

Instruction Manual



SAWING PRODUCTS

2012-VH

Serial No: 561-03101 to

Band Sawing Machine

DAMAGE CLAIM PROCEDURES

VISIBLE DAMAGE AT THE TIME OF DELIVERY:

1. Note damage on carrier's delivery receipt. Accept the shipment. It can be returned later if repairs are not possible in the field.
2. Request a "damage inspection" from the delivery carrier:
 - a. The carrier will send his own people or contract an independent agency to make the inspection.
 - b. The inspector will request a signature on the report and leave a copy.
 - c. The carrier "damage inspection" report is not final. If additional damage is found when repairs are started, contact the carrier for another inspection; or at least give them the details of the damage.
3. Do not move the equipment from the receiving area and keep all shipping materials until carrier "damage inspection" report is complete.
4. If possible, take photographs of the damage and keep them for your files. Photos could possibly prove a claim at a later time.
5. Keep a record of all expenses and be sure they are documented.
6. Repair damage in the field whenever possible. Carriers encourage this to keep expenses down.
7. You have nine (9) months to file a claim.

CONCEALED DAMAGE:

1. You have fourteen (14) days to report damage not noted at time of delivery.
 - a. Report damage as soon as possible. This makes it easier to prove that it did not happen at cosignee's plant.
 - b. Inspect machine(s) carefully before moving from the receiving area. Again, if machine is not moved, it is easier to prove your case.
2. Request a "damage inspection" from the delivery carrier:
 - a. The carrier will send his own people or contract an independent agency to make the inspection.
 - b. The inspector will request a signature on the report and leave a copy.
 - c. The carrier "damage inspection" report is not final. If additional damage is found when repairs are started, contact the carrier for another inspection; or at least give them the details of the damage.
3. Do not move the equipment from the receiving area and keep all shipping materials until carrier "damage inspection" report is complete.
4. If possible, take photographs of the damage and keep them for your files. Photos could possibly prove a claim at a later time.
5. Keep a record of all expenses and be sure they are documented.
6. Repair damage in the field whenever possible. Carriers encourage this to keep expenses down.
7. You have nine (9) months to file a claim.

OPERATOR'S INSTRUCTION MANUAL

METAL CUTTING BAND SAW


MODEL

2012-VH

FIRST SERIAL NO.

561-03101

LAST SERIAL NO.

MACHINE MODEL <input type="text"/>		SERIAL NUMBER <input type="text"/>	
TOTAL MACHINE ELECTRICAL POWER INPUT DATA			
VOLTAGE <input type="text"/>	PHASE <input type="text"/>	HERTZ <input type="text"/>	FULL LOAD AMPS <input type="text"/>
LARGEST CONTROLLED MOTOR <input type="text"/>	OVERCURRENT PROTECTION PROVIDED AT MACHINE SUPPLY TERMINAL		
FIELD ALIGN & ADJUST SUMMARY <input type="text"/>	BAND LENGTH <input type="text"/>		
ELECTRICAL SCHEMATIC NUMBER <input type="text"/>	DATE OF MANUFACTURE <input type="text"/>		
HYDRAULIC SCHEMATIC NUMBER <input type="text"/>	SEE INSTRUCTION MANUAL FOR MACHINE OPERATION AND LUBRICATION DATA		

For your information and future reference, insert pertinent data concerning your machine in the spaces provided above. This information is printed on a label or stamped on a plate attached to the machine frame.

Always specify model and serial numbers on all parts orders and correspondence concerning your machine. This will help avoid unnecessary delays and inconvenience during processing.

The specifications contained herein were in effect at the time this manual was approved for printing. The DoALL Company, whose policy is one of continuous product improvement, reserves the right to change specifications or design at any time without notice and without incurring obligations.

PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATING THE MACHINE!
For Sales, Parts and Service, call 1-888-362-5572



DoALL SAWING PRODUCTS
2375B TOUHY AVENUE
ELK GROVE, ILLINOIS 60007 U.S.A.

The following registered trademarks of the DoALL Company are used in this manual:
DoALL and Imperial Bi-Metal.

TABLE OF CONTENTS

MACHINE DIMENSIONS

Floor Plan	1
Front View	2

MACHINE FEATURES

Front View	3
Rear View	4

INSTALLATION

Location	5
OSHA Notice!!	5
Unpacking	5
Cleaning	5
Lifting	5
Machine Alignment	5-6
Electrical Installation	6
Plant Air Installation	6
Preparation for Use	6

OPERATION

Safety Precautions	7
Using the Job Selector	7
Electrical Controls	8
Band Speed Controls	8
Table Controls	8-9
Saw Band Preparation	9-10
Post Adjustment	10-11
Worktable and Tilt Adjustment	11
Mist Coolant	11
Wheel Brush and Chip Removal	11
Typical Operation Procedures	12-13

LUBRICATION

Lubrication Chart	14
Lubrication Diagram	15

MAINTENANCE

Replacing Bandwheel Flanges	16
Replacing Bandwheel Tires	16
Insert-Type Saw Guides	16
Electric Motors	16
Head Components	16
Transmission	16
Wheel Brush	17
Band Drive Belt	17
Mist Coolant	17
Hydraulic System	17-18
Hydraulic Pump Replacement	18
Machine Cleaning	18

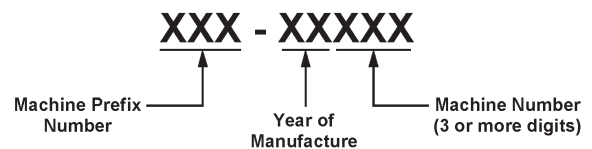
TROUBLE SHOOTING 19-20

ACCESSORIES

Disc Cutter	21
Universal Calibrated Work Fixture	21-22
Protractor Workstop and Alignment Gage	22
Workholding Jaws	22
Worklight	22
Magnifier	22
Band Break Switch	22
Dust Spout	22
Bandwheels	23
Extra Work Height	23
18" (457.2 mm) Stroke Worktable	23
DBW-15 Buttwelder	23
Band Lubricator	23
Optional Saw Guides	23-24
Foot Switch (3-Way)	24
Full Cycle Option	24
Laser Line Generator Option	24-25

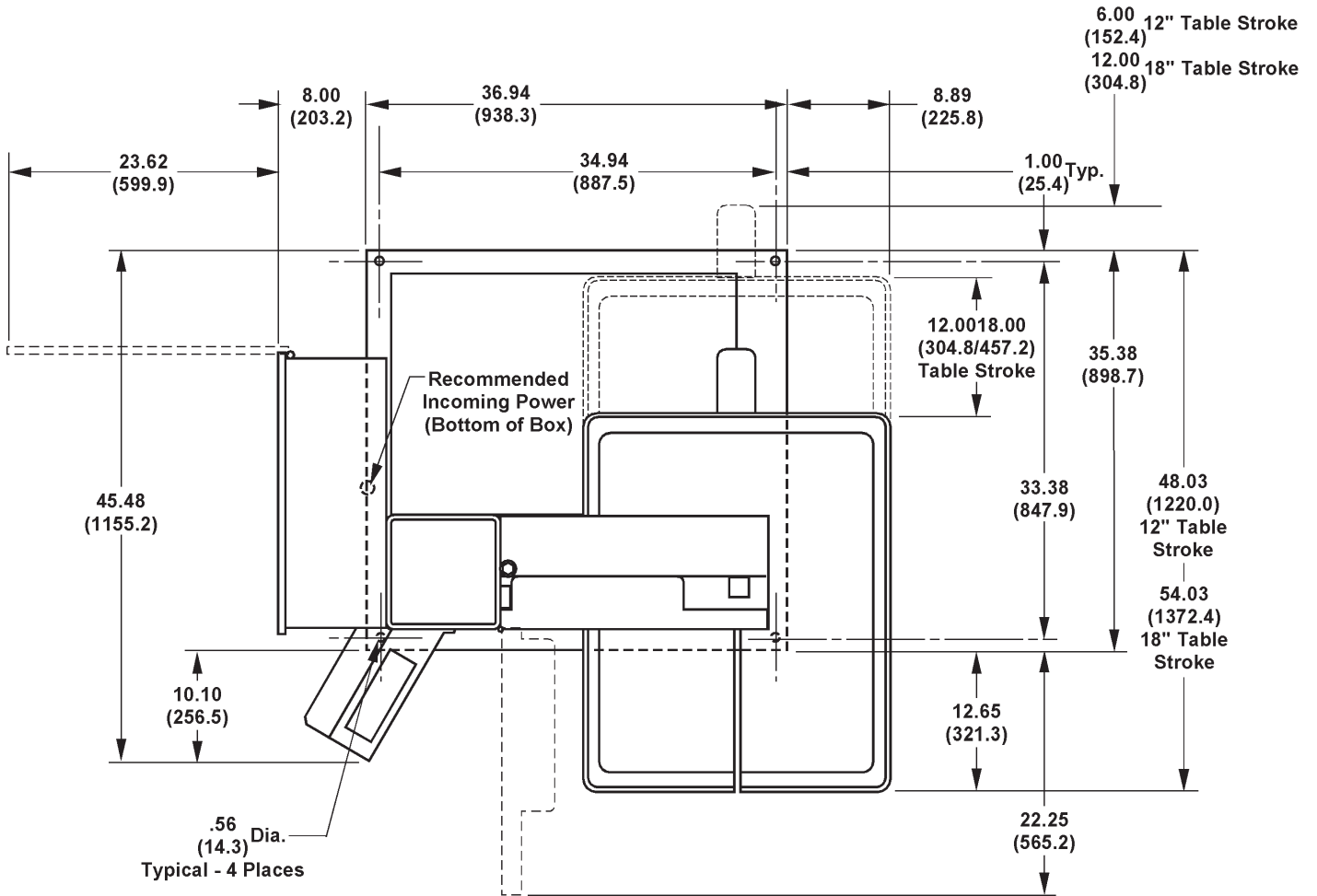
How to read your serial number:

Example: 500-001234



MACHINE DIMENSIONS

INCHES $\pm .03$
(MILLIMETERS ± 1 mm)

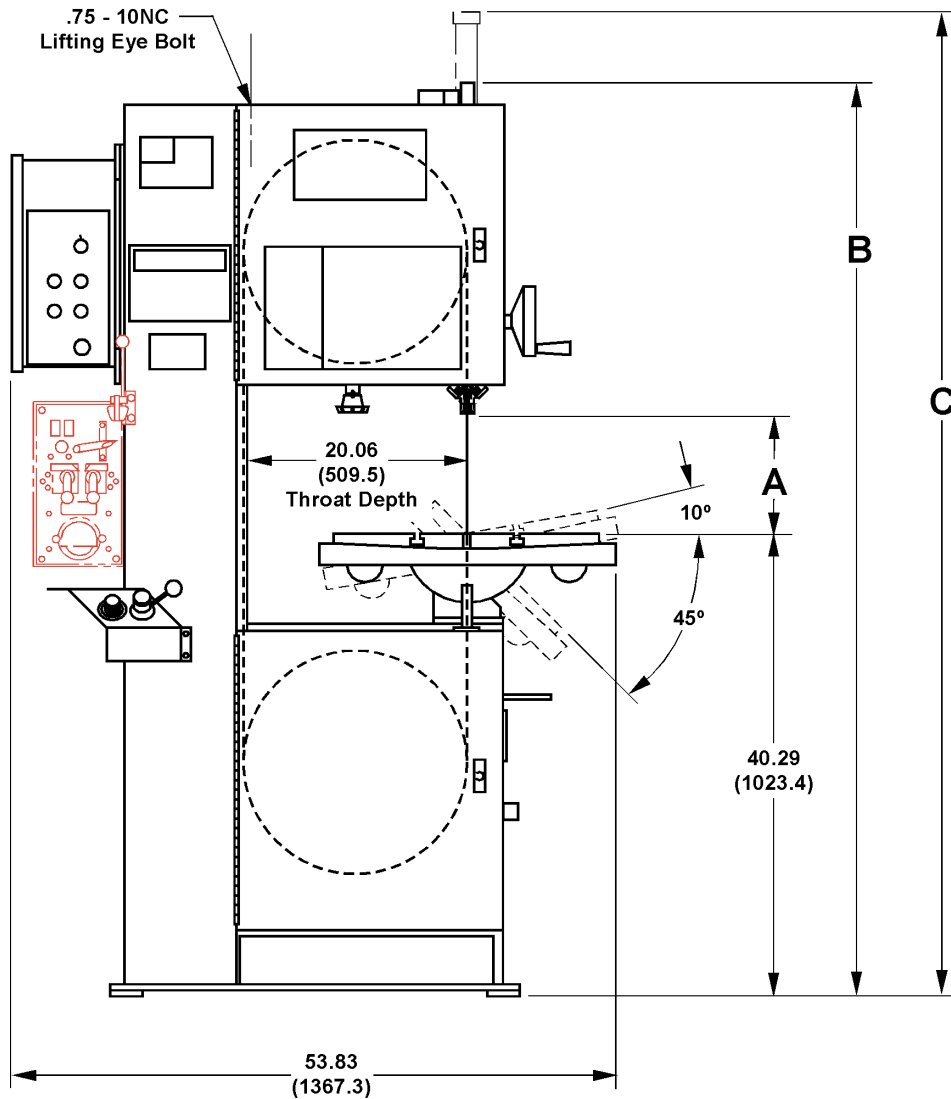


FLOOR PLAN

MACHINE DIMENSIONS (Continued...)

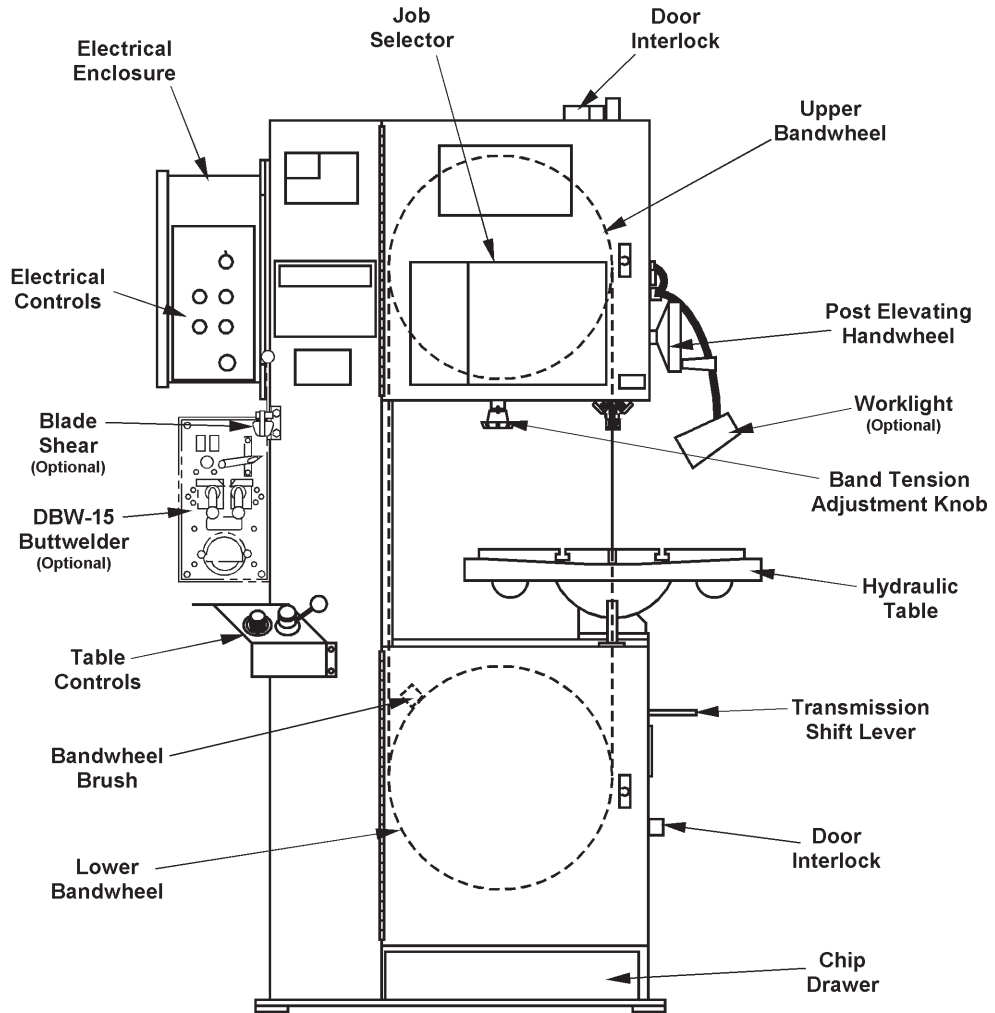
INCHES ± .03
(MILLIMETERS ± 1 mm)

	Dimensions		
	A	B	C
Work Height	12.12" (308.1 mm)	81.42" (2068.1 mm)	-----
	18.12" (460.2 mm)	84.42" (2142.7 mm)	-----
	24.12" (612.4 mm)	90.42" (2245.1 mm)	98.00" (2489.2 mm)
	30.12" (765.3 mm)	96.42" (2447.5 mm)	104.00" (2641.6 mm)



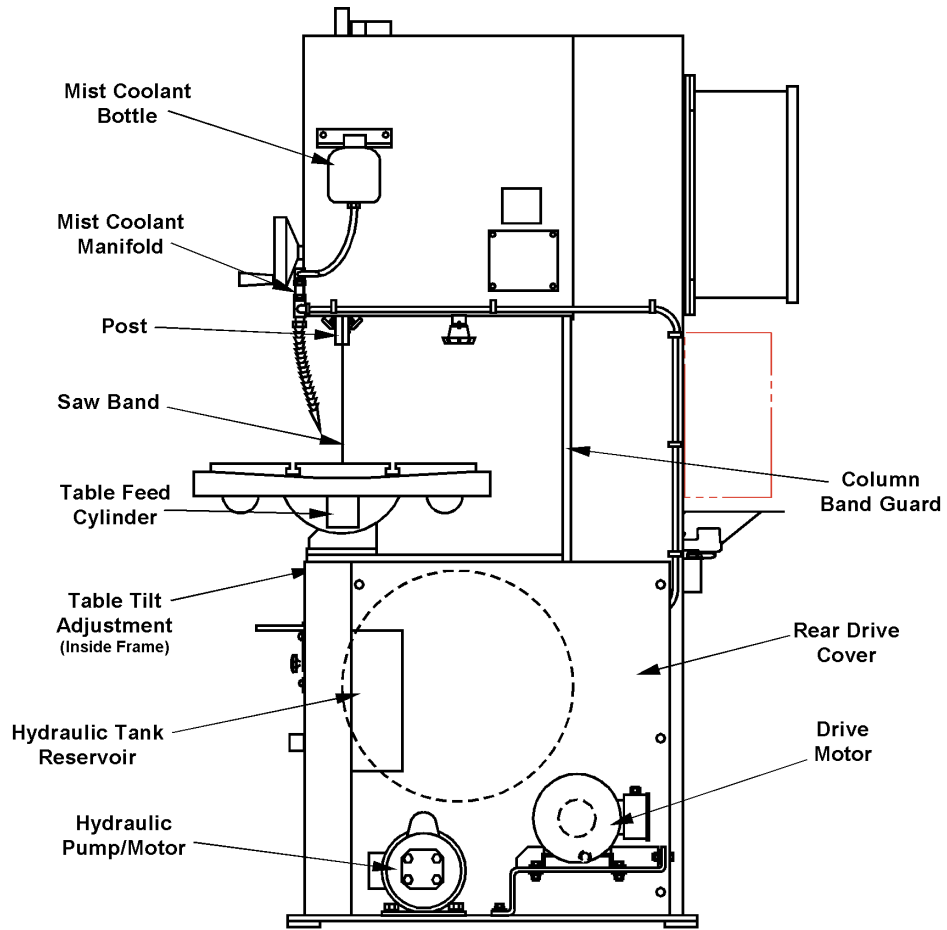
FRONT VIEW

MACHINE FEATURES



FRONT VIEW

MACHINE FEATURES (Continued....)



REAR VIEW

INSTALLATION



All the “left”, “right”, “front” and “rear” designations in this manual are as viewed by the operator facing the machine's electrical controls.

LOCATION

1. The floor area required by the standard machine is approximately 53.83 inches (1367.3 mm) in width by 45.48 inches (1155.2 mm) in length. Machine height for the standard machine is 81.42 inches (2068.1 mm). Refer to pages 1 & 2 for further machine dimensions.
2. Locate the machine to provide adequate space for your sawing needs. Be sure to provide sufficient clearance for: **(a)** Material loading and unloading; **(b)** All door openings; **(c)** Maintenance and lubrication procedures; **(d)** Operation of the any supplied machine accessories.

OSHA NOTICE!!



OSHA Regulation 1910.212 (5B). Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

UNPACKING

1. The machine is fastened to and shipped on a wooden skid. Overseas shipments are also crated.
2. Carefully remove all protective covers, strapping, hold-down brackets, crating, etc. Then: **(a)** Remove all bolts which fasten the machine to the shipping skid; **(b)** Check inside the rear drive compartment for other removable brackets, extra machine parts or supplies which might have been placed there for shipment. **(c)** Inspect the machine and all parts for shipping damage. Claim procedures are listed on this manual's inside front cover.

CLEANING

1. If necessary, use solvent to remove rust-preventive coating applied to exposed bare metal surfaces before shipment.

LIFTING

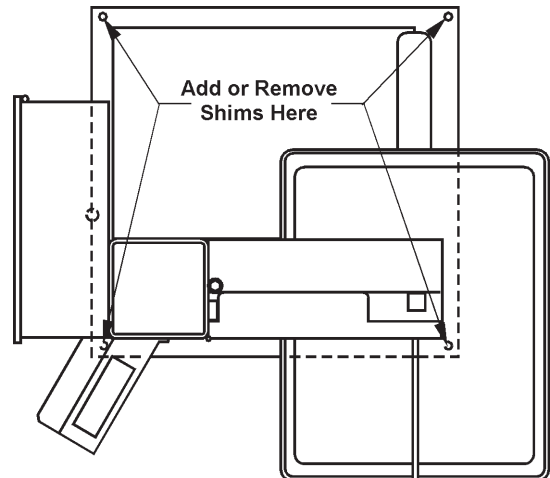
1. A tapped hole is located on top of the machine's saw head. Screw a forged 3/4-10NC eye-bolt into this hole for lifting purposes. Net weight of the machine is approximately 1800 pounds (816.5 kg).



DO NOT lift the machine by its sawing head.

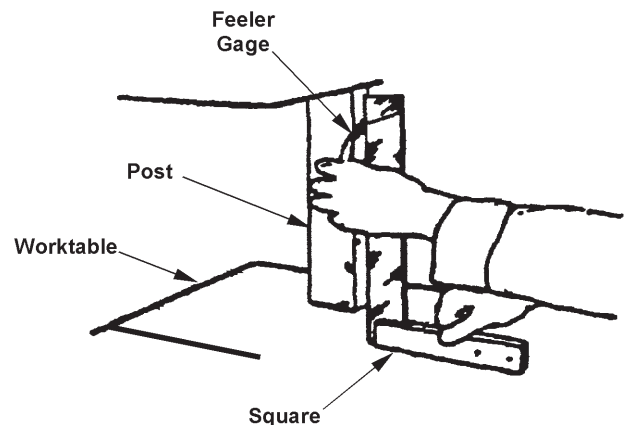
MACHINE ALIGNMENT

1. Place shims between the floor and the base mounting pads until the machine is level with weight resting evenly on all the base pads.



Shim Locations.

2. Square the worktable to the side of the post by loosening the tilt lock bolt located in the machine's frame under the worktable and make the necessary adjustments. If necessary: **(a)** Position the worktable's tilt angle pointer at zero (0) on the tilt scale; **(b)** Tighten the tilt lock bolt.



Squaring Worktable to Post.

3. Place a good quality, 10 inch (254.0 mm) master square on the worktable against the post's back side. Measure clearance between the post and square near the bottom of the post. Clearance should be within 0.007-inch \pm 0.005-inch (0.18 mm \pm 0.13 mm) at the bottom of the post for standard machines.

MACHINE ALIGNMENT (Continued....)

4. Add or remove shims under the base pads until the correct post to square clearance is obtained.



The machine must be bolted to the floor for worktable loads over 100 pounds (45.4 kg).

ELECTRICAL INSTALLATION



Electrical installation must be made by authorized electrical maintenance personnel only!

1. Refer to the machine specifications plate on the machine frame to verify that the electrical supply circuit will meet the voltage/phase/frequency/ampere requirements listed. A basic data plate is reproduced on this manual's introductory page.
2. Bring the incoming power leads into the machine's electrical box. Refer to the electrical schematic, if necessary, when making the connections.
3. Turn the disconnect switch on the electrical box to ON. Then: **(a)** Alternately jog the **Hydraulic Start** and **Hydraulic Stop** pushbuttons; **(b)** Check to make sure the saw band is running in a **clockwise** motion; **(c)** Reverse the leads if hydraulic pump rotation is incorrect.
4. If the machine has provided overload protection, the overload relay may kickout if starting and stopping occurs numerous times in rapid succession. If this happens, let the relay cool for a few minutes before restarting the machine.

PLANT AIR INSTALLATION

1. Plant air is required to operate the standard mist coolant and optional band mist lubricator.
2. Plant air is connected at the drive compartment wall in the rear of the machine. Air pressure should be in the range of 80 to 90 psi (5.5 and 6.2 bar or 5.6 and 6.3 kg/cm²).



DO NOT exceed 90 psi (6.2 bar or 6.3 kg/cm²).

PREPARATION FOR USE

1. Check the transmission oil level. Capacity is approximately 1.7 pints (0.80 liters). If the reservoir level is low (or empty): **(a)** Check to see that the transmission plug is installed tightly; **(b)** See the "Maintenance" section for proper procedure of checking and/or filling the transmission. **(c)** Refer to the Lubrication Chart later in this manual for recommended lubricants.
2. Check the mist coolant bottle located on the upper rear side of the saw head for the proper reservoir level. Capacity is one (1) quart (0.95 liter). Refer to the Lubrication Chart for recommended lubricant.
3. Be sure the hydraulic reservoir is full. Capacity is approximately three (3) gallons (11.3 liters). On top of the reservoir, remove the pipe plug and install the breather. The breather can be found in the box of extra parts shipped with the machine.
4. Make sure all other points listed by the Lubrication Chart have been properly checked or serviced.

OPERATION

SAFETY PRECAUTIONS

SUPERVISOR, MAKE SURE THAT THE OPERATOR UNDERSTANDS THE FOLLOWING:

WARNING

THESE PRECAUTIONS MUST BE FOLLOWED WHEN OPERATING OR SERVICING THIS MACHINE:

NEVER WEAR GLOVES WHILE OPERATING THIS MACHINE.
NEVER OPERATE MACHINE WITHOUT SAFETY GLASSES.
NEVER OPERATE MACHINE WITHOUT SAW BLADE GUARDS IN PLACE.
NEVER OPERATE MACHINE BEFORE CLOSING BAND WHEEL DOOR COVERS.
NEVER OPERATE MACHINE FROM REAR.
NEVER REMOVE CUT-OFF PIECES WHILE MACHINE IS RUNNING.

- READ INSTRUCTION MANUALS BEFORE OPERATING THIS MACHINE.
- AVOID CONTACT WITH COOLANT, ESPECIALLY GUARD YOUR EYES.
- BRING ADJUSTABLE SAW GUIDE AND GUARD AS CLOSE TO WORK AS POSSIBLE.
- DISCONNECT ALL ELECTRICAL POWER BEFORE SERVICING.
- DO NOT SERVICE, REPAIR OR ADJUST MACHINE WITHOUT PROPER INSTRUCTION FROM YOUR SUPERVISOR AND WITHOUT READING AND FULLY UNDERSTANDING THE INSTRUCTION MANUAL.
- USE A FIXTURE TO FEED MATERIAL.
- CLOSE AND SECURE BAND WHEEL COVERS BEFORE TENSIONING BAND OR STARTING MACHINE.
- STEP TO ONE SIDE AND AWAY FROM WELDING UNIT BEFORE WELDING A SAW BAND.
- KEEP HANDS AWAY FROM MOVING SAW BLADES AND VISE AREA.
- INSTALL FRICTION BAND AND SPARK SHIELD BEFORE FRICTION SAWING.
- USE EXTREME CARE IN HANDLING BLADES.
- USE A DUST COLLECTOR WHEN SAWING GENERATES DUST.

**MAKE SAFETY THE RULE AND FOLLOW SAFE SHOP PRACTICES.
DO NOT REMOVE OR DEFACE THIS SIGN**

404476

Warning Label - READ and UNDERSTAND.

USING THE JOB SELECTOR

1. Refer to the Job Selector chart located on the upper bandwheel door. It has information about the recommended band type and pitch, band speeds and cutting rates according to the type of material to be cut and its thickness. It also has a radius guide that shows the minimum radii cuts possible with various saw band widths.
2. To use, find the material to be cut in the first column. Then move to the right to find information on coolant application if any, band speed recommendations, feed rates and band type and pitch.



The Job Selector is a guide only and the recommendations shown can be adjusted to meet special material requirements.

Job Selector

RADIUS GUIDE

MATERIAL A.S.I.

WORK HEIGHT

BAND SPEED

FEED

BAND-TEETH/INCH

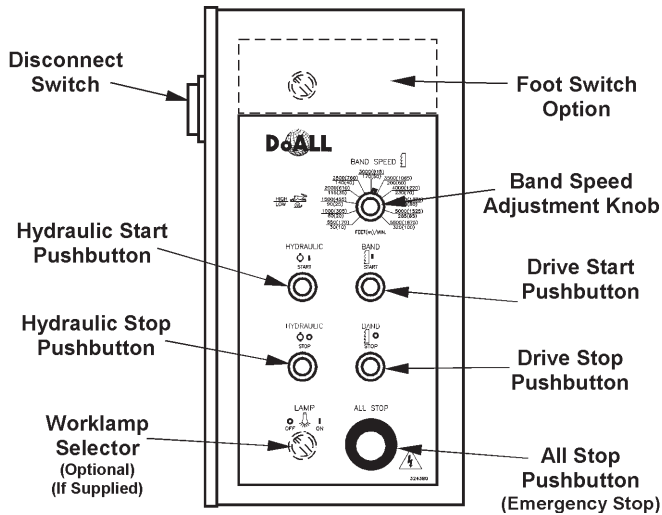
MATERIAL A.S.I.	F	1-1/4"	1-3/4"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"	10"	12"
LOW CARBON	SAFETY	170-180	160-170	150-160	140-150	130-140	120-130	110-120	100-110	90-100	80-90	70-80	60-70
MEDIUM CARBON	SAFETY	180-190	170-180	160-170	150-160	140-150	130-140	120-130	110-120	100-110	90-100	80-90	70-80
HIGH CARBON	SAFETY	190-200	180-190	170-180	160-170	150-160	140-150	130-140	120-130	110-120	100-110	90-100	80-90
STAINLESS	SAFETY	200-210	190-200	180-190	170-180	160-170	150-160	140-150	130-140	120-130	110-120	100-110	90-100
INVAR	SAFETY	210-220	200-210	190-200	180-190	170-180	160-170	150-160	140-150	130-140	120-130	110-120	100-110
MARAGING	SAFETY	220-230	210-220	200-210	190-200	180-190	170-180	160-170	150-160	140-150	130-140	120-130	110-120
ALUMINUM	SAFETY	230-240	220-230	210-220	200-210	190-200	180-190	170-180	160-170	150-160	140-150	130-140	120-130
COPPER	SAFETY	240-250	230-240	220-230	210-220	200-210	190-200	180-190	170-180	160-170	150-160	140-150	130-140
BRASS	SAFETY	250-260	240-250	230-240	220-230	210-220	200-210	190-200	180-190	170-180	160-170	150-160	140-150
INCONEL	SAFETY	260-270	250-260	240-250	230-240	220-230	210-220	200-210	190-200	180-190	170-180	160-170	150-160
TITANIUM	SAFETY	270-280	260-270	250-260	240-250	230-240	220-230	210-220	200-210	190-200	180-190	170-180	160-170
STAINLESS	SAFETY	280-290	270-280	260-270	250-260	240-250	230-240	220-230	210-220	200-210	190-200	180-190	170-180
INCONEL	SAFETY	290-300	280-290	270-280	260-270	250-260	240-250	230-240	220-230	210-220	200-210	190-200	180-190
TITANIUM	SAFETY	300-310	290-300	280-290	270-280	260-270	250-260	240-250	230-240	220-230	210-220	200-210	190-200
ALUMINUM	SAFETY	310-320	300-310	290-300	280-290	270-280	260-270	250-260	240-250	230-240	220-230	210-220	200-210
COPPER	SAFETY	320-330	310-320	300-310	290-300	280-290	270-280	260-270	250-260	240-250	230-240	220-230	210-220
BRASS	SAFETY	330-340	320-330	310-320	300-310	290-300	280-290	270-280	260-270	250-260	240-250	230-240	220-230
INCONEL	SAFETY	340-350	330-340	320-330	310-320	300-310	290-300	280-290	270-280	260-270	250-260	240-250	230-240
TITANIUM	SAFETY	350-360	340-350	330-340	320-330	310-320	300-310	290-300	280-290	270-280	260-270	250-260	240-250
ALUMINUM	SAFETY	360-370	350-360	340-350	330-340	320-330	310-320	300-310	290-300	280-290	270-280	260-270	250-260
COPPER	SAFETY	370-380	360-370	350-360	340-350	330-340	320-330	310-320	300-310	290-300	280-290	270-280	260-270
BRASS	SAFETY	380-390	370-380	360-370	350-360	340-350	330-340	320-330	310-320	300-310	290-300	280-290	270-280
INCONEL	SAFETY	390-400	380-390	370-380	360-370	350-360	340-350	330-340	320-330	310-320	300-310	290-300	280-290
TITANIUM	SAFETY	400-410	390-400	380-390	370-380	360-370	350-360	340-350	330-340	320-330	310-320	300-310	290-300
ALUMINUM	SAFETY	410-420	400-410	390-400	380-390	370-380	360-370	350-360	340-350	330-340	320-330	310-320	300-310
COPPER	SAFETY	420-430	410-420	400-410	390-400	380-390	370-380	360-370	350-360	340-350	330-340	320-330	310-320
BRASS	SAFETY	430-440	420-430	410-420	400-410	390-400	380-390	370-380	360-370	350-360	340-350	330-340	320-330
INCONEL	SAFETY	440-450	430-440	420-430	410-420	400-410	390-400	380-390	370-380	360-370	350-360	340-350	330-340
TITANIUM	SAFETY	450-460	440-450	430-440	420-430	410-420	400-410	390-400	380-390	370-380	360-370	350-360	340-350
ALUMINUM	SAFETY	460-470	450-460	440-450	430-440	420-430	410-420	400-410	390-400	380-390	370-380	360-370	350-360
COPPER	SAFETY	470-480	460-470	450-460	440-450	430-440	420-430	410-420	400-410	390-400	380-390	370-380	360-370
BRASS	SAFETY	480-490	470-480	460-470	450-460	440-450	430-440	420-430	410-420	400-410	390-400	380-390	370-380
INCONEL	SAFETY	490-500	480-490	470-480	460-470	450-460	440-450	430-440	420-430	410-420	400-410	390-400	380-390

Job Selector.

ELECTRICAL CONTROLS

Electrical Box Enclosure

1. **Hydraulic Start.** Push this green illuminous button to start the hydraulic motor. The hydraulics are running when the button is lit.
2. **Hydraulic Stop.** Push this red button to stop the hydraulic motor.



Typical Electrical Control Box.

3. **Band Speed.** Turning this knob adjusts the band speed in either "high" or "low" speed range.
4. **Drive Start.** Push this green illuminous button to start the band drive motor. The band drive motor is running when the button is lit.
5. **Drive Stop.** Push this red button to stop the band drive motor.
6. **All Stop (Emergency Stop).** Pushing this red mushroom head button stops all machine motors (band drive and hydraulic). To resume operation, the **All Stop** button must be reset by rotating the head of the button **clockwise** until the head pops out.
7. **Worklight (Optional) (If Supplied).** A switch on the worklight turns the light "OFF" and "ON". On some machines, there is a selector switch on the electrical control box below the **Hydraulic Stop** pushbutton that turns the light "OFF" and "ON".
8. Controls for the DBW-15 Butt welder are described in a separate instruction manual.
9. Controls for the optional Foot Switch option are described in the "Accessories" section.

BAND SPEED CONTROLS

1. The transmission gear shift lever is located on the machine's right side below the worktable, and the band speed indicator is located on the electrical box enclosure.
2. The operator can select between "high" and "low" band speed ranges by hold down the shift lock knob and then sliding the transmission gear shift lever:
 - (a) To the left to obtain "high" range speeds -- 550 to 5500 fpm (170 to 1675 m/min);
 - (b) To the right to obtain "low" range speeds -- 30 to 320 fpm (10 to 100 m/min).
- The "neutral" position is in the middle of the slot. The band speed **MUST** be at its lowest speed before the shift lever can be moved to "neutral".
3. Band speed within both ranges is changed by turning the **Band Speed** knob on the electrical control box to the desired speed.
4. During machine operation, keep the following band speed and gear shifting precautions in mind:



Adjust the band speed only while the machine is running.



Always turn the band speed knob to the lowest speed within its range before stopping the machine.



Always allow the saw band to stop completely before opening any bandwheel doors.



Stop the machine to shift gears. Then turn the drive bandwheel by hand to engage the clutch while shifting.



DO NOT attempt to force the gear shift lever into place.

TABLE CONTROLS

1. These controls, located on the front of the column, operate the hydraulic table.
2. **Feed Force.** This dial permits the operator to vary workpiece pressure against the saw band. Feed force can be changed between 0 and 175 psi (0 and 79 kg/cm²).

TABLE CONTROLS (Continued....)

3. **Table Feed.** This valve with "reverse", "stop", "feed" and "forward" settings controls table directional movement. "Feed" position is for sawing, "reverse" and "forward" positions are for table set-up and/or rapid table movement, and "stop" stops table movement in either direction.

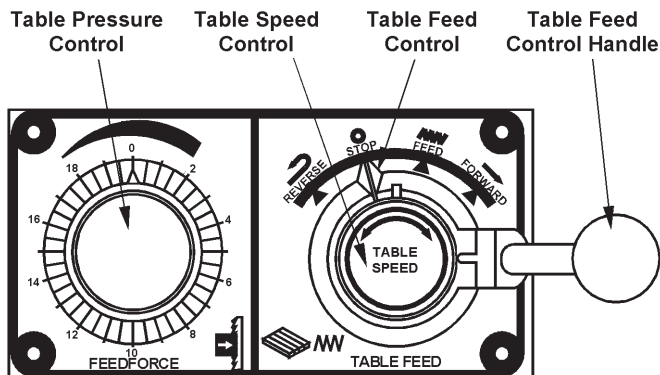


Table Controls.

4. **Table Speed.** This dial located in the center of the **Table Feed** control regulates the table speed. Turn the dial **clockwise** to "increase" table feed speed, **counterclockwise** to "decrease" it. This operates in the "feed" position only.

SAW BAND PREPARATION

Saw Band Selection

1. The machine is equipped with an Imperial Bi-Metal Super Silencer saw band that is 154.0 inches (3911.6 mm) long. It will accept saw band widths from 1/16 to one (1) inch (1.6 to 25.4 mm).
2. Standard equipment includes:
 - One (1) set of insert-type saw guide blocks with carbide back-up for saw bands from 1/8 to 1 inch (3.2 to 25.4 mm) wide.
 - One (1) set of metal saw guide inserts for saw bands 1/4 (6.4 mm), 3/8 (9.5 mm) and 1/2 inch (12.7 mm) wide and 3/4 inch (19.1 mm) and 1 inch (25.4 mm) carbide faced inserts.



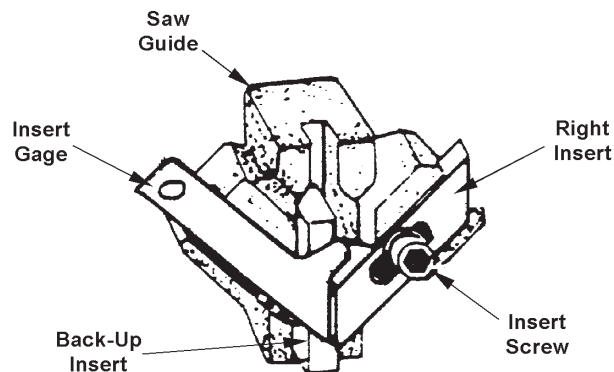
Information about all DoALL saw bands can be obtained from a DoALL sales representative.

Insert-Type Saw Guide Adjustment



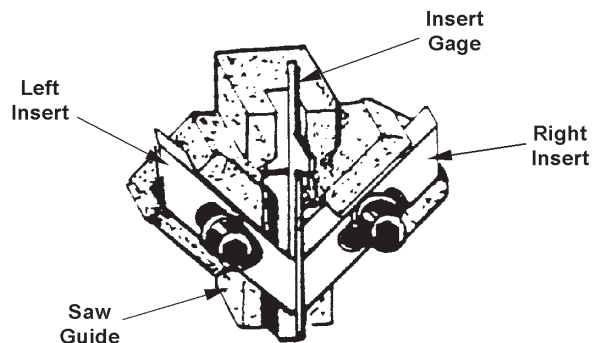
These instructions apply to both the upper and lower insert-type saw guide blocks.

1. Select the saw guide blocks and inserts marked for the width of the saw band to be used. Then: **(a)** Place the right insert in the right milled slot; **(b)** Tighten the insert screw slightly so that the insert will slide in the slot, yet still hold its correct position when released.



Positioning the Right Insert.

2. Select the insert gage which matches the size of the saw band being used. Then: **(a)** Place the insert gage in the left slot; **(b)** Adjust the right insert to fit exactly into the notched end of the gage; **(c)** Tighten the right insert screw.
3. Place the left insert in its slot and tighten the insert lightly. Then: **(a)** Place the gage edgewise between both inserts; **(b)** Lower the left insert until it rests against the gage; **(c)** Tighten the left insert screw.



Positioning the Left Insert.



Precision-type saw guides are recommended for maximum band speeds of 1300 fpm (390 m/min) for production sawing, or up to 5000 fpm (1500 m/min) for occasional sawing. Use optional roller saw guides for continuous sawing over 1300 fpm (390 m/min).

SAW BAND PREPARATION (Continued...)

Saw Band Removal



Always use extreme care when handling saw bands. Wear gloves.

1. Release saw band tension. Then: **(a)** Open both bandwheel doors; **(b)** Remove the post saw band guard; **(c)** Loosen the screw holding the worktable's sawing slot clamp bar and move it aside; **(d)** Loosen the saw guide inserts.
2. Carefully slip the worn or broken saw band from between the saw guide inserts, the column guard and remove it from around both bandwheels.

Saw Band Installation

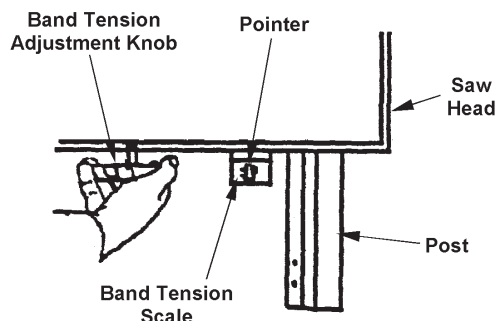


Always use extreme care when handling saw bands. Wear gloves.

1. Remove the old saw band according to the directions above. Then: **(a)** Place the new saw band carefully around the bandwheels, through the slot in the column guard and between the upper and lower saw guide inserts; **(b)** The saw band should track up against the back edge of the each bandwheel flange.
2. Remove the new saw band's protective Saw Cap. Then: **(a)** Apply the band tension recommended by the scale adjacent to the tension adjustment knob; **(b)** Reinstall the post saw band guard; **(c)** Reposition and secure the worktable sawing slot clamp bar; **(d)** Close both bandwheel doors.

Saw Band Tension Adjustment

1. Saw band tension is adjusted by turning the knob located below the machine's sawing head.
2. A scale showing the recommended tension for various saw band widths is located to the right of the tension adjustment knob. Scale numbers represent the recommended tensions for common saw band gages and pitches.



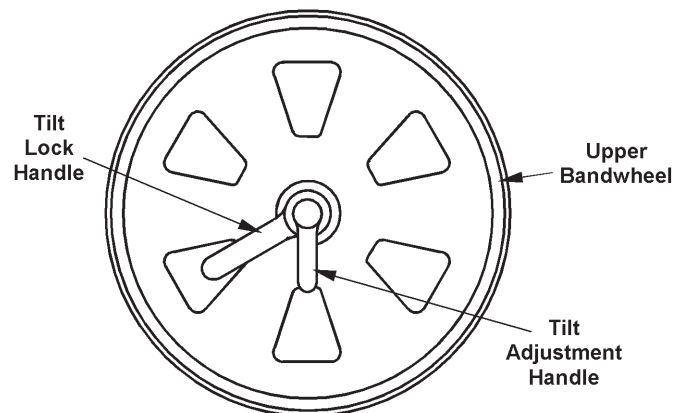
Adjusting Saw Band Tension.

3. The following are operator tensioning recommendations:

- **Reduce** the recommended band tension when using saw bands with a coarser pitch or lighter gage.
- **Increase** the recommended band tension when using heavier gage saw bands.

Saw Band Tracking

1. The upper bandwheel can be tilted a maximum of three (3) inches (76.2 mm) forward and backward to help obtain correct saw band tracking. A saw band is tracking properly when the saw band's back edge is against the bandwheel flange and just touching the saw guide back-up bearings.
2. The following tracking procedures are to be performed with the band drive motor off and the transmission in "neutral": **(a)** Open both bandwheel doors; **(b)** Manually turn the bandwheels to observe how the saw band is tracking.



Tilt Adjustment Handles.

3. To adjust bandwheel tilt if tracking is not correct: **(a)** Loosen the tilt lock handle; **(b)** Turn the tilt adjustment handle until the saw band tracks correctly on the bandwheel tires; **(c)** Retighten the tilt lock handle.
4. Close both bandwheel doors.

POST ADJUSTMENT

1. Post and upper saw guide elevation can be adjusted to accept workpieces with heights varying up to 12 inches (304.8 mm) (standard work height) by means of a handwheel located on the right side of the saw head.
2. Post and upper saw guide can be adjusted by turning the handwheel **clockwise** to "raise" the post and upper saw guide, **counterclockwise** to "lower" them.

POST ADJUSTMENT (Continued...)

3. Always keep the post and upper saw guide as close as possible to the workpiece and the band guard in place at all times while sawing.

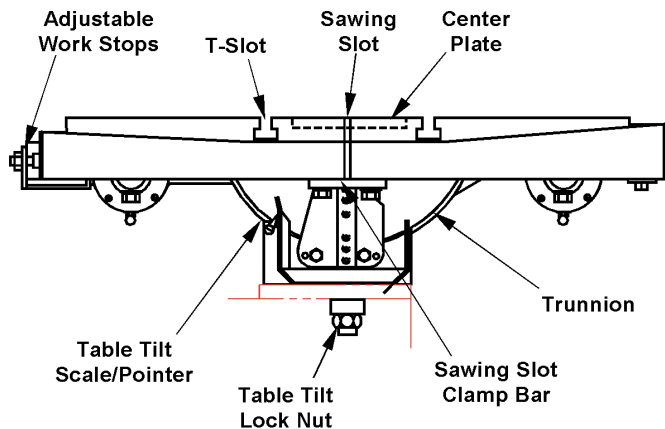
WORKTABLE AND TILT ADJUSTMENT

1. The standard hydraulically powered worktable measures 26.5 by 33.5 inches (673.1 by 850.9 mm) with a table stroke of 12 inches (304.8 mm). Table controls are mounted on the front column and has feed range of 0 to 6 fpm (0 to 1.8 m/min.). Its load capacity is 500 pounds (226.8 kg).



The machine must be bolted to the floor for table loads over 100 pounds (45.4 kg).

2. The worktable is drilled and tapped on the right side to attach accessory equipment. Its removable center plate can be replaced with optional plates for various options. The worktable also has two (2) 1/2 inch (12.7 mm) wide T-slots for tool and fixture mounting purposes.

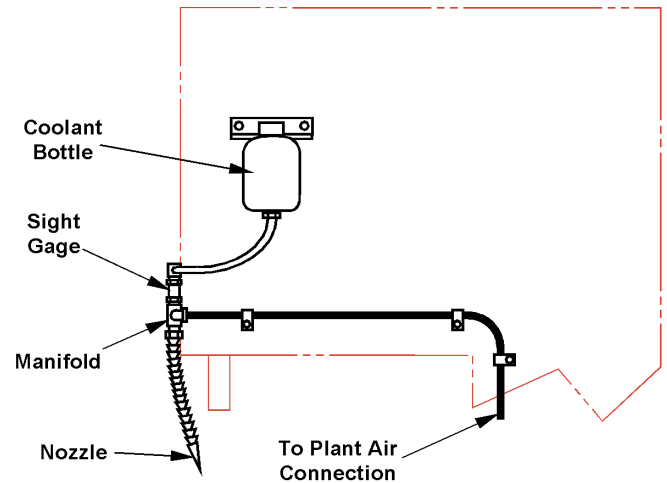


Hydraulically Powered Worktable.

3. Two (2) adjustable work stops, located on the table's left side, limit table travel. The front stop controls the cut depth, the rear stop minimizes unnecessary table travel. They can be adjusted by loosening the lock nuts and slide the work stops to the desired position.
4. The worktable can be tilted manually up to 10° left and 45° right primarily for sawing compound angles. The amount of worktable tilt is indicated by a pointer and a trunnion-mounted calibrated scale.
5. To tilt the worktable: **(a)** Use the wrench provided to reach through the machine frame and under the worktable to loosen the tilt locknut; **(b)** Tilt the worktable manually until the pointer reaches desired angle shown on the scale; **(c)** Tighten the tilt locknut.

MIST COOLANT

1. Mist coolant uses plant air, a valve with sight glass and a one (1) quart (0.95 liter) supply bottle mounted on the rear side of the head.



Mist Coolant.

2. Air and coolant are mixed in a manifold to form a fine mist. Adjust the flexible tube to direct mist stream onto saw band and workpiece. Regulate mist with adjustable valve at a rate of one drop per second as seen through the sight glass.
3. Your DoALL sales representative can provide complete information on various coolants.

WHEEL BRUSH AND CHIP REMOVAL

1. A brush located on the lower bandwheel approximately in the ten (10) o'clock position cleans metal chips from the bandwheel during machine operation. Removed chips drop into a removable pan in the machine base. This pan should be emptied periodically.
2. During operation, chips and other debris may accumulate around such machine areas as saw guides, worktable surfaces, bandwheels, slides, etc. Remove this debris as soon as possible. **The DoALL Company recommends removing chip collections at least twice per each eight (8) hour shift, and more often with heavier use.**
3. See the "Maintenance" section of this manual for cleaning and adjustment procedures.

TYPICAL SAWING PROCEDURES

Set-Up

1. These procedures assume that the following machine conditions exist: **(a)** The machine has been properly installed and aligned; **(b)** The band drive motor is off; **(c)** The proper saw band has been installed, is correctly tracked and tensioned; **(d)** All lubrication procedures have been carried out.

Procedure

1. Raise the post high enough so that the upper saw guide can not be damaged while stock is being loaded onto the worktable.
2. Set the table work stops to desired cut depth and table travel and lock in place.
3. If necessary, tilt the worktable to the desired angle and lock it in place.
4. Load stock to be cut onto the worktable. Clamp the stock if required.
5. Lower the post until the upper saw guide is just above the stock, but **NOT** touching.
6. Determine the band speed range and desired band speed for the procedure to be undertaken. Then: **(a)** Use the transmission gear shift lever to choose between "high" and "low" band speed ranges; **(b)** Push the **Drive Start** and **Hydraulic Start** buttons; **(c)** Turn the **Band Speed** knob to the band speed desired.
7. Before starting the cut, make sure to adjust the mist coolant spray onto the saw band and cutting area.
8. Turn the **Feed Force** and **Table Speed** knobs to "0" or low settings. Then: **(a)** Position the saw band to the starting point of the cut by moving the **Table Feed** control to "forward" and turn the **Feed Force** knob until the table is in position; **(b)** Turn the **Table Feed** control to "feed" and turn the **Table Speed** knob slowly to move the saw band into the workpiece.
9. Carefully move the stock toward the saw band and begin the cut. Adjust the band speed and feed force as necessary during the cutting procedure.
10. After the cut has been finished: **(a)** Turn the **Band Speed** knob to its lowest speed; **(b)** Push the **Drive Stop** button; **(c)** Remove the piece just cut from the worktable; **(d)** Reposition the stock to begin another cut; **(e)** Push the **Drive Start** button and then set the band speed.

11. The following are important sawing precautions which should be observed:



Reduce the feed force when cutting into an opening to prevent saw band damage.



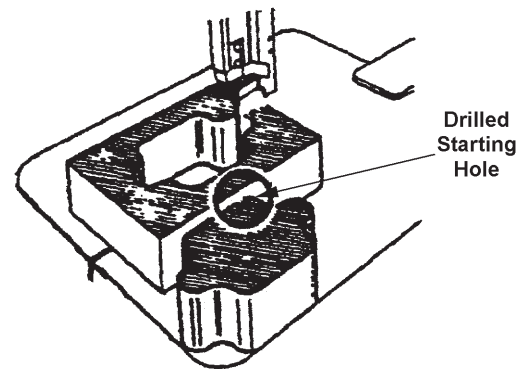
DO NOT feed work so rapidly that saw band twisting or bowing occurs.



For future reference, keep a record of band speed, feed pressure and coolant application settings for successful jobs.

Contour Sawing

1. Procedures for stock set-up and band speed adjustment are the same as noted for production sawing except when contour sawing of large, heavy stock may require the use of optional ball transfer strips, work slides, etc. and a heavy gage saw band.



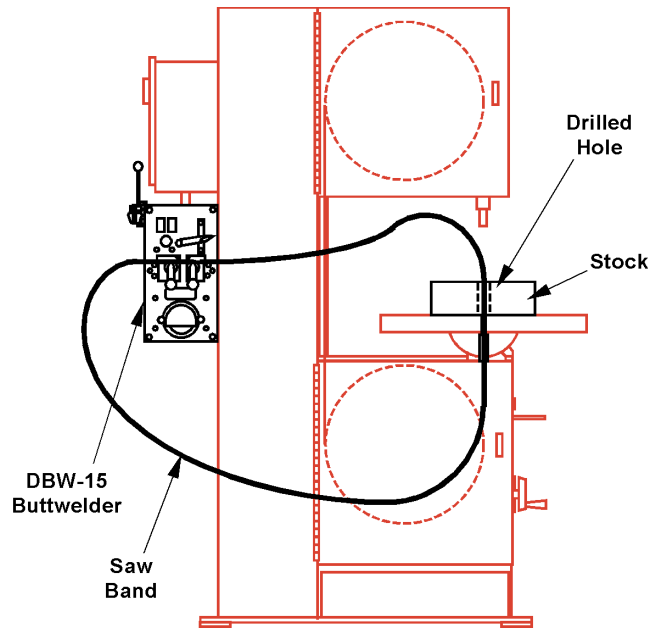
Starting Hole for Sharp Contour Cutting.

2. A hole is usually drilled in the stockpiece when a sharp corner is to be cut, as shown in the illustration. However, a corner may also be by-passed by cutting a curve, and leaving the remainder to be notched out later.

Internal Contours

1. To prepare for internal contour sawing: **(a)** Drill a starting hole in the stock; **(b)** Run the saw band through the hole; **(c)** Weld the saw band. **Insulate the saw band from contact with the stock or the worktable will insure a better weld.**
2. The diameter of the drilled starting hole is determined by the size of the saw band being used. Use the widest possible saw band for cutting the curve.

TYPICAL SAWING PROCEDURES (Continued....)



Internal Contour Sawing.

3. Attempting to cut too small a radius with too wide a saw band will cause binding, and the lower bandwheel may become grooved. The chart on the Job Selector shows minimum radii cuts possible with various saw band widths.
4. Radii chart recommendations are based on sawing relatively thin stock. Consider these variations: **(a)** Use a heavy gage saw band for heavy stock sawing; **(b)** Use a narrower than recommended saw band when sawing stock more than one (1) inch (25.4 mm) thick.

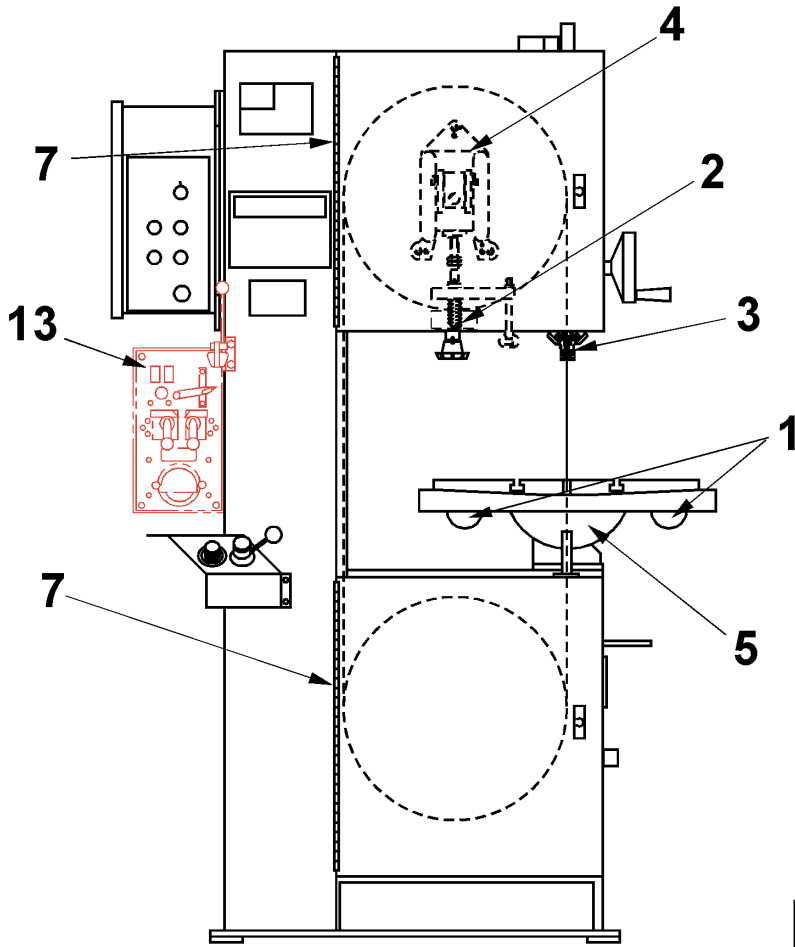
LUBRICATION

LUBRICATION CHART

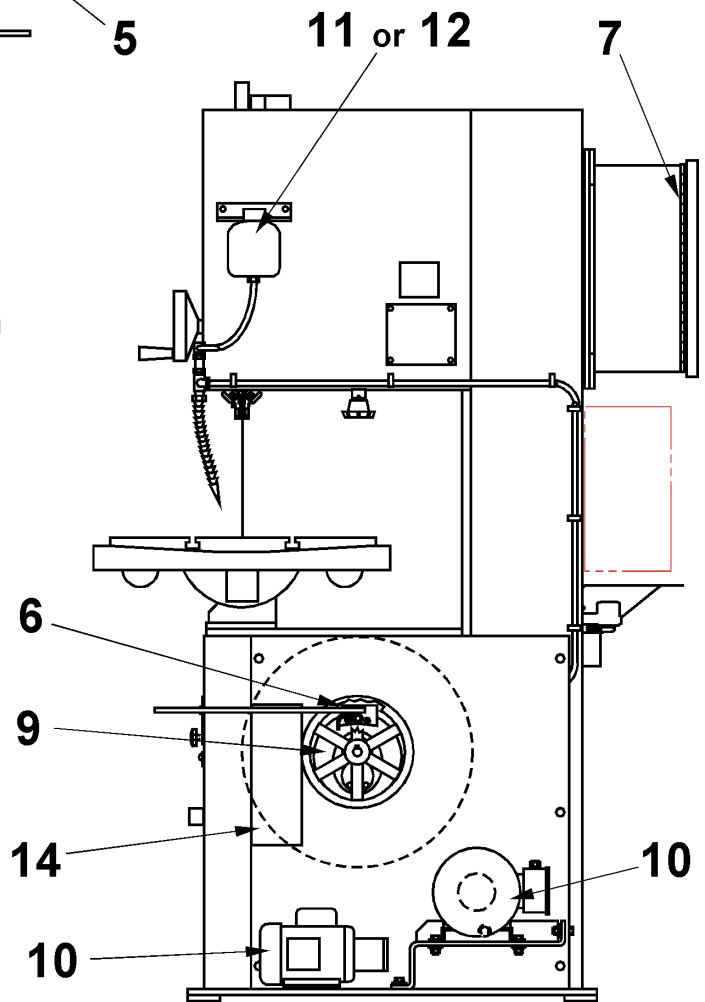
LUBRICATION POINT NO.	LOCATION DESCRIPTION AND SERVICE RECOMMENDATIONS	LUBRICATION INTERVAL*	RECOMMENDED LUBRICANT
1	Table Slide Rods. Two (2) grease fittings.	MONTHLY	Premium quality, multi-purpose lithium-base, EP (extreme pressure) grease. NLGI No. 2. Union 76, UNOBA EP 2, or equivalent.
2	Band Tension Screw and Bearing. Clean and apply oil.	MONTHLY	High quality, rust and oxidation-inhibited, medium hydraulic and general purpose industrial oil. ISO-VG Grade 68 (Formerly ASTM Grade No. 315). Union 76, UNAX RX 68, or equivalent.
3	Post, Post Elevating and Gears. Clean and apply oil.	MONTHLY	
4	Upper Bandwheel Slide, Hinge, and Tilt Screw. Clean and apply oil.	MONTHLY	
5	Table Trunnion. Oil tilt surfaces.	MONTHLY	
6	Transmission Shift Linkage and Interlock. Clean and apply oil as required.	MONTHLY	
7	Miscellaneous: Slides, Hinges, Pivot Points, Component Parts, Unpainted Surfaces, etc. Clean and apply oil as required.	CHECK MONTHLY	
8	Accessory Equipment as Supplied. Keep clean and apply oil as required to maintain proper function, reduce wear, and corrosion, etc.	CHECK MONTHLY	
9	Transmission. 1.7 pints (0.80 liter) capacity. Proper oil level must be maintained. Drain and refill yearly or when required.	CHECK MONTHLY	High quality, EP (extreme pressure) multi-purpose gear oil. S.A.E. Grade No. 90. Union 76, MP Gear Lube 90 or equivalent.
10	Electric Motors. Oil cup and/or grease fittings.	Lubricate (if any) per manufacturer's recommendations.	
11	Mist Coolant Reservoir (Optional). One (1) quart (0.47 liter) capacity. Keep filled and hoses clear.	CHECK DAILY/ AS REQUIRED	Premium quality, saw band coolant and lubricant. DoALL cutting fluids and/or oils (AL-2000).
12	Band Mist Lubricator (Optional). Sixteen (16) ounces (0.95 liter) capacity. Keep filled and hoses clear.	CHECK DAILY/ AS REQUIRED	Contact your DoALL sales representative for the best oils and/or fluids for your application. DoALL cutting fluids and/or oils.
13	DBW-15 Butt welder (Optional).	Lubricate as required per DBW-15 Instruction Manual.	
14	Hydraulic Reservoir. Approx. three (3) gallons (11.3 liters) capacity. Keep reservoir full. Check oil level (dipstick) weekly. Drain, clean strainer screen and refill after first month; every six (6) months thereafter. Change oil filters at same intervals. Thoroughly clean reservoir once a year.	CHECK WEEKLY/ 6 MONTHS	Multi-purpose automatic transmission fluid (Dexron III)**.

* Lubrication intervals are based on a 8-hour day, 40-hour week.
Lubricate more often with heavier use.

LUBRICATION DIAGRAM



FRONT VIEW

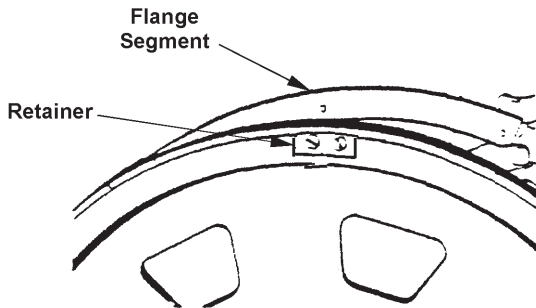


REAR VIEW

MAINTENANCE

REPLACING BANDWHEEL FLANGES

1. Replace worn or damaged flange segments by removing the bandwheel from the machine. Then: **(a)** Remove the flanged segments; **(b)** Install new flange segments with their chamfered edge toward the tire.



Replacing Retainers and/or Flange Segments.

REPLACING BANDWHEEL TIRES

1. Remove the retainers from the front of the bandwheel.
2. Loosen the worn tire with a screwdriver or other flat tool. Stretch or cut the tire if necessary to remove it.
3. Mount new tire with the steel backed notches in alignment with the retainers.
4. Clean the bandwheel and install a new tire by tapping lightly with a soft hammer. Rotate the bandwheel 30° as each tap is made until the tire is against the wheel flange.
5. Reinstall the retainers.

INSERT-TYPE SAW GUIDES

Pivot Back-Up Inserts

1. Reverse pivot back-up inserts for additional wear life, then replace when all surfaces are worn.

Roller Back-Up Bearing

1. These bearings are sealed and packed for life with a special lubricant. They can be replaced by: **(a)** Removing the snap ring; **(b)** Pulling out the bearing and shaft; **(c)** New bearings are easily installed with a light press fit.

ELECTRIC MOTORS

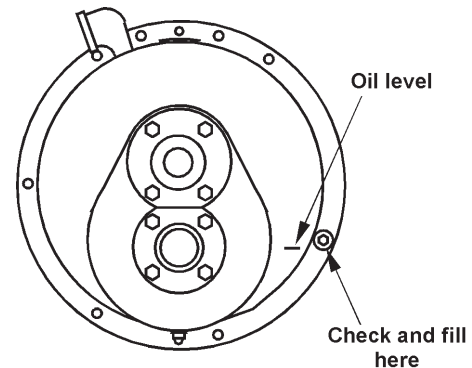
1. Follow the manufacturer's maintenance instructions for each electric motor.

HEAD COMPONENTS

1. Wipe oil onto the post occasionally. Then move the post up and down through the slide block several times.
2. Oil the upper bandwheel slide and band tension screw each month.
3. Wheel bearings are sealed and lubricated for life.

TRANSMISSION

1. Drain, flush, and refill the transmission yearly. Fill to the bottom of the check plug opening with oil recommended by the Lubrication Chart. Check the variations of filling and checking the oil level of the transmission below



Checking Oil Level.

2. Check often for seal leaks around the shaft.
3. Immediately investigate any loud or unusual noises, or rough operating vibration.
4. It is recommended that you return a faulty transmission to the factory for repair.



Correct new transmission installation is extremely important because careful alignment is necessary. Installation by a DoALL service representative is highly recommended.

WHEEL BRUSH

1. Check the lower bandwheel brush occasionally for correct position. Adjust the brush so it just touches the bandwheel tire.



Too much pressure of the brush will score the bandwheel tire.

2. Replace the brush when necessary.

BAND DRIVE BELT

1. The drive belt may stretch slightly after initial use. This stretch must be removed for proper operation.
2. To replace the belt: **(a)** Loosen the bolts that mount the motor to the bracket; **(b)** Slide the motor to the left to release belt tension; **(c)** Remove the belt.
3. Install a new belt around the transmission and motor pulleys. Then: **(a)** Slide the motor to the right to tension the belt. Only slight deflection of the belt should be present at the center span of the belt; **(b)** Tighten the motor mounting bolts.
4. Tension the belt by loosening the motor mounting bolts, slide the motor to the right until correct tension is obtained and then tighten the bolts.

MIST COOLANT

1. Intermittent coolant stream indicates an air leak. Check all joints.
2. Clogging may occur if waxed-based or other coolants are used. Your DoALL sales representative can provide complete information about various coolants.
3. Keep the mist applicator nozzle and filter clean. If the center nylon coolant tube needs replacing, remove the entire applicator tube. Insert new nylon tube and trim off excess flush with nozzle. Make sure all joints are sealed and tight after applicator tube is reinstalled.

HYDRAULIC SYSTEM

1. Keep the hydraulic tank full at all times. Drain and clean the tank and filter after the first month of operation and then every six (6) months thereafter. Filters are replaced at the same intervals. See the Lubrication Chart for recommended oils.

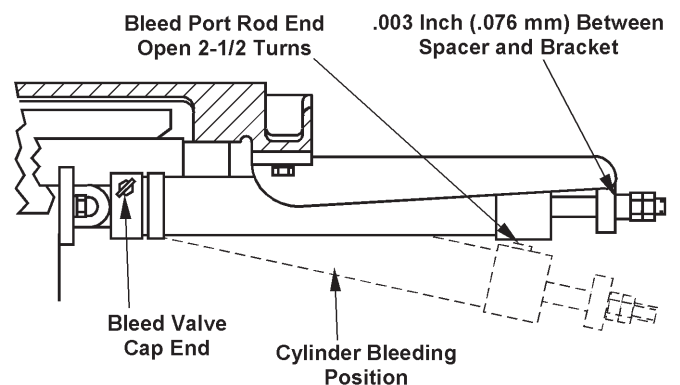
2. System pressure is factory set at 100 psi (6.9 bars). A relief valve located above the hydraulic pump is used to set the system pressure. A test station port is provided for installation of a pressure gauge. Hydraulic pressure will drop if dirt is lodged in the relief valve.

Bleeding Air From The System

1. Run the machine for at least 30 minutes or until oil is warm. Then: **(a)** Position the adjustable table stops, located on the side of the table, to give full table travel; **(b)** Place the **Table Feed Control** in “forward” to move the table cylinder rod to its extended position; **(c)** Remove the two (2) jam nuts and spacer shown in the illustration.



Support the rod end of the table cylinder as the rod is pulled out of the table bracket.



Bleeding Air From the Hydraulic System.

2. Attach a length of plastic tubing to the bleed valve on the rod end of the cylinder and route it into the reservoir through the dip stick opening. Next: **(a)** Open the bleed valve on the cap end of the cylinder; **(b)** Move the **Table Feed Control** to “reverse” and retract the cylinder.



Be certain to close the bleed port opposite the end you are bleeding.

3. Allow the cylinder to hang down to provide access to the bleed port on the top of the rod end cap. Then: **(a)** Close the bleed valve on the cap end of the cylinder; **(b)** With a container under the rod end of the cylinder, open the bleed port 2-1/2 turns **counterclockwise**; **(c)** Move the **Table Feed Control** in “forward” to fully extend the cylinder rod; **(d)** Repeat steps 2 and 3 until all air is purged from the system.
4. Reinstall the table cylinder rod with spacer and jam nuts, as shown in the illustration. Allow .003 inch (.076 mm) clearance between the spacer and the table bracket.

HYDRAULIC SYSTEM (Continued....)

4. See the "Adjustment Summary" for information on all hydraulic adjustment procedures.

HYDRAULIC PUMP REPLACEMENT

1. **DO NOT attempt to repair the hydraulic pump.** Return it to the factory for repair or replacement. Be sure to specify the correct pump model and serial numbers when returning the unit.
2. Rotate the pump and motor by hand to insure free movement after installing a new unit. Then: **(a)** Jog the **Hydraulic Start** and **Hydraulic Stop** buttons several times; on for two (2) seconds, off for three (3) seconds until the pump is primed; **(b)** Check for proper pump rotation while jogging; **(c)** Review wiring connections if the pump rotates in the wrong direction; **(d)** Pump and drive motor shafts must be in alignment within 0.003 inch (0.07 mm) T.I.R.



NEVER start a new pump installation against a blocked system.



After the pump has been primed, run it for several minutes while operating the machine's controls to purge entrapped air from the pump and system. Check for oil leaks while the system is being operated.

MACHINE CLEANING



Stop the machine when cleaning the machine or opening bandwheel doors or covers.

1. Keep the machine and its parts as clean as possible to prevent excessive wear and damage.
2. Remove the chip pan and dispose of the chips when necessary.
3. Metal chips and other waste materials may collect around areas such as: saw guides, table surface, T-slots, bandwheels, slides, etc. Remove these materials as soon as possible. **The DoALL Company recommends removing chip collections at least twice per each eight (8) hour shift, and more often with heavier use.**

TROUBLE SHOOTING



Repair and adjustment procedures should be made by experienced maintenance personnel, or by a DoALL service representative. Reference to the machine's electrical and hydraulic schematics will be helpful.

MACHINE WON'T START

1. Make sure the disconnect switch is in the "on" position.
2. Make sure the bandwheel doors are closed.
3. Check to see if the circuit breakers have tripped.
4. Make sure the **All Stop** pushbutton is reset (turn the button head **clockwise**).
5. Check the overload reset on the drive motor starter. Starting and stopping the machine a number of times in quick succession, or an overload, will trip the starter overload switch. Locate and correct the trouble, then push the overload reset switch.
6. Check the transformer for faulty operation.

MACHINE VIBRATION

1. Check for unbalanced bandwheels.
2. Check for worn or unbalanced band drive belt.
3. Check for an incorrectly shimmed machine base.

SAW BAND VIBRATION

1. Incorrect band speed or feed force is being used.
2. Choice of blade pitch is incorrect.
3. Stock is not being clamped firmly to the worktable and/or by optional vise jaws.
4. Check for worn or improperly adjusted saw guide inserts.
5. Check for a worn saw guide back-up bearing.
6. Check for a loose post. Adjust the cover plate if necessary.
7. Check for a poor weld in the saw band.
8. Check for an incorrect saw band tension setting.

9. Check for worn bandwheel flanges. Replace if necessary.

SAW BAND IS CUTTING INACCURATELY

1. Check for worn blade teeth. Inserts that are too wide for the blade will damage the teeth set.
2. Check for scale on the stock.
3. The saw band may be too wide if a radius is being cut.
4. Check for incorrect saw band or insert alignment.
5. Incorrect band speed or feed force is being used.
6. Mist coolant is not being applied evenly to both sides of the saw band.
7. Check for an incorrect saw band tension setting.
8. The upper saw guide is not located close enough to the stock.
9. Check for worn or loosely-adjusted saw guide inserts.

EXCESSIVE INSERT AND BLADE WEAR

1. Inserts or roller saw guide are adjusted too tightly on the saw band.
2. High band speed is causing friction (using roller saw guides may be advisable). Increase coolant volume to better lubricate the saw band.
3. The back-up bearing may need replacement.
4. Check for incorrect saw band tension setting.
5. Wheel brush is worn or not properly adjusted causing chips to stay on the bandwheel.

PREMATURE BLADE TEETH DULLING

1. The saw band is not being "broken" in on the first few cuts. Reduce the feeding pressure when making these cuts.
2. Band speed is too high (this causes abrasion).
3. Saw band pitch is too coarse.

TROUBLE SHOOTING (Continued....)

4. Check for a light feed pressure setting. Increase if necessary.
5. Coolant is not properly covering the saw band.
6. The cutting rate is too high.
7. Check for faulty material such as heavy scale, inclusions, hard spots, etc.
8. Check for saw band vibration.
9. Check for chip welding, or for a chipped tooth lodged in the cut.
10. Check for incorrect saw band tension setting.
11. Inserts are incorrect for the width of blade being used. This allows the inserts to hit the set teeth (listen for clicking sounds during saw band operation).

SAW BAND SLIPS OFF BANDWHEEL

1. The upper bandwheel is not aligned properly. The saw band needs to be tracked.
2. Check for slippery coolant, or excessive coolant volume.
3. Check for incorrect machine alignment.
4. Check for a worn or improperly-adjusted wheel brush (this allows chips to remain on the bandwheel tire).
5. Incorrect saw guide blocks are being used.
6. Check for incorrect saw band tension setting.

SURFACE FINISH ON WORK IS TOO ROUGH

1. Check for a worn saw guide insert (adjust or replace if necessary).
2. Band speed is too low or feed force is too heavy.
3. Blade pitch is too coarse.
4. Check for saw band vibration.
5. Check for a poor weld in the saw band.

NO COOLANT FLOW

1. Make sure reservoir is full.

2. Check for a clogged coolant applicator nozzle.
3. Check for a clogged or kinked coolant hose.
4. Check for a clogged or damaged coolant control valve.

TRANSMISSION WILL NOT STAY IN GEAR

1. Check for worn gears.



Transmission replacement, repairs, adjustments or alignment should be performed only by a DoALL service representative.

TRANSMISSION WILL NOT SHIFT INTO GEAR

1. Check the shift linkage for loose set screws or broken spring pins.
2. Check for a jammed shift mechanism.
3. Check for jammed or damaged sliding clutch jaws.

SLUGGISH HYDRAULIC OPERATION

1. Check for low hydraulic system pressure or low reservoir level.
2. Check for air in the hydraulic system.
3. Check for a blocked or clogged hydraulic filter.
4. Check for faulty hydraulic pump operation.
5. Check for cold hydraulic oil.
6. Relief valve in hydraulic line is opened too far, dropping system pressure. See tag on the valve for correct pressure setting.

LOW HYDRAULIC SYSTEM PRESSURE

1. Check the relief valve for incorrect adjustment or faulty operation.
2. Hydraulic pump is worn or damaged.

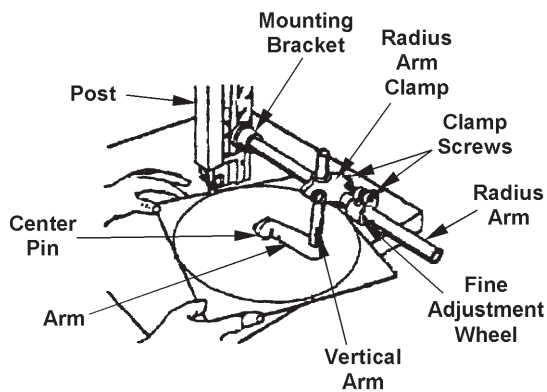
ACCESSORIES



The following are accessories sometimes used during contour sawing operations. A DoALL sales representative will be happy to advise you about the current availability of any accessory.

DISC CUTTER

1. This attachment can be used to cut internal or external circles from 2.50 to 30 inches (63.5 to 760.2 mm) in diameter. To set up the disc cutter:
 - Place flat washers under the mounting screws. Then: **(a)** Bolt the mounting bracket to the post; **(b)** Lower the post until the upper saw guide is approximately 3/8 inch (9.5 mm) above the worktable; **(c)** Loosen the fine adjustment and arm clamp bolts; **(d)** Move the center pin to the approximate distance of the radius to be cut; **(e)** Tighten the fine adjustment clamp bolt.



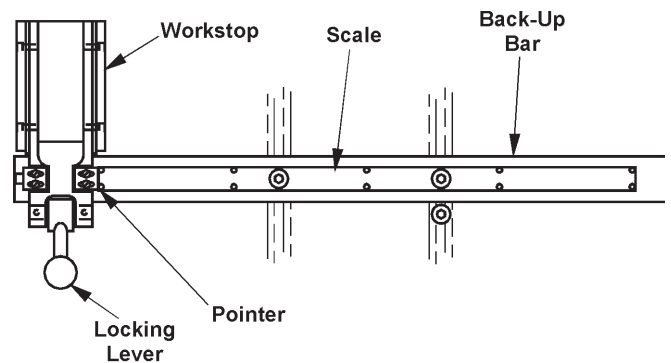
Disc Cutter.

- Position the center pin so that it is perpendicular to the saw band's cutting edge. To do so: **(a)** Place a square against the tip of a sawband tooth; **(b)** Loosen the vertical adjustment clamp bolt; **(c)** Line up the center pin with the square's blade edge; **(d)** Clamp the vertical adjustment clamp bolt.
- Make final radius adjustments with the fine adjustment wheel. Then: **(a)** tighten the arm and radius arm clamp bolts while making sure the center pin is square to the table; **(b)** Adjust the disc cutter for stock thickness by raising or lowering the post.

UNIVERSAL CALIBRATED WORK FIXTURE

Set-Up for Straight Cut-Off

1. Place the fixture on the worktable at the required distance from the saw band. Then: **(a)** Loosely install T-nuts and screws; **(b)** If necessary, align the scale's zero (0) mark with the saw band, then "zero" the pointer.
2. Place socket head screws loosely in the T-nuts projecting up from below the back-up bar. Then: **(a)** Place the T-nuts in the worktable T-slots; **(b)** Slide the work fixture's back-up edge to a distance equal to the desired length of cut. Be sure to allow enough clearance for positioning the stock.
3. Square the back-up bar to the worktable by aligning one (1) movable workstop edge with the T-slot or edge of the table sawing slot. Then: **(a)** Line up the calibrated bar's "0" mark with the saw band; **(b)** Tighten the socket head screws so that the back-up bar is firmly anchored to the worktable.



Universal Calibrated Work Fixture Set-Up for Straight Cut-Off.

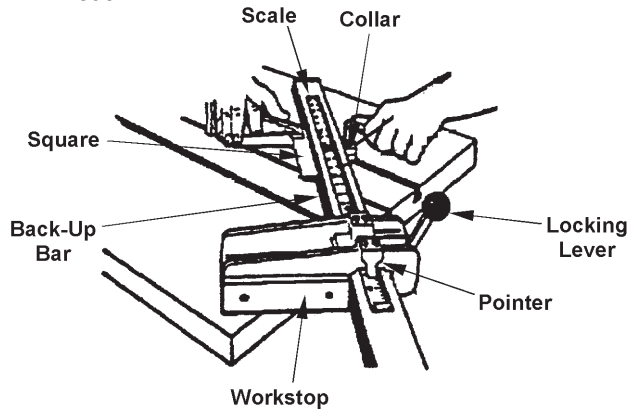
4. Shift the movable workstop to one side of the saw band. Then: **(a)** Run the worktable forward until the front of the workstop passes the saw band; **(b)** Move the workstop toward the saw band until its edge barely touches the set teeth.
5. Close the locking lever to hold the workstop in position. Then adjust the workstop pointer until it lines up with the scale's "0" mark.

Set-Up for Angle Cut-Off

1. Loosen the left socket head screw. Next: **(a)** Remove the right T-nut and screw from the back-up bar; **(b)** Use a protractor or square to position the back-up bar at the desired angle as measured to the worktable's T-slot; **(c)** Tighten the socket head screw.

UNIVERSAL CALIBRATED WORK FIXTURE (Continued...)

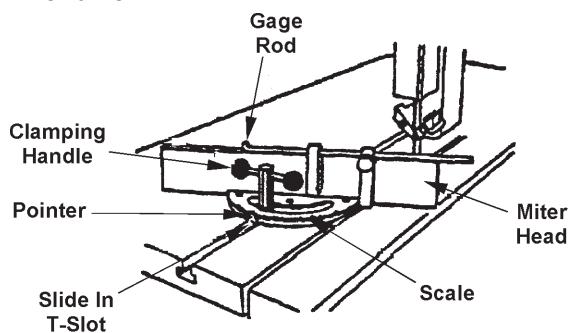
- Mount the collar on the right T-nut and fasten it to the worktable (against the back-up bar) with the socket head screw. Then: **(a)** Run the worktable forward until the back-up bar barely touches the saw band; **(b)** Set the workstop for the required stock length dimension. **The back-up bar scale is not used for angle cuts.**
- Notch the back-up bar with the saw band to assure being able to cut completely through the stock. Set the worktable stop to limit travel to the length of cut.



Universal Calibrated Work Fixture Set-Up for Angle Cut-Off.

PROTRACTOR WORKSTOP and ALIGNMENT GAGE

- To set up this unit: **(a)** Lock the slide bar into the worktable T-slot so that the miter head clears the saw band; **(b)** Release the clamping handle to adjust the miter head for angle cutting between 0° and 45°.



Protractor Workstop and Alignment Gage.

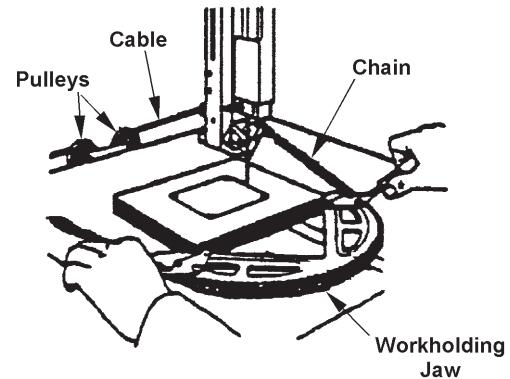
- Adjust for the desired cut length by loosening the gage rod thumb screw. Then: **(a)** Slide the rod to the desired position; and **(b)** Tighten the thumb screw.

WORKHOLDING JAWS

- This option is used for off-hand and contour sawing. By looping a power feed chain around the workholding jaws, the operator can use the cable pulley system to guide stock along the contour layout lines.



Be sure to use the correct saw band width when cutting a radius.



Workholding Jaws.

WORKLIGHT

- The worklight illuminates the cutting area and areas nearby and is controlled by an "on/off" switch on the lamp.

MAGNIFIER

- Magnifying the cutting area may prove helpful during delicate sawing procedures. This is done by placing a magnifying lens around the shade of the worklight.
- A protective lens cover should be placed around the magnifier to prevent scratches when not being used.

BAND BREAK SWITCH

- Stops the lower bandwheel automatically when a saw band breaks and the band tension mechanism activates a limit switch stopping the band drive motor.

DUST SPOUT

- This option is located just below the worktable on the right side of the machine frame near the lower saw guide and attached to a collection system for disposal of chips and other waste materials.

BANDWHEELS

1. Your machine may be equipped with flanged metal face or center crowned rubber tired bandwheels instead of the standard rubber faced flanged bandwheels.

EXTRA WORK HEIGHT

1. The factory installed extra work height allows maximum cutting capacity up to 30 inches (762.0 mm). Machines with this option have an auxiliary post support, plus a slightly different frame weldment, post guarding, and post elevating handwheel from those shown else where in this manual.

18" (457.2 mm) STROKE WORKTABLE

1. This factory-installed hydraulic powered worktable has a 18 inch (457.2 mm) stroke instead of standard 12 inch (304.8 mm) stroke. The table's working surface is 26.5 by 39.5 inches (673.1 by 1000.3 mm).

DBW-15 BUTTWELDER

1. Information covering blade welding, plus operation and maintenance of the optional DBW-15 Buttwelder (with flash grinder and blade shear) are provided in a separate instruction manual included with the machine.

BAND LUBRICATOR

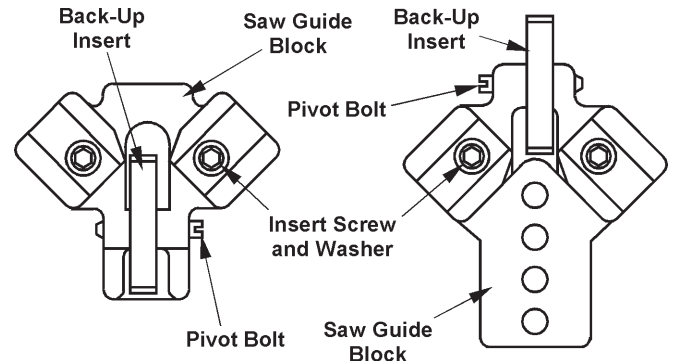
1. See the instructions sent with the unit for information on operation and adjustments.

OPTIONAL SAW GUIDE BLOCKS

1. It is possible to equip the machine with heavy-duty, insert-type saw guides or roller saw guides.

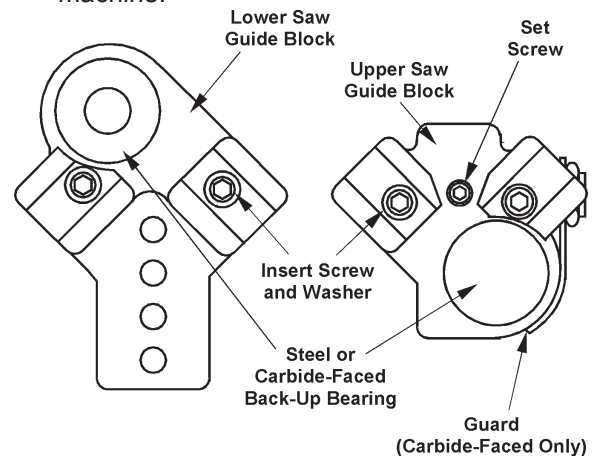
Insert-Type Saw Guides

- High speed, heavy-duty saw guide blocks are for band speeds up to 6000 fpm (1830 m/min).



High Speed Saw Guides (Standard)

- Saw guides with steel or carbide-faced back-up bearings with saw band widths of 1/16 to one (1) inch (1.6 to 25.4 mm) can be used with this machine.



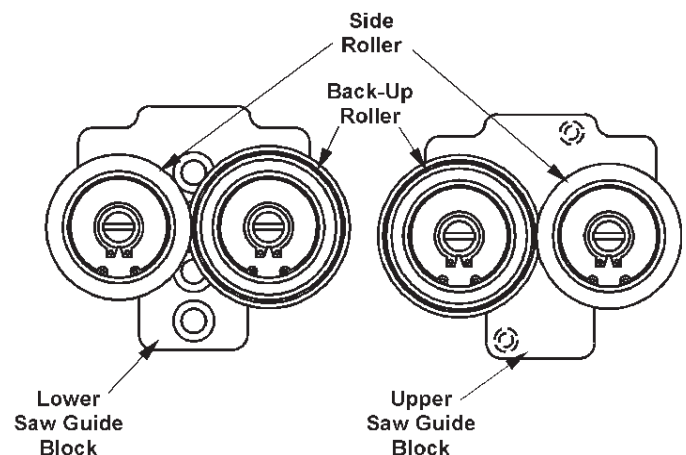
Heavy-Duty Saw Guides With Steel or Carbide-Faced Back-Up Bearing.

Roller Saw Guides

- Type II roller saw guide blocks use 1/4 to one (1) inch (6.4 to 25.4 mm) saw bands and are for band speeds up to 6000 fpm (1830 m/min).



Type II roller saw guide blocks reduce the work height capacity by one (1) inch (25.4 mm) and restricts right table tilt to 27°.



Type II Roller Saw Guides.

OPTIONAL SAW GUIDE BLOCKS (Continued....)

2. Roller saw guides are adjusted as follows:
 - Select the rollers which match the width of saw band to be used. Next: **(a)** Place one (1) back-up roller (has a rear flange) and one (1) side roller in upper guide block; **(b)** Place one (1) back-up roller and one (1) side roller in the lower saw guide block in opposite position of the upper guide; **(c)** Attach the upper roller guide to the post and the lower roller guide to the keeper block.
 - Place the saw band over the upper and lower bandwheels. Next: **(a)** Adjust the saw band tension; **(b)** Loosen the roller lock screw; **(c)** Bring the rollers toward the saw band by turning the eccentric bearing shaft with a screwdriver. The rollers should be just free enough to turn without moving the saw band.

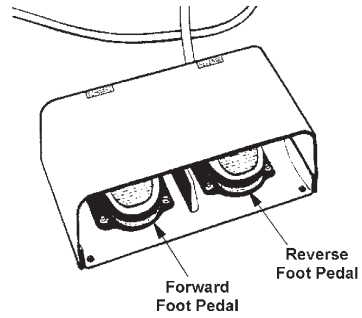


The bearings will overheat if the rollers are too tight against the saw band. Conversely, rollers that are too loose may cause the saw band to wobble and affect cutting accuracy.

- Tighten the roller lock screws to prevent the eccentric shaft from turning and changing the roller adjustment.

FOOT SWITCH (3-Way)

1. Many sawing operations are made easier by using a table feed foot control. The foot switch has "forward", "reverse" and "stop" positions and a selector switch mounted on the control box above the standard controls with "manual", "production" and "contour" settings.
2. The selector switch enables the operator to select the table feed mode best suited for the job.
 - In "manual", the foot switch is disconnected and standard operation is active.
 - In the "contour" setting, the foot switch operates the table in "forward" or "reverse" settings of the table feed control valve at controlled feed rates set by the operator.
 - The "production" setting operates the table at controlled forward feed rate but with a fast table return stroke.



3-Way Foot Switch.

3. The foot switch is connected to the machine by a flexible cable so that it can be located at operator's convenience.
 - Pressing the left pedal or "forward" moves the table forward when the table feed control valve is in the "feed" position.
 - Pressing the right pedal or "reverse" will reverse table direction when the table feed control valve is in the "feed" position.
 - Releasing either foot pedal stops table movement.

FULL CYCLE OPTION

1. This factory installed option allows a full cycle operation of the sawing sequence.
2. A selector switch on the control box with "manual" and "automatic" setting determines the operating mode. There is also a pilot light indicating that auto cycle is running.
3. To operate: **(a)** Preset the band speed, feed rate and cut depth and table return proximity switches; **(b)** Position stock to be cut and clamp; **(c)** Push BOTH **Cycle Start** buttons located on the left and right sides of the table; **(d)** Table feeds through the stock until it trips the proximity switch and then returns to "home" position; **(e)** Saw band stops and the operator can then relocate the stock for the next cut.

LASER LINE GENERATOR OPTION



To avoid eye damage, DO NOT stare into the laser beam.

1. A laser device is used to emit a line on the material to be cut. This line shows the approximate spot where the cut will take place.

LASER LINE GENERATOR OPTION

(Continued....)

2. The device is controlled by a selector switch with "ON" and "OFF" settings and is located on or near the control panel. Turn the laser "OFF" when not in use.
3. The laser is adjustable to position the laser beam where desirable.
4. When the laser is turned on, a warm-up period of 3 to 5 seconds take place before a line appears. If the line is difficult to see, darken the work area to enhance the line.
5. Remove the protective shipping cap from the laser device before operation. Replace the protective cap when not in use.