

MODELS

1118, 1318, 1338 & 1348

Parts List

and

Operating & Maintenance Manual

Manual Bandsaws

Built better to work stronger and last longer



1318
(formerly model 1118)



1338, 1348

REV 230720



WellSaw®
Made In The USA

Quality Metal Cutting Bandsaws

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FORWARD

The Model 1118, 1338 and 1348 Wellsaw bandsaws have been designed and manufactured to conform to Wellsaw's recognized high standards of quality and performance. Each saw must pass a series of final inspection tests, including actual metal cutting operations, before it is shipped. For this saw to provide satisfactory service, it is necessary that it be properly installed, operated and maintained. This manual has been prepared to assist you in carrying out these functions. We urge you to study this manual and follow its suggestions.

RECEIVING AND INSTALLATION

Carefully remove the wrap and skid so the saw and its parts are not marred or otherwise damaged. In the event of damage in transit, notify the carrier and file a Proof of Loss Claim immediately.

Shortages

Inspect the complete shipment carefully against the itemized packing list. Make sure that all items are present and in good condition. In the event of any shortage, notify the distributor from whom you purchased the saw and the carrier who made final delivery.

Utility Hook-Up

The use of a qualified electrician is always recommended when connecting the saw to the main power supply. Electrical codes differ from area to area and it is the customer's responsibility to ensure that their saw complies with applicable codes. Your Wellsaw is pre-wired at the factory for a specified voltage. Always check the motor and electrical panel to ensure that they are both wired to correspond to your electrical power supply.

WARNING

- Misuse of this machine can cause serious injury.
- For safety, machine must be set up, used and serviced properly.
- Read, understand and follow instructions in the operator's and parts manual.

When setting up machine:

- Always avoid using machine in damp or poorly lighted work areas.
- Always be sure machine is securely anchored to the floor.
- Always keep machine guards in place.
- Always put start switch in "OFF" position before plugging in machine.

When using machine:

- Never operate with machine guards missing.
- Always wear safety glasses with side shields (See ANSI Z87.1)
- Never wear loose clothing or jewelry.
- Never overreach - you may slip and fall into the machine.
- Never leave machine running while away from it.

- Always shut off the machine when not in use.

When servicing the machine:

- Always unplug machine from electrical power while servicing.
- Always follow instructions in operators and parts manual when changing accessory tools or parts.
- Never modify the machine.

Read and follow these simple rules for best results and full benefits from your machine. Used properly, Wellsaw's machinery is among the best in design and safety. However, any machine used improperly can be rendered inefficient and unsafe. It is absolutely mandatory that those who use our products be properly trained in how to use them correctly. They should read and understand the Operators and Parts manual as well as all labels affixed to the machine. Failure in following all of these warnings can cause serious injuries.

Machinery general safety warnings

1. Always wear protective eye wear when operating machinery. Eye wear shall be impact resistant, protective safety glasses with side shields which comply with ANSI Z87.1 specifications. Use of eye wear which does not comply with ANSI Z87.1 specifications could result in severe injury from breakage of eye protection.
2. Wear proper apparel. No loose clothing or jewelry which can get caught in moving parts. Rubber soled footwear is recommended for best footing.
3. Do not overreach. Failure to maintain proper working position can cause you to fall into the machine or cause your clothing to get caught - pulling you into the machine.
4. Keep guards in place and in proper working order. Do not operate the machine with guards removed.
5. Avoid dangerous working environments. Do not use stationary machine tools in wet or damp locations. Keep work areas clean and well lit. Special electrics should be used when working on flammable materials.
6. Avoid accidental starts by being sure the start switch is "OFF" before plugging in the machine.
7. Never leave the machine running while unattended. Machine shall be shut off whenever it is not in operation.
8. Disconnect electrical power before servicing. Whenever changing accessories or general maintenance is done on the machine, electrical power to the machine must be disconnected before work is done.

9. Maintain all machine tools with care. Follow all maintenance instructions for lubricating and the changing of accessories. No attempt shall be made to modify or have makeshift repairs done to the machine. This not only voids the warranty but also renders the machine unsafe.
10. Secure work. Use clamps or a vise to hold work when practical. It is safer than using your hands and it frees both hands to operate the machine.
11. Never brush away chips while the machine is in operation.
12. Keep work area clean. Cluttered areas invite accidents.
13. Remove adjusting keys and wrenches before turning the machine back on.
14. Use the right tool. Don't force a tool or attachment to do a job it was not designed for.
15. Use only recommended accessories and follow manufacturers instructions pertaining to them.
16. Keep hands in sight and clear of all moving parts and cutting surfaces.
17. All visitors should be kept at a safe distance from the work area. Make workshop completely safe by using padlocks, master switches, or by removing starter keys.
18. Know the tool you are using - its application, limitations, and potential hazards.

19. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

-Lead from lead based paint

-Crystalline silica from bricks and cement and other masonry products, and

-Arsenic and chromium from chemically treated lumber

20. Your risk from those exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specifically designed to filter out microscopic particles.

General Electrical Cautions

This saw should be grounded in accordance with the National Electrical Code and local codes and ordinances. This work should be done by a qualified electrician. The saw should be grounded to protect the user from electrical shock.

Wire sizes:

Caution: for circuits which are far away from the electrical service box, the wire size must be increased in order to deliver ample voltage to the motor. To minimize power losses and to prevent motor overheating and burnout, the use of wire sizes for branch circuits or electrical extension cords according to the following table is recommended:

Conductor Length	AWG (American wire gauge) number	
	240 volt lines	120 volt lines
0-50 feet	No. 14	No. 14
50-100 feet	No. 14	No. 12
Over 100 feet	No. 12	No. 8

Safety instructions on sawing systems

1. Always wear leather gloves when handling a saw blade. The operator shall not wear gloves when operating the machine.

2. All doors shall be closed, all panels replaced, and all other safety guards in place prior to the machine being started or operated.

3. Be sure that the blade is not in contact with the workpiece when the motor is started. The motor shall be started and you should allow the saw to come to full speed before bringing the workpiece into the saw blade.

4. Keep hands away from the blade area. **See figure A.**

5. Remove any cut off piece carefully while keeping your hands free from the blade area.

6. Saw must be stopped and electrical supply must be cut off before any blade replacement or adjustment of blade support mechanism is done, or before any attempt is made to change the drive belts or before any periodic service or maintenance is performed on the saw.

7. Remove all loose items and any unnecessary work pieces from the area before starting machine.

8. Bring adjustable saw guides and guards as close as possible to the work piece.

9. Always wear protective eye wear when operating, servicing or adjusting machinery. Eye wear shall be impact resistant, protective safety glasses with side shields complying with ANSI Z87.1 specifications. Use of eye wear which does not comply with ANSI Z87.1 specifications could result in severe injury from breakage of eye protection. **See figure B.**

10. Non-slip footwear and safety shoes are recommended. **See figure C.**

11. Wear ear protectors (plugs or muffs) during extended periods of operation. **See figure D.**

12. The workpiece, or part being sawed, must be securely clamped before the saw blade enters it.

13. Remove cut off pieces carefully, keeping hands away from saw blade.

14. Saw must be stopped and electrical supply cut off or machine unplugged before reaching into cutting area.

15. Avoid contact with coolant, especially guarding your eyes.

Figure A



Figure B



Figure C



Figure D



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Standard Features

- Spring-Loaded Carbide Guides with Rollers
- Combination Reduction Gearbox and Ring & Pinion Blade Drive
- Baldor® Motor
 - 3hp motor 3 phase TEFC
 - 2hp single phase ODP
- Infinitely Variable Blade Speeds
- Rite-Tension® Blade Tensioning Device
- Wet Cutting System
- Powered Blade Brush
- 110 Volts at Controls
- Overload and Undervoltage Protection
- Precision Ground Bed and Vise Jaws
- Quick Acting Vise
- Adjustable Stock Stop
- Auto Shut-Off at End of Cut
- OSHA Blade Guarding
- Tiger-Tooth® Bi-Metal Blade
- Coolant for Initial Start-Up

Specifications

Capacity:

Rectangular	13" high x 18" wide
1318	13" high x 38" wide
1338	13" high x 48" wide
1348	
Round	13" diameter
1318	13" diameter
1338	13" diameter
1348	
Flat	18" wide
1318	38" wide
1338	48" wide
1348	
45° Angle	11" high x 10" wide
1318	12" high x 21" wide
1338	12" high x 31" wide
1348	
Blade Size:	1" x .035" x 12'6" (150")
1318	1" x .035" x 15'6" (186")
1338	1-1/4" x .042" x 17'6" (210")
1348	
Blade Speeds	Infinitely Variable, 70-375 SFPM
Blade Guides	Carbide Guides with Rollers
Blade Tension	Manual Rite-Tension®
Electrical Options	3 hp - 208-230-460/60/3
	2hp - 115-208-230/60/1
Coolant System	Tank Capacity 8 Gallons
	Submersible Pump/3 GPM
Vise Control	Quick Acting/Manual Screw
Swivel Vise	To 45°
Feed Control	Variable Hydraulic/Counterbalance Spring
Band Wheels	15" Diameter Cast Iron
Bed Height	29"
Floor Area:	
1318	40"W x 84"L
1338	40"W x 102"L
1348	40"W x 112"L
Shipping Weight:	
1318	1000 Lbs.
1338	1230 Lbs.
1348	1300 Lbs.

Available Factory Options

Flush Hose with 8.5 GPM Pump | Powered Frame Raise and/or Powered Vise | Laser Line Pointer | Casters (Set of 4, 2 Locking) | NFPA Electrics (with Disconnect) | Work Light with Transformer | Stock Stand, 18" | 5' Non-Powered Roller Conveyor | 10' Non-Powered Conveyors
Please Contact Factory for Additional Options

Other Models in the 1318 Family

Model 1338 with 38" Width Capacity
Model 1316S Swivel Head Miter Saw to 60°
All Models Available with PLC Controlled
Semi-Automatic Operation

Notes on Sawing

It is widely recognized that a proficient operator is a key to optimum bandsawing. He makes certain the machine is properly maintained and adjusted for dependable operation. He carefully sets up each cutting job to prevent damage to the machine and obtain the best performance from the equipment.

Experienced blade dealers can be very help-ful in selecting the grade and proper tooth blade for each sawing job. All blades should be straight, have sharp teeth with uniform set, and be “broken in” at a reduced feed rate to obtain good cutting performance and blade life.

Every cutting situation has special characteristics requiring some experimentation to determine which blade, speed and feed rate will achieve the most satisfactory result. Cutting charts indicate a good starting point, but must be modified by direct experience if optimum performance is desired.

Here are some helpful pointers for adjusting speed and feed for good cutting performance.

1. Make sure the saw is cutting a good chip from the workpiece.
2. Watch for blue chips or excessive “smoke” indicating heat in the cut which could damage the blade or work harden the material being cut
3. Watch for excessive vibration or chatter marks on the cut-off piece indicating possible damage to the saw teeth by “hammering”.
4. Check the cut-off piece for flatness. A dull blade or excessive feed will produce a “belly” in the cut.
5. Inspect the blade for worn, rounded or shiny cutting edges. Avoid force cutting which will allow chips to “weld” to saw teeth and eventually cause the teeth to be stripped off the blade.
6. When experimenting, start with a slow speed and feed rate. Gradually increase blade speed and then feed pressure by small amounts until adverse effects are noted. You can then set the speed and feed at a reasonable level for continuous cutting. Remember that blade speed and feed pressure must be balanced to keep cutting a good chip.

Trouble Shooting

Premature Dulling of Blade Teeth

1. Feed rate too high or low. Check recommendation.
2. Blade speed too slow or too fast.
3. Faulty material; heavy scale, hard spots, etc.
4. Verify material analysis.
5. If coolant flow is not covering saw teeth, increase coolant flow rate.
6. If saw is vibrating in cut, reduce blade speed or increase feed rate.
7. Chipped or broken tooth may be lodged in cut.
8. “Chip welding” caused by improper feed and speed.
9. Incorrect coolant mixture.
10. Incorrect blade selection
11. Improper break-in of new blade. New blades should be run initially with reduced feed pressure for approximately 50 to 100 square inches.
12. Saw blade teeth may be hitting blade guides. Check for proper blade size.

Saw Blade Vibration

1. Incorrect blade speed for material.
2. Blade tension insufficient.
3. Back-up bearing may be worn.
4. Incorrect choice of saw tooth pitch.
5. Incorrect coolant mixture.
6. Incorrect feed setting. Increase feed.
7. Workpiece not firmly clamped in vice.
8. Worn or improperly adjusted saw guides. Check and make necessary adjustments.

Blade Teeth Chipping or Ripping Out

1. Blade pitch too coarse. Use a fine pitch saw blade on thin work sections.
2. Improper break-in of new blade. Do not start a new blade in an old cut.
3. Work piece not held firmly enough. Clamp work securely.
4. Introduce cooling if it is not being used.
5. Faulty material; scale or hard spots.
6. Blade gullets may be loaded. Use higher viscosity lubricant or coolant.
7. Blade speed and feed may need adjustment.

Notes on Sawing

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5. Inspect the blade for worn, rounded or shiny cutting edges. Avoid force cutting which will allow chips to “weld” to saw teeth and eventually cause the teeth to be stripped off the blade.
6. When experimenting, start with a slow speed and feed rate. Gradually increase blade speed and then feed pressure by small amounts until adverse effects are noted. You can then set the speed and feed at a reasonable level for continuous cutting. Remember that blade speed and feed pressure must be balanced to keep cutting a good chip.

Trouble Shooting

Premature Dulling of Blade Teeth

1. Feed rate too high or low. Check pages 35-36.
2. Blade speed too slow or too fast.
3. Faulty material; heavy scale, hard spots, etc.
4. Verify type of material.
5. If coolant flow is not covering saw teeth, increase coolant flow rate.
6. If saw is vibrating in cut, reduce blade speed or increase feed rate.
7. Chipped or broken tooth may be lodged in cut.
8. “Chip welding” caused by improper feed and speed.
9. Incorrect coolant mixture.
10. Incorrect blade selection
11. Improper break-in of new blade. New blades should be run initially with reduced feed pressure for approximately 50 to 100 square inches.
12. Saw blade teeth may be hitting blade guides. Check for proper blade size.

Saw Blade Vibration

1. Incorrect blade speed for material.
2. Blade tension insufficient.
3. Back-up bearing may be worn.
4. Incorrect choice of saw tooth pitch.
5. Incorrect coolant mixture.
6. Incorrect feed setting. Increase feed.
7. Workpiece not firmly clamped in vice.
8. Worn or improperly adjusted saw guides. Check and make necessary adjustments.

Blade Teeth Chipping or Ripping Out

1. Blade pitch too coarse. Use a fine pitch saw blade on thin work sections.
2. Improper break-in of new blade. Do not start a new blade in an old cut.
3. Work piece not held firmly enough. Clamp work securely.
4. Introduce cooling if it is not being used.
5. Faulty material; scale or hard spots.
6. Blade gullets may be loaded. Use higher viscosity lubricant or coolant.
7. Blade speed and feed may need adjustment.

Premature Blade Breakage

1. Poor weld in the blade.
2. Feed rate set too high. Reduce it.
3. Excessive blade speed. Adjust it.
4. Blade guides set too tight or misaligned.
5. Blade tension set too high.
6. Blade running against flange on wheels. Adjust wheel pitch.

Blade Squeal

1. Feed rate too light for blade speed. Increase feed rate and/or reduce blade speed.

Blade Slips Off Band Wheels

1. Blade not tensioned correctly.
2. Wheel pitch not set properly.
3. Guides set too tight.

Gullets of Blade Teeth Loading

1. Blade pitch too fine. Review blade selection.
2. Incorrect blade speed. Consult cutting chart.
3. If not using coolant, apply it.

Chips Welding to Blade Teeth

1. Cutting rate too high.
2. Chip brush may be out of adjustment.
3. Check coolant and application.

Blade Becoming Scored

1. Saw guides may be worn. Check and replace if necessary.
2. Too much pressure on saw guides. Adjust.
3. Guides may be out of alignment.

Blade Making Belly-Shaped Cut

1. Blade tension too light. Increase it.
2. Saw guides too far from work piece.
3. Blade pitch too fine. Use larger pitch and positive rake tooth form.
4. Excessive feed. Decrease it.
5. Dull blade.

Inaccurate Cut-Off

1. Is conveyor or stock stand level with saw bed?
2. Insufficient blade tension.
3. Blade guides too far apart. Always set blade guides as close to the piece as possible.
4. Blade may be dull. Check and replace if

necessary.

5. Feed pressure too high. Reduce it.
6. Blade guides loose, worn or out of alignment.
7. Too many teeth-per-inch. Blade not cutting freely.
8. Chip brush not cleaning teeth properly.
9. Dirty coolant.
10. Check for loose fasteners.

Rough Cut / Poor Finish

1. Excessive feed rate. See recommendations.
2. Blade too coarse. Use finer blade pitch.
3. Inadequate cutting fluid. Replace.

Blade Stalls in Work

1. Insufficient blade tension.
2. Excessive feed pressure.
3. Blade tooth spacing too coarse.
4. Motor worn or defective.
5. Guides too tight against blade.

Blade Does Not Track Properly

1. Set wheel pitch so that blade runs to wheel flange but not against it.
2. Is blade tension correct?
3. Is back of blade riding against backup bearing? If not, adjust it.

Motor Overheating

1. Check for correct voltage supply. Check voltage at motor. Check magnetic starter heaters.
2. Check for loose electrical connections.
3. Does motor amp reading correspond to rating on motor specifications tag?
4. Is internal motor wiring correct?
5. Is drive belt over tightened?

Automatic Stop

When the blade has completed a cut through the material, the saw frame drops onto a limit switch actuator which shuts the motor off.

When changing a blade or doing any other maintenance or repair, *be sure the automatic stop is engaged and disconnect the main power supply.*

It is necessary to raise the saw frame to clear the limit switch actuator before the saw can be started.

PLACING THE BLADE ON SAW

S/N's up to 1999

1. Raise saw frame.
2. Open idle and drive wheel guards.
3. Remove blade brush drive belt by loosening thumb screw.
4. Loosen Rite Tension® take up screw and remove old blade. In the event of a broken blade, be sure Rite tension® is open by turning take up screw counter-clockwise at least six (6) times.
5. **WARNING:** Uncoil new blade, wearing gloves to protect your hands and Eye protection. Make certain blade teeth point in the direction of blade travel which is toward the motor.
6. Place new blade on the guides and on band wheels.
7. Grasp blade on frame side and push it toward guide bracket beam to hold it in position while turning Rite Tension® take up screw.
8. Tighten blade to proper tension. Blade is properly tensioned when the take up screw is tightened until mechanism bottoms.

After S/N 1999

To insert a new blade, turn the Adjusting Knob (item 17 in the parts diagram) on the blade guide Counter Clockwise (CCW) until it stops. Insert the new blade and turn the Adjusting Knob Clockwise (CW) until it stops. The spring loaded carbide guides will then be in proper contact with the sides of the blade. The back of the blade should just touch the carbide back up guide (15 in the parts drawing). The side bearings should have a gap of .038 for the .035 thickness blade.

Wheel Pitch Adjustment

If the saw blade runs too low, runs off the wheels, or runs too high and rubs the wheel flange, a wheel adjustment must be made.

Loosen the blade before making the following adjustments.

Idler Wheel:

Blade running too low or off the wheel- adjust the idler wheel block. Loosen the two cap screws in the block, opposite the take up screw end, one-half turn. Tighten the opposite two cap screws one-half turn. Repeat if necessary.

Blade running too high and against the idler wheel flange- The blade can become distorted, its top edge rolled over and wheel flange will wear excessively.

To correct this, loosen the two cap screws closest to the take up screw one-half turn. Tighten the opposite cap screws one-half turn. Repeat if necessary.

Drive Wheel:

Blade running too low or off the drive wheel- Loosen the two cap screws opposite the outside end of the wheel plate one-half turn. Tighten the two set screws on the same end one-half turn. Repeat if necessary.

Blade running too high, and against the drive wheel flange- Loosen the cap screws closest to the outside end of the wheel plate and loosen the two set screws at the same time by the same amount. Repeat if necessary.

Make certain all screws are tight after adjustments have been made.

Variable Speed Drive

Models 1118, 1338, 1348 and 1316S are equipped with variable speed pulleys providing infinite speed selection between 70 and 375 feet-per-minute. See Cutting Speed Chart for settings.

To vary blade speed, rotate handwheel clockwise to increase speed or counter-clockwise to decrease speed. Do not adjust the speed unless the pulley system is in operation (spinning). The handwheel drag is set at the factory during assembly. This drag prevents handwheel "creep" during operation but still permits easy adjustment. Due to normal wear and environment, the drag setting may change. To readjust, tighten set screw in thrust nut.

Gear Box Repair

1. Remove gear box from saw.
2. Remove four machine screws holding gear box together.
3. Separate gear box by carefully prying castings apart at a location near pulley shaft. *Caution: Do not use excessive force.*
4. Once the gear box is open, the internal parts may be inspected for wear.
5. Liquid plastic gasket is used to seal the gear case, Loctite No. 51580 or equivalent.
6. Grease, Mobilgrease XHP 220 or equivalent is recommended. The grease must have excellent clinging characteristics. (See Lubrication).

Blade Guide Alignment

Up to S/N 1999

To properly align the saw blade for a straight and accurate cut, do the following:

1. Check the stationary vise jaw. Make sure it is square. To do this, place a combination square against the vise jaw slot in the saw bed. Slide the square toward the stationary vise jaw. Make the necessary adjustment. If you then find the saw blade is not square with the stationary vise jaw, the blade must be adjusted.

2. This adjustment is made with the top two socket headed screws on the roller adjusting block of the guide arm. Looking at the drawing (figure 2) you will see these adjusting screws labeled "A" and "B".

3. To make a vertical adjustment of the saw blade, so that the cut is square from top to bottom, the blade must be set so that it is perpendicular to the bed. In making this adjustment, clean the saw bed first.

4. Set the rule of the combination square on the saw bed with the end of the rule butted against the blade above the set of the saw teeth. Use a 1-1/2 thousandths (.0015") shim and slide it along the top and the bottom edge of the rule where it meets the saw blade. If the shim slides between the blade and the rule at, either the top or bottom, the roller supports must be adjusted by using the bottom socket head screws marked "C" and "D" to obtain the correct 90 degree angle. The top ball bearing should be in contact with the top of the blade at all times. When running the saw at idle, this contact pressure should be light.

Blade Guide Adjustment

After S/N 1999

To properly align the saw blade for a straight and accurate cut, do the following:

1. Square the stationary vise jaw. Make sure it is square to the front of the vise slot. Check by placing a combination square against the front of the vise slot in the saw bed. Slide the square toward the stationary vise. Make any necessary adjustment to the vise jaw to bring it into square. Set the combination square so that one leg is along the face of the stationary vise and check to see that the blade is square to the vise jaw. If it is not square, follow the instructions for horizontal adjustment.

2. Vertical Adjustment. The back of the saw blade should just touch the carbide back up guide (item 15 in the parts drawing) when the saw is running but not cutting. To adjust, loosen the two cap screws 8 [A] and move the block up or down as required. (Before making this adjustment, be sure the back of the blade is properly contacting the flange on both the drive and idle wheels).

3. Horizontal Adjustment. Loosen the two cap screws 8 [B] securing the horizontal adjusting block (items 11 & 12 of the parts drawing). Turn the top adjusting bolt (item 13 of the parts drawing) to move the blade either in, toward the saw bed, or out, away from the saw bed.

Normally, the blade comes off the Drive Wheel with a minimum amount of adjustment needed in the Horizontal Adjusting Block. The Idle End adjusting block is more likely to require adjustment.

4. Blade Tilt. To ensure the blade is perpendicular to the bed of the saw, loosen the two cap screw 8 [C] holding the Guide Support (28 & 29 of the parts drawing) and turn the bottom adjusting bolt (13 of the parts drawing).

Set the combination square on the saw bed with the end of the rule butted against the blade *above the set of the teeth*. Use a 1-1/2 thousandths (.0015") shim and slide it along the top and bottom edge of the rule where it meets the saw blade. If the shim slides between the blade and the rule at either the top or bottom, the blade guides must be adjusted.

5. Safety. Ensure that all bolts are properly tightened and that all guards are in place before using the saw.

Recommended Service Kits for Insurance Against Downtime (before S/N 2000)

1 year

100133-004	Rotary Blade Brush	1 reqd.
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2 years

100416-003	Bearing	4 reqd.
100406-002	Bearing	2 reqd.
105454-005	VS Belt	1 reqd.
100133-004	Rotary Blade Brush	1 reqd.
100166-450	Blade Brush V Belt	1 reqd.
106317	Fixed Carbide Guide	2 reqd.
106319	Spring Back Carbide	2 reqd.

After s/n 2000

1 year

100133-004	Rotary Blade Brush	1 reqd.
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2 years

100416-001	Bearing	4 reqd.
152153	Top Carbide Guide	2 reqd.
106317	Fixed Carbide Guide	4 reqd.
105454-005	VS Belt	1 reqd.
100133-004	Rotary Blade Brush	1 reqd.
100166-450	Blade Brush V Belt	2 reqd.

Maintenance

Caution: *Disconnect the electrical supply and press emergency STOP button before performing any maintenance. DO NOT service the Frame Hydraulic Cylinder or Down Feed Valve unless the frame is in the DOWN position or resting on a mechanical stop, such as a block of wood.*

Daily

1. Keep the saw clean and free of chips.
2. Maintain the coolant level and keep the coolant tank and filter clean of chip accumulation or sludge.

Monthly

1. Check, adjust and replace blade brush as needed.
2. Lubricate drive gears
3. Inspect carbide guides and bearings.
4. Inspect drive belt.
5. Clean coolant tank and filter as needed.

Annually

1. Check hydraulic oil level.
2. Replace guide rollers and carbide inserts.
3. Inspect gear box. Lubricate as needed.

Lubrication

Correct and adequate lubrication is a very important factor in determining the life and service of your Wellsaw. It is essential that all dust, dirt, chips, [etc. be](#)

thoroughly removed before lubricating the saw. The following lubrication recommendations cover usual saw applications. Heavy use and hostile environments may indicate more frequent lubrication for best saw performance.

Vise Screw, Ring Gear, Drive Pinion

1. Inspect Monthly.
2. Use Anti-Seize on Vise Screw.
3. Use Extreme Pressure Open Gear Lube sparingly on Ring Gear and Drive Pinion

Gear Case

1. Inspect after 3 years (6,000 hours).
2. Use Mobilgrease XHP 220 or equivalent.
3. Viscosity: Heavy Grease, drop point 550EF
4. Military Specification: None

Hydraulic Cylinder

1. Inspect annually. Fill to top of plug. Drain and replace every 5 years (10,000 hours).
2. Fill with Mobil Velocite Oil #6 or equivalent.
3. Viscosity at 100EF: SUS 57-61.
4. Military Specification: None.

Motor

1. Inspect annually. Re-lubricate every 2 years (4,000 hours) 1 to 2 full strokes.
2. Use Shell Dolium R or equivalent.
3. Viscosity: Heavy Grease, drop point 219EC.
4. Military Specification: None.

Parts Ordering

For your convenience:

When contacting your Wellsaw supplier or the Company for parts or service, it is essential that you have your saw Model, Serial Number and Purchase Date available.

Jot them down here for handy reference.

Model:

Serial Number:

Purchase Date:

MACHINE OPERATION

1. Raise the frame and lock it into place by turning the manual flow control valve clockwise (CW) until it stops.
2. Adjust material you plan to saw to the desired cut off length. Turn vise screw handle clockwise (CW) to tighten. Always be sure the material is properly secure before cutting.
3. Push the blade START button to start the machine.

NOTE: If the coolant selector switch is in the ON position, the coolant pump will turn on with the motor. Check to ensure there is adequate coolant in the coolant tank.

4. Adjust feed pressure for the material to be cut. Refer to pages 35 & 36 for the recommended settings.

5. Open the manual flow control valve. Turn it counterclockwise (CCW) to the desired feed rate.

NOTE: When breaking in a new blade, always reduce the frame feed rate to one half (1/2) the normal rate of descent.

6. The saw will automatically shut off at the end of the cut. Raise the frame and lock it in to place. Repeat the above operation for additional operations.

NOTE: The saw may be turned off at any time during the cutting operation by pressing the STOP button on the operator control panel or by pressing the KILL SWITCH (frame down limit switch) on the front of the machine.

One Year Limited Warranty

This Wellsaw is warranted against defects in material and workmanship installed or performed at our factory. Within one year from the date of purchase, we will, free of charge, at our option, either repair or replace any part of the Wellsaw which our examination discloses to be defective because of workmanship or a defect in material, and to make any necessary service adjustments as required. This warranty does not apply if the Wellsaw has been subject to accident, alteration, abuse, misuse or which fails due to lack of care or as the result of inadequate power supply and specifically does not apply to normal wear of moving parts such as bearings, gears, pinion or blade. *There is no warranties beyond the description on the face hereof.* Wellsaw shall not be liable for consequential or incidental damage suffered or incurred with respect to defective material or workmanship.

All transportation costs or parts submitted to Wellsaw under this warranty must be paid by the saw's owner. No products or parts are to be returned to our factory without first obtaining written permission.

NOTE: Be sure to fill out and return the Warranty Card provided with this Wellsaw.



Procedure to check gear backlash on Wellsaw bandsaws.

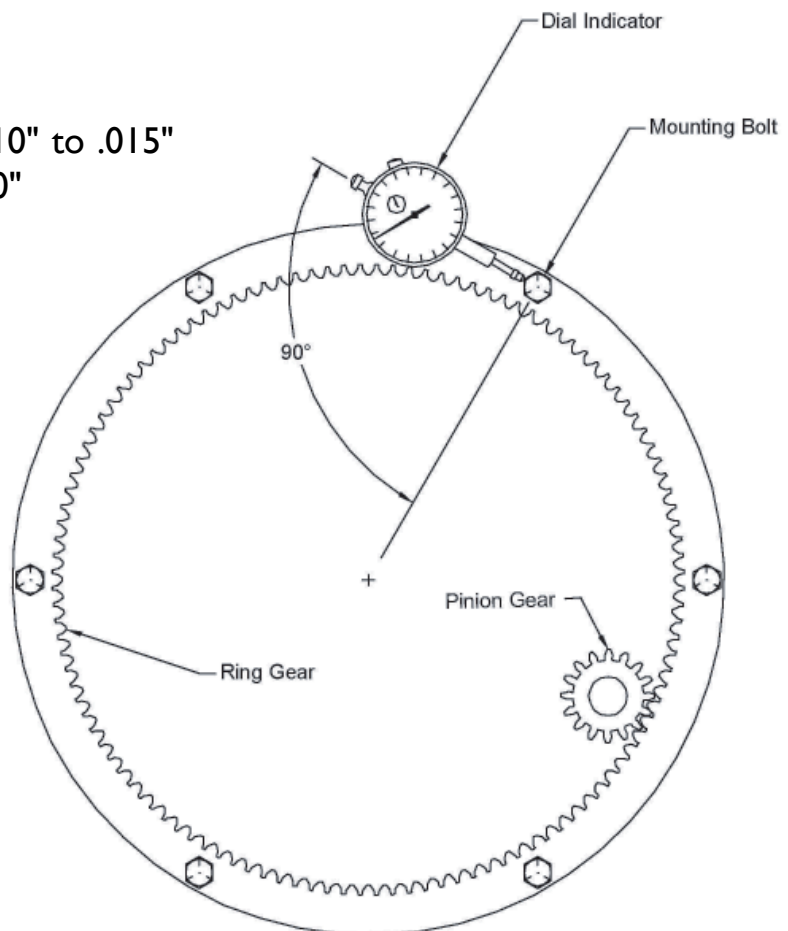
The applies to saw models with spur type ring & pinion final drive.

- Find the six bolts that hold the Ring Gear to the Bandwheel.
- Using a dial indicator with a magnetic mount, position the indicator so that the point will contact one of the bolt heads. The indicator must be 90° to the gear (see illustration).
- The Pinion Gear must be held stationary. This can be done by holding a screwdriver in the teeth and prying against the saw frame.
- Rock the bandwheel slightly by hand and note the travel on the indicator. See specifications.
- To adjust the backlash the gearbox must be repositioned. The gearbox mounting holes are oversized for this purpose. Slightly loosen the bolts that hold the gearbox to the wheel plate and push the gearbox in the desired direction. Tighten the bolts and recheck the backlash.
- If you chose to use another method to check the recommended clearance please note that too much or too little clearance will cause damage to the ring and pinion gears.

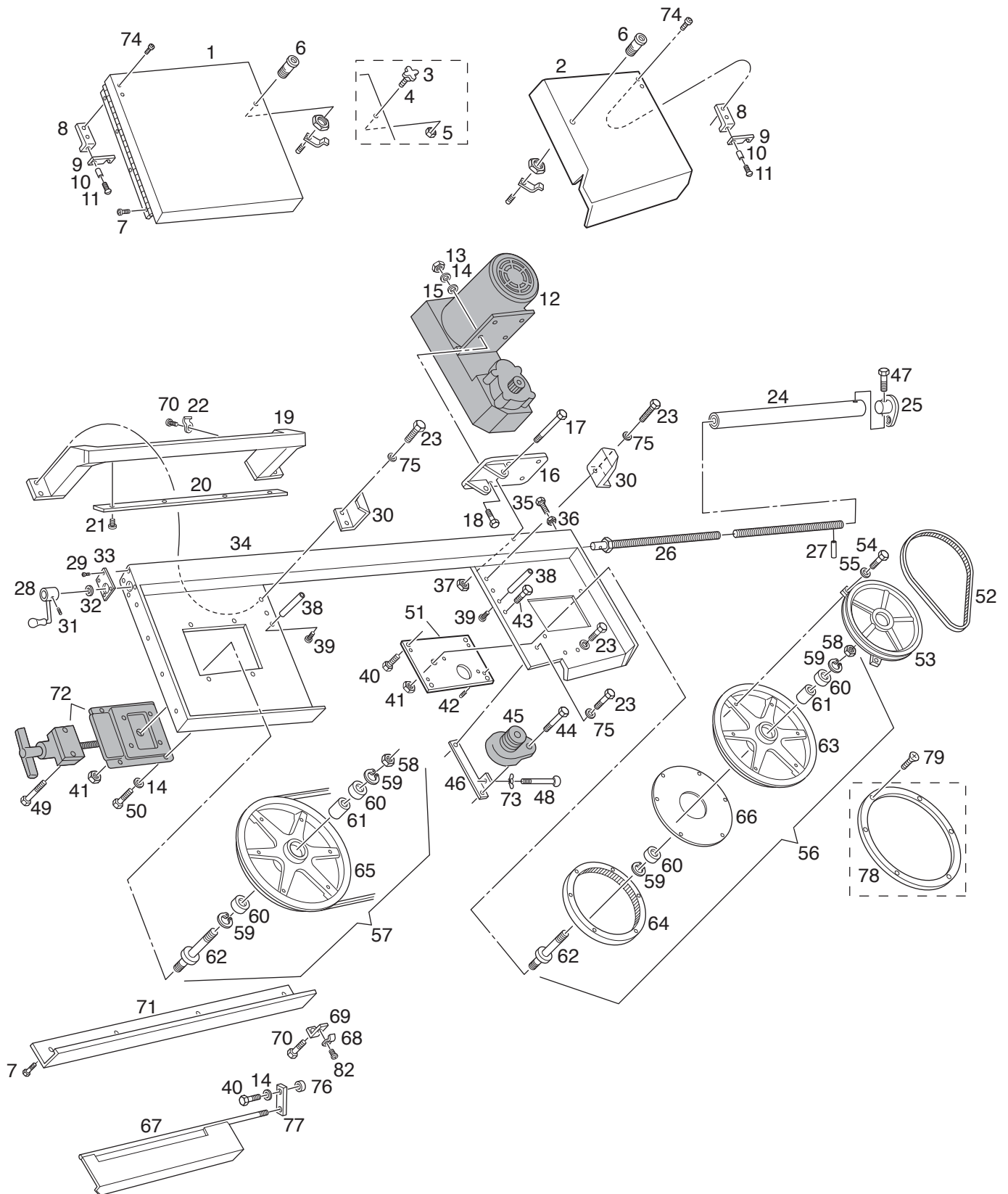
Backlash Specification:

9.5" and 11.5" Ring Gears = .010" to .015"

13.5" Ring Gear = .015" to .020"

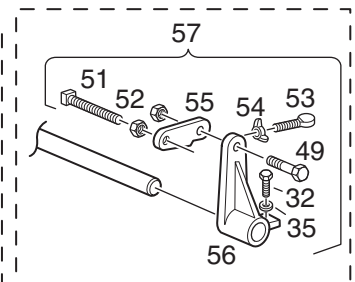
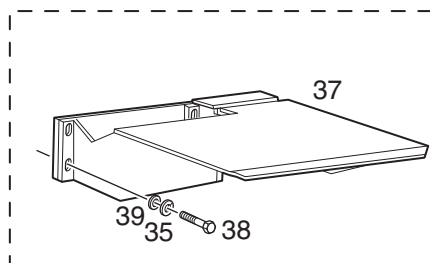
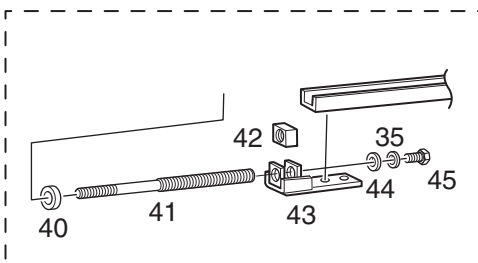
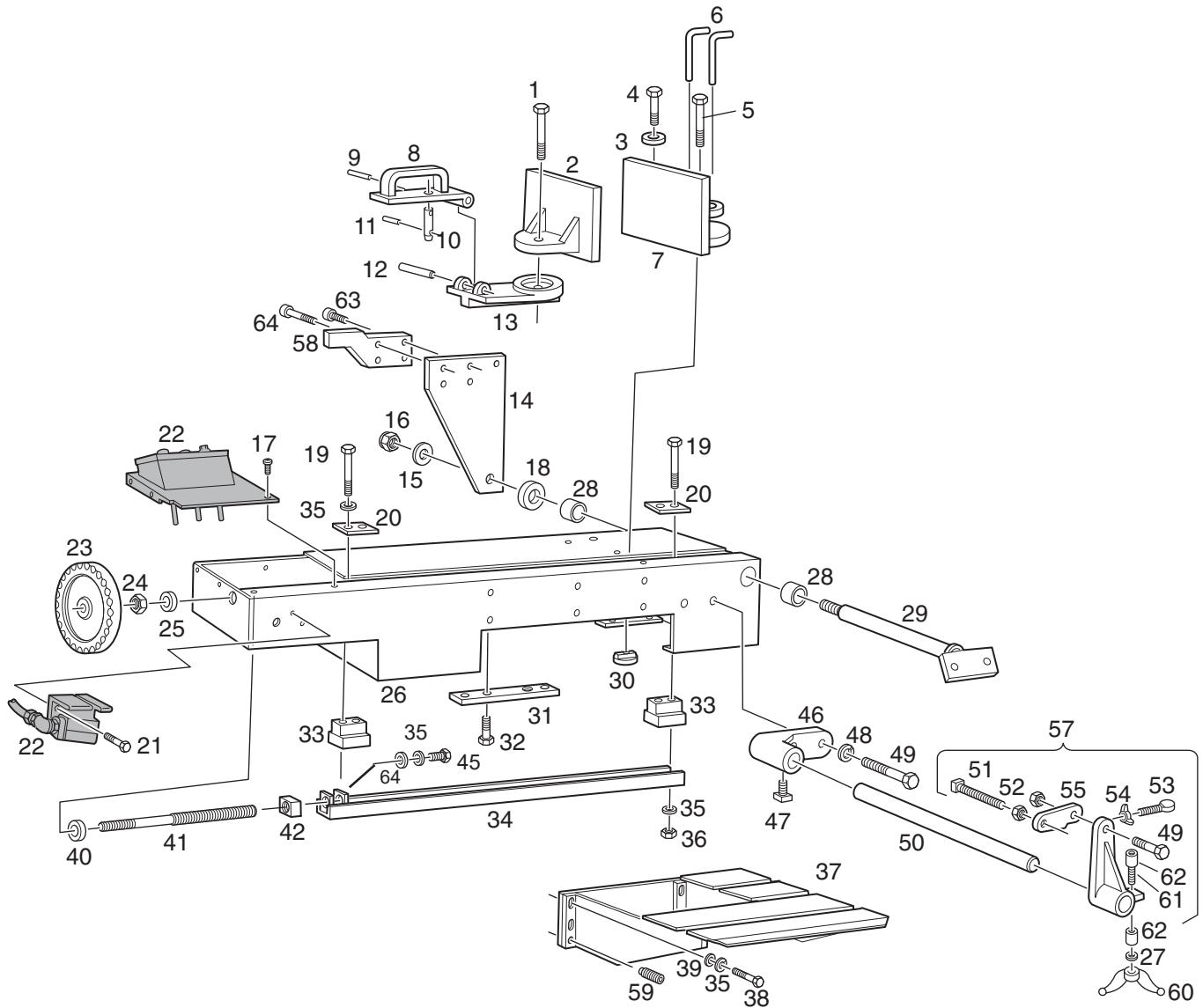


Frame Assembly



1	150146SERV	Idle Wheel Guard	44	100165-011	Shoulder Bolt, 3/8-16 x 1-1/2
2	150147SERV	Drive Wheel Guard	45		Blade Brush Ass'y (page 20)
3	100139-003	Knob	46	150369	Blade Brush Arm
4	100034-045	Set Screw, 1/4-20 x 1-1/4	47	100008-018	Cap Screw, Soc Hd 5/16-18 x 3/4
5	150150	Retainer Nut	48	100042-003	Thumb Screw, 1/4-20 x 2
6	100135-002	1/4 Turn Fastener w/cam (model 1118 after S/N 2583) (model 1338 after S/N 1723) (model 1348 after S/N 4807)	49	100004-055	Cap Screw, HH 3/8-16 x 2-1/4
7	100013-010	Cap Screw, BH 1/4-20 x 1/4	50	100004-013	Cap Screw, HH 5/16-18 x 5/8
8	150095	Door Catch Mtg Block	51	150022	Wheel Plate, Drive End
9	150096	Door Catch	52	100166-450	V- Belt
10	150182	Door Catch Sleeve	53	150144	Pulley, Large
11	100013-009	Machine Screw, BH 10-32 x 1/2	54	100004-068	Cap Screw, HH 1/4-20 x 1-1/4
12		Motor & Gear Box Assy. (page 30)	55	100025-001	Lock Washer, 1/4
13	100017-002	Hex Nut, 5/16-18	56	150087	Drive Wheel Ass'y for 1" Blades (includes 41,54,55,58-64, & 66)
14	100025-002	Lock Washer, 5/16		150087-002	Drive Wheel Ass'y for 1-1/4" Blades (includes 41,54,55,58-64,66,78 & 79)
15	100029-003	Flat Washer, 5/16	57	150088	Idle Wheel Ass'y for 1" Blades (includes 41,58-62 & 65)
16	150248	Motor Mount Bracket		150088-002	Idle Wheel Ass'y for 1-1/4" Blades (includes 41,58-62,65,78 & 79)
17	100004-116	Cap Screw, HH 1/2-13 x 4-1/2	58	100019-016	Hex Jam Nut, 5/8-18
18	100004-016	Cap Screw, HH 5/16-18 x 7/8	59	100068-002	Snap Ring (2 req'd/ wheel)
19	150010	Guide Beam Ass'y (model 1118 to S/N 1300)	60	100414-003	Ball Bearing (2 req'd/ wheel)
	150280	Guide Beam Ass'y (model 1118 after S/N 1300)	61	105415	Spacer (1 req'd/ axle)
	150318	Guide Beam Ass'y (model 1338)	62	105420	Wheel Axle
	150389	Guide Beam Ass'y (model 1348)	63	150059-001	Drive Wheel for 1" Blade (includes items 59 thru 61)
20	150124	Guide Arm Track (model 1118)		150059-002	Drive Wheel for 1-1/4" Blade (includes items 59-61, 78 & 79)
	150320	Guide Arm Track (model 1338)	64	B-086	Internal Ring Gear
	150387	Guide Arm Track (model 1348)	65	150060-001	Idle Wheel for 1" Blade (includes items 59 - 61)
21	100009-013	Cap Screw, FH 5/16-18 x 1/2		150060-002	Idle Wheel for 1-1/4" Blade (includes items 59-61, 78 & 79)
22	100218-010	Clamp	66	150405	Shield
23	100004-076	Cap Screw, HH 3/8-16 x 1	67	150157	Blade Guard Lower (Model 1118)
24	150104	Counter Balance Arm & Sleeve		150321	Blade Guard Lower (Models 1338 & 1348)
25	150411	Counter Balance Spring Attach. (model 1118)	68	150414	Clamp
	150336	Counter Balance Spring Attach. (model 1338)	69	150154	Blade Guard Support
	150471	Counter Balance Spring Attach. (model 1348)	70	100013-005	Machine Screw, BH 10-32 x 3/8
26	150114	Counter Balance Screw (model 1118)	71	150273	Blade Guard, upper (Model 1118)
	150315	Counter Balance Screw (model 1338)		150314	Blade Guard, upper (Model 1338)
	150386	Counter Balance Screw (model 1348)		150399-001	Blade Guard, I.E. (Model 1348, 1 req'd w/ 150339-002)
27	100053-021	Roll Pin, 3/16 x 7/8		150399-002	Blade Guard, D.E. (Model 1348, 1 req'd w/ 150339-001)
28	150476	Crank	72		Rite Tension® Blade Tension & Slide Block Ass'y (see page 16)
29	100049-001	Drive Screw #4	73	100024-002	Wing Nut, 1/4-20
30	155152	Door Catch Support (after S/N 2583)	74	100013-008	Machine Screw, Button Head 1/4-20 x 3/8
31	100053-015	Roll Pin, 1/8 x 1"	75	100025-003	Lock Washer, 3/8
32	100030-007	Flat Washer, 1/2 SAE	76	105537	Spacer (2)
33	150231	Cutting Pressure Label	77	150158	Blade Guard Mounting Block
34	150031	Saw Frame (model 1118 to S/N 1300)	78	150467	Flange Ring (used w/ 1-1/4" blades)
	150281	Saw Frame (model 1118)	79	100009-001	Cap Screw, Soc. FH, 1/4-20 x 5/8 (6 req'd per wheel)
	150316	Saw Frame (model 1338)	80	100004-076	Cap Screw, HH 3/8-16 x 3/4
	150391	Saw Frame (model 1348)	81	100004-054	Cap Screw, HH 5/16-18 x 1-3/4"
35	100004-030	Cap Screw, HH 3/8-16 x 1-1/2	82	100013-006	Cap Screw, BH 1/4-20 x 1/2
36	100019-004	Hex Nut, 3/8-16			
37	100023-004	Nylon Lock Nut, 1/2-13			
38	150160-001	Door Latch Stud (1118 to S/N 2582)			
	150160-002	Door Latch Stud (only 1 req'd if used w/ tem #6) after s/n 2583; 1338 s/n 1724; 1348 s/n 4808			
39	100004-015	Cap Screw, HH 5/16-18 x 3/4			
40	100004-020	Cap Screw, HH 5/16-18 x 1-1/4			
41	100065-007	Hex Nut, 5/8-18			
42	100034-005	Set Screw, 5/16-18 x 3/4			
43	100004-015	Cap Screw, HH 5/16-18 x 3/4			

Bed Assembly



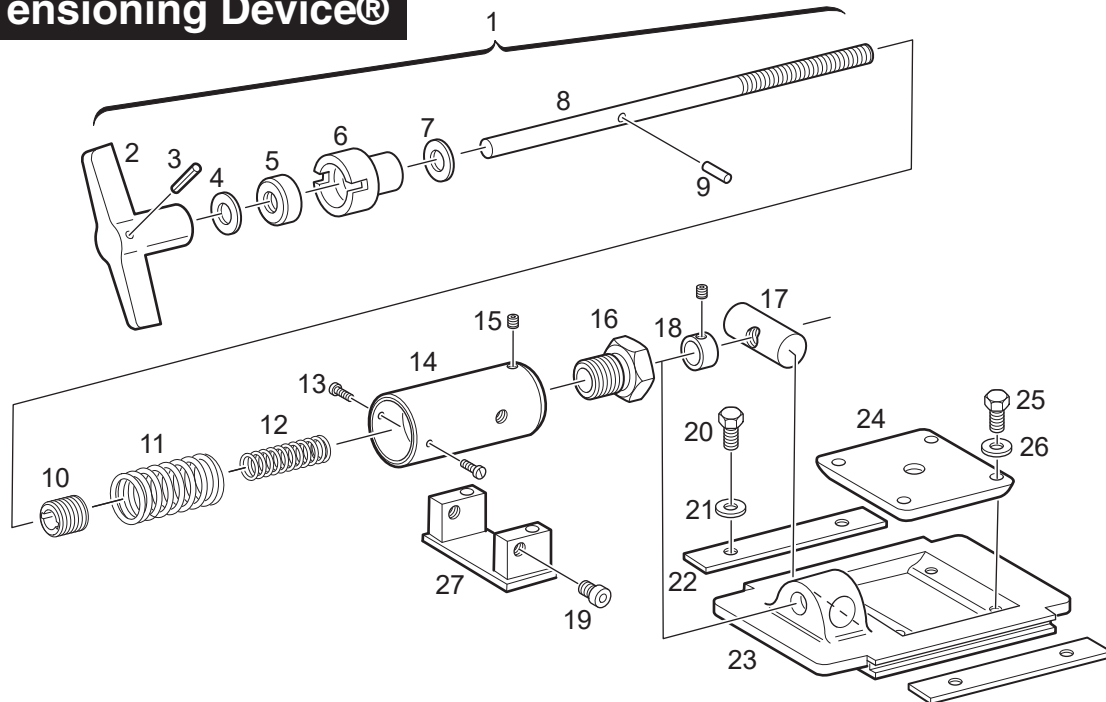
Bed Assembly

1	100004-044	Cap Screw, HH 5/8 x 3		
2	B-003	Movable Vise Jaw		
3	155107	Washer		
4	100004-070	Cap Screw, HH 1/2-13 x 1-3/4		
5	100004-043	Cap Screw, HH 5/8 x 2-1/2		
6	M-065	Locating Pin		
7	B-215	Stationary Vise Jaw		
8	150091	Lift Plate		
9	100053-008	Roll Pin, 1/8 x 1-3/8		
10	150094	Vise Drive Pin before s/n 4279*		
	150094-001	Vise Drive pin after s/n 4279		
11	100053-009	Roll Pin, 1/8 x 5/8		
12	100053-002	Roll Pin, 3/8 x 2-1/2		
13	B-077	Vise Slide Block before s/n 4279*		
	B-077-001	Vise Slide Block after s/n 4279		
14	150109	Pivot Arm (before S/N 1300)		
	150275	Pivot Arm (After S/N 1300)		
15	100029-008	Flat Washer, 5/8		
16	100017-007	Hex Nut, 5/8-11		
17	100000-018	Machine Screw, Rd Hd, 10-32 x 3/8		
18	150021-001	Pivot Bar Collar		
19	100004-024	Cap Screw, HH 5/16-18 x 2-1/2		
20	150097	Clamp Plate		
21	100004-015	Cap Screw, HH 5/16-18 x 3/4		
22		Control Switch Ass'y (see page 32)		
23	B-093	Hand Wheel		
24	100019-008	Hex Jam Nut, 3/4-10		
25	102886	Set Collar		
26	150242	Saw Bed (1118, 1318 before 4279)		
	150242-001	Saw Bed (1318 after s/n 4279)		
	150305	Saw Bed (model 1338)		
	150398	Saw Bed (model 1348)		
27	100030-005	Washer, 3/8		
28	100419-041	Bushing (2 req'd)		
29	150017	Pivot Bar (before S/N 1300)		
	150276	Pivot Bar (after S/N 1300)		
30	B-151	Clamp Nut		
31	150099	Slide Block Plate before sn 4279*		
	150099-001	Slide Block Plate after sn 4279		
32	100004-022	Cap Screw, HH 5/16-18 x 1- 1/2		
33	150098	Slide Block before s/n 4279*		
	150098-001	Slide Block after s/n 4279		
34	150093	Vise Push Channel (model 1118 before S/N 1300)		
	150285	Vise Push Channel (model 1118 after S/N 1300)		
	150311	Vise Push Channel (model 1338)		
	150392	Vise Push Channel (model 1348)		
35	100025-002	Lock Washer, 5/16		
36	100017-002	Hex Nut, 5/16-18		
37	150383	Tip Off Table (model 1118 before sn 4278)		
	150284-001	Tip Off Table (model 1118/1318 sn 4279 and later)		
	150382	Tip Off Table (model 1338)		
	150394	Tip Off Table (model 1348)		
38	100004-018	Cap Screw, HH 5/16-18 x 1		
39	100029-002	Flat Washer, 1/4		
40	100402	Thrust Collar		
41	150199	Vise Screw (1118, 1318 before S/N 1300)		
	150286	Vise Screw (1118, 1318 after S/N 1300), 1348		
	150286-001	Vise Screw Model 1338		
42	M-061B	Vise Screw Nut		
43	150197	Vise Actuator (before S/N 1300) (Not Used after S/N 1300)		
44	M-041	Vise Ratchet Spacer		
45	100004-015	Cap Screw, HH 5/16-18 x 3/4		
46	B-082	Stop Bar Bracket		
47	100033-015	Set Screw, Sq Hd 5/8-11 x 1		
48	100025-007	Lock Washer, 5/8		
49	100004-041	Cap Screw, HH 5/8-11 x 1-1/2		
50	B-460	Stock Stop Bar		
51	100033-016	Sq. Hd. Set Screw, 5/8-11 x 4		
52	100019-007	Hex Jam Nut, 5/8-11 (2 req'd)		
53	100042-003	Thumb Screw, 1/4-20 x 2		
54	100024-002	Wing Nut, 1/4-20		
55	M-452	Stock Stop Arm (hinged)		
56	M-451SERV	Stock Stop Arm (fixed)		
57	B-344	Stock Stop Ass'y (includes items 27,49, 51-56, & 60 - 62)		
58	150274	Upper Cylinder Mount		
59	100034-007	Set Screw, cup point 5/16 x 1 (5 req'd for 1118 - 10 req'd for 1338)		
60	155205-002	Wing Nut		
61	155204	Carriage Bolt, Ribbed Neck		
62	155190	Wedge		
	155203	Wedge and Bolt Assembly (includes items 61 & 62)		
63	100008-006	Cap Screw, SH, 3/8-16 x 1		
64	100008-016	Cap Screw, SH, 3/8-16 x 1-3/4 (4 req'd)		

*items are used on model 1338

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Rite Tensioning Device®



Calibrating the WELLSAW RITE-TENSION® Blade Tensioning Device

The Rite-Tension® device is a simple turn counter that is activated by blade tension and can be easily adjusted in the field.

Please review the operation instructions before making any adjustment:

1. LOOSENING

When replacing a worn or broken blade always turn the "T" handle out at least six (6) turns (counter-clockwise).

This will reset the device. **Always push-in** on the handle when loosening, this will insure that the internal counter is engaged.

2. TIGHTENING

Always pull out on the "T" handle when tightening the device (clockwise). After a number of turns the "T" handle will come to a hard stop.

At this point the blade will be properly tensioned. Do not force the unit beyond this point.

Note: If the mechanism does not seem to come to a hard stop but continues to tighten, stop and repeat steps one and two. Check to make sure the blade is properly positioned on the band wheels and is not binding in the guides during the tightening process.

Calibration

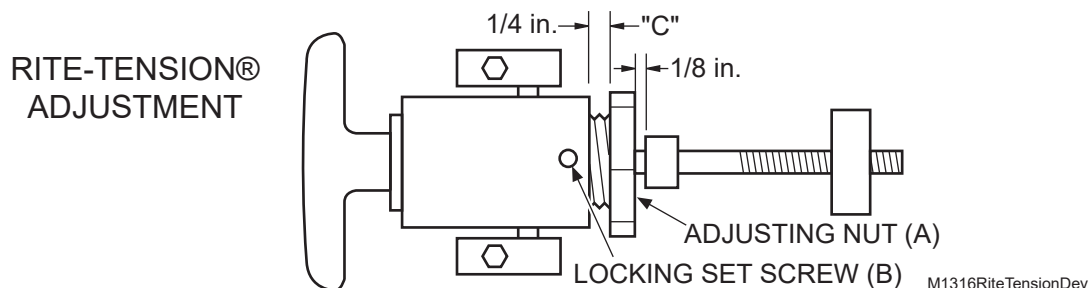
The final tension is determined by the Adjusting Nut, pn 150070 (see "A" in drawing). The "rough" position can be checked by measuring the clearance between the nut and the Tensioning Housing, pn 150067, (see "C").

A clearance of 1/4" will be within a safe range of the correct tension. When a tension gauge becomes available the device should be calibrated as follows: Loosen the set screw (B) one turn.

-If the band tension needs to be *increased* the adjusting nut should be turned out, one flat at a time, then the set screw tightened and the device rechecked.

-If the tension needs to be *decreased* the adjusting nut should be turned in, one flat at a time and rechecked.

The device must be in the "loosened" or "open" position to make this adjustment.



Rite Tensioning Device®

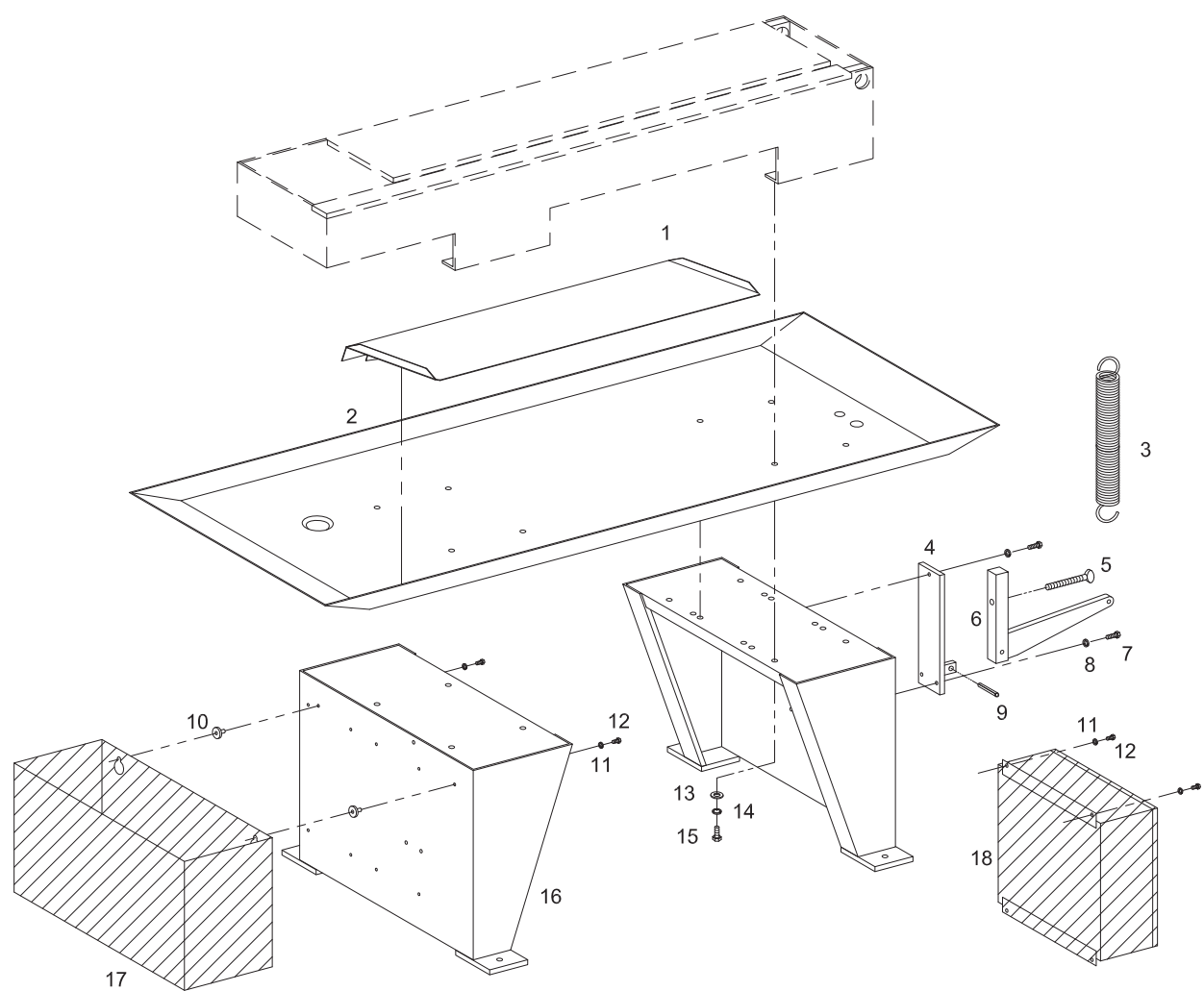
Caution:

The Rite Tension ® blade tensioning device has been factory calibrated for your saw.

When re-tightening or replacing a blade, the 'T' handle must be turned counter-clockwise at least six turns to reset the Rite Tension ® mechanism.

1	150075	Blade Tensioning Ass'y (includes items 2 thru 18)
	150075-001	Blade Tensioner for model 1348 after sn 4843 (ask factory for diagram)
2	101184	Take Up Screw Handle
3	100053-005	Roll Pin, 3/16 x 1
4	100030-007	Flat Washer, 1/2
5	100410-001	Thrust Bearing
6	150068	Bearing Housing
7	100116-007	Belleville Washer (2 req'd)
8	150074	Take Up Screw (includes items 2 & 9)
9	100052-026	Dowel Pin, 3/16 x 11/16
10	150069	Turn Counter
11	100136-006	Spring, Large Diameter
12	100136-001	Spring, Small Diameter
13	100000-010	Machine Screw, 8-32 x 5/16 (2 req'd)
14	150067	Blade Tension Housing
15	100034-008	Set Screw, 1/4-20 x 1/4
16	150070	Tension Adjuster
17	155068	Swivel Nut
18	098030-004	Collar, w/set screw
19	100008-072	Cap Screw, HH 5/16-18 x 3/8 (2 req'd)
20	100004-013	Cap Screw, HH 5/16-18 x 5/8 (4 req'd)
21	100025-002	Lock Washer, 5/16 (4 req'd)
22	B-046	Slide Block Guide, (2 req'd)
23	101164	Slide Block
24	B-010	Wheel Adjusting Block
25	100004-019	Cap Screw, HH 5/16-18 x 1-1/8 (4 req'd)
26	102360	Spacer (4 req'd)
27	150190	Tensioner Support

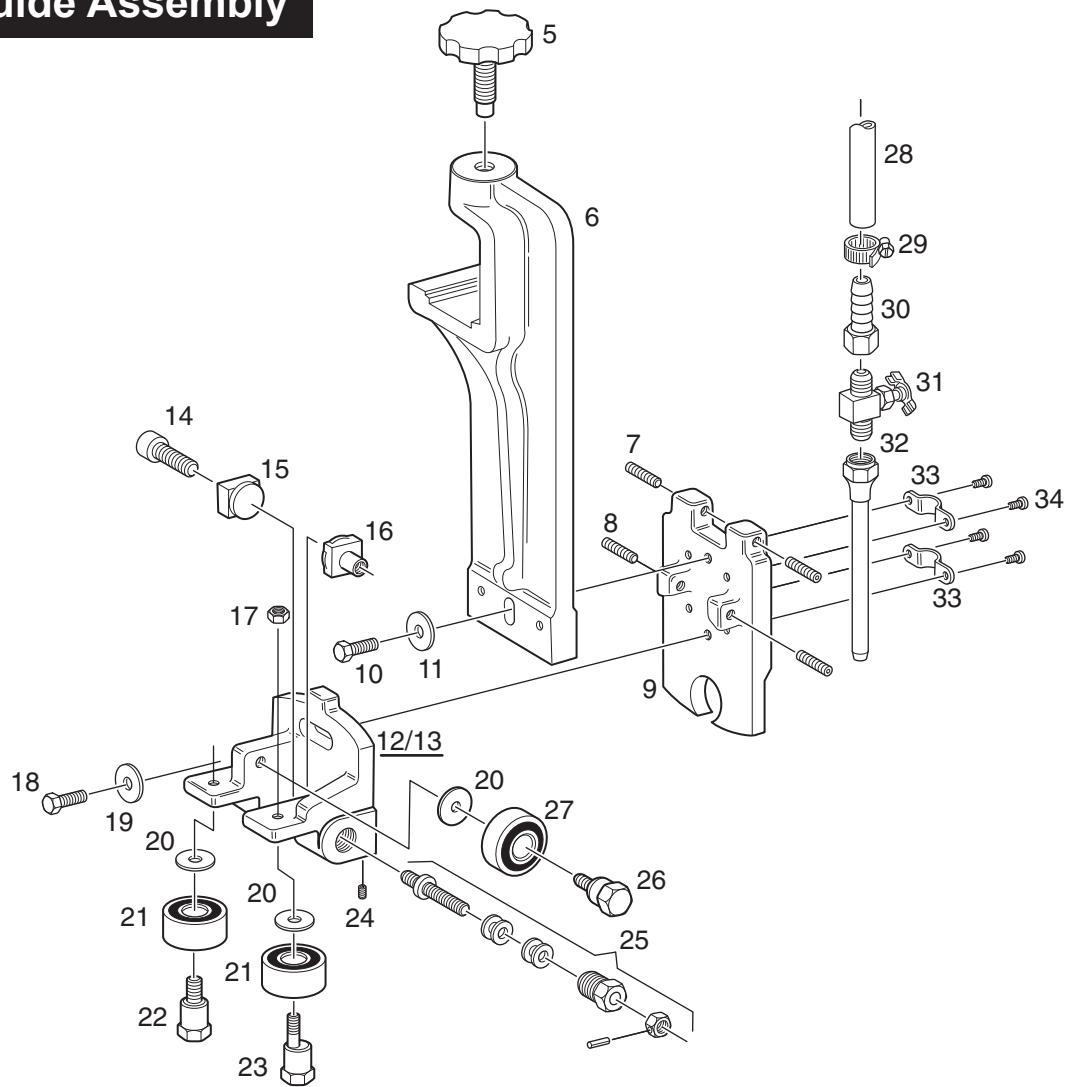
Leg & Chip Pan



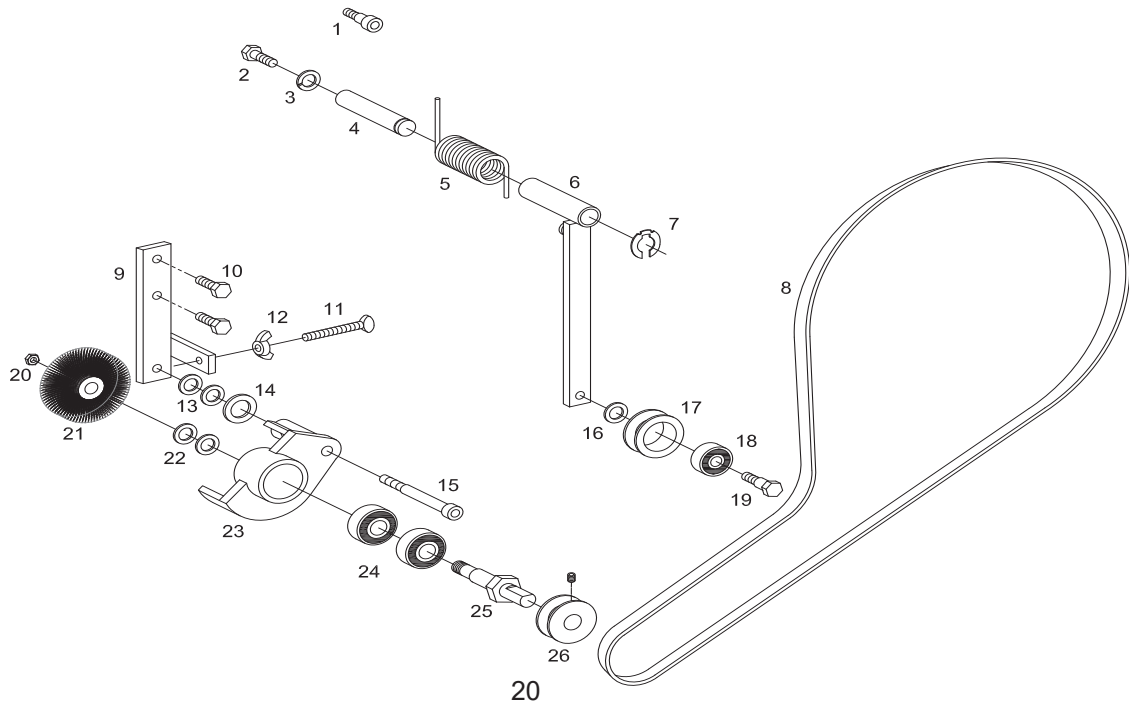
Leg & Chip Pan

- 1 F-228 SPLASH GUARD
- 2 150077 CHIP PAN (MODEL 1118, 1318)
- 150303 CHIP PAN (MODEL 1338)
- 150393 CHIP PAN (MODEL 1348)
- 3 150119 COUNTER BALANCE SPRING (MODEL 1118/1318 BETWEEN SN 2762 AND 4004)
- 150466 COUNTER BALANCE SPRING (MODEL 1118,1318 BEFORE SN 2760 AND AFTER 4004)
- 150466 COUNTER BALANCE SPRING (MODEL 1338, 2 REQUIRED)
- 150466 COUNTER BALANCE SPRING (MODEL 1348, 3 REQUIRED)
- 150466 COUNTER BALANCE SPRING (MODEL 1118SA/ 1318SA)
- 150119 COUNTER BALANCE SPRING (MODEL 1118SA/1318SA W/O AIR VISE)
- 4 150081 SPRING ANCHOR (FOR 1118/1318 BEFORE SN 4004)
- 155270 SPRING ANCHOR UPGRADE KIT FOR 118/1318 SN 4004 & LATER)
- 150334 SPRING ANCHOR (MODEL 1338 BEFORE SN 1935)
- 155270-001 SPRING ANCHOR UPGRADE KIT (MODEL 1338 SN 1935 & LATER)
- 150470 SPRING ANCHOR (MODEL 1348)
- 5 100033-025 SQ HD SET SCREW 1/2 - 13 X 4"
- 6 155019-001 SPRING ADJUSTER WELDMENT
- 7 100004-018 CAP SCREW HH 5/16-18 X 1 (3 REQUIRED)
- 8 100025-002 LOCK WASHER 5-16 (3 REQUIRED)
- 9 100053-040 ROLL PIN 3/8 X 1-3/4
- 10 150078 COLLAND TANK HANGER (2 REQUIRED)
- 11 100025-001 LOCK WASHER 1/4 (2 REQUIRED)
- 12 100004-003 CAP SCREW, HH 1/2-20 X 1/2
- 13 100029-004 FLAT WASHER 3/8
- 14 100025-003 LOCK WASHER 3/8
- 15 100004-027 CAP SCREW, HH 3/8-16 X 1
- 16 155106 LEG (2 REQUIRED)
- 17 COOLANT TANK ASSEMBLY (SEE PAGE 28)
- 18 ELECTRICAL CONTROL ASSEMBLY (SEE PAGE 32)

Blade Guide Assembly



Blade Brush Assembly



Blade Guide Assembly

Model 1118 Serial Number 1999 and Earlier
Model 1338 Serial Number 1650 and Earlier

1	101522	Blade Guide Ass'y, D.E. Complete (before S/N 1300) (includes 5-12 & 17-23, 26 & 27)	12	106389	Roller Support, Drive End (S/N 1300 thru 1999)
	101522-004	Blade Guide Ass'y, D.E. Complete (S/N 1300 thru 1999) (includes 5-27, minus 13)		101180	Roller Support, Drive End (before S/N 1300)
2	105406	Blade Guide Ass'y, I.E. Complete (before S/N 1300) (includes 5-11,13, 17-23, 26 & 27)	13	106315	Roller Support, Idle End (S/N 1300 thru 1999)
	105406-004	Blade Guide Ass'y, I.E. Complete (S/N 1300 thru 1999) (includes 5-27, minus 12)		105396	Roller Support, Idle End (before S/N 1300)
3	150061	Roller Support Ass'y, D.E. (includes 14-27 & 12) (S/N 1300 thru 1999)	14	100008-018	Cap Screw, SH 5/16-18 x 3/4
	101521	Roller Support Ass'y, D.E. (includes 12,17,20-23,26 & 27) (before S/N 1300)	15	106317	Fixed Carbide Guide (after S/N 1300)
4	106659	Roller Support Ass'y, I.E. (Includes 13 thru 27) (S/N 1300 thru 1999)	16	106319	Spring Back Carbide Guide (S/N 1300 thru 1999)
	105408	Roller Support Ass'y, I.E. (includes 13,17,20-23,26 & 27) (before S/N 1300)	17	101300	Hex Nut, 5/16-18
5	105335-001	Hand Wheel Ass'y	18	100004-016	Cap Screw, HH 5/16-18 x 7/8
6	150118	Roller Guide Bracket	19	100029-002	Flat Washer, 1/4
7	100034-006	Set Screw, 5/16-18 x 7/8 (2 req'd)	20	101186	Roller Guide Washer (3 req'd)
8	100034-005	Set Screw, 5/16-18 x 3/4 (2 req'd)	21	100416-003	Ball Bearing (2 req'd)
9	M-092	Roller Adjuster (before S/N 1300)	22	101178	Roller Axle
	150287	Roller Adjuster (after S/N 1300)	23	101177	Eccentric Roller Axle
10	100004-018	Cap Screw, HH 5/16-18 x 1	24	100127-003	Set Screw, Nylon Pt. 1/4-20 x 5/16
11	100029-002	Flat Washer, 1/4	25	106285	Guide Pre Load Ass'y
			26	101179	Roller Axle Back Up
			27	100406-002	Ball Bearing
			28	100220-038	Coolant Hose, I.E., 37"
				100220-039	Coolant Hose, D.E., 13"
			29	100219-001	Hose Clamp
			30	102617	Adapter
			31	100226	Needle Valve
			32	150288	Coolant Nozzle
			33	100246-001	Pipe Strap (2 req'd)
			34	100000-018	Machine Screw, 10-32 x 3/8 (4 req'd)

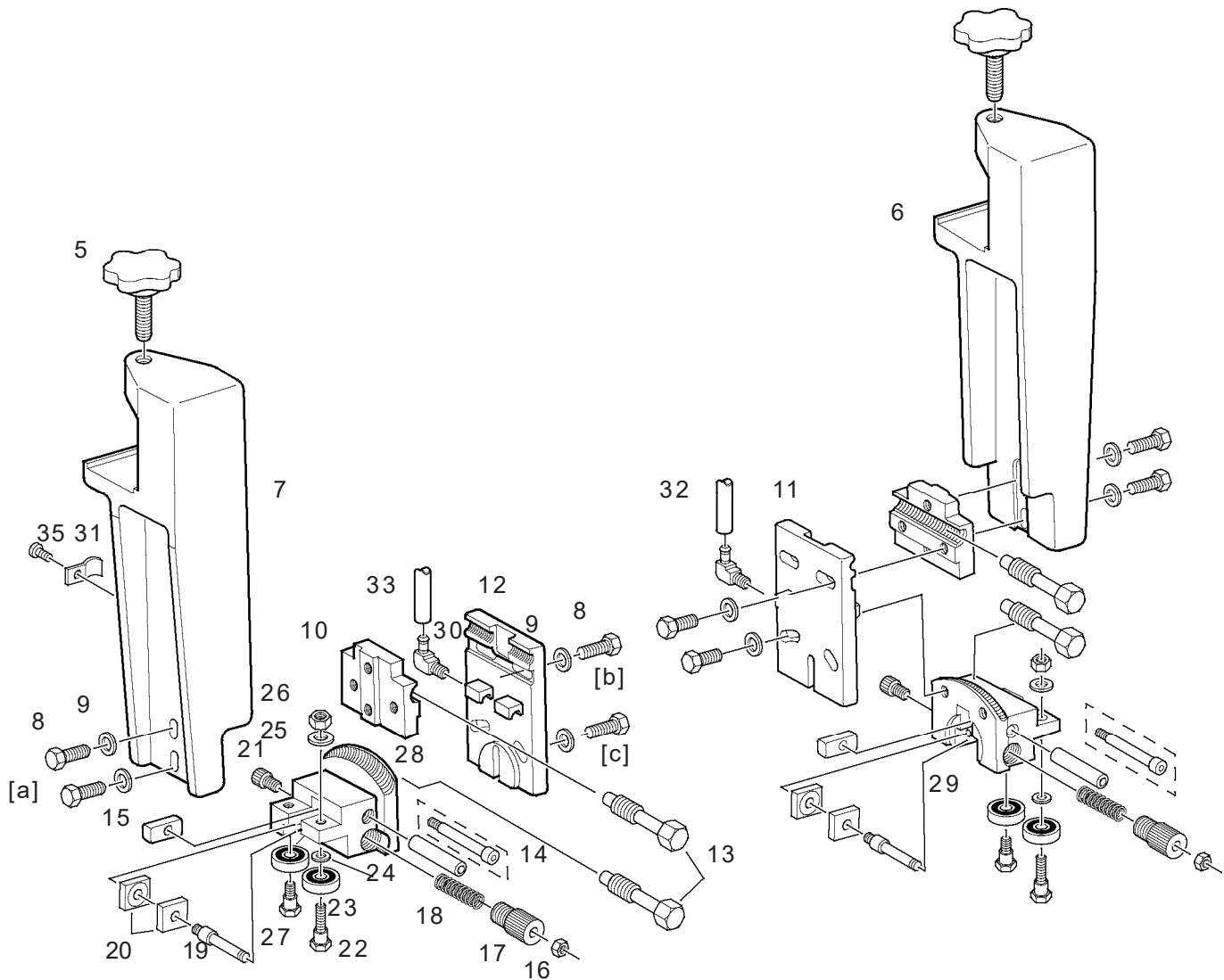
Blade Brush Assembly

Note: Adjust thumb screw (11) so that the brush makes light contact with the blade. This avoids dulling the blade and prevents premature brush wear.

1	100165-007	Shoulder bolt, 3/8 x 3/8	12	100024-002	Wing Nut, 1/4-20
2	100004-018	Cap Screw, HH 5/16-18 x 1	13	100029-002	Flat Washer 1/2 USS (2 required)
3	100025-002	Lockwasher, 5/16	14	100030-005	Flat Washer 3/8 SAE
4	150160-001	Door Latch Stud 1118 before 2584; 1338 before 1724; 1348 before 4808	15	100165-015	Shoulder Bolt 3/8 x 1-3/4
	150160-002	Door Latch Stud 1118-1318 after 2584 1338 after 1724, 1348 after 4808	16	100097-001	Washer
5	150360	Spring	17	150361	Pulley, belt idler
6	150364	Belt Tension Arm	18	100416-001	Bearing
7	100069-003	Snap Ring	19	B-043	Axle
8	100166-450	V' Belt	20	100019-005	Hex Jam Nut 1/2-20
9	150369	Blade Brush Arm (Model 1118 after S/N 1885)	21	100133-004	Blade Brush
	150127	Blade Brush Arm (Model 1118 before S/N 1885)	22	100030-007	Flat Washer 1/2 USS (2 required)
10	100004-015	Cap Screw, HH 5/16-18 x 3/4	23	150257	Brush Housing
11	100042-003	Thumb Screw, 1/4-20 x 2	24	100404-001	Bearing (2 required)
			25	150126	Brush Arbor
			26	100167-003	Small Pulley w/ set screw
			27	150272	BLADE BRUSH ASSEMBLY (includes items 20-26)

Blade Guides for 1" Blades

Model 1118/1318 serial number 2000 and later
Model 1338 serial number 1651 and later

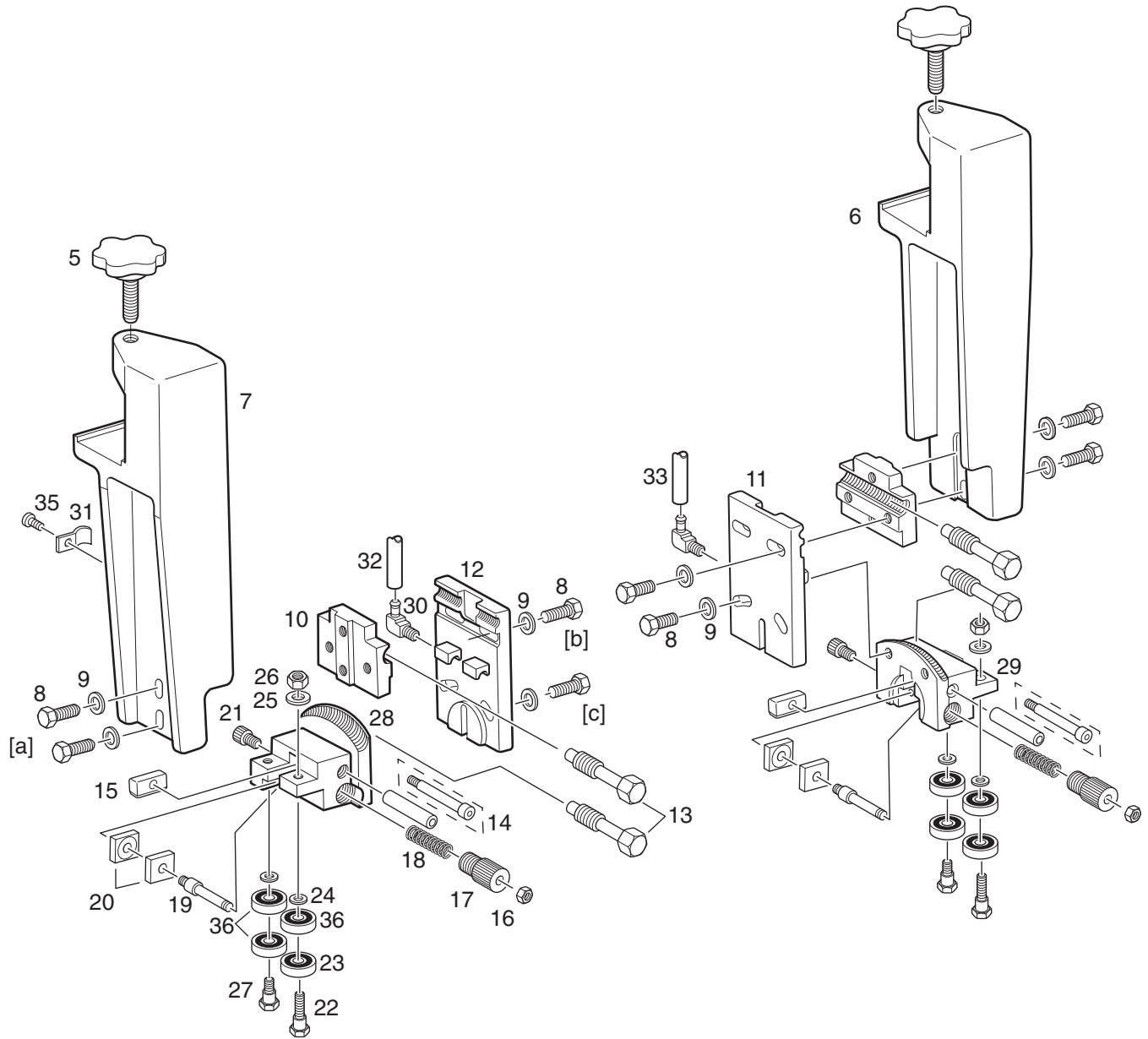


Blade Guides for 1" Blades

Model 1118 serial number 2000 and Later
Model 1338 serial number 1651 and Later

- 1 **152158-001** **Blade Guide Ass'y, D.E.**
 (includes items 5 - 31& 35 - 37, minus 7,12,& 28)
- 2 **152159-001** **Blade Guide Ass'y, I. E.**
 (includes items 5 thru 31& 35 - 37 minus 6,11& 29)
- 3 **152160-001** **Guide Support Ass'y, D.E.**
 (includes items 13 - 27 plus 29)
- 4 **152161-001** **Guide Support Ass'y, I.E.**
 (includes items 13 - 28)
- 5 105335-001 Hand Wheel & Screw
- 6 152117 Roller Guide Bracket, D.E.
- 7 152118 Roller Guide Bracket, I.E.
- 8 100004-018 Cap Screw, HH 5/16-18 x 1
- 9 100029-002 Flat Washer, 1/4
- 10 152155 Vertical Adjusting Block
- 11 152121-003 Horizontal Adjusting Block, D.E.
- 12 152121-002 Horizontal Adjusting Block, I.E.
- 13 152151 Adjusting Bolt
- 14 100053-036 Roll Pin, 1/4 x 2 (later S/N's)
- 15 152153 Carbide Back up Guide Block
- 16 100023-006 Nylon Lock Nut, 1/4-20
- 17 152156 Adjusting Knob
- 18 100136-009 Spring
- 19 152157 Stud
- 20 106317 Fixed Carbide Guide
- 21 100008-004 Cap Screw, HH 5/16-18 x 5/8
- 22 B-109 Eccentric Roller Axle
- 23 100416-001 Bearing
- 24 100097-001 Roller Guide Washer
- 25 100027-005 Lock Washer, Shakeproof
- 26 101300 Hex Nut, 5/16-18
- 27 B-043 Roller Axle
- 28 152120 Guide Support, I.E.
- 29 152119 Guide Support, D.E.
- 30 100324-009 Hose Barb, 1/4" hose, 90 deg
- 31 100218-018 Tubing Clamp, 3/8
- 32 100350-018 Coolant Hose, 1/4" X 18" D.E.
- 33 100350-040 Coolant Hose, 1/4" X 40" I.E. for 1118, 1318
- 100350-068 Coolant Hose 1/4" x 68" for 1338
- 100350-070 Coolant Hose 1/4" x 70" for 1348
- 34 100013-005 Machine Screw, BH 10-32 x 3/8

Blade Guides for 1-1/4" Blades



Blade Guides for 1-1/4" Blades

1	152158-002	Blade Guide Ass'y, D.E. (includes items 5 thru 36 (Minus 7,12,28,32,33, & 34))
2	152159-002	Blade Guide Ass'y, I. E. (includes items 5 thru 36 (Minus 6,11,29,32,33, & 34))
3	152160-002	Guide Support Ass'y, D.E. (includes items 13 thru 27 plus 29 and 36)
4	152161-002	Guide Support Ass'y, I.E. (includes items 13 thru 28 plus 36)
5	105335-001	Hand Wheel & Screw
6	152117	Roller Guide Bracket, D.E.
7	152118	Roller Guide Bracket, I.E.
8	100004-018	Cap Screw, HH 5/16-18 x 1
9	100029-002	Flat Washer, 1/4
10	152155	Vertical Adjusting Block
11	152121-003	Horizontal Adjusting Block, D.E.
12	152121-002	Horizontal Adjusting Block, I.E.
13	152151	Adjustment Screw
14	100053-036	Roll Pin, 1/4 x 2
	100165-013	Shoulder Bolt, 1/4 x 1-1/4 (earlier S/N's)
15	152153	Top Carbide Guide
16	100023-006	Nylon Lock Nut, 1/4-20
17	152156	Adjusting Knob
18	100136-009	Spring
19	152157	Stud
20	106317	Fixed Carbide Guide
21	100008-004	Cap Screw, HH 5/16-18 x 5/8
22	150465	Eccentric Roller Axle
23	100416-001	Ball Bearing, Side (1 per Blade Guide)
24	100097-001	Roller Guide Washer
25	100027-005	Lock Washer, Shakeproof
26	101300	Hex Nut, 5/16-18
27	150464	Roller Axle
28	152120	Guide Support, I.E.
29	152119	Guide Support, D.E.
30	100324-009	Hose Barb, 1/4" hose, 90 deg
31	100218-018	Tubing Clamp, 3/8
32	100350-040	Coolant Hose, D.E.
33	100350-018	Coolant Hose, I.E. (model 1118)
	100350-068	Coolant Hose, I.E. (model 1338)
	100350-070	Coolant Hose, I.E. (model 1348)
34	152165	Blade Guard, D.E. (not shown)
35	100013-005	Machine Screw, BH 10-32 x 3/8
36	100406-001	Ball Bearing, Side (3 per Blade Guide)

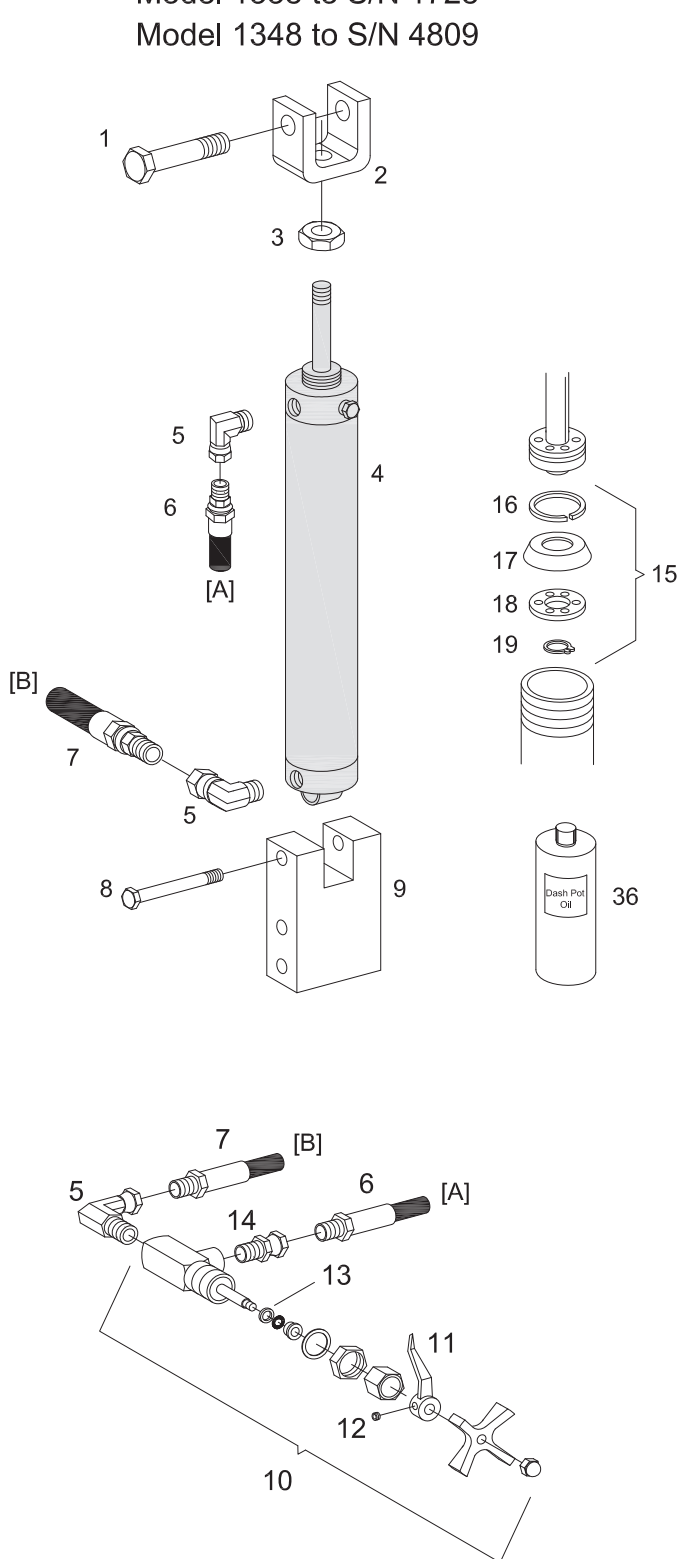
Hydraulic Cylinder

150265

Model 1118 to S/N 2583

Model 1338 to S/N 1728

Model 1348 to S/N 4809

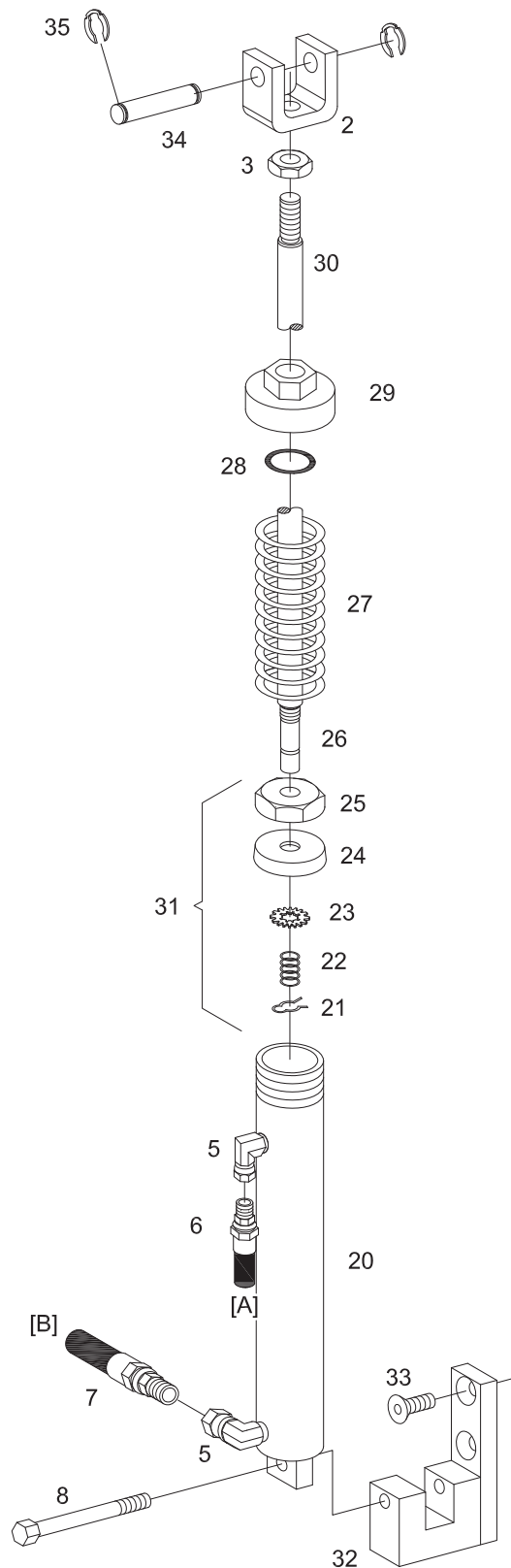


155180

Model 1118 Starting S/N 2584

Model 1338 Starting S/N 1729

Model 1348 Starting S/N 4810



Hydraulic System

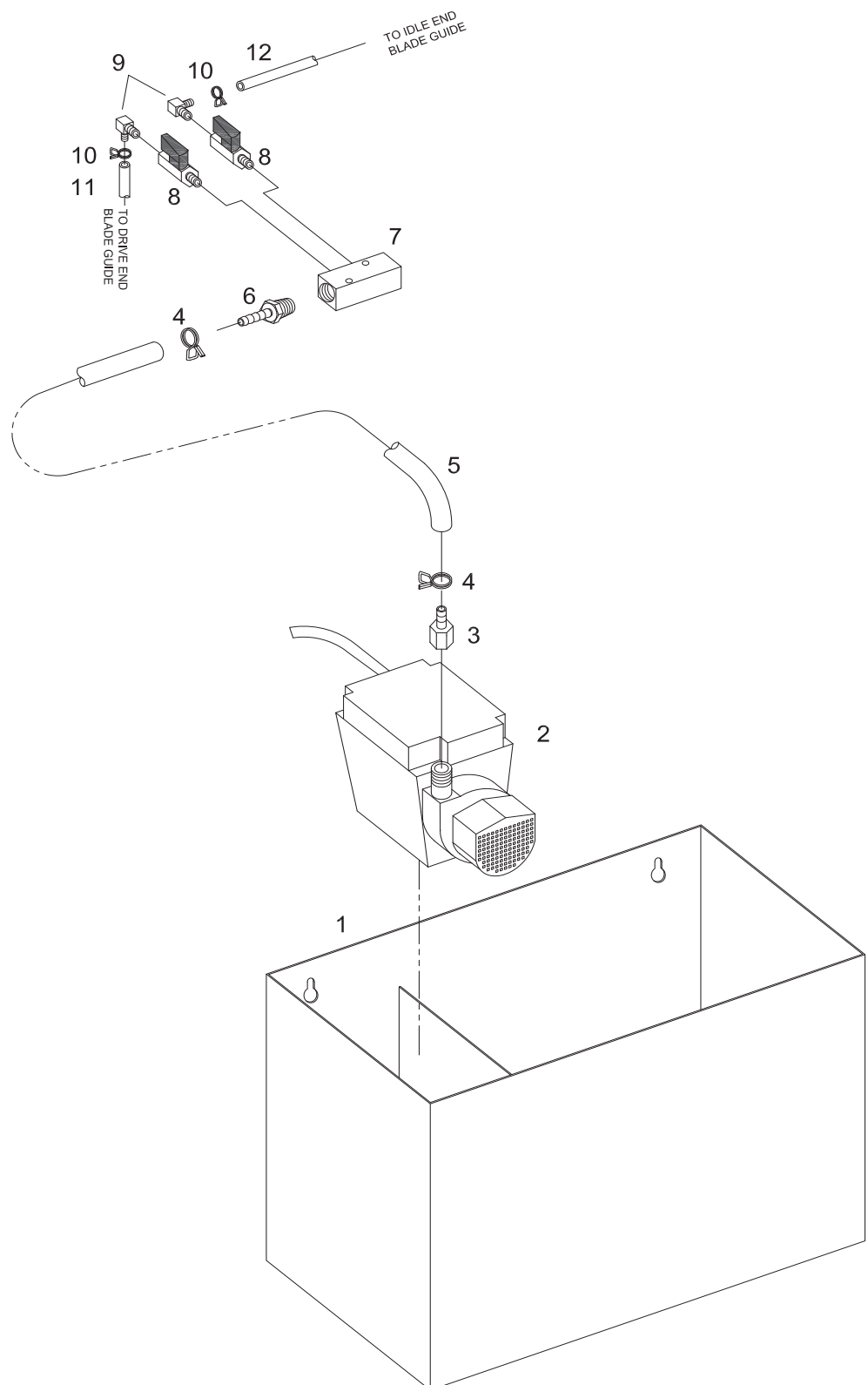
***NOTE:**

On saw model 1118 before S/N 1171 there
is no cylinder service kit.

Replace the cylinder with part # 155180 & 150277.

1	1000004-115	Cap Screw, HH 1/2-13 x 3-1/2 (before S/N 1300)
2	150218	Clevis
3	100019-026	Heavy Hex Jam Nut, 1/2-20
4	150265	Hydraulic Cylinder (No Longer Available- use 155180 & 150277) (Model 1118 before S/N 2584, Model 1338 before 1733 and Model 1348 before 4809)
	155180	Hydraulic Cylinder (Model 1118 after S/N 2584, Model 1338 after 1733 and Model 1348 after 4809)
5	100313-001	90 deg. Swivel Fitting, 1/4
6	100331-034	Hose Assy, top 1/4 x 50 for 1118, 1318
	100331-013	Hose Assy, top 1/4 x 68 for 1338
	100331-019	Hose Assy, top 1/4 x 80 for 1348
7	100331-052	Hose Assy, bottom 1/4 x 54 for 1118, 1318
	100331-029	Hose Assy, bottom 1/4 x 72 for 1338
	100331-053	Hose Assy, bottom 1/4 x 84 for 1348
8	100004-052	Cap Screw, HH 3/8-16 x 3-1/2
9	150219	Cylinder Bracket, Lower (before S/N 1300)
10	100238-005	Feed Control Valve
11	150278	Pointer
12	100034-049	Set Screw, 10-32 x 1/8
13	107065	Nylon Washer
14	100329-001	Swivel Fitting, Straight
15	150269	Hydraulic Cylinder Field Service Kit for 150265 (includes items 16-19)
16	150266	Glide Ring
17	150267	Piston Cup
18	150268	Cup Retainer
19	100069-012	External Snap Ring
20	155181	Cylinder
21	155164	External Hitch Pin
22	155163	Spring
23	100028-006	Shake Proof Washer
24	155161	Piston Cup
25	155160	Aluminum Washer
26	155182	Piston Rod
27	155159	Spring
28	155156	O-ring, Buna N 2-208
29	155157	Cylinder Cap
30	155221	Piston Rod Ass'y for 155180 (includes Rod and items 21-26)
31	155256	Hydraulic Cylinder Field Service Kit for 155180 (includes items 21-24 & 28)
32	150277	Lower Cylinder Mount (after S/N 1300)
33	100008-006	FH Socket Head Capscrew, 3/8-16 x 1 (2 req'd)
34	150279	Clevis Pin (after S/N 1300)
35	100069-019	Snap Ring (2 req'd)
36	098049-001	Dash Pot Oil, 8 oz (2 req'd)

Coolant System

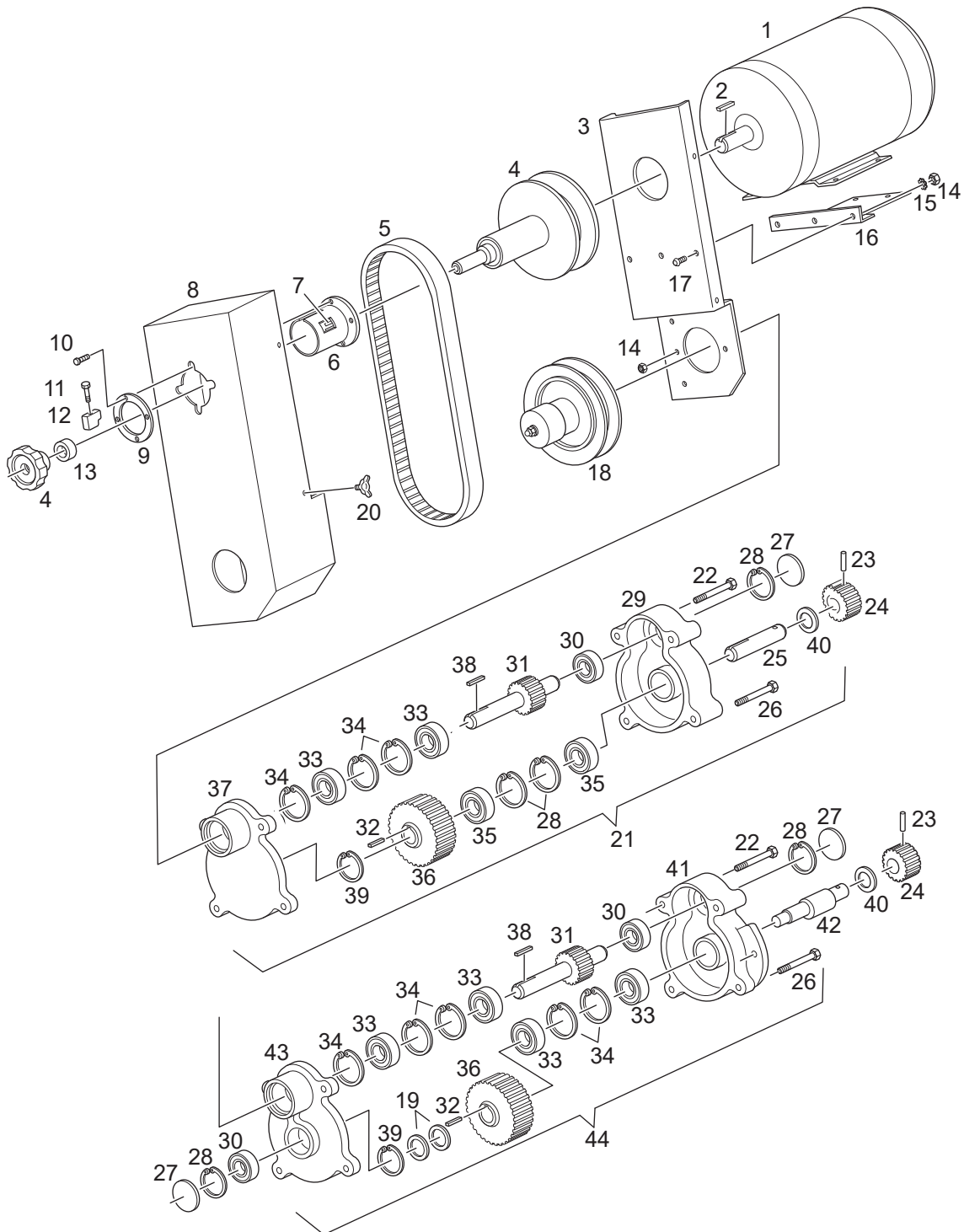


Coolant System

see page 20 and 22 for guide coolant details

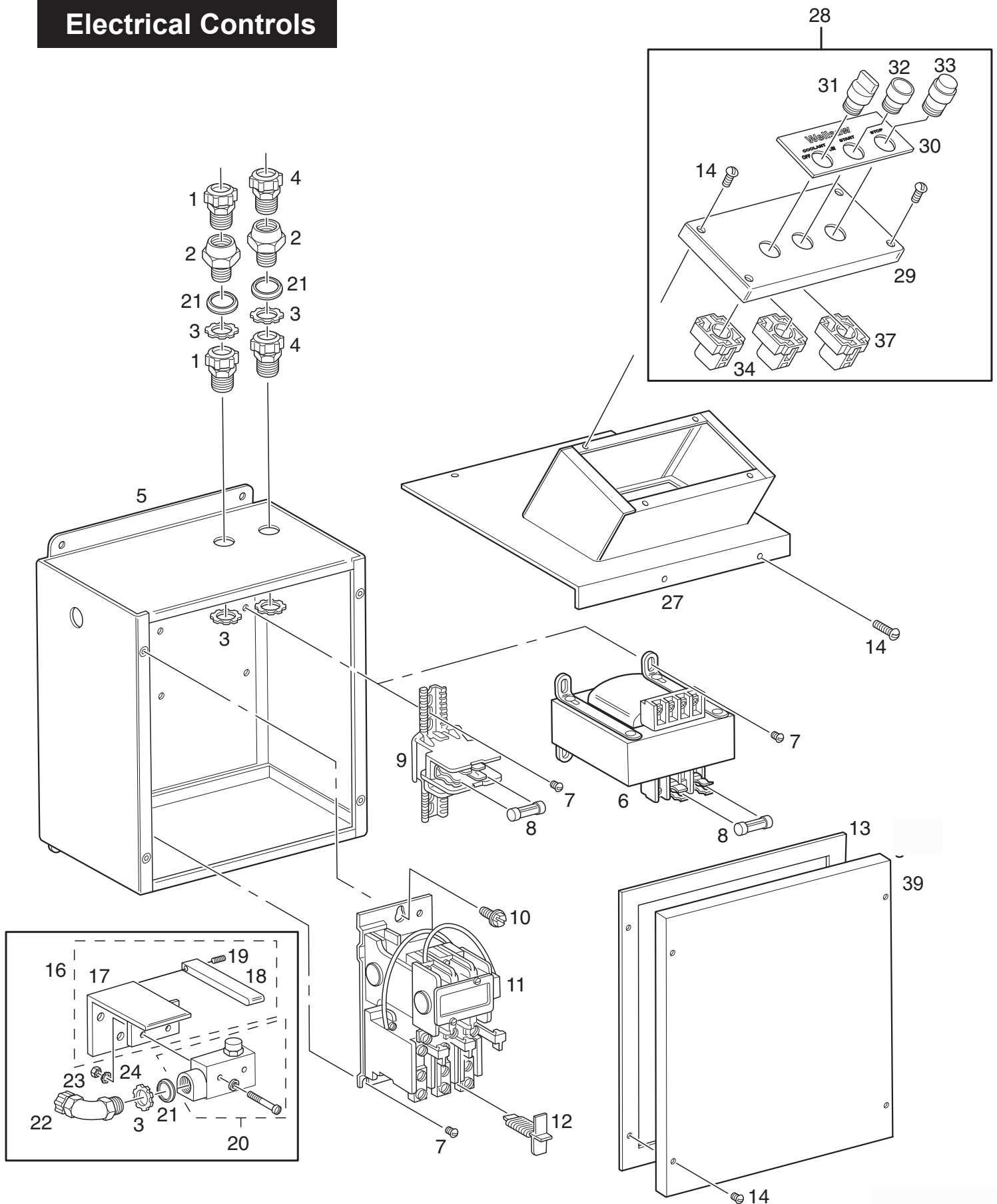
1	150066	COOLANT TANK
2	100249-010	COOLANT PUMP
3	102617	ADAPTER
4	100219-001	TUBING CLAMP
5	100220-041	1118,1318 COOLANT HOSE 124"
	100220-043	1338 COOLANT HOSE 142"
	100220-049	1348 COOLANT HOSE 154"
6	100324-003	HOSE BARB FITTING
7	152167	COOLANT MANIFOLD
8	100226-004	VALVE, MINIATURE BALL
9	100324-009	HOSE BARB FITTING, 90 DEGREE
10	100219-002	TUBING CLAMP
11	100350-018	COOLANT HOSE 18"
12	100350-040	1118, 1318 COOLANT HOSE 40"
	100350-068	1338 COOLANT HOSE 68"
	100350-070	1348 COOLANT HOSE 70"
13	152177-002	COOLANT MANIFOLD ASSY (INCLUDES ITEMS 6-9)

Motor & Gear Box



1	100835-037	Motor, 3 HP TEFC, 3/4" shaft, 230/460 3ph need 105451-021 pulley too if 1118,1318 sn before 4125, 1338 before sn 1934, 1348 before sn 4844
	100836-030	Motor, 2 HP, ODP, 115-220/60/1phase 5/8 Shaft
2	100056-037	Key
3	150250	Belt Guard, Bottom Plate
4	105451-021	VS Motor Pulley, 3/4" bore used with replacement motors, and on 1318 after s/n 4125; 1338 after 1934; 1348 after 4844
	105451-008	VS Motor Pulley, 7/8" bore, 3 Ph 1118,1318 before s/n 4125 only 1338 before sn 1934, 1348 before sn 4844
	105451-005	VS Motor Pulley, 5/8" bore, 1 Ph (includes hand wheel 407-712)
	407-712	Handle/ knob (without pulley)
5	105454-005	Variable Speed Belt
6	150252	Sleeve
7	105688	Blade Speed Label
8	150251	Belt Guard
9	150255	Flange Clamp
10	100013-008	Cap Screw, BH 1/4-20 x 3/8
11	100008-087	Cap Screw, SH 1/4-28 x 3/4
12	150256	Blade Speed Indicator
13	150217	Spacer (1118 up to S/N 3219, 1338 up to S/N 1823)
14	100017-001	Hex Nut, 1/4-20
15	100026-004	Shake Proof Washer, 1/4
16	150249	Belt Guard Support
17	100155-001	Machine Screw, 1/4-20 x 1/2
18	105451-015	VS Driven Pulley w/step key, 3/4" bore (starting S/N 1097)
	105451-009	VS Driven Pulley , 3/4" bore (before S/N 1097)
19	100097-003	Washer (shim as needed)
20	100063	Thumb Screw (4 req'd)
21	102901SERV	Gear Box Ass'y (before S/N 1097)
	150263SERV	Gear Box Ass'y (1118 S/N's 1097-2359, 1338 to S/N 1704 and 1348 to S/N 4803)
22	100008-086	Cap Screw, SH 1/4-20 x 2
23	100180-001	Coiled Spring Pin
24	101645-FP	Drive Pinion
25	101644SERV	Drive Shaft
26	100008-061	Cap Screw, SH 1/4-20 x 1-1/2
27	100072-001	Expansion Plug
28	100068-001	Snap Ring
29	M-013SERV	Gear Case cover w/bearings
30	100404-002	Ball Bearing
31	150234	Pulley Shaft & Pinion
32	100056-001	Key
33	100414-003	Bearing
34	100068-002	Snap Ring
35	100404-001	Bearing
36	101286S	Driven Gear (used Phenolic before S/N 2440. Available in Phenolic or Steel)
37	150233	Gear Case Cover w/bearings
38	105451-017	Step Key (used w/105451-015)
39	100069-003	External Snap Ring
40	150416	Spacer
41	150424SERV	Gear Case housing w/bearings
42	150426	Drive Shaft
43	150425	Gear Case Cover
44	150423	Gear Box Ass'y (1318, 1118 starting S/N 2360, 1338 starting S/N 1704, 1348 starting S/N 4803)
45	100318-005	Marfax, Grade 0, Grease (not shown)
46	100146-005	Loctite 609 Liquid Sealant (not shown)

Electrical Controls



- 1 100612-004 Connector, TB-2534
- 2 100796-019 Hub Connector, TB-370
- 3 100240-001 Conduit Lock Nut
- 4 100612-002 Connector, TB-2523
- 5 100870 Electrical Enclosure
- 6 100869-005 Transformer, 230/460 Volts
- 100869-007 Transformer, 208 Volts
- 100869-006 Transformer, 575 Volts
- 7 100000-017 Machine Screw, RH 10-32 x 1/4
- 8 100628-017 Fuse, FNA 2-1/2 Amp
- 9 155115 Fuse Block Ass'y
(used w/ 115/60/1 only)
- 10 100796-010 Ground Screw, 10-32 x 3/8
- 11 * **100867 Magnetic Starter 208,230,460V EARLIER saws**
100867-018 Magnetic Starter 115V EARLIER saws
*** SEE NOTE for later starters**
- 12 100888-B32 Heater, B32 115/60/1 (1 req'd)
- 100888-B14 Heater, B14 230/60/1 (1 req'd)
- 100888-B128 Heater, B12.8 208/60/3 (3 req'd)
- 100888-B128 Heater, B12.8 230/60/3 (3 req'd)
- 100888-B625 Heater, B6.25 460/60/3 (3 req'd)
- 100888-B300 Heater, B3.00 575/60/3 (3 req'd)
- 13 098048-050 Gasket, SC 41, 1/8 x 3/4 x 50"
- 14 100000-019 Machine Screw, RH 10-32 x 1/2
- 15 **155118 Frame Rest Ass'y, w/ cord**
(Includes items 17 thru 24)
- 16 **155118-001 Frame Rest w/ Trip Bar,**
(Includes items 17 thru 19)
- 17 105977 Frame Rest
- 18 150344 Switch Bar Weldment
- 19 100165-005 Shoulder Bolt, 5/16 x 3/4
- 20 100782-012 Limit Switch, 115v w/ screws
- 21 100606-001 Sealing Ring
- 22 100612-006 Elbow, 90 deg, TB-2268
- 23 100015-005 Hex Nut, 6-32 (2 req'd)
- 24 100026-001 Washer, Shake Proof, #6 (2 req'd)
- 27 150235 Switch Box
- 28 **150271 Control Switch Ass'y**
(includes items 31 thru 37, and 14)
- 29 150236 Switch Box Cover
- 30 150230 Legend Plate

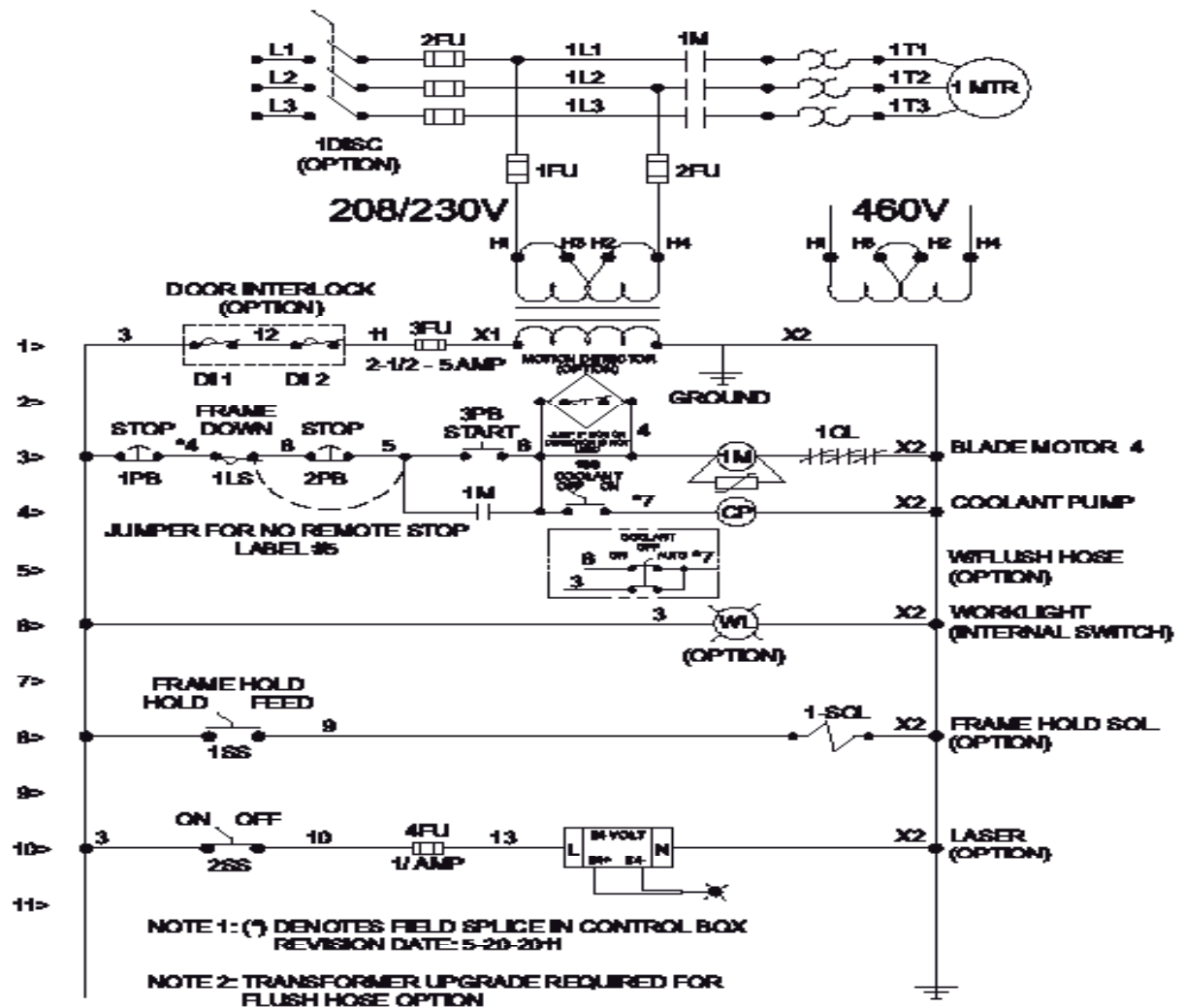
*NEW STARTERS		
for 1318 after s/n 4105, 1338 after s/n 1935, 1348 after 4845		
11	100867-029	IEC Starter 208, 230, 460V
	100867-023	IEC Starter 115V
Adjustable Overload for IEC Starters (check motor amps)		
	100867-012	4-6 amps 440-460V
	100867-014	7-10 amps 208-230V 3ph
	100867-027	9-13 amps 208-230V 1ph
	100867-022	16-24 amps 110-120V
	100717-016T4	Mounting Rail for IEC

*NOTE: Various starters were used on this saw. To make certain you receive the correct replacement parts, contact the WELLSAW parts department with the information on your saw's starter.

**Switches and contact blocks for these saws need to be replaced together
 1118 or 1318 serial number before 3085
 1338 serial number before 1784
 1348 serial number before 4830

- 31 100871-003 Selector Switch, Coolant **
- 32 100871-001 Push Button Start **
- 33 100871-013 Push Button Stop **
- 34 100871-004 Switch Block, Coolant & Start **
- 37 100871-005 Switch Block, Stop **
- 38 100893 Back Panel - not shown
- 39 100892 Enclosure Cover

Electrical Schematic





Stock Dimensions Tooth Pitch	0 - 1" 10/14, 8/12		1" - 3" 8/12, 6/10, 5/8		3" - 6" 5/8, 4/6, 3/4, 3 Sabre		6"+ 3/4, 2/3, 2 Sabre, 1 Tooth, 3/4" T.S.	
Material (Annealed)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)
<u>Carbon Steels</u>								
1008-1013	250	8 - 10	275	9 - 12	280	12 - 15	250	9 - 12
1015-1018	250	8 - 10	275	9 - 12	250	12 - 15	230	9 - 12
1048-1065	200	5 - 7	200	5 - 7	175	8 - 10	150	6 - 8
1065-1095	200	4 - 6	200	5 - 7	150	6 - 8	120	6 - 8
<u>Free Machining Steels</u>								
1108-1111	300	9 - 11	330	12 - 14	275	13 - 15	220	11 - 14
1112-1113	300	8 - 11	330	11 - 13	275	12 - 15	220	12 - 15
1115-1132	300	7 - 11	330	10 - 13	275	13 - 16	220	11 - 14
1137-1151	275	6 - 8	250	8 - 10	250	8 - 11	200	7 - 10
1212-1213	300	8 - 10	320	11 - 13	300	13 - 15	255	11 - 14
<u>Manganese Steels</u>								
1320-1330	250	5 - 7	250	5 - 8	200	8 - 11	175	7 - 10
1335-1345	250	5 - 7	225	5 - 7	200	7 - 9	175	5 - 8
<u>Nickel Chrome Steels</u>								
3115-3130	260	4 - 6	260	5 - 7	230	5 - 7	225	5 - 7
3135-3150	220	4 - 6	200	4 - 7	180	6 - 8	150	5 - 8
3310-3315	200	3 - 4	180	4 - 5	180	5 - 7	160	4 - 6
<u>Molybdenum Steels</u>								
4017-4024	300	3 - 5	270	4 - 7	250	6 - 8	220	5 - 8
4032-4042	300	3 - 5	270	4 - 7	250	6 - 8	230	5 - 8
4047-4068	250	3 - 5	220	4 - 6	200	5 - 7	180	3 - 5
<u>Chrome Moly Steels</u>								
4130-4140	280	4 - 6	250	5 - 8	250	8 - 10	220	6 - 8
4142-4150	230	3 - 5	200	4 - 6	200	5 - 7	170	4 - 6
<u>Nickel Chrome Moly Steels</u>								
4317-4320	250	3 - 5	225	4 - 6	200	5 - 7	170	4 - 6
4337-4340	230	3 - 4	200	4 - 5	200	4 - 6	170	4 - 5
8615-8627	250	4 - 5	230	6 - 7	230	6 - 8	200	6 - 7
8630-8645	250	3 - 5	230	4 - 6	230	5 - 7	180	4 - 6
8647-8660	220	2 - 4	200	3 - 5	200	4 - 6	150	3 - 5
8715-8750	250	3 - 5	220	4 - 6	220	5 - 7	180	4 - 6
9310-9317	200	1 - 3	160	2 - 3	160	2 - 4	150	2 - 3
9437-9445	250	4 - 5	230	4 - 5	230	5 - 6	180	4 - 5
9747-9763	250	2 - 4	230	3 - 5	200	4 - 6	180	3 - 5
9840-9850	240	4 - 5	220	4 - 6	200	5 - 7	180	4 - 6
<u>Nickel Moly Steels</u>								
4608-4621	250	3 - 5	220	5 - 6	220	6 - 7	200	5 - 6
4640	220	3 - 5	200	4 - 6	200	5 - 7	170	4 - 6
4812-4820	200	3 - 5	180	3 - 5	180	4 - 6	160	4 - 5
<u>Chrome Steels</u>								
5045-5046	280	4 - 6	250	5 - 7	250	8 - 10	200	7 - 8
5120-5135	280	4 - 6	250	6 - 7	240	7 - 8	180	5 - 8
5140-5160	250	3 - 5	230	4 - 6	230	5 - 7	200	4 - 6
50100-52100	180	2 - 4	160	3 - 5	150	4 - 6	100	3 - 5
<u>Chrome Vanadium Steels</u>								
6117-6210	225	4 - 5	225	5 - 7	200	6 - 8	170	5 - 7
6145-6152	225	3 - 4	200	4 - 5	200	5 - 6	150	4 - 5
<u>Die Steels</u>								
A-2	210	2 - 3	200	3 - 4	190	3 - 4	180	2 - 3
D-2, D-3	110	1 - 2	100	1 - 2	90	1 - 2	80	1 - 2
D-7	90	1	80	1	70	1	70	1
O-1, O-2	240	3 - 4	210	4 - 5	190	5 - 6	170	4 - 5
O-6	230	3 - 4	200	4 - 6	180	5 - 7	150	4 - 6

Stock Dimensions Tooth Pitch	0 - 1" 10/14, 8/12		1" - 3" 8/12, 6/10, 5/8		3" - 6" 5/8, 4/6, 3/4, 3 Sabre		6"+ 3/4, 2/3, 2 Sabre, 1 Tooth, 3/4" T.S.	
Material (Annealed)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)
<u>Silicon Steels</u>								
9255-9260	200	2 - 4	180	3 - 5	180	3 - 5	150	3 - 5
9261-9262	200	1 - 3	160	2 - 3	160	2 - 4	150	2 - 3
<u>High Speed Tool Steels</u>								
T-1, T-2	130	1 - 2	110	2 - 3	100	2 - 4	90	2 - 3
T-4, T-5	110	1 - 2	100	1 - 2	90	2 - 3	80	1 - 2
T-6, T-8	110	1 - 2	100	1 - 2	80	1 - 2	70	1 - 2
T-15	80	1	80	1	70	1	50	1
M-1	150	1 - 3	140	2 - 4	130	3 - 5	110	2 - 4
M-2, M3	120	1 - 2	110	2 - 3	100	3 - 4	80	2 - 3
M-4, M-10	100	1 - 2	90	1 - 2	80	1 - 3	60	1 - 2
<u>Hot Work Steels</u>								
H-12, H-13, H-21	150	2 - 4	125	3 - 5	125	2 - 4	125	2 - 4
H-22, H-24, H-25	150	1 - 3	125	1 - 3	125	1 - 3	125	1 - 3
<u>Shock Resisting Tool Steels</u>								
S-1	220	2 - 4	180	3 - 5	165	3 - 5	150	2 - 4
S-2, S-5	170	1 - 3	150	3 - 5	120	2 - 4	100	1 - 3
<u>Special Purpose Tool Steels</u>								
L-6	200	2 - 4	180	3 - 5	170	3 - 5	150	2 - 4
L-7	200	2 - 4	180	3 - 5	150	3 - 5	100	2 - 4
<u>Stainless Steels</u>								
201, 202, 302, 304	120	2 - 4	100	2 - 4	100	2 - 4	100	1 - 3
303, 303F	140	2 - 4	120	2 - 4	100	3 - 5	100	2 - 4
308, 309, 310, 330	90	1	70	1	60	2	60	1
314, 316, 317	90	1	80	1	70	2	60	1
321, 347	130	1 - 3	110	1 - 3	100	2 - 4	80	1 - 3
410, 420, 420F	150	1 - 3	130	1 - 3	120	2 - 4	100	1 - 3
416, 430F	200	3 - 5	180	4 - 6	170	5 - 7	150	4 - 6
430, 446	100	1 - 3	90	2 - 4	80	2 - 4	80	1 - 3
440 A,B,C	120	1 - 3	10	1 - 3	90	2 - 4	70	1 - 3
440F, 443	150	1 - 3	130	1 - 3	120	2 - 4	100	1 - 3
17-4PH, 17-7PH	100	2 - 3	90	2 - 4	80	3 - 4	80	2 - 3
A-7	100	1 - 2	100	1 - 2	100	2 - 3	100	2 - 3
<u>Beryllium Copper #25</u>								
BHN 100-120	350	4 - 6	300	5 - 7	275	6 - 8	225	5 - 7
BHN 220-250	250	2 - 4	225	3 - 5	200	3 - 4	175	3 - 5
BHN 310-340	200	1 - 2	160	1 - 2	140	2 - 3	100	1 - 2
<u>Nickel Base Alloys</u>								
Monel	100	1 - 2	100	1 - 2	80	1 - 2	60	1
R Monel	140	2 - 3	140	2 - 4	125	2 - 4	75	2 - 3
K Monel	100	1	80	1	60	1	60	1
KR Monel	100	1 - 3	90	1 - 3	80	1 - 3	60	1 - 2
Inconel	110	1 - 2	100	1 - 3	80	1 - 3	80	1 - 2
Inconel X	90	1	80	1	70	1	60	1
Hastelloy A	120	1 - 2	100	1 - 2	85	2 - 3	75	1 - 2
Hastelloy B	110	0 - 1	100	1 - 2	90	1 - 2	75	0 - 1
Hastelloy C	100	0 - 1	90	0 - 1	70	0 - 1	60	0 - 1
Rene 41	90	1	90	1	90	1 - 2	90	1 - 2
Udimit	100	1	90	1 - 2	90	1 - 2	90	1 - 2
Waspalloy	90	1	90	1 - 2	90	1 - 2	90	1 - 2
Titanium	100	1 - 2	100	2 - 3	100	2 - 3	100	2 - 3
<u>Titanium Alloys</u>								
TI-4AL-4MO	100	0 - 1	90	0 - 1	80	0 - 1	70	0 - 1
TI-140A2CR-2MO	100	0 - 1	90	0 - 1	80	0 - 1	60	0 - 1

The Original.....Since 1926



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