



BLADE CARE

The bandsaw blade is subjected to a tremendous amount of strain. Make sure to always use the appropriate feed rate for the type material you are cutting.

Be sure to select a blade of the proper width, style, and pitch that will produce the best cut in your material. Choosing the wrong blade can produce excess heat that can adversely affect the life of the blade.

A clean blade performs much better than one that is dirty. Blades that are gummed up and dirty offer more resistance when cutting through the material. This in turn creates unnecessary heat in the blade.

CHOOSING A SAW BLADE

A general purpose blade is furnished with this band saw.

To achieve a quality, economical, and efficient saw cut, the following points must be taken into consideration:

- Type of material being cut (ferrous or non ferrous)
- Material hardness and physical dimensions
- Blade descent rate
- Longitudinal speed of blade
- Blade tooth profile

Choose a tooth pitch that is suitable for the workpiece. Thin walled profiles, including tubes and pipes require close toothing. At least 3-6 teeth should be in contact with the material while cutting. Large solid or transverse sections require widely spaced toothing to allow for greater volume of chips and better tooth penetration. Soft materials such as plastics, light alloys, mild bronze, Teflon, etc. require widely spaced toothing to avoid clogging.



S	Outer Diameter of the Tube (inch) / Tooth pitch																	
	Inches	0.787	1.574	2.362	3.15	4	4.724	6	7.873	11.811	15.75	19.685	23.621	27.5	31.5	35.5	39.5	59
0.079	14	14	14	14	14	14	14	10-14tpi	10-14tpi	8-12tpi	8-12tpi	6-10tpi	5-8tpi	5-8tpi	5-8tpi	5-8tpi	5-8tpi	5-8tpi
	0.118	14	14	10-14tpi	10-14tpi	10-14tpi	10-14tpi	8-12tpi	8-12tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.157	14	14	14	10-14tpi	10-14tpi	10-14tpi	10-14tpi	8-12tpi	8-12tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
	0.197	14	10-14tpi	10-14tpi	10-14tpi	10-14tpi	10-14tpi	8-12tpi	8-12tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi
0.236	14	10-14tpi	10-14tpi	10-14tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi
	0.315	14	10-14tpi	8-12tpi	8-12tpi	8-12tpi	6-10tpi	6-10tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi
0.394	8-12tpi	6-10tpi	6-10tpi	6-10tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi
	0.472	8-12tpi	6-10tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
0.591	8-12tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
	0.787	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
1.181	2				4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	1.4-2tpi
	3						3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
4	6								2-3tpi	2-3tpi	2-3tpi	2-3tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
	7.873								2-3tpi	2-3tpi	2-3tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
9.842	11.81											1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
	13.778											1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
15.747	17.716																	
	19.685																	

S= Wall Thickness

If you have to cut two or more tubes lying side by side please use this table in consideration of the double wall thickness (s).



BLADE BREAKAGE

In some cases blade breakage is unavoidable due to the stresses that are imparted on the blade. Avoidable breakage is often the result of poor care, or poor operator judgment when it comes to adjusting or mounting the blade or blade guides.

Listed below are some of the more common reasons for blade breakage.

- Top blade guide assembly is set too high above the piece part.
- The blade is tensioned incorrectly.
- Piece part is fed into the blade too quickly.
- Blade teeth are dull or broken.
- Blade is not properly aligned with the guides.
- Forcing a large width blade to cut a small radius.
- Using a blade with an improperly finished weld joint.
- Allowing the blade to run when not in use. (**NEVER** leave an unattended blade running.)

MATERIAL SELECTION



CAUTION: It must be determined by the customer that materials being processed through the machine are **NOT** potentially hazardous to operator or personnel working nearby.

When selecting materials keep these instructions in mind:

- Material must be clean and dry. (without oil)
- Material should have a smooth surface so it processes easily.
- Dimensional properties of material must be consistent and not exceed the machine capacity values.
- Chemical structure of material must be consistent.
- Buy certificated steel from the same vendor when possible.

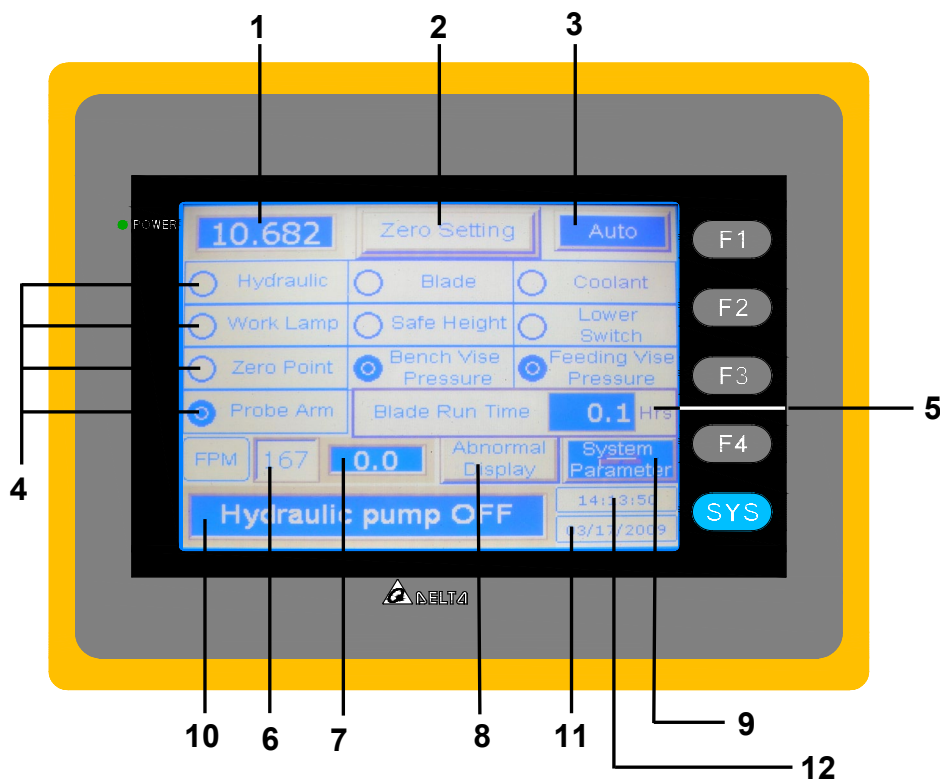


MACHINE INTERFACE and PROGRAMMING

The Baileigh BS-20A Band Saw comes standard with a touch screen input window for the programming of operation variables. It also displays current operation parameters and machine faults. They are presented to the machine operator in an easy to follow menu form. After turning on the disconnect switch, the white power light will be lit, and the interface will power up, displaying the company logo and machine model as shown below.



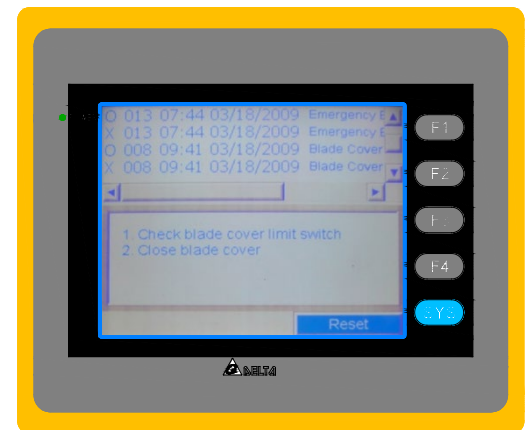
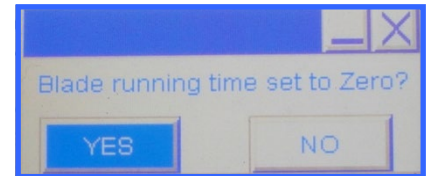
(F1) Main Menu (Touching the F1 button will display the following screen):



1. Shuttle Vise Move Position – This box shows the distance the shuttle has traveled from the zero position.
2. Zero (Home) Setting – Touch to set the shuttle vise zero position before automatic cutting or to set when machine has been shut Off and turned On again.  **Note:** Close front vise and open the rear vise in manual mode before setting the zero position.
3. Operating Mode – Indicates whether machine is in Manual mode or Auto mode.



4. Working Indicator Lights – The indicator lights show the machines current operating status. (Hydraulic, Blade, Coolant, Work Lamp, Safe Height, Lower Switch, Zero Point, Bench Vise Pressure, Feeding Vise Pressure, & Probe Arm.)
5. Blade Run Time – Displays time that the blade has been in service. Touch to bring up the “Blade running time set to Zero?” message after changing a blade. After selecting “Yes or No” touch the “X” to return to the main screen.
6. Set the Blade Speed – Touch to enter a value for the blade speed.
7. Blade Speed – Shows actual blade running speed.
8. Abnormal Display – Touch to show fault screen (at right). The fault screen shows the malfunction and how to solve it. It also shows prior faults with the date and time when they occurred.
9. System Parameter – A password is required to enter into this section. ONLY QUALIFIED PERSONNEL should have access to the parameter settings. Key in the password and Touch enter. Caution should be taken when making any parameter changes as they could cause a machine malfunction.
10. Main Message Display
11. Current Date
12. Current Time





(F2) Current Operation (Touching the F2 button will display the following screen):



- 13. Executing No. – Refers to the instruction task order. Touch to go to menu F3, Material Cutting Jobs
- 14. Operating Mode – Shows whether machine is in Manual or Auto mode.
- 15. Length Setting – Refers to the length setting of the current task.
- 16. Quantity Setting – Refers to the quantity setting of the current task.
- 17. Feeding Length – Refers to the current total length of material that has fed forward. This includes distances beyond a single shuttle stroke.
- 18. Finished Quantity – Refers to the number of cut pieces completed.
- 19. Count Trim Cut In – Touch to count trim cut out after starting automatic cutting cycle.
- 20. Upper Position – Set the saw upper or lower head stop position after finished cutting in Manual mode.
- 21. Single Cutting or Bundle Cutting – Touch to select Single cutting or Bundle cutting. For single cutting operation, the shuttle vise will clamp at a position in the back to prepare for the next feed. Bundle cutting means the shuttle vise will stay at the front position after feeding material forward.



22. Blade Speed (FPM) – Touch to set blade speed directly, the blade speed is read in feet per minute. After entering blade speed Touch “Enter” and then “X” to return to screen F2.

23. Shows Actual Blade Running Speed.

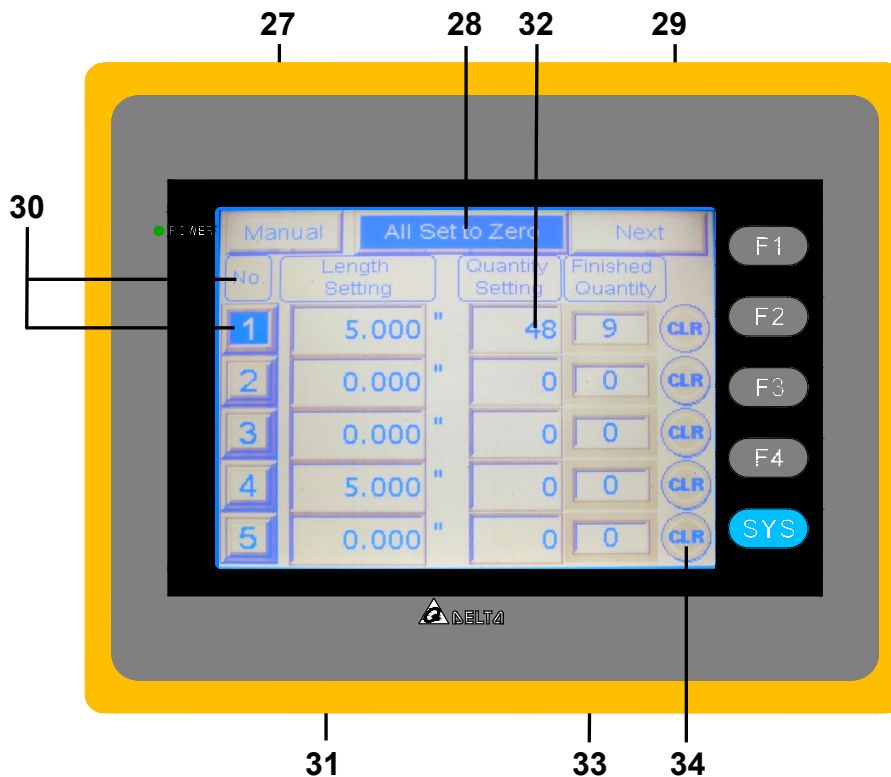
24.(+) Touch to increase blade speed.

25.(-) Touch to decrease blade speed.

26. Main Message Display – Shows a machine or fault message and a possible remedy.



(F3) Sets Material Cutting Jobs (Touching the F3 button will display the following screen):





- 27. Shows Manual or Auto Mode.
- 28. All Set To Zero – Touch to bring up screen “All Data Zero Setting” Yes or No. Touch “X” to return to F3 menu.
- 29. Next – Touch to advance to additional entry lines.
- 30. Job Number – Refers to the cutting task orders (1 – 10). For cutting piece parts, the saw will follow the selected jobs in sequence. Touch the task number(s) required and the box will turn blue.



Note: The Length Setting and Quantity settings must be filled in first.

Chosen task number



- 31. Length Setting – Refers to the length of cut pieces. This menu allows the user to set the variables for cutting piece parts. There are 10 total task lines available for altering the production lengths. To modify the cut length (in manual mode) Touch the Length Setting box and the screen to the right will display. Key in the cutting length and Touch the enter key.
- 32. Quantity Setting – Touch the Quantity Setting box. Key in the quantity and Touch the enter key.
- 33. Finished Quantity – Refers to the number of cut pieces completed.





34. Clear Setting (CLR) – Touch any CLR button within 2 sec. to set the length and quantity back to zero.

35. Back – Touch the back button and you will return to task lines (1 – 5).



(F4) Language Option (Touching the F4 button will display the following screen.)

This menu allows the operator to change the user language. Touch the button of the language you desire, and then the button to return to the main menu in the language you selected.



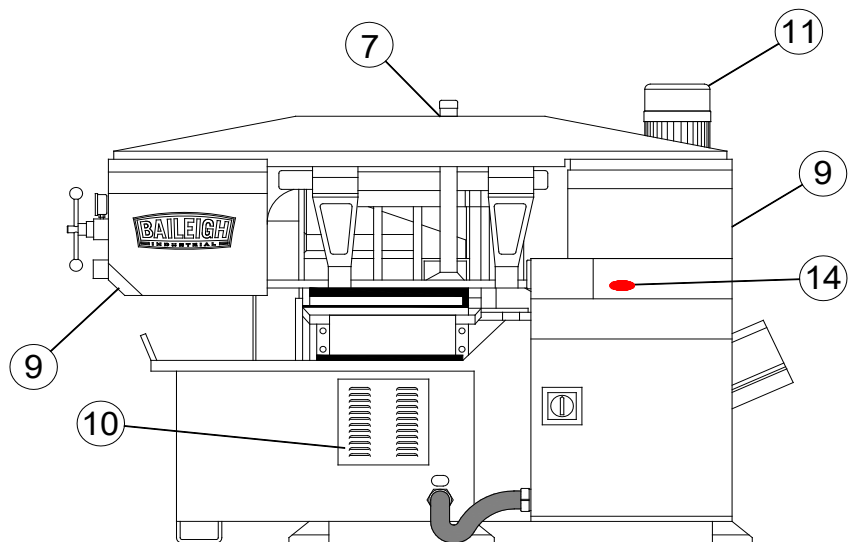
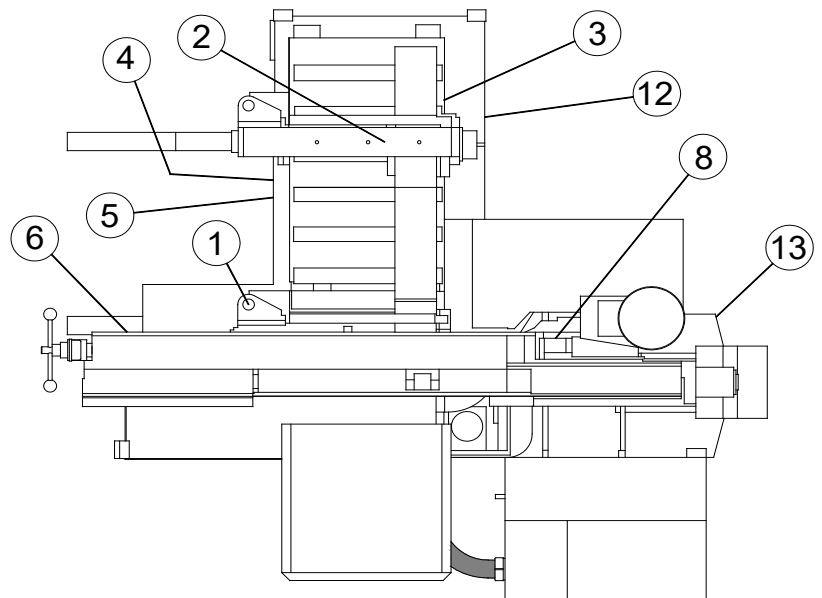


Machine Faults

The touch screen interface will show machine faults when they occur. You will be able to see the probable causes and possible remedies. After the fault is corrected, touch the reset button to remove the error notice.

Use the diagram showing the number and location of the various machine faults:

1. Faulty forward proximity switch
2. No material in the shuttle vise
3. Incorrect encoder reading
4. Shuttle vise pressure sensor fault
5. Bench vise pressure sensor fault
6. Blade tension fault
7. Probe arm limit switch fault
8. Bow down limit switch fault
9. Blade cover limit switch fault
10. Motor inverter malfunction
11. Blade motor fault
12. Hydraulic pump motor fault
13. Coolant motor fault
14. Emergency button pressed





SAW BLADE CARE



WARNING: Make sure the electrical disconnect is OFF before working on the machine.

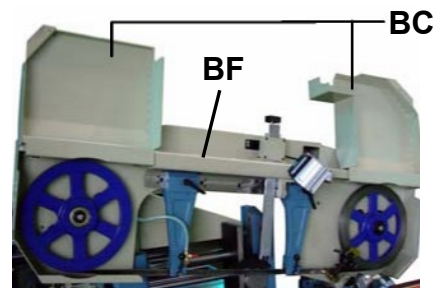
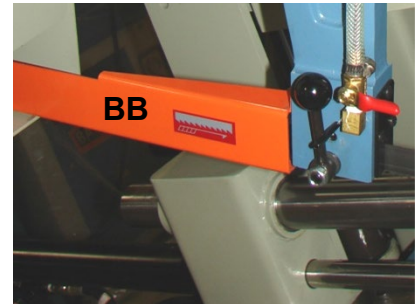
Maintenance should be performed on a regular basis by qualified personnel.

Always follow proper safety precautions when working on or around any machinery.

Blade changes are periodically required when they become worn. Choose a saw blade that is best suited for the size, type, and shape of material you will be cutting.

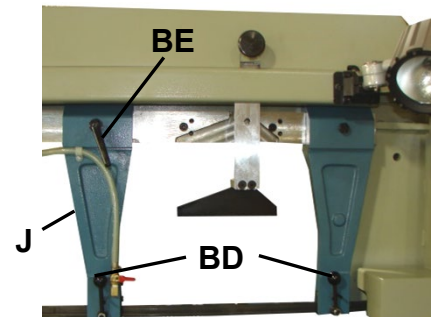
Removing and Installing the Blade

1. Raise the saw bow approximately 6" in height.
2. Disconnect the saw from the power source.
3. Remove blade guard (BB) from the guide post.
4. Rotate the saw bow to 10° and lock in place.
5. Remove a single bolt on each cover (BC) and open each cover.
6. Release the tension on the carbide guides by turning the handles (BD) counterclockwise (ccw) 1/4 turn.
7. Loosen handle (BE) and slide left blade guide post (J) as far to the right as possible.
8. Release the blade tension. Turn the blade tension handle (B) counterclockwise (ccw) until the blade is free.
9. At the top of the saw bow, the saw blade passes through a protective channel (BF).



CAUTION: Wear leather gloves to protect your hands from the sharp blade!

10. Grip the blade at each end of this channel and guide out carefully.
11. Remove the old blade from both the idler and drive pulleys and out of each carbide blade guide.
12. Place the new blade in the carbide guides and then slide the blade over the pulleys. The teeth should be pointing towards the drive side as they pass through the carbide guides.





Blade Tracking

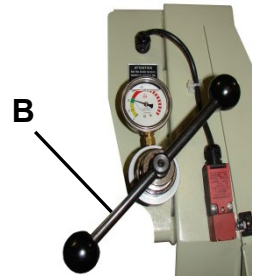
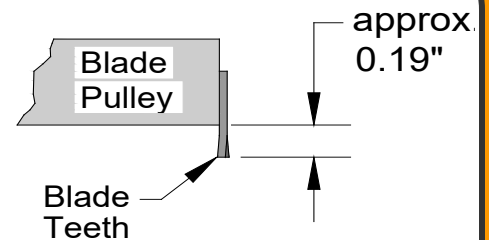
The blade teeth should protrude from the face of the blade pulleys approximately 0.19" (5mm).

1. With the blade in place, turn the tension handle (B) clockwise (cw) until the needle of the tension gauge is centered in the green area.
2. Set the carbide guides by turning the locking handles (BD) clockwise (cw) to the locked position.
3. Jog the blade a few revolutions.



Note: Blade covers must be closed or the saw will not run.

4. Check that the blade is not moving in or out on the pulleys.
5. Close and secure the blade covers.



Blade Tracking Adjustment

Blade tracking has been set at the factory and requires no adjustment. Generally the blade tracking will stay fairly constant. The blade teeth should protrude from the face of the pulley approximately 0.19" (5mm).

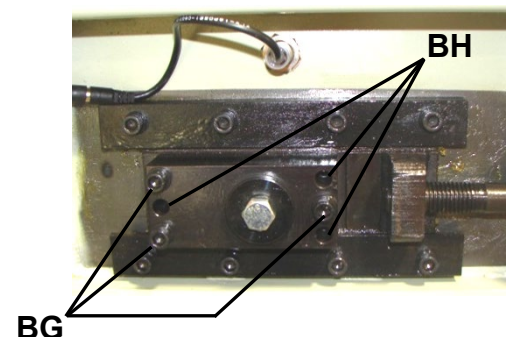
If a tracking problem occurs, adjust the saw as follows:



Note: Normally only the idler pulley will need adjustment.

Idler Pulley

1. Locate the axle mount for the idler pulley on the backside of the saw bow. It has (3) socket head bolts (BG) and (3) setscrews (BH).
2. Unlock the axle mount by loosening the (2) socket head bolts (BG) on the left side 1/4 turn, and (1) bolt on the right side 1/2 turn.
3. Set the tracking by adjusting the setscrews (BH). Turning the (2) right side setscrews clockwise (cw) will pull the blade towards the saw bow frame. Turning the left setscrew clockwise (cw) will push the blade away from the saw bow. Using a 1/4 turn make the adjustment.
4. Lock the change by tightening the (3) hex socket bolts (BG).



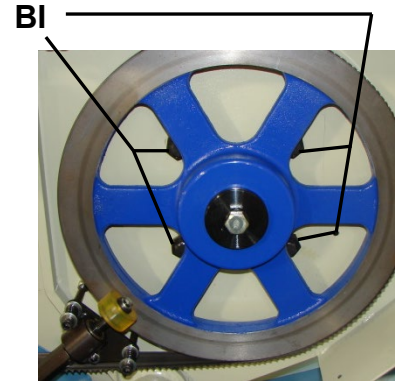


Drive Pulley

1. Tracking is held in place with (4) small hex bolts (BI) located behind the drive pulley.
2. Loosen all (4) of the small hex bolts.
3. Turning the (2) large hollow hex head bolts on the right side, 1/4 turn clockwise (cw), will pull the blade toward the saw bow frame. Turning them counterclockwise (ccw) will push the blade away from the saw bow frame.



Note: The (2) hollow hex head bolts on the left side adjust opposite.



4. After adjustment, tighten all (4) small hex bolts.

Breaking in the Saw Blade

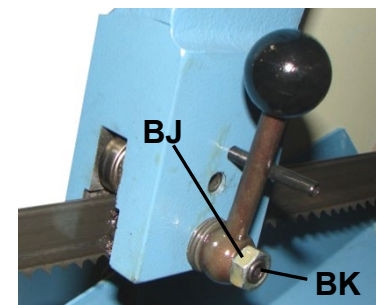
When a new blade is used, break it in before using it for extended operation. Failure to break in the blade will shorten the service life of the blade, and result in less than optimum efficiency. To break in the blade, proceed as follows:

- Lengthen the time required for cutting to 2-3 times that of normal.
- The break-in period can be considered sufficient if all unusual noises or metallic sounds have been eliminated. To completely break in the blade, a minimum of five complete cuts of an 8" (203mm) diameter piece part will be required.
- After the break-in period has been completed, return the feed rate to a normal setting.

Adjusting the Tungsten Carbide Guides

The carbide blade guides are at the base of the guide posts. Adjustments are needed when the carbide pads become worn. Adjust the carbide pads as follows:

1. Loosen the nut (BJ) on the locking handle.
2. Adjust the setscrew (BK) by turning it clockwise (cw) until tight and then loosen it 1/8 of a turn.
3. Tighten hex nut (BJ). This should put just enough pressure on the blade to permit you to push the blade down approximately 1/8".





OPERATION



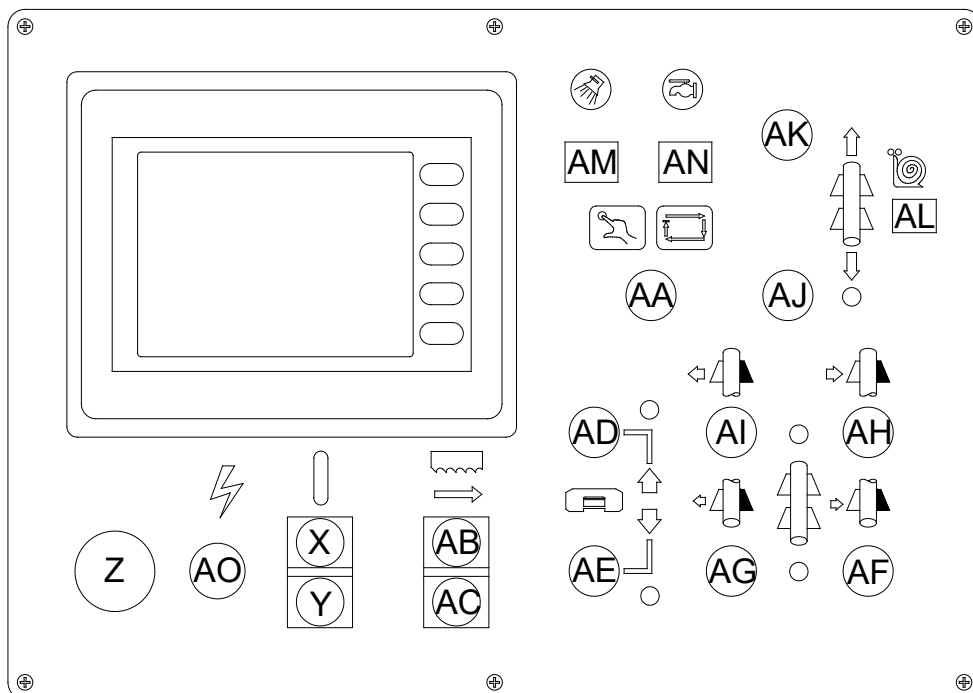
CAUTION: Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges. NEVER operate saw without blade guards in place.

Before you start to cut the piece part check the following:

- The saw blade is suitable for the material being cut.
- The blade guide post is properly positioned and secure.
- There is sufficient saw blade tension.
- The wire brush is properly positioned.
- Adequate amount of coolant in reservoir.
- The piece part is securely clamped.
- The feed length is set to the correct distance.

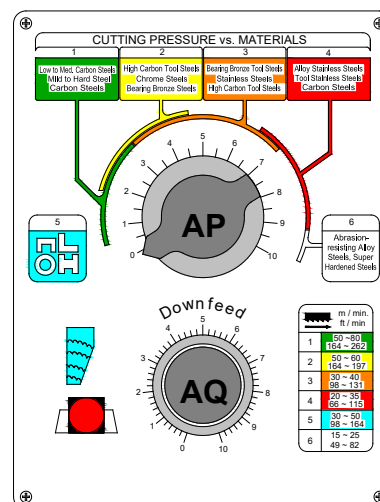
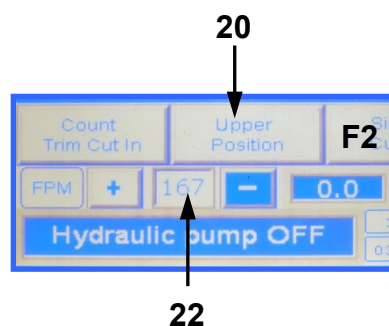
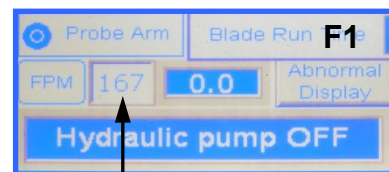
Manual Operation

1. Connect power to the saw and turn the main disconnect switch (M) to On.
2. Press the hydraulic start button (X).
3. Use the Auto/Manual selector switch (AA) to select Manual mode.





4. Secure the piece part into the vise.
 - a. Raise the saw bow to adequately clear the piece part.
 - b. In Manual mode open both vises wide enough for the material.
 - c. Place the piece part onto the roller table.
 - d. Gently push the piece towards the blade.
5. Press button (AH) to close the shuttle vise.
6. Move the piece part to the desired location with buttons (AJ) and (AK).
7. Clamp the piece part with the bench vise by pressing button (AF).
8. Adjust the spacing of the blade guidepost.
 - a. Unlock the left guide post by loosening the adjustable handle.
 - b. Grip the post and move horizontally.
 - c. Using the handle, lock into position.
9. Set the blade speed in Manual mode. Touchscreen Menu F1, button 6 or Menu F2, button 22. In Auto mode touchscreen menu F2 the + / - can be used to set the blade speed.
10. Set the rate for the cutting pressure by turning knob (AP) to the corresponding setting. Set the bow down speed by turning knob (AQ) clockwise (cw) for faster speed and counterclockwise (ccw) for slower bow drop speed.
11. Press operation start button (AB) to start the cutting operation cycle.
12. Press coolant switch (AN) to start the coolant pump. Indicator light will be lit. The chip auger will also start turning. The saw bow will begin to descend quickly until the probe arm touches the piece part. Then the blade descent speed will slow to the cutting pressure (AP) and down feed (AQ) settings.
13. After completion of the cut, the saw blade will stop at the lower limit position and stop moving. The bow stop location can be set at upper position or lower position while in manual cutting mode F2, button 20. After a short pause the bow will ascend to the start cut position.





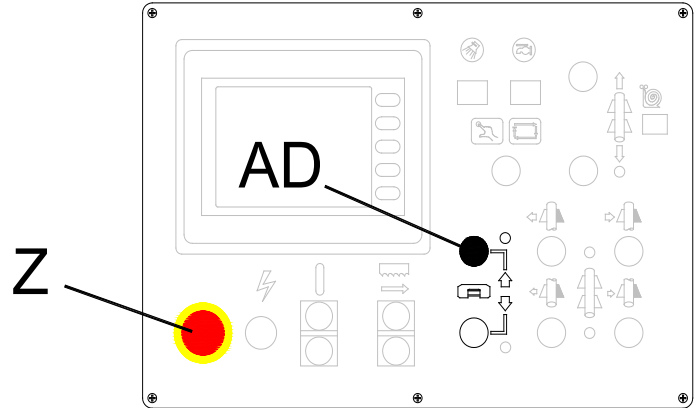
Stopping the Machine

In the event of an emergency, press either the Emergency Stop button (Z) or the Bow Up switch (AD) to stop all machine functions. To release the E-STOP button, rotate the mushroom head clockwise (cw) to reset.



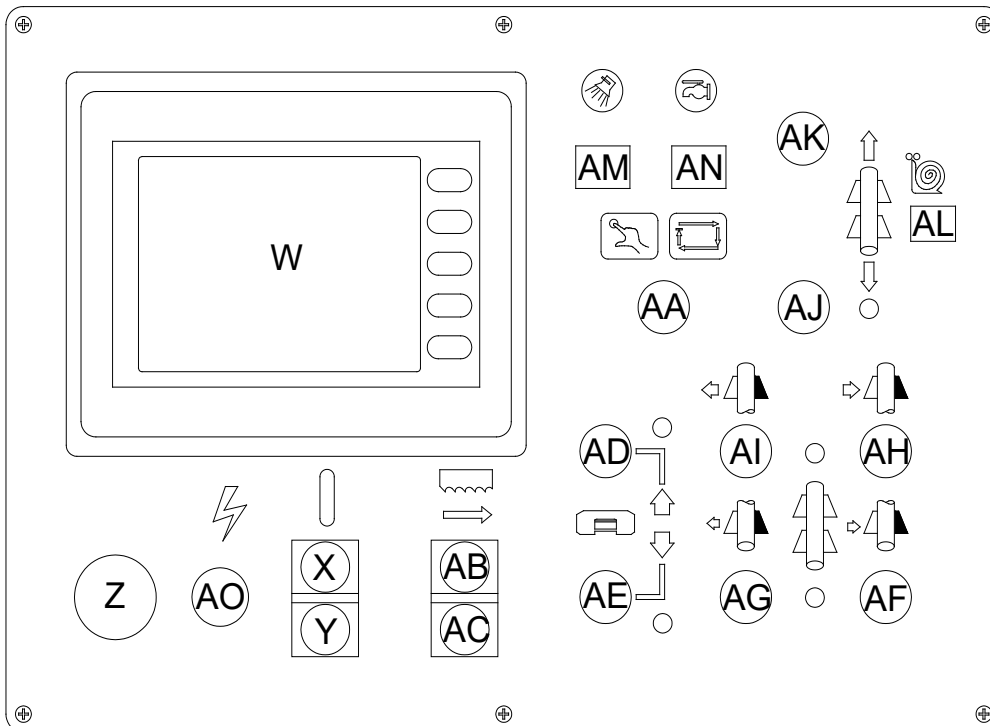
Note: Resetting the E-STOP button will not start the machine.

Using the Bow Up switch in an emergency situation will not cancel the machine settings entered into the touch screen interface, whereas the Emergency Stop button will. When using the Bow Up switch the piece part will stay clamped. Also the saw can be stopped between task cycles by switching to manual mode. When in manual mode the saw will stop at the end of the current task.



Automatic Operation

1. Connect power to the saw and turn the main disconnect switch (M) to On.
2. Press the hydraulic start button (X).
3. Use the Auto/Manual selector switch (AA) to select Manual mode.

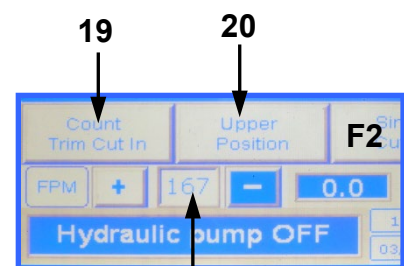
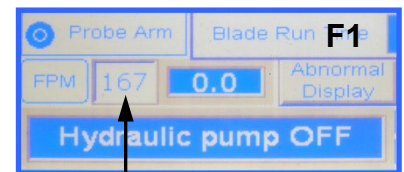




4. Secure the piece part into the vise.
 - a. Raise the saw bow to adequately clear the piece part.
 - b. In Manual mode open both vises wide enough for the material.
 - c. Place the piece part onto the roller table.
 - d. Gently push the piece towards the blade.
5. Use the Auto / Manual switch (AA) to select the Automatic mode.
6. Set the cut-piece variables on the Human-Machine (touch screen) Interface (W). See the F3 Sets Material Cutting Jobs descriptions in the MACHINE INTERFACE and PROGRAMMING section.
7. Adjust the spacing of the blade guidepost.
 - a. Unlock the left guide post by loosening the adjustable handle.
 - b. Grip the post and move horizontally.
 - c. Using the handle, lock into position.
8. Set the blade speed in Manual mode. Touchscreen Menu F1, button 6 or Menu F2, button 22. In Auto mode touchscreen menu F2 the + / - can be used to set the blade speed.
9. Set the rate for the cutting pressure by turning knob (AP) to the corresponding setting. Set the bow down speed by turning knob (AQ) clockwise (cw) for faster speed and counterclockwise (ccw) for slower bow drop speed.

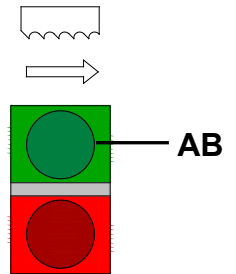
If starting with a new piece part, refer to the Initial Trim Cut Procedure that follows:

- When inserting a new piece part in Automatic mode, the first cut piece will not be the proper length unless an end-cut is performed. This initial cut will zero the material length so that additional cuts will be to the specified size.
- Begin by inserting the material. Have the material slightly past the blade cut-off line.
- Switch the operation to Manual mode by turning the Auto / Manual switch (AA).
- Start the initial trim cut in Automatic mode. The initial trim cut can count: Trim Cut In or Trim Cut Out by touching the F2, button 19.

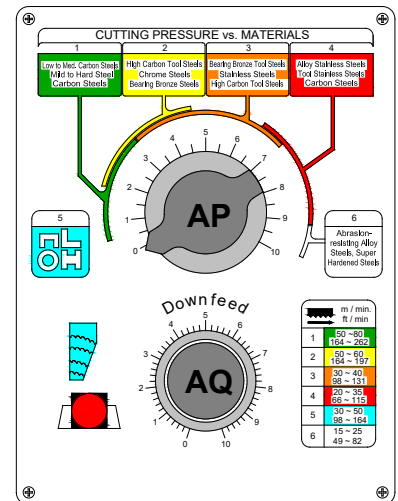




10. Press the start button (AB) to start the operation cycle.
11. Press (AN) to start the coolant pump. The chip auger will also start turning. The saw bow will begin to descend at the speed settings made by the operator for the cutting pressure (AP) and the down feed (AQ).
12. After completion of the cut, the saw bow will stop at the lower limit position.
13. The saw bow will rise and the piece part will feed ahead for the next cut.
14. The cycle will continue until all commands have been completed. The machine will stop and the motors will turn off.



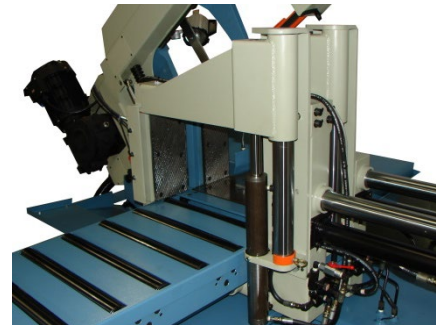
Note: When switching from Manual mode to Auto mode Execute "Zero" setting after clamping the bench vise and opening the shuttle vise.



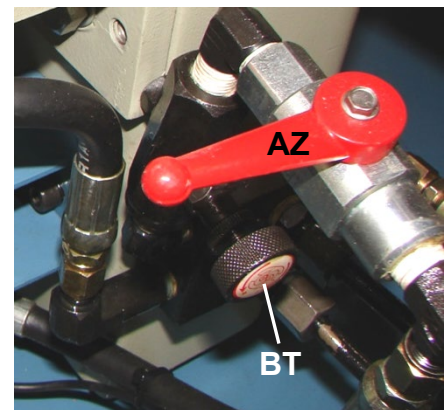


Bundle Cutting

Nesting clamps are used for bundle cutting operations. They vertically press down upon a stack of equally sized piece parts. Using these hydraulically operated clamps you can cut multiple pieces at once. To regulate the speed of the cylinder turn the flow control knob (BT) located below the hydraulic shut-off valve. If you want to stop using the nesting clamps, allow them to return to the up position, and turn off the hydraulic valves (AZ) closed as shown in photo.



1. Follow either the Manual operation or the Automatic operation.
 2. Open the hydraulic valves on the bench vise cylinder and the shuttle vise cylinder. (Note: photo at right shows closed position.)
- All clamping operations are the same.
 - The pushbuttons (AF), (AG), (AH), & (AI) that operate the vises also operate the vertical motion of the nesting clamps.
 - If you open the shuttle vise clamps, the nesting clamp will rise. When the shuttle vise clamps are closed the nesting clamp will lower onto the piece part.

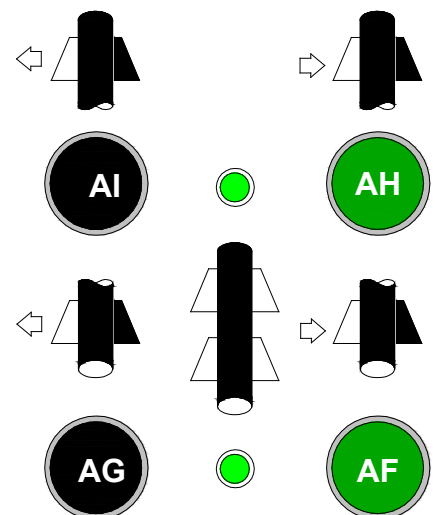


Special Operation for a Jammed Blade

While cutting a piece part, if the saw blade suddenly jams, press the bow up button (AD) on the control panel.

The following situations could cause jamming:

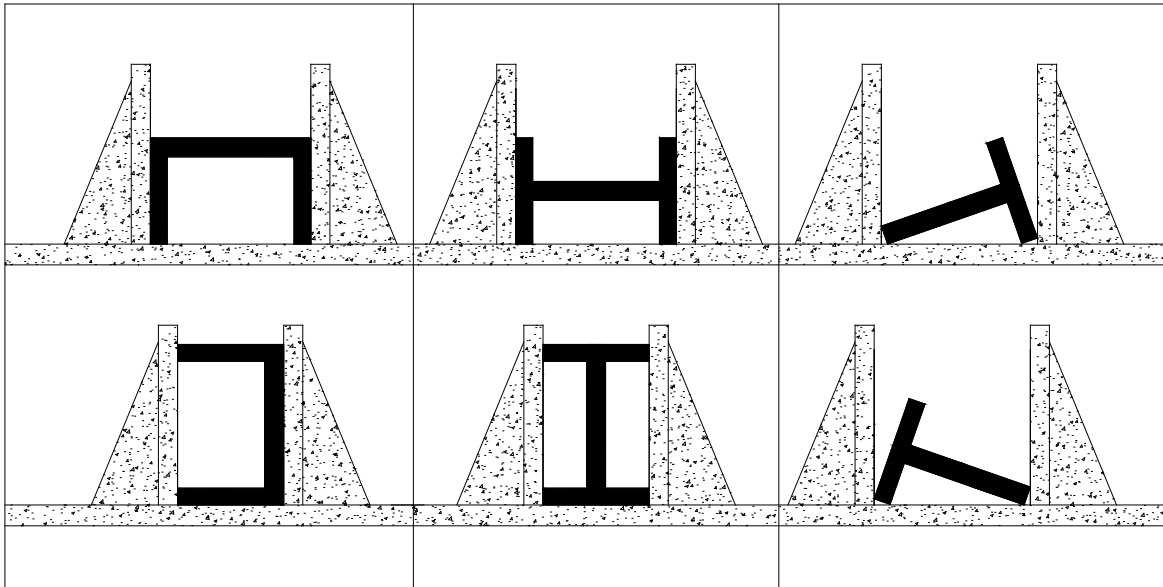
- Slippage between drive wheel and blade caused by insufficient blade tension.
- Broken teeth on the saw blade.
- The saw blade teeth are dull.
- The tooth spacing on the saw blade is too fine for material being cut.
- Feed rate is too fast for material being cut and type of blade being used.





Material Clamping Examples

These examples below show ways to clamp a variety of cross sections. Always keep in mind the cutting capacity of the saw to achieve efficient saw cuts and long blade life. Do not use blades of a size different from that shown in the technical specification chart.



Vise Operation

1. In manual mode the bench vise and the shuttle vise can open and close full stroke.
2. The shuttle vise will not advance the piece part when the bench vise is clamped.
3. With the bench vise clamped on a piece part, the shuttle vise can be repositioned ONLY if the vise is unclamped.
4. In AUTO mode the bench vise Open and Close and the Shuttle vise Open and Close buttons will not respond.

Securing the Piece Part

1. Raise the saw bow to adequately clear the piece part.
2. In Manual mode open both vises wide enough for the material.
3. Place the piece part onto the roller table.
4. Gently push the piece towards the blade.
5. The part can now be clamped with the vise close buttons. (Manual mode)



MACHINE ADJUSTMENTS



WARNING: Make sure the electrical disconnect is OFF before working on the machine.

Maintenance should be performed on a regular basis by qualified personnel.

Always follow proper safety precautions when working on or around any machinery.

Blade Brush Adjustment

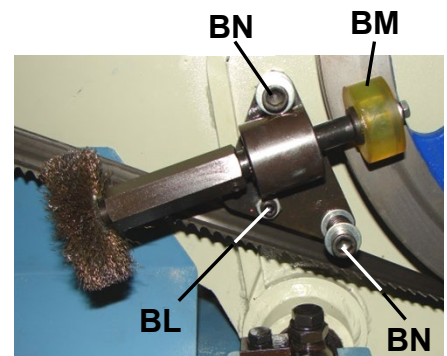
Due to wear of the blade brush, it is necessary to adjust its position. The brush should be held against the blade gullets with minimum force. The brush must periodically be moved closer to the blade as it wears.

Adjust the brush as follows:

1. Disconnect power from the saw.
2. Open the drive idler cover.
3. Loosen the hex nut on setscrew (BL).
4. Turning setscrew (BL) counterclockwise (ccw) will move the blade brush closer to the blade. Turning the setscrew clockwise (cw) will move the brush further away from the blade.
5. After adjustment re-tighten the hex nut.

Adjust the urethane drive wheel (BM) as follows:

6. Turn the (2) spring loaded setscrews (BN) clockwise (cw) to bring the urethane wheel closer to the drive idler face.
7. After adjustment, close and secure the cover.
8. Reconnect power to the saw.

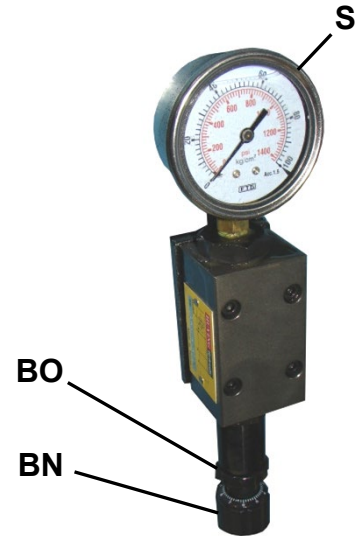




Hydraulic Vise Pressure

The hydraulic vise pressure can be monitored by gauge (S) and adjusted by a pressure adjuster knob (BN) located to the right of the hydraulic tank. It allows for the reduction of hydraulic pressure clamping force. The normal pressure is set at 28kgs/cm² (400psi). This is good for most solid materials. For softer or hollow materials, including pipe, 15kgs/cm² (215psi) is good. Other materials may require different pressure settings.

1. In AUTO mode, the vise pressure can be changed by turning the pressure knob (BN) after clamping a piece part.
2. Unlock the fluted knob nut (BO).
3. Turn the pressure knob (BN) counterclockwise (ccw) to decrease the pressure and clockwise (cw) to increase the vise pressure.
4. Lock the fluted nut (BO) after adjusting.



Guide Post Adjustment

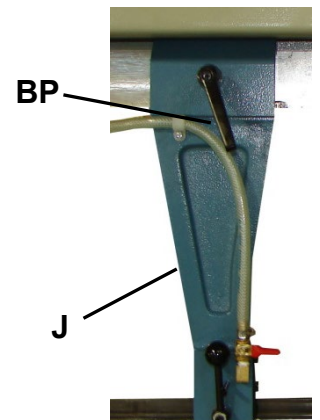
The blade guide post adjusts horizontally on a slide to control the spacing of the blade guide. Having the guide post close to the piece part reduces blade flexing offering a more precise cut. It also offers more safety protection of the blade guard.

1. Unlock the left guide post (J) by loosening the adjustable handle (BP).
2. Grip the post and move horizontally.



Note: Do not try and move further than the coolant hose will allow.

3. Using the handle (BP), lock into position.

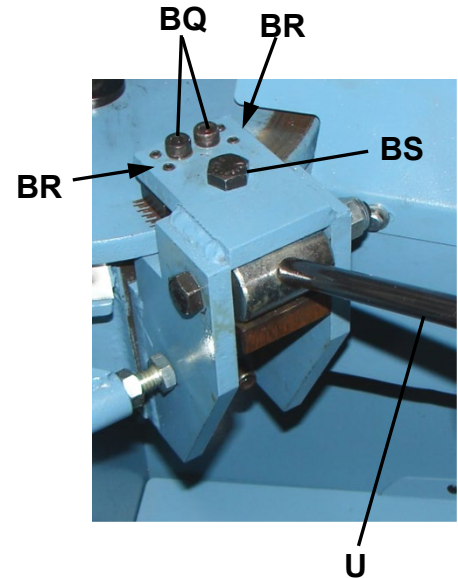




Miter Angle Lock Adjustment

The clamping force on the miter angle lock can be adjusted to ensure that the head is held securely during cutting. If the lock lever fails to clamp while locked, the clamp force should be adjusted as follows:

1. Raise the lock lever (U).
2. Loosen the two locking hex socket screws (BQ).
3. Tighten all four setscrews (BR) until tight.
4. Back out the setscrews (BR) 1/4 of a turn.
5. Tighten the two locking hex socket screws (BQ).
6. Swing the saw bow forward and back to about 45° to ensure that the head moves freely and does not bind on the surface of the pivot link.
7. If necessary, adjust bolt (BS). If it is not tight enough, lock lever (U) will bottom out and not hold the miter angle.



Cutting Pressure

Select a suitable cutting pressure for the piece being cut. This varies according to the size and shape of the piece part, type of material, and type of saw blade being used.

Refer to the chart which is also located on the control panel.

CUTTING PRESSURE vs. MATERIALS			
1	2	3	4
Low to Med. Carbon Steels Mild to Hard Steel Carbon Steels	High Carbon Tool Steels Chrome Steels Bearing Bronze Steels	Bearing Bronze Tool Steels Stainless Steels High Carbon Tool Steels	Alloy Stainless Steels Tool Stainless Steels Carbon Steels



LUBRICATION AND MAINTENANCE



WARNING: Make sure the electrical disconnect is OFF before working on the machine.

Maintenance should be performed on a regular basis by qualified personnel.

Always follow proper safety precautions when working on or around any machinery.

Daily Maintenance

- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- Do a general cleaning by removing dust and metal chips from the machine.
- Inspect the saw blade for wear.
- Top off the coolant tank.
- Check that the blade guards and emergency stop button are in good working order.
- When through using saw for the day, raise the bow to its up position and release some of the blade tension.

Weekly Maintenance

- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.
- Wipe down the cylinder shafts and lightly oil the vise sliding shafts and other sliding surfaces.
- Inspect blade brush and clean if needed.
- Clean coolant pump inlet.
- Remove chips from inside the guard housings for the saw blade.
- Use compressed air to clean the blade guides and guide bearings.
- Make sure coolant is circulating through system adequately.

Monthly Maintenance

- Check the tightening of the motor flywheel screws.
- Check the blade guide bearings for wear. (replace if necessary)
- Tighten any loose bolts or screws on the gear motor, pump, and safety switches.
- Clean coolant tank.



- Regrease blade tension slide and slide of blade guide post.

Six month maintenance

- Do an operational check of the safety circuit.

Annually

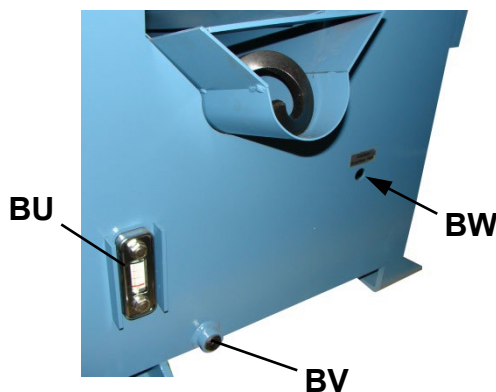
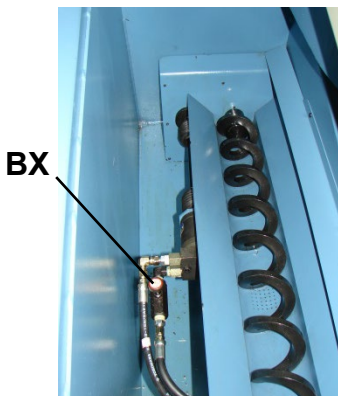
- Change hydraulic oil and clean oil tank



Note: Proper maintenance can increase the life expectancy of your machine.

Coolant System Maintenance

1. Disconnect power from the saw.
2. Remove the coolant cover by taking out the two screws.
3. Lift off the chip auger pump cover. Notice the flow control (BX) that is used to change the speed of the augers hydraulic motor.
4. Remove the drain plug (BV) and completely empty the tank. Use a vacuum cleaner to remove any chips and debris.
5. Thoroughly clean the pump and pump inlet.
6. Replace the drain plug and fill the tank with coolant to the full mark on the sight gauge (BU).
7. (Coolant tank capacity is approx. 22.0 US gal.)
8. The overflow (BW) will prevent over filling.
9. Replace the pump cover and the auger cover.
10. Connect power to the saw.
11. Test coolant flow at the blade nozzles and the coolant hose nozzle.





Oils for Lubricating Coolant

Any 20:1 (water to coolant) solution will work, however we recommend Baileigh B-Cool biodegradable metal cutting fluid. It has excellent cooling and heat transfer characteristics, is non-flammable, and extends blade and machine life. Each gallon of concentrate makes 21 gallons of coolant.

Oil Disposal

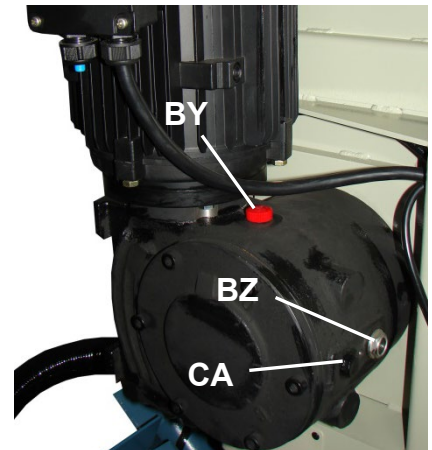
Used oil products must be disposed of in a proper manner following your local regulations.

Gearbox Maintenance

The gearbox requires periodic changing of the oil. Change the gear oil after the first 3-6 months of operation. Then change the gear oil annually thereafter.

Follow the procedure below:

1. Lower the saw bow to a horizontal position.
2. Disconnect machine from the power source.
3. Remove the oil drain plug (CA) and drain the oil into a catch basin. Loosening oil fill cap (BY) will help oil to drain.
4. After draining, replace drain plug (CA).
5. Remove the fill cap (BY) and add gear oil. (For reference use SHELL type gear oil or Mobil gear oil #90). (Fill until the sight gauge (BZ) shows full)
6. Replace oil fill cap (BY).
7. Reconnect power to the saw.



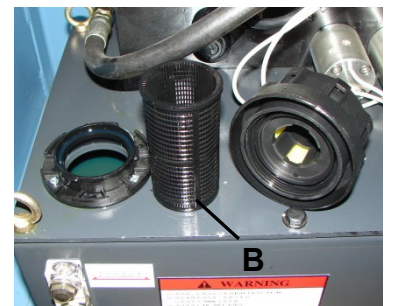
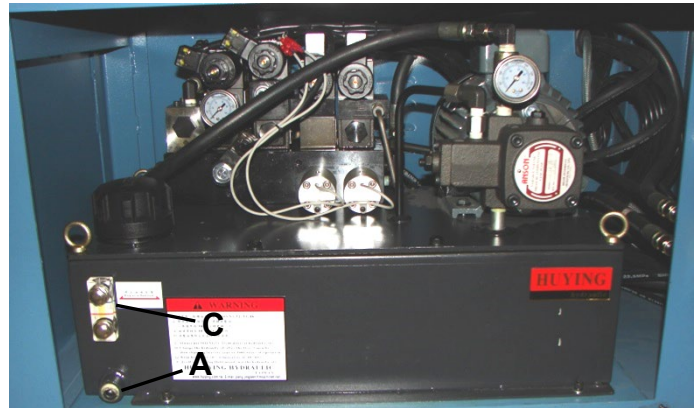


Hydraulic System

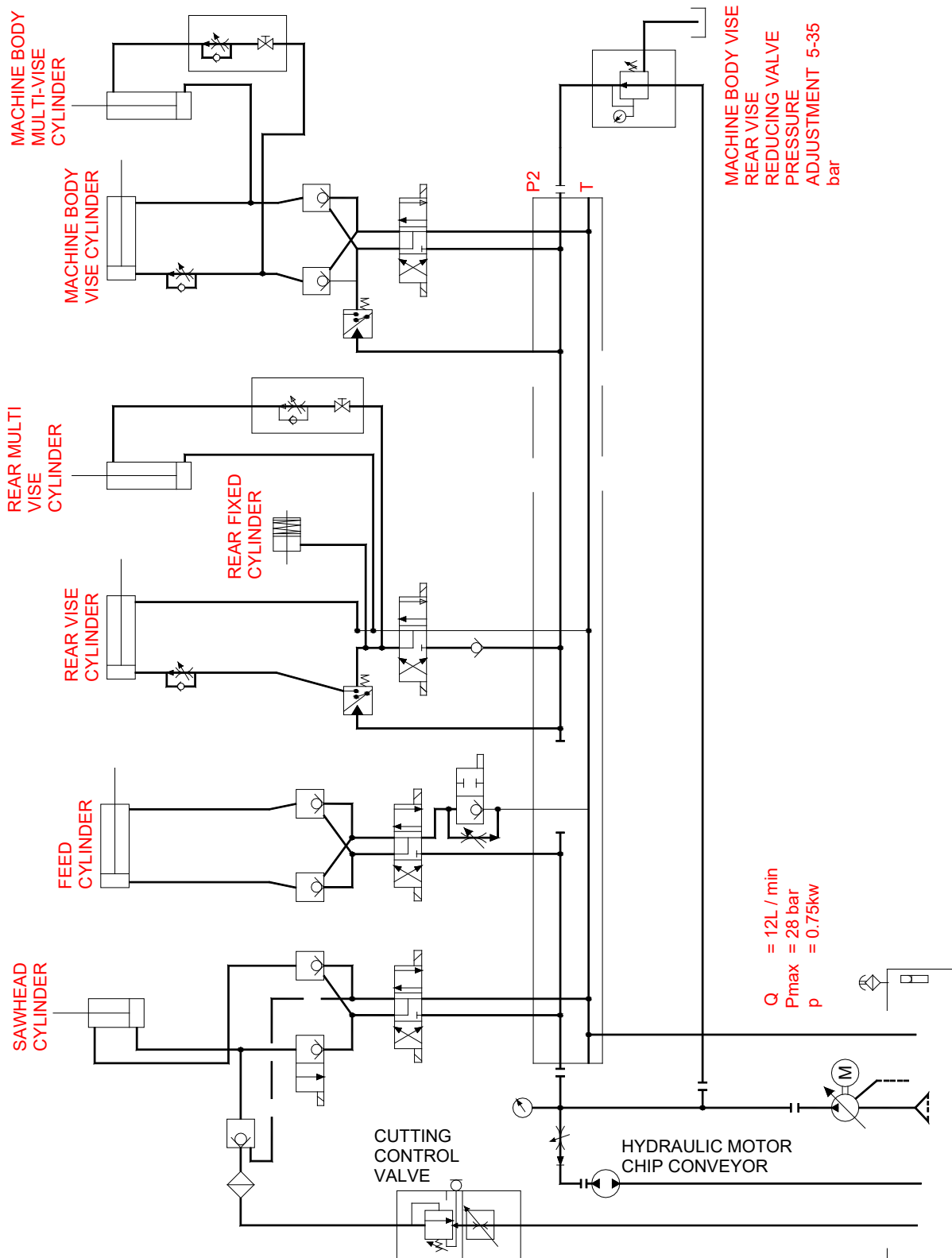
The hydraulic oil is the primary medium for transmitting pressure and also must lubricate the running parts of the pump.

Change the hydraulic oil after the first 3 months of operation. Then change the oil annually or after every 3,000 hours of operation, whichever comes first.

- Keep hydraulic oil temperature between 50°F - 140° F.
 - Avoid mixing cutting fluid with the hydraulic oil.
 - Check hydraulic oil level periodically by monitoring the sight gauge on the tank.
 - Tank capacity is approx. 6.0 US gal. (22.5L).
1. Disconnect power to the saw.
 2. Use hydraulic oil #68 SHELL BRAND or an equivalent with similar specifications.
 3. Keep hydraulic reservoir filled to 90% of capacity.
 4. DO NOT rely totally on the oil gauge as they can sometimes indicate an incorrect level reading. Do a visual inspection with the oil fill cap removed as well.
 5. A shortage of hydraulic oil will cause hydraulic system breakdown to major mechanical components due to overheating.
 6. Change the hydraulic oil every 12 months along with the oil filter.
 7. Remove the cover panel to access the hydraulic tank.
 8. Place a suitable container under the drain plug (A) to drain the oil into. Remove plug and drain oil.
 9. If cleaning the inside of the tank, remove the bolts securing the cover to the tank and slide the cover over enough to access the inside. Replace the cover when complete.
 10. Clean filter basket (B) when filling or changing hydraulic oil.
 11. Fill to the full mark on the sight gauge (C).
 12. Operate the hydraulics to cycle each cylinder to full extension and retraction several times to purge any air from the system.
 13. Install the access cover.

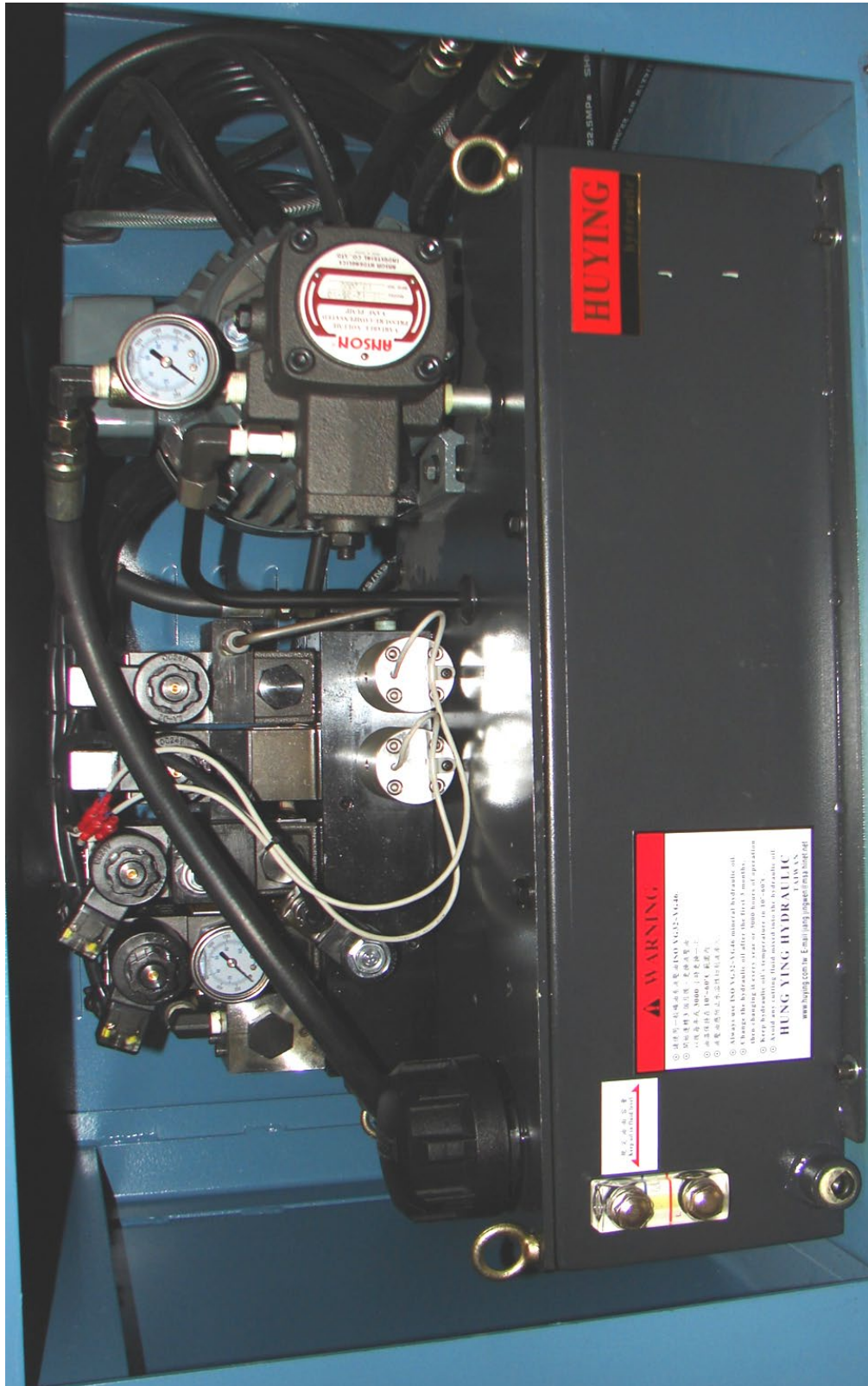


HYDRAULIC SCHEMATIC

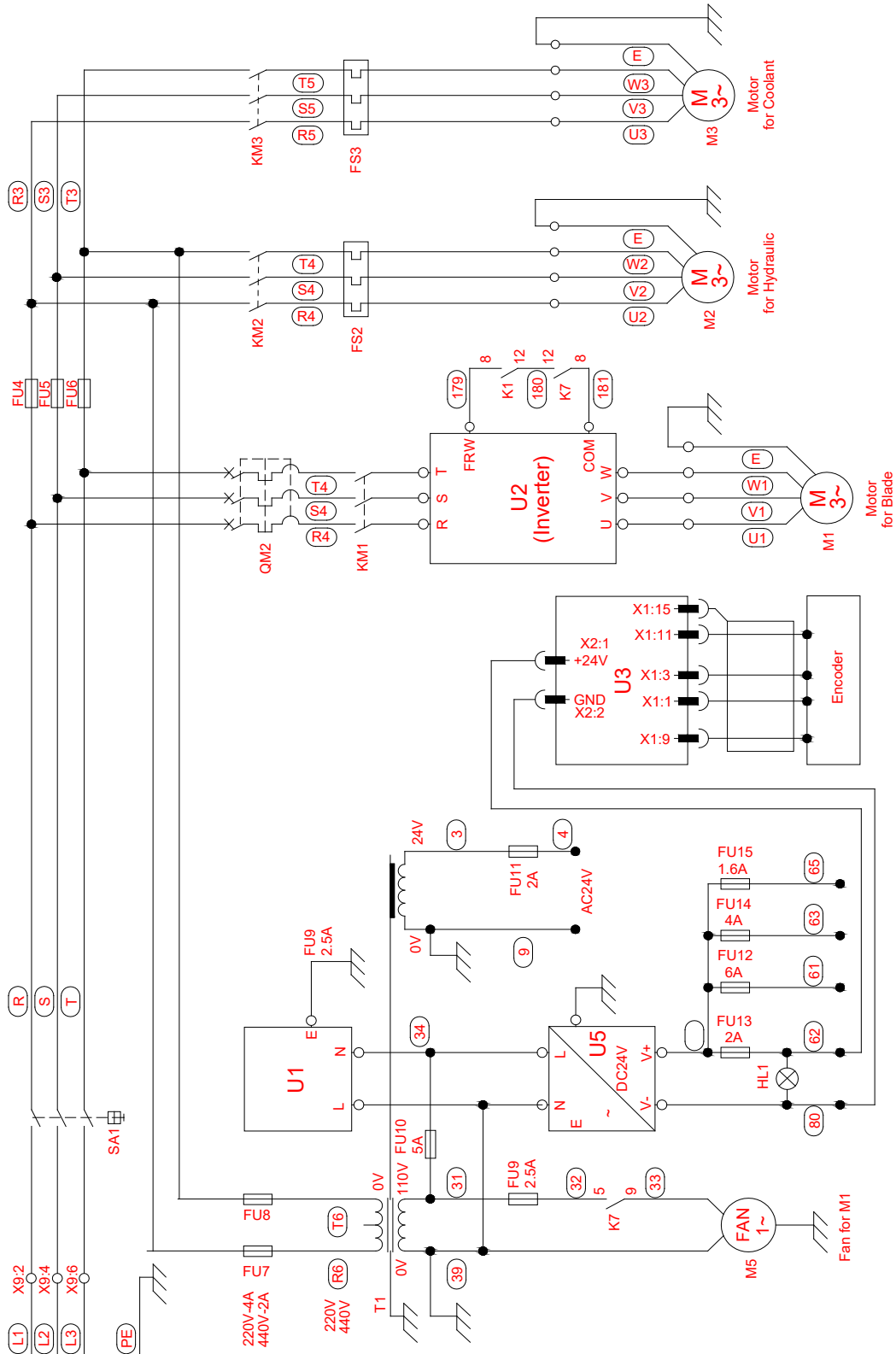




HYDRAULIC TANK

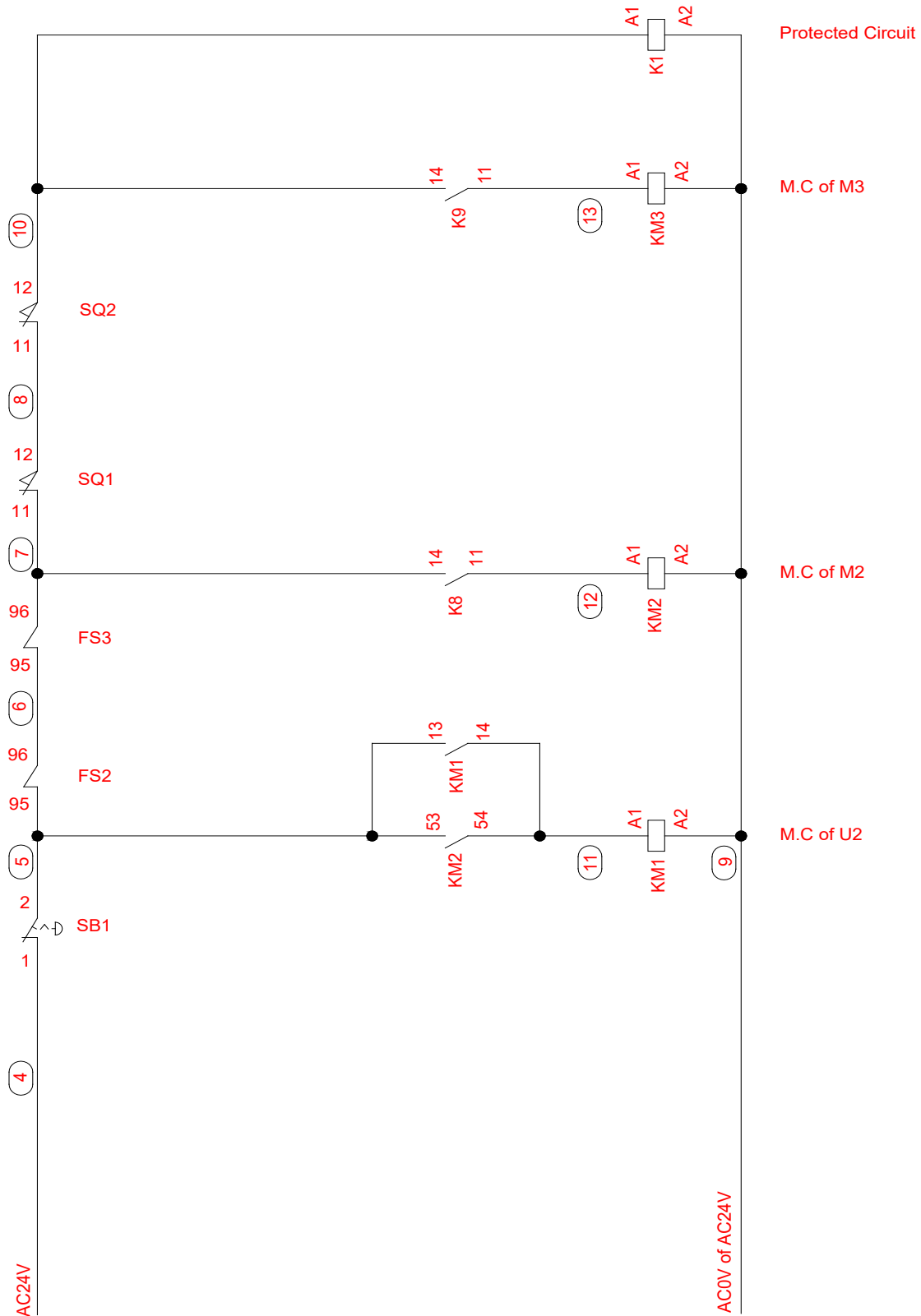


ELECTRICAL CIRCUIT DIAGRAM - (1 of 5)



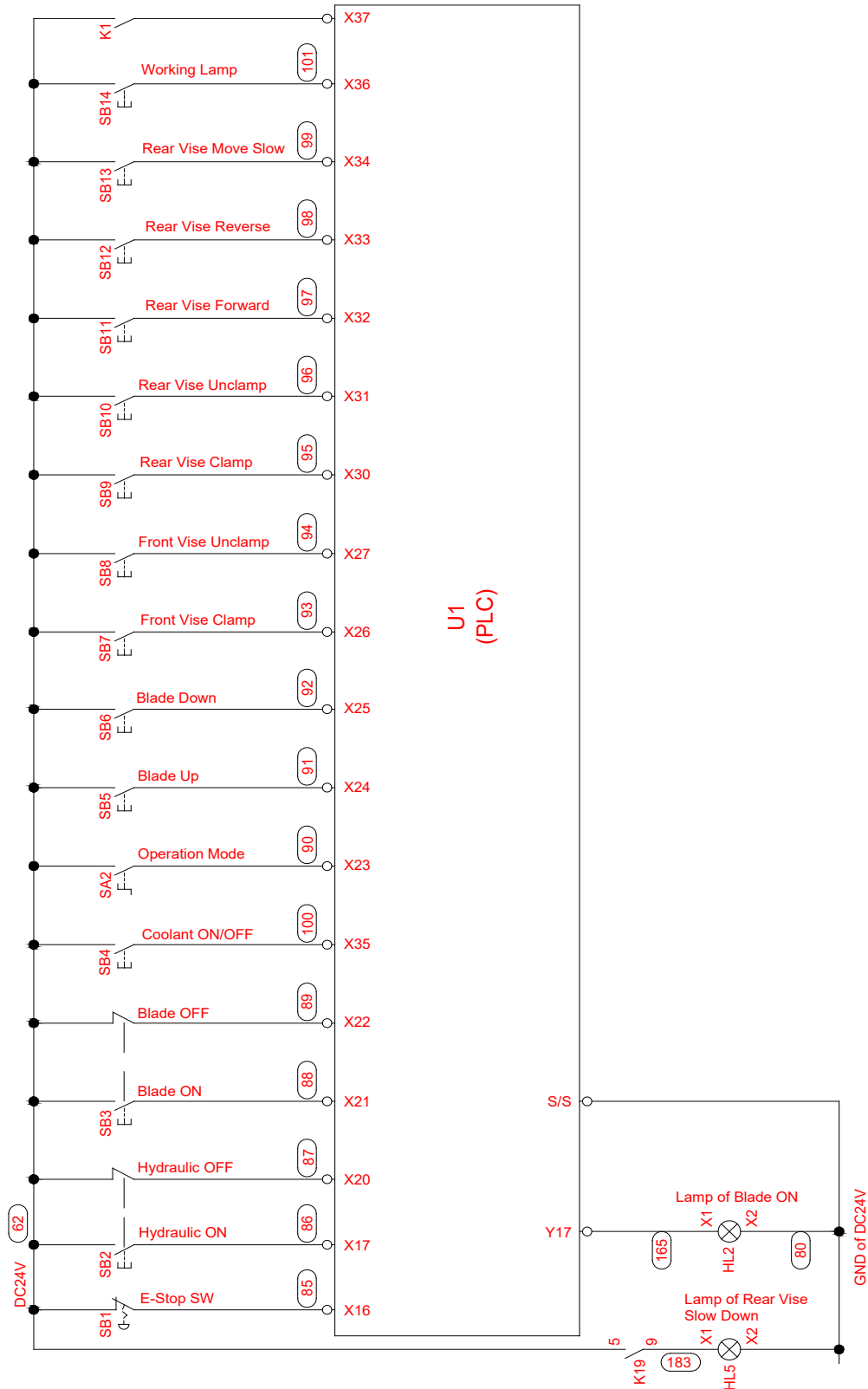


ELECTRICAL CIRCUIT DIAGRAM - (2 of 5)



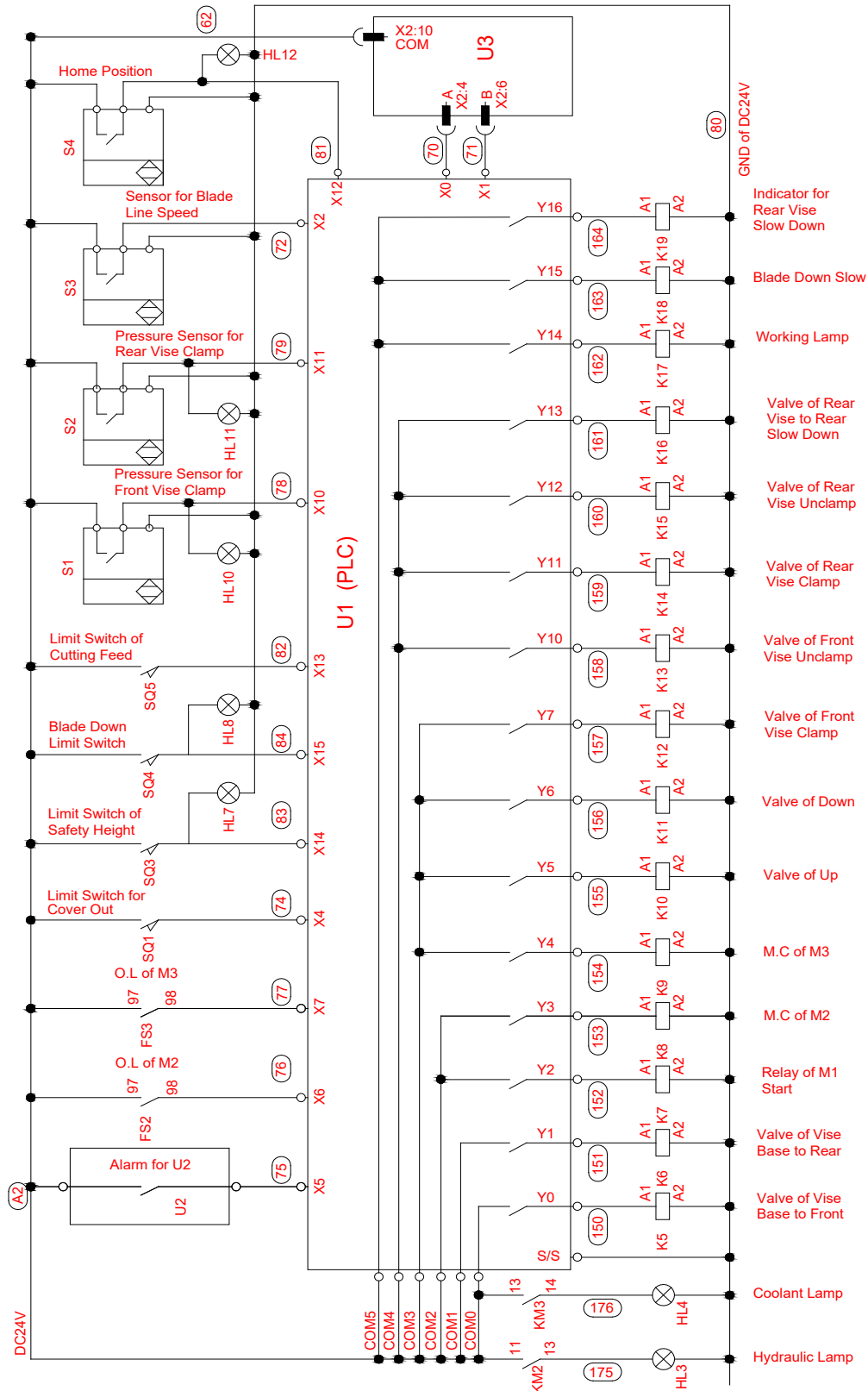


ELECTRICAL CIRCUIT DIAGRAM Panel I/O's - (3 of 5)



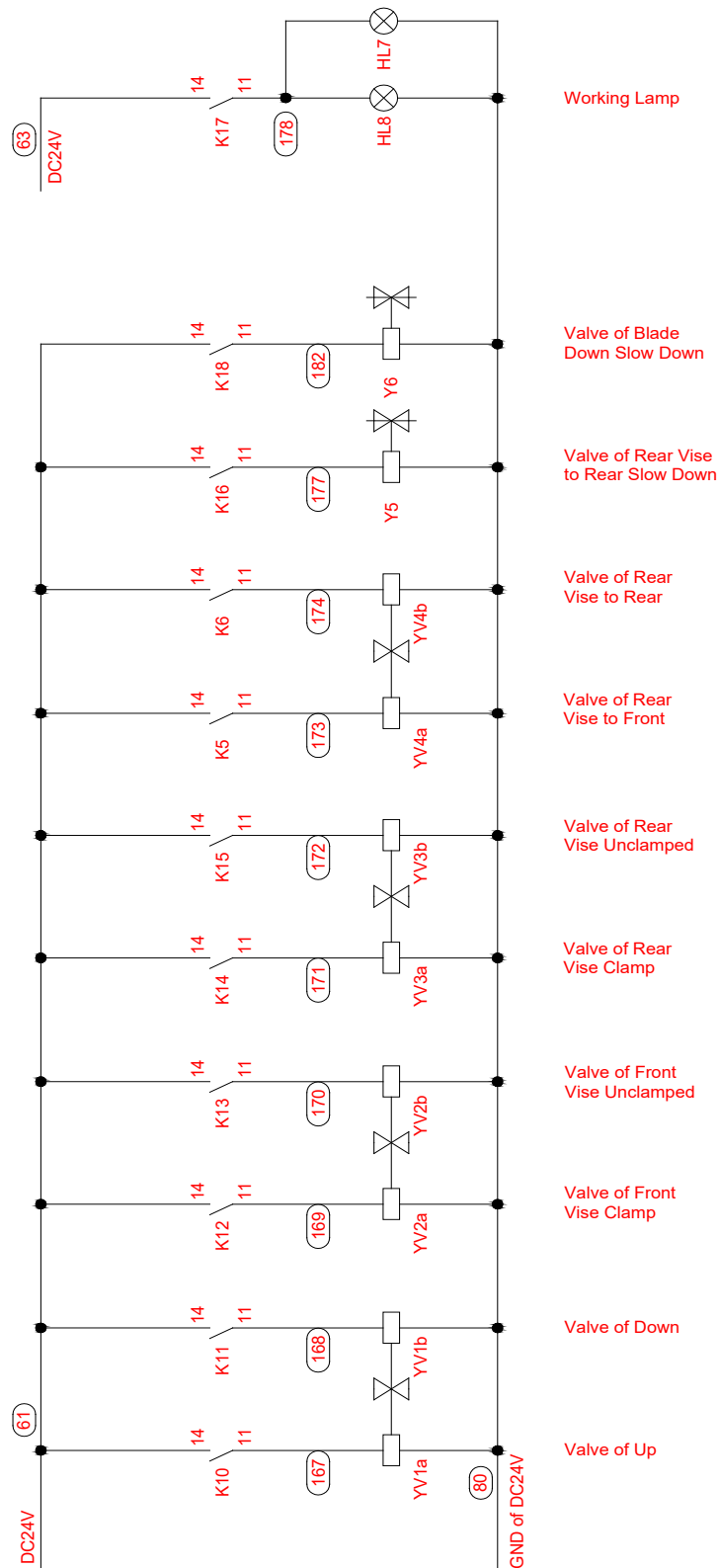


ELECTRICAL CIRCUIT DIAGRAM - (4 of 5)





ELECTRICAL CIRCUIT DIAGRAM - (5 of 5)





ELECTRICAL ENCLOSURE COMPONENTS

