 37

Figure 38

Twin Cutter. The rotor bits have three cutting edges -- make certain that the widest side of the bit is on the top. This will allow for the proper clearance angle while machining.

1. To install the rotor bits, move the cross slide assembly out towards the operator to clear the rotor. Place one torque spring in the forward (Engage) position until dampener arm clears the tool bit. **(Figure 39)** Change that tool bit. **(Figure 40)** Repeat the procedure for the other bit. **(Figure 41).**

Figure 39

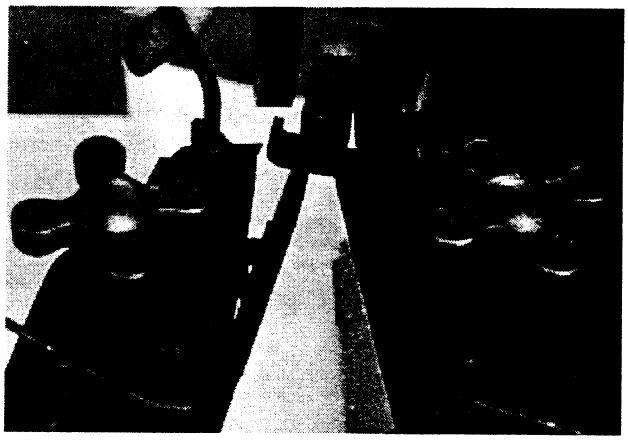


Figure 40

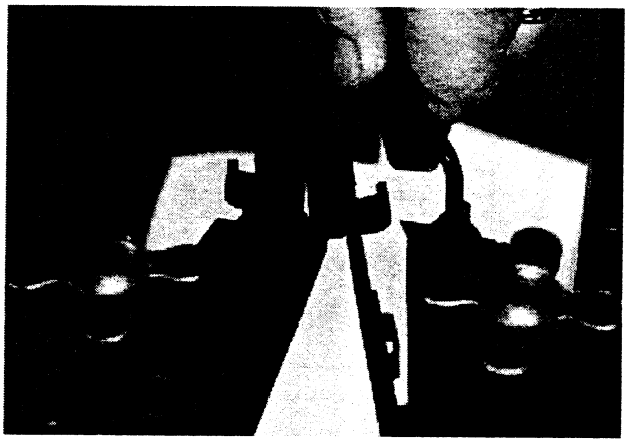


Figure 41

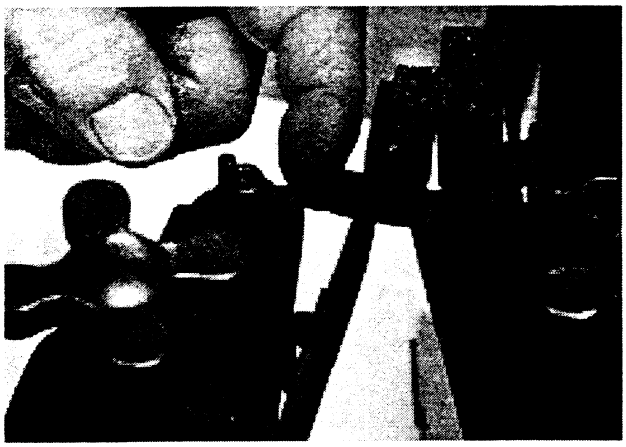


Figure 42

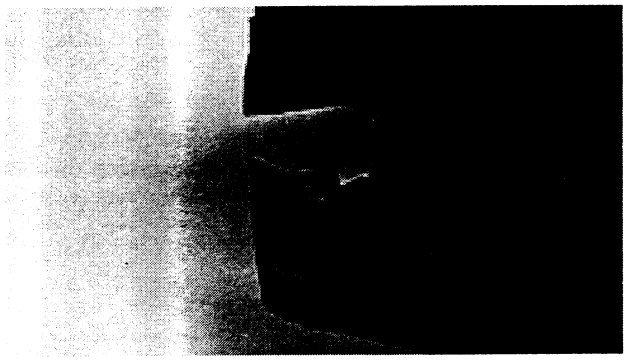


Figure 43

3. Tighten set screw securely.

4. Repeat procedure for the installation of the other bit **(Figure 41).**

assembly so that the tool bits are about in the center of the rotor surface.

2. Start spindle and bring one of the tool bits into contact with the rotor face using the traverse slide. Once contact has been made return traverse slide to original position. (Be sure twin cutter arms are secured with clamp knobs).

3. Loosen arbor nut and rotate disc 180° being careful not to rotate adapters. Tighten arbor nut and make another scratch cut as in step 2 above after moving cross slide position about .100".

4. If the first and the second scratch cuts are opposite with each other (180° apart) remove the rotor from the arbor. Check the mounting adapters and arbor for nicks, burrs, or chips. Clean if necessary remount, and run scratch test again.

5. If the first and second scratches are side by side, proceed in machining the disc.

silencer band. Do not use both at the same time.

1. Manually adjust the traverse slide over until the Twin Cutter Arms are centered over the rotor. Lock the traverse slide using the lock knob on the back side of the slide **(Figure 44).**

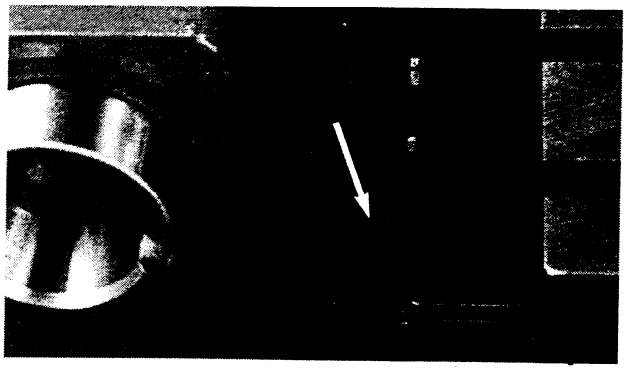


Figure 44

2. Position the Dampener arms in the Retract Position and move the cross slide in until the rotor bits are aligned with the thickest part of the rotor. Start the spindle motor.

3. Slightly loosen the 2 - twin cutter arm lock knobs **(Figure 45).** Turn each micrometer dial on the twin cutter to adjust the individual tool bits until they just touch the rotor **(Figure 46).** Set the micrometer sleeves to zero **(Figure 47).**

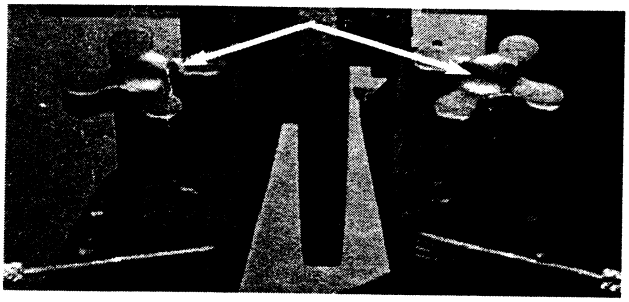


Figure 45

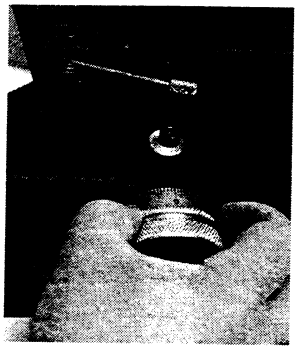


Figure 46

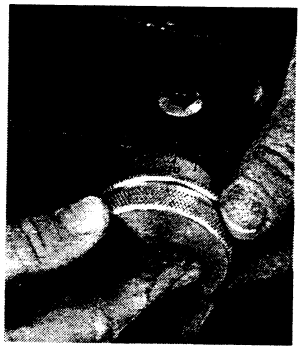


Figure 47

(Maximum depth of cut is .015" per side) Securely tighten cutter arm lock knobs. Engage Dampener Arms now if machining a non vented or composite rotor **(Figure 48).**

6. Engage disc slide feed screw lock. **(Figure 49).**

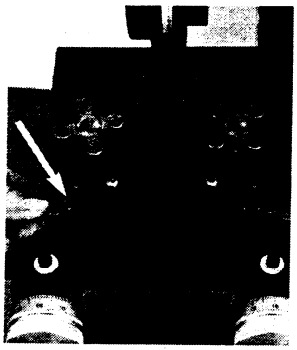


Figure 48

Figure 49

7. Set feed rate to "0" and position function switch to **DISC.** Slowly increase feed rate until desired feed is obtained. After cut is complete, turn Function Switch to "Off" and shut off main power. Examine disc for complete clean up. If additional cuts are required, repeat Steps 4 - 7.

8. After machining is complete, apply a non-directional finish to rotor.

1. Mount the flywheel on the 1" arbor **(Figure 50)**. It may be necessary to use a smaller optional centering cone if the pilot bore is smaller than 1.7" If the pilot bore of the flywheel is smaller than will fit on the 1" arbor, it will be necessary to use the optional Small Hole Flywheel Kit, part no. VNE868208.

2. Using the handwheel for the drum slide, move the slides to the position closest to the workpiece, then back it off three (3) or four (4) turns. Using the handwheel for the disc slide, turn in toward the body of the lathe as far as possible, then back it off three (3) or four (4) turns.

3. Position the drum tool bar and mounting cradle on the mounting surface with the tool bar and cradle facing the workpiece **(Figure 51)**. Select the preferred mounting hole that will allow the tool bar to reach the innermost surface to be machined while being mounted at approximately a 45° angle to the contact surface.

4. Install the threaded stud, mounting cradle, tool bar, and top plate. Secure using the flange nut provided. Move the tool bar to the innermost contact surface and tighten the nut on the cradle assembly **(Figure 51)**.

5. At this time you should be wearing safety glasses for eye protection. Continue to wear the glasses until the machining procedure is completed.

6. Perform a scratch test to verify the accuracy of the mounting. With the scratch test completed, set the on/off switch to the "on" position.

7. Using the handwheel for the disc slide, position the tool bar with the cutting bit at the innermost contact surface **(Figure 52)**. Lock the disc feed hand nut. Having previously determined the amount of material you plan to remove from the workpiece, use the handwheel for the drum slide to set the desired depth of cut and tighten the drum slide tension lock.

8. Set the Feed Switch to the disc position. If for any reason the workpiece should bind on the cutting tool and stall the machine, perform the following steps:
   a. First, immediately turn the MOTOR switch to the "off" position.
   b. Back the cutting tip away from the workpiece.
   c. Reset the depth of cut to a slightly smaller amount.
   d. Re-start the machining process.

9. When the machining function is complete, set the function switch to the "off" position. If additional cuts are desired, repeat the procedure. Otherwise, set the on/off switch to the "off" position and remove the workpiece from the arbor. Clean the adapters and tools used.

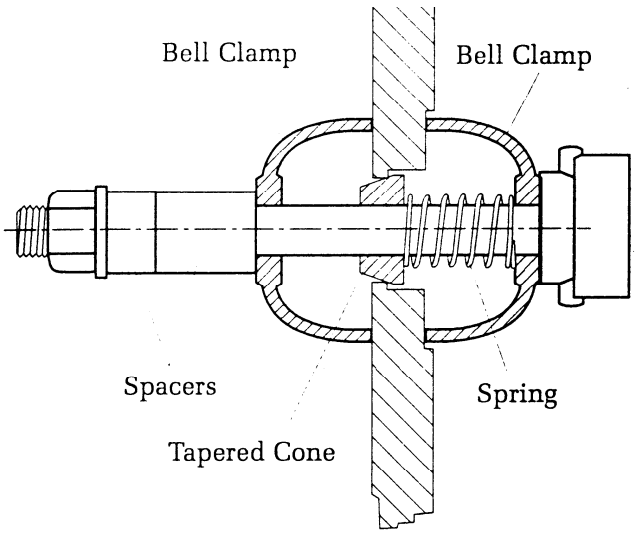


Figure 50

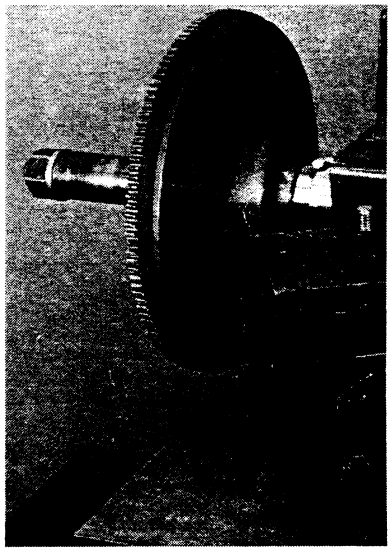


Figure 51

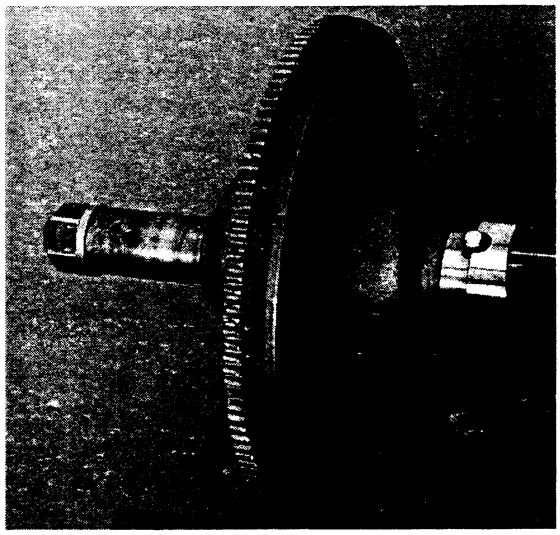


Figure 52

1. **DAILY:**
Clean all surfaces to remove chips and dirt. Use a brush or a shop vac. To prevent metal in machine bearings **NEVER** use compressed air to clean the EEBR301A Brake Lathe.

1. **WEEKLY**
Apply dry graphite lubricant to the dovetail ways. DO NOT use grease or oil on the ways or leadscrew since this collects chips and causes accelerated wear.

1. **SPINDLE**
The spindle is supported on a pair of wear life tapered roller bearings that run in an oil bath. The spindle housing is filled with #40 non-detergent motor oil. The oil will not require changing under normal use. To change oil, remove belt guard to access drain tube. Remove cap on tube and drain oil into container. Replace cap on drain tube. Clean area around fill plug, remove plug and fill with 14 oz. #40 non-detergent motor oil.

2. **MOTORS**
The 1 HP spindle motor and the two DC gear motors are totally enclosed and do not require maintenance.

3. **DOVETAIL WAYS GIB ADJUSTMENT**
If it becomes necessary to adjust the gibs on the dovetail ways it can be easily done using a 5/32" hex wrench and a 1/2" open end wrench. Loosen the hex nuts **(Figure 53)** then turn the set screws in just until there is resistance **(Figure 54).** While holding the set screw from turning, tighten the hex lock nut. When all screws are properly adjusted there should be no side to side play in the slide and the handwheel should turn easily with only light resistance. Overtightening the gibs will cause premature failure of the gearmotor, nut, and leadscrew.

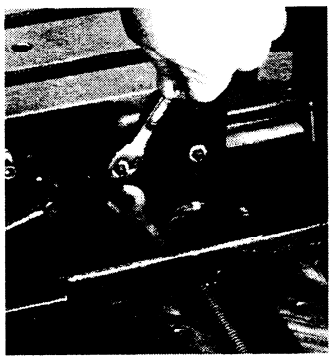


Figure 53

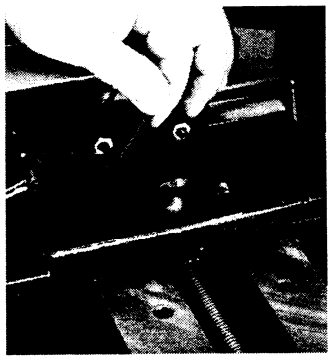
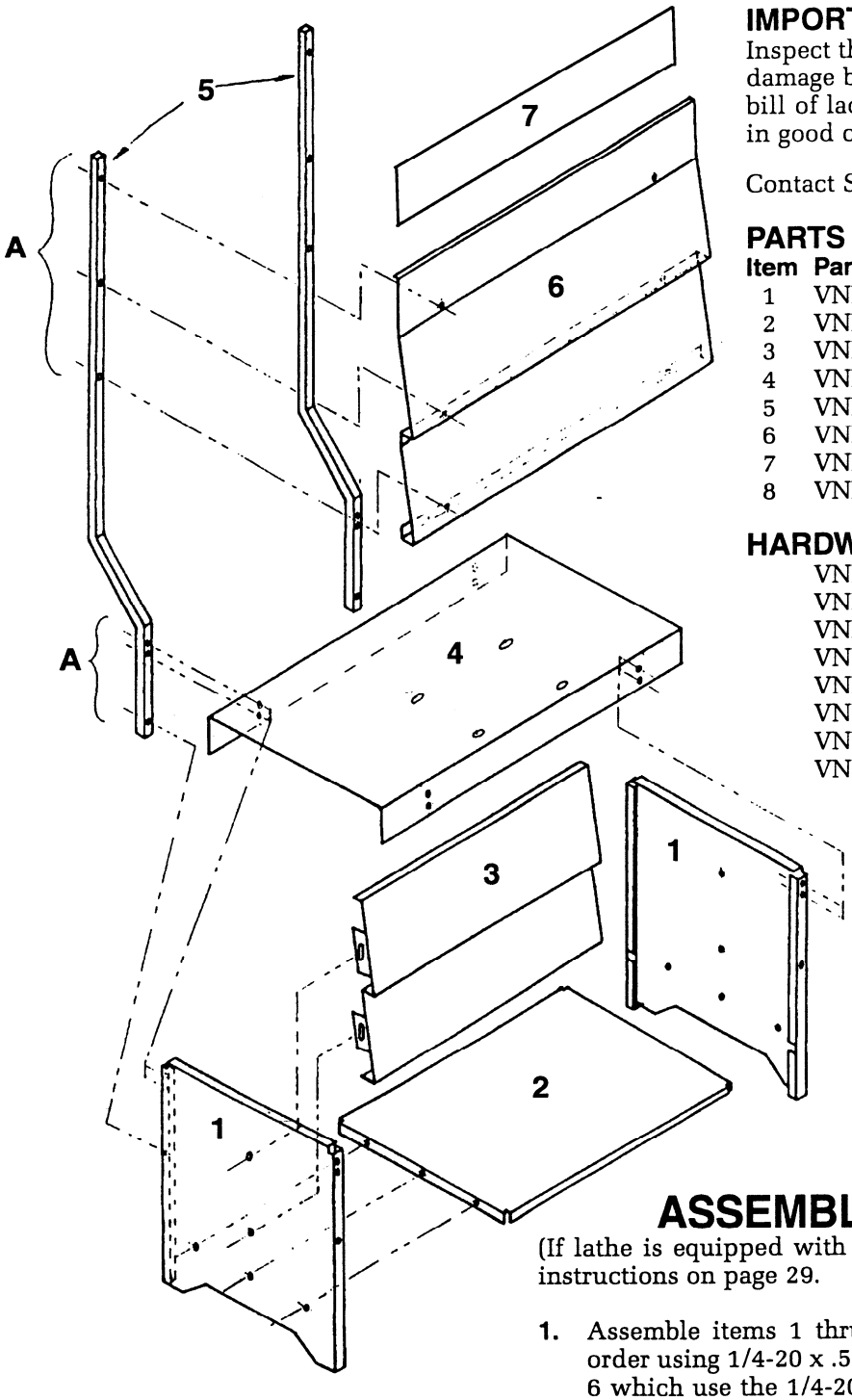


Figure 54

4. **DRIVE BELT**
When drive belt becomes cracked or frayed, it should be replaced.

5. **CARE OF ARBORS AND ADAPTERS**
The arbors, adapters, and the spindle are precision made and must be cared for to assure quality brake jobs every time. When the adapters are not in use, they should be wiped completely clean, and sprayed daily with a light rust-preventative product like WD40.
DO NOT store any of the adapters loose in a box or container where they might become nicked or scratched. This will cause incorrect rotor or drum alignment, resulting in inaccurate machining. Store all adapters on the individual hooks supplied with the machine.



VNE866547
BASIC BENCH

NOTE: Does not include Items No.'s 5 & 6 as shown above.

IMPORTANT:

Inspect the shipment of your bench for evidence of damage before signing the bill of lading. A signed bill of lading indicates the shipment was received in good condition.

Contact Snap-On concerning any parts shortages.

PARTS LIST

Item	Part No.	Description	Qty.
1	VNE866532	Leg	2
2	VNE866531	Shelf	1
3	VNE866538	Lower Tool Board	1
4	VNE866530	Top	1
5	VNE866540	Upright	2
6	VNE866539	Upper Tool Board	1
7	VNE869162	Decal (Not Pictured)	1
8	VNE866553	Chip Tray (Not Pictured)	1

HARDWARE

VNE805199	1/4-20 x 1.75 Machine Bolt	12
VNE807137	1/4-20 x .50 Machine Bolt	14
VNE801615	1/4 Hex Nut	26
VNE803330	3/8-16 x 2.00 Machine Bolt	4
VNE803325	3/8 Hex Nut	4
VNE801636	3/8 Flat Washer	4
VNE866550	Rubber Pads	4
VNE808556	Hooks for Tool Boards	22

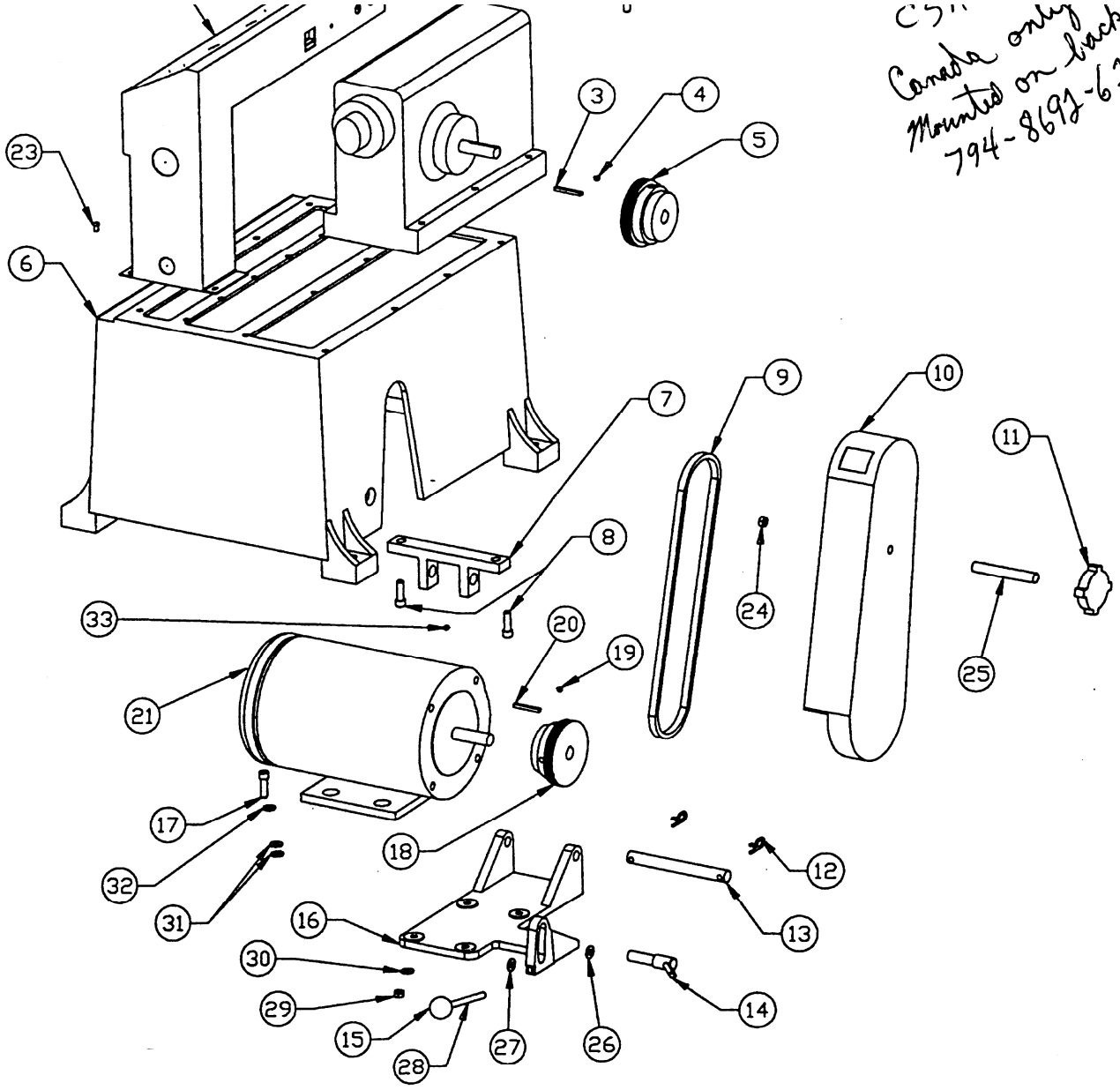
NOTE:
A - use 1/4-20 x 1.75 Machine Bolt with Nut

1 thru 6 - use 1/4-20 x .50 Machine Bolt with Nut

ASSEMBLY INSTRUCTIONS

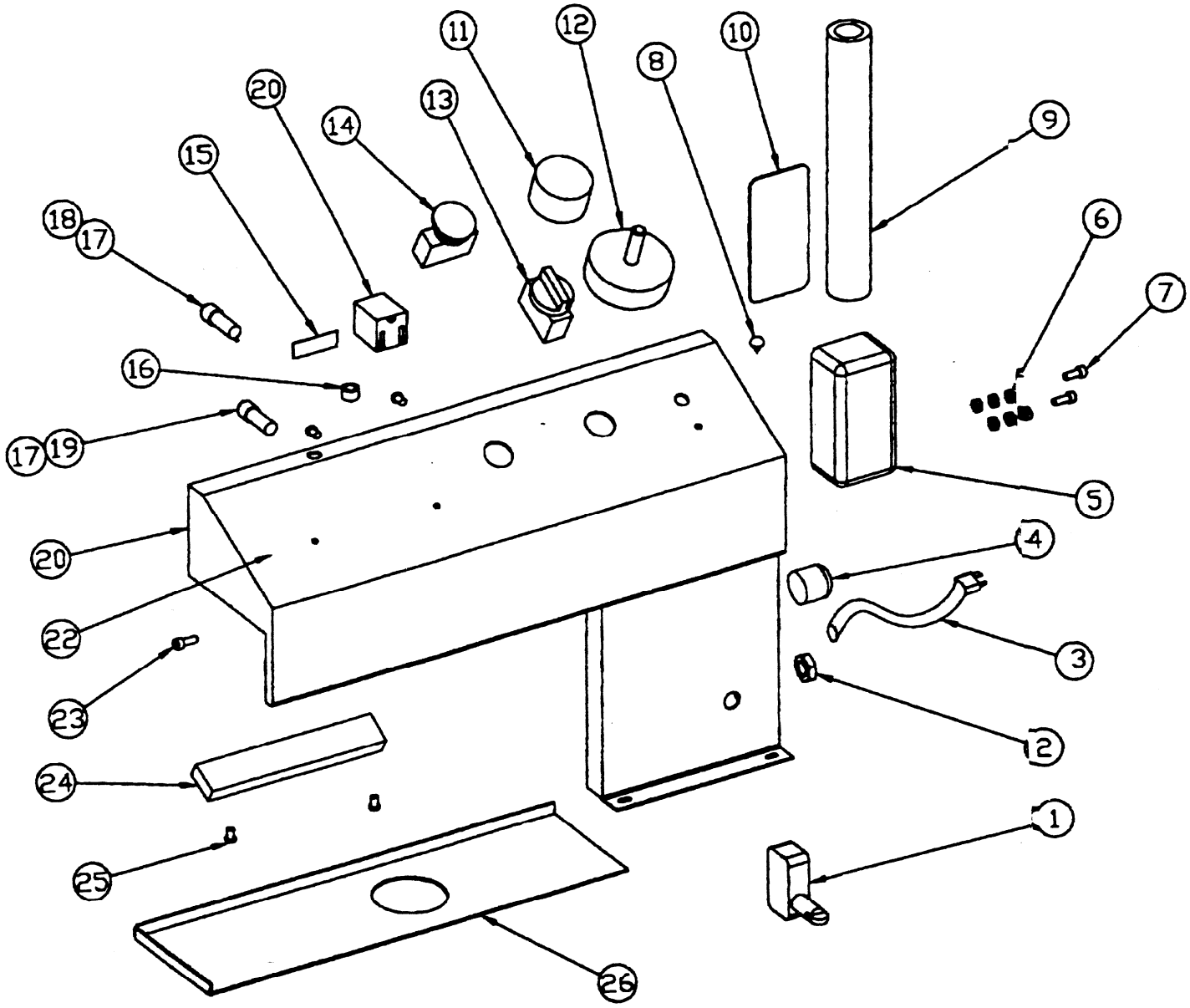
(If lathe is equipped with outboard support assemble according to instructions on page 29.

1. Assemble items 1 thru 6. Items are assembled in numerical order using 1/4-20 x .50 bolts and nuts for all parts except 5 and 6 which use the 1/4-20 x 1.75 bolts and nuts. Leave all fasteners loose until all parts are assembled.
2. Tighten all fasteners securely.
3. Place the four rubber pads in line with the four holes in the top of the bench. Using proper lifting equipment place the 800 Series Brake Lathe on top of the pads.
4. Fasten the lathe to the bench using the four 3/8-16 x 2.00 bolts, nuts and washers.
5. Arrange the hooks on the upper and lower tool board as desired.

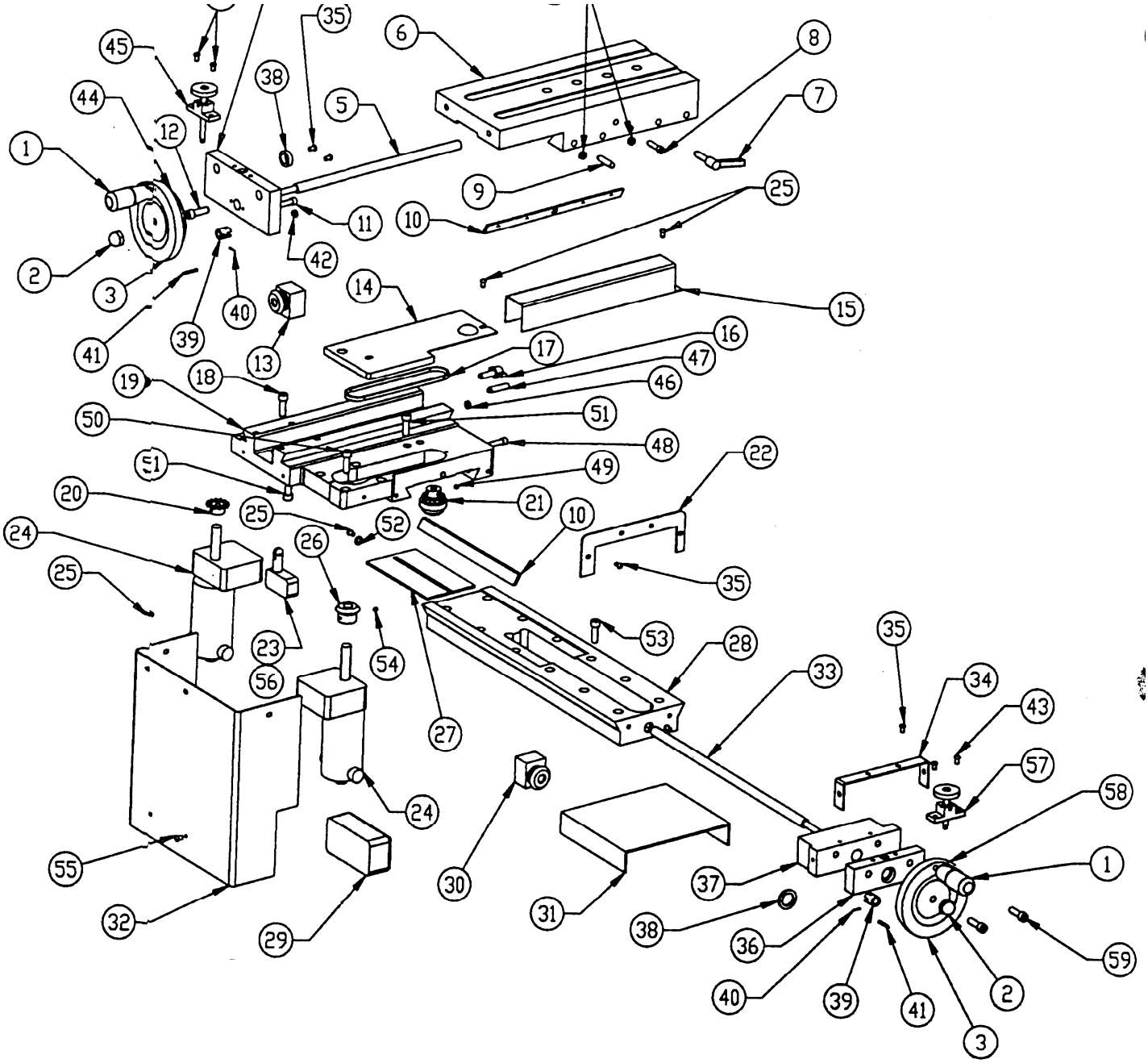


Item	Part No.	Description	Qty.
1	VNE869051	Control Box Assembly	1
2	VNE866349	Spindle Housing Assembly	1
3	VNE866491	Key	1
4	VNE105379	SSS 1/4-20 x .37	2
5	VNE867969	Spindle Pulley	1
6	VNE866313	Base	1
7	VNE866621	Motor Mounting Bracket	1
8	VNE801583	SHCS 5/16-18 x 1.00	2
9	VNE867669	Belt	1
10	VNE866381	Belt Cover	1
11	VNE866422	Knob	1
12	VNE866623	Hitch Pin	2
13	VNE866622	Motor Bracket Rod	1
14	VNE866431	Adjustment Handle	1
15	VNE803016	Ball Knob	1
16	VNE866379	Motor Mounting Plate	1
17	VNE804747	H.H.C.S. 5/16-18 x 1.25	4
18	VNE867968	Motor Pulley	1
19	VNE105379	SSS 1/4-20 x .37	2
20		Key (Supplied with Motor)	1
21	VNE140524	Motor 1 HP 110/220V	1
22	VNE801583	SHCS 5/16-18 x 1.00	6
23	VNE804764	BHCS 10-32 x .37	4
24	VNE806360	Jam Nut 3/8	1
25	VNE866418	Belt Guard Stud	1
26	VNE801636	Washer 3/8	1
27	VNE866498	Spacer	1
28	VNE866527	Motor Adjustment Handle	1
29	VNE803082	Hex Nut 5/16	4
30	VNE801661	Lock Washer	4
31	VNE868624	Rubber Washer	8
32	VNE805197	Washer, 5/16	4
33	VNE801620	S.S.S. 1/4-20 x .25	2

CONTROL PANEL ASSEMBLY



Item	Part No.	Description	Qty.
1	VNE866555	Limit Switch	1
2	VNE866793	Strain Relief Nut	1
3	VNE808361	Power Cord	1
4	VNE801469	Strain Relief	1
5	VNE111666	Junction Box	1
6	VNE808374	Hex Nut, #10-32	6
7	VNE804765	BHCS, 10-32 x	2
8	VNE805079	Hole Plug	1
9	VNE868755	Conduit	10"
10	VNE141357	Junction Box Cover	1
11	VNE860740	Dial	1
12	VNE860679	DC Controller	1
13	VNE867550	Disc/Drum Feed Switch	1
14	VNE867549	On/Off Switch	1
15	VNE868443	Fuse Label	1
16	VNE804678	Light Mounting Adapter	1
17	VNE866589	Fuse Holder	2
18	VNE862269	1 Amp Fuse	1
19	VNE867975	1/2 Amp Fuse	1
20	VNE866803	Receptacle	1
21	VNE869052	Control Box	1
22	VNE869053	Control Box Label	1
23	VNE120065	BHCS #10-32 x	3
24	VNE866820	Terminal Strip	1
25	VNE809766	BHCS #8-32 x .375	2
26	VNE869080	Control Box, Floor	1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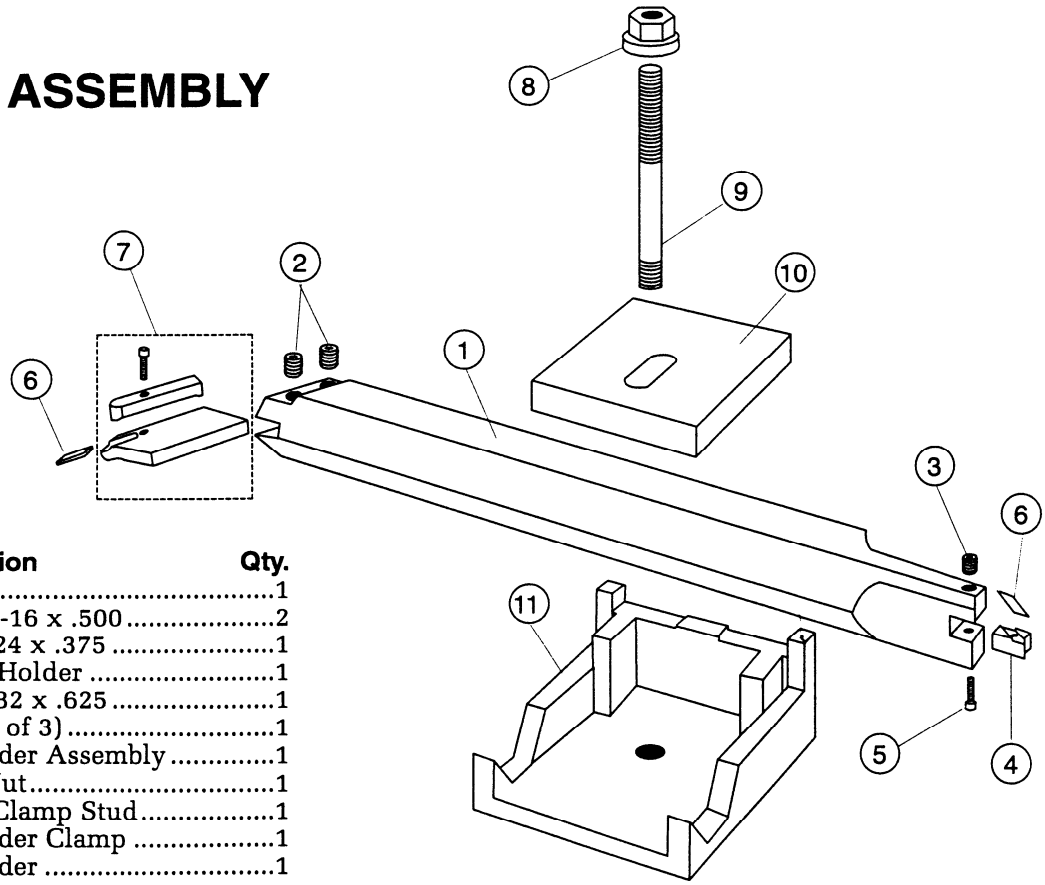
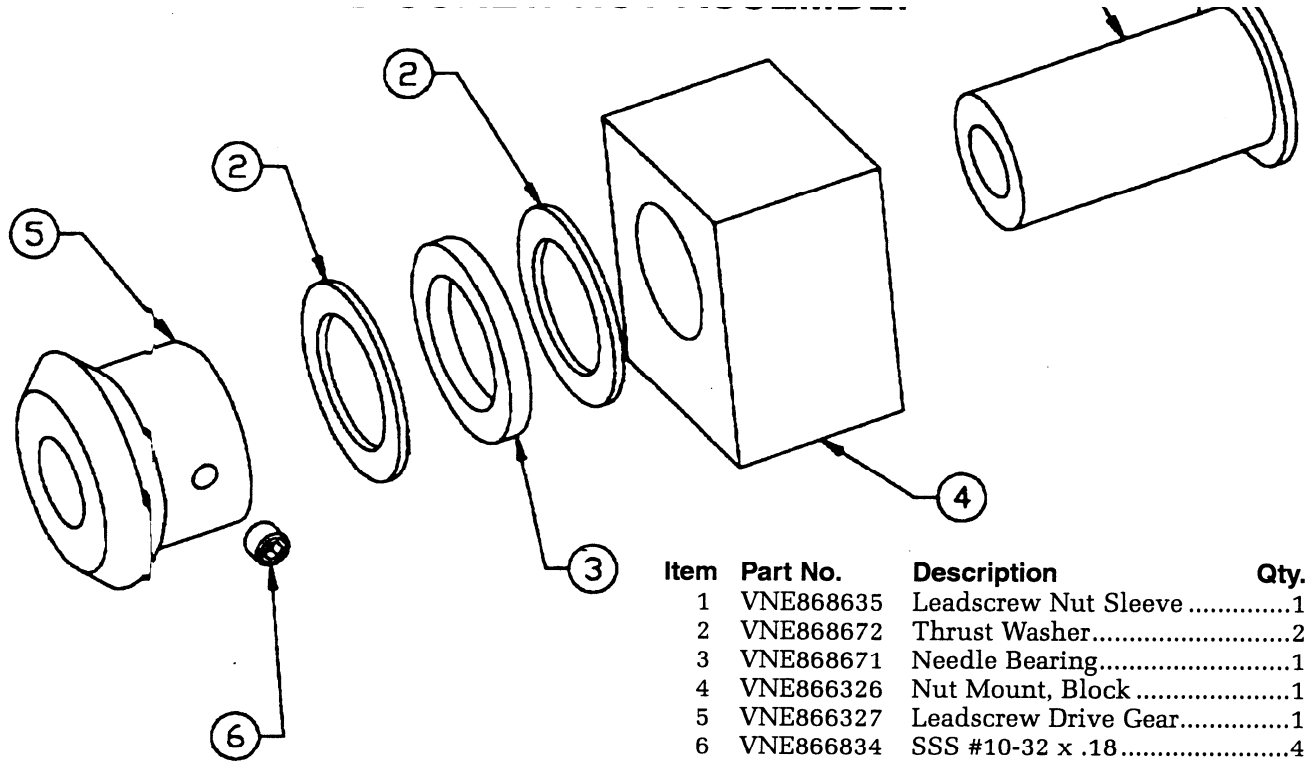
2	VNE806301	Acorn Nut, 5/16	2
3	VNE866324	Hand Wheel	2
4	VNE867965	Disc Slide Plate	1
5	VNE868636	Disc Lead Screw	1
6	VNE866317	Disc Slide	1
7	VNE867976	Upper Gib Lock Handle Assy	1
8	VNE804791	SHCS 5/16-18 x .75	1
9	VNE867962	Disc Slide Gib Screw	4
10	VNE866322	Gib Plate	2
11	VNE801609	SHCS 1/4-20 x 1.00	1
12	VNE869057	BHCS 5/16-18 x .75	2
13	VNE868634	Disc Slide Lead Screw Nut Assy	1
14	VNE866348	Drive Chain Guard	1
15	VNE866421	Upper Lead Screw Guard	1
16	VNE868010	Lower Gib Lock Handle Assy	1
17	VNE866800	Chain Assembly	1
18	VNE814806	SHCS 10-32 x 1.75	4
19	VNE866319	Drum Slide	1
20	VNE866336	Drive Motor Gear Assembly	1
21	VNE866340	Gear Link Shaft Assembly	1
22	VNE868070	Way Cover Retaining Flange	1
23	VNE866555	Limit Switch	1
24	VNE866335	D.C. Gear Motor	2
25	VNE804764	BHCS 10-32 x .375	8
26	VNE866338	Drive Sprocket	1
27	VNE866378	Lower Lead Screw Guard	1
28	VNE866315	Way Strip	1
29	VNE866162	Electric Box	1
30	VNE868674	Drum Slide Lead Screw Nut Assy	2
32	VNE866420	Motor Cover Guard	1
33	VNE868637	Drum Lead Screw	1
34	VNE868071	Way Cover Retaining Flange	1
35	VNE120065	BHCS 10-32 x .25	10
36	VNE867964	Drum Slide Plate	1
37	VNE868080	Drum Slide Spacer Block	1
38	VNE867966	Bearing	2
39	VNE868979	Spacer	2
40	VNE863901	Roll Pin, 1/8 x .500	2
41	VNE801268	Pointer	2
42	VNE801329	Hex Nut 1/4-20	1
43	VNE804765	BHCS 10-32 x .62	4
44	VNE868638	Disc Hand Wheel Label	1
45	VNE868986	Rotor Feed Lock Assembly	1
46	VNE867807	Hex Nut 5/16-18	10
47	VNE111726	Drum Slide Gib Screw	4
48	VNE801002	BHCS 5/16-18 x 1.00	1
49	VNE803596	SSS 1/4-20 x .25	1
50	VNE804794	SHCS 10-32 x .50	4
51	VNE809807	SHCS 1/4-20 x .62	4
52	VNE114160	Flat Washer #10	1
53	VNE803346	SHCS 5/16-18 x 1.50	12
54	VNE111539	SSS 10-32 x .25	2
55	VNE866035	BHCS 6-32 x .37	2
56	VNE866566	Limit Switch Cover	1
57	VNE868987	Drum Feed Lock Assembly	1
58	VNE868639	Drum Hand Wheel Label	1
59	VNE862224	SHCS 1/4-20 x 2.75	2

TOOL BAR ASSEMBLY

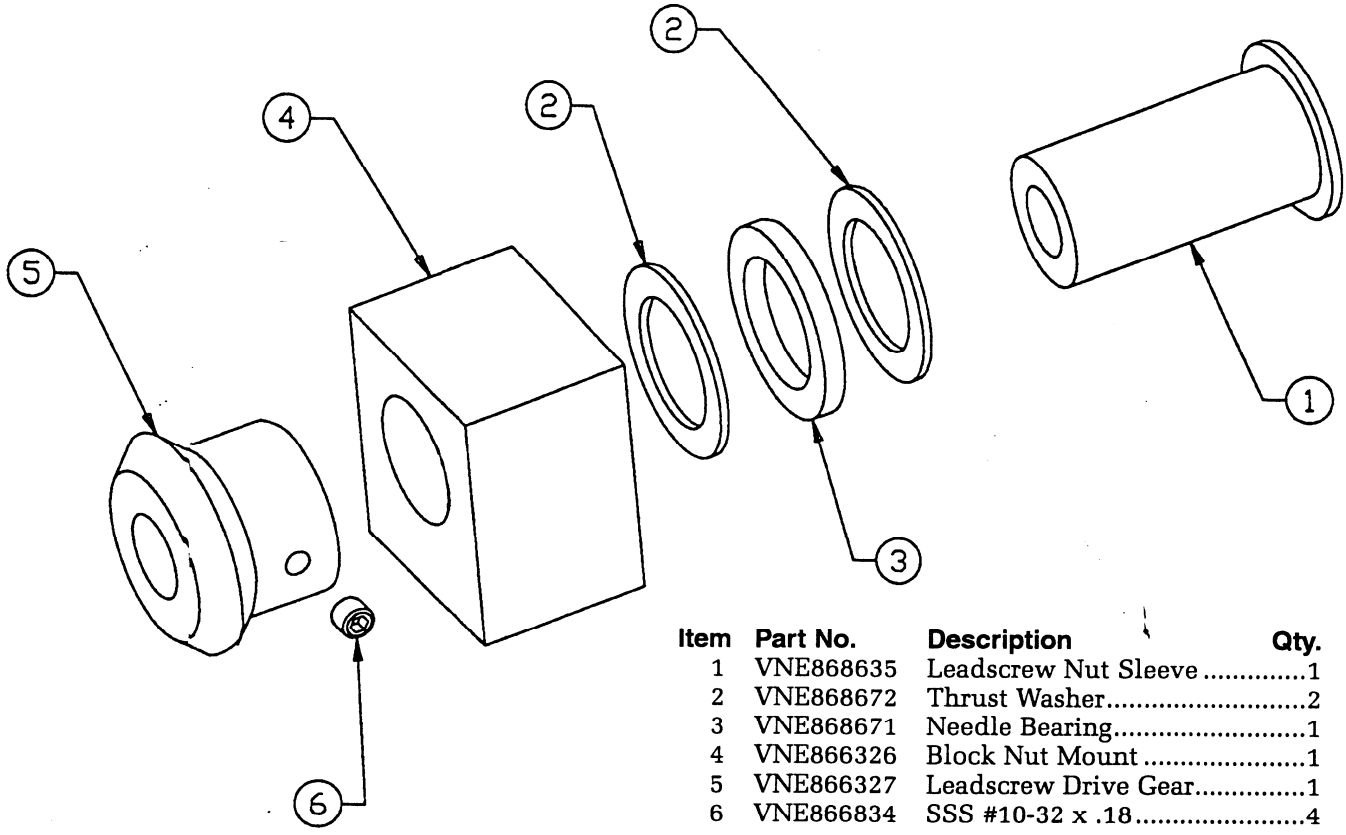


Item	Part No.	Description	Qty.
1	VNE866806	Tool Bar	1
2	VNE801621	SSS .375-16 x .500	2
3	VNE803007	SS .312-24 x .375	1
4	VNE866807	Tool Bit Holder	1
5	VNE803102	SHCS 8-32 x .625	1
6	VNE866562	(Package of 3)	1
7	VNE302171	Tool Holder Assembly	1
8	VNE866442	Flange Nut	1
9	VNE204303	Tooling Clamp Stud	1
10	VNE204030	Tool Holder Clamp	1
11	VNE204301	Tool Holder	1



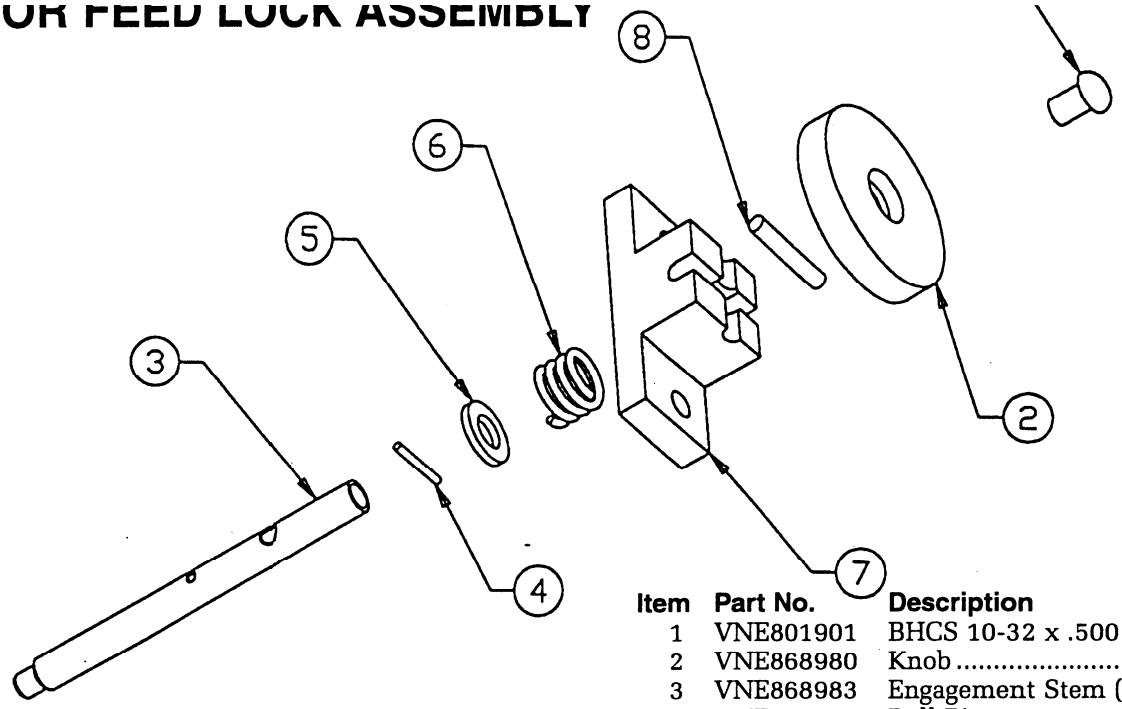
Item	Part No.	Description	Qty.
1	VNE868635	Leadscrew Nut Sleeve	1
2	VNE868672	Thrust Washer	2
3	VNE868671	Needle Bearing	1
4	VNE866326	Nut Mount, Block	1
5	VNE866327	Leadscrew Drive Gear	1
6	VNE866834	SSS #10-32 x .18	4

ITEM 30, VNE868674
DRUM SLIDE LEAD SCREW NUT ASSEMBLY



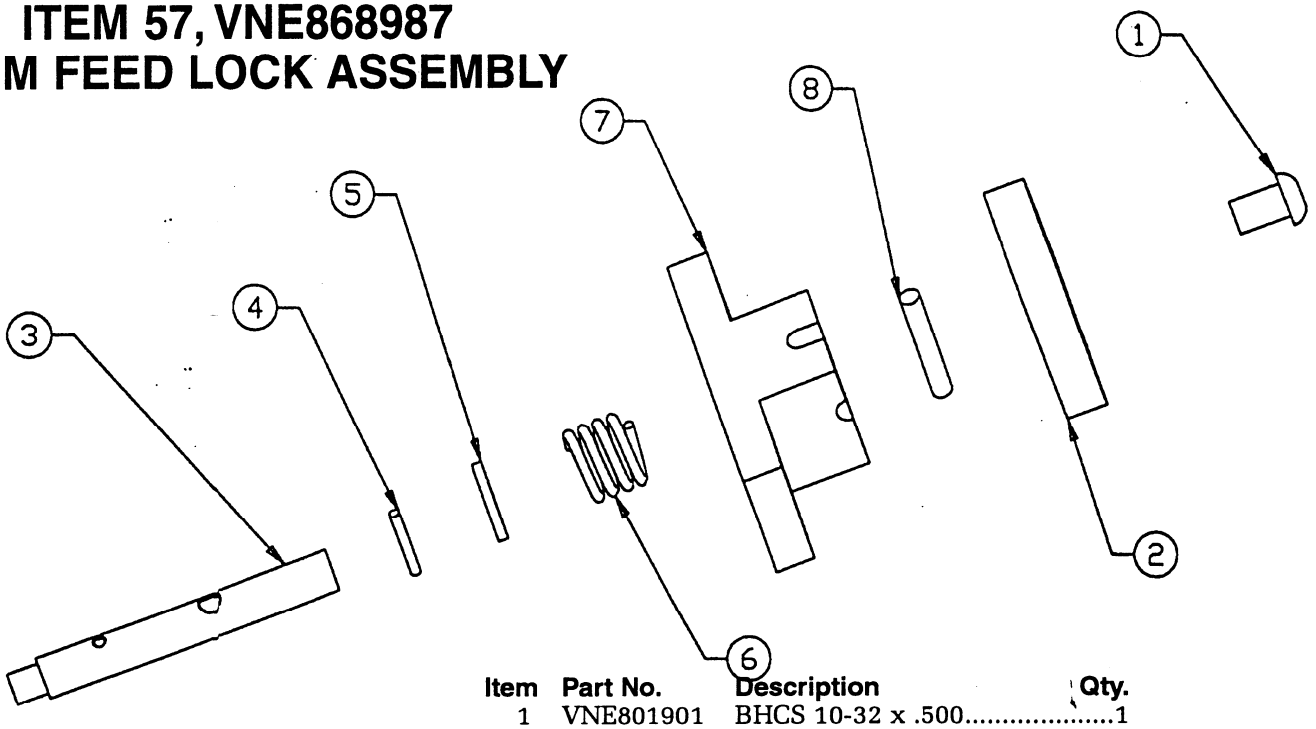
Item	Part No.	Description	Qty.
1	VNE868635	Leadscrew Nut Sleeve	1
2	VNE868672	Thrust Washer	2
3	VNE868671	Needle Bearing	1
4	VNE866326	Block Nut Mount	1
5	VNE866327	Leadscrew Drive Gear	1
6	VNE866834	SSS #10-32 x .18	4

ROTOR FEED LOCK ASSEMBLY

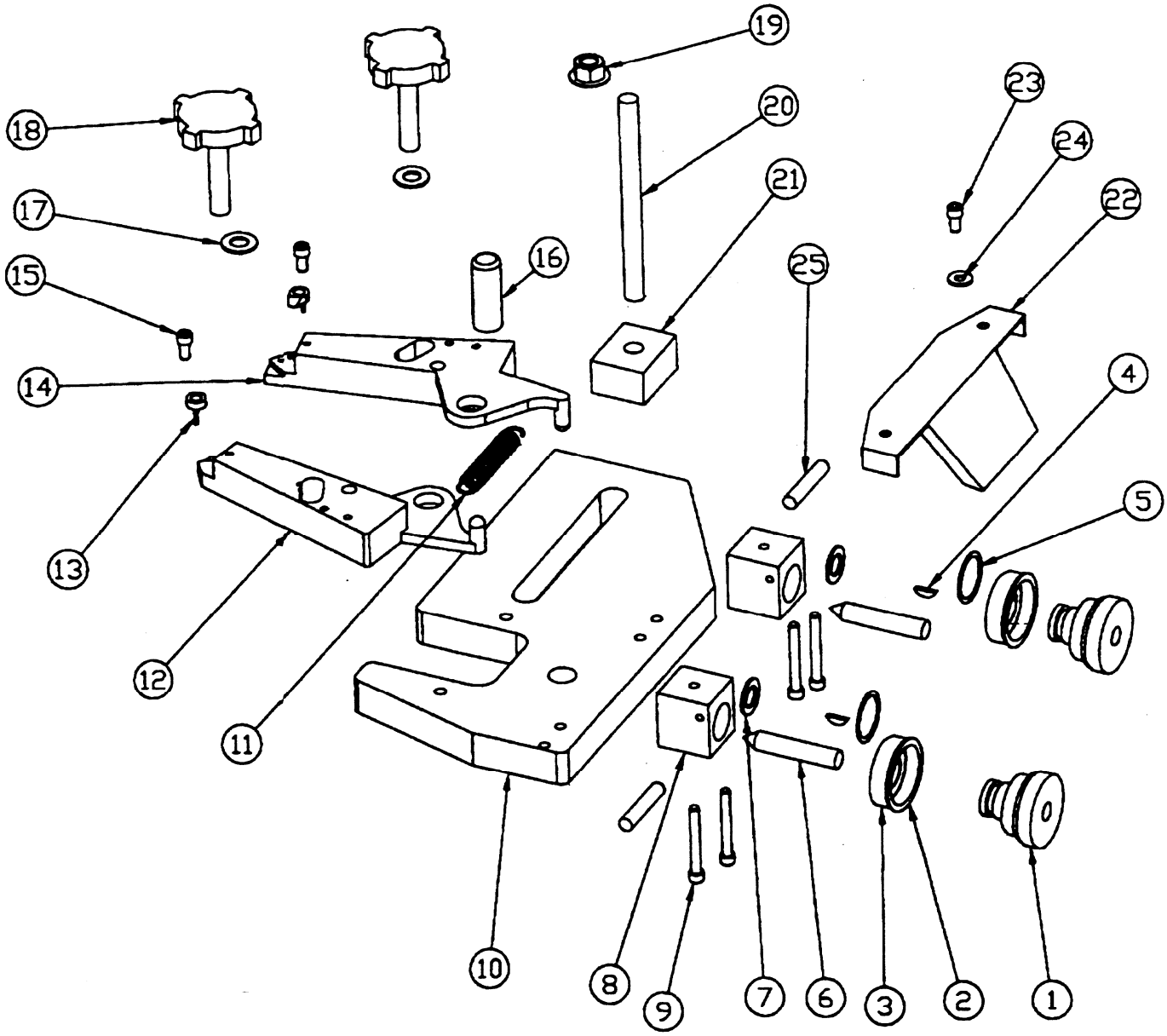


Item	Part No.	Description	Qty.
1	VNE801901	BHCS 10-32 x .500	1
2	VNE868980	Knob	1
3	VNE868983	Engagement Stem (Disc)	1
4	VNE809768	Roll Pin, .062 x .500	1
5	VNE868985	Flat Washer, 6mm	1
6	VNE868984	Spring	1
7	VNE868981	Feed Engagement Block	1
8	VNE869006	Dowel Pin .125 x .625	1

ITEM 57, VNE868987
DRUM FEED LOCK ASSEMBLY

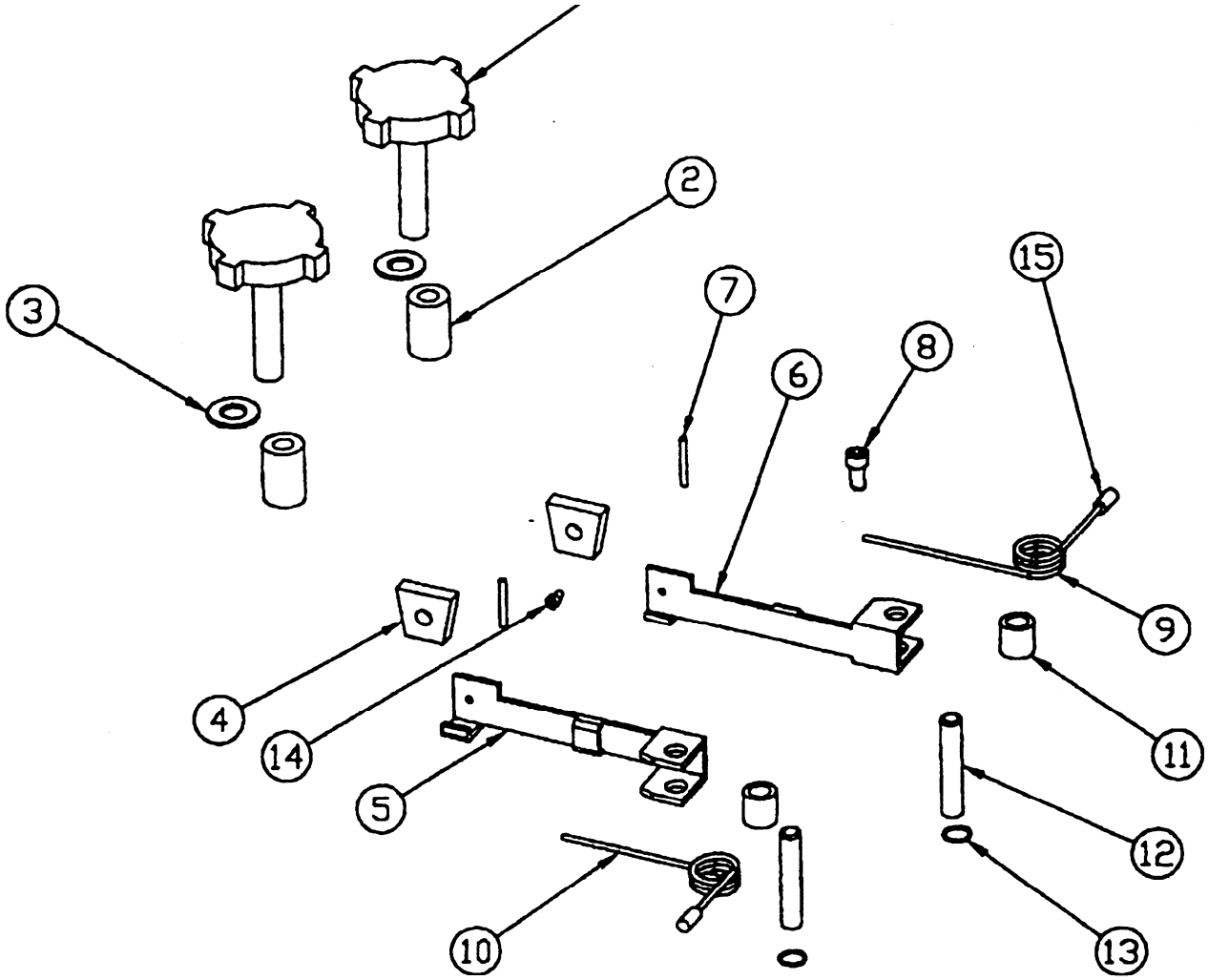


Item	Part No.	Description	Qty.
1	VNE801901	BHCS 10-32 x .500	1
2	VNE868980	Knob	1
3	VNE868982	Engagement Stem (Drum)	1
4	VNE809768	Roll Pin .062 x .500	1
5	VNE868985	Flat Washer, 6mm	1
6	VNE868984	Spring	1
7	VNE868981	Feed Engagement Block	1
8	VNE869006	Dowel Pin .125 x .625	1

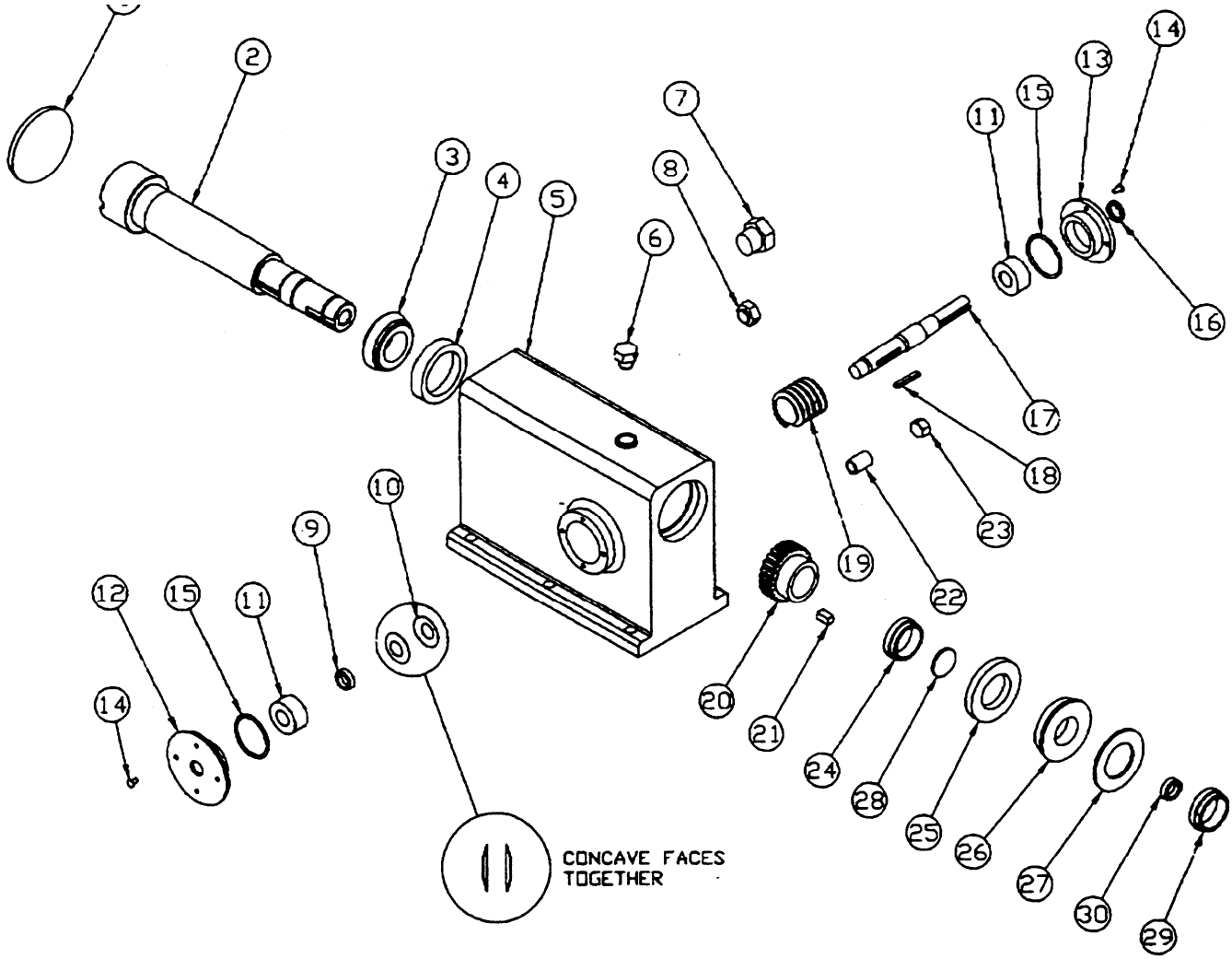


Item	Part No.	Description	Qty.
1	VNE868951	MicrometerKnob	2
2	VNE868952	Zeroing Sleeve	2
3	VNE868949	Feed Dial Label	2
4	VNE108057	Woodruff #5 Key	2
5	VNE868978	Spring Washer	2
6	VNE204270	Feed Screw	2
7	VNE125810	Finger Spring Washer	2
8	VNE869024	Feed Dial Block	2
9	VNE869049	SHCS 1/4-20 x 1.25	4
10	VNE869023	Claw Base Plate	1
11	VNE140535	Spring	1
12	VNE867855	Tool Holder LH	1
13	VNE129279	Tool Bit w/Spring Clamp	2

Item	Part No.	Description	Qty.
14	VNE867854	Tool Holder RH	1
15	VNE809807	SHCS 1/4-20 x .62	2
16	VNE125812	Dowel Pin, .75 x 2.00	1
17	VNE140754	Washer	2
18	VNE140753	Hand Lock Knob	2
19	VNE866442	Flange Nut	1
20	VNE204303	Tool Clamp Stud	1
21	VNE205849	Clamp Block	1
22	VNE204320	Guard	1
23	VNE809807	SHCS 1/4-20 x .62	2
24	VNE868434	Rubber Seal Washer	2
25	VNE119925	Dowel Pin, 3/16 x 1.50	2



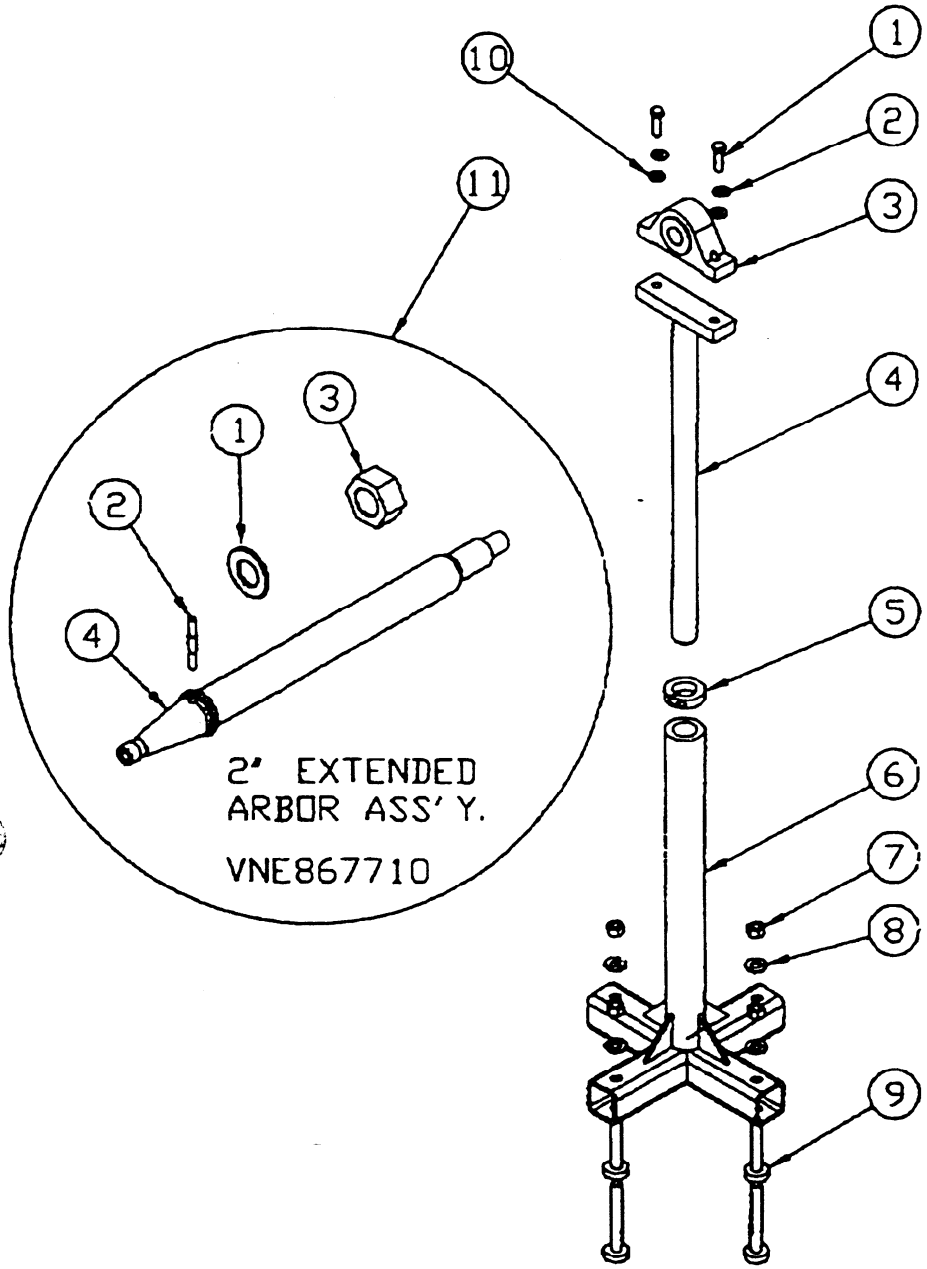
Item	Part No.	Description	Qty.
1	VNE869129	Hand Lock Knob	2
2	VNE869128	Spacer Knob	2
3	VNE140754	Washer	2
4	VNE205231	Shoe	2
5	VNE869132	Dampener Arm LH	1
6	VNE869133	Dampener Arm RH	1
7	VNE109424	Roll Pin, 156 x 1	2
8	VNE869136	BHCS 10-32 x 1.50	4
9	VNE869131	Dampener Spring RH	1
10	VNE869130	Dampener Spring LH	1
11	VNE869134	Spring Bushing	2
12	VNE803572	Dowel Pin, .375 x 2.00	2
13	VNE801292	O-Ring .312 x .062	2
14	VNE140349	BHCS 6-32 x .25	2
15	VNE869135	Spring Grip Knob	2

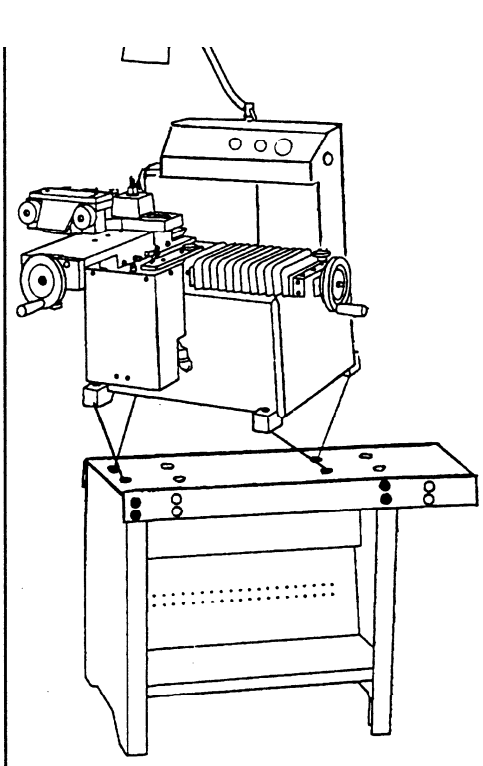


Item	Part No.	Description	Qty.
1	VNE866365	Front Seal	1
2	VNE866354	Work Spindle	1
3	VNE808414	Bearing Cone	1
4	VNE808415	Bearing Cup	1
5	VNE866352	Spindle Housing	1
6	VNE118428	Breather Plug	1
7	VNE8663332	Oil Sight Gage	1
8	VNE805954	Filler Plug	1
9	VNE866376	Spacer-Driveshaft	1
10	VNE866377	Bellville Washer	2
11	VNE866373	Ball Bearing	2
12	VNE866375	Cap Closed End Shaft	1
13	VNE866374	Cap Open End Shaft	1
14	VNE801901	BHCS 10-32 x .5	8
15	VNE866372	O-Ring	2

Item	Part No.	Description	Qty.
16	VNE866369	Seal	1
17	VNE866362	Shaft-Spindle Drive	1
18	VNE866361	Key-Worm	1
19	VNE866357	Worm-Spindle Drive	1
20	VNE866358	Worm Gear	1
21	VNE866360	Key-Worm Gear	1
22	VNE807107	Pipe Nipple 1/8 NPT	1
23	VNE866528	Pipe cap 1/8 NPT	1
24	VNE866356	Locknut BH7	1
25	VNE866364	Bearing Cup	1
26	VNE866363	Bearing Cone	1
27	VNE866371	Rear Seal	1
28	VNE866370	Spindle O-Ring	1
29	VNE866355	BH6 Locknut	1
30	VNE866487	Spacer-Spindle	1

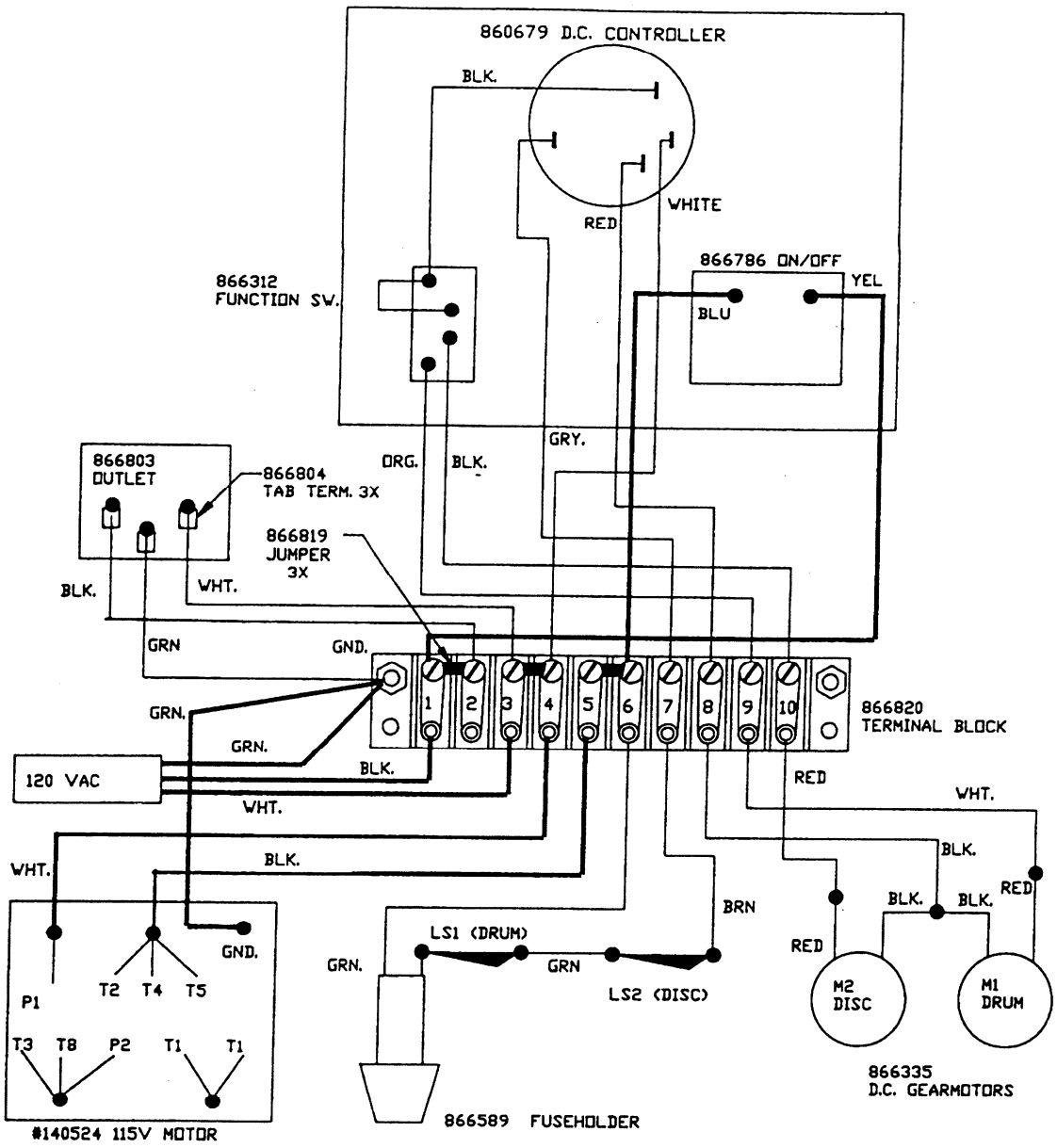
OUTBOARD SUPPORT ASSEMBLY





Reposition tabletop to right most location and machine to left most location when using outboard support.

Item	Part No.	Description	Qty.
1	VNE801618	HHCS 3/8-16 x 1.25	2
2	VNE803061	Lock Washer	2
3	VNE869092	Pillow Block Bearing	1
4	VNE868267	Support Bearing Slide	1
5	VNE868269	Locking Collar	1
6	VNE868266	Base Weldment Stand	1
7	VNE803025	Nut 1/2-13	4
8	VNE803024	Washer	4
9	VNE869093	Leveling Pad Screw	4
10	VNE801636	Washer	2
11	VNE867710	2" Extended Arbor Arm	1
	VNE867710		
1	VNE404174	Washer	1
2	VNE124405	Groove Pin	1
3	VNE304388	Nut LH 2" Arbor	1
4	VNE867711	Arbor 2" Extended	1


860679 D.C. CONTROLLER
BLK.
WHITE
RED
866786 ON/OFF
YEL
BLU
866312
FUNCTION SW.
GRY.
ORG.
BLK.
866803
OUTLET
866804
TAB TERM. 3X
866819
JUMPER
3X
BLK.
WHT.
GRN
GND.
GRN.
GRN.
1
2
3
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866820
TERMINAL BLOCK
120 VAC
BLK.
WHT.
RED
WHT.
BLK.
WHT.
BLK.
BRN
BLK.
BLK.
RED
RED
GND.
LS1 (DRUM)
GRN.
GRN
LS2 (DISC)
P1
T2
T4
T5
T3
T8
P2
T1
T1
M2
DISC
M1
DRUM
866335
D.C. GEARMOTORS
#140524 115V MOTOR
866589 FUSEHOLDER

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