

INSTRUCTION BULLETIN
& MAINTENANCE MANUAL
FOR CTD A200
PUSHFEED
AUTOMATIC SAW

CTD MODEL NO: _____

CTD SERIAL NO: _____

MANUFACTURE DATE: _____

DISTRIBUTOR PURCHASED THROUGH:

(IF ANY) _____



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Machine Requirements:

MODEL NO: _____ SERIAL NO: _____

Cutting Capacities

Models A200 & A 200M
12" Blade Capacity (305mm)

A200/45° Mitre:

2-1/2" (64mm) High x 4-1/4" (108mm) Wide
3-1/2" (89mm) High x 4" (101mm) Wide

A200 & A200M/90° Cutting:

2-1/2" (64mm) High x 6-1/2" (165mm) Wide
3-3/4" (95mm) High x 3-3/4" (95mm) Wide

Pneumatic Requirements: (if applicable) 1 CFM per 10 strokes at 75 PSI (.043 cubic meters at 5.4 kg/cm²)

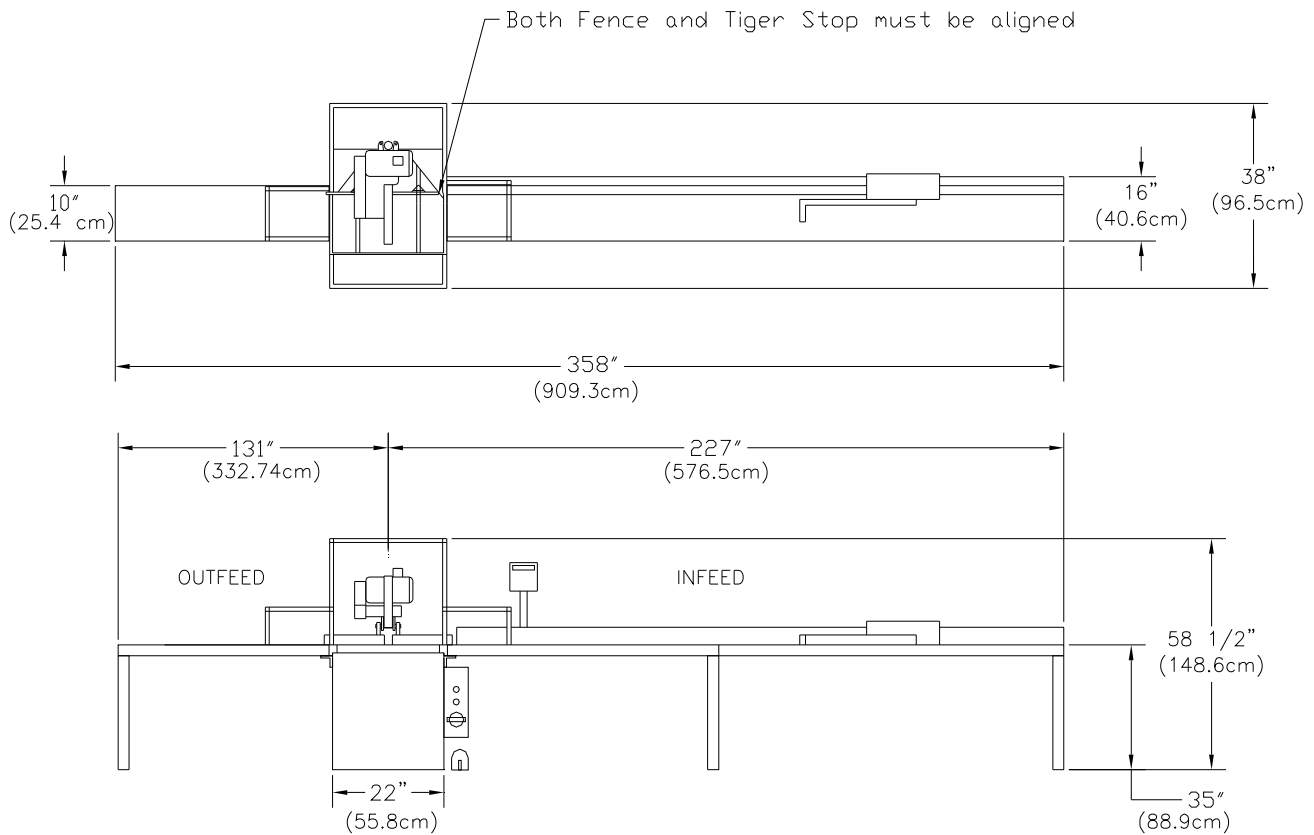
Dust Collection Requirements: 1200 CFM at (2) 2" outlets and (1) 4" outlet

Electrical Requirements: Based on one motor per machine

Motor Size	Required Amperage	Breaker Needed
2 H.P., 1 Phase 230 Volt	12.5 amps	20 amp
2 H.P., 3 Phase 230 Volt	5.4 amps	20 amp
2 H.P., 3 Phase 460 Volt	2.7 amps	20 amp
3 H.P., 3 Phase 230 Volt	7.4 amps	20 amp
3 H.P., 3 Phase 460 Volt	3.7 amps	20 amp

Cutting Tool Requirements: Heavy, rigid plate 12" blades: .100 to .110 plate

Space Requirements



Installation and Set Up:

The CTD saw you have purchased is designed to cut wood, aluminum, and plastic, with of course the proper blade and conditions. For the material you are cutting, please refer to the cutting instructions for each material type. The A200 Series machines use a NEMA 56 Frame 3 H.P., 3450 RPM, 60 Hertz TEFC Motor. CTD uses a speed-up so that the blade will run at approximately 11,000 SFPM on a 12" blade.

IMPORTANT: Before operating saw, please be sure to read the "SAFETY INSTRUCTIONS TO THE OPERATOR" (see Page No. 8).

Note: The floor stand must be shimmed, leveled and bolted to the floor, or framed in to eliminate vibration. Use holes provided in bottom of floor stand. All machines have been completely assembled at the factory, then disassembled for shipment.

Blade Installation:

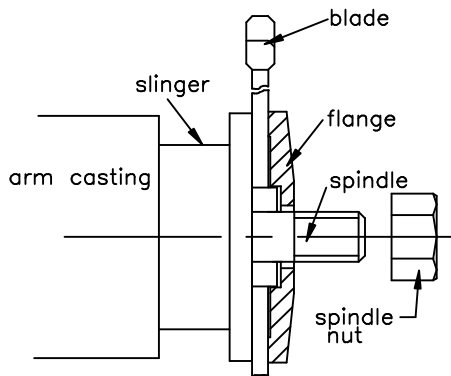
Open safety cage door. Before setting blade on spindle, *always shut off or disconnect air supply*. With motor **OFF** and power disconnected, remove linkage bolt at rear of link arm. Loosen five machine screws on blade guard cover. Entire lower Blade Guard Cover Assembly comes off as one piece, exposing spindle nut and flange. (Refer to Diagram "D" on Page No. 4).

Blade Installation (continued):

1. Remove Spindle Nut, P/N 2B1P36 or 2B1P37 and Outer Flange, P/N 200BM03. If necessary, hold blade in hand with rag or lower blade into a piece of wood, and loosen spindle nut by pushing down on a 15/16" wrench.
2. Place blade on spindle with tips pointing down. Make sure Slinger (inner flange), P/N 200BM04 and blade surface are **clean** before putting blade on spindle. This is a critical surface and is ground within .0005 flatness. Any debris or dust will wear this surface. Wipe both surfaces (blade and slinger) with a clean rag.
 - A. The blade must **ALWAYS** rotate to the rear of the machine on the underside of the blade (see Diagram "D"). **Always check rotation before cutting a piece of material.**
3. Replace Outer Flange, P/N 200BM03 and nut as before and tighten (refer to Diagram "C"). Pull up with 15/16" wrench. Do not over-tighten. Snugging the blade is all that is necessary.
4. Replace Blade Guard Cover Assembly as before.

If blades were purchased from CTD, your machine has been set with your blades. If not, blade diameters may vary. Check to see if the blade contacts the base or disc in the down position. If repositioning is necessary, adjust down stop bolt located under Arm casting, P/N 200BC01L or R.

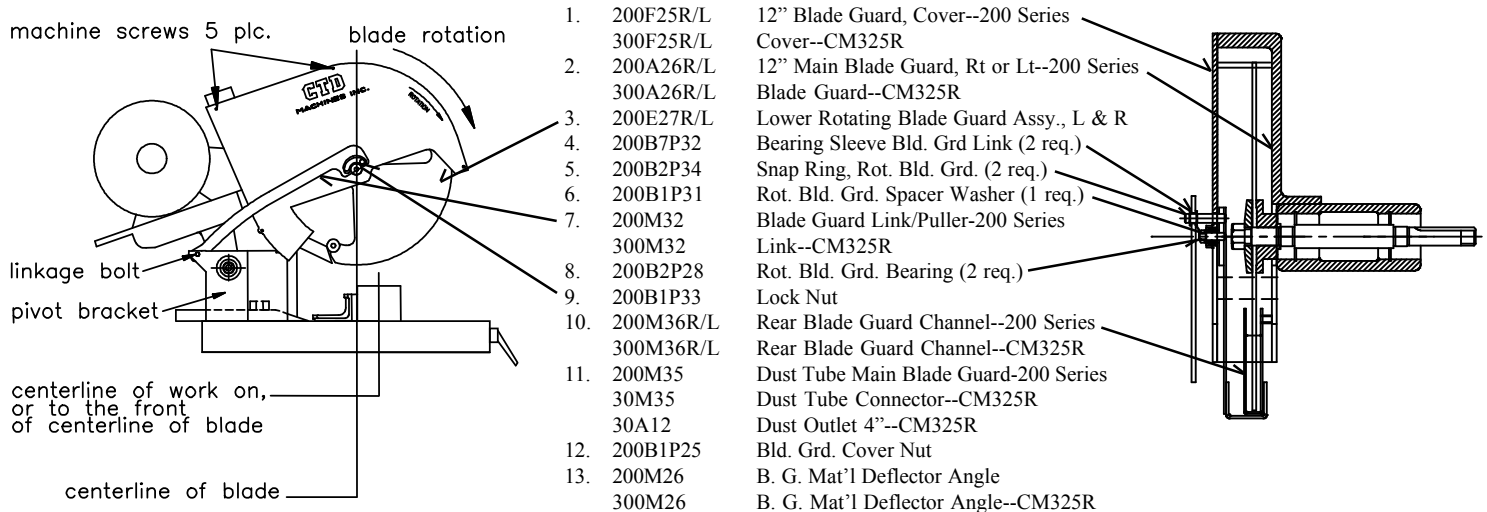
Diagram "C"



This label is attached to the blade guard.
Never put hand or fingers near or under the moving blade. Use a piece of wood to remove short pieces from saw.



Diagram "D"



Blade Guard:

The blade and belt drive are enclosed. When the saw arm is lowered, the lower blade guard rotates up into the main blade guard. The blade continues through the work as the lower blade guard rotates up.
NEVER remove any blade guard part, exposing the blade.

Electrical Installation:

The CTD A200 Series Cut-Off Saws use 2 H.P. single or three phase, or 3 H.P. three phase 3450 RPM, 60 HZ TEFC (totally enclosed fan cooled) motors on a NEMA 56Z Frame. CTD uses a speed up drive so that the blade will run at approximately 3700 RPM.

Electrical installation should be performed by a qualified and certified electrician. It is highly recommended that a *lock-out* or *disconnect switch* be located close to the machine between your main electrical panel and the machine. This disconnect switch is used to shut off power to the machine and should be used whenever the blades are changed, or at any time the machine is serviced and the blade is exposed. The Magnetic Starter is provided in the electrical control box, along with a separate disconnect switch.. The starter protects the motor from overheating and will not allow the motor to restart itself after power outages or undervoltage situations.

Electrical Installation of Power to Starter by a Qualified Electrician:

All wiring from the motor to the starter has been completed and tested at the factory several times.

The voltage has been clearly tagged. **DO NOT CONNECT ANY VOLTAGE THAT IS *DIFFERENT THAN THE TAGGED VOLTAGE, AS THIS MAY CAUSE SEVERE DAMAGE AND DANGER.*** Consult the factory if any changes are needed.

Bring power lines to the top of the rotary disconnect switch located in the electrical control box. Connect to terminals 2 & 4 for single phase motors, and to 2, 4, & 6 for three phase motors. Always ground the green wire. Use dust proof connectors if available. (See wiring diagram on Page 6).

Single Phase Motor Replacement:

Connect motor leads to T1 and T2 for the overload relay for single phase motors. (See Wiring Diagram).

below.) Green ground wire must be grounded to enclosure. *Be sure to check rotation.* If a change is necessary, open the motor box located on top of the motor, and switch the #8 and the #5 wires. This reverses the rotation of a single phase motor. The blade must rotate down and to the rear on the underside of the blade.

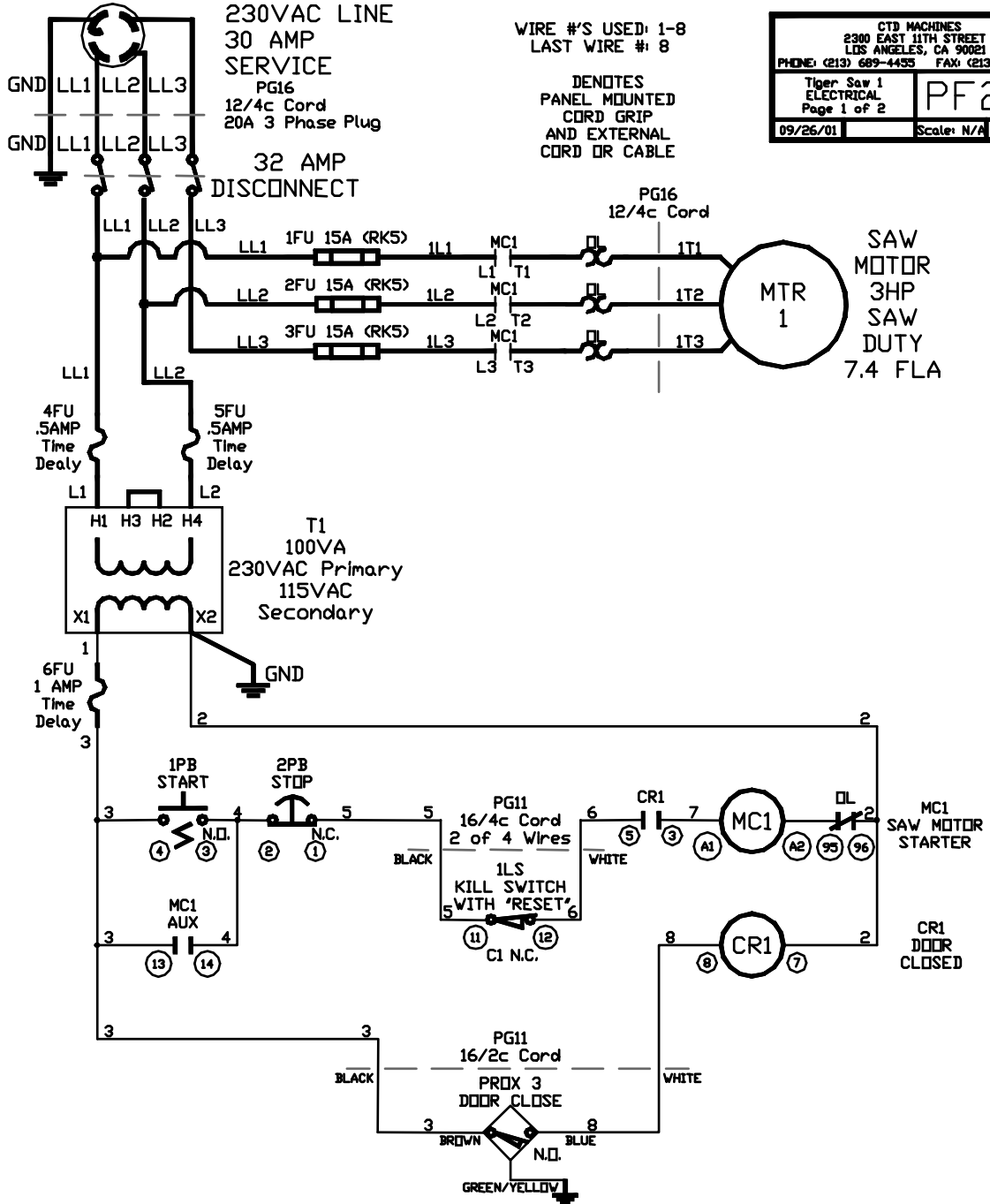
Three Phase Motor Replacement:

Connect motor leads to T1, T2 and T3 of the overload relays. Green ground wire must be grounded to enclosure. *Be sure to check rotation* as polarities may be different. The blade must rotate down and to the rear on the underside of the blade.

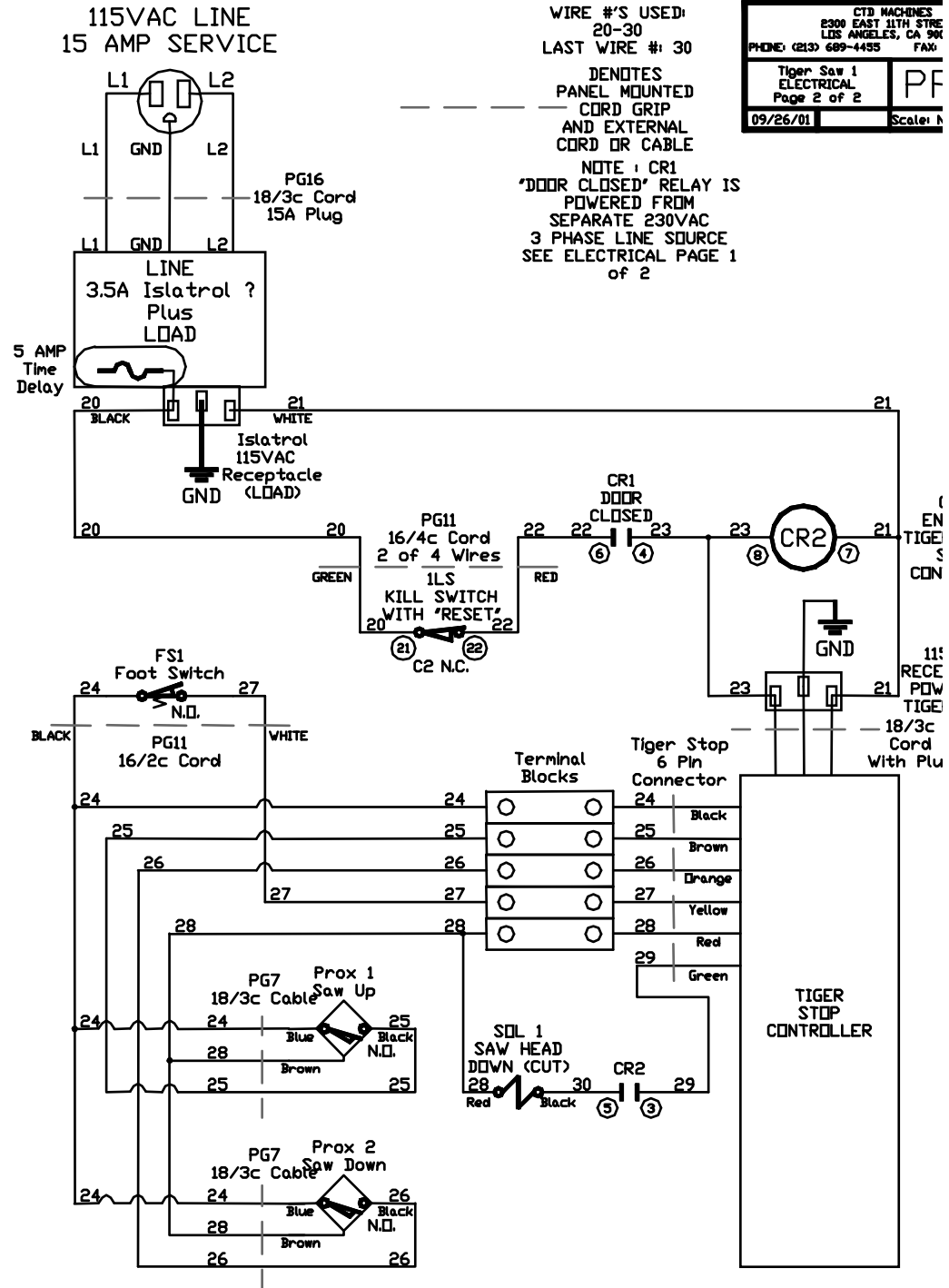
If a change in rotation is necessary, reverse any two of the incoming power wires. *Example: If the blade is running backwards and incoming wires are connected White L1, Black L2, Red L3, switch the Black wire with the Red so that Black is connected to L3 and Red is connected to L2. This will change the motor to rotate properly.*

	Motor Load Amperes		
Motor Size	110 Volt	220 Volt	440 Volt
2 H.P., 1 Phase	25 amps	12.5 amps	N/A
2 H.P., 3 Phase	N/A	5.4 amps	2.7 amps
3 H.P., 3 Phase	N/A	7.4 amps	3.7 amps

ELECTRICAL WIRING DIAGRAM 1



ELECTRICAL WIRING DIAGRAM (CONTINUED 2)



Safety Instructions to the Operator:

1. *KNOW YOUR CTD SAW.* Read this instruction manual carefully. Learn the operation, application, and limitations, as well as the specific potential hazards peculiar to this machine.
2. Avoid accidental starting. Make sure switch is **OFF** before plugging in power cord. A Magnetic Starter is provided as an optional accessory to give the operator added protection. (OSHA required by user.)
3. *Always* use a plug equipped with a ground.
4. *Always* keep blade guard in place. Do not wire-up or chain-up, so that blade is exposed.
5. Be sure all unnecessary tools are removed from machine before turning on power.
6. Use safety goggles. Also use a face or dust mask if operation is dusty.
7. Support work. To maintain control of work at all times, it is necessary that material be level with cutting surface.
8. Wear proper apparel. Do not wear loose clothing or jewelry. Do not wear a tie or gloves. These items can get caught in the moving parts of the machine.
9. Do not over-reach. Keep your proper footing and balance at all time.
10. Maintain your machine in top condition. Use proper blades. Clean machine weekly for proper maintenance.
11. Keep work area clean. Cluttered areas, benches and slippery floors invite accidents.
12. Avoid dangerous environments. Keep work area well illuminated.
13. Wear ear protection if exposed to long periods of very noisy shop operations.
14. Keep visitors away. All visitors should be kept a safe distance from work area.
15. Do not force the machine. The saw will do a better job and be safer to operate at the speed for which it was designed. Forcing the saw can be very hazardous to the operator.
16. Use recommended accessories. Use of other accessories may be hazardous. Use this instruction manual or consult CTD for the proper accessories available.
17. Do not drown the blade using a steady stream of coolant when cutting non-ferrous materials. Only spray the work to cool it.
18. Be sure to use the proper blade for the particular material to be cut.
19. Disconnect power cord before adjusting, servicing, and before changing belts, or for installing accessories.
20. Safety is a combination of operator *COMMON SENSE* and *ALERTNESS* at all times when the machine is being used.

21. ***WARNING!!! DO NOT ALLOW FAMILIARITY (GAINED FROM FREQUENT USE OF YOUR (SAW) TO DULL YOUR AWARENESS!! ALWAYS REMEMBER THAT A CARELESS FRACTION OF A SECOND IS SUFFICIENT TO INFLICT SEVERE INJURY!!***

How to operate the A200 Series Single Cut-Off Saws:

Before operating the machine, please read the “SAFETY INSTRUCTIONS TO THE OPERATOR” on Page 8. Other important information and features need to be learned before operating the machine.

Rotation:

The blade must rotate to the rear of the machine on the underside of the blades (see Diagram “D” on Page No. 4).

Blade Guard and Safety Gage:

The blade and belt drive are enclosed. When the saw arm is lowered, the lower blade guard rotates up into the main blade guard. The blade continues through the work as the lower blade guard rotates up. **NEVER remove any blade guard part, exposing the blade.** The safety cage encloses the entire sawhead and base portion of the machine. The opening door has a lockout switch interlocked with the door. Opening the door with the motor running will automatically shut down the machine.

Initial Operating & Set up Instructions

1. Plug in 110V power cord from Autostop Controller to control box (located at bottom of Saw Control Box).
2. Attach data cable as described in Tiger Stop Manual.
3. Attach pin connector from Tiger Stop Motor Box to Tiger Control Panel.
4. Connect Power source for saw (typically 3 phase 230 or 460V) and 110V power source from saw Control box.
5. Connect Air Supply.
6. Connect Kill Switch cable from Control Box to Kill Switch Box. (White-12; Black-11 Red-21; Green-22)
7. Push Kill Switch (blue button) in to reset.
(Yellow pointer should be located in the center of indicator window.)
8. Close front door.
9. Turn on main Rotary Power Switch.
10. Push Green Start Button (located on front of Saw Control Box) to start saw motor (Red Stop Button must be released by turning button).
12. Turn on Tiger Stop Switch located on blue Tiger Stop Motor Box.
13. Follow instructions in Tiger Stop manual for set up routine.
14. To Stop or Start cycle, press the foot switch once. This allows operator to take break & come back without resetting machine or setup.

Refer to Tiger Stop manual for programming information.

Cutting Speed:

The blade is rotating at approximately 3700 RPM. When moving the blade through the material, the blade must **NEVER** be allowed to dwell in the work. If fine finishes are required:

1. Use a sharp blade.
2. Use a **constant, even pressure** when cutting through material.

Clamping and Work Slippage:

The work must never be allowed to move or vibrate as it is being cut. When the work is positioned against a stop, it **must be clamped** by pneumatic air clamps.

CTD offers both Horizontal and Vertical Clamps. The Horizontal Clamp pushes the material backwards against the rear fence. Vertical Clamps hold the material down, against the table base. The clamps are actuated prior to the saw head movement down. **Be careful not to overtighten clamp cylinder bracket** on the cylinder. This will cause irregular function of the cylinder and damage it.

Check your material for squareness using a 90° square. Material that is out of square will move when it is cut, causing irregular cuts. Additional tooling may be needed. Consult factory for more information.

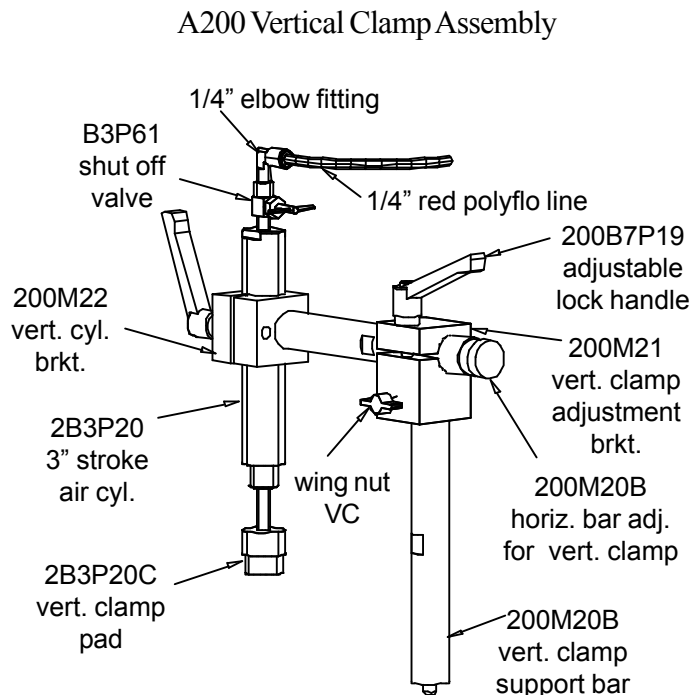
Horizontal clamps should be positioned at 3 5/8" FROM THE REAR FENCE (NO CLOSER). This allows the 3 1/2" wide pusher foot to push material forward to the blade without interference or damage.

CAUTION:

When cutting shorter pieces at the end of a length of material, make sure Horizontal clamps **do not contact** the Vertical clamp in down position. **This will damage the cylinder on the Vertical clamp assembly.**

NOTE:

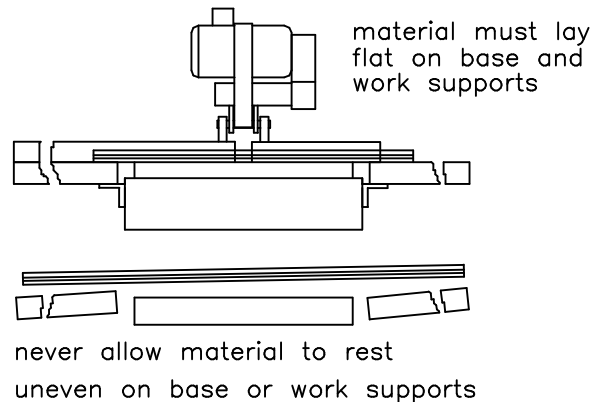
The pushfeed mechanism as it pushes the last portion of the stock length (less than 6") of material toward the blade, will back off, so that the clamps will **not contact** the feeding mechanism (thereby causing damage the mechanism). **!DO NOT CHANGE THIS SAFETY SET-UP!**



Cutting the Material:

The material to be cut (both the incoming pieces and the cut pieces) must lay flat on the table base, or the blade may bind the material. ***THIS CAN DAMAGE THE BLADE OR THROW THE CUT PIECE OUT OF THE SAW, POSSIBLY HARMING THE OPERATOR*** (see Diagram “F”).

Diagram “F”



Removing Material From the Blade:

If the machine is stalled while cutting, immediately shut saw off and disconnect power. ***NEVER attempt to free the blade while the motor is still on.*** If a piece is bound on the blade, do not attempt to raise the blade out of the material. Instead, tap the piece down on both sides of the blade with light pressure until the piece has freed the blade.

Cutting Wood:

While wood is generally soft and simpler to cut than aluminum, it requires that the material be held in place as the blade passes through the material. CTD suggests using a Carbide Blade with Alternate Top Bevel (AT) for lighter wood sections and picture frame mouldings. This type of blade gives the finest of finishes. No ***ONE*** blade will cut all materials perfectly. High lacquers or mica mouldings require a special modified blade for best results. Consult factory. ***Never use a wood blade to cut aluminum,*** as it will chip and fracture the carbide tips of the blade.

Cutting Plastic:

Plastic can be cut as easily as wood on the 200R Series Saws. However, because of its elastic properties, the material can deflect as the blade passes through. Therefore, it is important to clamp the material as close as possible to the blade and support it by use of fixtures. CTD offers Horizontal and Vertical clamps for this application (see Page No. 10). Additional tooling may be required.

Cutting Aluminum:

As with cutting any material, it is important that aluminum be clamped properly. Precision blades are required for accurate cutting. CTD suggests and uses a Triple Chip Grind on all its non-ferrous Carbide Blades. When cutting aluminum, or other non-ferrous materials, it is essential that the blades be lubricated with a Saw blade Lubrication System or other blade lubricating system for the finest finish. See “SAW BLADE LUBRICATION SYSTEM” on Page No. 12 for more details.

Combination Blades:

Any combination blade is basically an aluminum cutting blade. Significant blade life in between sharpenings will be lost if a blade is used for cutting both aluminum and wood. The amount of production for either wood or aluminum should be the determining factor in the assessment of the particular blade type to be used. Please consult factory.

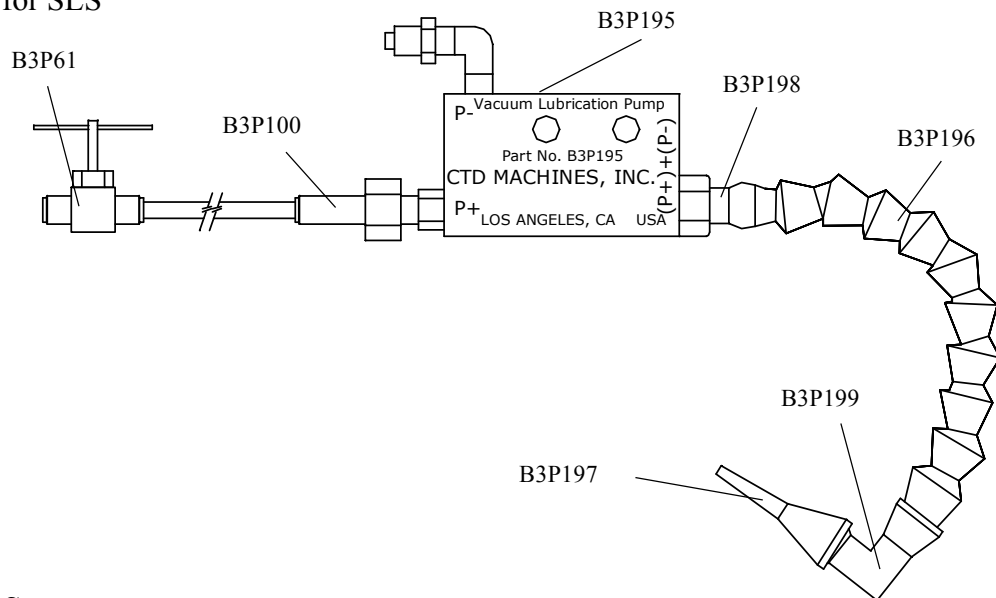
Sound Levels:

During normal running of the machine without cutting the typical sound range will be between 60-85 db. Due to the wide variety of blades available, CTD cannot warrant that maximum allowable OSHA sound limits can be met--particularly during the cutting cycle.

Sawblade Lubrication System:

The Sawblade Lubrication System is used when cutting aluminum or other non-ferrous materials. This system normally uses a Water Soluble Oil mixture of *10 parts water to one part oil*. The system operates by syphoning the lubrication up the line to the spray nozzle. Any air leak will cause inconsistent fluid flow to the spray nozzle. **BE SURE** your fluid is free from chips and other debris. A fluid container supplied with the machine contains a One-Way Check Valve, Part No. B3P96 at the end of the clear fluid line. This check valve helps to hold the lubrication in the line, however after a couple of minutes the lubrication or oil will back-flow into the container. Priming of the system may be necessary if the machine has been standing without use. The system may be shut off by closing the toggle valve next to the vacuum pump. The fluid must be clean or the Vacuum Pump will clog.

Part No.	Description
B3P195	Vacuum Pump
B3P196	Link Tubing
B3P197	Nozzle Fitting
B3P198	1/8" NPT Adapter
B3P199	1/4" Elbow
B3P61	Shut Off Toggle Valve
B3P100	1/8" NPT to 1/4" tube fitting
B3P96	Check Valve
B3P97	Lubricant Container
BF30	Bracket for SLS



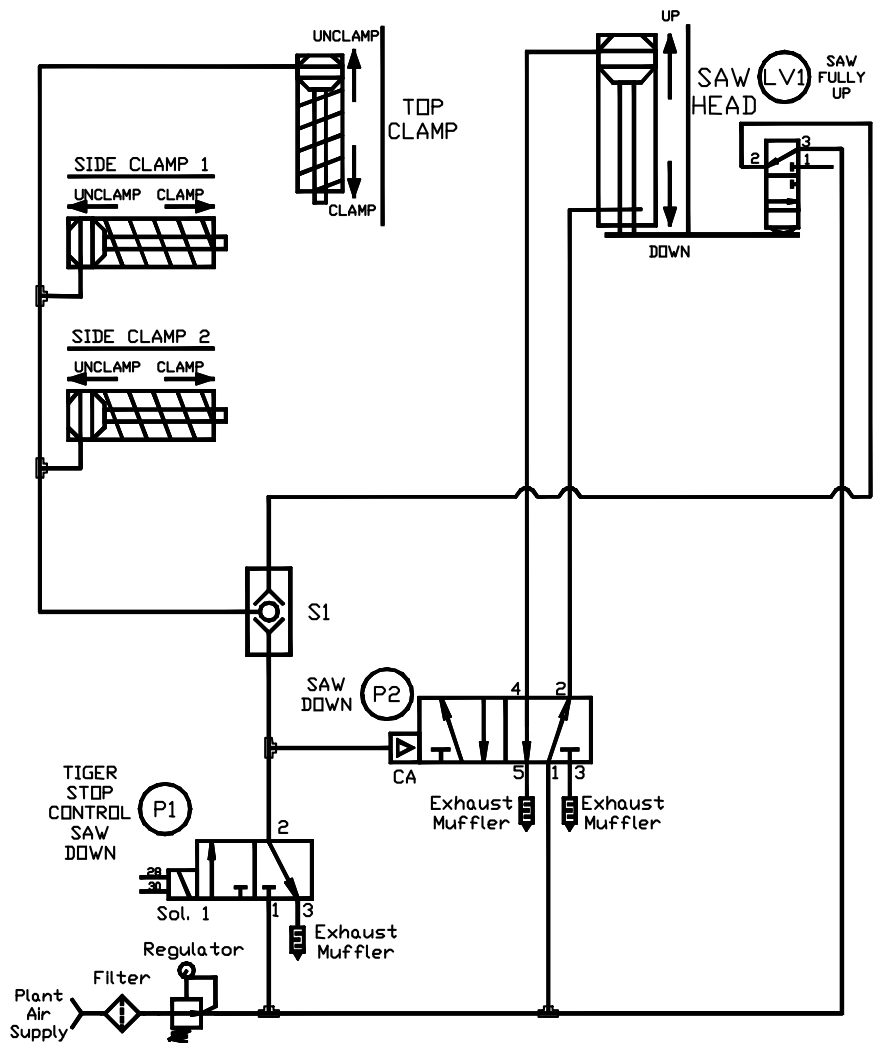
CTD Bio Lubrication System:

The CTD biodegradable lubrication system operates by pulse spraying a minute amount of biodegradable lubricant directly on to the saw teeth of the blade in time-measured increments. The majority of the lubricant then dissipates with the heat of the cutting action. Chips coming off the blade are hot and dry, and are more easily collected. (See specific instructions included with system.)

A200 Series Air/Pneumatic System:

The air pneumatic system on the A200 is simple to use and understand, and easy to operate. The main components of the air system are shown below in the Air Circuit Piping Diagram. Included with the air pneumatic system is the main drive Cylinder and Valves, an Air Filter/Regulator/Lubricator, two Horizontal Air Clamps and one Vertical Pneumatic Clamp. The pneumatic clamps hold the material and the main drive cylinder pushes the saw head down. The speed of descent is controlled by the Speed Control Valve, P/N 2B3P61 located on the Cylinder. When the Sawhead reaches the downstroke limit proximity switch the main drive cylinder reverses and the Sawhead returns to the rest position. This allows the pushfeeder to move forward. The process then repeats itself.

Air Circuit Schematic A200

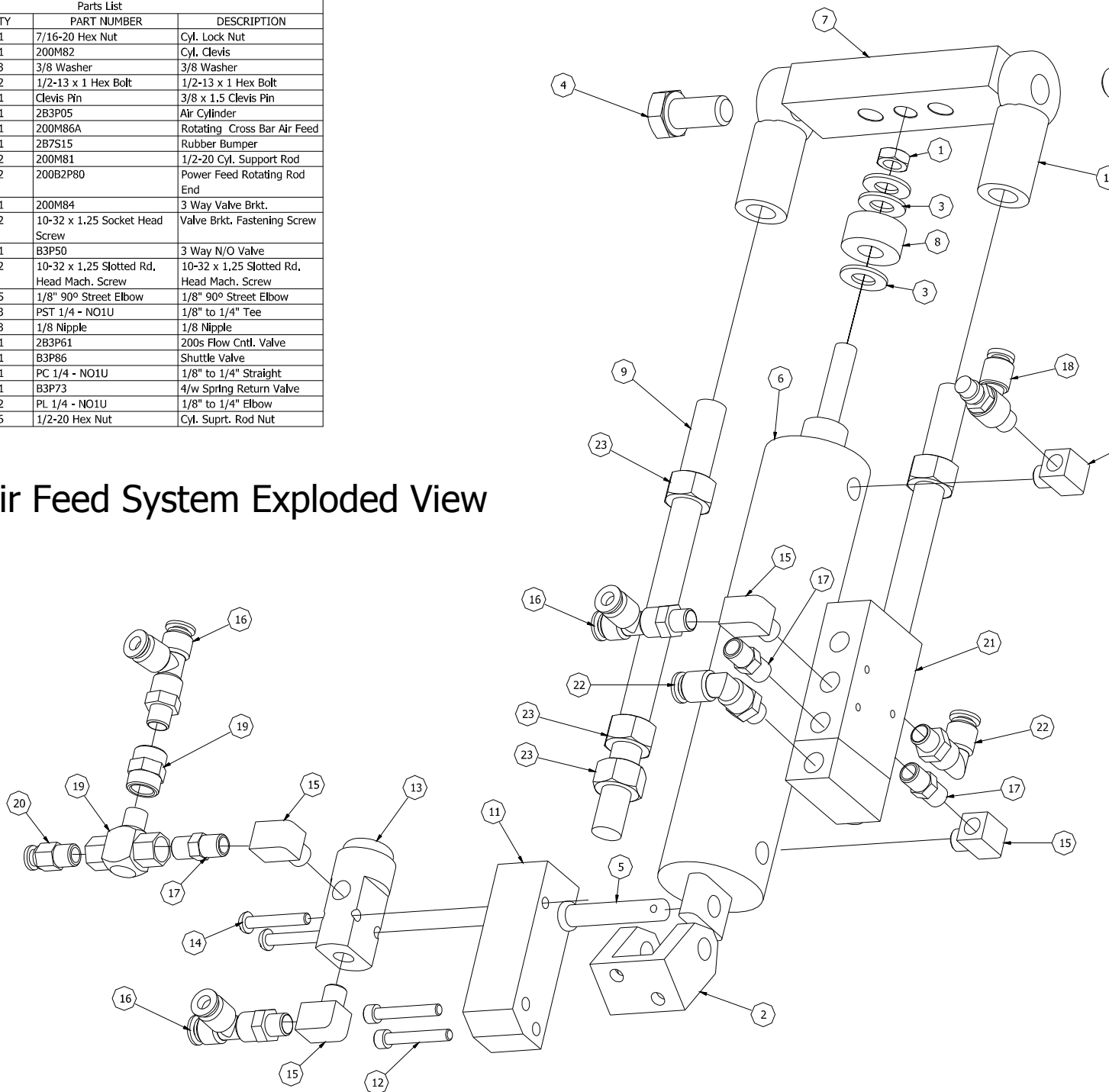


— DENOTES 1/4 O.D. POLYETHYLENE TUBING

CTD MACHINES 2200 EAST 11TH STREET LOS ANGELES, CA 90021 PHONE (213) 689-4433 FAX (213) 689-1233	
Tiger Saw 1 PNEUMATIC Page 1 of 1	PF200
09/26/01	Scale: N/A Rev:

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	7/16-20 Hex Nut	Cyl. Lock Nut
2	1	200M82	Cyl. Clevis
3	3	3/8 Washer	3/8 Washer
4	2	1/2-13 x 1 Hex Bolt	1/2-13 x 1 Hex Bolt
5	1	Clevis Pin	3/8 x 1.5 Clevis Pin
6	1	2B3P05	Air Cylinder
7	1	200M86A	Rotating Cross Bar Air Feed
8	1	2B7S15	Rubber Bumper
9	2	200M81	1/2-20 Cyl. Support Rod
10	2	200B2P80	Power Feed Rotating Rod End
11	1	200M84	3 Way Valve Brkt.
12	2	10-32 x 1.25 Socket Head Screw	Valve Brkt. Fastening Screw
13	1	B3P50	3 Way N/O Valve
14	2	10-32 x 1.25 Slotted Rd, Head Mach. Screw	10-32 x 1.25 Slotted Rd, Head Mach. Screw
15	5	1/8" 90° Street Elbow	1/8" 90° Street Elbow
16	3	PST 1/4 - NO1U	1/8" to 1/4" Tee
17	3	1/8 Nipple	1/8 Nipple
18	1	2B3P61	200s Flow Cntl. Valve
19	1	B3P86	Shuttle Valve
20	1	PC 1/4 - NO1U	1/8" to 1/4" Straight
21	1	B3P73	4/w Spring Return Valve
22	2	PL 1/4 - NO1U	1/8" to 1/4" Elbow
23	6	1/2-20 Hex Nut	Cyl. Suprt. Rod Nut

Air Feed System Exploded View



Air Supply:

The air supply must be turned off and all electrics disconnected before making adjustments on the power feed. A working pressure of 75 PSI (pounds per square inch at 5.4 kg/cm²) is required. An industrial-type compressor of at least 3 CFM (cubic feet per minute) is recommended. An additional 3 CFM is required for Saw blade Lubrication System or Biolubrication System.

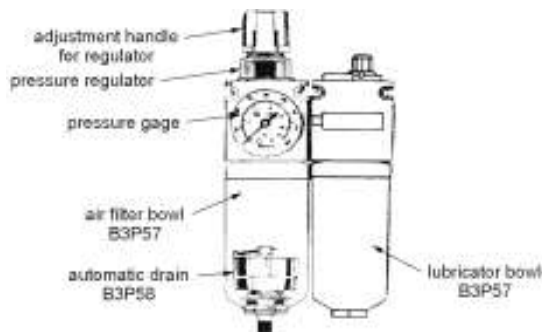
A conveniently located valve should be supplied by the user to shut off the air line. **Arms should be raised or lowered by hand when setting up machine.** The machine must use clean, filtered air. The speed of descent of the saw head will vary if the air pressure varies. An Air Filter/Regulator/Lubricator is essential.

FRL:

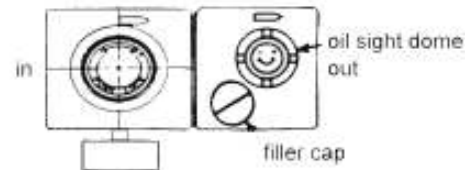
An Air Filter/Regulator/Lubricator is installed ahead of the air inlet to the machine. This system helps prevent foreign material from entering the system. It also provides lubrication in the air supply which helps prevent valves and cylinders from sticking. The FRL is comprised of three different components.

1. The Air Filter Bowl is located on the left side and is provided with an automatic drain. This collects and then releases foreign matter and condensation collected by the air filter.
2. The Pressure Regulator, which is located on top of the air filter, controls the amount of air pressure allowed into the system. An operating pressure of 75 PSI @ 5.4 kg/cm² is required. (This is set at the factory.)
3. The Lubricator Bowl is located on the right side of the FRL. It allows a small amount of *Light Hydraulic Oil* (10 weight) into the air system to keep the air valves lubricated. One drop of oil per 20-30 strokes is all that is required. All machines are adjusted at the factory. Be sure that the lubricator is filled regularly. Check every week.

Air Filter/Regulator/Lubricator



Complete FRL Assembly is Part No. B3P54A



Trouble Shooting the Pneumatic System for Downfeed of Saw Head:

If the Air Feed no longer has smooth action, check the Downstroke Control Valve, P/N 2B3P61. If there is no Speed Control, replace with Part No. 2B3P61. If air is leaking from the bottom of the cylinder, replace Cylinder with Part No. 2B3P05.

Speed Control of Blades Movement:

The downstroke & upstroke speed of the blades is controlled by the Speed Control Valve, P/N 2B3P61 located in the lower and upper ports of the main drive Cylinder, P/N 2B3P05. Adjust as required for best finish.

Preventative Maintenance:

The 200R Series machines are relatively easy machines to operate and maintain.

Following is a weekly check list of General Maintenance items. The best preventative maintenance advice is to *CLEAN THE MACHINE DAILY*, especially around the pivot points on the machine.

Lubrication and Adjustments of Bearings:

NO LUBRICATION OR ADJUSTMENTS ARE REQUIRED. All CTD cut-off saws are assembled using sealed, prelubricated ball bearings. The spindle and pivot assembly are constructed using preloaded belleville springs. These springs eliminate the need for adjustments of bearings and also greatly increase the life of the bearings.

General Maintenance Weekly Check List:

Always disconnect electrical power and air supply.

1. Keep machine clean—especially around pivot bracket and pivot bearings.
2. Blow off and clean around the cylinder
3. Check the oil level in the FRL unit (Air Filter/Regulator/Lubricator) if purchased.
 - A. Fill with *Light Hydraulic Oil, 10 wt.* Do not overfill. Fill within 3/4" of the top of Sight bowl.
4. Check Air Filter Bowl for water and condensation build up.
5. Remove any scrap pieces and dust build up from inside floor stand.
6. Check monthly;
 - A. For excessive belt wear
 - B. Make sure motor pulley set screws are tight.

Repair and Service:

Always use CTD factory authorized replacement parts and consult factory before making any repairs or adjustments which may be unclear.

Fence Alignment:

All machines are preset at the factory for perfect 90° and 45° mitre cuts. If any adjustments are necessary;

1. Check alignment of fences—left to right as shown in Diagram “D” on Page No. 4. Use a two foot steel scale or quality precision straight edge and lay flat on table base. Butt edge against fence bracket and long measuring gage (if purchased). Touch the outside corner of the straight edge. If one side of the straight edge pulls away from the fence, then the long fence gage is not in alignment with the left Fence, P/N 200M09.
2. Loosen 3/8-16 lock nut on Left Fence Bracket, P/N 200C05.
Clean all surfaces of dirt or dust, and re-assemble as before.
3. Re-align right fence to left fence with your straight edge. Once you are sure both fences are in alignment, you now have a reference point to check your 90° or 45° mitre.

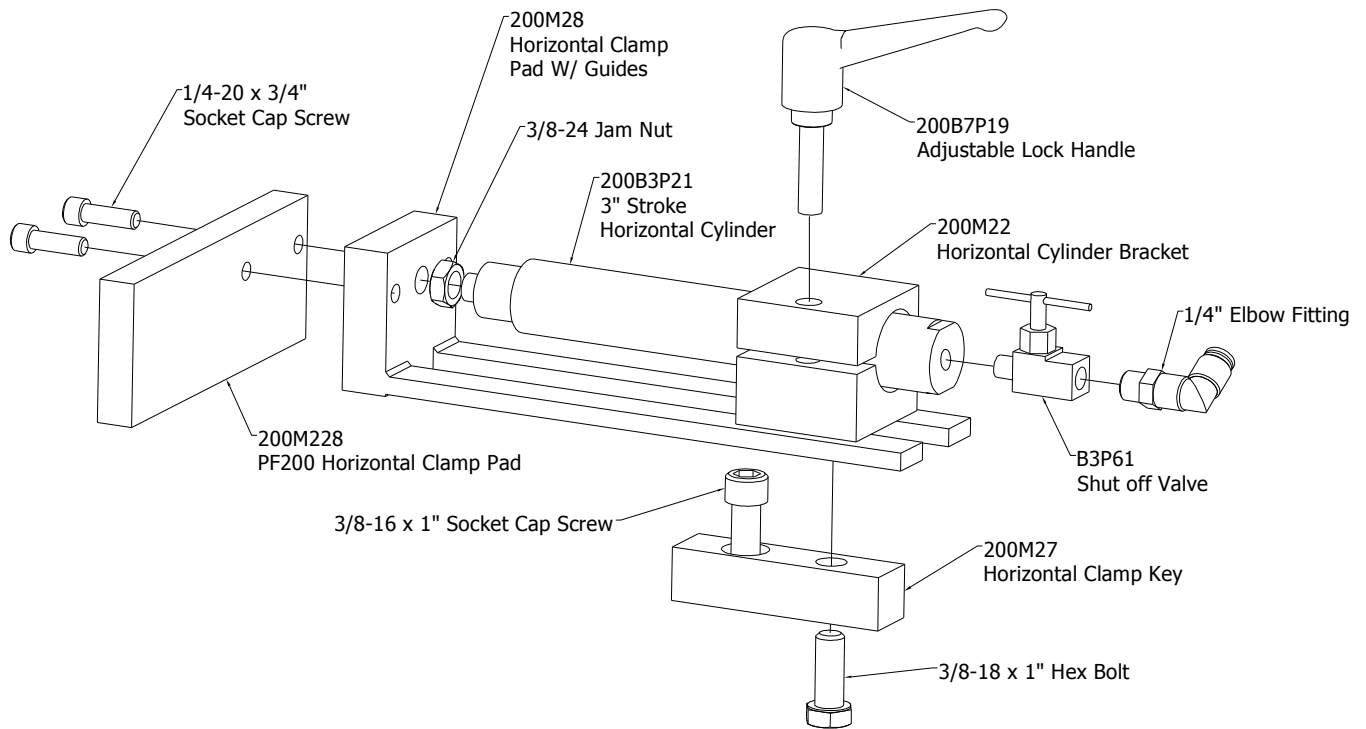
200R Spindle Assemblies and Bearing Installation Instructions:

For Models M25R, F255R, A200 (refer to sketch on following page).

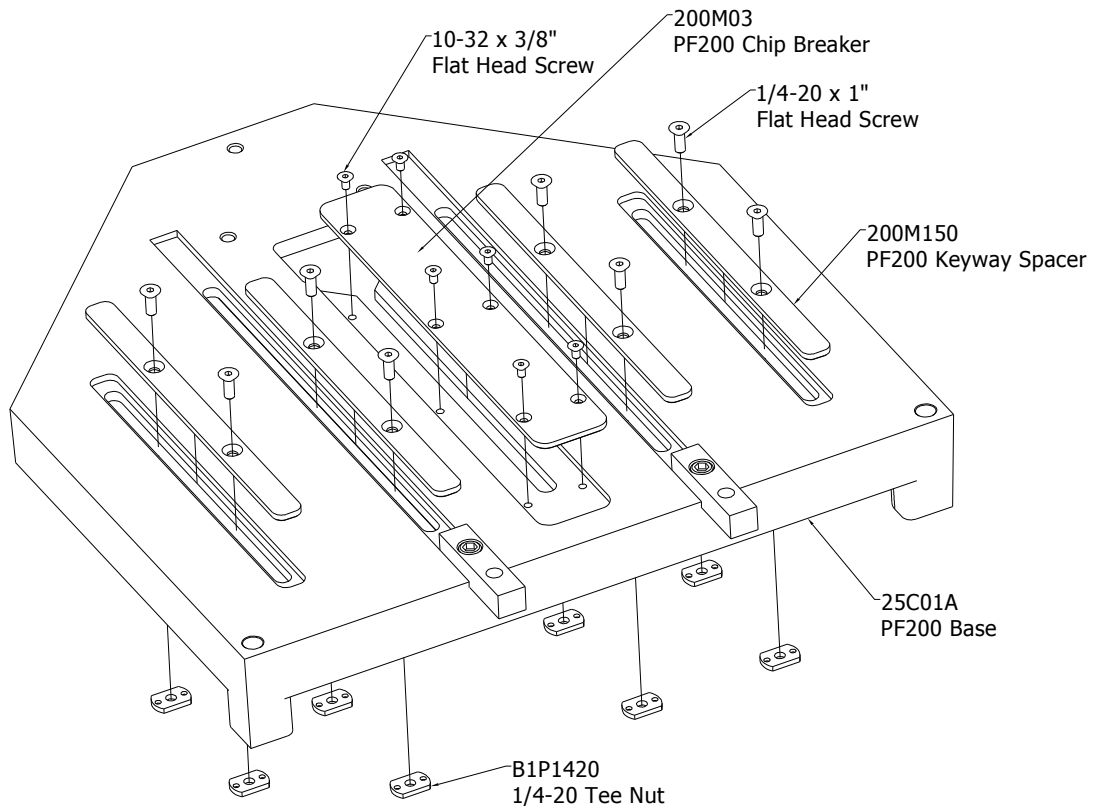
It is suggested that replacement spindle assemblies be purchased from CTD before disassembling. Old spindles can be returned for bearing replacement and slinger refacing for a nominal fee. The 200R Series spindle assemblies provide for a "slip-fit" between the outer races of the bearing and the housing or arm casting, and a "press-fit" between the inner race and the spindle. Great care must be taken with ball bearings or the life of the bearings will be reduced. To remove the spindle assembly;

- A. Loosen motor and remove belts.
- B. Remove Spindle Pulley Nut #9 by holding pulley or slinger. Loosen set screws in pulley.
- C. Remove Pulley #8, Pulley Key #13, and Spindle Spacer #7 (200R Series only). Place Pulley Nut #9 back onto spindle to protect threads.
- D. With a soft hammer or rubber mallet, gently drive spindle towards blade side. Take care to protect pivot bearings by holding arm casting on blade side to overcome effects of hammer blows.
- E. Remove Pulley Nut #9, again.
- F. Spindle assembly, consisting of Spindle #1, Slinger #3, and Blade Bearing #4 will come out of housing. Outside bearing will slip out of housing. If a replacement spindle assembly was purchased, go to item "L".
- G. If bearing on the blade side must be replaced, an arbor press must be used to disassemble the bearing and the slinger from the spindle. Great care must be used in disassembling, or the spindle will be scored or stripped by the slinger. Before pressing apart, scribe a line on the face of the spindle and the slinger so that they will be re-assembled in exactly the same position in relation to each other. Use an arbor press or pulley puller.
- H. Press off slinger and bearing from spindle.
- I. Press new bearing on to spindle, making sure spindle is square to the bore.
- J. Replace slinger, as above, making sure scored lines match.
- K. The face of the slinger must be checked to make sure the face (next to the blade) is running true. If it is not running true, it should be refaced. Slinger should indicate $< .001$. To reface;
 1. Partially assemble pulley bearing on spindle.
 2. Hold outer races of both bearings gently in a vise.
 3. Use the side of a surface grinder wheel to dress the face of the slinger by rotating spindle in bearings slowly against the direction of the grinding wheel.
- L. Clean bearing hole and slip new spindle assembly into arm casting up to snap ring. From the opposite side of the arm, make sure that belleville springs #6 are assembled in housing as shown in Diagram on Page No.18.
- M. To re-assemble spindle assembly, slide outside bearing #4 onto the spindle as far as it will go, being careful that bearing goes into housing square
- N. Slide pulley onto shaft with pulley key and spacer.
- O. Hold slinger or spindle nut. Replace jam nut on spindle threads and slowly tighten pulley jam nut. This will push bearing onto shaft. Tighten thoroughly.
- P. Since motor was moved, the centerline of the motor shaft and spindle must be parallel. Both pulleys must be in line or belts will not wear evenly. This should be checked by placing a straight edge across both pulley grooves. Tighten motor.
- Q. Belt tension is of critical importance. To obtain proper tension, press down on top of belts with moderate amount of pressure. Belts should deflect approximately $1/4"$.
- R. Tighten set screw in both pulleys. To check assembly after tightening belts, apply pressure in the direction of the blade on the pulley nut. A slight spring pressure should be felt. If spindle does not spring back, the belts may be too tight.

PF200 Horizontal Clamp Assembly

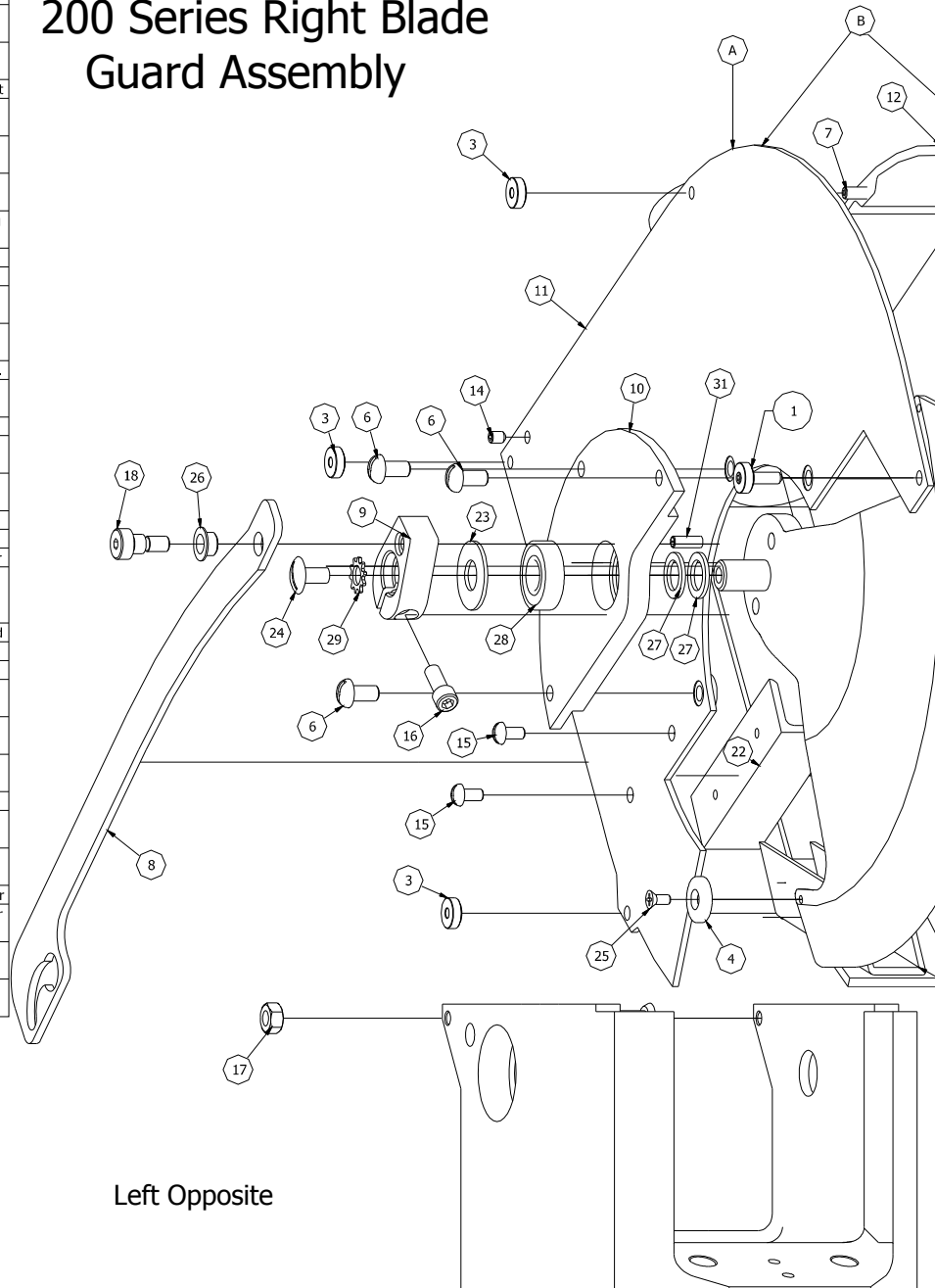


PF200 Base Assembly



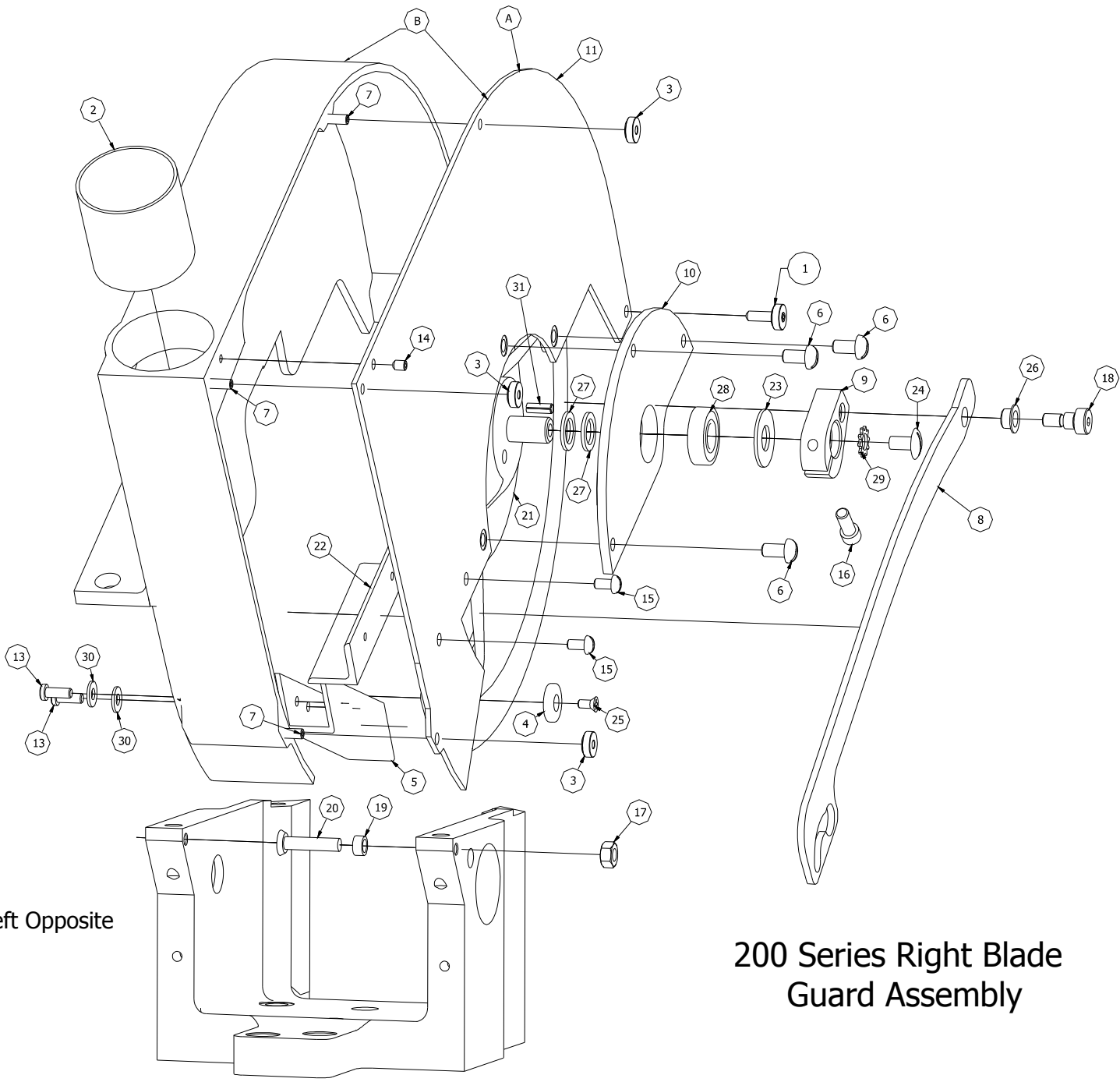
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	200B1P25A	Blade Guard Cover Knob W/Stud
2	1	200M35	Top Dust Tube Main Blade Guard
3	3	200B1P25	Blade Guard Cover Lock Nut
4	1	200B2P30	Roller Bearing Lower Blade Guard
5	1	200M36R/L	Rear Blade Guard Channel, Rt. or Lt.
6	3	1/4-20 x 1/2 Slotted Rd. Head Mach. Screw	Bearing Housing Bolt
7	3	10-32 x 3/4 Set Screw	Blade Guard Cover Locating Studs
8	1	200M320	Blade Guard Link/Puller
9	1	200M261	Rotating Pawl
10	1	200M265R/L	Bearing Housing Blade Guard Assy, Rt. or Lt.
11	1	200F250R/L	Blade Guard Cover, Rt. or Lt.
12	1	200A26R/L	Main Blade Guard, Rt. or Lt.
13	2	10-32 x 1/2 Socket Head Screw	Screw Rear Blade Guard Channel
14	1	10-32 x 1/4 Set Screw	Dust Tube Lock Screw
15	2	10-32 x 3/4 Slotted Rd. Head Mach. Screw	Material Deflector Screw
16	1	1/4-20 x 5/8 Socket Head Screw	Lock screw Pawl
17	1	1/4-20 Hex Nut	Lock Nut Rear Puller Bolt
18	1	200B1P267	Pawl Shoulder Bolt
19	1	200B7P35	Rear Bushing for Link/Puller
20	1	1/4-20 x 1 Flat Head Phil. Undercut Mach. Screw, Plated	Rear Link Puller Srew
21	1	200A270	Lower Rotating Blade Guard
22	1	200M26	Material Deflector Angle
23	1	200B1P269	Teflon Space Washer
24	1	1/4-20 x 3/8 Truss Head Comb. Mach Screw, Plated	Pawl & Lower Blade Guard Lock Screw
25	1	8-32 x 3/8 Flat Head Phil. F Thread-Cutting Screw	Roller Bearing Screw
26	1	200B7P36	Front Bushing for Link/Puller
27	2	2BM13	Space Washers for Pin
28	1	2B2P09	Rotation Bearing for Housing
29	1	200B1P268	External Tooth Lock Washer
30	2	10 Washer	Rear Channel Screw Washer
31	1	3/16 x 1/2 Zinc Plated Roll Pin	Rotating Blade Guard Upper Stop Pin
A	1	200E250R/L	Lower B.G. Cover Assy, Lt. or Rt. 4,6,8-11,15-30
B	1	200E260R/L	Blade Guard Assy, Lt. or Rt. 1-30

200 Series Right Blade Guard Assembly



Additional Parts:

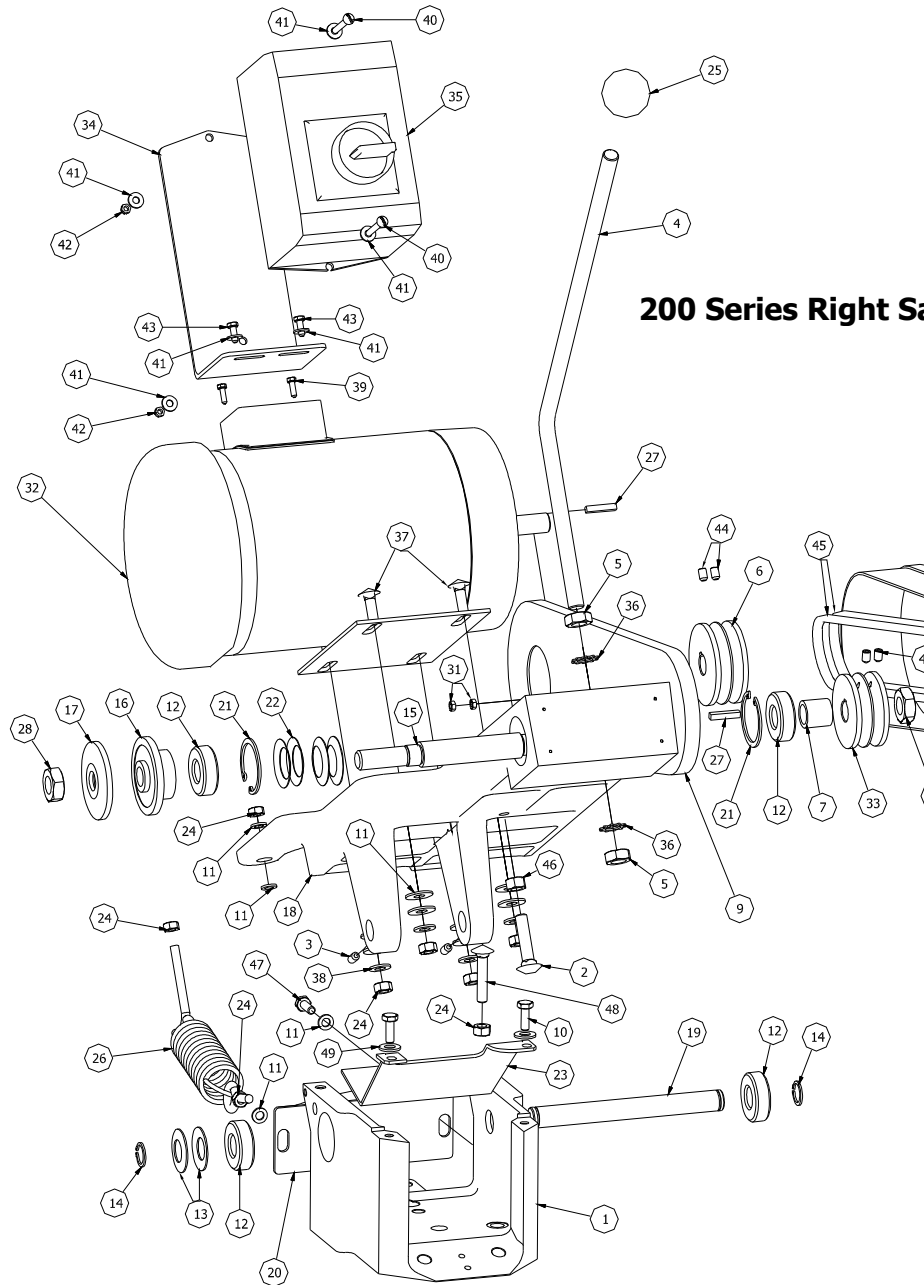
- 200E260L Blade Guard Assy. Complete Lt
- 200E260R Blade Guard Assy. Complete Rt
- 200F250L 12" Blade Guard, Cover Left
- 200F250R 12" Blade Guard Cover, Right
- 200A26L 12" Main Blade Guard, Left
- 200A26R 12" Main Blade Guard, Right
- 200E250L&R Cover & Lower Blade Guard Assy with Link Puller L&R
- 200A270L&R Lower Rotating Blade Guard Assembly w/pin, Left & Right
- 200M265L&R Bearing Housing Blade Guard Assy. L & R
- BS7S01-06 Safety Decals



Left Opposite

200 Series Right Blade
Guard Assembly

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	200DC21M	200S Pivot Bracket
2	1	3/8-16 x 1.5 Carriage Bolt	Down Stop Bolt
3	2	1/4-20 x 1/2 Set Screw	Arm/Pivot Lock
4	1	2BM18	Pull Down Handle
5	2	1/2-13 Hex Nut	Handle Lock Nut
6	1	2B4P24	Motor Pulley
7	1	2BM05	Splndle Spacer
8	1	2BF31R	Belt Guard Cover, Right
9	1	2BF29R	Belt Guard Backing Plate, Right
10	2	1/4-20 x 3/4 Hex Bolt	1/4-20 x 3/4 Hex Bolt
11	12	5/16 Washer	5/16 Washer
12	4	2B2P05	Splndle / Pivot Bearing
13	2	3B2P10	Pivot Belleville Spring
14	2	3B2P11	Pivot Snap Ring
15	1	2BM02R	200S Splndle, Right
16	1	200BM04	200S Silnger
17	1	200BM03	200S Flange
18	1	200BC01R	200S Arm, Right
19	1	3BM08	Pivot Shaft
20	1	200F45A	2" Dust Outlet
21	2	2B2P06	Snap Ring Splndle
22	4	2B2P07	Preload Belleville Spring Washer
23	1	200F22	Dust Deflector
24	8	5/16-20 Hex Nut	5/16-20 Hex Nut
25	1	2B7P17	Hand Knob, Handle
26	1	200B7P16E	Return Spring Assy.
27	2	2BM23	Pulley/Splndle/Motor Key
28	1	2B1P37	Splndle Nut, Left Thread
29	1	151P16R	Pulley Jam Nut, Right
30	1	10-32 x 2.5 Slotted Flat Head Mach. Screw	Belt Guard Bolt
31	2	10-32 Hex Nut	Belt Guard Lock Nuts
32	1	2B6S01	Motor 1 HP 1 Phase
33	1	2B4P23	Splndle Pulley
34	1	200BF96	Manual Overload Starter Bracket
35	1	Manual Overload Starter	Manual Overload starter
36	2	1/2 Tooth Lock Washer	Handle Lock Washer
37	4	5/16-18 x 3/4 Carriage Bolt	Motor Mount Bolt
38	4	5/16 SAE Washer	5/16 SAE Washer
39	2	10-32 x 1/2 Hex Bolt	10-32 x 1/2 Hex Bolt
40	2	10-32 x 3/4 Slotted Rd. Head Mach. Screw	10-32 x 3/4 Slotted Rd. Head Mach. Screw
41	6	10 Washer	10 Washer
42	2	10-32 Hex Nut	10-32 Hex Nut
43	2	10-32 x 1/2 Hex Bolt	10-32 x 1/2 Hex Bolt
44	4	1/4-20 x 3/8 Set Screw	1/4-20 Set Screw for Motor/Splndle Pulley
45	2	2B4P25	3V335 Drive Belt
46	1	3/8-16 Hex Nut	3/8-16 Hex Nut
47	1	5/16-18 x 1/2 Hex Bolt	5/16-18 x 1/2 Hex Bolt
48	1	5/16-18 x 1.5 Carriage Bolt	Up Stop Bolt
49	2	1/4 Washer	1/4 Washer



Motor Warranty:

Motors which fail during the warranty period of one (1) year must be returned to an authorized Baldor Service Representative for examination to determine whether the failure was caused by manufacturing. In the event a replacement is required before factory examination, a motor will be sold at the list price. If the factory authorizes replacement, CTD will credit customer's account for the replacement cost. All motors are shipped F.O.B. CTD, Los Angeles, CA Plant.

Guarantee:

CTD warrants that their cut-off machines and accessories are free from defect of material, workmanship, and title, and are of the kind of quality indicated and described in applicable specifications. The foregoing warranty is exclusive and in lieu of all other warranties, whether written or oral. CTD's obligation under the foregoing warranty is limited to the repair or replacement (at CTD's option) of the part which is defective in materials or workmanship for a period of one (1) year from the date of shipment to the original purchaser, whether for warranties, negligence, or otherwise, shall not in any way include consequential damages, or costs of removing or re-installing the products. All parts and machines are shipped F.O.B. CTD, Los Angeles, CA Plant.

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