MODEL 1316S after sn 7300

Parts List and Operating & Maintenance Manual

Miter Head Bandsaw

Built better to work stronger and last longer

1316S

1316S-EXT

Extended Capacity

REV 220503

Wellsaw®
Made In The USA
Quality Metal Cutting Bandsaws
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FORWARD

The Model 1316S Wellsaw has 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

Un-crating

Carefully remove the protective crating 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

Index

Specifications

Capacity:	Round	Rectangular
1316S		
@ 0 (90)	**13"**	**13" x 15-1/4"**
@ 45	**11-1/2"**	**13" x 11-1/2"**
@ 60	**8"**	**8-1/2" x 8"**
1316S-EXT Capacity:		
@0 (90)	**13”**	**13” x 18”**
@45	**13”**	**13” x 18”**
@60	**13”**	**13” x 14.5”**
Blade Speed	**Infinitely variable, 70-375 SFPM**	
Blade Guides:	**Carbide Guides with Rollers**	
Motor		
3hp		**208-230/460/60/3**
2hp		**115/208-230/60/1**
Drive		**V-Belt**
Blade Size standard 1316S		**1" x .035 x 12'6"**
Blade Size for 1316S-EXT		**1” x .035 x 15’6”**
Height to top of Bed		**35"**
Coolant Tank Capacity		**8 gallons, 170 GPH**
Floor Space		**90" wide x 76" long**
Stock Stop Projection		**25"**
Blade Tension		**Manual Rite Tension®**
Feed Rate Control	**Gravity, Variable Hydraulic**	
Shipping Weight Standard 1316S		**1720 lbs.**
Shipping Weight for 1316S-EXT		**1810 lbs.**

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 pages 36 and 37.
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

1. Raise saw frame part way.
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. Open each carbide guide. Reach behind each blade guide assembly and turn the black knurled knob counter clockwise until it stops. This pulls the carbide block away from the blade.
6. Uncoil new blade, WARNING: wear gloves to protect your hands and eye protection. Make certain blade teeth point in the direction of blade travel which is toward the motor.
7. Place new blade on the band wheels and fit it into the guides. Close the carbides by turning the black knob clockwise until it stops. It does not need to be tight. Make sure that the blade is not riding up on the band wheel flanges.
8. Grasp blade on frame side and push it toward guide bracket beam to hold it in position while turning Rite Tension® take up screw.
9. Tighten blade to proper tension. Blade is properly tensioned when the take up screw is tightened until mechanism bottoms.
10. Re-attach the blade brush belt and close all guards.

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

Model 1316S is 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).

Fixed Vise Jaw

The two pins in the fixed vise jaw should be kept in place in order to ensure square cuts. For cutting angles, the pins must be removed and the turned to the desired position and tightened with clamp bolts. These pins enable operators to quickly relocate the fixed vise jaw for approximate 90°cutting. For final, accurate cutting, the fixed vise jaw should be squared with the blade. (See Guide Alignment)

Sliding Vise Jaw

The sliding vise jaw is fitted with a lift plate and ratchet dog for quick action. A hand wheel tightens the vise on the workpiece. *Excessive pressure is not required to hold workpiece securely.*

Hydraulic Feed Control

The feed rate is hydraulically controlled with a needle valve located on the side of the saw bed.
Caution: Do not attempt to loosen or remove hoses until the saw frame is supported in its "Down" position.

Blade Brushes

Brushes should be cleaned frequently in kerosene and reversed to take advantage of both rows of bristles. For efficient cutting and blade life, keep blade brushes adjusted so they are contacting blade teeth and replace them when wore.

Motor Switch

The "Start-Stop" motor starter is provided with heater coils to de-energize the circuit if an overload occurs. Allow the coil to cool before trying to restart the motor.

Low/No Voltage Control also de-energizes the circuit and prevents automatic restarts after power is restored. Allow the coil to cool.

To stop the saw at any time,
press the stop button or
press down on the limit switch actuator

Blade Guide Adjustment

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 or 23 in the parts drawings) 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.

Operation of the Swivel Feature for Miter Cutting

The angle of the cut is adjustable from 0° (90°) to 60°. The angle is indicated by a pointer at the back of the chip pan and a large scale on the edge of the cutoff turntable. The saw head is locked into position by means of a control rod and locking block. There is a 0° stop on the back of the saw bed. ***DO NOT ADJUST THIS STOP.***

To adjust the angle of the cut, loosen the angle lock handle, pull the saw head, while lining up the pointer to the desired angle shown on the scale. Then gently tighten the handle. The lock requires very little pressure to hold the head in place. ***DO NOT OVER TIGHTEN.***

Stock Stop Feature

The saw is equipped with an adjustable stock stop for use when making repeated cuts of the same length. The stop length is adjusted with the same type of lock used on the saw head angle lock. The stop can be adjusted width-wise using the "T" handle on the lower portion of the support. The stop mechanism can also be swung completely out of the way. To do this, loosen the "T" handle two turns, lift up on the stop and let it down behind the saw.

Recommended Service Kits for Insurance Against Downtime		
1 year		
100133-004	**Rotary Blade Brush**	**1 reqd.**
2 year		
100416-001	**Bearing**	**4 reqd.**
152153	**Top Carbide Guide**	**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**	**4 reqd.**
101645-FP	**Drive Pinion**	**1 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 and Nut**
3. **Use Extreme Pressure open gear lube 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:

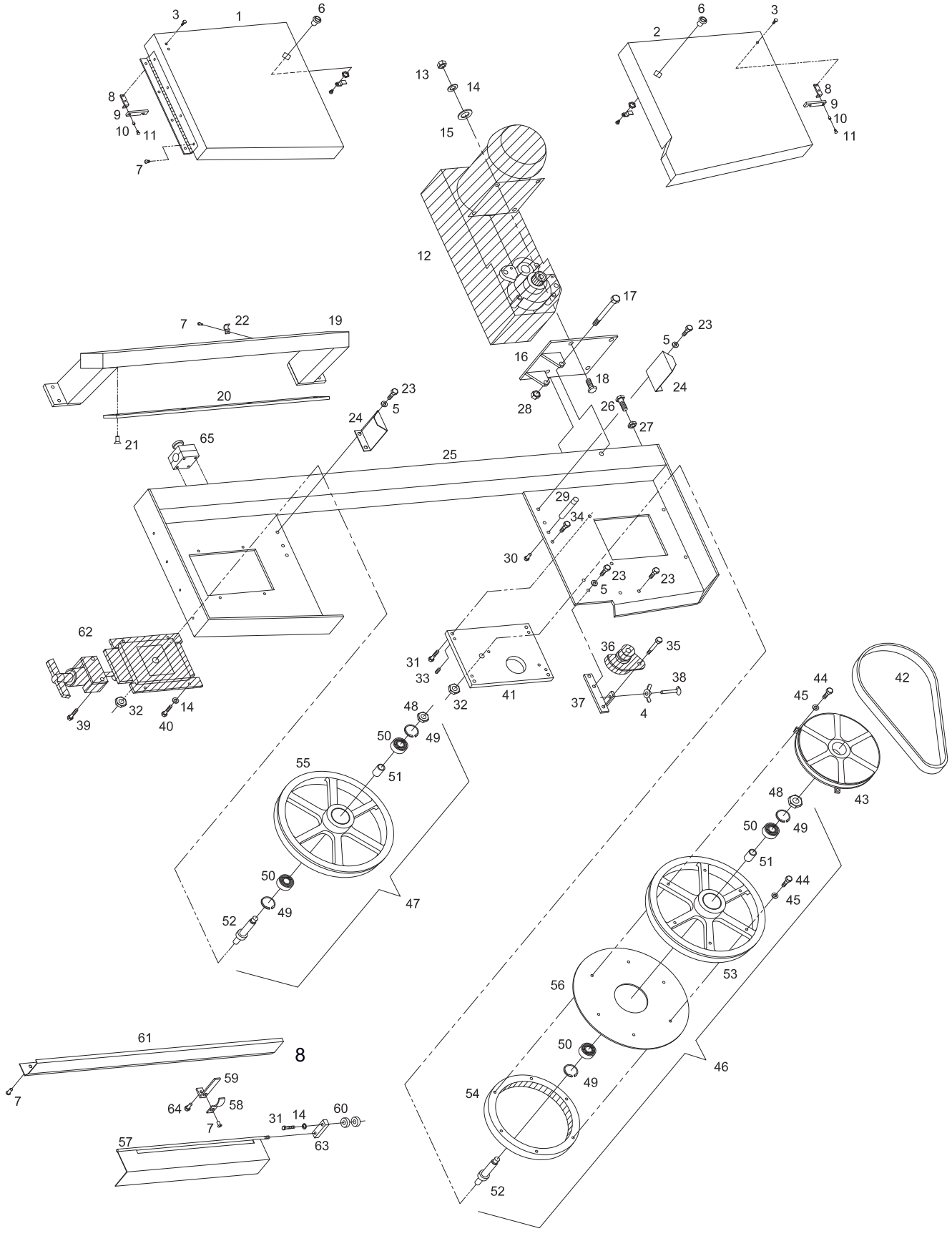
Wellsaw model 1316S

Sequence of Operation

Pushbutton Feed Control for manually raised saws.

1. At the finish of the cut the blade motor will stop. Be sure to wait until the motor has stopped before removing the cut piece.
2. The saw frame can be lifted to the desired height. There is no need to turn the **Cutting Speed** handwheel (feed rate control). The saw will hold in the up position at any point.
3. The vise can now be opened and the next cut can be positioned. The vise can be close.
4. If the blade is quite high above the material the saw frame can be lowered quickly by pressing the **Fast Approach** button. This has a momentary operation. Be careful not to allow the blade to touch the material.
5. Start the blade motor with the green **Start** button.
6. The **Frame Lower** button is used to start the cut. After the blade motor is running the **Frame Lower** button can be pushed and the blade will feed into the cut. If the blade motor is not running the **Frame Lower** button will have a momentary action, the head will drop only while the button is held down and at a slower rate than the **Fast Approach**.
7. The **Cutting Speed** handwheel is used to adjust the rate that the saw head comes down (Feed Rate). It can be adjusted for each job as needed but <u>does not require attention during the sawing cycle</u>. Best results will come when this knob is adjusted only in small amounts and only when needed. Avoid adjusting this knob during the cutting cycle.
8. The red **Stop** button will stop the blade motor <u>and</u> the feed cycle. To resume sawing both the blade **Start** and the **Frame Lower** buttons must be pushed.
9. The saw required electrical power to lower the saw frame. The saw is equipped with a **By-Pass Valve** which allows the saw head to be lowered when there is no electrical power available. The valve is located under the saw bed at the Vise Handwheel end.
10. **NOTE:** The saw is shipped with the **By-Pass Valve** in the **open** position. The valve must be closed before operating the saw. Gently turn the knob clockwise until the valve seats.

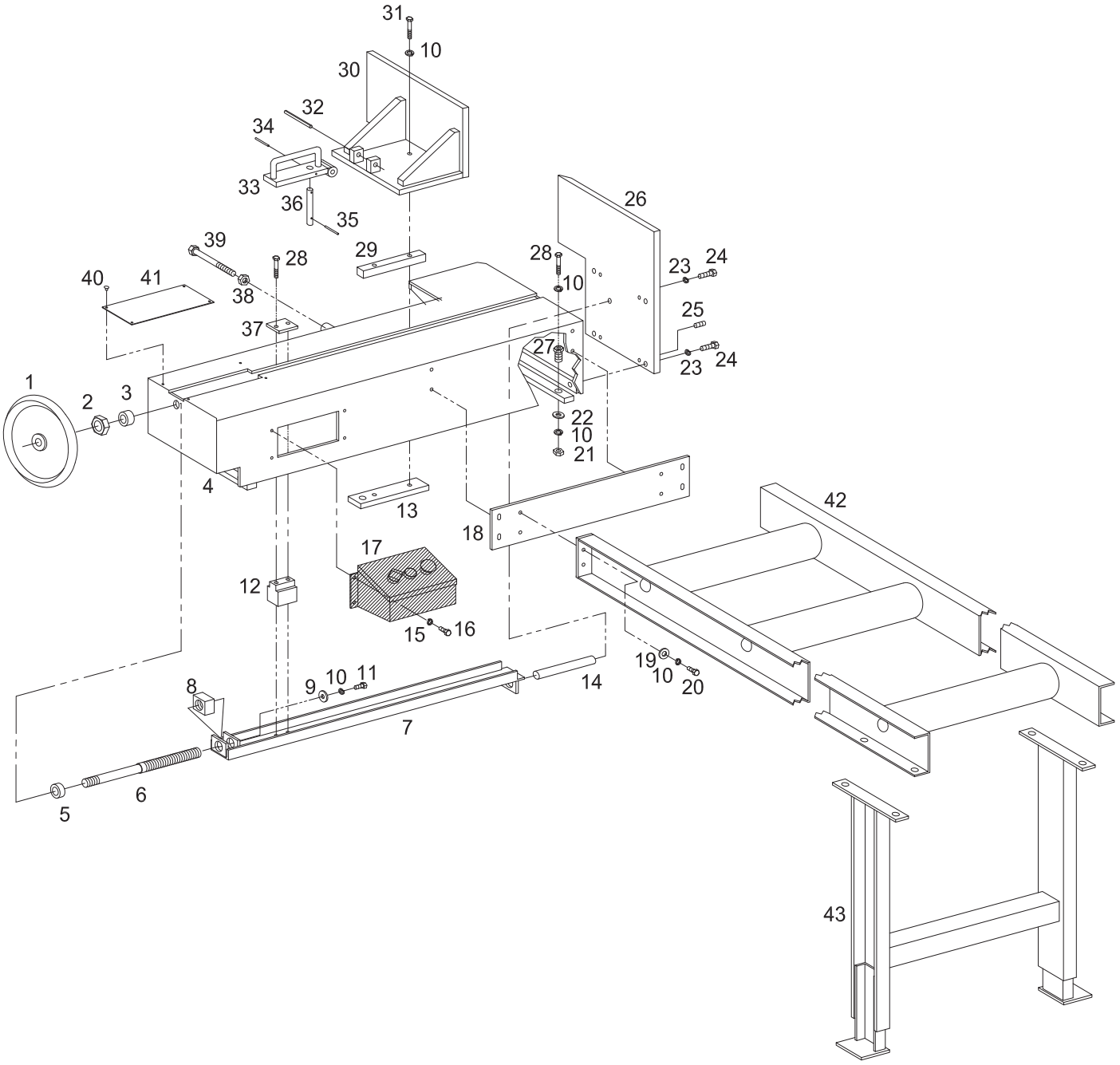
Frame Assembly



Frame Assembly

1	150146SERV	Idle Wheel Guard
2	150147SERV	Drive Wheel Guard
3	100013-005	Machine Screw, BH 10-32 x 3/8
4	100024-002	Wing Nut, 1/4-20
5	100025-003	Lockwasher, 3/8
6	100135-002	1/4 Turn Fastener w/cam
7	100013-010	Machine Screw, BH 1/4-20 x 1/4
8	150095	Door Catch Mtg Block
9	150096	Door Catch
10	150182	Door Catch Sleeve
11	100013-009	Machine Screw, BH 10-32 x 1/2
12		**Motor & Gear Box Ass'y. (page 26)**
13	100017-002	Hex Nut, 5/16-18
14	100025-002	Lock Washer, 5/16
15	100029-003	Flat Washer, 5/16
16	150248	Motor Mount Bracket
17	100004-116	Capscrew, HH 1/2-13 x 4-1/2
18	100004-016	Capscrew, HH 5/16-18 x 7/8
19	150280	Guide Beam Ass'y (standard 1316S
	150318	Guide Beam Assy (1316S-EXT)
20	150124	Guide Arm Track (standard 1316S)
	150320	Guide Arm Track (1316S-EXT)
21	100009-013	Capscrew, FH 5/16-18 x 1/2
22	100218-010	Clamp
23	100004-076	Capscrew, HH 3/8-16 x 3/4
24	155152	Door Catch Support
25	153085	Saw Frame (standard 1316S)
	150316	Saw Frame (1316S-EXT)
26	100033-023	Capscrew, SH 3/8-16 x 2-1/2
27	100019-004	Hex Nut, 3/8-16
28	100023-004	Nylon Lock Nut, 1/2-13
29	150160-002	Door Latch Stud
30	100004-015	Capscrew, HH 5/16-18 x 3/4
31	100004-020	Capscrew, HH 5/16-18 x 1-1/4
32	100065-007	Hex Nut, 5/8-18
33	100034-005	Set Screw, 5/16-18 x 3/4
34	100165-007	Shoulder Bolt, 3/8-16 x 3/8
35	100165-015	Shoulder Bolt, 3/8-16 x 1-3/4
36		**Blade Brush Ass'y. (page 29)**
37	150369	Blade Brush Arm
38	100042-003	Thumb Screw, 1/4-20 x 2
39	100004-055	Capscrew, HH 3/8-16 x 2-1/4
40	100004-013	Capscrew, HH 5/16-18 x 5/8
41	150022	Wheel Plate, Drive End
42	100166-450	V- Belt
43	150144	Pulley, Large
44	100004-068	Capscrew, HH 1/4-20 x 1-1/4
45	100025-001	Lockwasher, 1/4
46	**150087**	**Drive Wheel Ass'y for 1" Blades (includes 41,54,55,58-64, & 66)**
47	**150088**	**Idle Wheel Ass'y for 1" Blades (includes 41,58-62 & 65)**
48	100019-016	Hex Jam Nut, 5/8-18
49	100068-002	Snap Ring (2 req'd/ wheel)
50	100414-003	Ball Bearing (2 req'd/ wheel)
51	105415	Spacer (1 req'd/ axle)
52	105420	Wheel Axle
53	**150059-001**	**Drive Wheel for 1" Blade (includes items 59 thru 61)**
54	B-086	Internal Ring Gear
55	**150060-001**	**Idle Wheel for 1" Blade (includes items 59 - 61)**
56	150405	Shield
57	150157	Blade Guard Lower (standard 1316S)
	150321	Blade Guard Lower (1316S-EXT)
58	150414	Clamp
59	150154	Blade Guard Support
60	105537	Spacer
61	150273	Blade Guard, upper (standard 1316S)
	150314	Blade Guard, upper (1316S-EXT)
62		**Rite Tension® Blade Tension & Slide Block Ass'y (see page 24)**
63	150158	Blade Guard Mounting Block
64	100013-002	Cap Screw, BH, 1/4-20 x 3/4
65	100871-014	Emergency stop switch
66	100781-011	**Worklight (not pictured)**

BED ASSEMBLY



Bed Assembly

1	B-093	Hand Wheel
2	100019-028	Hex Jam Nut, 3/4-10
3	102886	Set Collar
4	153011	Saw Bed
5	100402	Thrust Collar
6	150286	Vise Screw
7	153026	Vise Push Channel
8	M-061B	Vise Nut
9	M-041	Guide Washer
10	100025-002	Lock Washer, 5/16"
11	100004-015	Cap Screw, 5/16-18 x 3/4"
12	150098	Slide Block
13	153082-002	Slide Block Plate
14	153054	Push Channel Support Rod
15	100025-001	Lock Washer, 1/4"
16	100004-005	Cap Screw, 1/4-20 x 5/8"
17		**Control Switch Assembly (See Page 30)**
18	153073	Conveyor Mounting Plate
19	100030-007	Flat Washer, 1/2"
20	100004-011	Cap Screw, 5/16-18 x 1"
21	101300	Hex Nut, 5/16-18
22	100030-007	Flat Washer, 1/2"
23	100025-003	Lock Washer, 3/8"
24	100004-029	Cap Screw, 3/8-16 x 1-1/4"
25	100034-005	Set Screw, SH, 5/16-18 x 3/4"
26	153010	Stationary Vise Jaw
27	210273	Adjustment Screw
28	100004-099	Cap Screw, 5/16-18 x 2-1/4
29	153078	Vise Jaw Key
30	153005-002	Moveable Vise Jaw
31	100004-023	Cap Screw, 5/16-18 x 2"
32	100053-002	Roll Pin, 3/8 x 2-1/2"
33	150091	Lift Plate
34	100053-008	Roll Pin, 1/8 x 1-3/8"
35	100053-009	Roll Pin, 1/8 x 5/8"
36	150094	Vise Drive Pin
37	150097	Clamp Plate
38	100019-005	Heavy Hex Jam Nut, 1/2-13
39	100008-081	Cap Screw, SH, 1/2-13 x 4-1/2"
40	100000-018	Machine Screw, RH, 10-32 x 3/8"
41	153056	Bed Cover Plate
42	098045-001	Gravity Conveyor
43	098046-004	Leg Assembly

Table Assembly

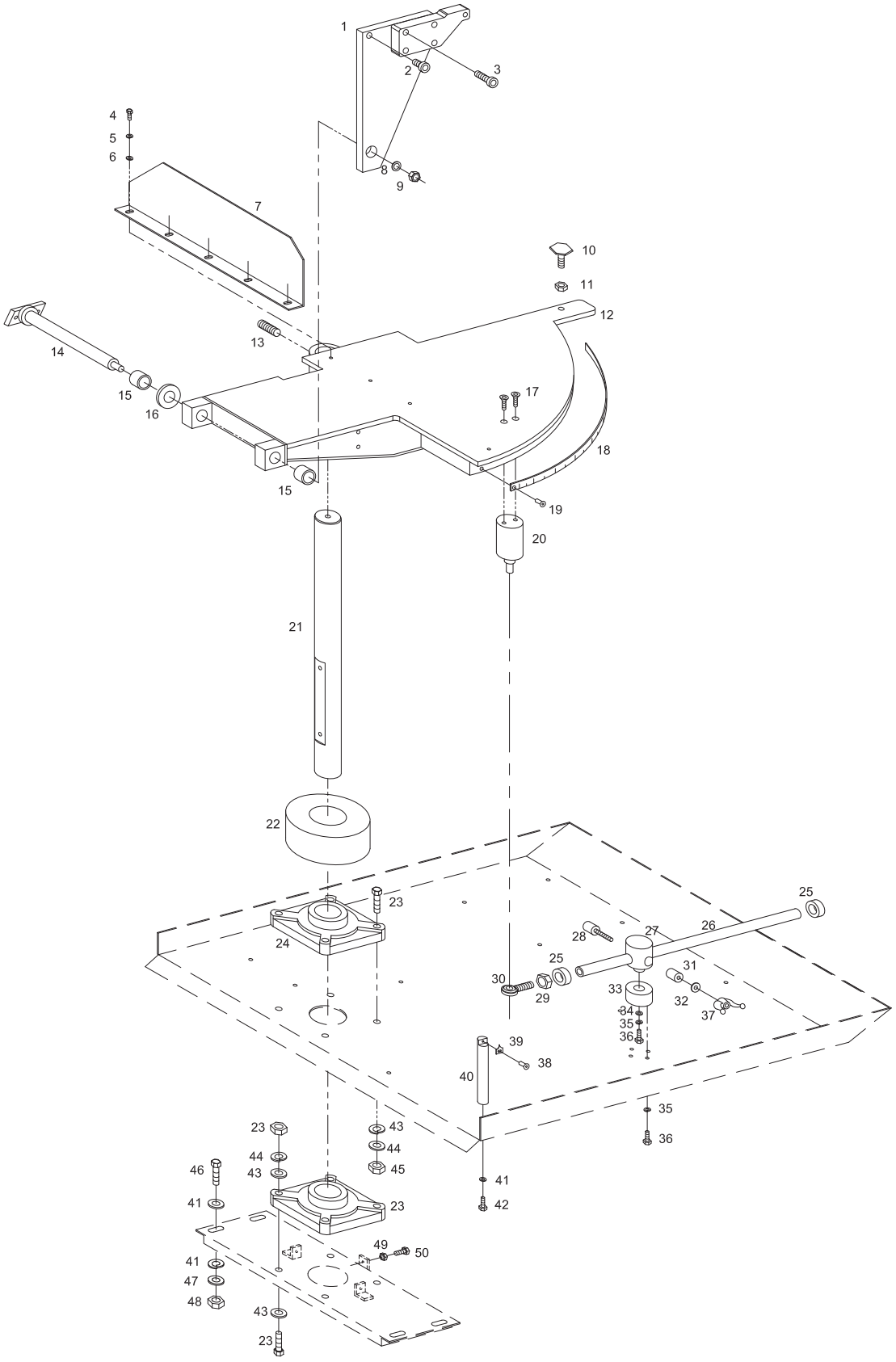
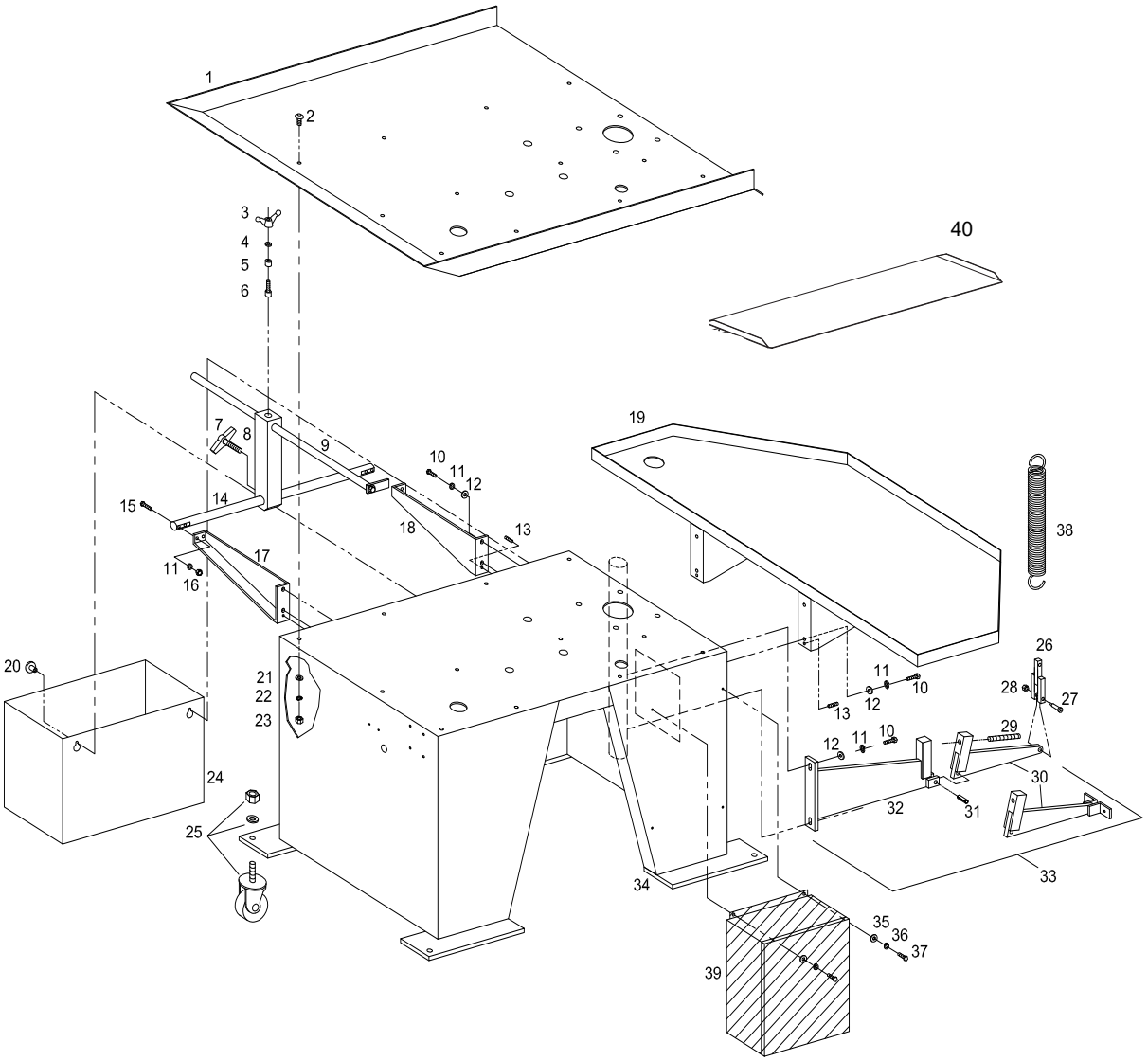


Table Assembly

1	150517	Pivot Arm Weldment
2	100008-006	Cap Screw, SH, 38-16 x 1
3	100008-016	Cap Screw, SH, 3/8 x 1-3/4
4	100004-027	Cap Screw, HH, 3/8 x 1
5	100025-003	Lock Washer, 3/8
6	100029-004	Flat Washer, 3/8
7	153057	Stock Guide
8	100029-008	Flat Washer, 5/8
9	100017-007	Lock Nut, 5/8-11
10	104604	Adjusting Screw
11	101300	Nut, 5/16-18
12	153040	Tip Off Table
13	100039-004	Set Screw, SH, 38/-16 x 1
14	150276	Pivot Bar
15	100419-041	Sleeve Bearing
16	150021-001	Pivot Bar Collar
17	100009-006	Cap Screw, FH, 18-16 x 1
18	153025	Protractor
19	100013-005	Cap Screw, BH, 10-32 x 38
20	153035	Table Lock Bar
21	153055	Post Frame Support
22	153024	Flange Bearing Cover
23	100004-043	Cap Screw, HH, 5/8-11 x 2-1/2
24	100452-002	Flange Bearing
25	098030-011	Steel Shaft Collar
26	153039	Shaft for Table Lock
27	153037	Table Lock Swivel
28	155203	Wedge and Bolt Assembly
29	100019-016	Hex Nut, 5/8-18
30	098081	Ball Joint
31	155190-001	Wedge
32	100030-005	Flat Washer, 3/8
33	153036	Base to Table Lock
34	M-041	Guide Washer
35	100025-002	Lock Washer, 5/16
36	100004-015	Cap Screw, HH, 5/16-18 x 3/4
37	155205-002	Wing Nut
38	100013-005	Cap Screw, BH, 10-32 x 38
39	210335	Pointer
40	153080	Pointer Rod
41	100029-004	Flat Washer, 3/8
42	100004-076	Cap Screw, 3/8-16 x 3/4
43	100030-009	Flat Washer, 5/8
44	100025-007	Lock Washer, 5/8
45	100019-027	Hex Jam Nut, 5/8-11
46	100004-027	Cap Screw, HH, 3/8-16 x 1
47	100025-003	Lock Washer, 3/8
48	100015-017	Hex Nut, 5/8-11
49	100019-001	Hex Jam Nut, 1/4-20
50	100004-053	Cap Screw, HH, 1/4-20 x 1

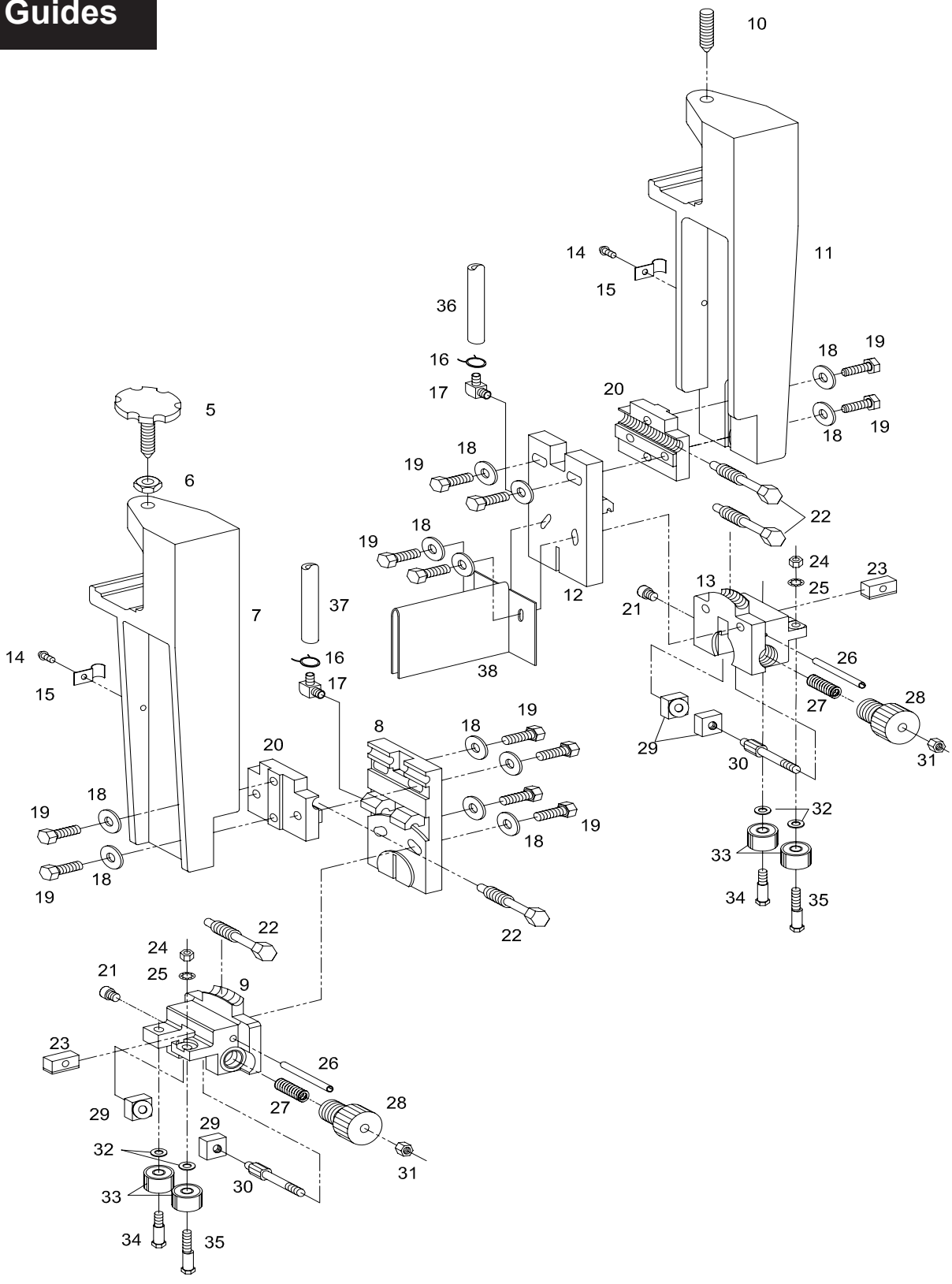
BASE ASSEMBLY



BASE ASSEMBLY

1	153023	CHIP PAN
2	100013-015	CAP SCREW, BH, 3/8/16 x 1"
3	155205-002	WING NUT
4	100030-005	FLAT WASHER , 3/8 SAE
5	155190	WEDGE
6	155203	WEDGE & BOLT ASSEMBLY
7	155201	HANDLE & SCREW ASSEMBLY
8	153060	BAR & STOCK STOP
9	153076	STOCK STOP ROD
10	100004-018	CAP SCREW, HH 5/16-18 X 1"
11	100025-002	LOCK WASHER , 5/16
12	100030-004	FLAT WASHER, 5/16
13	100034-005	SET SCREW, 5/16-18 X 3/4"
14	153067	STOCK STOP ROD
15	100004-020	CAP SCREW, HH 5/16-18 X 1-1/4"
16	100017-002	HEX NUT, 5/16-18
17	153065	STOCK STOP SUPPORT, RH
18	153066	STOCK STOP SUPPORT, LH
19	153031	LOWER CHIP PAN
20	150078	COOLANT TANK HANGER
21	100030-005	FLAT WASHER, 3/8 SAE
22	100025-003	LOCK WASHER , 3/8
23	100015-017	HEX NUT, 3/8-16
24	150066	**COOLANT TANK (SEE PAGE 28)**
25	100113-003	CASTER SET (2 LOCKING, 2 NON-LOCKING) OPTIONAL
26	150500	SPRING ANCHOR LINK (NOT USED ON EXTENDED SAW)
27	100165-011	SHOULDER BOLT, 3/8 X 1-1/2"
28	100023-007	NYLON LOCK NUT
29	100033-025	SQUARE HEAD SET SCREW, 1/2-13 X 4
30	153105	SPRING ANCHOR ARM, OUTBOARD
	153105-001	SPRING ANCHOR ARM FOR EXTENDED SAW
31	100053-041	ROLL PIN, 3/8 X 1-1/4
32	153108	SPRING ANCHOR ARM, INBOARD
33	153030-002	SPRING ANCHOR ASSY (INCLUDES ITEMS 29-32)
	153030-003	DOUBLE SPRING ANCHOR ASSY (EXTENDED SAW
34	153022	LEG WELDMENT
35	100029-002	FLAT WASHER , 1/4 USS
36	100025-001	LOCK WASHER, 1/4
37	100004-004	CAP SCREW, HH, 1/4-20 X 1/2
38	150466	SPRING for Standard saw after sn 6574
	150119	SPRING EXTENDED USES 2 OF THESE
39		**ELECTRICAL BOX (SEE PAGE 30)**
40	M-250	SPLASH GUARD
41	152245	DRAIN SCREEN
42	152246	DRAIN BRACKET

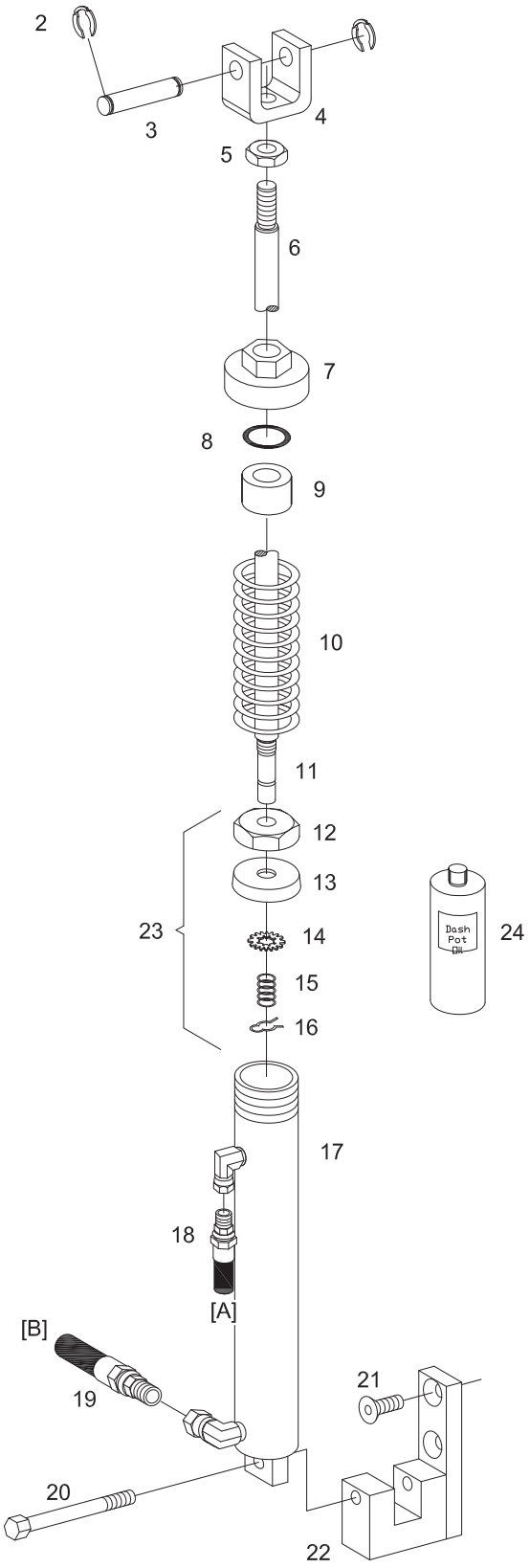
Blade Guides



Blade Guides

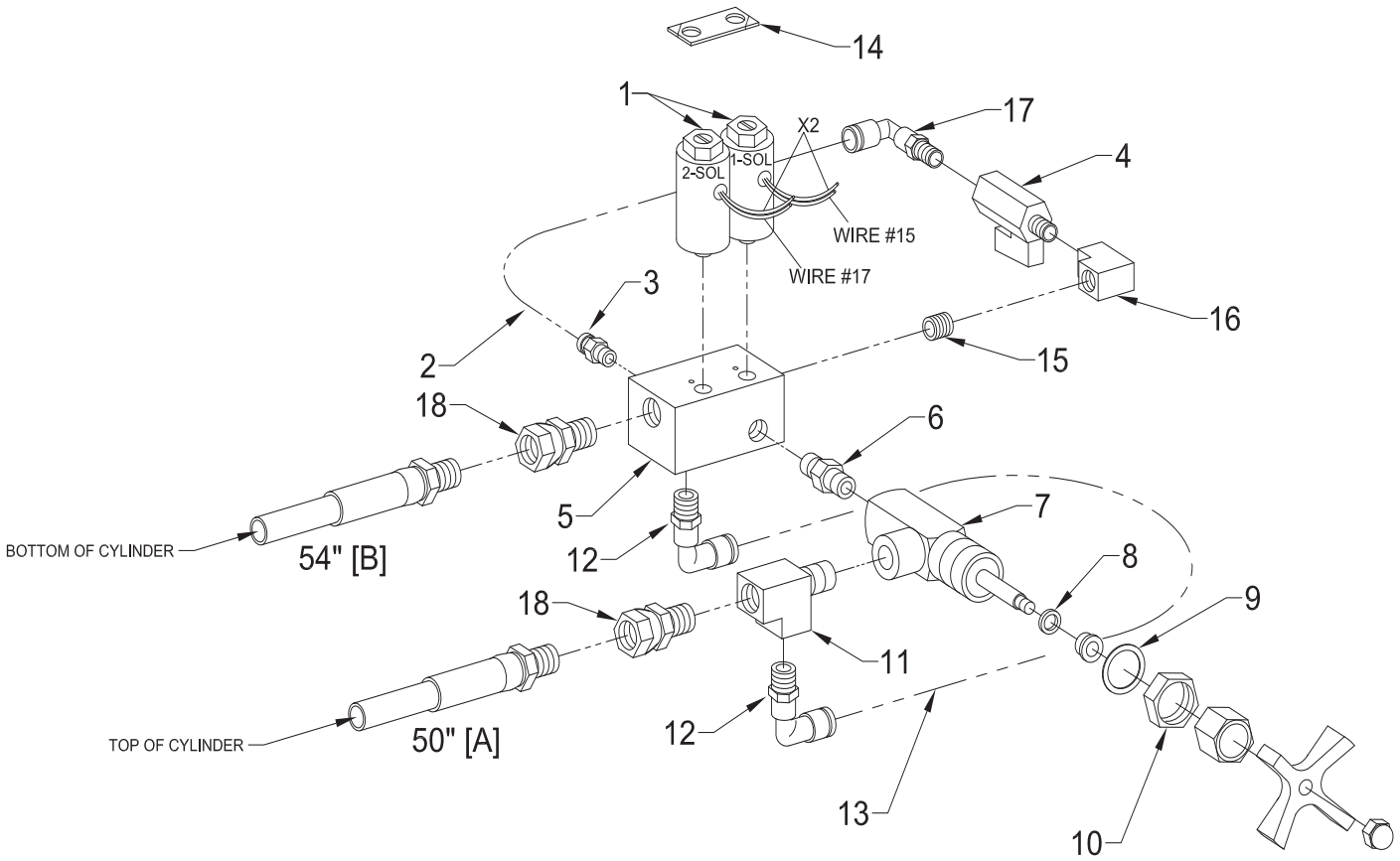
	152158-005	**Blade Guide Assy, D.E. (includes 10-35 (less 16))**
	152159-001	**Blade Guide Assy, I.E. (includes 5-9, 14-35 (less 16))**
	152160-001	**Guide Support Assy, D.E. (includes 13,21-35)**
	152161-001	**Guide Support Assy, I.E. (includes 9,21-35)**
5	105335-001	Hand Wheel & Screw
6	100019-005	Hex Jam Nut 1/2-13
7	152118	Roller Guide Bracket, I.E.
8	152121-002	Horizontal Adjusting Block, I.E.
9	152120	Guide Support, D.E.
10	100035-013	Set Screw
11	152117	Roller Guide Bracket, D.E.
12	152121-003	Horizontal Adjusting Block, D.E.
13	152119	Guide Support, D.E.
14	100013-005	Cap Screw 10-32 x 3/8
15	100218-018	Tubing Clamp, 3/8
16	100219-002	Hose Clamp
17	100324-009	Hose Barb, 1/4" hose, 90°
18	100029-002	Flat Washer, 1/4
19	100004-018	Cap Screw, HH 5/16-18 x 1
20	152155	Vertical Adjusting Block
21	100008-004	Cap Screw, HH 5/16-18 x 5/8
22	152151	Adjusting Bolt
23	152153	Carbide Back up Guide Block
24	101300	Hex Nut, 5/16-18
25	100027-005	Lock Washer, Shakeproof
26	100053-036	Roll Pin, 1/4 x 2
27	100136-009	Spring
28	152156	Adjusting Knob
29	106317	Fixed Carbide Guide
30	152157	Stud
31	100023-006	Nylon Lock Nut, 1/4-20
32	100097-001	Roller Guide Washer
33	100416-001	Bearing
34	B-043	Roller Axle
35	B-109	Eccentric Roller Axle
36	100350-018	Cooant Hose, D.E.
37	100350-040	Coolant Hose, I.E.
	100350-068	Coolant Hose, I.E. for Extended
38	150484	Blade Guard

Hydraulic Cylinder



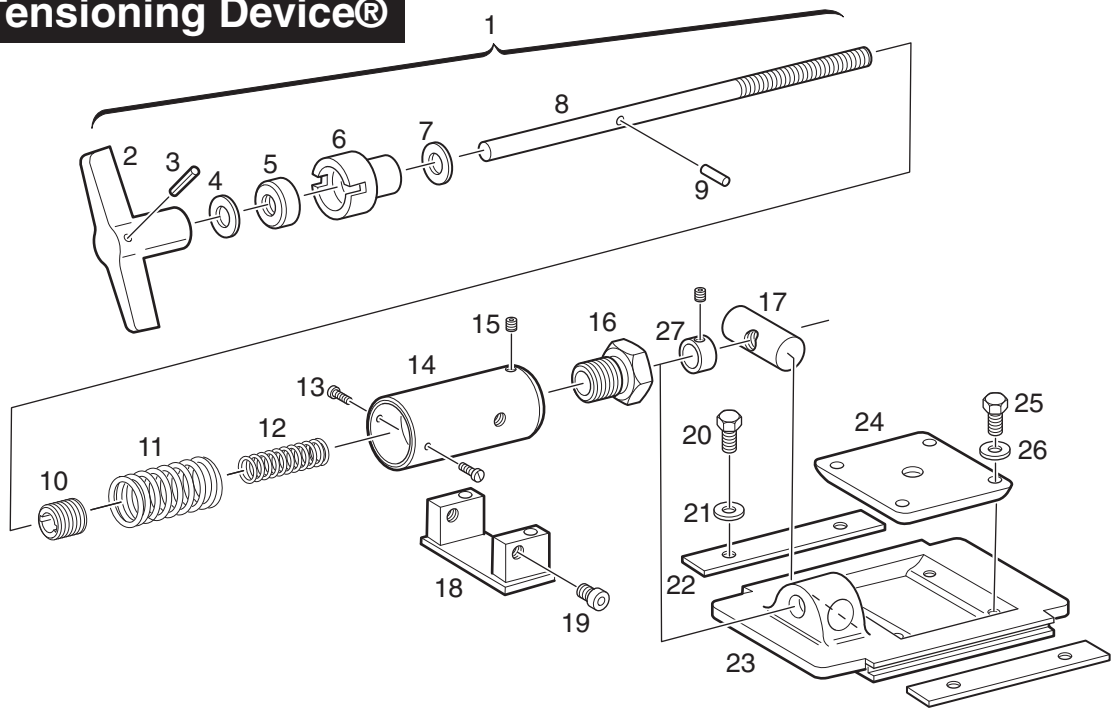
1	**155180-001**	**Cylinder (items 6-17)**
2	100069-019	Snap ring (2 required)
3	150279	Clevin Pin
4	150218	Clevis
5	100019-026	Heavy hex jam nut
6	**155221**	**Piston Rod Assy (includes 11-16**
7	155157	Cylinder Cap
8	155156	O-ring
9	153092	Spacer
10	155159	Spring
11	155182	Piston Rod
12	155160	Aluminum washer
13	155161	Piston cup
14	100285-006	Shake-proof washer
15	155163	Spring
16	155164	Hitch clip
17	155181	Cylinder body
18	100331-045	Hydraulic hose 31"
19	100331-046	Hydraulic hose 36"
20	100004-052	Cap screw 3/8-16 x 3-1/2"
21	100009-016	Cap screw 3/8-16 x 1-1/2"
22	153051	Lower cylinder mount

Flow Control Assembly



1	100673-044	SOLENOID VALVE
2	100358	TUBING FLEXIBLE NYLON
3	100357-002	PUSH IN FITTING, STRAIGHT
4	100226-004	MINIATURE BALL VALVE
5	150530	MANIFOLD
6	100332-001	1/4 NPT HEX PIPE NIPPLE
7	100238-005	FEED CONTROL VALVE ASSY
8	107065	NYLON WASHER
9	100238-003	WASHER
10	100238-004	PANEL NUT
11	100359-001	1/4 NPT STREET “T”
12	100357-003	PUSH IN FITTING 90°
13	100358	TUBING, FLEXIBLE NYLON
14	150541	LOCKING TAB
15	100203-001	PIPE NIPPLE 1/8” CLOSE
16	100335-003	90° FEMALE ELBOW 1/8”
17	100357-007	PUSH IN FITTING 90°
18	100329-001	SWIVEL FITTING, STRAIGHT
	155216-004	FLOW CONTROL ASSY

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.

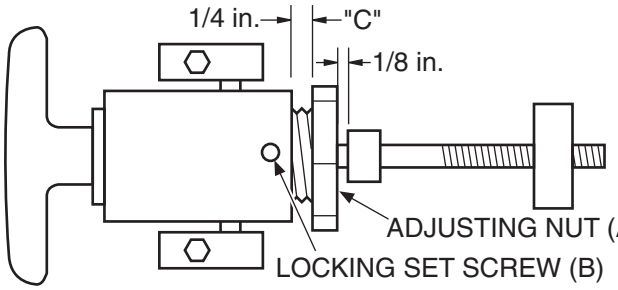
Calibration

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 guage 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-TENSION®
ADJUSTMENT

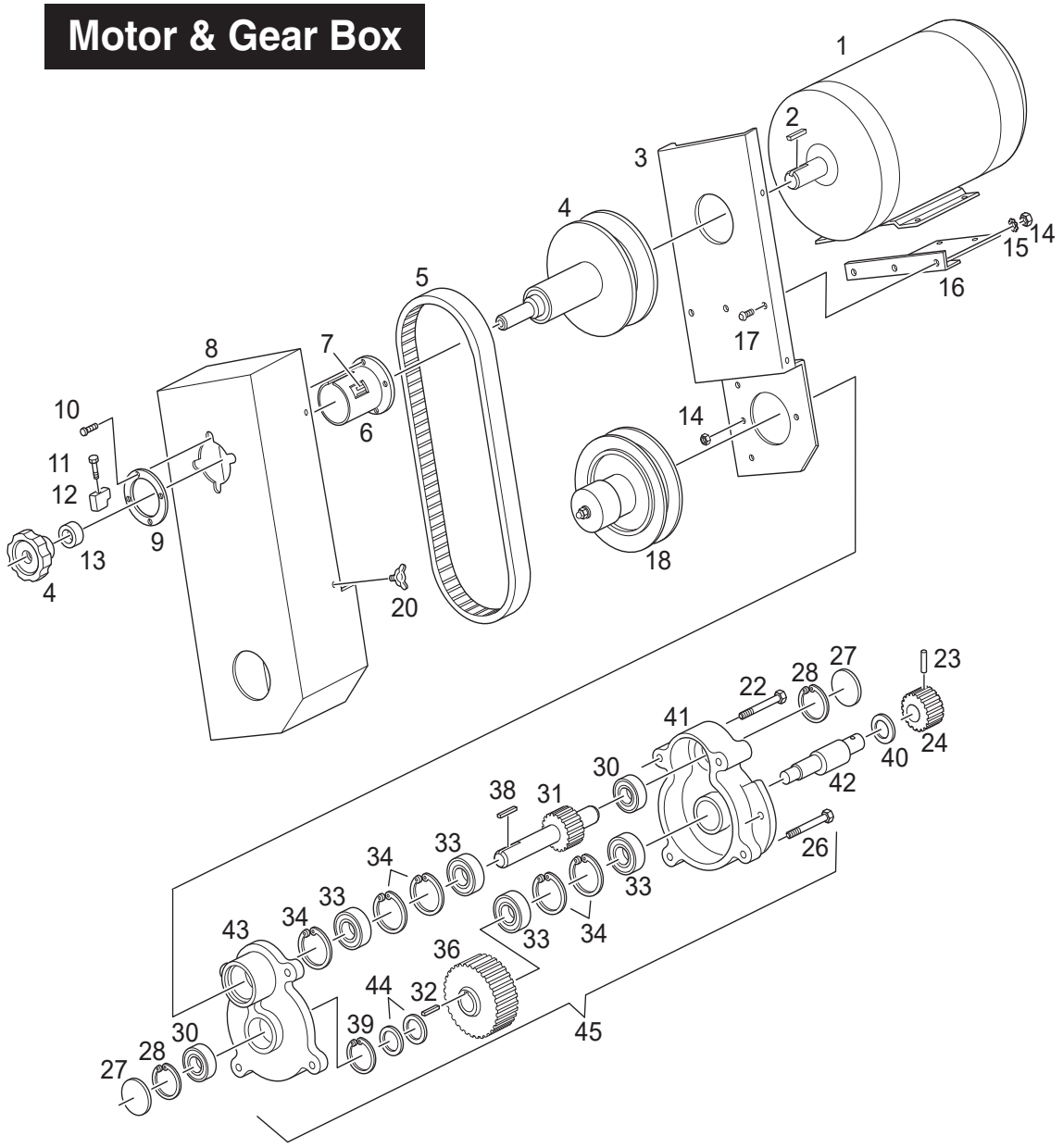


Rite Tensioning Device®

Caution:
The Rite Tension ® blade tensiong 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 ® mechenism.

1	**150075**	**Blade Tensioning Ass'y (includes items 2 thru 17 and 27)**
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	150190	Tensioner support
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	098030-004	Collar, w/ set screw

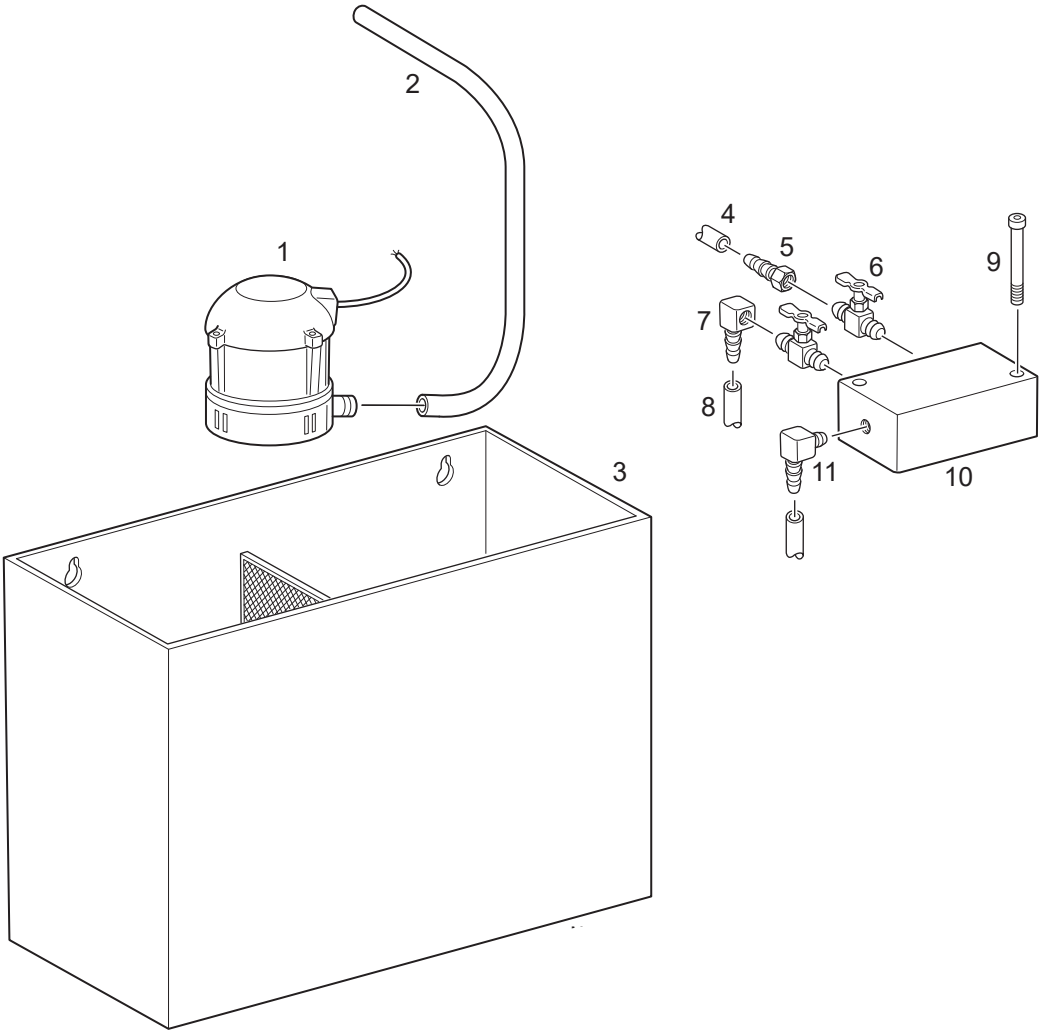
Motor & Gear Box



Motor & Gear Box

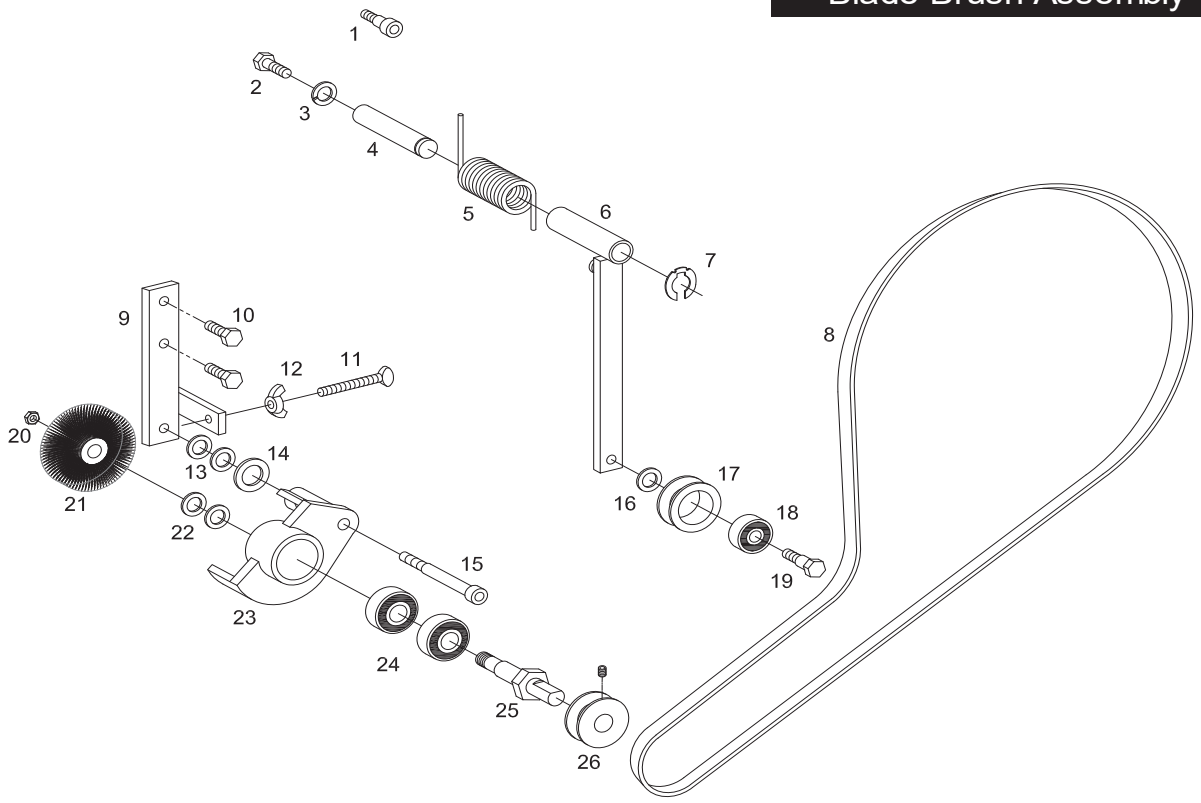
1	100835-037	Motor, 3 HP TEFC, 3/4" shaft 3 phase
	100836-030	Motor, 2 HP, 115-220/60/1
2	100056-037	Key
3	150250	Belt Guard, Bottom Plate
4	105451-021	VS Motor Pulley, 3/4" bore 3 Ph (includes hand wheel 407-712)
	105451-005	VS Motor Pulley, 5/8" bore, 1 Ph (includes hand wheel 407-712)
	407-712	Handle/ knob only (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
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
20	100063	Thumb Screw (4 req'd)
22	100008-086	Cap Screw, SH 1/4-20 x 2
23	100180-001	Coiled Spring Pin
24	101645-FP	Drive Pinion
26	100008-061	Cap Screw, SH 1/4-20 x 1-1/2
27	100072-001	Expansion Plug
28	100068-001	Snap Ring
30	100404-002	Ball Bearing
31	150234	Pulley Shaft & Pinion
32	100056-001	Key
33	100414-003	Bearing
34	100068-002	Snap Ring
36	101286S	Driven Gear – Steel
38	105451-017	Step Key
39	100069-003	External Snap Ring
40	150416	Spacer
41	150424	Case
42	150426	Drive Shaft
43	150425	Gear Case Cover
44	100097-003	Washer (shim as needed)
45	150423	Gear Box Ass'y

Coolant System



1	100249-010	Coolant Pump
2	100220-049	Coolant Hose from Pan 3/8” x 154”
3	150066	Coolant Tank w/ filter
4	100350-040	Coolant Hose, I.E. 1/4” x 40” for 1316S
	100350-068	Coolant Hose, I.E. 1/4” x 68” for 1316S-EXT
5	100324-003	Hose Barb, 1/4”
6	100226-004	Needle Valve
7	100324-009	Hose Barb, 1/4” 90 degree
8	100350-018	Coolant Hose, D.E. 1/4” x 18”
9	100008-068	Cap Screw, Button Head, 10-32 x 1-1/4”
10	152167	Coolant Manifold
11	100324-010	Hose Barb, 3/8 90 degree
12	**152177-002**	**Coolant Manifold Assembly (includes items 5-7 & 10)**

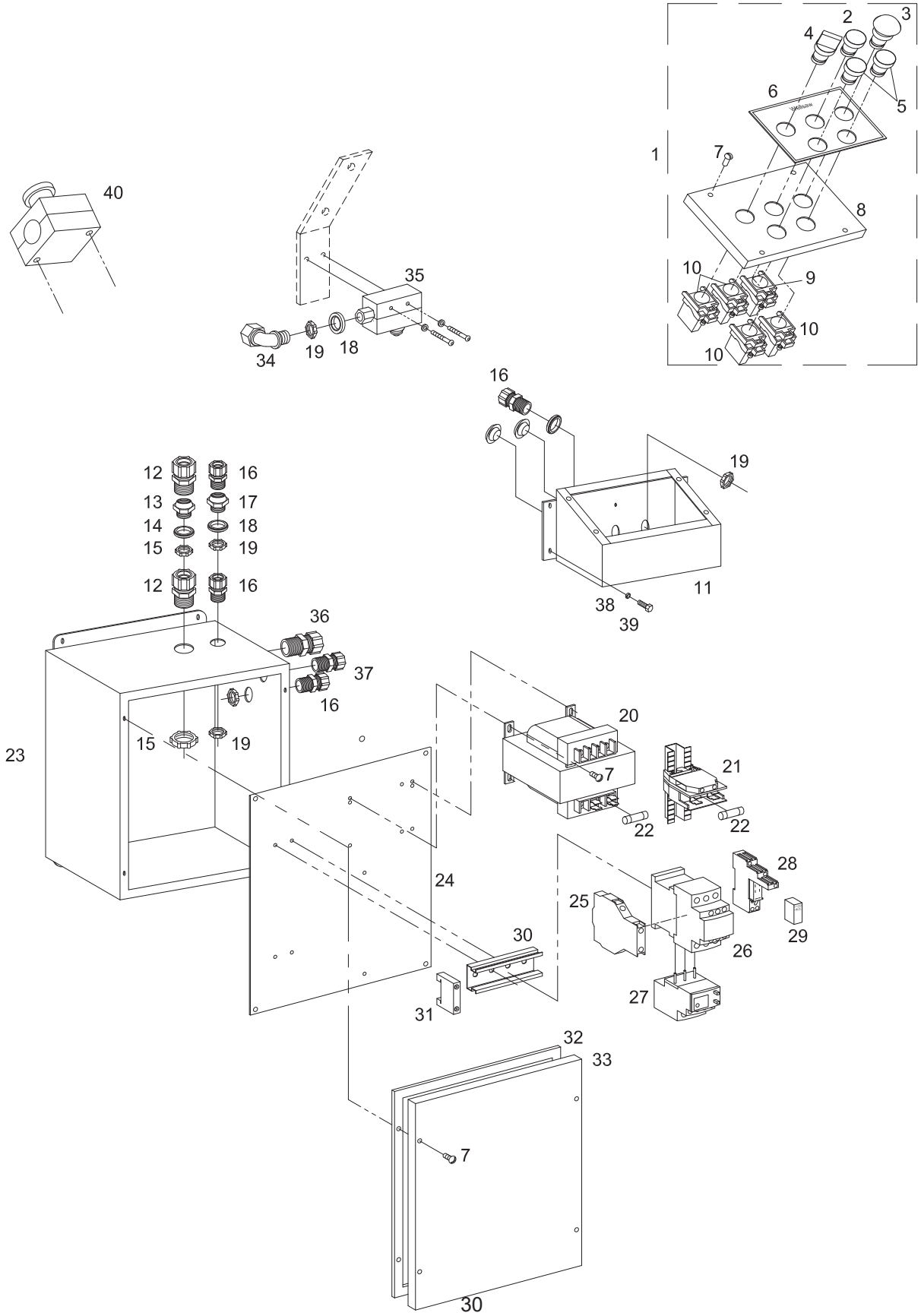
Blade Brush Assembly



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
2	100004-018	Cap Screw, HH 5/16-18 x 1
3	100025-002	Lockwasher, 5/16
4	150160-002	Door Latch Stud
5	150360	Spring
6	150364	Belt Tension Arm
7	100069-003	Snap Ring
8	100166-450	V' Belt
9	150369	Blade Brush Arm
10	100004-015	Cap Screw, HH 5/16-18 x 3/4
11	100042-003	Thumb Screw, 1/4-20 x 2
12	100024-002	Wing Nut, 1/4-20
13	100029-002	Flat Washer 1/2 USS (uses 2)
14	100030-005	Flat Washer 3/8 SAE
15	100165-015	Shoulder Bolt 3/8 x 1-3/4
16	100097-001	Washer
17	150361	Pulley, belt idler
18	100416-001	Bearing
19	B-043	Axle
20	100019-005	Hex Jam Nut 1/2-20
21	100133-004	Blade Brush
22	100030-007	Flat Washer 1/2 USS (2 required)
23	150257	Brush Housing
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)

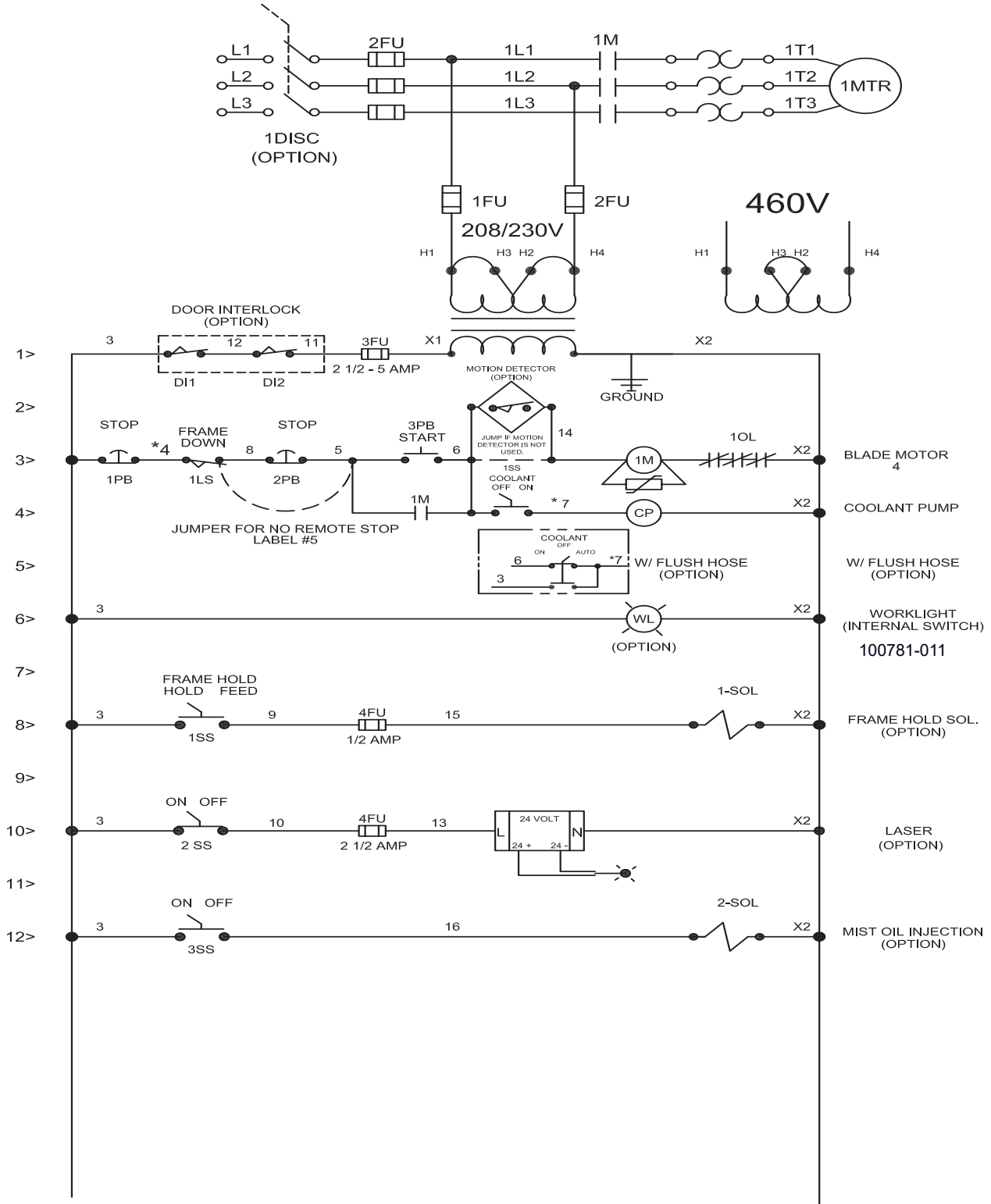
Electrical Controls



Electrical Controls

1	**155330-001**	**Control Switch Assembly (includes 2-10, minus 7)**
2	100871-001	Push Button Start
3	100871-013	Push Button Stop **
4	100871-003	Selector Switch, Coolant **
5	100871-019	Push Button
6	150230-001	Legend Plate
7	100000-019	Machine Screw, RH 10-32 x 1/2
8	155095-001	Switch Box Cover
9	100871-005	Switch Block, Normally Closed
10	100871-004	Switch Block, Normally Open
11	155094-001	Switch Box
12	100612-002	Connector, TB-2534
13	100796-024	Hub Connector, TB-371
14	100606-002	Sealing Ring
15	100240-003	Conduit Lock Nut
16	100612-001	Connector, TB-2523
17	100796-019	Hub Connector, TB-370
18	100606-001	Sealing Ring
19	100240-001	Conduit Lock Nut
20	100869-005	Transformer, 230/460 Volts
	100869-007	Transformer, 208 Volts
	100869-006	Transformer, 575 Volts
21	155115	Fuse Block Ass'y
22	100628-017	Fuse, FNA 2-1/2 Amp
23	100906	Electrical Enclosure
24	100893	Back Panel
25	100867-016	Auxilary Contact
26	100867-023	Magnetic Starter for 115V
	100867-029	Magnetic Starter for all other voltages
27	100867-012	Adjustable Overload, 4-6 amps 440-460V
	100867-014	Adjustable Overload, 7-10 amps 208-230V (3 phase)
	100867-027	Adjustable Overload, 9-13 amps 208-230v (1 phase)
	100867-022	Adjustable Overload, 16-24 amps 110-120V
28	100866-008	Relay Socket
29	100866-007	Relay
30	100717-016T4	Mounting Rail
31	100717-017T	End Clamp
32	098048-050	Gasket, 1/8 x 3/4 x 50"
33	100892	Enclosure Cover
34	100612-006	Elbow, 90º Connector
35	100782-012	Limit Switch, 115v w/ screws
36	100612-004	Connector, 3/4 Straight
37	100612-023	Connector, 1/2 Straight
38	100025-001	Lock Washer, 1/4
39	100004-003	Cap Screw, 1/4-20 x 1/2
40	100871-014	Emergency Stop Switch (Mounted on Frame)

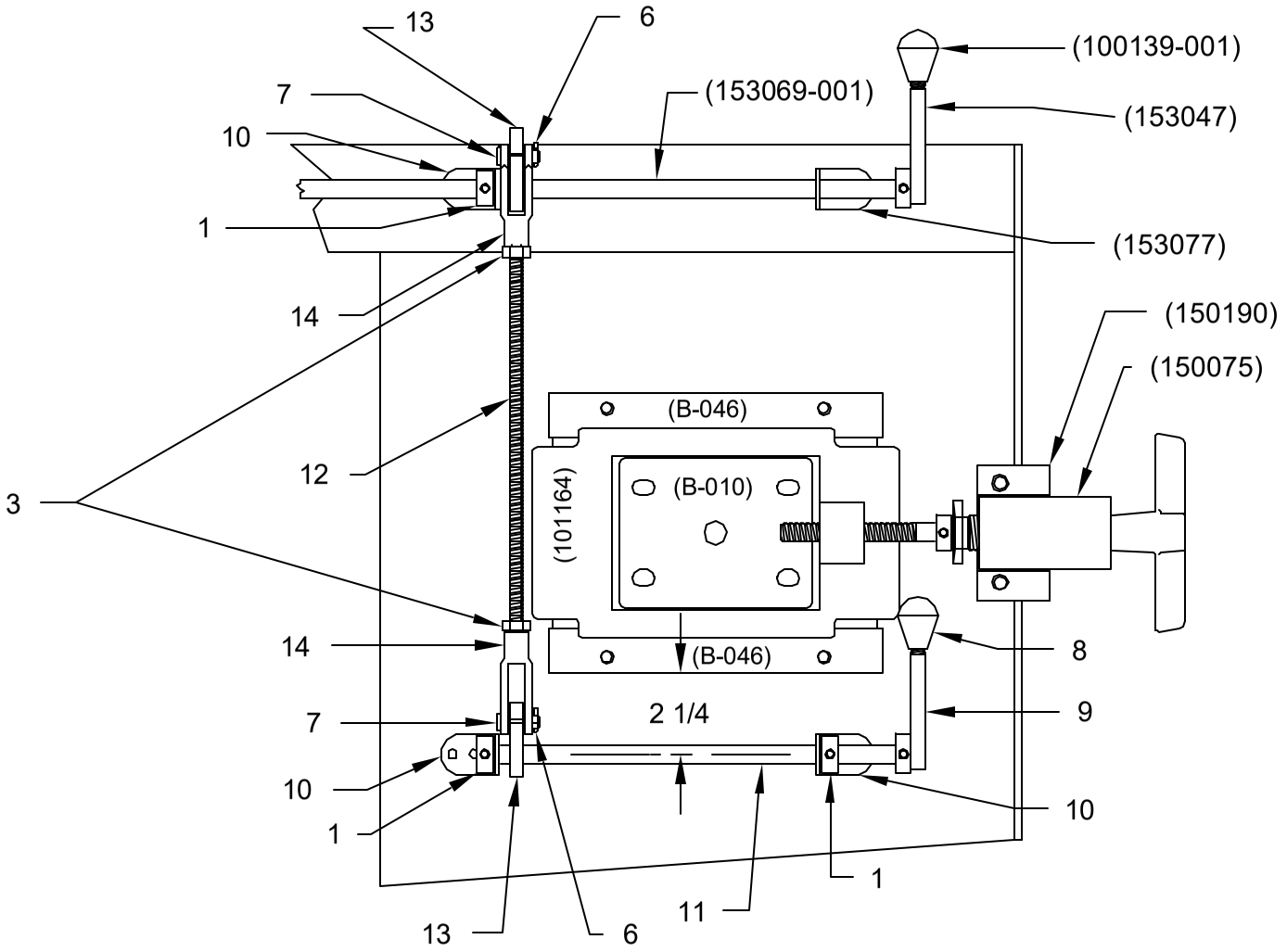
Electrical Schematic



NOTE 1: (*) DENOTES FIELD SPLICE IN CONTROL BOX.
REVISION DATE: 5 - 20 - 11

NOTE 2: TRANSFORMER UPGRADE REQUIRED FOR FLUSH HOSE OPTION.

	C.O.	DATE	BY		C.O.	DATE	BY	NEXT ASSEMBLY	MODEL NUMBER	NUMBER REQUIRED	NEXT ASSEMBLY	MODEL NUMBER	NUMBER REQUIRED
A				D									
B				E									
C				F								1316S-EH	1



PARTS LIST			
ITEM #	PART #	DESCRIPTION	QTY
1	098030-004	COLLAR, W/SET SCREW	3
2	100013-005	10-32 X $\frac{3}{8}$ BTN HD CAP SCREW	6
3	100019-029	$\frac{3}{8}$-24 HEX JAM NUT	2
4	100034-008	$\frac{1}{4}$ - 20 X $\frac{1}{4}$ SOC. HD. SET SCREW	1
5	100034-025	$\frac{1}{4}$ - 20 X $\frac{3}{8}$ SOC. HD. SET SCREW	2
6	100050-002	$\frac{3}{32}$ X $\frac{3}{4}$ COTTER PIN	2
7	100054-003	$\frac{3}{8}$ X 1 $\frac{3}{32}$ YOKE PIN	2
8	100139-001	KNOB, BLACK, OVAL	1
9	153047	HANDLE WELDMENT	1
10	153077	CYLINDER FEED ROD SUPPORT	3
11	153099	ROD, CYLINDER DOWNFEED	1
12	153100	ROD, THREADED, $\frac{3}{8}$ - 24	1
13	210259	LINKAGE ARM	2
14	210307	ADJUSTABLE YOKE END	2
15	100034-025	$\frac{1}{4}$-20 X $\frac{3}{8}$ SET SCREW (NOT SHOWN)	2

UNLESS OTHERWISE SPECIFIED:
1. DECIMAL TOLERANCES, 3 PLACES ± .005, 2 PLACES ± .02
2. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI-Y14.5
3. ALL THREADS SHALL BE AMERICAN STANDARD FOR UNIFIED THREADS
4. ALL PIPE THREADS SHALL BE AMERICAN STANDARD FOR PIPE THREADS
5. REMOVE ALL BURRS AND BREAK ALL SHARP EDGES
6. DO NOT SCALE DRAWING

MATERIAL

FINISH

DRAWN BY: S. CARPENTER — DATE: 8-15-05

CHECKED BY

ENG. APPVL.

SCALE: NONE

Wellsaw

Wellsaw, Inc.
2829 N. Burdick St.
Kalamazoo, MI 49004

1316S-EH DOWNFEED ASSEMBLY DRAWING

DATE RELEASED

PART NO. 153101

REV.

Wellsaw MADE IN U.S.A.

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)
Carbon Steels								
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
Free Machining Steels								
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
Manganese Steels								
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
Nickel Chrome Steels								
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
Molybdenum Steels								
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
Chrome Moly Steels								
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
Nickel Chrome Moly Steels								
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
Nickel Moly Steels								
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
Chrome Steels								
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
Chrome Vanadium Steels								
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
Die Steels								
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)
Silicon Steels								
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
High Speed Tool Steels								
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
Hot Work Steels								
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
Shock Resisting Tool Steels								
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
Special Purpose Tool Steels								
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
Stainless Steels								
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
Beryllium Copper #25								
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
Nickel Base Alloys								
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
Titanium Alloys								
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

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