

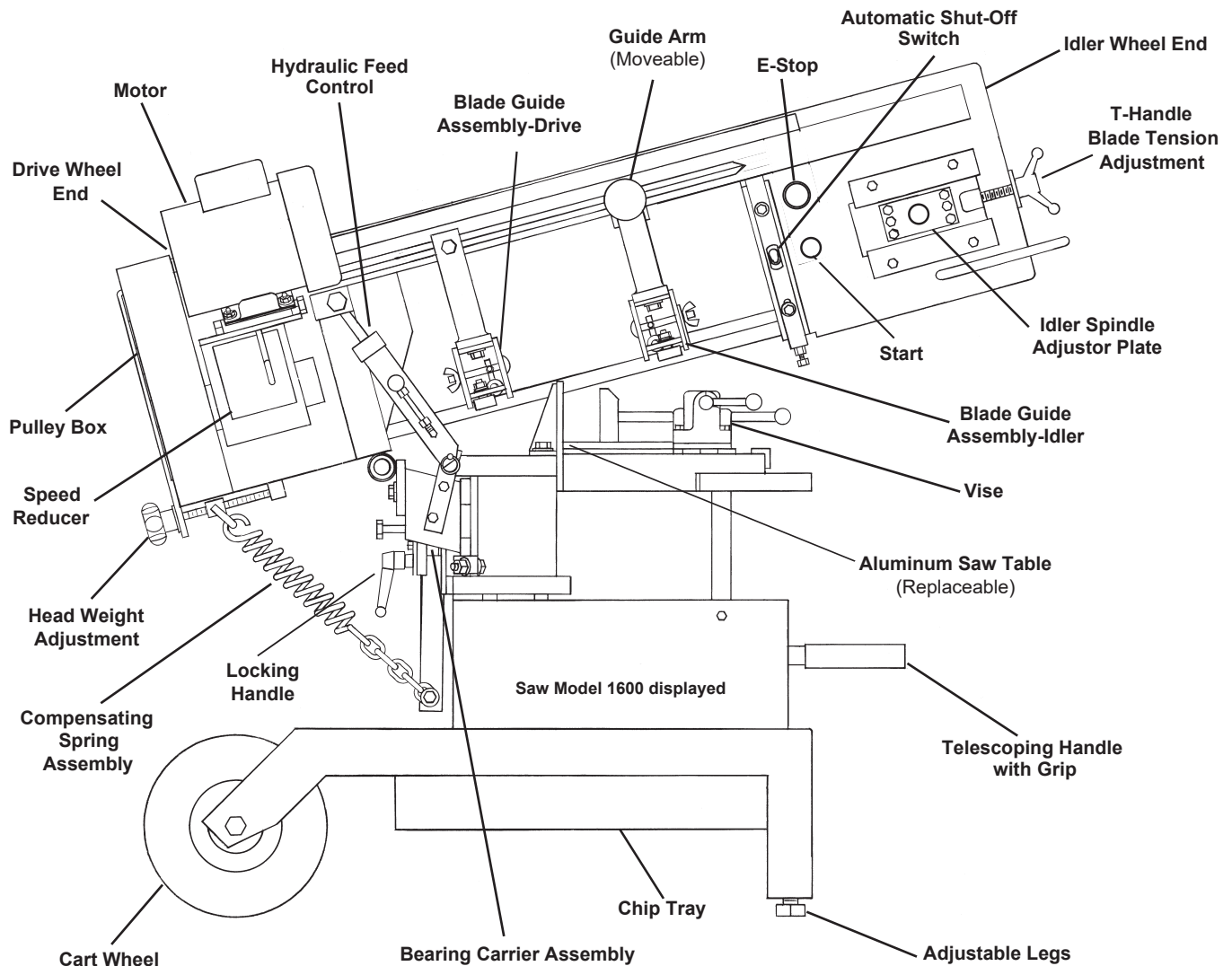


MFG. COMPANY, INC.

Mitre Band Saw

Installation and Operating Instructions

Note: Not all saw parts are shown in this booklet. Product changes are made and improved overtime and therefore not all images displayed may reflect the actual product shipped.



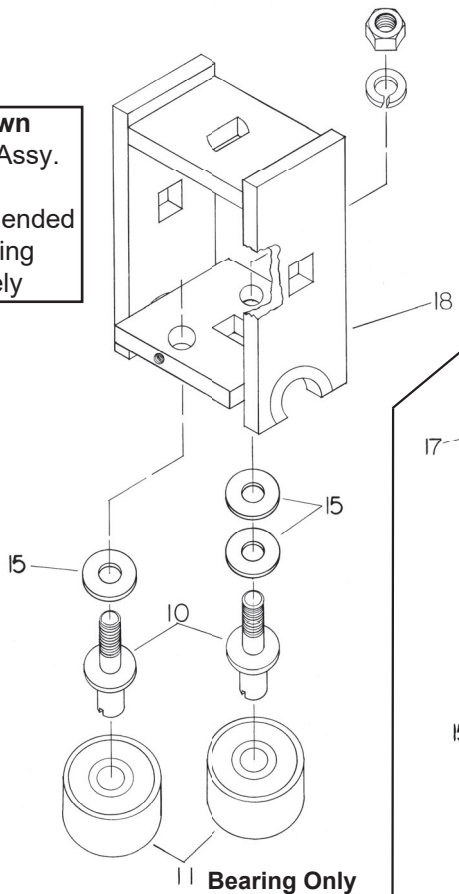
1-800-383-5547

107 W. Railroad Street • P.O. Box 930219 • Verona, WI 53593-0219
Phone: (608) 845-6472 • Fax: (608) 845-5199 • www.EllisSaw.com

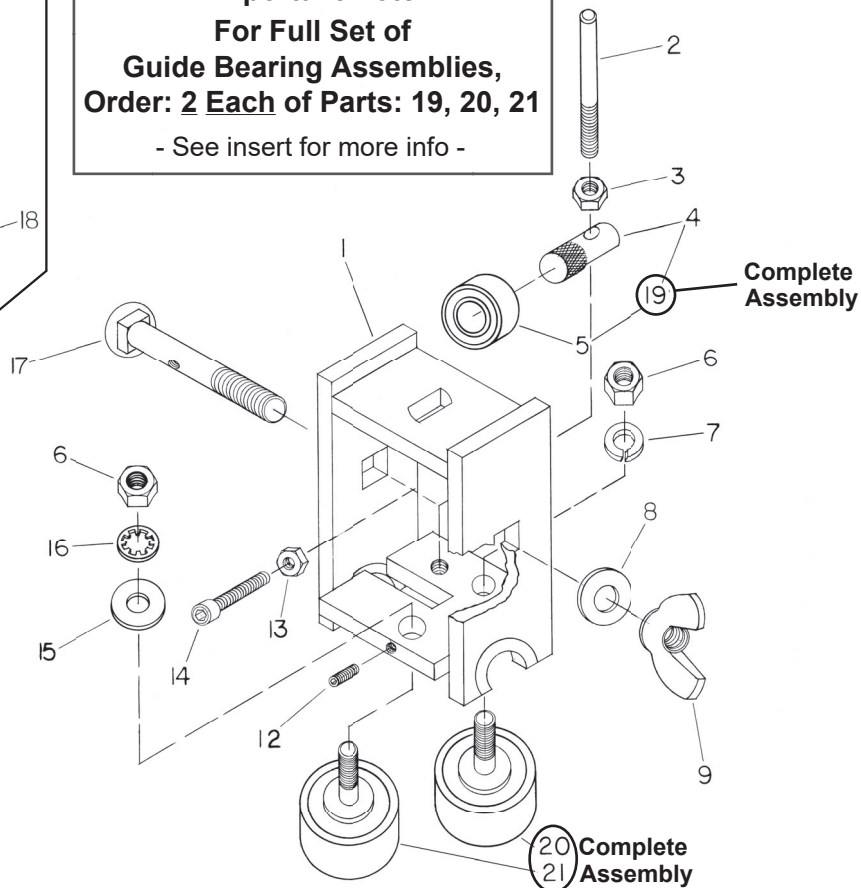
BLADE GUIDE

Page 2

**Breakdown
of Bearing Assy.
(only)
Not Recommended
For Ordering
Separately**



***** Important Note *****
**For Full Set of
Guide Bearing Assemblies,
Order: 2 Each of Parts: 19, 20, 21**
- See insert for more info -



For ordering, see assemblies! *

Blade Guide Assembly

Part Number For Models

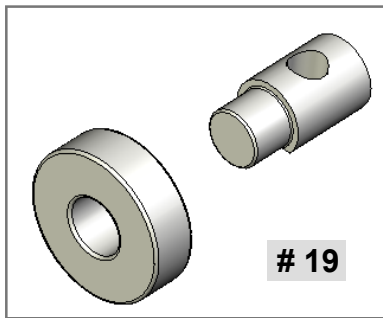
| Item No. | 90H 1100 | 900 1000 1200 | 1440 1500 | 1600 1800 2000 3000 | 4000 | Description |
|-----------------------|-------------|---------------------|--------------|------------------------------|------|--|
| Complete Assy. | 9016DC | 5370 | 5539 | 5720 | 5732 | Blade Guide Assembly, Drive End |
| Complete Assy. | 9016IC | 5371 | 5519 | 5721 | 5733 | Blade Guide Assembly, Idler End |
| 1 | 5391 | 5391 | 5588 | 5588 | 5981 | Housing Assembly, Idler |
| 2 | 4181 | 4181 | 4181 | 4181 | 4137 | Adjustment Stud, Bearing Plate |
| 3 | 4260 | 4260 | 4260 | 4260 | 4260 | Hex. Nut 1/4-20 |
| 4 | 6066 | 6066 | 6066 | 6066 | 5999 | Spindle, Pressure Bearing |
| 5 | 4499 | 4499 | 4499 | 4499 | 4522 | Ball Bearing, Pressure |
| 6 | 4260 | 4260 | 4266 | 4266 | 4279 | Nut, Hex. |
| 7 | 4336 | 4336 | 4337 | 4337 | 4343 | Lock Washer, Spring |
| 8 | 4310 | 4310 | 4310 | 4310 | 4311 | Flat Washer, SAE |
| 9 | 4271 | 4271 | 4271 | 4271 | 4272 | Wing Nut or Stop Nut |
| 10 | 5389 | 5389 | 5587 | 6074 | 6073 | Spindle, Guide Bearing |
| 11 | 4522 | 4522 | 4502 | 4502 | 4515 | Ball Bearing, Guide |
| 12 | 4140 | 4140 | 4140 | 4140 | 4132 | Set Screw 8-32 x 3/8 or 1/4-28 x 3/8 |
| 13 | 4258 | 4258 | 4258 | 4258 | 4260 | Hex. Nut |
| 14 | 4155 | 4155 | 4155 | 4155 | 4137 | Socket Head Cap Screw |
| 15 | | 4304 | 4305 | 4305 | 4314 | Flat Washer, 3/16 or 1/4 Std. or 1/2 SAE |
| 16 | 4355 | 4355 | 4356 | 4356 | 4358 | Lock Washer - Internal |
| 17 | 5374 | 5374 | 5542 | 5542 | 6056 | Guide Clamping Bolt |
| 18 | 5390 | 5390 | 5540 | 5540 | 5982 | Housing Assembly, Drive |
| * 19 | 9012 | 9012 | 9012 | 9012 | 5996 | Pressure Bearing Assembly |
| * 20 | 5406 | 5406 | 6730 | 6742 | 6747 | Stationary Guide Bearing Kit |
| * 21 | 5407 | 5407 | 6732 | 6743 | 6746 | Adjustable Guide Bearing Kit |

*On all saws, the stationary and adjustable kits are the same except for items 6, 16, and 15 which are included with the adjustable kits.

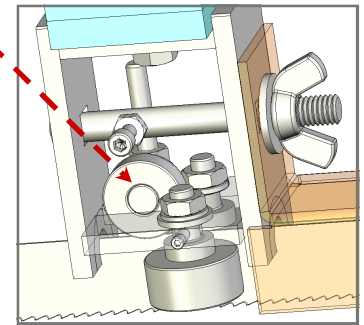
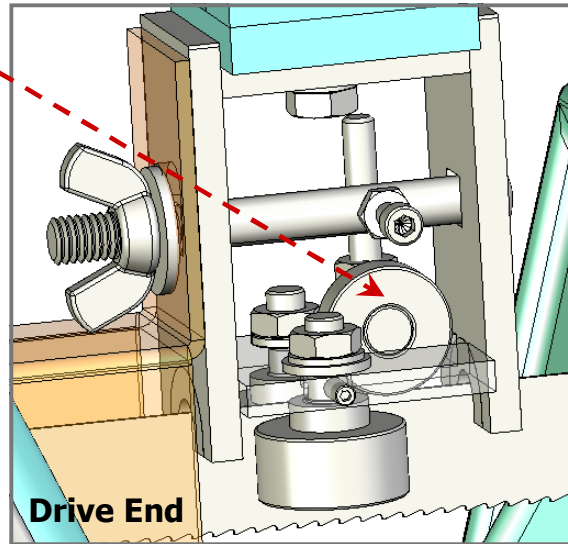
For Replacing Bearings in Blade Guides, Order 2 Each of Parts 19, 20, 21

Page 2b

Pressure Bearing Assembly

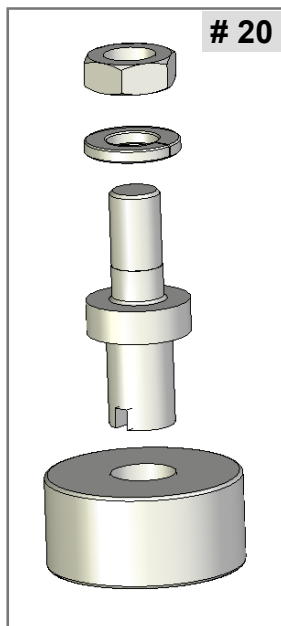


| Saw Models | Part # |
|---------------------------|--------|
| 1600, 1800, 2000, 3000 | 9012 |
| 4000 | 5996 |



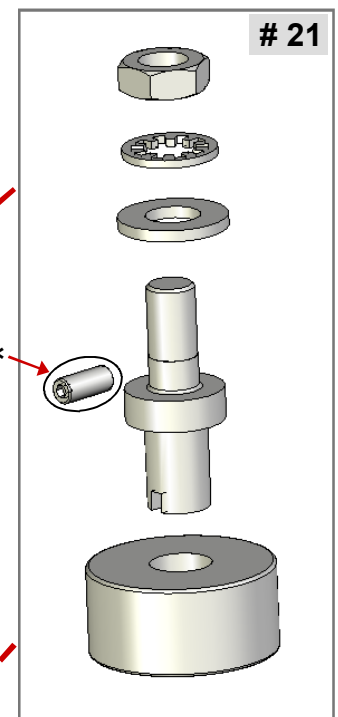
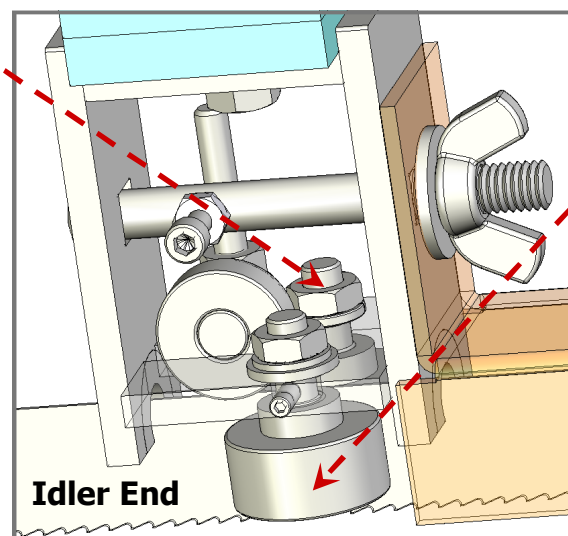
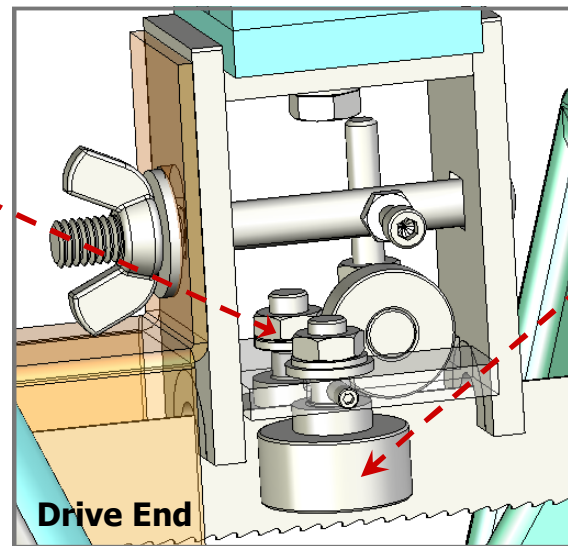
For other models,
See page 2

Stationary and Adjustable Guide Bearing Assemblies



Stationary Bearing
Assy.

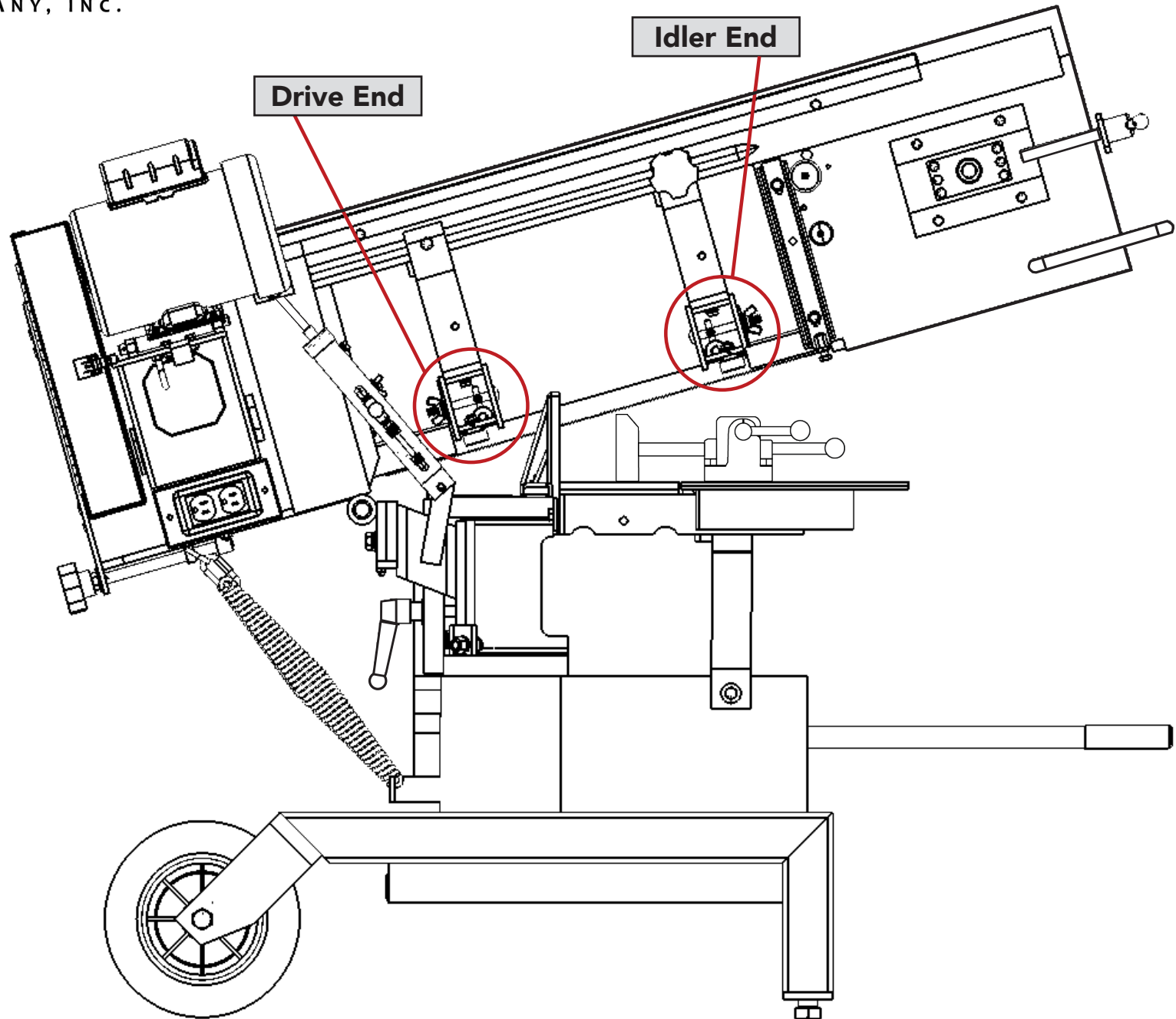
| Saw Models | Part # |
|---------------------------|--------|
| 1600, 1800, 2000, 3000 | 6742 |
| 4000 | 6747 |



Adjustable Bearing
Assy.

| Saw Models | Part # |
|---------------------------|--------|
| 1600, 1800, 2000, 3000 | 6743 |
| 4000 | 6747 |

*Not part
of Assy. kit



Hydraulic Feed Control Assembly

Part Number For Models

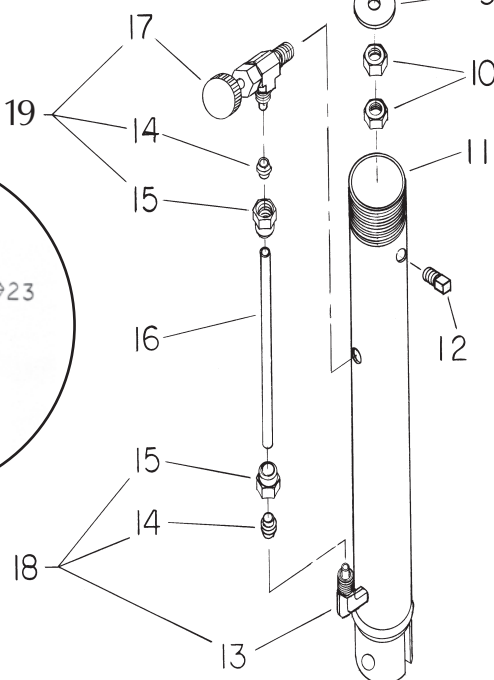
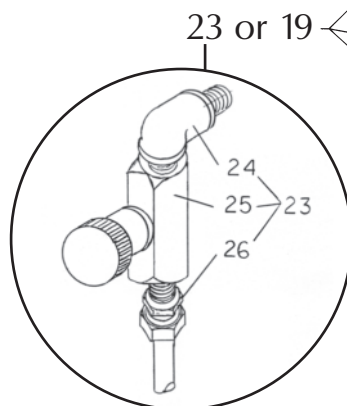
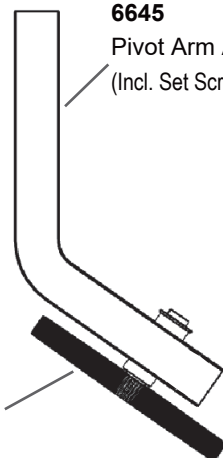
| Item No. | 90H 900 1000 1100 1200 | 1500 1600 1800 | 1440 2000 | 3000 4000 | |
|----------|---|----------------------|--------------|--------------|------------------------------|
| Assy. | 5355 | 5506 | 5708 | 5777 | Hydraulic Feed Control Assy. |
| 1 | 5529 | 5529 | 5529 | 5529 | Cap |
| 2 | 4950 | 4950 | 4950 | 4950 | O-Ring-Shaft |
| 3 | 5532 | 5532 | 5532 | 5532 | Sealing Washer, Top |
| 4 | 4951 | 4951 | 4951 | 4951 | O-Ring-Cylinder |
| 5 | 5361 | 5530 | 5530 | 5766 | Shaft |
| 6 | 4305 | 4305 | 4305 | 4305 | Flat Washer, 5/16 |
| 7 | 5531 | 5531 | 5531 | 5531 | Sealing Washer, Bottom |
| 8 | 5533 | 5533 | 5533 | 5533 | Leather Cup |
| 9 | 5534 | 5534 | 5534 | 5534 | Washer-Special |
| 10 | 4266 | 4266 | 4266 | 4266 | Nut, Hex. Jam, 5/16-24 |
| 11 | 5362 | 5528 | 5528 | 5767 | Cylinder |
| 12 | 4743 | 4743 | 4743 | 4743 | Plug, Oil Fill |
| 13 | Only sold as an Assembly (See 4728) Item # 18 | | | | Male Elbow - Tube Fitting |
| 14 | 4732 | 4732 | 4732 | 4732 | Sleeve - Plastic |
| 15 | 4729 | 4729 | 4729 | 4729 | Nut with Brass Sleeve |
| 16 | 5363 | 5590 | 5711 | 5706 | Tube, 1/4 Dia. Plastic |
| 17 | 4727 | | | | Needle Valve-Tube Fitting |
| 18 | 4728 | 4728 | 4728 | 4728 | Male Elbow Assembly |
| 19 | 4727 | | | | Needle Valve Assembly |
| 20 | 5356 | 5749 | 5749 | 5748 | Travel Stop Tube |
| 21 | 6702 | 6702 | 6702 | 6702 | Rebuilding Kit (2,4,8,16) |
| 22 | | | 4798 | 4798 | Remote Needle Valve Assembly |
| 23 | | 4808 | | | Flow Needle Valve Assembly |
| 24 | | 4735 | | | Elbow, Male to Male |
| 25 | | 4734 | | | Flow Needle Valve |
| 26 | | 4736 | | | Straight Fitting |

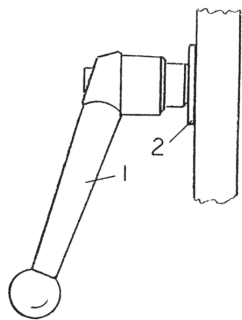
Chip Brush & Pivot Arm Assy.

Part No. 5484

6645
Pivot Arm Assy.
(Incl. Set Screw)

5550
Chip Brush Assy.

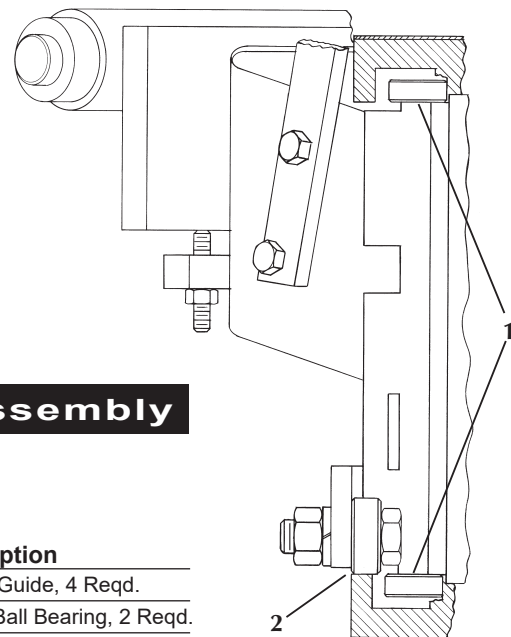




**Mitre Head Locking Handle
ALL MODEL SAWS**

| Item No. | Part No. | Description |
|----------|----------|---------------------------|
| 1 | 4966 | Mitre Head Locking Handle |
| 2 | 4311 | Flat Washer |

Press center button and pull back to reset ratchet in Handle.

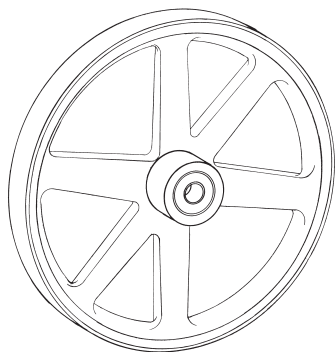


Bearing Carrier Assembly

Part Number For Models

| Item No. | Part Number For Models | | | Description |
|----------|------------------------|------------------------------|------------------------------|------------------------------|
| | 90H 1000 | 1100 1200 1500 1600 | 1800 2000 3000 4000 | |
| 1 | 4500 | 4510 | 4514 | Carrier Guide, 4 Reqd. |
| 2 | 4499 | 4522 | 4522 | Thrust Ball Bearing, 2 Reqd. |

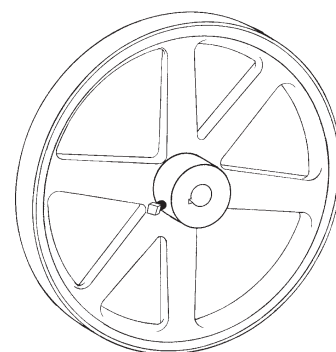
Note: Serial No. required when ordering



**Idler Wheel and Bearing Assy.
With Vulcanized Rubber**

Part Number For Models

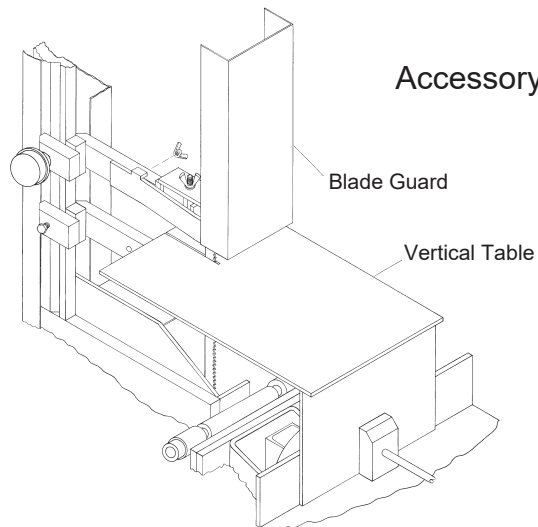
| 90H 900 1000 1100 1200 | Part Number For Models | | Description |
|------------------------------------|--------------------------------------|--------------|-----------------------------|
| | 1440 1500 1600 1800 2000 | 3000 4000 | |
| 5365 | 5788 | 5849 | Idler Wheel & Bearing Assy. |



**Drive Wheel With
Vulcanized Rubber**

Part Number For Models

| 90H 900 1000 1100 1200 | Part Number For Models | | Description |
|------------------------------------|--------------------------------------|--------------|-------------------------|
| | 1440 1500 1600 1800 2000 | 3000 4000 | |
| 5367 | 5740 | 5775 | Drive Wheel With Rubber |



Accessory

**Vertical Table and
Blade Guards**

Order by Saw Model Number.
Table sold with blade guard.

Part Number For Models

| Description/Item | 90H 900 1100 1200 | 1500 | 1600 | 1800 |
|----------------------------|----------------------------|------|------|------|
| | ✓ | ✓ | ✓ | ✓ |
| Vertical Table #9374 | ✓ | ✓ | ✓ | ✓ |
| Vertical Table #6040 | ✓ | ✓ | ✓ | ✓ |
| Blade Guard #6041 | ✓ | ✓ | ✓ | ✓ |
| T-Nut #6021* | ✓ | ✓ | ✓ | ✓ |
| Vertical Support Bar #6022 | ✓ | ✓ | ✓ | ✓ |

* Replace Head Weight Adjustment Handwheel with 6021 T-Nut

CAUTION: Disconnect power supply cord from power source before changing the blade or making any other repair or adjustment to the saw.

Installation Instructions

1. Visually inspect machine for hidden shipping damage.
2. As part of the receiving inspection, check for broken ball bearings on the bearing carrier assembly. This is the assem-

bly that the saw swivels on for miter cuts. CHECK ALL SIX BEARINGS. Two are located in the groove under the degree plate. See illustration on page 4.

IMPORTANT Model 2000, 3000 and 4000 owners note: The shut off rail was removed for shipping. You must mount the rail on the machine table before using the saw.

Vertical Sawing Position

NOTE: Model 1800 only – before raising the head on the Model 1800, remove the head weight adjustment hand-wheel and install the 6021 T-Nut. Attach the threaded vertical support bar (6022) tightly to the rear of the drive housing. See the chart on page 4. Adjust, if needed, to square blade with the vertical table.

1. Pull hydraulic pin at bottom of hydraulic. Disengage compensating spring assembly. Head is now free to raise to vertical position. Raise head up and over center. Hold head and gently let it move up to vertical position. DON'T LET THE HEAD DROP! See illustration on page 4.

2. Slide the vertical saw table into the blade and against the back of the horizontal table. Secure with the screwless vise or C-clamps. Adjust the drive end of the blade guide assembly, if necessary, to provide support for that end of the vertical table.
3. Attach the vertical blade guard on the moveable guide arm and secure with wing nut supplied.
4. Position moveable arm as close to work as possible.

Removing and Replacing Blade

See Insert!: "Proper Blade Replacement & Tension Instructions"

Call 1-800-383-5547 for experienced help in selecting the proper saw blades for your application.

1. Disconnect power supply cord from power source.
2. Raise saw head assembly until blade clears the back of the table. Close hydraulic valve to lock in position.
3. Open the covers of the idler and drive wheels.
4. Pivot the chip brush to horizontal position and lock in place.
5. Loosen blade tension T-handle sufficient to release the blade around the wheels. Pull blade out of the blade guide bearings.
6. Brush chips from blade guide bearings and housings. Wipe bearing surfaces clean. Check that all bearings are running free.
7. Check that the guide bearings are set correctly for the new blade thickness. Use a feeler gauge that is one thousandth of an inch thicker than the blade. This is the best method because it does not rely on judgement.

A saw blade can also be used as a gauge, but it must be new. After the blade has been installed and under proper tension, check for proper spacing. Twist the blade at the idler and drive wheel side of the respective guide bearing housings. There should not be any noticeable motion of the blade on the other side of the guide bearings. Reset the gap to correct fit.

8. Place the new blade over the idler and drive wheels with the teeth facing toward you. The blade should run under the guides. The teeth should point out toward you and the tips of the teeth should point toward the motor end of the saw.

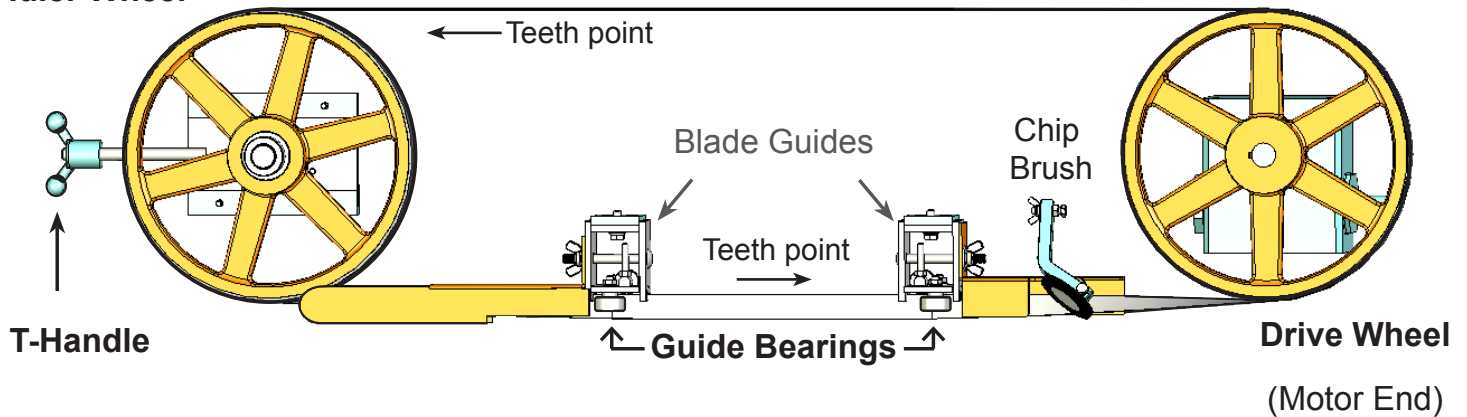
A fast check is to compare the blade (as you place it over the idler wheel) with the decal on the top of the saw head. Check to make sure the blade is on both orange wheels.

9. By turning the T-Handle, apply tension to the blade until all slack is removed from the blade or the blade is pulled in a straight line across the top of the saw from wheel to wheel. Grasp the blade on each side of the guides and twist the blade. Push down on the teeth with your thumbs and roll the back of the blade between the guide bearings. Proper tension is 1-1/2 to 2 full turns (360) of the T-Handle.
10. Proper blade tension is reached by grasping the T-Handle and applying one full turn (360) on the tension handle. You can use the casting number on the handle as a reference point. Reconnect the power supply. Turn the saw on for a couple of revolutions to square the blade on the wheels. Turn the saw off. Now put the second full turn of tension on the T-Handle. Turn the saw on again for a few revolutions. Turn the saw off. Check the tracking of the blade on the wheels. On saws with a 9" wheel the blade runs centered on the wheels. On saws with 12" and 14" wheels the teeth of the blade should be sticking out past the edge of the wheel. The teeth should not be on the rubber of the idler or drive wheels. If the blade is not tracking properly then the idle wheel needs to be adjusted. If you think the idle wheel needs to be adjusted, call the factory at 1-800-383-5547 for assistance.
11. Check the blade tension by setting the guide housings about 8" apart then grasp the blade between the fingers and thumb halfway between the guide housings. With a rotating or twisting motion of the hand the blade should deflect no more than 1/8".

See our website at www.EllisSaw.com
Explore our videos and links for additional
troubleshooting and maintenance information.

PROPER BLADE REPLACEMENT & TENSION

Idler Wheel



1. Follow directions for best results and general safety.
2. Wear gloves and safety glasses.
3. **Unplug the saw!!**
4. Raise head and close hydraulic. This will lock saw head in the up-position. Raise and lock chip brush.
5. **Loosen T-handle at least 5 full turns.** (Leave idler door shut.)
6. Remove blade from guide bearings by pushing down on blade. (A small wood block can be used to help push the blade out.)
7. Open all doors and remove blade from saw.
8. Clean and check bearings: remove chips, wipe clean.
9. Uncoil new blade - slowly!! (Blade is under tension.)
10. Place new blade over the idle and drive wheel. **NOTE:** Teeth must be facing toward you! Refer to drawing above and decal for teeth direction.
11. **Tighten blade by turning T-handle until all slack is removed from top of the idler and drive wheel.**
12. Twist blade into guide bearings.
13. Tension blade by turning T-handle one 360° turn.
14. Plug saw in and turn on for 3 to 5 seconds. (This will pull the blade through the bearings.)
15. Turn saw off.
16. Final tension is achieved by turning the T-handle a second 360° turn. **NOTE:** *If the blade does NOT have proper tension, the back of the blade will rub against the saw frame.*
17. Check the tracking of the blade. Turn saw on and run for 10-15 seconds.
18. Turn saw off. - Now, observe that the teeth of the blade are off the idler and drive wheels 1/8" to 1/4". **NOTE:** Improper blade tension will (greatly) affect blade tracking.
19. Reposition the chip brush and close the doors.
20. **Final Step:** Break in the new blade to increase blade life. See "Videos" on the website, check the manual or call us for support.

Troubleshooting Crooked Cuts

1. Check blade for worn or broken teeth and replace if needed.
2. Check to make sure that the number of teeth per inch on the blade fit the application. As a rule, only 6 to 12 teeth should be in contact with the workpiece.
3. Check the head pressure on the saw. The compensating spring tension should be 8 pounds with the blade 1" above the table, coming down with the hydraulic valve open.
4. Check the blade tension. Review the proper blade tension procedure under "Removing and Replacing Blade" on page 5, item 10.
5. Check the space between bearings of both guide bearing assemblies. It should be only .001" over the thickness of a new blade. As an example, a .033" feeler gauge would be used to set the guides for a .032" thick blade.
6. Check the blade tracking on the idler and drive wheels.
 - 9" solid wheels:** blade in center of wheels
 - 12" spoked wheels:** 3/4" wide blade should have teeth protruding from the side of the wheel about 1/8", and the 1" wide blade about 1/4".
 - 14" spoked wheels:** 1" and 1-1/4" wide blades should have teeth protruding 1/4" to 5/16" from side of wheel.
7. Check to make sure that the blade guide assemblies are not too far apart. Set the idler blade guide closer to the work to provide greater support for the blade.

Saw Adjustments

(If above steps did not eliminate crooked cuts)

1. Squaring blade with back of saw table.

Raise the head up 1/8" and hold in place with the hydraulic valve. Place a 6" square against the table back and move the head until the blade is exactly 90 degrees from the table back. Lock the head in position. Check that the POINTER points to zero (0 degrees) on the degree plate. If the pointer does not point to zero, bend the pointer so that it lines up to 0 degrees. The saw is now adjusted to cut from front to back accurately at 90 degrees and at all angles.
2. Square blade with top of saw table.

Use a blade aligning tool of the "clip on" or magnetic type to attach to the blade. Set a 6" square on the table top with the blade vertical and touching the aligning tool. These test measurements should be made with the tools kept as close as possible to the guide bodies. If the blade is not square with the table, the guide bearing plate needs to be adjusted to bring the blade into alignment. **See illustration of Blade Guide Assembly on page 2.**

First the wing nut, Item 9 in the illustration, must be loosened. Next, loosen nut, Item 13. The adjustment to the bearing plate is set using the cap screw, Item 14. If the adjustment requires that the cap screw be backed out, the adjustment stud, Item 2, must be manually pushed so it is in contact with the cap screw. When the blade is aligned parallel with the square, tighten the wing nut to lock the bearing plate in position. Hold the cap screw from turning and lock nut, Item 13, against the guide clamping bolt.

Blade Speeds

The V-belt must be changed on the pulleys to change speeds. For HIGH speed, place the belt in the largest pulley on the motor shaft and the smallest on the reducer shaft.

For MEDIUM speed, the middle pulley is used on both shafts. For LOW speed, the smallest pulley on the motor shaft is used with the largest on the reducer.

Replacement of Hydraulic Oil

The hydraulic cylinder can be filled on the saw or in a bench vise.

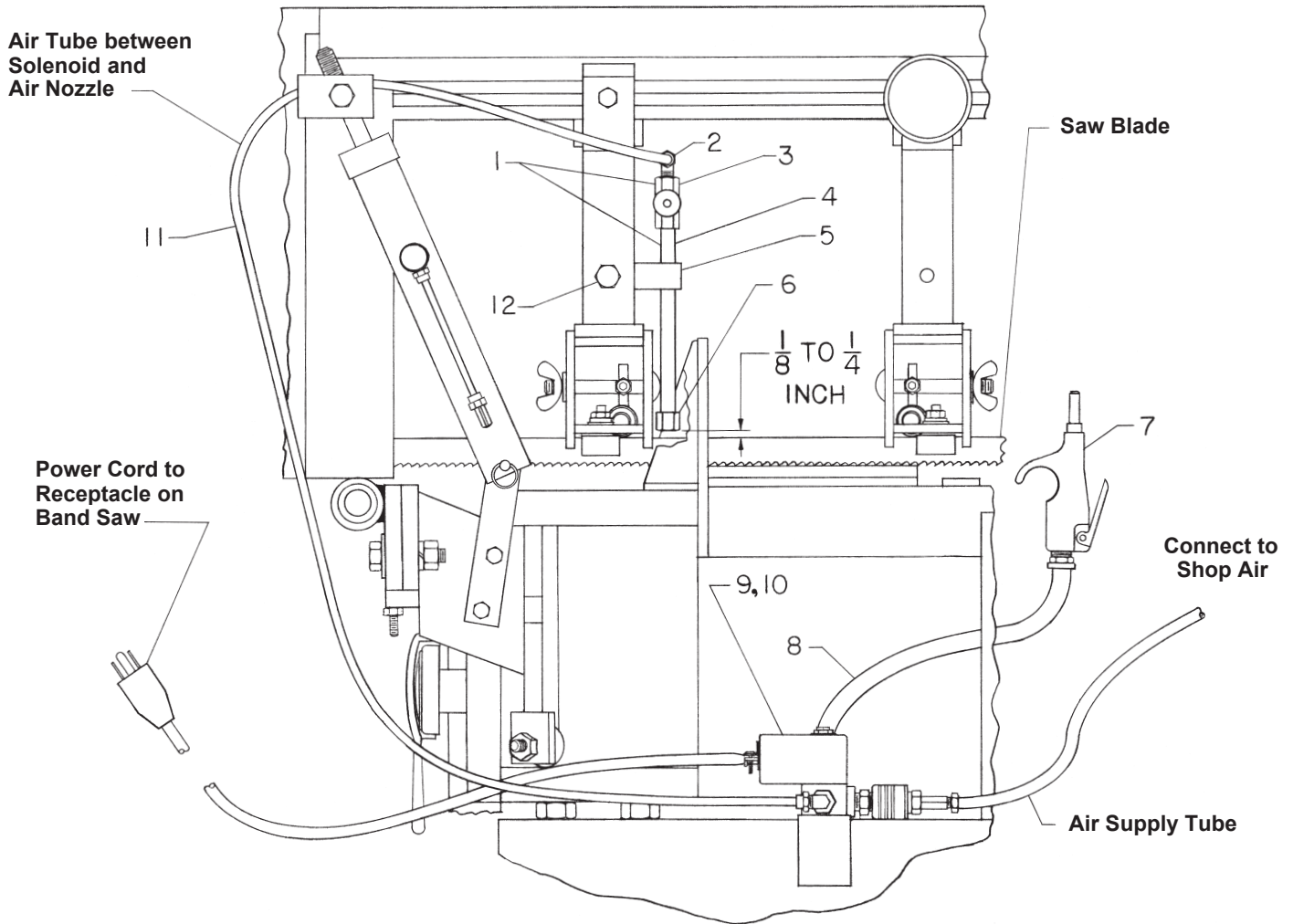
THE SHAFT MUST BE FULLY PUSHED IN BEFORE STARTING TO FILL.

1. Remove pipe plug from near top of cylinder.
2. Fill with light weight hydraulic oil until oil flows back out of hole. Replace pipe plug.

Maintenance

A good clean machine is easy to operate and promotes safety.

1. Keep areas clean by brushing chips from table grooves, guide bodies, idler and drive wheels, pivot shaft hinge area and turntable grooves.
2. Oilite bushings in pivot shaft should be oiled annually.
3. Check oil level in hydraulic. Proper level is at pipe plug hole.
4. Oil in wormgear should be checked every 90 days. **FILL TO PROPER LEVEL AT PLUG, BELOW THE BREATHER VENT,** using 80 to 140 weight gear oil.

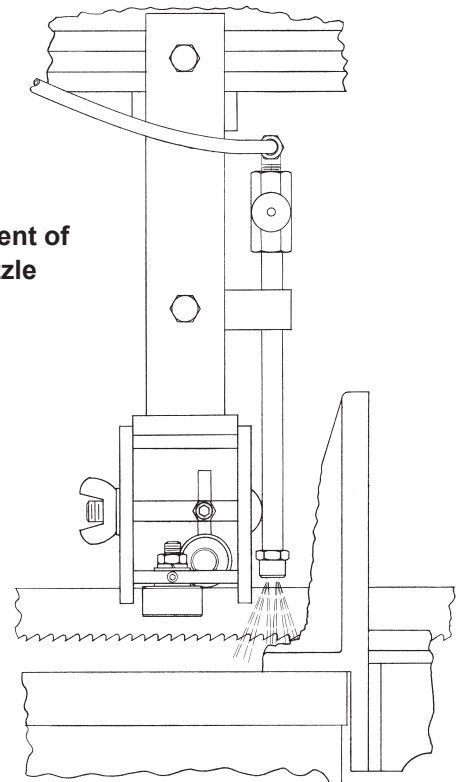


Air Cooling System

| Item No. | Part Number For Voltage Rating | | Description |
|----------|-----------------------------------|--------------|--|
| | 120V 5922 | 230V 5932 | |
| Sys. | 5922 | 5932 | Air Cooling System-Complete |
| 1 | 5925 | 5925 | Valve and Nozzle Assembly |
| 2 | 4728 | 4728 | Elbow Fitting |
| 3 | 4734 | 4734 | Flow Needle Valve |
| 4 | 4744 | 4744 | Nipple |
| 5 | 5923 | 5923 | Mounting Bar* |
| 6 | 5924 | 5924 | Nozzle Cap |
| 7 | 4970 | 4970 | Blow Gun |
| 8 | 4969 | 4969 | Air Hose Assembly |
| 9 | 5903 | 5912 | Solenoid Valve Assembly-Complete |
| 10 | 5001 | 5002 | Solenoid and Cord Assembly <i>Only</i> |
| 11 | 5926 | 5926 | Tubing, .25 OD, 5 Feet |
| 12 | 4015 | 4015 | Bolt, Hex. Head 5/16-18 x 1-1/4 |

* For saw Model 4000 use mounting bar 5928

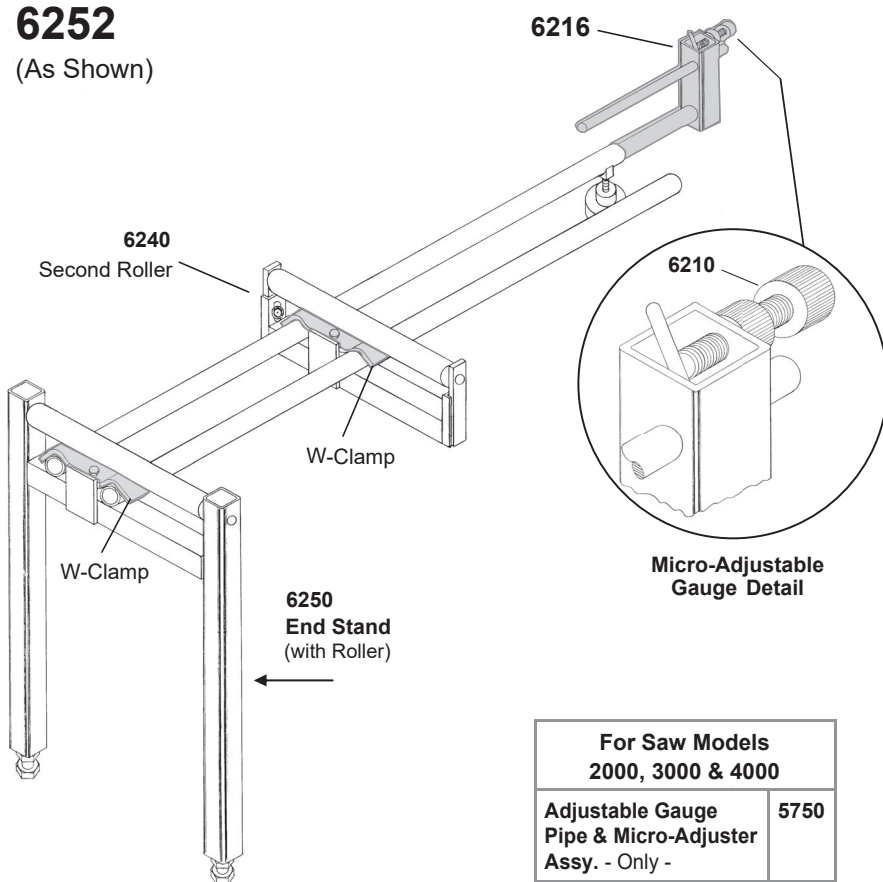
Enlargement of Air Nozzle



ACCESSORIES

6252

(As Shown)



| For Saw Models 2000, 3000 & 4000 | |
|---|------|
| Adjustable Gauge Pipe & Micro-Adjuster Assy. - Only - | 5750 |

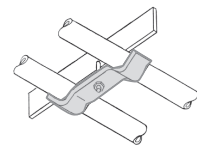
2 Roller Stock Stand Assy. Part No. 6252

Includes: Stock Stand with 2 Rollers, Adjustable Gauge Pipe & Micro-Adjuster Assy. (+ W-Clamps, Hardware and Handwheel)

For Saw Models 1800, 1600 and Smaller

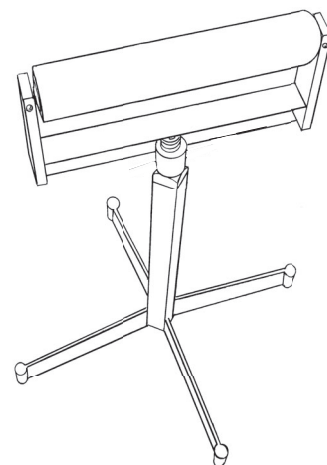
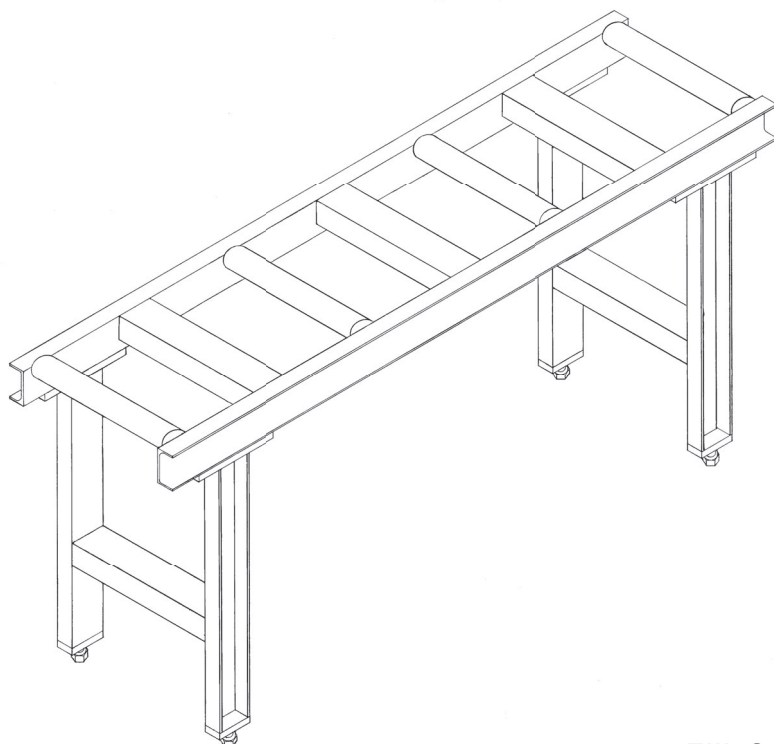
6252 - Sub-Assemblies - Options

| Description | Part #'s |
|--|---------------|
| Stock Stand - 1 Roller Assy. Includes: Everything <u>except</u> Second Roller Assy. (6240) (+ W-Clamps and Bolts) | 6200 |
| Adjustable Gauge Pipe & Micro-Adjuster Assy. *Sold with 6252* | 6216 * |
| Stock Gauge Assy. Includes: 6216, 2 Pipes, 2 W-Clamps with Bolts and Handwheel | 6222 |
| Micro-Adjuster Screw Assy. T-Rod, Nut and Knob *Sold with (6216) 6252* | 6210 * |
| End Stock Stand Assy. End Stand with Roller (+ W-Clamp + Bolt) | 6250 |
| Second Roller Assy. (+ W-Clamp + Bolt) | 6240 |
| W-Clamp (9086) (Under Saw Table) 2 Req., includes J-Bolts Used with Part No's: 6252, 6200, 6222 | |



Heavy Duty Stock Stands (4 Rollers)

| Saw Model | Part No. | Roller & Shaft | Length | Width | Roller Dia. | Height |
|-------------|----------|----------------|--------|-------|-------------|--------|
| 3000 - 4000 | 6227 | 6198 | 5ft | 20" | 2.38" | 24" |
| 1600 - 2000 | 6228 | 6198 | 5ft. | 20" | 2.38" | 22.5" |
| 1600 - 2000 | 6229 | 6193 | 5ft. | 12" | 2.38" | 22.5" |



Single Stock Stand

| Description | Part No. |
|---|-------------|
| Single Stock Stand Self Supporting, Adjustable | 6185 |
| Roller and Shaft (Only) | 6193 |