Maintenance

Fill all oil cups with 10W non-detergent oil.

Check anti-kickback fingers for wear, free-fall-ability, stuck or bent fingers.

Walk around inspection of machine.

Completely blow the machine down with compressed air.

Clean arbor shaft with solvent and apply a light film of 10W non-detergent oil.

Check oil mist nozzles for proper aim and output of oil.

Check to insure dust extraction system is clear of sticks/slivers and possible jams.

Check arbor shaft run-out and bearing integrity.

Check overbeam relationship.

Check arbor sleeves for damage and excessive wear.

Clean and flat file all aluminum spacers.

Check #3 rubber covered press roll and rubber feed slat inserts for wear.

Check press roll to bedplate relationship.

Check press roll pivot bushings for wear.

Check and adjust all air pressures as needed.

Check Bijur mist oil units oil output quantity.

Check feed drive chain tension and sprocket condition.

Preventive Maintenance Schedule Daily

Weekly

Monthly

Quarterly

Check dip cams, feed sprockets, feed chains, and chainway for wear.

Check and adjust press roll housing gib.

Check and adjust arbor motor gibs.

Check lube level in feed drive gear box.

Check press roll housing adjust screws and brass nuts for wear.

Check arbor motor hoist for wear.

Tighten all electrical connections. Inspect all electrical components.

Grease entire machine. Do *not* overgrease arbor bearings.

Every 400 hours

Mereen-Johnson Machine Company is using a current sensor as an electronic shear pin for our rip saws. This sensor is monitoring normal current draw on the feed motor. If this current climbs above its set level it will trip out and shut off the feed drive.

The trip delay potentiometer should be set full counterclockwise for no delay.

Adjust the trip point clockwise until the read LED light goes out. If this adjustment is turned up severe damage to the feed drive system may be the result.

Electronic Shear Pin Replacement

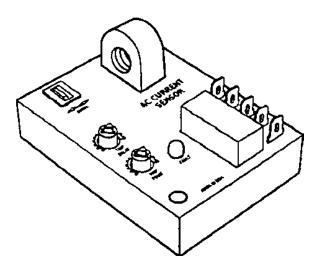


If the current sensor happens to trip out it will reset itself automatically. Before restarting the feed, locate the reason why it tripped out and take corrective measures to ensure smooth operation.

If your machine as a variable frequency controlled feed drive the frequency controller has a built-in current sensor. This will be factory set. If you need to change the sensor settings see the manufacturer's setup parameters listed below.



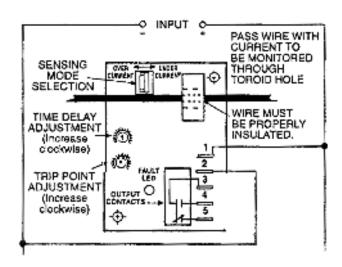
Disconnect all voltages before making connections.



Sensor Operation Instruction

Over or Undercurrent Sensing

- Toroidal through hole wiring
- 0.5 to 50 amperes trip point (lower current with multiple turns)
- Adjustable or factory fixed trip delays
- Led fault indicator
- 10 amp SPDT isolated output contacts.
- Encapsulated construction protects against shock, vibration and humidity
- 5% trip point systeresis (dead band)

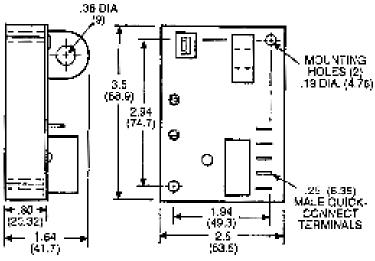


Description of operation

Using the mode selection switch, set the desired function, *over* or *under* current sensing. Pass the wire carrying the current to be monitored, through the toroid sensor. Now set the *trip point* and *trip delay* to their approximate settings.

Prior to connecting the output to the control circuitry, apply power to the ECS and the monitored load. Fine-tune the *trip point* by turning the adjustment and watching the LED. The LED will light, indicating a fault. Turn slightly in opposite direction until the LED is off. This adjustment can be done wile connecting to the control circuitry if the *trip delay* is set at maximum.

When a fault is sensed (LED on) throughout the *trip delay*, the output will energize after the delay is complete. When the current returns to normal run condition, the output and the delay are reset.



Mechanical

All dimensions in inches (milimples).

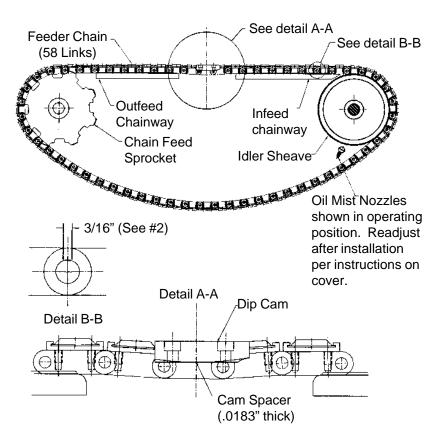
Overcurrent Sensing Overcurrent Trip Point Reset Trip Operating Current ~ Delay Output NO Undercurrent Sensing Undercurrent Reset Trip Trip Point Delay Operating Current Output NO

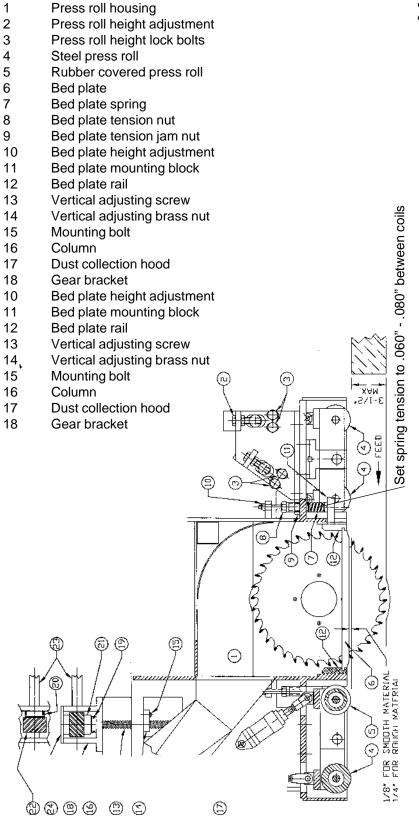
*A= Sensing Delay ON Startup

Time Diagrams

- 1. Dip cams are quad life. If the dip cams are worn on one side, switch the left hand cam with the right hand cam. If the cam are worn on both sides, remove the cam spacer (.018") from under the cams and repeat the above procedure. Before starting, remove the outside tie bar, bed plates and the inside tie bar.
- Dip Chain Adjustment

- 2. After time the chain pins become worn on top of the chain. If the flat spot on the chain is 3/16" or greater, replace or rebuild the feed chain.
- 3. Check the parts list at the end of this manual for individual part numbers.





3" Air Loaded Press Roll & Bed Plate Adjust

1. The amount of yield by the press rolls and bed plate is factory set relative to the pointer and scale.

The pressure head scale and pointer will always read the same thickness as the material being ripped.

- 2. The press rolls, #4 and #5, and bed plate, #6, relationship has been factory preset for 1/8" smooth material. When the pressure head is set for the thickness of the material being ripped, as shown on the scale and pointer, the press rolls, #4, will yield (raise) 3/16". The bed plate, #6, will yield (raise) 1/16".
- 3. The press roll relationship must be maintained as illustrated on the opposite page. The press roll height adjustment bolts, #2, should also be used for resetting rolls from 1/8" yield (raise) for smooth material to 1/4" yield (raise) for rough material.
- 4. Roll pressure may be increased by turning the air regulator pressure up (40-45 PSI is normal with a maximum of 60 PSI). When the roll adjustment bolts are adjusted to reset the rolls from 1/8" to 1/4" to handle rough material the pressure should not be increased.
- 5. The bed plate pressure may be increased by turning tension nut, #8, counter clockwise. The bed plate pressure should be checked four (4) times a year to maintain .080" to .100" clearance between coils on spring (#7).

3" Air Loaded Press Roll & Bed Plate Adjust

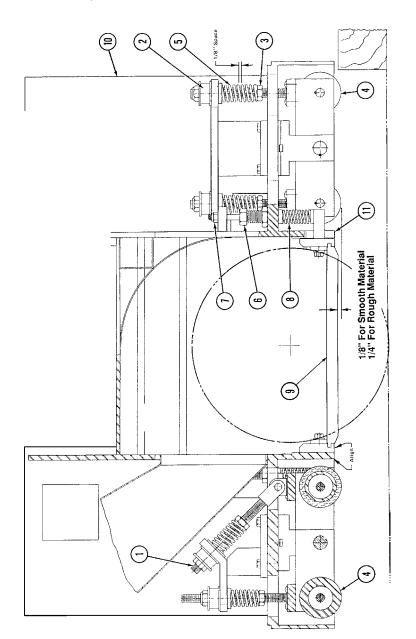
ACAUTION

Never attempt to achieve more hold down pressure by lowering the press roll assembly.

- 1 Press roll height adjust
- 2 Press roll grommet
- 3 Press roll tension nut
- 4 Press roll
- 5 Press roll spring
- 6 Bed plate tension nut
- 7 Bed plate height adjust
- 8 Bed plate spring
- 9 Bed plate
- 10 Press roll assembly
- 11 Bed plate frame

Note: Bed plate tie bar is not shown.

Spring Loaded Press Roll & Bed Plate Adjustment



1. The amount of yield by the press rolls and bed plate is factory set relative to the pointer and the scale.

Spring Loaded Press Roll & Bed Plate Adjustment

The pressure head scale and pointer will always read the same as the thickness of the material being ripped.



- 2. The press roll and bed plate relationship has been factory preset for 1/8" smooth material. When the pressure head is set for the thickness of the material being ripped, as shown on the scale and pointer, the press rolls, #4, will yield (raise) 3/16". The bedplate will yield (raise) 1/16".
- 3. The press roll relationship must be maintained as illustrated on the opposite page. Compression of the shock absorbing urethane grommets, caused by normal wear and tear, will eventually necessitate the readjustment of the vertical height adjustment nuts, #1. The press roll adjustment nuts, #1, should also be used for resetting the rolls from 1/8" yield (raise) for smooth material to 1/4" yield (raise) for rough material.
- 4. Roll pressure may be increased by turning the tension nut, #3, up, compressing the springs, #5. When the roll adjustment nuts, #1, are adjusted to reset the rolls from 1/8" to 1/4" to handle rough material, the pressure must be increased also.

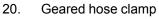
ACAUTION

Never attempt to achieve more hold down pressure by lowering the press roll assembly.

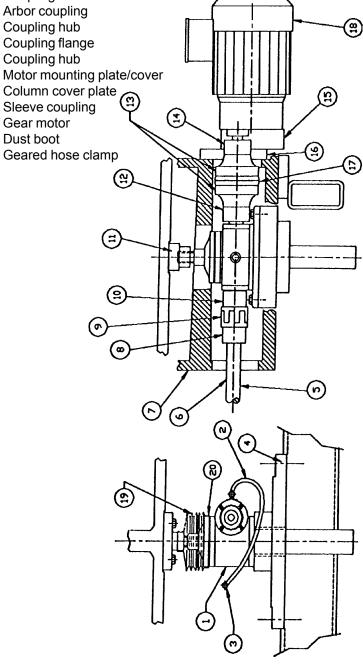
- 5. The bed plate pressure may be increased by turning tension nut, #6. Proper tension is achieved when there is .080" to .100" gap between the spring coils (#8).
- 6. On spring loaded models only, check the spring pressure on the press rolls every ninety (90) days. The gap between spring coils should maintain 1/8" of clearance.

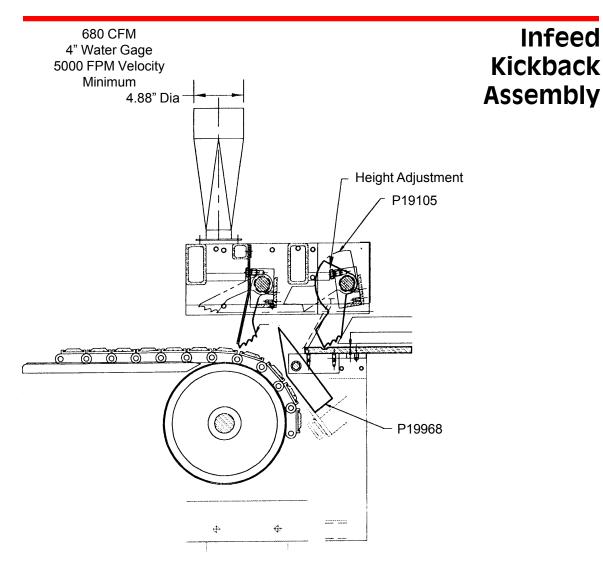
1. Acutator

- 2. Tubing
- 3. Grease fitting
- 4. Actuator support bracket
- 5. Actuator adjust shaft
- 6. Set collar
- 7. Main column
- 8. Coupling half
- 9. Coupling spider
- 10. Coupling half
- Arbor coupling 11.
- 12. Coupling hub
- Coupling flange 13.
- 14. Coupling hub
- 15. Motor mounting plate/cover
- 16. Sleeve coupling 17.
- 18. Gear motor
- 19. **Dust boot**



Arbor Hoist Assembly



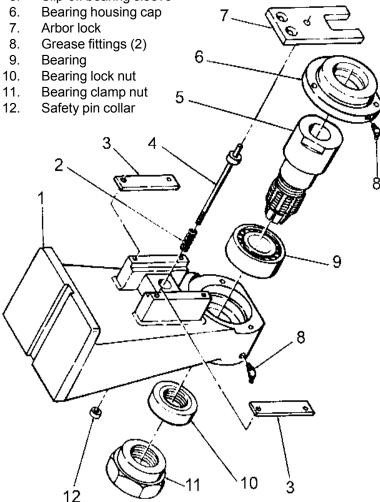


Notes:

- Clean kickback fingers daily, with air only.
 Do not oil.
- Replace any worn kickback fingers. Test for sharpness using card board strip provided in the back of this manual.
- Kickback fingers should always swing freely and return to their original position.

Slip-off bearing housing
 Safety pin spring
 Arbor lock clamp plate
 Arbor lock safety pin
 Slip-off bearing sleeve
 Bearing housing cap
 Arbor lock

Slip-off Bearing Detail



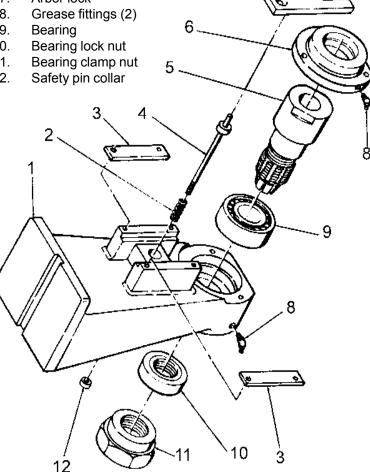
The numbers refer to the drawing above.

1. Disassembly

- a. Drop the arbor lock, #7, into the lock position.
- b. Remove the clamp nut, #11.
- c. Remove the lock nut, #10.

Slip-off bearing housing/bearing replacement

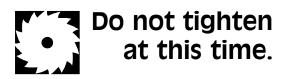
- 1. Slip-off bearing housing
- 2. Safety pin spring
- 3. Arbor lock clamp plate
- 4. Arbor lock safety pin
- 5. Slip-off bearing sleeve
- 6. Bearing housing cap
- 7. Arbor lock
- 8.
- 9.
- 10.
- 11.
- 12.



- Remove the clamp plates, #3. d.
- Remove the arbor lock, #7. e.
- f. Remove the bearing cap, #6.
- Press out the sleeve, #5. g.
- h. Press off the bearing, #9.

2. Reassembly

- a. Wash all the parts thoroughly with solvent.
- b. Purge old grease from inside the grease fittings.
- c. Lubricate the bearing.
- d. Press the new bearing, #9, into the housing.
- e. Press in the sleeve, #5.
- f. Install the bearing cap, #6.
- g. Install the arbor lock, #7, and the clamp plates, #3.
- h. Install the lock nut, #10. Tighten.
- i. While the arbor lock is disengaged, the sleeve assembly should turn freely.
- j. Install the clamp nut, #11.



The oil mist generator system provides essential lubrication to the bottom chain vees and chain pins. If the system was not generating the oil mist there could be excessive wear to the feed chains, extended pins and cams. Check the location and position of the four (4) spray nozzles weekly to make sure that they are spraying on the chain vees and pins.

Oil Mist Generator System

To properly check the spray nozzles the feed chains must be running. The operator should use extreme caution and there should be some one standing by the main power switch.

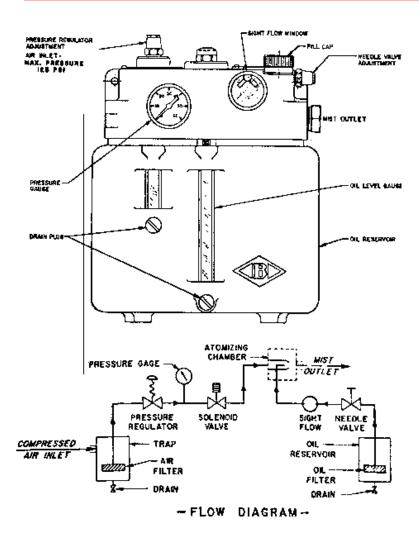


- 1. While the feed chains are running, the operator should hold a piece of white paper in front of each nozzle for 15 to 20 seconds. After 20 seconds there should be a spot the size of a quarter.
- 2. If there is no stain on the paper the nozzles should be checked for obstructions. Dust will often collect at the nozzle discharge fitting and should be removed with a weekly cleaning.

The Mist Lubricator, type Z, consists of an oil reservoir, air trap and filter, a solenoid operator air valve, an air pressure regulator and pressure gage, needle valve adjustment for oil flow and sight flow window.

Consists essentially of tubing and distribution fittings, using flexible tubing when necessary. Pressure and mist setting are as per machine manufacturer's specifications.

System



Use only a clean oil of type and viscosity recommended by machine manufacturer.

Never remove filler plug when unit is in operation.



Oil

Fill the oil reservoir to, but never above, the top of the Liquid Sight Gage. Make sure the unit is connected to the shop air line and the solenoid valve is connected to the electrical system. The pressure regulator is factory set by the machine manufacturer to allow proper distribution of the mist with a minimum of air consumption. Check with the machine manufacturer or Bijur Lubrication Corporation before making a adjustments to the pressure regulator or mist output needle valve. The rate of oil drops visible at the sight window is not a measure of mist output, however it provides a check the lubricator is functioning and is proportional to mist output.

Operation

Check the oil level daily and refill the reservoir as required. Filters should be checked periodically and cleaned or replaced if necessary. Accumulated water and impurities in the air reservoir should be drained as necessary.

Replace filter group once a year.

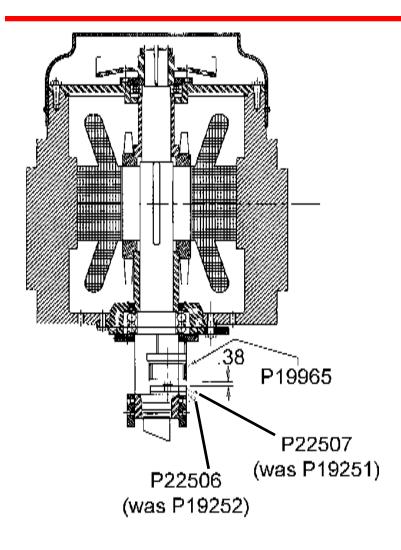
Maintenance

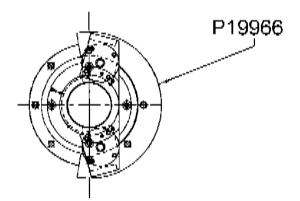


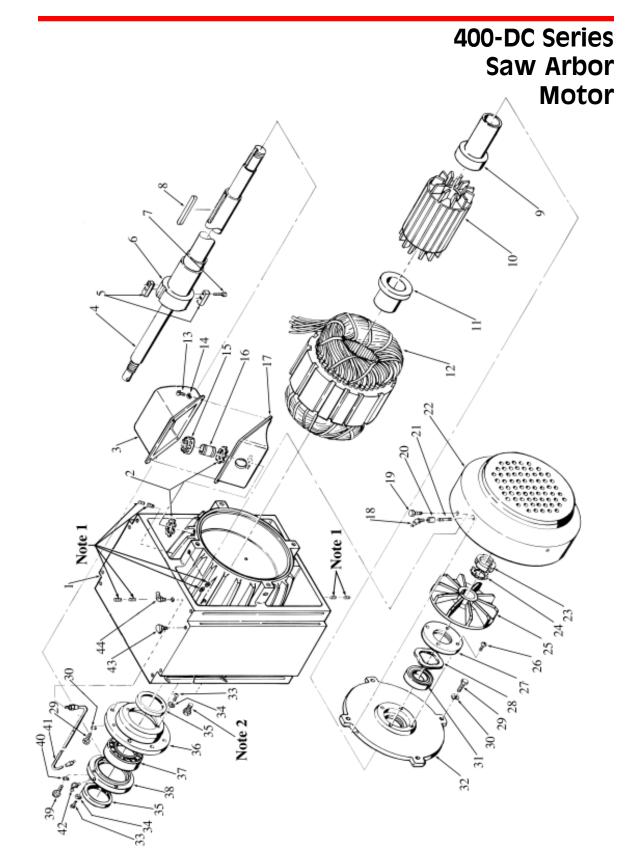
Unit chatters when turned on - check the electrical **Troubleshooting** supply for low voltage

No delivery of air or mist - check for burned out solenoid or loose wire connection.

Rip Saw Arbor Brake







400-DC Series

Saw Arbor

List

Motor Parts

Item	Item Description	Ö	y Ite	Oty Item Description	Oty
_	Arbor motor housing	_	23	#10 SKF nut 1	
7	Conduit nut	7	24	#10 SKF lock washer	
က	Electric connection box cover	_	25	Ventilating fan 1	
4	400-DC Model arbor motor shaft	_	56	Button head cap screw (3/8"-16NCx3/4") M10x20MM 4	
2	Arbor collar keys	7	27	Rear end bearing cap	
9	Arbor collar	-	28	Wavy spring washer	
7	Allen head cap screw (1/4"-20NCx5/8")(M6x16MM)	4	29	Hex head cap screw (1/2"-13NCx1-1/4")(M12x20MM) 8	
				Hex head cap screw (1/2"-13NCx1-1/4")(M12x30MM) 2	
∞	Rotor key	_	30	Split lock washer - 1/2"	
တ	Rear motor spacer	_	31	Rear end bearing - 62123	
9	Rotor	_	35	Rear end bell	
7	Front motor spacer	_	33	Pan head screw (#10-24NFx3/8")(M5X6MM)	
12	Stator	_	8	#10 Flat washer	
13	Pan head mach. screw (#10-24NFx1/2")(M6x20MM)	4	32	Bearing seal 2	
4	#10 Split lock washer	4	36	Bearing housing 1	
15	2" Plastic conduit bushing	_	37	Cartridge type front end bearing - 5216-C3	
16	Pipe nipple (2" NPTx2-1/2")	_	88	Front end bearing cap 1	
17	Electrical connection box	_	99	Hex head cap screw (3/8"-16NCx1")(M10X20MM) 4	
8	Rear bearing grease fitting	_	4	Spring lock washer - 3/8"	
19	Hex head cap screw (1/4"-20NCx5/8")(M6x20MM)	4	4	Copper tubing - 1/4"	
8	Coupling - 1/8" NPT	_	45	Compression fitting - 1/4"	
7	Pipe coupling (1/8" NPTx2-1/2"	_	43	Gits oil cup	
22	Fan housing	_	4	Front bearing grease fitting	

Do not operate the motor with these four (4) screws removed! Hex head cap screws are used to plug the stator removal access holes. Note 2:

Note 1: Double set screws lock the stator into the motor housing. Location may vary on some machines.



Motor

400-DC Series Saw Arbor

The exploded drawing above illustrates the arbor motor with all the internal parts numbered. These numbers will be referred to in the following procedures. This is a listing of the steps that must be taken to install, or to remove, the arbor shaft and motor bearings in your Mereen-Johnson Rip Saw machine.

Disassembly of the Arbor **Motor**

Special Equipment Needed: Dead-blow hammer

To disassemble the arbor shaft and motor rotor:

- 1. Remove the grease fittings, #18, #29 and #21.
- 2. Remove the electrical cover, #3, to gain access to two (2) bolts that hold the electrical connection box, #17, to the fan housing. Remove the fan housing, #22.
- 3. Remove the lock nut, #23, and the washer, #24.
- 4. Remove the ventilating fan, #25, and the key (not shown).
- 5. Remove the rear end bearing cap, #27.
- 6. Remove the wavy washer, #28.
- 7. Remove the rear end bell, #32.
- 8. Remove the rear bearing, #31. Do not install new bearing in the housing.
- 9. Remove the rear motor spacer, #9.
- 10. Remove the rotor, #10.
- 11. Remove the rotor key, #8, from the arbor shaft.

If your machine is equipped with an arbor brake, you must remove the brake assembly from the machine before removing the arbor. Remember to mark air lines for proper reassembly.



Motor

400-DC Series Saw Arbor

Leave the inner spacer, #11, on the arbor shaft as this will help to prevent damage to the inner seal when removing the arbor shaft, #4.



Place the arbor nut and the lock nut, #23, on the arbor shaft, #4, so as not to damage the threads during transit.



- 12. To remove the front bearing cartridge, #36, loosen the cap screws, #29. There are six (6) cap screws.
- 13. Remove the grease line, #41, from the front bearing cap, #38.
- 14. Pull the arbor motor shaft, #4, along with the front motor cartridge, #36, out of the motor housing from the arbor access door side.
- 15. Remove the front bearing cap, #36, by loosening the four (4) cap screws, #39.
- 16. Lightly tap the front bearing cartridge, #38, off of the bearing, #37.
- 17. Press the front bearing, #37, off of the arbor motor shaft, #4.

The exploded drawing on the opposite page illustrates the arbor motor with all the internal parts numbered. These numbers will be referred to in the following procedures. This is a listing of the steps that must be taken to install, or to remove, the arbor shaft and motor bearings in your Mereen-Johnson Rip Saw machine.

Special Equipment Needed: Dead-blow hammer

Before reassembling the arbor motor take care to inspect and clean all the parts, so that the bearings are less likely to get contaminated during the assembly process.

Reassembly of the arbor motor



400-DC Series Saw Arbor Motor

This will allow the bearing, #37, to slide onto the bearing journal, with little resistance.

The front motor spacer, #11, can be used to *gently* tap the bearing, #37, onto the arbor shaft, #4.

Let the front end bearing, #37, cool, making sure that it fits the shaft properly.

To reassemble the arbor shaft and motor rotor

Hand pack the bearings 1/3 full with "Molylube" 126-EP grease or an equivalent.



To reassemble the arbor shaft and motor rotor:

- 1. Slide the seal, #35, and the front bearing cap, #38, onto the new arbor, #4.
- 2. Heat the front end bearing, #37, inner race, to approximately 120°F to 140° F using a bearing core heater, an oven or a light bulb. This will allow the bearing, #37, to slide onto the bearing journal, with little resistance.

The front motor spacer, #11, can be used to gently tap the bearing, #37, onto the arbor shaft, #4.



- 3. Let the front end bearing, #37, cool, making sure that it fits the shaft properly.
- 4. Place a piece of wood on the floor to prevent damage to the arbor shaft, #4. Then place the shaft on the board with the snout end on the board.
- 5. Gently lower the bearing housing, #36, down onto the front bearing, #37, making sure that the cartridge sits squarely on the bearing.

A light coating grease on the lip of each seal, #35, will ensure long seal life.



6. Slowly rotate the bearing housing, #36, while *gently* tapping on the cartridge with a hammer handle or other non-marring tool.

Saw Arbor

Motor

400-DC Series

Gradually tap the cartridge all the way onto the bearing, #37, making sure that the cartridge stays square on the bearing as you proceed.

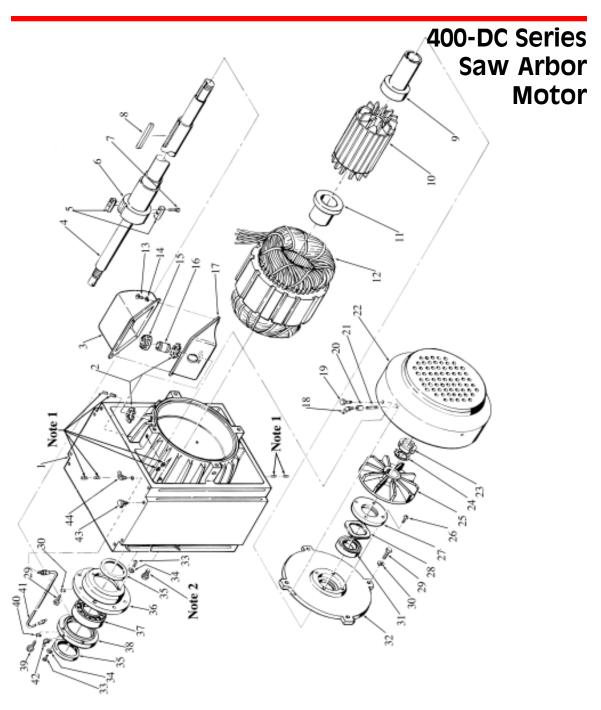
7. Bolt the front end bearing cap, #38, to the bearing housing, #36, making sure that the cap to cartridge alignment will allow the grease line to be connected to the bearing cap in the proper alignment.

- 8. Slide the front motor spacer, #11, into place.
- 9. Slide the shaft/cartridge/spacer assembly into the motor housing, #1, make sure that the grease fitting is at the one o'clock position for making the connection to the grease line.
- 10. Bolt on the arbor brake (if equipped with one) and the cartridge.
- 11. Connect the grease line and the arbor brake air lines (if so equipped).
- 12. Install the rotor key, #8, in the arbor.
- 13. Install the rotor, #10, in the arbor.

A light coating of commercially available anti-seize compound applied to the arbor shaft, #4, prior to final assembly will greatly ease disassembly in the future



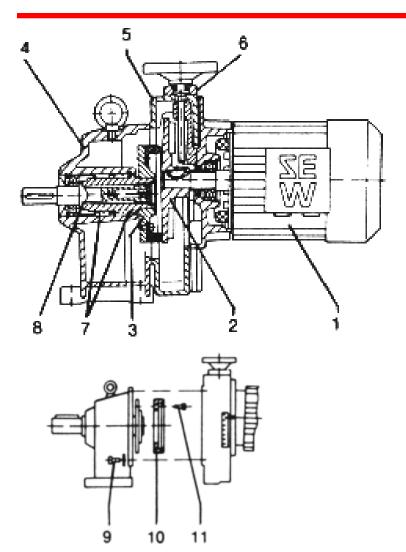
- 14. Install the rear motor spacer, #9.
- 15. Install the rear end bell, #32.
- 16. Using the dead-blow hammer, or a non-marring driver, press the rear bearing, #31, into the end bell, #32, and onto the arbor shaft, #4.
- 17. Install the wavy washer, #28.
- 18. Install the rear end bearing cap, #27.



- 19. Install the ventilating fan, #25, with the key on the arbor shaft, #4.
- 20. Install the lock washer, #24, and the nut, #23.

- a. Tighten the nut, #23, hand tight.
- b. Tap both the saw end and the end of the lock nut, #23, with the dead-blow hammer, as this will help seat the bearings.
- c. Tighten the nut, #23, securely.
- d. Bend the lock washer tabs, #24, to secure the lock nut in position.
- 21. Install the fan housing, #22.
- 22. Install the grease fitting through the fan housing, #18, #20 and #21 into the end bell, #32.

Varimot®



This variable speed drive consists of the following components:

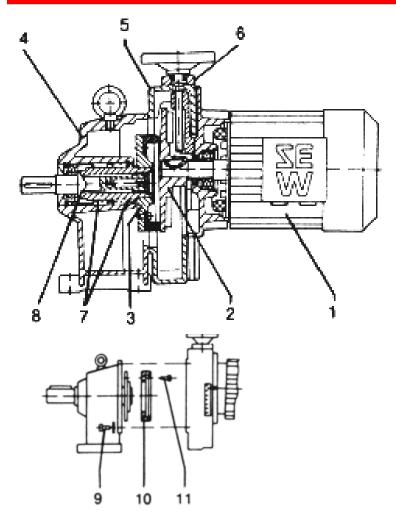
- 1. Motor with dovetail slide
- 2. Drive disc
- 3. Hollow shaft with friction ring and output shaft
- 4. Housing

Varimot® service information

- 5. Traction housing
- 6. Speed adjustment
- 7. Needle bearings
- 8. Torque compensator (lobe cams)
- 9. Bolts
- 10. Friction disc
- 11. Friction ring screws
- 1. Remove the four (4) bolts, #9.
- 2. Split the traction housings.
- 3. Mark the friction disc/hollow shaft assembly so the lobe cams at the end of the shaft assembly can later be engaged at the same place.
- 4. Remove the friction ring screws, #11.
- 5. Replace the friction disc, #10.
- 6. Before assembling the housing, clean the driving disc face so it is completely free from oil and grease.

Replacing the Friction Disc

Varimot®



When the friction disc is checked or replaced, perform the following regreasing of the bearings and the lobe cams.

Regreasing

- 1. Pull out the hollow shaft assembly, #3.
- 2. Regrease the needle bearing, #7. Use "Shell" Alvania R# or equivalent.
- 3. Grease the cam lobes, #8. ("Lubriplate" grease GR-132)

When regreasing do not overfill the cavity. Too much grease generates an excess amount of heat.



If the lobe cams are worn excessively and can't function properly by sliding over each other, replace both shafts involved.

- 1. When assembling the unit, make sure the cams are engaging the same way as they cam out.
- Assembling the Traction Housing
- 2. The cams must be properly engaged. Push the shaft assembly "in" against the spring force.
- 3. Tighten the bolts, #9, diagonally, making sure that the cams are properly engaged.

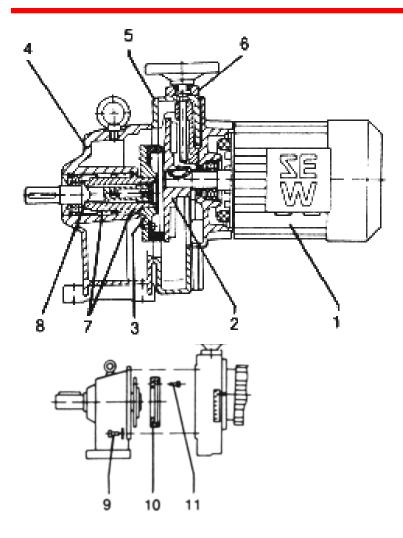
Upon completion of the assembly, under power, run the Varimot through the whole speed range checking for noise or vibration. If the friction disc has stalled out and the disc is damaged or has become noisy due to operation problems (jamming of the driven machine):



- 1. Completely remove the hollow shaft assembly with the friction ring.
- 2. Face off the friction ring on a lathe.
- 3. Remove enough material to clean up the face.
- 4. Reinstall the shaft assembly.

The driving cone can be removed in two ways:

Varimot®



- By using a wheelpuller. When using this method make sure the fingers of the puller don't fracture the cast iron driving cone. The use of a spacer between the puller fingers and the driving cone will reduce the possibility of fractures.
- 2. By pressing the rotor out of the driving cone. This method requires the complete disassembly of the motor.
 - a. Remove the fan guard, end shield and the stator.

Removal of the Driving Cone

- b. Remove the snap ring which holds the bearing behind the driving cone in it's place.
- c. Press out the rotor shaft.

For assembly of the unit:

- 1. Install rotor shaft with bearing.
- 2. Install the snap ring.
- 3. Press on the driving cone.
- 4. Assembly the stator, end shields and fan guard.

For assembly of the unit

Varimot® Oil Recommendations

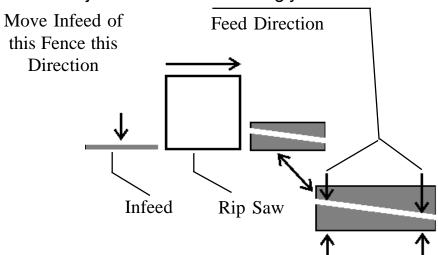
Infeed & Outfeed System Recommendations

- Be run at the same speed as the rip saw feed bed. Any difference may affect the cut quality, jam the feed bed of the rip saw, double feed (stacked boards) or "kick" the board to one side.
- Infeed conveyors feeding a rip saw should:

Conveyor

- Must be parallel with the direction of feed
- Have at least the closest roller to the saw parallel to the saw arbor. For use with longer and heavier material two to four straight rolls may be required.
- Simply align the fence as close as possible Instructions for using your eyes.
 Installing
- Send a straight board through the saw holding the board against the fence until the saw takes the board away.
- Inspect the resulting strip at the outfeed end of the saw.

Adjust the fence accordingly



Outfeed conveyors being feed by a Rip Saw should:

- Measure the strip at its infeed end and compare it to the outfeed end measurement.
- Be running no more than 10% faster than the saw's feed bed.
- Accept material straight out of the saw.
- Be level with the saw's outfeed.

Infeed Nip Rolls Feeding a Mereen-Johnson Rip Saw should:

- Jump down (lower) as the material passes under them.
- Remain down only long enough to allow the Rip Saw feed bed to contain the material.
- Raise off of the material by the time the 2nd press roll touches the material.
- Be running at the same speed as the Rip Saw feed bed to prevent jamming the saw's feed bed.
- Be positioned parallel to the arbor
- Be positioned level with the saw's infeed table.

Overrunning clutches work to some degree, but still may feed the board into the Rip Saw too fast before overrunning.

Electrical components should be replaced on an "as needed" basis. There are no components that should be replaced on a scheduled maintenance.

Electrical Components