



## **V-25**

**393229**

THANK YOU,

On behalf of everyone at HYD·MECH Group Limited, we would like to thank and congratulate you on your decision to purchase a HYD·MECH bandsaw.

Your new machine is now ready to play a key role in increasing the efficiency of your operation, helping you to reduce cost while boosting quality and productivity.

To ensure you are maximizing the power and versatility of your new HYD·MECH bandsaw, please take the time to familiarize yourself and your employees with the correct operation and maintenance procedures as outlined in this manual. Please keep this instruction manual for future reference in a known location and easily accessible to all users of the device.

HYD·MECH offers a great variety of options, components, and features for its various models. Therefore, some of the equipment described in this manual (various illustrations and drawings) may not be applicable to your particular machine.

The information and specifications provided in this manual were accurate at the time of printing. HYD·MECH reserves the right to discontinue or change specifications or design at any time without notice and without incurring any obligation.

Thank you.

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# SECTION 0 - SAFETY INSTRUCTIONS

## SUMMARY

All persons operating this machine must have read and understood all of the following sections of this Manual:

Section 0	SAFETY
Section 2	OPERATING INSTRUCTIONS

However, as a memory aid, the following is a summary of the Safety Section.

### Put Safety First

**Mandatory Information** – What operators and maintenance people must have read and understood.

**Signatures** – Everyone involved with this machine must sign to confirm they have read and understood mandatory information.

**Basic Rules** – only use this machine when

- It is in good working order.
- All safety equipment is in place and functional.
- Operations are in compliance with this manual.
- Materials are within designed specifications and are non-hazardous.

### Owner is responsible to

- Keep Manual accessible at the machine.
- Ensure only reliable, fully trained personnel work with the machine.
- Clearly define responsibilities of all personnel working with the machine.
- Keep the machine in good working order.

### Operator and Maintenance Personnel are responsible to:

- Keep all safety equipment in order, check its function at the beginning of each shift, and report any shortcomings.
- Shut down machine and report any faults or malfunctions that could impair safety.
- Understand and obey safety hazard labels.
- Not to wear un-restrained long hair, loose clothing or jewellery.
- Wear all required personal protective equipment.
- Not to wear gloves within 24 inches of moving blade.
- Maintain a clean working area and machine.
- Always use Lock-out when performing maintenance or repairs.

---

## FOREWORD

### Put Safety First!

This Safety Section contains important information to help you work safely with your machine and describes the dangers inherent to bandsaws. Some of these dangers are obvious, while others are less evident.

It really is important to PUT SAFETY FIRST. Make it a habit to consider the hazards associated with any action BEFORE you do it. If you feel any uncertainty, stop and find a safer approach to the action. If you're still uncertain, ask for advice from your supervisor.

The SAFETY FIRST approach is particularly necessary when you do something new, or different, and most people instinctively recognize this, although impatience may still cause them to take unnecessary risks.

Danger also lurks in the routine task that we have done over and over. Here, familiarity, boredom, or tiredness may lull us into unthinking, automatic repetition. Be alert for this, and when you feel it happening, stop and take stock of your situation. Review the safety hazards associated with what you are doing. That should get your brain working again.

Certainly production is important, but if you think you're too busy to put safety first, think how much production you'll lose if you get hurt.

You owe it to yourself, your family, and your co-workers to PUT SAFETY FIRST.

### Mandatory Information

All persons operating this machine must have read and understood all of the following sections of this Manual:

Section 0 SAFETY

Section 2 OPERATING INSTRUCTIONS

Personnel involved in installation and maintenance of the machine must have read and understood all sections of the manual

Persons who have difficulty reading, or for whom English is not their first language, must receive particularly thorough instruction.

### Signatures

Everyone involved in operation of this machine must sign below to confirm that:

I have read and understood all parts of Section 0 – Safety, and Section 2 – Operating Instructions.

Name	Date	Signature

Everyone involved in the installation, inspection, maintenance, and repair of this machine must sign below to confirm that:

I have read and understood all parts of this Operation and Maintenance Manual.

Name	Date	Signature

---

## BASIC RULES

### Intended Use

Our machines are designed and built in line with the state of the art, and specifically in accordance with American National Standards Institute Standard B11.10 *Safety Requirements for Metal Sawing Machines*. However, all machines may endanger the safety of their users and/or third parties, and be damaged, or damage other property, if they are operated incorrectly, used beyond their specified capacity, or for purposes other than those specified in this Manual.

### Exclusion of Misuse

Misuse includes, for example:

Sawing hazardous materials such as magnesium or lead.

Sawing work pieces which exceed the maximum workload appearing in the Specifications.

Operating the machine without all original safety equipment and guards.

### Liability

The machine may only be operated:

When it is in good working order, and

When the operator has read and understood the Safety and Operating Instructions Sections of the Manual, and

When all operations and procedures are in compliance with this Manual.

Hyd-Mech Group cannot accept any liability for personal injury or property damage due to operator errors or non-compliance with the Safety and Operating Instructions contained in this Manual.

## RESPONSIBILITIES OF THE OWNER

### Organization of work

This Operation and Maintenance Manual must always be kept near the machine so that it is accessible to all concerned.

The general, statutory and other legal regulations on accident prevention and environmental protection must also be observed, in addition to the Manual material. The operators and maintenance personnel must be instructed accordingly. This obligation also includes the handling of dangerous substances and the provision and use of personal protective equipment.

### Choice and qualification of personnel

Ensure that work on the machine is only carried out by reliable persons who have been appropriately trained for such work.

### Training

Everyone working on or with the machine must be duly trained with regard to the correct use of the machine, the correct use of safety equipment, the foreseeable dangers that may arise during operation of the machine, and the safety precautions to be taken.

In addition, the personnel must be instructed to check all safety devices at regular intervals.

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### Define responsibilities

Clearly define exactly who is responsible for operating, setting-up, servicing and repairing the machine.

Define the responsibilities of the machine operator and authorize him to refuse any instructions by third parties if they run contrary to the machine's safety.

Persons being trained on the machine may only work on or with the machine under the constant supervision of an experienced operator. Observe the minimum age limits required by law.

### Condition of Machine and Workplace

Ensure that the machine and its safety equipment are kept in good working order.

Ensure that the work area is well lit, and protected from the elements, such as rain, snow, abrasive dust, and extremes of temperature.

Ensure that the machine is installed with sufficient clearance around it for the safe loading and unloading of work pieces.

## RESPONSIBILITIES OF THE OPERATOR AND MAINTENANCE PERSONNEL

### Safety equipment

All machines are delivered with safety equipment that must not be removed or bypassed during operation.

The correct functioning of safety equipment on the machine must be checked:

- At the start of every shift.
- After maintenance and repair work
- When starting for the first time, and after prolonged shutdowns

### Emergency Stop Button (E-Stops)

Always be aware of the location of the Emergency Stop Button(s). Do not allow material or objects to block your access to an Emergency Stop.

### Damage

If any changes capable of impairing safety are observed in the machine or its operation, such as damage, malfunctions, or irregularities, then appropriate steps must be taken immediately, the machine switched off, locked-out, and the fault reported to the responsible person.

### Safe operation

The machine may only be operated when in good working order and when all protective equipment is in place and operational.

Keep a safe distance from all moving parts – especially the blade and vises.

Stock should not be loaded onto the saw if the blade is running.

Long and heavy stock should always be properly supported in front of and behind the saw.

### Faults

The machine must be switched off and locked-out before starting to remedy any faults.

### Safety hazard labels

Safety hazard labels and other instructional labels on the machine must be observed. They must be clearly visible and legible at all times. If they become damaged they must be replaced.



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## Clothing, jewellery, protective equipment

Personnel operating or working on the machine must not wear un-restrained long hair, loose-fitting clothes and dangling jewellery.

When operating or working on the machine, always wear suitable, officially tested personal protective equipment such as safety glasses and safety boots and any other equipment required by plant regulations.

## Gloves

Experience has shown that careless use of gloves around machinery is a major factor in serious hand injuries.

Gloves should not be worn when operating or adjusting the machine, except:

Wear protective gloves when handling bandsaw blades at blade changes.

Gloves may be worn when handling work pieces, only if the machine is in Manual Mode and the bandsaw blade is not running.

If the machine is running in Auto Mode, and only if the cut parts are greater than 24 inches long, it may be possible to safely wear gloves for handling the cut parts, but the wearer of the gloves must never put his hands near the blade for any reason. If the cut parts are less than 24 inches long, it is required to arrange their automatic flow into a parts bucket or other suitable arrangement to avoid the necessity to pick them off the machine by hand.

## Hearing protection

Ear protection must be worn whenever necessary.

The level and duration of noise emission requiring hearing protection depends upon the national regulations in the country in which the machine is being used.

The actual level of noise emission by band sawing machines depends upon work piece size, shape and material, blade type, blade speed and feed rate.

The only practical course of action is to measure the actual noise emission levels for the type of work that is typically done. With reference to national standards, decide upon the necessary hearing protection required.

In the absence of such measurements, it is advisable for anyone exposed to long periods of moderate to loud noise to wear hearing protection. It is important to understand that hearing loss is gradual and easily goes un-noticed until it is serious and irreversible.

## Workplace

A clear working area without any obstructions is essential for safe operation of the machine. The floor must be level and clean, without any build-up of chips, off-cuts, coolant, or hydraulic oil.

The workplace must be well lit, and protected from the elements, such as rain, snow, abrasive dust, and extremes of temperature

Nothing may ever be placed on, or leaned against the machine, with the obvious exception of the work piece on the table and conveyor of the machine.

---

## Master Disconnect

Lock-out the machine before undertaking any maintenance or repair work on it. 'Lock-out' refers switching off the master electrical disconnect switch, and locking it out so that it cannot be switched on again without authorization.

On Hyd-Mech machines the Master Disconnect Switch will be of one of four types:

- Rotary switch mounted in electrical control cabinet door and inter-locked with door.
- Rotary switch mounted on the side of the operator interface console.
- Lever switch mounted in separate box mounted on the machine.
- Supply disconnect switch supplied by user at installation and usually wall-mounted within sight of the machine, depending upon local regulations.

In almost all jurisdictions, it is required that owners of industrial equipment establish and post lock-out procedures. Know and use the lock-out procedures of your company or organization.

## Residual Risks

The machine is still not completely de-energized if an electrical cabinet door type switch is locked-out.

The line side of the disconnect switch itself remains energized.

Variable speed blade drives store dangerous voltage in their capacitors, and this requires time to dissipate. After locking out power, wait 3 minutes before beginning to work on machine electrical circuits.

If compressed air is supplied to the machine to power a mist lubrication system or other devices, it should be disconnected, and any stored air pressure released before working on the machine.

The weight of individual machine components represents stored potential energy that can be released if they fall when disconnected. Secure these components with adequate hoisting gear before disassembly.

## SAFETY HAZARD LABELS

The safety hazard labels attached to your machine represent important safety information to help you avoid personal injury or death.

All supervisors, operators, and maintenance personnel must locate and understand the safety information associated with each hazard label prior to operating or servicing the machine.

The safety hazard labels shown below are located at various positions on the machine to indicate possible safety hazards. The location and re-order part number of all the safety labels associated with this particular model of bandsaw are indicated at the end of this section of the manual. It is important to replace any safety hazard label that becomes damaged or illegible.



### HAZARDOUS VOLTAGE INSIDE

Contact with high voltage may cause death or serious injury. Never perform maintenance on, or near, electrical components until the machine's electrical power source has been disconnected. Lock-out power in accordance with your company's lock-out procedures before any such maintenance. The "Stop" or "Emergency Stop" push button does not disconnect the machine's power supply. Hazardous voltage is still present in the machine's electrical circuits.

The machine's Electrical Disconnect Switch does disconnect voltage from the machine's circuits; however hazardous voltage is still present inside the main electrical cabinet, on the infeed (line) side of the main fuses. Therefore keep hands and tools away from the infeed side of the control panel main fuses. If these fuses need to be replaced, use a fuse puller.

Allow three minutes after locking-out power before opening any electrical enclosures. Your machine may be equipped with a variable frequency drive that stores high voltage within its capacitors. Three minutes will allow sufficient time for this voltage to safely discharge.

Never spray coolant directly at electrical components or cabinets.



### MOVING BANDSAW BLADE WILL CUT

Do NOT operate with guard removed.  
Do NOT place hands or fingers near moving bandsaw blade.  
For blade changing, always follow the proper Blade Changing Procedure, as given in Section 3 of this manual.

### PINCH POINT

Machine parts may move without warning, either because the machine is operating automatically, or because another person initiates the motion. Keep hands clear of all labelled pinch points, whenever the machine is running. Machine vises can exert great force and cause severe injury. Keep hands clear of vises and work piece when vises are opened or closed. Be aware that vise closing or opening may result in potentially dangerous work piece movement. Be aware also that the opening motion of a vise may create potential pinch points.



### MOVING PARTS CAN CRUSH AND CUT

Keep hands clear of chip auger. Lock-out power in accordance with your company's lock-out procedures before attempting to clear a jam in the chip auger.  
Be aware that the chip auger may start unexpectedly, either because the machine is operating automatically, or because another person initiates the motion.  
If the chip auger is stalled because of a jam, it may start without warning when the jam is cleared, unless the machine power is locked out.



## PART NUMBERS OF SAFETY HAZARD LABELS ON V-25

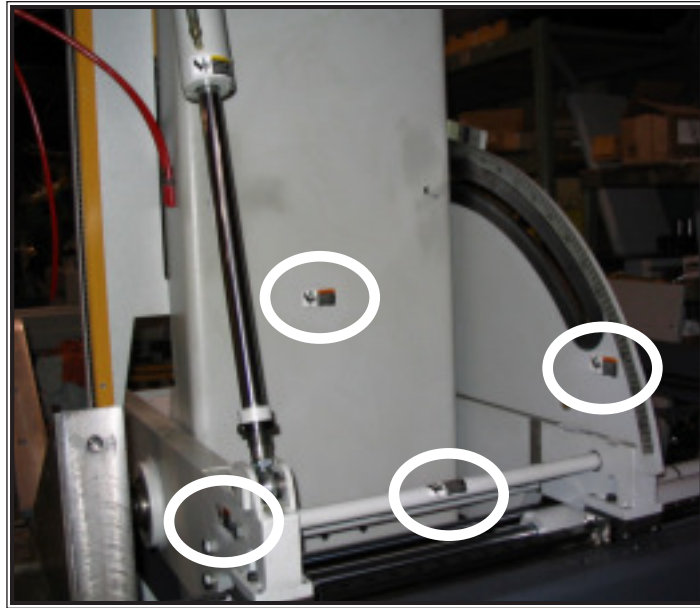


Item #: 391938

Item #: 391340



Caution  
Pinch Point  
Item NO. 391633



Warning  
Pinch Point  
Item NO. 392801



Danger  
Moving bandsaw blade will cut  
Item NO. 391937





Item #: 391632

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# SECTION 1 - INSTALLATION



## SAFETY CONSIDERATIONS

All safety precautions must be observed during installation, operation, or repair work on the V-25 bandsaw machine.

Inspect the machine thoroughly before power hook-up. Pay special attention to the electrical and hydraulic systems to ensure no damage was caused in shipping.

Power hook-up must be performed by qualified personnel.

If not performing properly, the machine should be stopped immediately and set-up, or repaired by a qualified person.

Stock must not be loaded while the blade is running and the V-25 should not be operated unless all guards, covers, and doors are in place and closed.

Long and heavy stock should be supported where it extends off the saw table.

The operator should keep a safe distance from all moving parts especially the blade and operating vises.

Long hair, loose clothing, or gloves, should not be worn while operating the V-25.

The area around the machine should be kept clean and tidy.

The V-25 machine should be used according to its specifications.

The operator must wear eye protection.

**No modifications to the machine are allowed without Hyd-Mech's prior approval. Any approved modifications shall be performed by trained personnel.**

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## V-25 LIFTING AND SHIPPING

The shipping weight of the V-25 is 9500 lb. The front-to-rear location of the centre of gravity is midway between the chain holes on the lifting angles. Side-to-side the centre of gravity is about 7" to the right of the centre line of the saw table.

### CRANE

Before lifting with a crane, the head must be retracted, swung to 57° right, and locked in position using the supplied head restraint plate and four ½ NC bolts. The upper guide arm must be fully lowered.

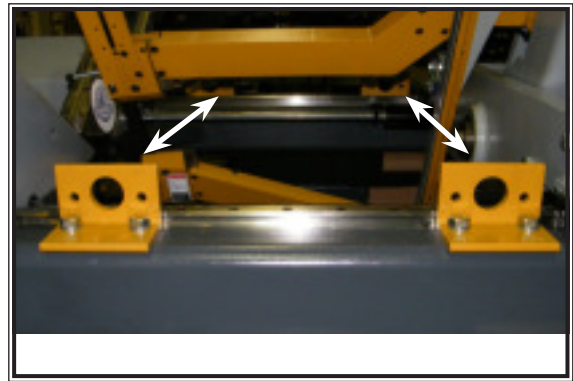
Four chains should be connected to the four holes in the lifting angles which bolt to the table rails as shown in the illustrations. Chain lengths must be carefully adjusted so that the crane is above the centre of gravity, and the chains, when tightened, do not contact any part of the head or guide arm.

Before setting the saw in location, the 3x4 tubes bolted under the leveling bolts must be removed.

**NOTE:** The head restraint plate and two lifting angles must be removed before machine start up.



Head Restraint Plate



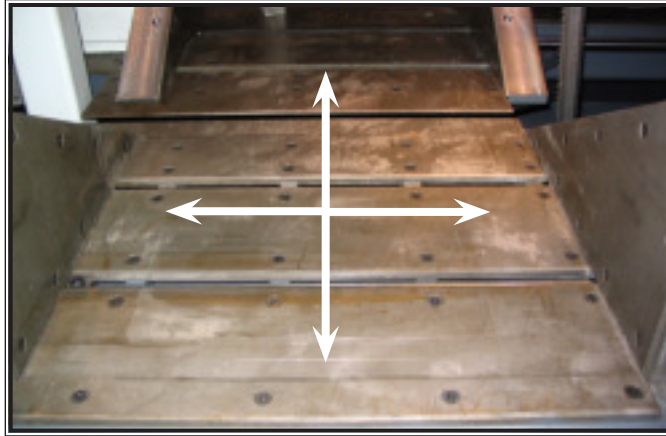
Lifting Angles x 4



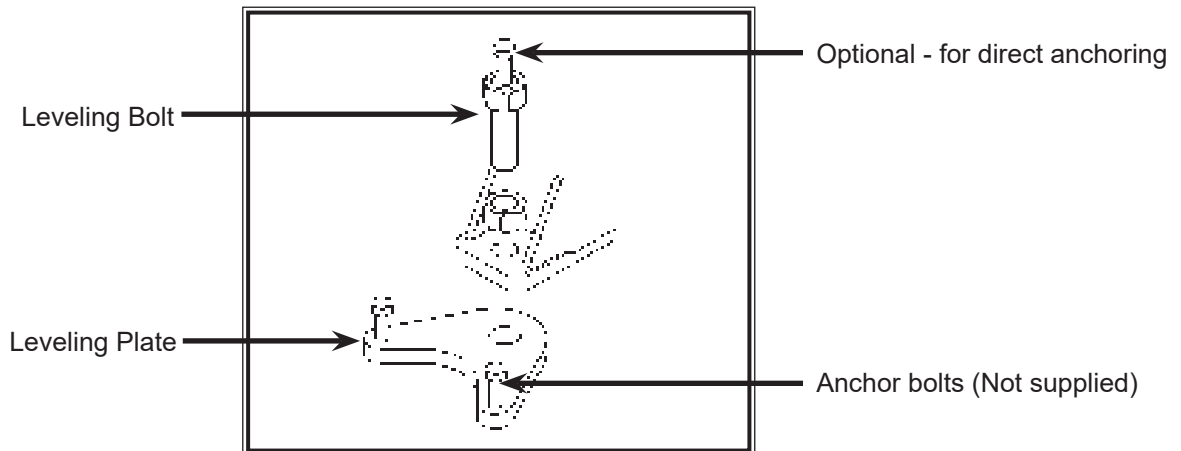
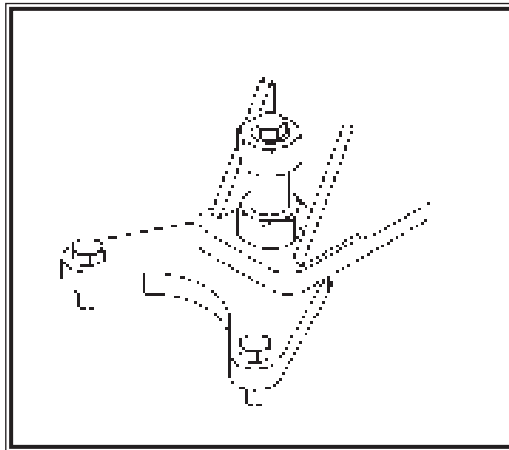
## LEVELING THE V-25

It is important that the V-25 sit solidly on all four leveling bolts, and that the saw table be level. The leveling bolts are drilled for mounting the 3 x 4 shipping tubes, and these holes can be used to lag the saw directly to the shop floor. However, the V-25 is stable in all head positions, and it is not necessary to bolt the saw directly to the floor. The leveling plates provided have a dimple for the leveling bolt to sit in, and two holes for lagging the plate to the floor. As long as at least two plates are lagged with two bolts each, the saw will be positively located. The advantage of this approach is that an accidental collision with the saw may pop the saw out of the dimples, but damage to the saw and the lagging is minimized. Also the two leveling plates lagged, and their orientation may be chosen to facilitate the lagging. Leveling is checked by applying an accurate bubble level to the saw table, checking level both front-to-rear and side-to-side. Lock the level using the jam nuts on the leveling bolts.

Conveyors working with the saw must be aligned to the saw table. If the saw is being aligned to existing conveyors, be aware that this may require adjustment of the gravity referenced digital angle display.



At least two of the leveling feet should be anchored to the floor.



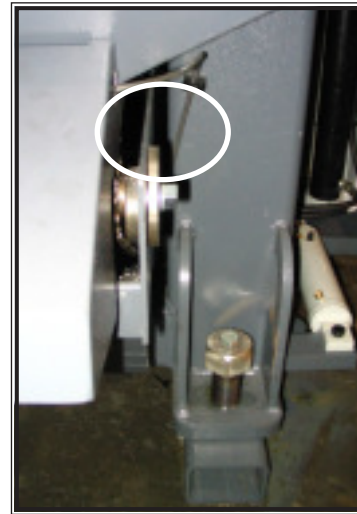
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## CENTERING THE COOLANT TRAY

The coolant tray should be centered before it is filled with coolant. The pictures below show the area that the tray should be centered between. There should be approximately 0.75" between the edge of the coolant tray and the table leg at the front and rear.



Rear



Front

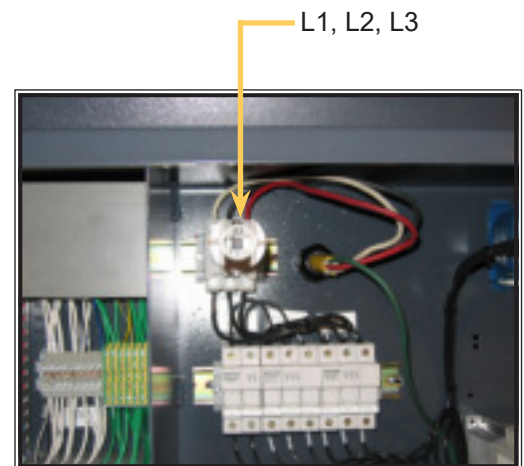
## WIRING CONNECTIONS

After the machine is levelled and anchored the necessary power hook-up needs to be performed. In order to provide safe operation as well as to prevent potential damage to the machine, only qualified personnel should make the connections.

### BEFORE START-UP THE FOLLOWING TWO POINTS SHOULD BE CHECKED

1. Signs of damage that may have occurred during shipping to the electrical cables and the hydraulic hoses.
2. The hydraulic oil level is between the upper and lower levels on the gauge.

As supplied, the machine is set to run on three phase voltage as indicated on the serial plate and voltage label. During the initial hook-up, it is very important to check that the phase order is correct. This is indicated by the hydraulic system pressure gauge registering a pressure rise and the blade running in a counter clockwise direction. If the hydraulics do not register an immediate pressure rise, **SHUT THE HYDRAULICS OFF** and change the phase order.



Power connection terminal

**ATTENTION: Running the hydraulics “backwards” can damage the hydraulic pump!**

Power connection to the machine is made to the L1, L2, L3 and ground terminals located inside the control panel above the fuse holders as shown in the photo.

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## BLADE TENSION CHECK

When the machine is first started, the blade position must be checked. Check that the blade teeth do not project more than 1/4" beyond the front face of both the drive and idler wheel. If it is consult "Blade Tracking" in Section 3. If it has stayed in it's correct position, then check that the blade tension switch is in the "+" position and close the door.



## EARTH GROUNDING PROCEDURE

1. The customer is to provide and install a ground rod approx. .60 (15mm) diameter, copper clad steel, to be driven no less than 8' (2.5m) into the ground, no more than 10' (3m) away from control enclosure.
2. The ground rod is to be connected to customer's in plant ground system. This connection shall be made directly at the ground rod. (If applicable).
3. It is desirable that the overall resistance to ground measured at the ground rod does not exceed 3 ohms. Customer is advised to consult local power company for further information on grounding.
4. The ground rod is to be connected to the ground terminal in the control enclosure using insulated, stranded 8 gauge copper wire.
5. An additional point to check is to ensure continuity of all ground within the control enclosure. Start with the main power entrance ground terminal where the internal ground conductors should originate and then connect to, the DIN terminal strip, control transformer, and the lid of control enclosure. Also, the PLC and Interface units should have their own ground conductors connected to one of the main ground terminals.
6. A properly functioning ground system will:
  - provide safety for personnel.
  - ensure correct operation of electrical/electronic apparatus.
  - prevent damage to electrical/electronic apparatus.
  - help dissipate lightning strikes.
  - divert stray radio frequency (RF) energy from electronic/control equipment.

## HYDRAULIC OIL & CUTTING FLUID

The V-25 bandsaw is supplied with Texaco Rando HD46 oil. If it is necessary to change the oil to a different brand it is good practice to empty the hydraulic tank using a pump. Fill the hydraulic tank approximately 1/3 full with the new brand of oil and operate the saw through several cycles with maximum cylinder extension. Drain the hydraulic tank again and then refill to capacity with the new brand.

As the V-25 operates with an open reservoir to contain the cutting fluid, no cutting fluid can be shipped with the saw. There are two main types of cutting fluids available, oil based and synthetic. For oil based fluids the dilution ratio is 1:10. One part concentrate to ten parts water. For synthetic cutting fluids dilution, if required, should be done to the specifications as recommended by the manufacturer.



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## SECTION 2 - OPERATING INSTRUCTIONS

### START-UP

The V-25 control console has been designed to simplify the operation of the saw so that the operator has the ability to stop any function at any time, and to be able to control all the functions of the saw remotely.

We can not over stress the importance of familiarizing yourself with the controls of the V-25 prior to starting the machine for the first time.

**NOTE: WHEN STARTING THE V-25 FOR THE FIRST TIME MAKE SURE THAT THE PRESSURE IS  $900 \pm 25$  PSI, AND THAT THE BLADE IS RUNNING IN A COUNTERCLOCKWISE DIRECTION AS VIEWED FROM THE DOOR SIDE OF THE HEAD.**

### CONTROL CONSOLE

The operator console has the ability to articulate to suit the preference of the operator. It is arrayed with a complete set of controls to operate both the hydraulic and electrical functions of the saw. All of the selector switches must be placed in their neutral centre position for the hydraulics to start. This is a safety feature which is designed to prevent any un-wanted hydraulic actuation without the conscious intervention from the operator.



V-25 Control Console

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## SAW CUTTING CONTROLS

This section has been prepared to give the operator the ability to set up the saw for most cutting situations. The saw is equipped with variable blade speed control and hydraulic feed control, as well as an extensive chart to guide the operator to the correct setting of these controls.

### HYDRAULIC FEED CONTROL

The hydraulic feed controls are located on top of the control console and consist of the Feed Force Setting knob, the Feed Rate knob and the Head Fast Approach lever. These controls allow the operator to independently control both the Feed Force and the Feed Rate.

#### Fast Approach Lever

Depress for fast head approach.

#### Feed Rate Knob

Used to control the speed of head advancement



#### Feed Force Knob

Used to set Feed Force Limit (counterclockwise rotation to increase and clockwise rotation to decrease).

### MANUAL OPERATION CONTROLS

The electrical switches and buttons on the control panel allow for full manual operation of the V-25. The operation of each is detailed on the following pages.



Manual operation controls.

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## MANUAL OPERATION CONTROLS

### TOP ROW



#### MIST:

This OPTIONAL switch has three positions - AUTO, OFF and ON.

**OFF:** No mist coolant.

**AUTO:** The mist coolant sprays only when the Head is advancing into the cut.

**ON:** Mist coolant sprays any time the machine is under power.



#### LEFT VISE:

This switch operates the vise on the left side of the blade. If the switch is placed in the neutral (centre) position, the vise jaw will hold it's position. For the blade to start at least one of the vises has to be in the closed position, and the other must be in the closed or open position (not neutral).



#### HEAD CONTROL:

**RETRACT:** The head will retract until it reaches the HEAD BACK LIMIT SETTING.

**HOLD:** The head will remain stationary.

**ADVANCE:** The head will advance until it reaches the HEAD ADVANCE LIMIT SETTING determined by the vise opening. Advance is controlled by the FEED RATE and FEED FORCE controls.



#### BLADE START:

This button is only active when the hydraulic system is running. Momentarily depressing this button will start the blade motor. This button is illuminated for operator safety while the blade is running. This button can not start the blade running unless both vises are closed, or one closed and the other open.



#### HYDRAULIC START:

Starts hydraulic pump motor and energizes the BLADE START BUTTON. This button is illuminated when ON to give the operator an indication that the hydraulic system is running. The head selector switch as well as the both vise selector switches have to be in their neutral centre position for hydraulics to start.



#### CHIP CONVEYOR:

This OPTIONAL switch controls the direction of the chip conveyor to dump the chips to the left or right side of the machine.





**COOLANT:**

This switch has three positions - AUTO, OFF and ON.

**OFF:** No coolant flow.

**AUTO:** The coolant flows only when the Head is advancing into the cut.

**ON:** Coolant flows any time the machine is under power, permitting wash down with the hose.



**RIGHT VISE:**

This switch operates the vise on the right side of blade. If the switch is placed in the neutral (centre) position, the vise jaw will hold it's position. For the blade to start at least one of the vises has to be in the closed position, and the other must be in the closed or open position (not neutral).



**BLADE SPEED:**

Blade speed can be adjusted infinitely between 70 to 350 SFM. Clockwise rotation of the knob increases blade speed while counter clockwise rotation decreases blade speed.



**BLADE STOP:**

Momentarily pressing this button will stop the blade motor.



**EMERGENCY STOP:**

This button will stop both the hydraulic and blade motors. The head motion will cease. The vises will remain as they are, but if closed, they will gradually lose gripping force. For this reason all long stock should be supported so that it will not fall.



---

## BOTTOM ROW



### HEAD SWING LEFT:

Depressing this button fully will cause the head to swing quickly to the left until the button is released or the head reaches the swing limit. Depressing this button partially will cause the head to swing slowly to the left allowing for fine adjustment. The head will only swing when the upper guide arm is fully up and the head is fully retracted.



### HEAD SWING RIGHT:

Depressing this button fully will cause the head to swing quickly to the right until the button is released or the head reaches the swing limit. Depressing this button partially will cause the head to swing slowly to the right allowing for fine adjustment. The head will only swing when the upper guide arm is fully up and the head is fully retracted.



### GUIDE ARM:

This switch controls the vertical position of the upper guide arm. Guide arm position is very important when cutting as well as affecting the blade life. Placing the upper guide arm as close to the work as possible improves cut accuracy, blade life, and safety (because less blade is left exposed above the work piece). The guide arm must be fully raised before the head can be swung.



### HEAD RETRACT LIMIT OVERRIDE:

This button overrides the head retract limit switch to allow the head to retract further in order to allow easier blade removal. Depressing this button will also permit the head to be advanced without starting the blade.



### BLADE CHANGE KEYLOCK

This lock is provided for the safety of the operator during the blade changing procedure. When the lock is in the "ON" position, the hydraulics may be started with the side covers and the drive box door open, and the only functions that are active are HEAD, GUIDE ARM and BLADE TENSION controls. When the blade has been changed, the lock must be switched to the "OFF" position in order to operate the machine.

## ADDITIONAL MANUAL CONTROLS



### BLADE TENSION:

The Blade Tension switch is located on the side of the electrical enclosure, and its used when adjusting or changing the blade which is detailed in Section 3 of this manual. During cutting the Blade Tension switch must be in the "+ RUN" position.

---

## BLADE BASICS

Technology is rapidly changing all aspects of production machining. Metal cutoff is no exception. The advances made in the bandsaw blade industry have definitely brought down the cost per cut, despite the three fold higher price of high technology blades. Variable pitch, bi-metal blades (like the 4/6 or 3/4 bi-metal blade supplied with the saw) last much longer, cut faster, and more accurately than conventional carbon steel blades. In order to take advantage of the superiority of bi-metal blades, it is critical to properly “break-in” a new blade. This is accomplished by taking two or three cuts through solid four or five inch diameter mild steel at an *extremely slow feed rate*. (It is also advisable to utilize a slow blade speed.)

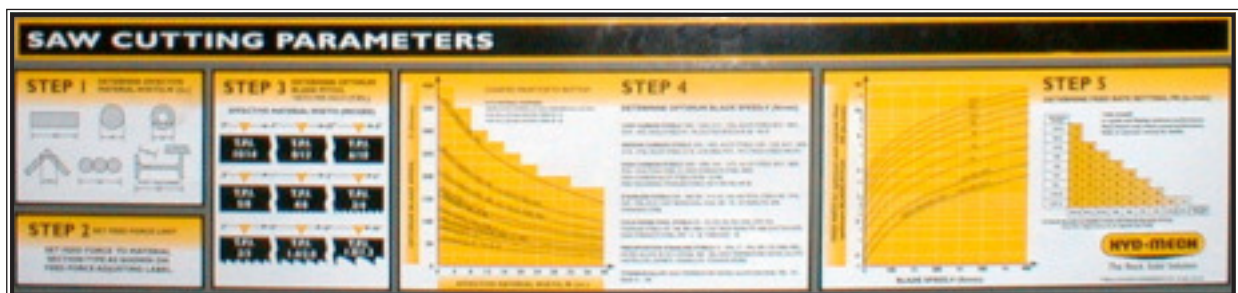
These two or three slow cuts sufficiently lap (polish) the new blade so that it does not snag the material being cut. Proper break-in will alleviate blade vibration, improve surface finish, accuracy, and blade life.

After “break-in”, the following six points must be closely monitored to ensure long blade life:

1. Proper blade tension should be maintained. (see Section 3, Blade Changing)
2. Generous coolant application is essential with most materials. A high quality and well mixed coolant will extend blade life, and also increase cutting rate and quality. On those materials where coolant is undesirable for cutting, a slight coolant flow or periodic oiling of the blade is necessary to prevent the blade from being scored by the carbide guides.
3. The stock being cut must be securely clamped in the vises.
4. The proper feed force should be chosen. (Saw Cutting Parameters: Step2)
5. The proper blade speed must be selected. (Saw Cutting parameters: Step 4)
6. The proper feed rate must be applied. (Saw Cutting Parameters: Step 5)

## CUTTING PARAMETERS CHART

A full size CUTTING PARAMETERS CHART is mounted on the front of the saw. The chart contains five steps for the operator to follow in order to achieve optimum performance of the saw. These steps are detailed on the following pages.



Saw Cutting Parameters Chart

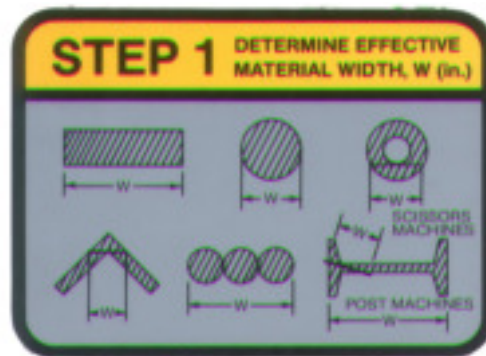
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## CHART EXAMPLE #1

We will use the parameters chart to set up the saw for cutting 8" (200mm) Diameter #1045 Carbon Steel.

### STEP 1: DETERMINE EFFECTIVE MATERIAL WIDTH - W (inches) or (mm)

Effective material width, W (in.) for most common shapes of materials, is the widest solid part of the material to be in contact with blade during cutting. For simple shapes, as illustrated on the chart, this can be directly measured. For bundles of tubes and structurals, measuring the effective width is difficult. Effective width is 60% to 75% of the actual material width.



#### NOTES:

1. Effective material width, as determined here in STEP 1, can be thought of as the average width of material "seen" by each tooth, and it is used in STEPS 3 and 4.  
In Example #1, for an 8" (200 mm) diameter solid, Effective Material Width is 8" (200mm).

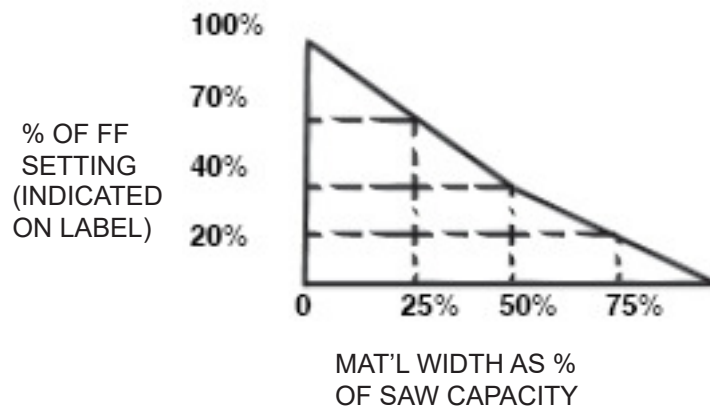
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## STEP 2: SET FEED FORCE LIMIT

The Feed Force Limit is the maximum amount of force with which the head is allowed to push the blade into the work-piece.

### CUTTING SOLIDS

For cutting solids, the wider the section, the less FF should be set, to avoid blade overloading. See the graph below.



**EXAMPLE:** When cutting a solid which is 1/2 of machine capacity using the graph, locate 50% on the horizontal line and travel upwards to the plotted line and then travel directly across to the vertical FF Setting line. The point that you have arrived at shows a setting of 40% for a piece 50% of capacity.

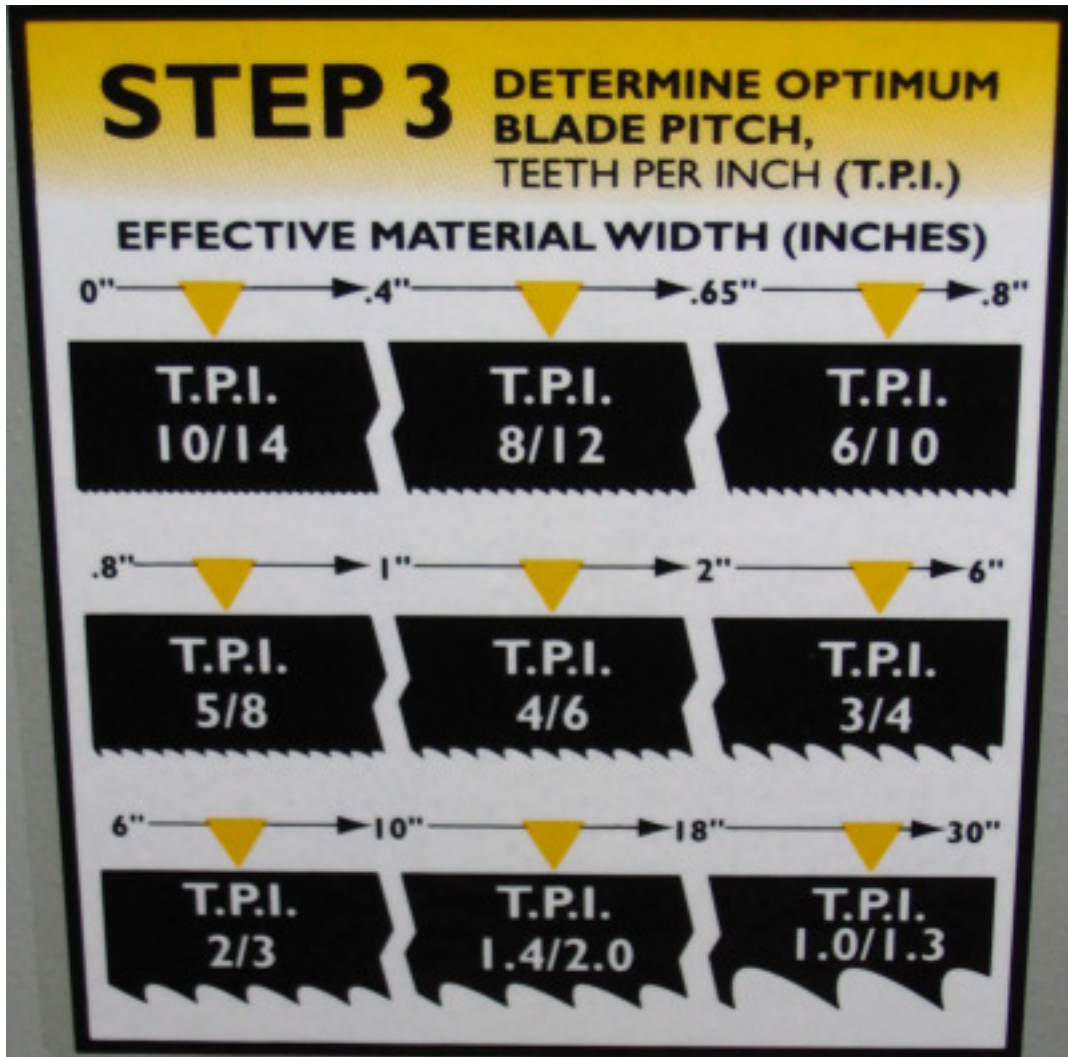
**CUTTING STRUCTURALS:** A reduced Feed Force Setting is used when cutting structurals.

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### STEP 3: DETERMINE OPTIMUM BLADE PITCH - TEETH PER INCH (T.P.I.)

Selecting a blade with proper tooth pitch is important in order to achieve optimal cutting rates and good blade life.

For cutting narrow or thin wall structural materials a fine blade with many teeth per inch (T.P.I.) is recommended. For wide materials a blade with a coarse pitch should be used. The sketch can be referenced for the blade pitch changes for differing effective material widths.



Optimum Blade Pitch (T.P.I.) for Material Width (Inches)

It is impractical to change the blade to the proper pitch every time a different width of material is cut and it is not necessary, but remember that the optimum blade will cut most efficiently. Too fine a blade must be fed slower on wide material because the small gullets between the teeth will get packed with chips before they get across and out of the cut. Too coarse a blade must be fed slower because it has fewer teeth cutting and there is a limit to the depth of a cut taken by each tooth. Allowance for the use of a non-optimum blade is made in STEP 5.

Example #1: Effective material width of 8" (200 mm):

Optimum blade has 2/3 teeth per inch.



The following table gives examples of the optimum blade speeds for different materials.

#	MATERIALS	OPTIMUM	BLADE SPEED
		(ft/min)	(m/min)
1	5" (125mm) Diameter Solid Carbon Steel	225	70
2	12" (300mm) I-Beam	290	90
3	4" x 4" (100mm x 100mm) Rect. Tube 1/4" (6mm) Wall	350	110
4	4" (100mm) 400 Stainless Steel	140	45
5	2" x 2" (50mm x 50mm) Rect. Tube 1/4" (6mm) Wall		
	Bundle 5" x 5" pcs. 10" x 10" (500mm x 500mm)	325	100
6	3" x 3" (75mm x 75mm) Inconel	60	20

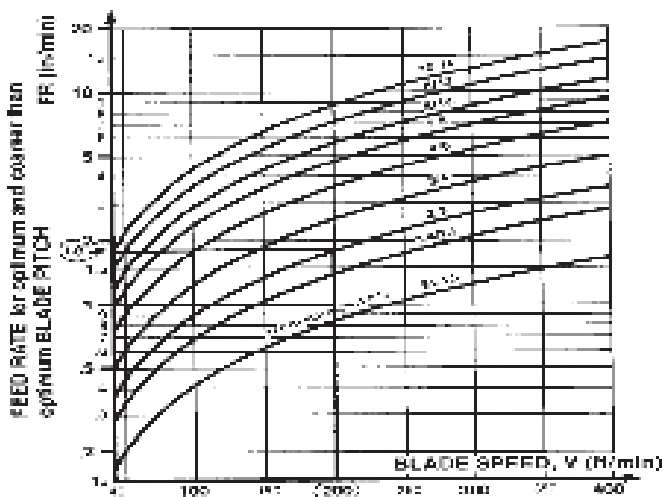
Materials and Blade Speed

**STEP 5: DETERMINE FEED RATE SETTING, FR (in/min) (mm/min).**



FEED RATE is the speed at which the blade descends through the work-piece.

The FEED RATE Knob controls FEED RATE of the blade descent. The FEED RATE should be adjusted only in one direction (from "O" to required value). If you go too far, go back to "O" and come back up. To set FEED RATE for particular cutting situations use the graph below, which represents the relationship between FEED RATE, blade speed and blade pitch.



Feed Rate Calculation

Example #1: It is known from Step 3 that optimum blade pitch is 2/3, and from Step 4 that blade speed is 200 ft/min (60mm/min). From the Graph on the left, the FEED RATE is determined in the following way:

1. On the horizontal axis (blade speed axis), find 200 ft/min (60mm/min).
2. Find the point where a vertical line from 200 ft/min (60mm/min) would intersect the 2/3 blade pitch curve
3. From this intersection point run horizontally left to the vertical (FEED RATE) axis, to arrive at 1.8 in/min (45mm/min) FEED RATE. Thus 1.8 in/min (45mm/min) is the FEED RATE for cutting 8" (200mm) diameter 1045 Carbon Steel when the optimum 2/3 pitch blade is used.



## FEED RATE, continued

If the saw is fitted with a blade coarser than optimum (e.g.: 1.4/2.5 TPI) we can still use the graph, but we go to the 1.4/2.5 curve. As a result we find that the FEED RATE is decreased to 1.3 in/min (133mm/min) for this blade. If however, the machine is fitted with a finer than optimum blade (e.g. 3/4 TPI) we use the graph for the optimum blade as before, and then use a multiplier given by the table below.

OPTIMUM PITCH										
10/14	1.0									
8/12	.83									
6/10	.67	.80								
5/8	.54	.65	.81							
4/6	.42	.50	.63	.77						
3/4	.29	.35	.44	.54	.70					
2/3	.21	.25	.31	.38	.50	.71				
1.4/2.5	.17	.20	.25	.31	.40	.57	.80			
.85/1.5	.10	.12	.15	.18	.24	.34	.48	.60	1.0	
	10/14	8/12	6/10	5/8	4/6	3/4	2/3	1.4/2.5	.85/1.5	ACTUAL PITCH
IF YOUR BLADE IS FINER THAN OPTIMUM BLADE PITCH MULTIPLY FEED RATE, FR, BY ABOVE FACTORS										

Optimum Vs Actual Blade Pitch

## ADDITIONAL CUTTING SETUP EXAMPLES

### EXAMPLE # 2

Material:

Round Steel Tube SAE 4320 - Hardened to 35 RC (325 Bhn )

Dimensions - 6" O.D. x 4" I.D. (150mm O.D. x 100mm I.D.)

- Step 1** Effective Material Width: 4 1/2" (.75 X 6) 114mm (19 x 6)
- Step 2** Feed Force limit setting for 6" Diameter material (Refer to Feed Force Limit, Setting in Step 2)
- Step 3** Optimum blade pitch (TPI): 3/4 T. P. I.  
Actual blade pitch on the saw: 4/6 T. P. I.
- Step 4** Optimum blade speed for 4 1/2" effective 225 ft/min (70m/min) material width  
Blade speed reduced by hardness factor: 225 ft/min X .60 = 135ft/min (70m/min x .60 = 42m/min)
- Step 5** Feed Rate for 3/4 TPI blade: 1.8 in/min (45mm/min)  
Feed Rate for 4/6 TPI blade: 1.8 in/min X .70 = 1.3in/min  
(reduced by finer than optimum blade pitch factor) (45mm/min x .70= 31.5mm/min)



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## ADDITIONAL CUTTING SETUP EXAMPLES, continued

### EXAMPLE # 3

#### Material:

Bundle low carbon steel 2" x 2" Tube with 1/4" wall, 12 piece bundle (50mm x 50mm with 6mm wall)

Dimensions: 6" x 8" (150mm x 200mm)

- Step 1** Effective Material Width: 5" ( .6 X 8" ) 120mm (.6 x 200)
- Step 2** Feed Force limit setting for 8" Diameter material. (Refer to Feed Force Limit, Setting in Step 2)
- Step 3** Optimum blade pitch (TPI): 3/4 T. P. I.
- Step 4** Optimum blade speed for 5" effective material width: 320 ft/min (100m/min)
- Step 5** Feed Rate for 3/4 TPI blade: 4.0 in/min (100mm/min)

## MECHANICAL CONTROLS

### HEAD FORWARD LIMIT SETTING

The Head Forward Limit is factory set and under normal operating conditions should not need to be reset. It functions by stopping head advance and shutting off the blade when it has advanced to meet the left hand movable vise jaw.

#### TO SET LIMIT:

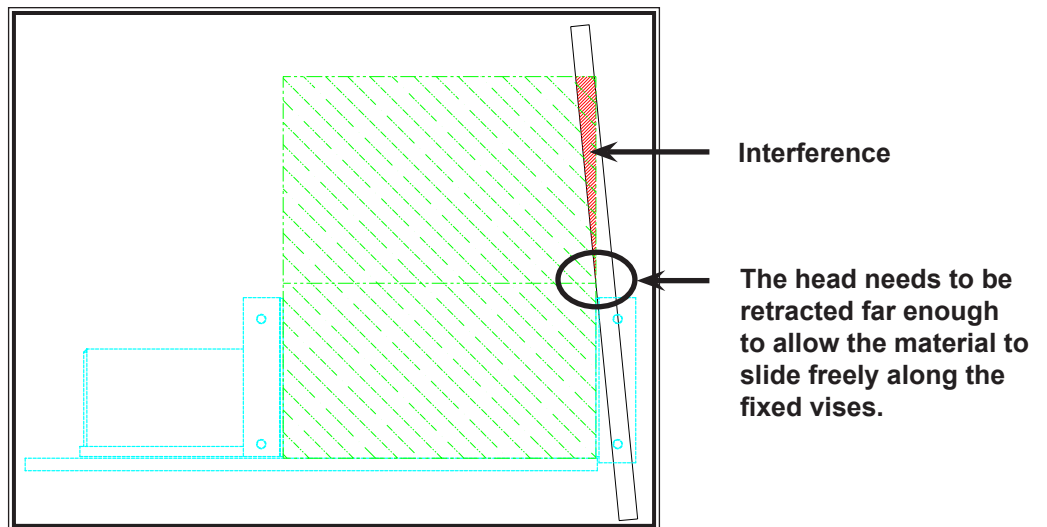
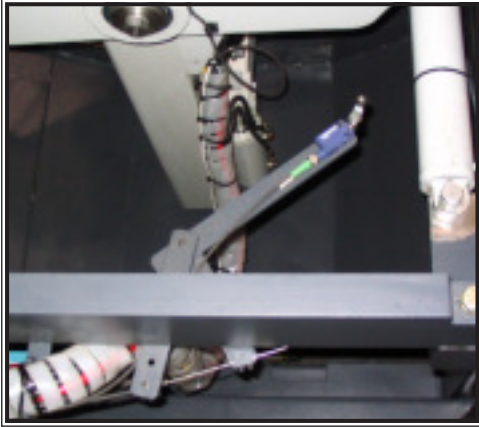
If adjustment of the head stopping position with respect to the vise jaw is necessary, the split shaft collar on the vise cylinder shaft may be loosened and the collar re-positioned as necessary.



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## HEAD BACK LIMIT SETTING

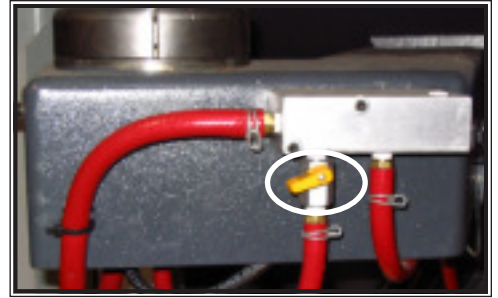
The machine has a 5.6° canted head which requires the head back limit setting to be adjusted according to the height of material to avoid interference between the blade and the work piece (The head needs to be retracted further for higher material). The head needs to be adjusted to allow the material to slide freely along the fixed vises. This is achieved by setting the Head Back Adjustment Pull Cable located on the side of the control console.



## COOLANT FLOW

A generous flow of coolant should be applied in order to increase production and blade life. The machine is provided with a control switch on the operator panel and an independently controlled coolant spout. This spout should always flood the blade with coolant. Slight adjustment may be required when changing the blade speed. A properly adjusted flow of coolant should cover the blade which in turn will carry it into the cutting area. The flow adjusting tap is shown on the Console mounting arm in the photo.

**NOTE:** When cutting materials that do not need coolant (cast iron) some coolant flow is required to provide blade lubrication in order to prevent blade scoring by the carbides.



## PRIMING THE COOLANT PUMP

The coolant pump needs to be primed after the initial installation of the machine. This is done by opening the priming valve (Located at the back side of the machine) and turning the coolant switch to the "ON" position on the control console. The valve can be closed after some coolant sprays out of the primer hose (Wait a couple of minutes).



## RESTRICTIONS - HEAD SWING LEFT

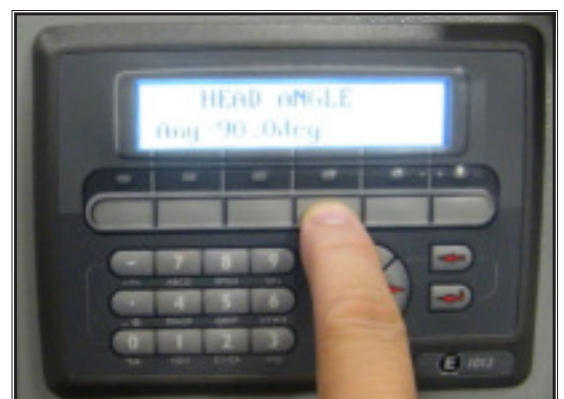
With the head swung to the left and below 38°, the upper guide arm can be positioned over its full range only for a work piece less than 18" wide. For work pieces wider than 18" and left mitre angles less than 38°, the guide arm position must be kept high enough to avoid interference between the rear of the guide arm and the left fixed vise jaw.

The following table may be used as a guide:

Left Mitre Angle	Minimum Distance. Upper Guide to Table Top. Measure with Head at 90°
Less Than 38°	9
Less Than 36°	17
Less Than 34°	21

## DIGITAL ANGLE DISPLAY

The digital angle display is a factory set unit mounted on the operator control console. Contact the HydMech service department if the unit needs to be calibrated.



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# SECTION 3 - MAINTENANCE & TROUBLE SHOOTING

## SAFETY DURING MAINTENANCE AND TROUBLESHOOTING

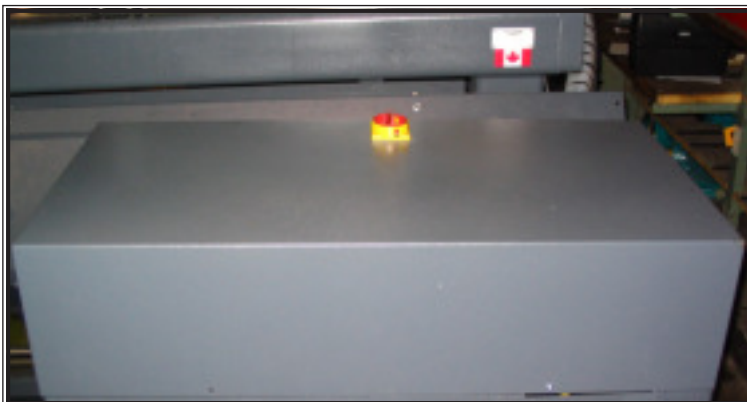
“Lock-Out”, or “Lock-out Tag-out” are terms that refer to procedures taken to prevent the unexpected start-up, or other release of energy, by a machine, whenever anyone is required to remove or bypass safety devices, or whenever anyone is required to place part of his body in a hazard area.

In almost all jurisdictions, it is required that owners of industrial equipment establish and post lock-out procedures. Know and use the lock-out procedures of your company or organization. In the absence of such posted procedures, use the following.

### LOCK-OUT PROCEDURE

Whenever work is to be performed on a machine, which requires removal or bypassing of safety guards or devices, or the placement of part of anyone’s body in a hazard area, the following steps shall be taken:

1. Position the head in a suitable angular position for the work to be done.  
**NOTE: The head is top heavy. When any hydraulic work is to be performed, the head must be swung fully left or right so that it can swing no further. If it is necessary to keep the head vertical, the head must be restrained by a crane.**
2. Operator shuts down the machine.
3. The supervisor in charge of the machine must be informed of the intention to lock-out the machine.
4. The FEEDER power which supplies power to the machine and which is connected to the machine via the Power Junction Box (see picture below) must be turned OFF and locked in the OFF (0) position by means of a padlock. The key for this padlock must be kept by the person performing the work on the machine. If more than one person is performing work on the machine, then a multiple lock hasp shall be used, and each person shall apply his or her own lock to the hasp.
5. The Machine Power Disconnect Switch must be turned OFF, and locked in the OFF (0) position by means of a padlock. The key for this padlock must be kept by the person performing the work on the machine. If more than one person is performing work on the machine, then a multiple lock hasp shall be used, and each person shall apply his or her own lock to the hasp.
6. Prior to starting any work on the locked-out machine, the supervisor shall attempt to start the machine to ensure that the lock-out device provides adequate protection. Operating control must be reset to the “OFF” position after this test.
7. Work on the locked-out machine may now proceed.



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## BLADE CHANGE PROCEDURE

Wear safety glasses, gloves, and a long sleeve shirt for protection when handling bandsaw blades during blade change.  
**NOTE THAT GLOVES SHOULD NEVER BE WORN NEAR A RUNNING BANDSAW BLADE.**

When handling new blades, or ones that will be re-used, it is important to keep the teeth out of contact with concrete floors.

All machines with hydraulic blade tension are equipped with a 'Blade Change Mode' key switch, located at the operator control panel.

This key switch has 2 positions:

OFF = All normal operations of the band saw are operative.

ON = Hydraulic motor can be started.

Blade Tension is operative.

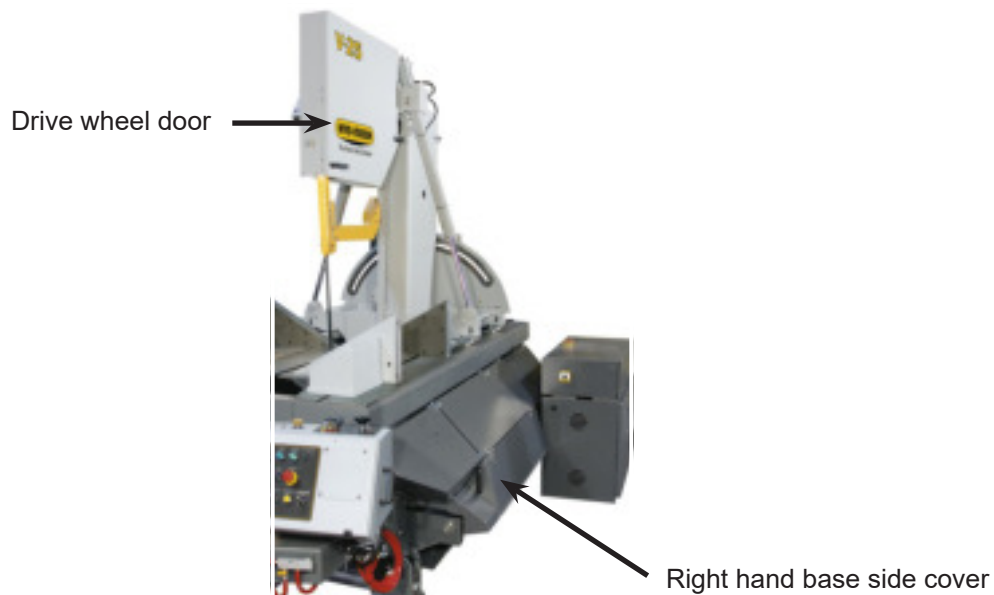
All other hydraulic functions and blade start are inoperative.

## BLADE REMOVAL

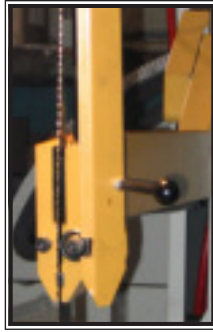
1. With the Blade Change Mode key switch in 'OFF', the blade stopped and the hydraulics ON, retract the saw head in the full retract position. Press the HEAD RETRACT LIMIT OVERRIDE button and turn the head control switch to retracted on the operator panel. This will drive the Head past the Head Back Limit Switch creating a wider gap between the blade and the cutting table allowing easier removal of the blade.
2. Lower the upper guide arm for easier access.
3. Turn the blade change key switch to the "ON" position. Hydraulics will continue to run, but only the Blade Tension Switch is functional.



4. Lift and slide open the right hand base side cover to expose the idler wheel. Unlatch and open the drive wheel door.



- 
5. The V-25 blade is only exposed to the operator at the cutting area. A blade guard protects the operator from the blade between the drive wheel assembly and the actual cutting area. A black knob on the cover allows it to be swung open.



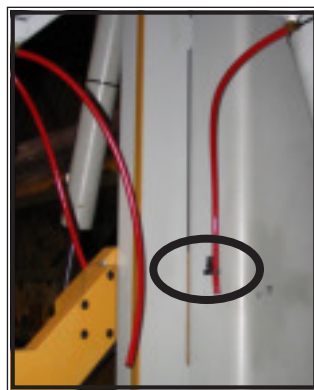
6. It is necessary to release the carbides on both guide arms from the locked position so that the blade can be easily removed. As shown in the photo the carbides are released by loosening the socket head cap screw with a 5mm allen key (2 turns CCW).



7. Turn the Blade Tension Switch from the TIGHTEN position “+ RUN”, through the unmarked, central HOLD position, and briefly to the LOOSEN position “-”.
- By jogging the switch between hold and loosen, it is possible to regulate the degree of looseness of the blade. It is helpful to have the blade just loose enough that it stays on the wheels and in the blade guides, but can be manually pulled off the wheels and out of the guides.



8. Pull the blade forward off of the blade wheels and out of blade guides.
9. The door drain tube must be released from its retainer in order to remove the blade.



10. Store or dispose of the used blade.



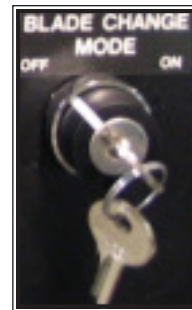
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## BLADE INSTALLATION

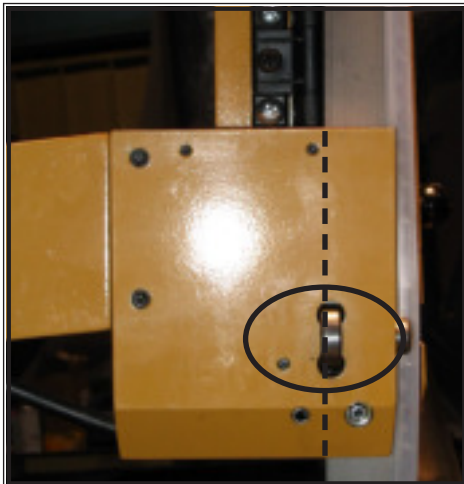
### NOTES ABOUT NEW BLADES:

- It is helpful to have two people to install a new blade.
- A new blade will come folded into a compact coil. Follow the blade manufacturer's instructions for safely unfolding blade.
- The blade must be installed with the teeth facing out towards the right hand side of the saw where it passes around the wheels, and with the teeth in the cutting area pointing down towards the idler wheel. This usually requires that the blade be turned inside out before installation.

1. With the Blade Change Mode key switch remaining in the 'ON' position, turn the Blade Tension Switch to the LOOSEN <-> position for several seconds until the idler wheel has fully retracted.



2. Insert the new blade into the blade guides and onto the wheels. Take care to fully insert the blade into both the upper and lower guides so that the back edge of the blade is fully past the rear side rollers of both guides (see illustration of upper guide). Make sure the blade is sitting behind and clear of the blade guard.



3. Turn the Blade Tension Switch briefly to TIGHTEN "+ RUN" and leave it in HOLD, to retain the blade lightly on the wheels.
4. Adjust blade position on the wheels so that the blade is not crooked on them and the teeth overhang the front edge of the wheels.
5. Turn the Blade Tension Switch to "+ RUN".
6. Close both the upper and lower blade guides by tightening the adjusting screw with a 4mm hex key until firm resistance is encountered.



7. Swing the blade guard into the closed position. NOTE: The drive wheel door can not be closed unless the blade guard is closed.
8. Snap the door drain tube back into its retainer.



9. Close the drive wheel door and the right hand base side cover.
10. Turn the Blade Change Mode key switch to the 'OFF' position.
11. Switch the hydraulics ON. Set the blade to minimum speed, and then start and run the blade for 20 seconds.
12. STOP the blade.
13. Turn the blade change key switch to the 'ON' position.
14. Open the drive wheel door to inspect the blade tracking. Open the right hand base side cover to check the position of the blade brush. Refer to following pages for tracking adjustments, if necessary.
15. Break in the new blade.

## BLADE TRACKING

Blade tracking refers to the lateral position in which the blade runs on the blade wheels. On metal-cutting saws the tracking is set so that the teeth project (or overhang) beyond one edge of the wheels so that interference between the wheel and the "set" of the teeth does not flatten the set, or chew up the wheel. For the 1.50" wide blades used on the V-25, the designed overhang is .200 - .220".

The actual position in which a blade tracks depends upon three things:

**The lateral position of the wheels:** This is factory set, and should not normally need to be re-adjusted. On the V-25, the drive wheel lateral position is adjusted by two push and two pull bolts in the drive wheel retaining cap. The idler wheel lateral position is adjusted by a large (1.5" across flats) hex bolt, and locked by a concentric round head socket screw. Hyd-Mech Service should be contacted before making any adjustment to lateral wheel position.

**The angular position of the blade wheels:** Although apparently parallel to each other, the blade wheels are tilted slightly and adjustment of the tilt of each wheel is the primary method of adjusting blade tracking. In general, tilting the wheels away from each other, as viewed from the "tooth edge" of the wheels, causes the blade to run farther onto the wheel (overhang decreases).

**The condition of the wheel surfaces:** With prolonged use the wheels may wear unevenly so that the front edge has a slightly smaller diameter than the rear edge. This will result in the blade tracking farther off the wheels. Moderate wheel wear can be offset by adjusting wheel tilt, but excessive correction by wheel tilt will cause premature blade cracking, and the only solution is to replace the worn wheel(s).

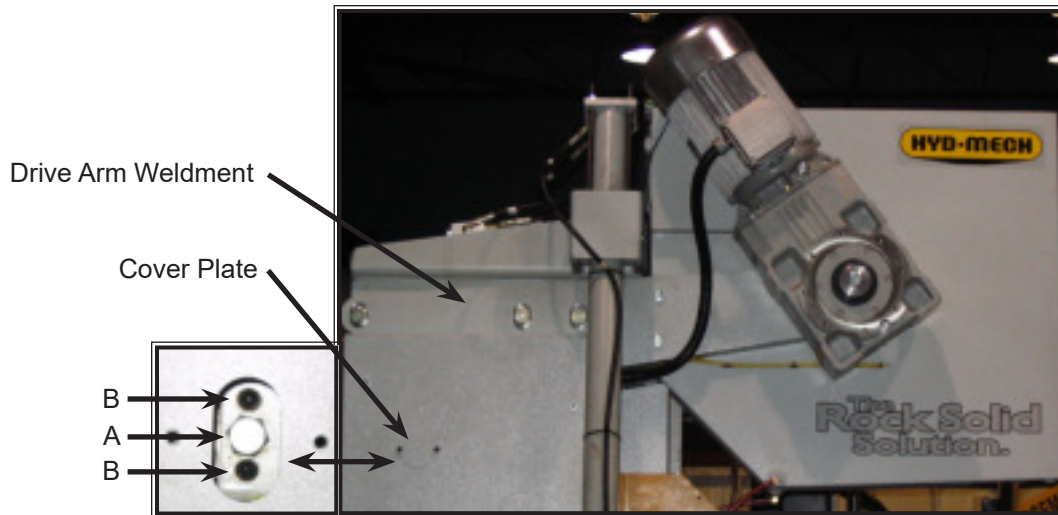
Adjustment of the tilt of either wheel affects the tracking on it, as well as the tracking on the other wheel. Thus blade-tracking adjustment should always begin at the wheel where the tracking is farthest out of specification. Using the instructions below, adjust the worst wheel, run the blade slowly for about 5 – 10 seconds, stop the machine and re-check tracking at both wheels. Repeat the process until tracking at both wheels is within tolerance, test running the blade for longer periods each time, as the desired tracking is approached.



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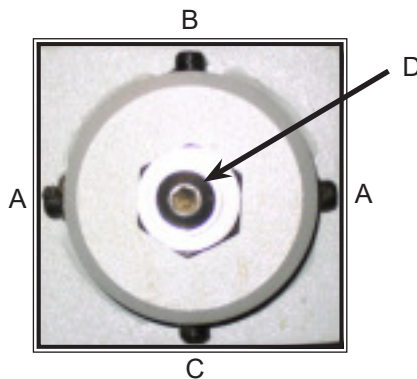
## DRIVE WHEEL ADJUSTMENT

Adjustments should be made with the blade tension released slightly. The drive wheel assembly is mounted on the drive arm weldment which has two set screws and a hex bolt in a “push/pull” arrangement. Gain access to these adjusters by removing the cover plate on the head upper side cover. To make adjustments, loosen bolt “A” and back one of the set screws “B” out several turns, so that adjustment is made with just the other set screw and the hex bolt. Use the hex bolt to pull the adjustment arm in and cause the blade to track with less overhang. Use the set screw to push the adjustment arm out and cause the blade to track with more overhang. Check the blade movement after each 1/4 turn of set screw “B” by running the blade at minimum speed for a couple of rotations. When the tracking is within specification, tighten the other set screw “B” to contact the surface of the head post weldment, then tighten bolt “A”.



## IDLER WHEEL ADJUSTMENT

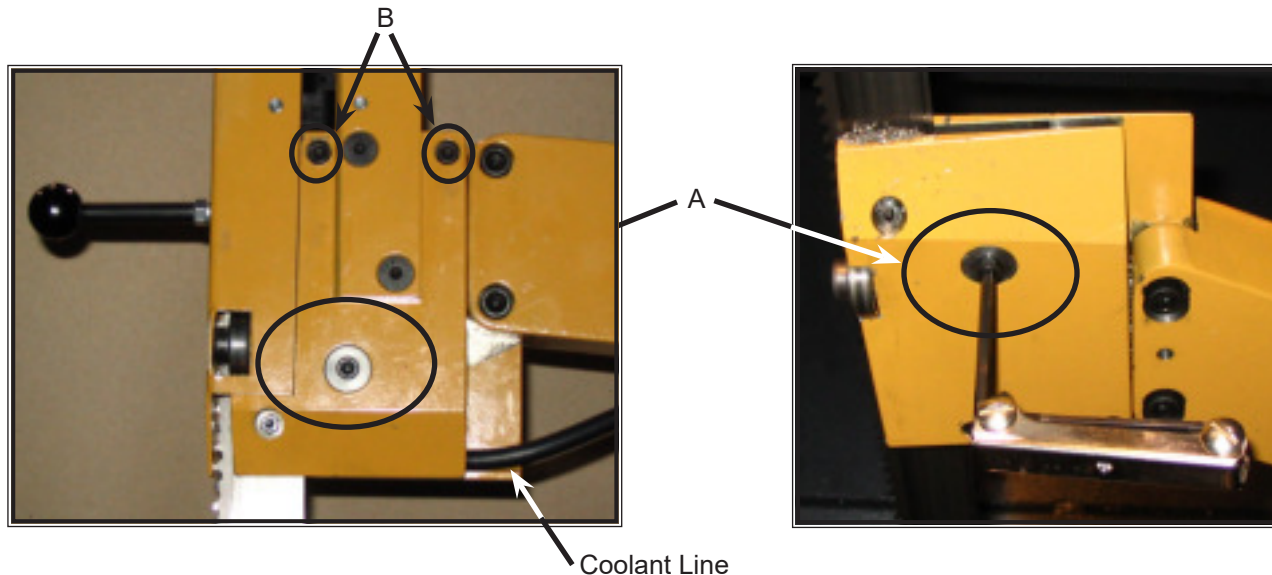
Before adjusting the idler wheel, reduce blade tension and slightly loosen the button head cap screw “D”. There are four set screws; “A” set screws should not be adjusted as they are pivot points. Set screws “B & C” are adjusted by turning one out and the other in a 1/4 turn, and then tightening the first again. Check the blade movement after each 1/4 turn adjustment by running the blade at minimum speed for a couple of rotations. Loosening “C” and tightening “B” will push the blade off the wheel. Loosening “B” and tightening “C” will pull the blade onto the wheel. When correct tracking is achieved, re-tighten “D”.



## BLADE GUIDES

The blade is twisted and guided by upper and lower guide block assemblies. These are almost identical except that the upper assembly contains a coolant gallery, and the lower guide is externally tapered on an angle to allow it to sit closer to the underside of the table.

Each assembly consists of a fixed rear plate bolted to the guide arm, and a movable front plate hinged to the rear plate. An adjusting screw "A", circled in the pictures allows the front plate to be swung into or away from the rear plate. Mounted in each plate is a carbide pad and a roller. The two rollers twist the blade through 90°, and the two pads support the blade laterally. The rear plate also carries a pivoting carbide insert that applies the feed force to the back (or smooth) edge of the blade.



Drive Guide Arm

Idler Guide Arm

The adjusting screw assembly includes a pre-loaded stack of spring washers so that when the screw is turned in (clockwise) to a firm stop, the carbides clamp the blade with a controlled force. To open the guide for blade changing the adjusting screw is backed out (counterclockwise) 2 – 3 turns, using the supplied 5mm hex key. The first half turn takes the spring loading off the carbide, and the subsequent turns open the front plate and its carbide away from the rear plate and its carbide, to assist blade removal and insertion.

No adjustment is normally required, except to open and close the adjusting screw, as described above for blade change.

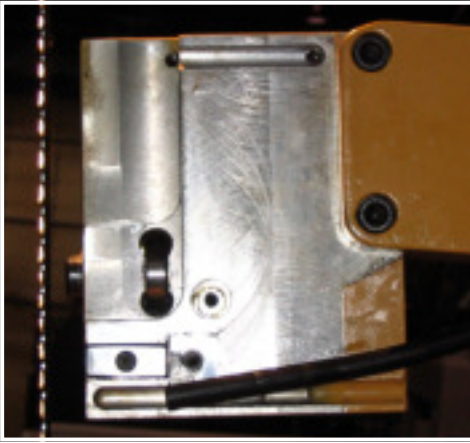
Maintenance of the guide assemblies will consist of periodically inspecting, and replacing, as necessary, the side and back carbides, and the blade rollers.

Roller stoppage may occur at any time due to the wedging of cuttings between the blade and the roller. This will quickly cause a flat on the roller, which requires that it be replaced. For this reason the operator should make it a regular habit to visually check that all four rollers are turning.

Roller replacement does not require removing the front plate of the guide - simply remove the associated shoulder bolt. On the bearing in the front plate, there is a small shim between the bearing inner race and the front plate. The shim must be replaced in the same spot to keep the outer race of the bearing from rubbing on the front plate. The rollers are standard double sealed 6200 ball bearing units that are readily available at any bearing supply.

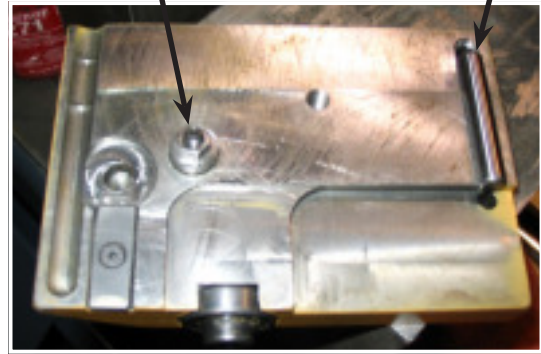
The side carbides and the pivoting back carbide wear very slowly but should be inspected every 6 months, and whenever crooked cutting does not arise from another obvious cause. Access to the carbides is gained by removing the movable front guide plate from the fixed rear plate. To do this, open the adjusting screw "A" 2-3 turns as for normal blade change. Then, using a 5mm hex key remove the two hinge bolts, labeled B in the pictures. At this point the front plate will be held only by the loosened adjusting bolt. Support the front plate with one hand while unscrewing the adjusting screw completely (about 6 – 7 turns).

Removal of the front plate completely exposes the internals of the guide block assembly as shown in the photos above.



Adjusting Screw Assembly

Dowel Pin - Hinge



The side carbides are mounted by #6-32 flat head socket screws which engage lock nuts on the outside of the plates. The back plate holds the square pivoting carbide insert that correspond to the “top” carbide in horizontal machines. A dowel pin pressed into the rear plate locates the pivoting carbide. This carbide can be rotated four times to offer four new surfaces before it is replaced.

The adjusting screw assembly should not normally need to come apart. If dis-assembly is required, be aware that the nut, and circular nut above it are both locked with red Loctite™ 271, and similar material must be used at re-assembly.

The hinge between the front and rear plates of the guide assembly is formed by a dowel pin resting in two semi circular grooves. For convenience during disassembly, the pin is “glued” into the groove of the front plate using Loctite™ 515 Gasket Eliminator.

When re-installing the front plate, support the plate with one hand while locating the adjusting screw in its tapped hole, and then turning it in 6 – 7 turns before installing the hinge screws. This avoids the possibility of cross-threading or bending the adjusting screw.

## BLADE BRUSH ADJUSTMENT

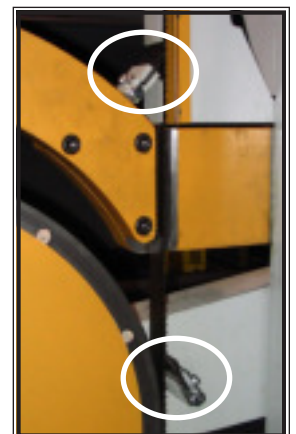
The blade brush is properly set when the machine leaves the factory, but wears during operation and needs to be re-adjusted periodically. The plastic wheel that is driven by the idler wheel face should be held against the idler wheel with the minimum force that is necessary. As the blade brush wears it is necessary to adjust it closer to the blade, or further away from the blade if a new brush is installed.

As shown, there are two springs on socket head screws holding the brush against the blade. There is also an adjusting socket set screw with a hex nut on it. Adjustment is made from the back side by loosening the hex nut and turning the set screw. Tightening the set screw will move the brush away from the blade, and loosening the set screw will move the brush closer to the blade. Adjust the set screw so that the brush cleans to the bottom of the blade gullets and then tighten the hex nut.



## BLADE WIPERS

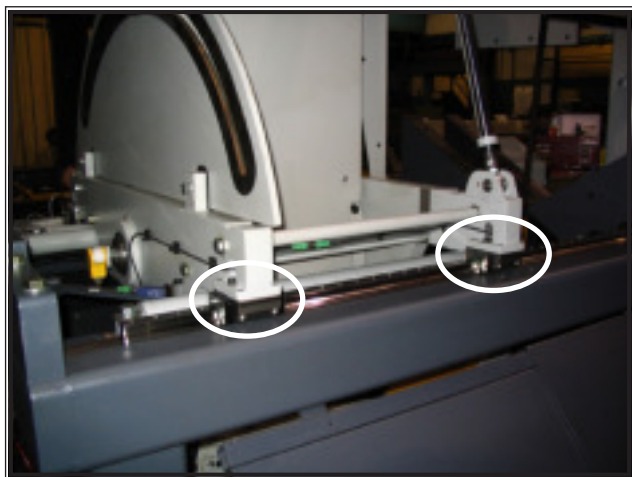
Two blade wiper assemblies are mounted close to the idler wheel to remove coolant from the blade. As the urethane wipers wear, the angular position of the assemblies may be adjusted to maintain contact with the blade. The wipers may be flipped over and rotated end for end to provide four successive wiping edges before they must be replaced. Rubber has a very short life in this application and it is recommended that genuine urethane wipers be obtained from your dealer.



## LUBRICATION

The V-25 was designed with a goal to minimize the maintenance required so as to reduce downtime. We recommend that periodic lubrication be done once a month using any general purpose grease. The following photos show the location of grease fittings that should be lubricated monthly.

In addition to the grease fittings shown, it is good practice to maintain a constant greased surface on the vise ways and moving parts. As the vises are precision fit to the vise table, the constant friction of metal to metal can be effectively alleviated with the application of a general purpose grease. If the saw is left for long periods without use, an effective coating of grease will prevent metal to metal adhesion and rust.



Carriage Runner Blocks (x4)



Swing Cylinder Trunnion (x4)



Head Pivot Bearing (x2)  
&  
Idler Tension Arm Bushing



**OPTION**  
Bundling Runner Blocks (x4)



## OUTPUT SHAFT LUBRICATION

Band tension load is carried by a grease lubricated spherical bearing. A grease fitting is accessible on the back side of the drive box as shown in the accompanying illustration. Lubricate once per year with 30 ml [1 fluid ounce] of NLGI Class 2 Lithium base mineral oil grease. This quantity represents about 20 to 30 strokes of a typical hand grease gun.



## GEARBOX LUBRICATION (V-25 WITH A503 GEARBOX)

The Bonfiglioli A503 gearbox used on the V-25 is supplied with 11 liters (2.90 US gallons) of Mobil SHC 634 synthetic oil. This oil has an ISO Viscosity Grade of 220 that is optimum for ambient temperatures from 20 – 40 Deg C [70 – 104 Deg F]. If the machine will be operated for prolonged periods at ambient temperatures below 20 Deg C [70 Deg F] an oil of ISO Viscosity Grade 150 should be substituted. If the type of oil is being changed, it is advisable to flush the old oil by filling the box with the normal quantity of the new oil, running it briefly at moderate speed, and then draining the box again, before re-filling it with a fresh quantity of the new oil.

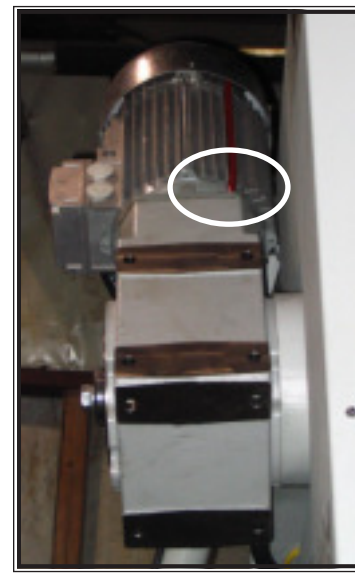
Because of the tilted orientation of the gearbox on the V-25, the correct oil level is to the bottom of the fill plug “A” shown in the photo. The gearbox can also be filled at the breather shown in the photo.

The suggested oil change interval is given below:

Oil Temperature Deg C [deg F]	Mineral Oil Interval [hours]	Synthetic Oil Interval [hours]
< 65 [ $< 150$ ]	8000	25000
65 – 80 [150 – 175]	4000	15000
80 – 95 [175 – 200]	2000	12500



Fill plug “A”



Breather

---

## HYDRAULIC MAINTENANCE

There are four items of routine maintenance associated with the hydraulic system of the V-25. With proper maintenance the hydraulic system of the V-25 should provide years of reliable service.

**1. OIL FILTER** - Ten micron filtration of the hydraulic oil is provided by a spin on type filter mounted on the tank return line as shown below. The element should be changed every 500 working hours or a minimum of at least once per year. Suitable replacement elements are:

CANFLO - RSE-30-10  
GRESN - K-23018  
LHA - SPE-15-10  
ZINGA - AE-10

**2. OIL LEVEL** - The oil level should be maintained in the upper half of the level gauge. Normally the rate of oil consumption will be very low and it should be unnecessary to add oil more often than at filter changes. Add oil only to the top line on level gauge. The hydraulic tank capacity is 8 US gallons.

**NOTE:** The V-25 is shipped from the factory with Texaco Rando HD 46 oil. Generally any brand of recognized mineral hydraulic oil with the same properties should be compatible with Texaco Rando HD 46 oil, but to avoid any risk we suggest staying with Texaco Rando HD 46. If it is desirable to change brands, it is necessary to drain the tank and to fill to 1/3 with the new oil. Operate through several full strokes of each cylinder, drain the tank again, and finally fill the tank with the new brand.

Recommended replacement oils:

Chevron - AW Hydraulic Oil 46  
Conoco - Super Hydraulic 46  
Mobil - Mobil DTE 25  
Esso - NUTO H46  
Shell - Tellus 46

**3. HYDRAULIC OIL CHANGE** - Oil visual inspection should be conducted with every filter change for the following signs of degradation:

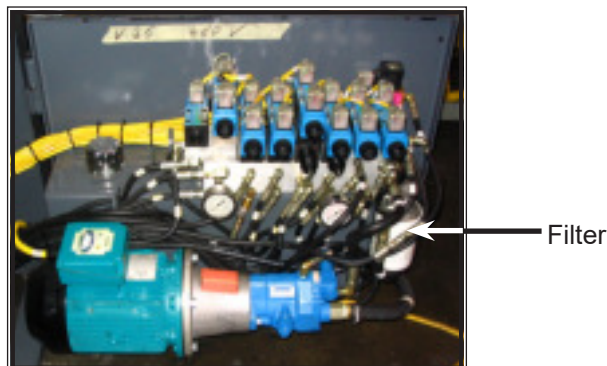
- Milky or hazy oil colour
- Burnt smell
- Varnish or sludge formation
- Increased viscosity

If one of the above is observed, oil should be changed. It is recommended to change the oil after 6000 hours of operation or every 2 years.

**4. OIL TEMPERATURE** - Oil temperature is indicated by a thermometer contained in the level gauge. Oil temperature during steady operation should stabilize at about 50 - 55°F (10° - 13°C) above room temperature. Thus in a 70°F (21°C) shop one might expect an oil temperature of about 120°F (49°C). Oil temperature should never exceed 160 F° (71°C).

**5. OIL PRESSURE** - Oil pressure is factory set to 900 psi and should not require further attention

Hydraulic tank and manifold assembly are mounted on a door located on the infeed side of the base. The level and temperature gauge is found on the front of the door.



## TROUBLE SHOOTING GUIDE

Most problems which may occur have one of the relatively simple solutions which appear in this section. If the solution is not found here, contact the Hyd-Mech Distributor from whom you purchased your bandsaw. They have trained field service personnel who will be able to rectify the problem.

- NOTES:**
- 1) **IF THE BLADE IS RUNNING CLOCKWISE OR THE HYDRAULIC PUMP IS NOISY  
SHUT THE SAW DOWN IMMEDIATELY!**
  - 2) **THE HEAD SHOULD BE SWUNG FULLY TO THE LEFT OR RIGHT BEFORE ANY HYDRAULIC  
SERVICE IS PERFORMED TO PREVENT THE HEAD FROM MOVING UNEXPECTEDLY.**

**NOTE:** All solutions referring to a qualified technician require that your organizations safety lock-out provision be followed. Other solutions may require lock-out depending upon circumstances.

### CONTROL PROBLEMS

	PROBLEMS		CAUSE		SOLUTION
1	Saw hydraulics will not start	1.1	Head and vise selector switches not in centre positions.	1.1	Place switches in centre position.
		1.2	Side covers or drive wheel door are not closed.	1.2	Close covers and door.
		1.3	Broken or dismounted blade.	1.3	Replace or remount blade using blade change mode.
		1.4	Hydraulic motor overload has tripped.	1.4	Qualified technician - reset overload relay.
		1.5	Control circuit fuse has blown.	1.5	Qualified technician- replace fuse.
2	Hydraulic pump runs but no hydraulic functions available.	2.1	Check system pressure gauge. No pressure indicates wrong phase order.	2.1	Shut down immediately. Qualified technician reverse any two phase connections.
		2.2	Blade change mode selected.	2.2	Switch off blade change mode.
		2.3	Pump runs noisily - check hydraulic oil level at tank gauge.	2.3	Stop immediately. Add correct grade of hydraulic oil to level mark on tank.
		2.4	Pump/motor coupling backed off.	2.4	Qualified technician - re-adjust coupling spacing.
3	An individual function does not respond to manual control.	3.1	If pilot light on corresponding valve does not light, then electrical fault is indicated.	3.1	Qualified technician - use schematic to find fault.
		3.2	If pilot light responds, then valve coil may be bad.	3.2	Test by interchanging coil from another valve.
		3.3	If pilot light responds and coil is good, then valve may contain dirt.	3.3	Qualified technician - remove, disassemble and clean valve spool.
4	Hydraulics function but blade will not start.	4.1	Vise switches not set correctly.	4.1	At least one vise must be closed. The other must be closed or open, but not in neutral.
5	Head will not advance.	5.1	Blade motor not started.	5.1	Start blade motor, or use Head Back Limit Override button to permit advance with blade stopped.
6	Head will not swing.	6.1	Head not back, or guide arm not fully up.	6.1	Retract head to limit switch and fully raise guide arm.



## CUTTING AND BLADE TROUBLESHOOTING

	PROBLEMS		CAUSE		SOLUTION
1	Saw is cutting out of square from top to bottom.	1.1	Head is not set at 90 degrees.	1.1	Re-position head.
		1.2	Blade guide(s) not closed.	1.2	Close guide adjusters fully.
2	Saw is cutting out of square front to back, or cut is not flat.	2.1	Excessive feed rate or feed force settings.	2.1	Review settings using Blade Basics and Cutting Parameters Chart in Section 2 of this manual.
		2.2	Upper guide arm too far above workpiece.	2.2	Lower guide arm close to workpiece.
		2.3	Blade type or pitch is incorrect for workpiece.	2.3	Get advice of blade supplier.
		2.4	Blade is worn.	2.4	Replace blade.
		2.5	Blade guides are worn.	2.5	Replace blade guide carbides.
		2.6	Low band tension.	2.6	Check blade tension pressure gauge against specification. Adjust pressure reducing valve as indicated.
3	Excessive blade breakage.	3.1	Excessive feed rate or feed force settings.	3.1	As 2.1, above.
		3.2	Upper guide arm too far above workpiece.	3.2	As 2.4, above.
		3.3	Excessive band tension.	3.3	As 2.6, above.
		3.4	Worn blade guide carbides.	3.4	Refer to Blade Guides in Section 3 of this manual.
4	Blade tooth strippage.	4.1	Blade pitch is too fine for workpiece.	4.1	Use coarser blade; refer to Cutting Parameters Chart.
		4.2	Blade brush is not cleaning.	4.2	Replace or adjust blade brush.
		4.3	Workpiece movement.	4.3	Special care is required in clamping thin workpieces and bundles.
		4.4	Excessive feed rate or feed force settings.	4.4	As 2.1, above.
5	Excessive blade vibration.	5.1	Blade not properly broken in.	5.1	See Blade Basics in Section 2 of this manual.
		5.2	Blade speed resonance.	5.2	Adjust blade speed up or down while cutting.
6	Blade stalls while cutting.	6.1	Blade tension switch not in "+ RUN"	6.1	Correct switch position.
		6.2	Blade tension insufficient.	6.2	As 2.6, above.
		6.3	Excessive feed rate or feed force settings.	6.3	As 2.1, above.
7	Blade comes off wheels.	7.1	Blade tension switch not in "+ RUN"	7.1	Correct switch position.
		7.2	Blade tracking out of adjustment.	7.2	Refer to Blade Tracking in Section 3 of this manual.
8	Head will not advance.	8.1	Feed Rate Valve is closed.	8.1	Turn feed rate knob counter clockwise to open.
		8.2	Feed Force Limit is set too low.	8.2	Turn feed force knob counter clockwise to increase.

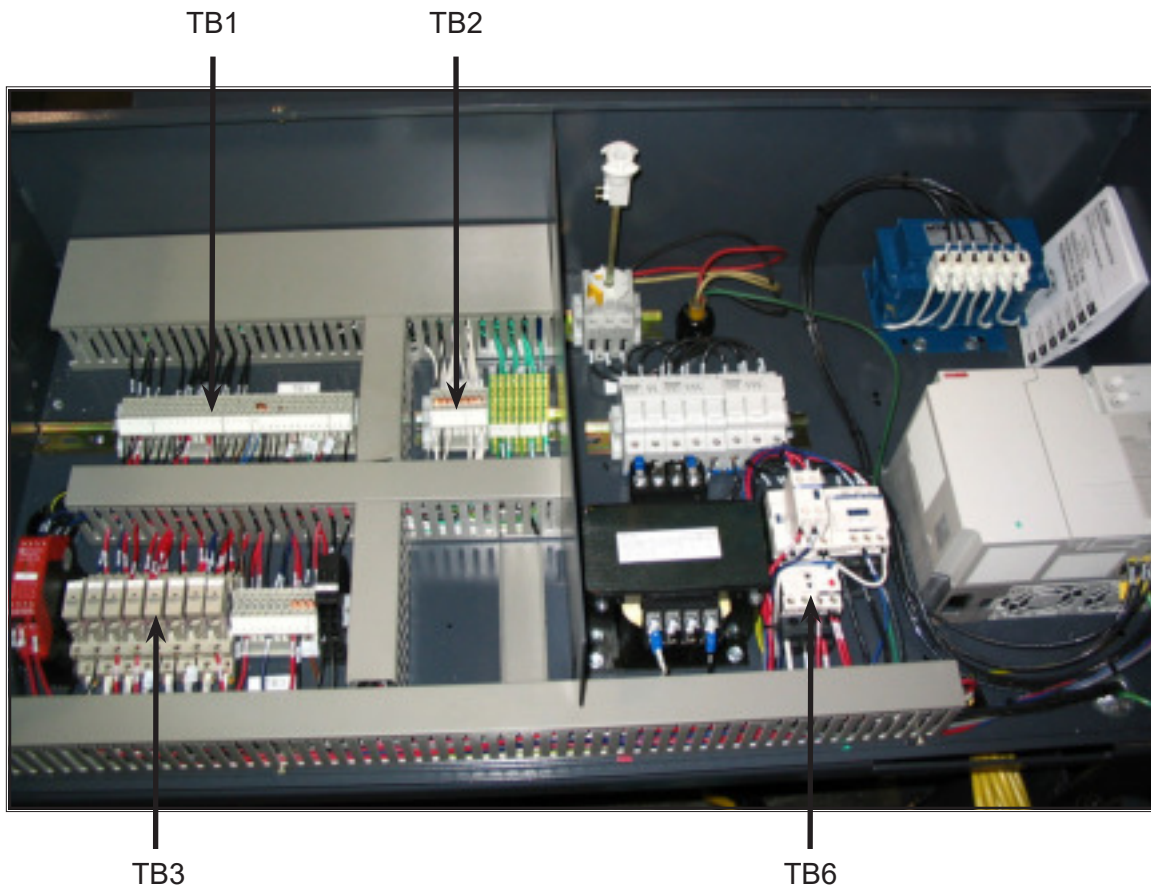
9	No coolant flow.	9.1	In "Auto" coolant only flows when head advances.	9.1	Place coolant switch in "ON" to check operation of system.
		9.2	Coolant flow regulating valve turned off.	9.2	Open valve (located below operator console).
		9.3	Coolant level low or empty.	9.3	Add coolant. Level must cover suction inlet located at extreme rear of reservoir.
		9.4	Pump had lost prime.	9.4	Open priming valve until coolant flows from it, and then shut valve.
		9.5	If wash gun flows, then line to blade guide or guide coolant gallery may be plugged.	9.5	Open upper blade guide, remove hose, use air gun <u>with safety nozzle</u> to blow out hose and gallery.
10	Head advances with set to "0".	10.1	Feed Rate pointer misaligned.	10.1	Loosen pointer lock nut. Turn the knob clockwise until it is closed. Position the pointer to "0" and tighten lock nut.
		10.2	Fast approach valve is open. Blocked lever.	10.2	Adjust fast approach lever. Phone Hyd-Mech Service for details.

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## SECTION 4 - ELECTRICAL

### V-25 Component Location

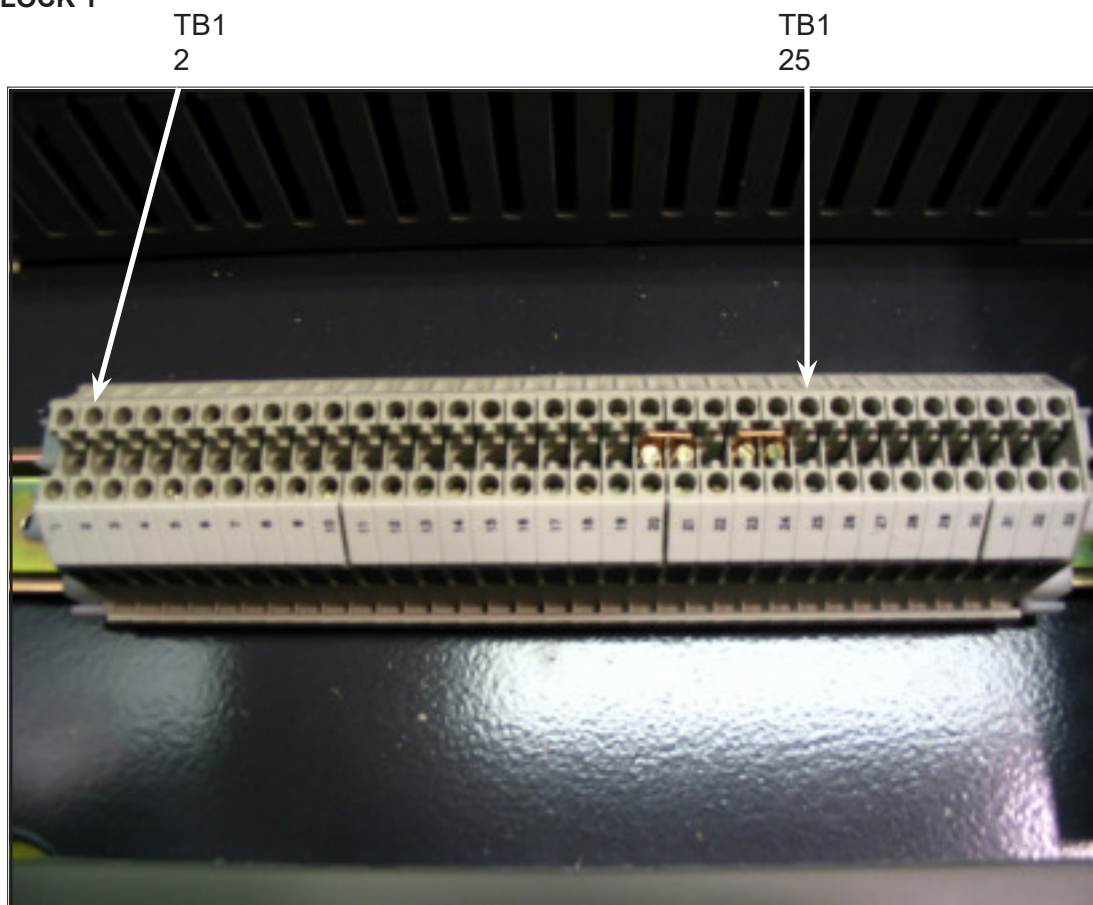
The electrical schematics show some components labeled as TB1 to TB6 and these components are physically mounted on DIN rails. The illustration below shows the location of the DIN rails with the installed components and the designated TB number.



The following pages will show and explain in brief how to understand the correlation between the electrical schematic and the control panel with regards to TB1 to TB6.

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## TERMINAL BLOCK 1



TERMINALS  
1 TO 33

Page 4.1 shows the position of TB1 in the control panel. It can be seen that TB1 has only terminals mounted to it.

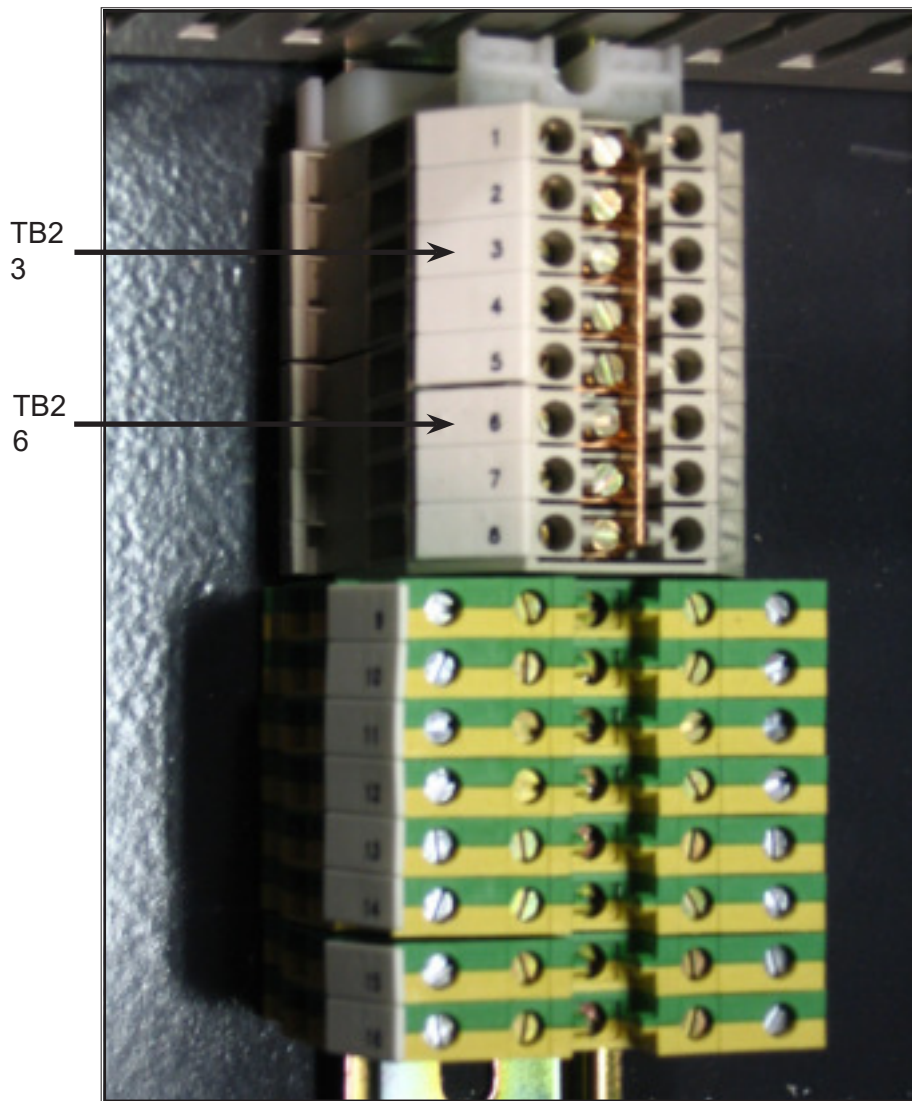
For example, if the electrical schematic shows a terminal, described as  $\begin{matrix} \text{TB1} \\ 2 \end{matrix}$

This indicates that the terminal is located on din rail TB1 and is terminal #2.

$\begin{matrix} \text{TB1} \\ 25 \end{matrix}$  would indicate that the terminal is mounted on TB1 and is terminal #25.

---

## TERMINAL BLOCK 2



A close up view of TB2 is shown.

Page 4.1 shows the position of TB2 in the control panel.

For example, if the electrical schematic shows a terminal, described as <sup>TB2</sup> 3

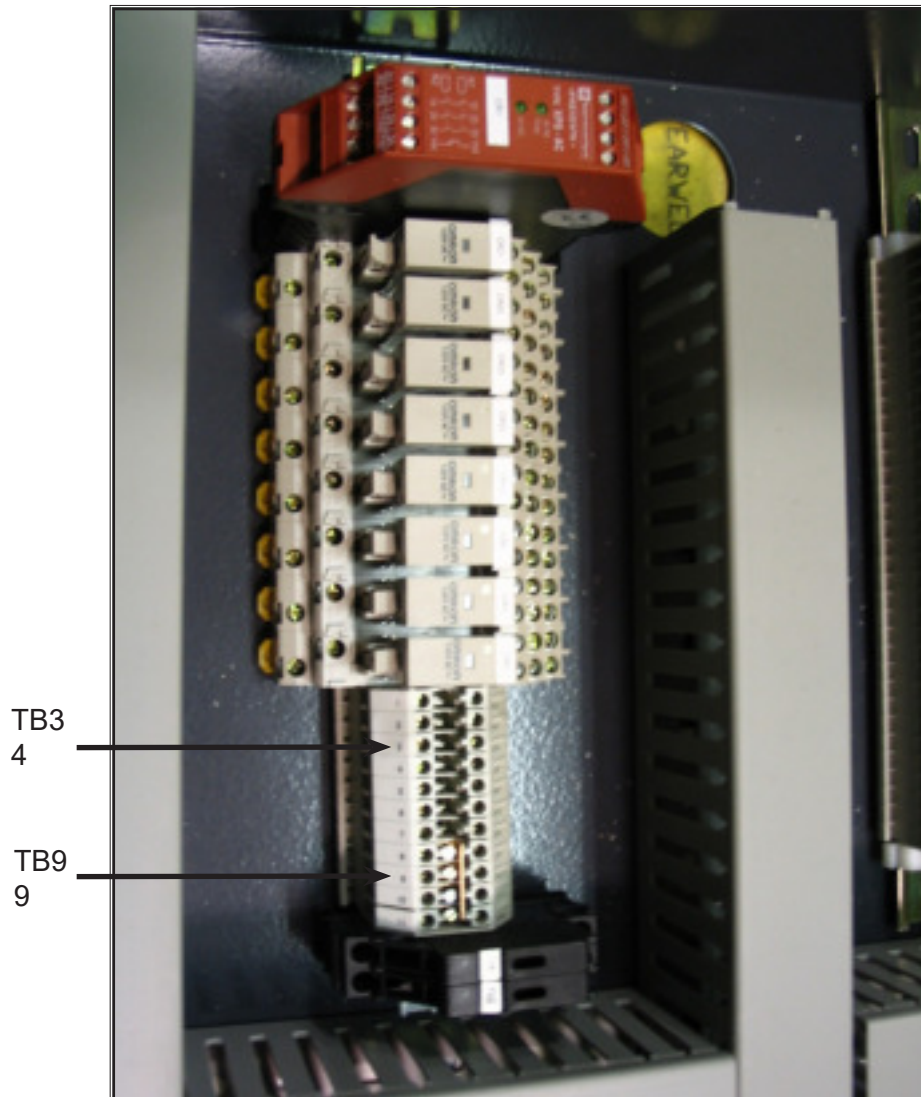
This indicates that the terminal is located on din rail TB2 and is terminal #3.

<sup>TB2</sup> 6 would indicate that the terminal is mounted on TB2 and is terminal #6.



---

## TERMINAL BLOCK 3



A close up view of TB3 is shown.

Page 4.1 shows the position of TB3 in the control panel.

For example, if the electrical schematic shows a terminal, described as 4 TB3

This indicates that the terminal is located on din rail TB3 and is terminal #4.

TB3  
9 would indicate that the terminal is mounted on TB3 and is terminal #9.

---

**TERMINAL BLOCK 3. Close up view of Control Relays**



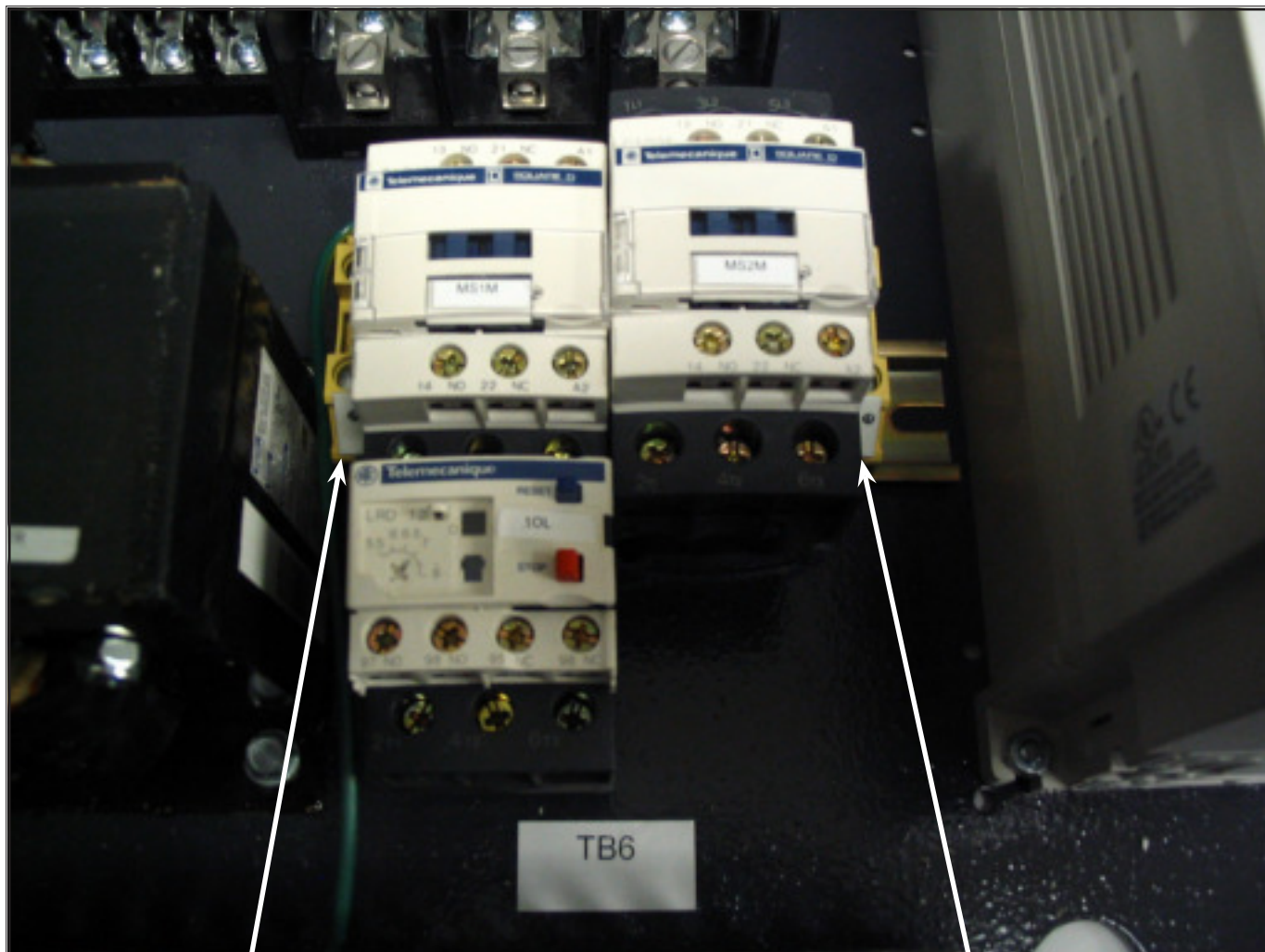
**TERMINAL BLOCK 4 (TB4):** See page 4.7

**TERMINAL BLOCK 5 (TB5) :**

TB5 only has a power supply installed on the din rail. A picture indicating the power supply is not shown in the document.



## TERMINAL BLOCK 6



TB6  
1

TB6  
2

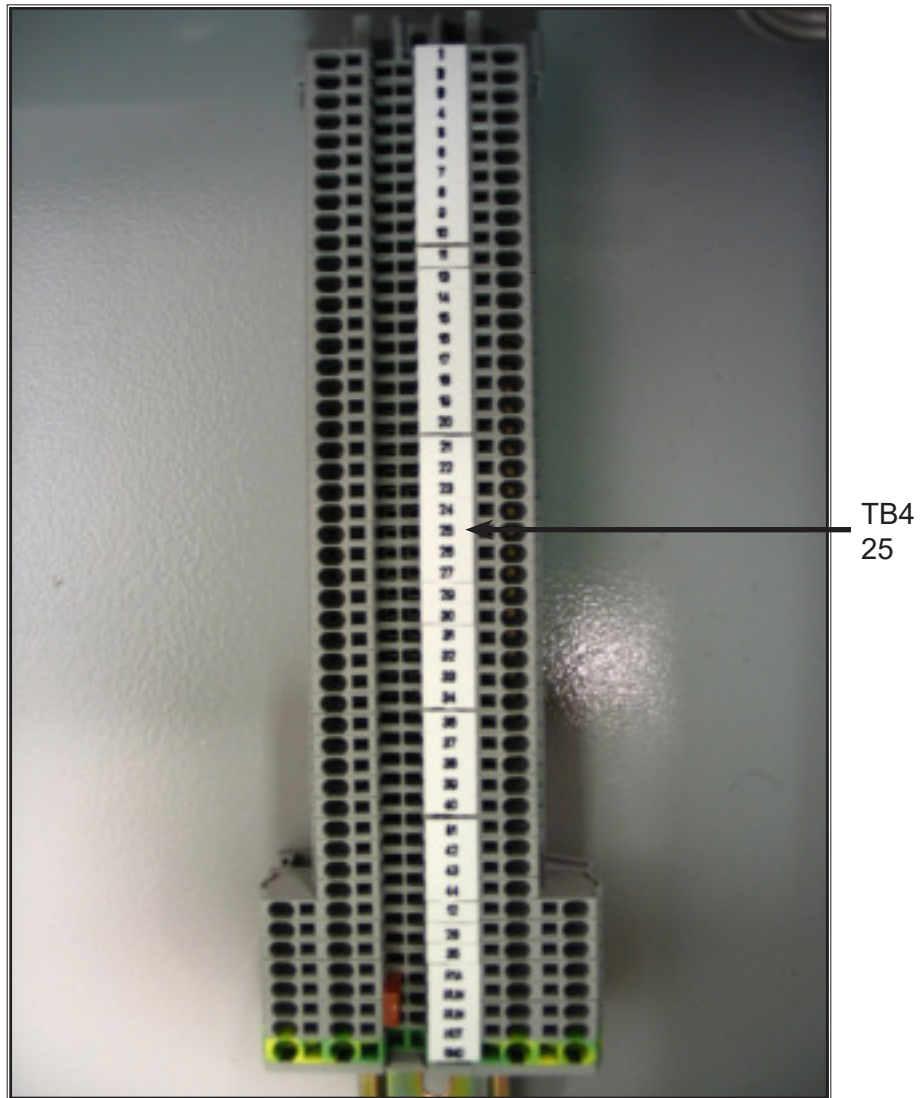
TB6 Contains ground terminals (partially visible) mounted either side of the contactors MS1M & MS2M and are indicated on the schematic as:

TB6	TB6
1	2

The mounting location in the control panel is shown on page 1.

---

## TERMINAL BLOCK 4



TB4 is located in the HMI panel (Human Machine Interface). This houses the selector switches and push buttons.

As in the main panel, the same concept applies. For example: TB4  
25

This indicates that the terminal is located on din rail TB4 and is terminal #25.

---

## **DT (Device Tag)**

The remainder of the components in the control panel are labeled and are referred to in the documentation under the DT heading. For example:

DT, CR20 is the Left Vise control relay labeled CR20.

DT, LS2 is the limit switch for Head Advance function labeled LS2.

DT, MS 2M is the contactor labeled MS 2M.

DT, SS4 is the selector switch for Head Control, labeled SS4

## **Page and Row Numbers**

In each title block of the project (electrical documentation) there are 2 headers, which are:

1. Page. This refers to the current page number
2. Pg. This refers to the total number of pages in the entire project and is for internal HYD·MECH use only.

On each Page there is a column of 4 digit numbers on the left of the page.

For example, Page 15 shows the numbers from 1500 to 1539.

The first 2 digits refer to the page number, which in this case is page 15.

The latter 2 digits refer to the row number, which in this case are from 00 to 39.

Whenever the electrical schematic shows a target to another page then the method described above should be used to locate the component, device, wire etc.

The same format applies when reading the wire list or cable list as the page and row number are included on the list.

**FOR ELECTRICAL SCHEMATICS AND PARTS LIST  
SEE PDF ON ATTACHED CD**

## SECTION 5 - HYDRAULICS

### FOR HYDRAULIC SCHEMATICS AND PLUMBING DIAGRAMS SEE PDF ON ATTACHED CD

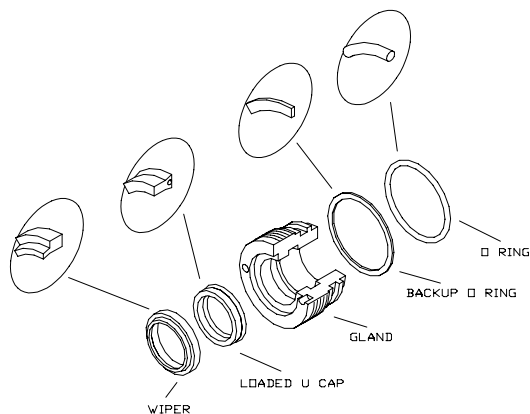
The V-25 hydraulic system does not require any special work on a new machine before its start-up. The hydraulic tank is filled with Texaco Rando HD 46 oil and all machine functions have been tested at the factory to ensure the proper operation upon start-up.

#### V-25 HYDRAULIC PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	H22-C5-00A	BLADE TENSION CYLINDER
2	0(+2)	V25-C23-00	BUNDLING CYLINDER (OPTION)
3	2	V25-C3-00	WISE CYLINDER
4	2	V25-C7-00	SWING CYLINDER
5	1	V25-C8-00	BRAKE CYLINDER
6	1	V25-C4-00A	HEAD CYLINDER
7	1	H32-C41-00	GUIDE ARM CYLINDER
8	1	DDF5-0-00	DDF VALVE
9	0 (+1)	363150	PRESSURE REDUCING V.(VVP OPTION) - PRV1-10-K-6T-12
10	1	MB6PA	6-POSITION MANIFOLD
11	1	V18-CHB-15	CUSHION BLK
12	1	EB-03	EXTENSION BLK
13	1	EB-02	EXTENSION BLK LEFT
14	1	363160	SOLENOID POPPET VALVE - PV2P-A-C
15	1	363185	BRAKE VALVE - DCV2P-ABT
16	2	363295	DIRECTIONAL VALVE - DCV3P-AB-T
17	2	363300	DOUBLE PILOT CHECK VALVE - DPCH-1
18	4(+1)	363290	DIRECTIONAL VALVE - DCV3P-AB-C
19	2	363155	PRESSURE REDUCING V. SUBPLATE - PRV2
20	1	362745	PUMP - HYP-1
21	2(+1)	360751	PRESSURE GAUGE 1500 PSI - PG15
22	0(+1)	395410	CHIP AUGER MOTOR (OPTION) - HYM-1 OR HM-1
23	1	363105	RETURN FILTER ELEMENT 10 MICRON - SF6520
24	0(+2)	363225	NEEDLE VALVE (BUNDLING OPTION) - N10BK
25	0(+2)	363205	BALL VALVE - B.V 1000PSI W.P (BUNDLING OPTION)

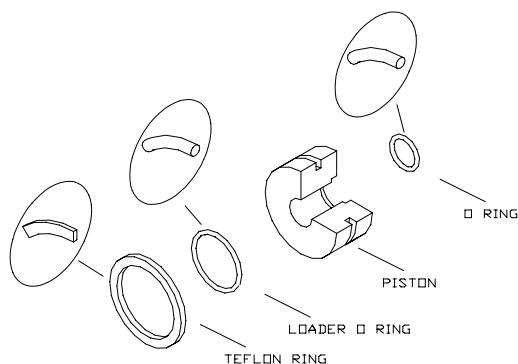
## CYLINDER ASSEMBLIES

### GLAND ASSEMBLIES



CYLINDER DIAMETER	E O RING	F BACKUP O RING	G GLAND	H LOADED U CAP	I WIPER
2.0"	362960	362785	CS20-GL-01A	362830	363330
2.5"	362970	362790	CS25-GL-01B	362815	363335
3.0"	362985	362795	CS30-GL-01A	362815	363335
3.5"	362995	362800	CS35-GL-01A	362835	363340
4.0"	363005	362805	CS40-GL-01A	362840	363345
5.0"	363015	362810	CS50-GL-01A	362840	363345

### PISTON ASSEMBLIES



CYLINDER DIAMETER	A TEFLON RING	B LOADER RING	C PISTON	D O-RING
2.0"	363035	362950	CS20-PS-01B	362905
2.5"	363040	362965	CS25-PS-01	362910
3.0"	363045	362980	CS30-PS-01	362910
3.5"	363050	362990	CS35-PS-01	362925
4.0"	363055	363000	CS40-PS-01	362940
5.0"	363060	363010	CS50-PS-01	362940

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## **SECTION 6 - MECHANICAL ASSEMBLIES**

**MECHANICAL ASSEMBLY DRAWINGS & PARTS LIST: SEE PDF  
ON ATTACHED CD**

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## SECTION 7 - OPTIONS

### SAW BUNDLING (INFEED VISE AND OUTFEED VISE) - V25APC MACHINE SHOWN

The bundling clamps can be used to supplement the infeed and outfeed vises by clamping down on the work piece from above. They work in conjunction with their associated vise. As the name implies, they are particularly used to clamp work pieces made of bundles of smaller material. For simple, non-bundled work pieces, the bundling clamps are not usually needed.

The bundling clamps need to be rotated out of the cutting area when they are not being used, or when the head is to be swung either left or right.

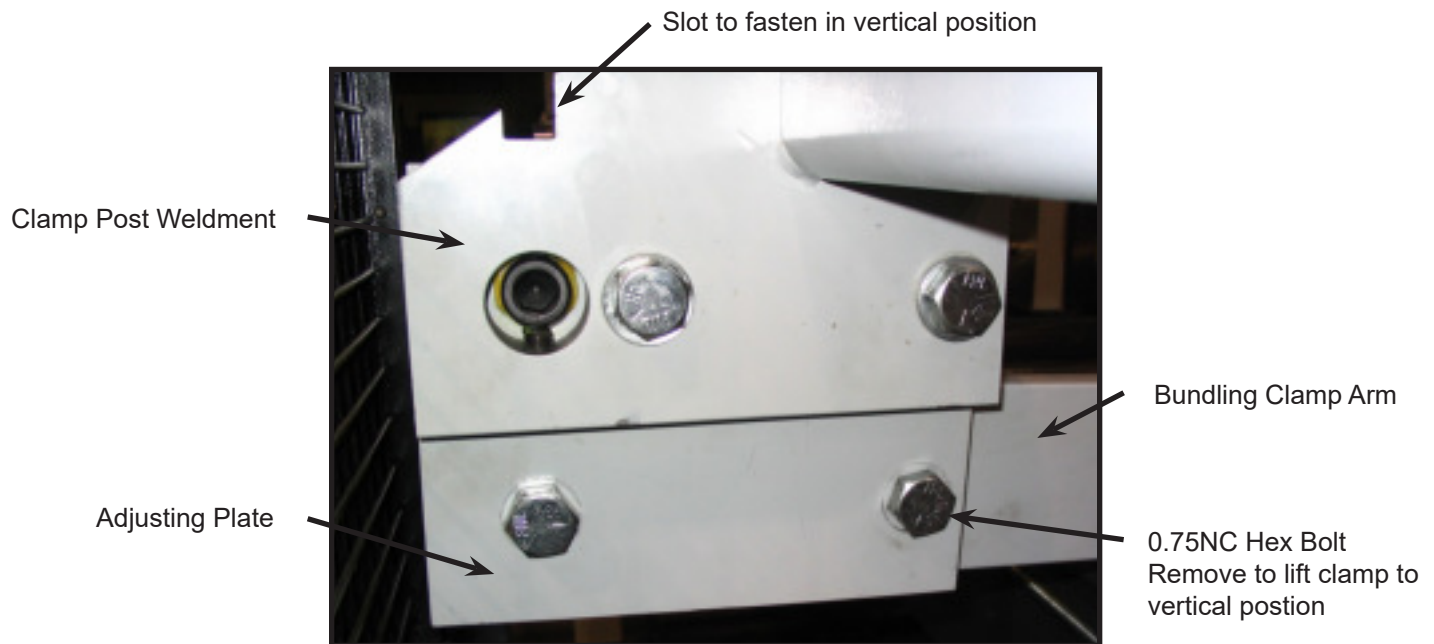
The relative speed of the bundling jaws can be adjusted with the needle valves for each bundling cylinder. Each bundling clamp has its own control valve. When the control valve lever is positioned vertically the bundling clamp is locked in its current position. When the valve lever is horizontal, the bundling clamp will move open and shut with its associated vise.

### BUNDLING HEIGHT RESTRICTIONS

The allowable height of a bundle will decrease with the head swung towards the infeed side of the machine. The bundling arm must be kept low enough to avoid interference with the head assembly. The following table can be used as a guide:

HEAD SWING	BUNDLE HEIGHT
90°	20"
45°	18.5"
30°	8.5"

The procedure below details how to remove the infeed or outfeed bundling clamps out of the loading area of the machine:



1. Raise the bundling clamp a couple inches off the table, and close the movable vise.



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2. Remove the 0.75NC hex bolt holding the bundling clamp to the adjusting plate.

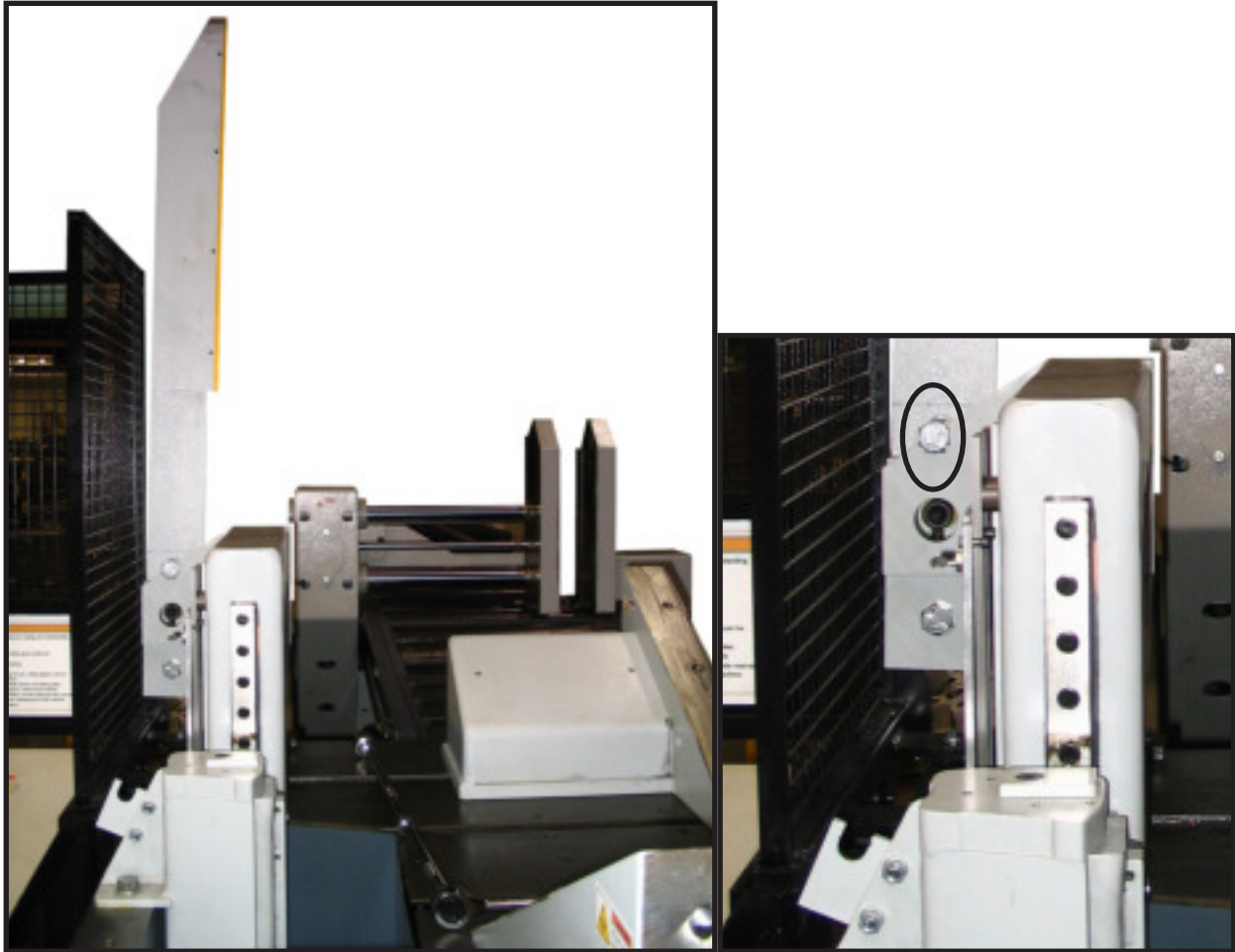


3. Insert the bundling arm lift tool into the slot of the support plate and fit the socket onto the 0.75NC hex bolt.



Support Plate

4. Lift the bundling clamp to its vertical position and fasten it through the slot of the clamp post weldment using the 0.75NC hex bolt.



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## HYDRAULIC CHIP CONVEYOR OPTION

An option available with the V-25 is the hydraulic chip conveyor drive which provides an easier means of cleaning out the chips that accumulate while cutting. A Chip Conveyor control switch for the hydraulically driven chip conveyor is located on the operator control panel. A chip bucket is included with the chip conveyor option.



## MIST COOLANT OPTION

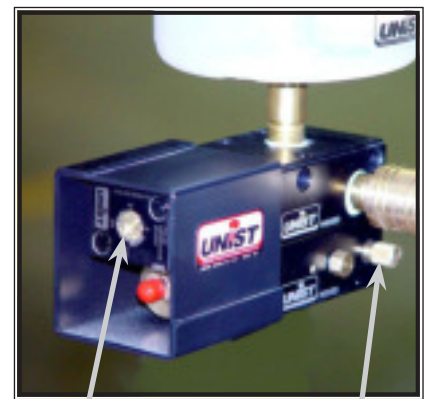
Mist Coolant – the air powered pump delivers a regulated number of pulses of lubricant to a single applicator nozzle.

The unit has two control screws.

Pulse / Minute – adjusts rate of lubricant use. About 8 to 12 pulses per minute is optimum – more is not better.

Air Screw – regulates the jet of air that projects the lubricant from the nozzle onto the blade. Adjustment should be such that lubricant covers the blade without blowing the mist beyond the back edge of the blade.

Note: A new blade may require initial lubrication with a small quantity of mist coolant applied to the blade to prevent squealing.



PULSE / MINUTE

AIR SCREW

## VARIABLE VISE PRESSURE OPTION

Vise clamping pressure adjustment is located on the top of the control console. Clamping pressure is indicated by the pressure gauge adjacent to pressure control knob. Turning knob clockwise increases clamping pressure. The clamping pressure can be changed infinitely from 50PSI to 1000PSI (full pump pressure). It has to be taken under consideration that clamp pressure setting will affect the clamp speed. The actual usable low clamp pressure setting maybe higher than achievable by controls and is limited by mechanical friction of the vise assemblies.



**FOR OPTIONAL DRAWINGS AND PARTS LISTS  
SEE PDF ON ATTACHED CD**

## SECTION 8 - SPECIFICATIONS

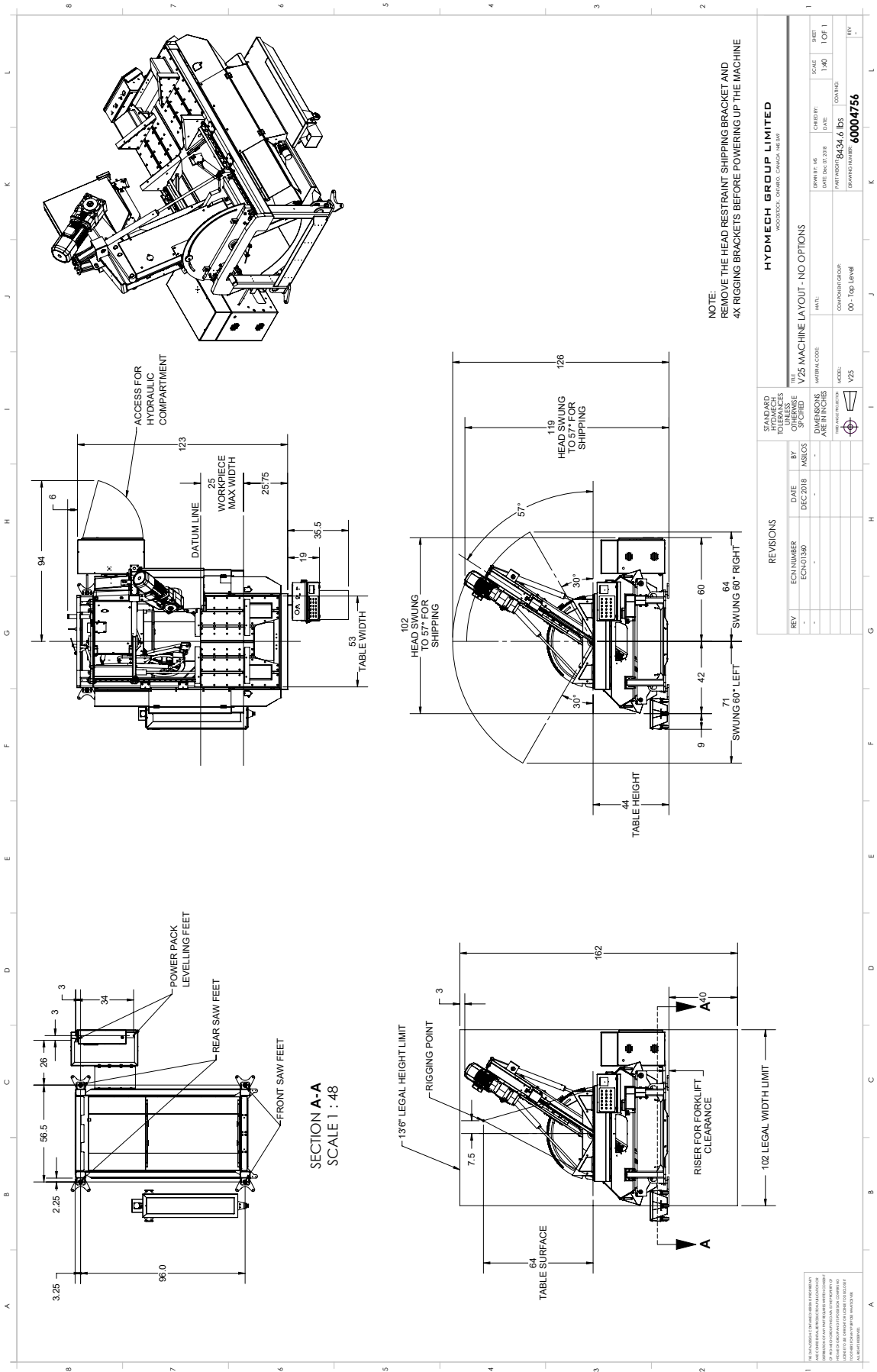
V-25 BANDSAW SPECIFICATIONS		
Capacity	at 90°	25"x 30.5"(635mm x 775mm)
	at 45°	21"x 25"(534mm x 635mm)
	at 30° RH	14.5"x 25"(368mm x 635mm)
	at 30° LH	13.5"x 25"(343mm x 635mm)
	Bundling clamp is full capacity at 90°	
Cant Angle	5.6°	
Blade	Length	21' 1/2" (6414mm)
	Width	1 1/5" (38mm) Wide x .050 (1.3mm) Thk.
Blade Speed	variable	75 - 350 sf/min (23 - 106 m/min)
Blade Guides	Carbide pads, spring loaded, zero clearance, with positively maintained parallelism	
	Integrally mounted entry rollers	
Blade Wheel Dia.	Drive Wheel	32" (813mm)
	Idler Wheel	24" (610mm)
Blade Drive	10 HP (7.5 kW)	
Hydraulic System	Power	3 HP (2.2 kW)
	Pressure	1000 psi (6895 kPa)
	Tank	7 U.S. Gal.(26.5 liters)
Coolant System	Tank Capacity	38 US Gal (144 liters)
	Usable Capacity	28 US Gal (106 liters)
Vises	Hydraulic	Full stroke
	Adjustable Force	1000 - 3300 lbs (454 - 1497 Kg)
Table Height	44" (1118mm)	
Maximum Workload	10,000 lbs (4536 Kg) applied to table; maximum of 5000 lbs (2268 Kg) to either table half.	
	Based on .030" (0.76 mm) allowable table deflection , safety factor of 4 on structure yield.	
Machine Dimensions	Max Height 90°	123" (3124mm)
	Width at base	Right of datum 60" (1524mm) (over power pack)
		Left of datum 36" (914mm)
	Width at head top	Right of datum 67" (1702mm)
		Left of datum 74" (1880mm)
	Depth front to rear	160" (4064mm) with console
	Shipping Height	118" (2997mm)
	Shipping Width	96" (2438mm)
	Shipping Length	148" (3759mm) exclusive of console
	Shipping Weight	9500 lbs (4309 Kg)

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## V-25 BANDSAW SPECIFICATIONS

<b>Options</b>	Overhead Bundling
	Variable Vise Pressure
	Digital Angle Display
	Hydraulic Drag Chain Chip Conveyor
	Pop-Up Feed Roller
	Mist System
	5' (1524mm) & 10' (3048mm) Idler Conveyors
	Power Conveyors

V-25 LAYOUT



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## SECTION 9 - WARRANTY

### WARRANTY

Hyd-Mech Group Limited warrants parts/components on each new V-25 bandsaw to be free from failure resulting from defective material and workmanship under proper use and service for a period of two years following the date of shipment to the user. Hyd-Mech's sole obligation under this warranty is limited to the repair or replacement without charge, at Hyd-Mech's factory, warehouse, or approved repair shop any part or parts which Hyd-Mech's inspection shall disclose to be defective. Return freight must be prepaid by the user.

This warranty, in its entirety, does not cover maintenance items, including but not limited to lubricating grease and oils, filters, V-belts, saw blades, etc., nor any items therein which show signs of neglect, overloading, abuse, accident, inadequate maintenance, or unauthorized altering.

MOTOR, GEARBOX, PUMP, ELECTRIC COMPONENTS, VALVES, HOSES, FITTINGS, and any other items used in the manufacture of the V-25, but not originally manufactured by Hyd-Mech are subject to the original manufacturer's warranty. Hyd-Mech will provide such assistance and information as is necessary and available to facilitate the user's claim to such other manufacturer.

Liability or obligation on the part of Hyd-Mech for damages, whether general, special or for negligence and expressly including any incidental and consequential damages is hereby disclaimed. Hyd-Mech's obligation to repair or replace shall be the limit of its liability under this warranty and the sole and exclusive right and remedy of the user.

**THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, WRITTEN OR ORAL, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

This warranty may not be changed, altered, or modified in any way except in writing by Hyd-Mech Group Limited

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