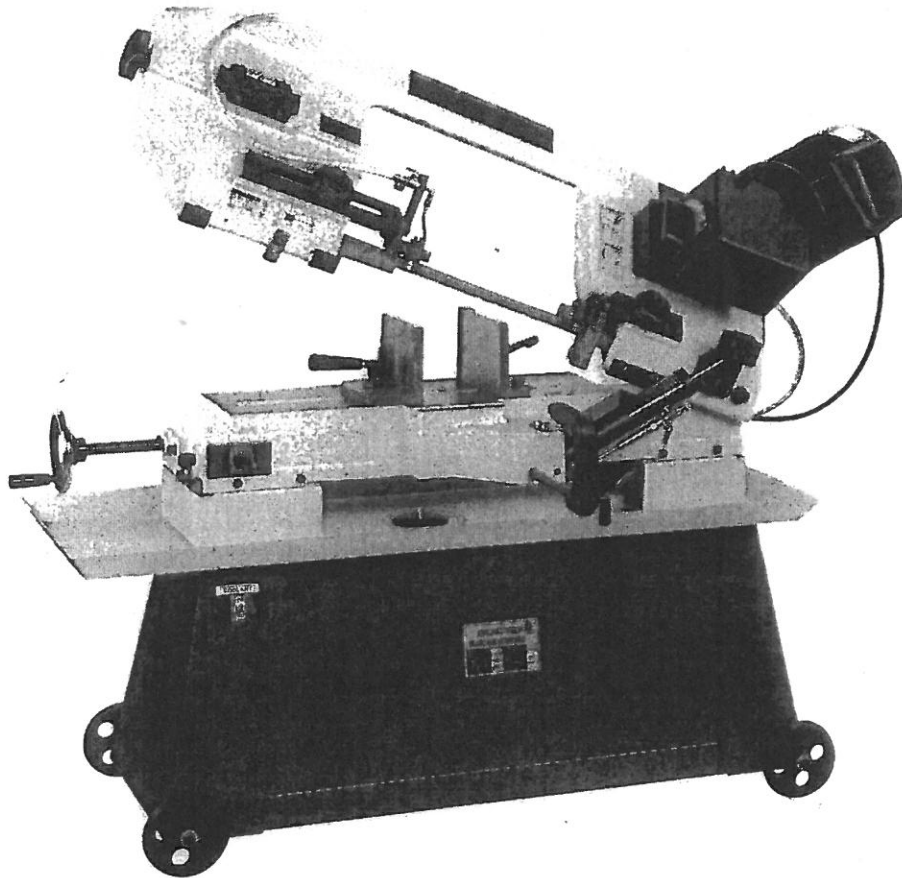


**PALMGREN®**  
a CH Hanson brand

**8" X 12"**

**HORIZONTAL BAND SAW**



**SPECIFICATIONS**

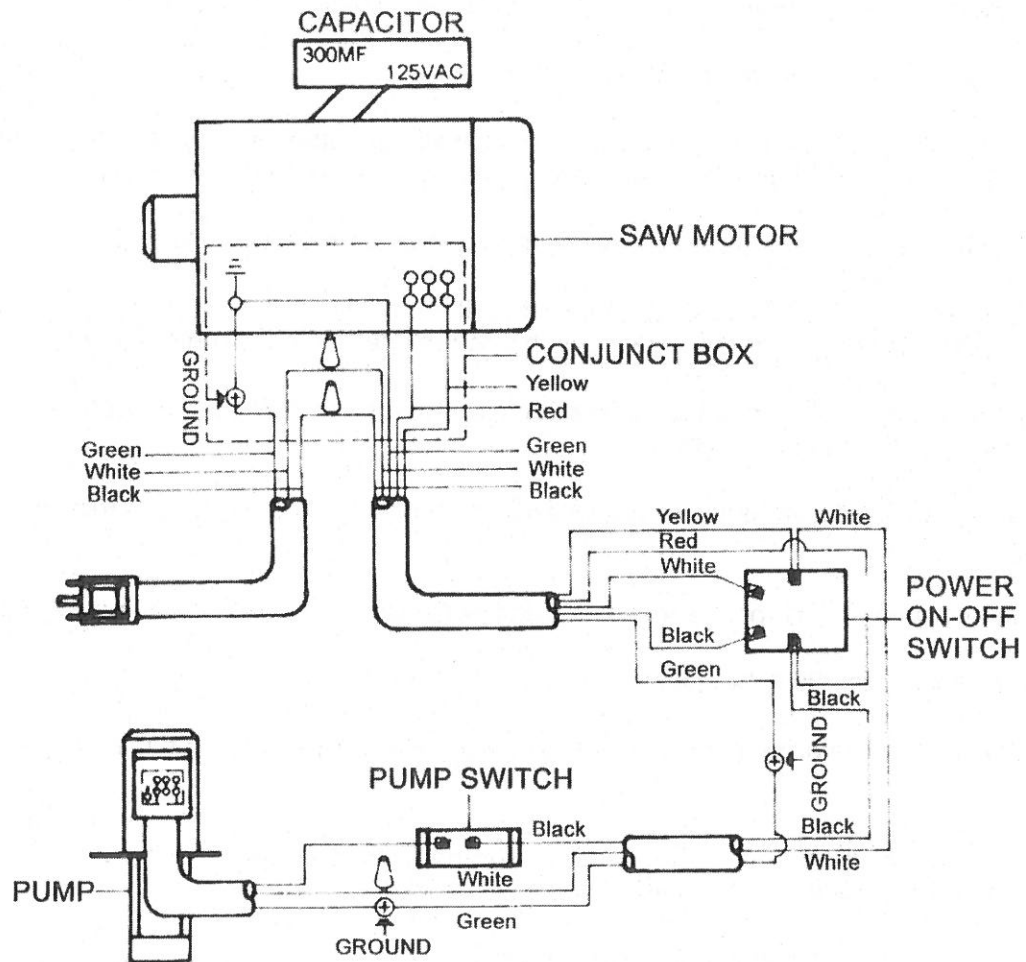
<b>Capacity</b>	90° ● 8" (200mm)	■ 6.5"x11" (165x275mm)	■ 2"x12" (55x300mm)
	45° ● 4.75" (120mm)	■ 8"x4.75" (200x120mm)	
<b>Motor</b>	1HP		
<b>Blade Size</b>	0.75"x0.032"x93" (19x0.9x2360 mm)		
<b>Blade Speed</b>	150/210/255 FPM (45/65/77 MPM)		
<b>Packing Size</b>	51"x19"x43" (1280x480x1100 mm)		
<b>N.W. / G.W.</b>	329 lbs / 379 lbs (149 kgs / 172 kgs)		

**READ CAREFULLY AND FOLLOW ALL SAFETY RULES AND OPERATING INSTRUCTIONS BEFORE FIRST USE OF THIS PRODUCT**

## **WARNING**

1. Read and understand the entire instruction manual before operating machine.
2. Always wear approved safety glasses/face shields while using this machine.
3. Make certain the machine is properly grounded.
4. Before operating the machine, remove tie, rings, watches, other jewelry, and roll up sleeves above the elbows. Remove all loose clothing and confine long hair. Do not wear gloves.
5. Keep the floor around the machine clean and free of scrap material, oil and grease.
6. Keep machine guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately.
7. Do not overreach. Maintain a balanced stance at all times so that you do not fall or lean against blades or other moving parts.
8. Make all machine adjustments or maintenance with the machine unplugged from the power source.
9. Use the right tool. Don't force a tool or attachment to do a job which it was not designed for.
10. Replace warning labels if they become obscured or removed.
11. Make certain the motor switch is in the off position before connecting the machine to the power supply.
12. Give you work undivided attention. Looking around, carrying on a conversation, and "horse-play" are careless acts that can result in serious injury.
13. Keep visitors a safe distance from the work area.
14. Use recommended accessories; improper accessories may be hazardous.
15. Make a habit of checking to see that keys and adjusting wrenches are removed before turning on the machine.
16. Always keep hands and fingers away from the blade when the machine is running.
17. Never hold the material with the saw in the horizontal position. Always use the vise and clamp it securely.
18. Read and understand warning posted on the machine.
19. Keep the belt guard and wheel covers in place and in working order.
20. Always provide adequate support for long and heavy material.
21. Use a sharp blade and keep machine clean for best and safest performance.
22. Failure to comply with all of these warnings may cause serious injury.
23. This machine is only used for horizontal metal cutting, not vertical woodwork cutting.

# Electrical Schematic



## Unpacking and Clean-Up

1. Finish uncrating the saw. Inspect it for shipping damage. If any damage has occurred, contact your distributor.
2. Unbolt the saw from the skid and place it on a level surface.
3. Clean rust-protected surfaces with kerosene, diesel oil, or a mild solvent. Do not use cellulose-based solvents such as paint thinner or lacquer thinner. These will damage painted surfaces.

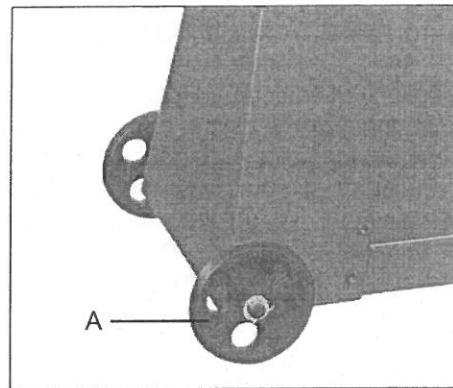


Fig. 1

## Assembly

1. Place blocking under the ends of the saw base to allow wheel installation. Caution: Make sure saw is steady while temporarily supported.
2. Slide wheel axles through holes in base.
3. Slide wheels (A, Fig. 1) onto axles and fasten with pins. Bend pins to hold in place.
4. Slide material stop bar (A, Fig. 2) into base and secure by tightening hole (B). Slide material stop (C) onto bar and tighten bolt (D).
5. Remove transportation strap and keep for later use should the saw be moved any distance.

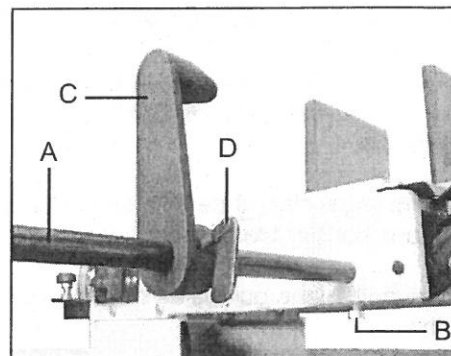


Fig. 2

## Coolant Tank Preparation



### WARNING

Disconnect band saw from the power source before making any repairs or adjustments! Failure to comply may cause serious injury!

Use of a water-soluble coolant will increase cutting efficiency and prolong blade life. Do not use black cutting oil as a substitute. Change cutting lubrication often and follow manufacturer's instructions as to its uses and precautions.

1. Disconnect machine from the power source.
2. Remove the coolant return hose from tank.
3. Slide tank out of saw base.
4. Fill tank to approximately 80% of capacity.
5. Place tank assembly back into base.
6. Replace return hose back into hole in tank.

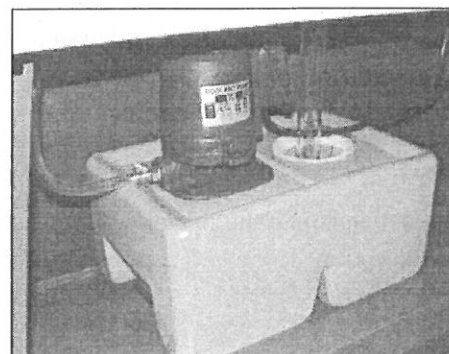


Fig. 3

## Hydraulic Feed Selector Operation

The hydraulic feed selector is used to control blade feed rate and to lock the bow in the vertical position. To increase the feed rate, turn knob (A, Fig. 4) counter-clockwise. To decrease the feed rate, turn knob (A) clockwise. To turn off the flow of hydraulic fluid, turn lever as in figure 4. To turn the hydraulic cylinder on, raise lever (B) to parallel with the cylinder.

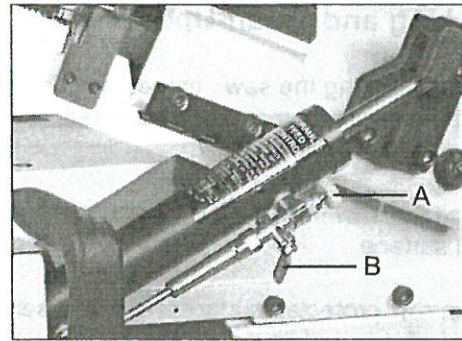


Fig. 4

## Prior to Operation

1. Check to see blade tooth direction matches diagram on saw body.
2. Check to see that blade is properly seated on wheels after proper tension has been applied.
3. Set blade guide roller bearing snug against blade. See *Adjusting Blade Guide Bearings* for more details.
4. Check for slight clearance between vertical rollers and back of blade.
5. Position both blade guides as close to work as possible.
6. Select proper speed and feed rate for materials being cut.
7. Material to be cut must be held securely in vise.
8. Check to see that coolant level is adequate.
9. Do not start cut on a sharp edge. File the edge first.
10. Keep machine lubricated. See *Lubrication* section.

## Changing Blade Speed

1. Disconnect machine from the power source.
2. Turn knob (K in Fig. 5) to desired speed  
Speed 1: 150 (FPM)  
Speed 2: 210 (FPM)  
Speed 3: 255 (FPM)
3. Connect machine to the power source.

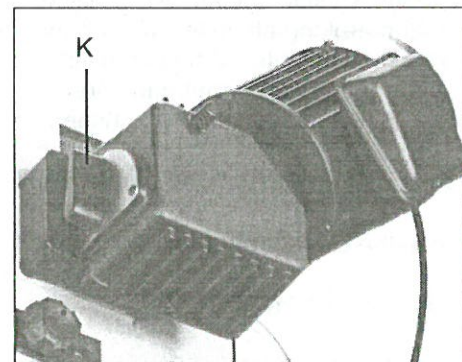


Fig. 5

## Adjusting Blade Guides

1. Disconnect machine from the power source.
2. Loosen knobs (A and B, Fig. 6). Slide blade guide assemblies as close as possible to the material with interfering with the cut.
3. Tighten knob (A and B) and connect machine to the power source.

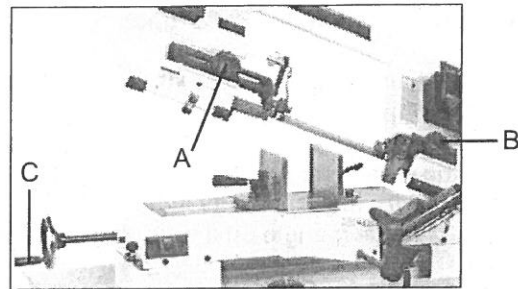


Fig. 6

## Vise Operation



**Do not make any adjustments or load/unload material from vise while machine is running! Failure to comply may cause serious injury!**

### Loading and Clamping

1. Open the vise. Lift handle (C, Fig. 7) and move the movable vise-jaw (D, Fig. 7) toward the vise hand wheel (C, Fig. 6).
2. Load work piece. Place the work-piece against the fixed vise-jaw.
3. Quickly approach the jaw to the work-piece. Lift the handle (C, Fig. 7) and approach movable vise-jaw (D, Fig. 7) to the work-piece. Lower handle (C, Fig. 7) and adjust movable vise-jaw (D, Fig.7) back and forth until the jaw locks\* in place.  
\* Within the table, a spring lock mechanism should fall into a slot on lead screw.
4. Clamp the work-piece. Turn hand wheel (C, Fig. 6) to approach and clamp the work piece.

\* Use the handle (C, Fig. 7) for large vise movements.

\* Use the hand wheel (C, Fig. 6) for small vise movements and repeat clamping operations for similar size materials

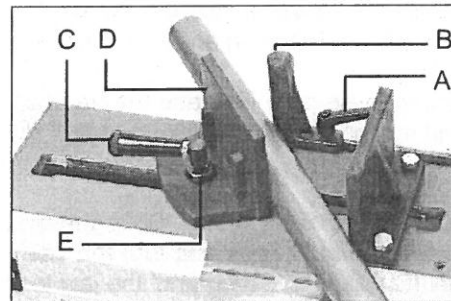


Fig. 7

### Extending the Capacity to Maximum

1. Remove the 2 Bolts (B, Fig. 8).
2. Reposition the fix vise-jaw (C, Fig. 8) to align with the secondary holes (A, Fig. 8).
3. Tighten two screws to fixed vise-jaw (C, Fig. 8) after squaring vise with blade.

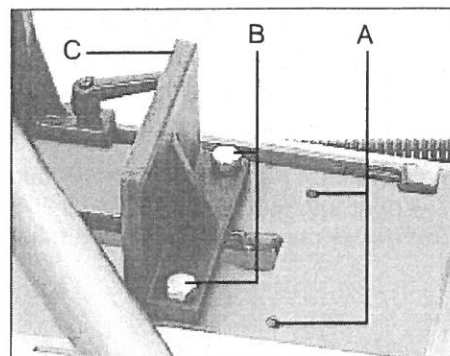


Fig. 8

### Setting the Angle to 0-45° Cutting

1. Free the independent vise-jaw B. Loosen the spring ratchet handle\* (A, Fig. 9).
2. Set the cutting angle. Move the independent vise-jaw (B, Fig. 9) until its index reaches the desired cutting angle on the degree scale (C, Fig. 9).
3. Lock the vise-jaw. Tighten the spring ratchet handle\* (A, Fig. 9).
4. Open the vise. Lift handle (C, Fig. 7) and move the movable vise-jaw (D, Fig. 7) toward the vise hand wheel (C, Fig. 6).
5. Load work piece. Place the work-piece against the fixed vise-jaw (C, Fig. 8) and independent vise-jaw (B, Fig. 9).
6. Release the movable vise-jaw. Loosen the hollow hex head bolt (E, Fig.7). Rotate the movable vise-jaw relative to the cutting angle.
7. Set the vise-jaw angle. Lift handle (C, Fig. 7) and Slide the movable vise-jaw toward the work-piece until the matching angle is achieved.
8. Secure the vise-jaw. Release the handle (C, Fig. 7) and tighten the hollow hex head bolt (E, Fig. 7).
9. Securely clamp work-piece. Slide the movable vise-jaw (D, Fig.7) back and turn the vise hand wheel (C, Fig.6) to clamp until the jaw locks in place.

\* Spring ratchet handle (A, Fig. 9) only tightens or loosens when handle is down or normal position. Lift the handle to reposition it without screwing action.

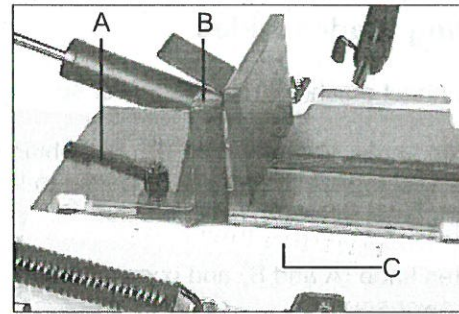


Fig. 9

### Adjusting Blade Tension

 **WARNING**

Disconnect machine from the power source!  
Blades are sharp! Use extra care when  
removing, installing or adjusting!  
Failure to comply may cause serious injury!

Blade tension is important to the proper operation of the saw. Proper blade tensions in 700 to 900kgs (1550-2000lbs) as measured on blade tension gauge.

**To set the blade tension without the use of a blade tension gauge:**

1. Install blade between wheels and insert blade between bearings on blade guides.
2. Tension blade slightly to remove any sag in blade between blade wheels.
3. Turn blade tension knob (A, Fig. 10) one and three quarters to two revolutions, clockwise. This equals approximately 800kgs of blade tension.

**!CAUTION!**

Do not over tighten blade. This may cause blade to stretch and warp.

4. After blade has been completely installed, close covers, connect to the power source, and run saw for two to three minutes so blade can seat properly.
5. Disconnect machine from the power source. Open cover and loosen blade just until it begins to sag.
6. Tighten blade until it becomes straight between blade wheel and all sags has been eliminated.
7. Tighten blade by turning blade tension wheel two full revolutions. Blade is now properly tensioned and ready for use.
8. Close covers and connect the machine to the power source.

**Changing Blades**

**!WARNING**

Never operate this saw unless all blade guards are installed and in proper working order!  
Never adjust blade brush while machine is running.  
Failure to comply may cause serious injury!

**!CAUTION!**

This machine is designed and intended for use with blades that are 19mm wide by 0.9mm thick by 2360mm long. Use of blades with different specification may cause inferior performance.

1. Disconnect machine from the power source.
2. Raise saw bow to vertical position and lock in place by turning hydraulic cylinder off switch.
3. Remove yellow blade guard assembly (A, Fig. 11) by removing two screws (B).

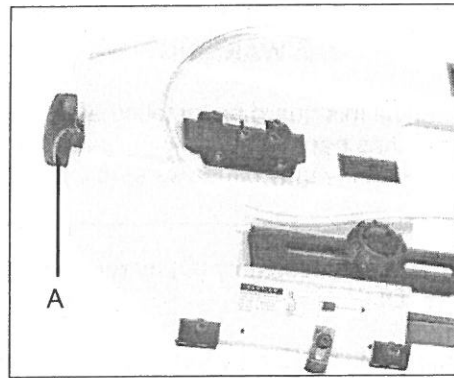


Fig. 10

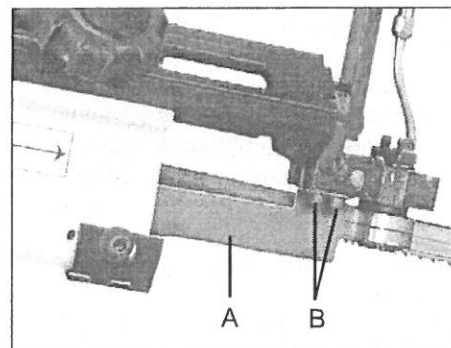
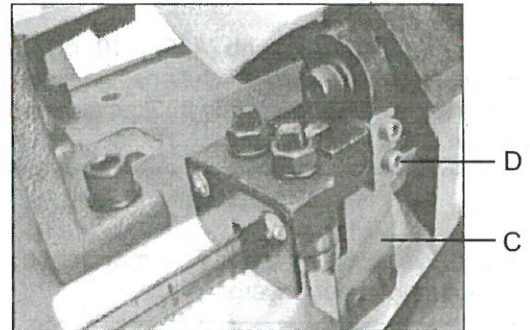


Fig. 11

 **WARNING**

It is essential this guard be installed after the new blade has been fitted.  
Failure to comply may cause serious injury!

4. Remove brush assembly (C) by removing two screws (D).
5. Loosen blade tension by turning blade tension knob counter-clockwise.
6. Carefully remove old blade. Caution: blade teeth are sharp. Handle with care.
7. Install new blade by placing blade between blade guides first. Make sure blade teeth face the same direction as indicated on the label found on the saw bow.
8. Place blade around both wheels. Make sure the blade edge rests near the wheel flange on both wheels.
9. Turn blade tension knob clockwise to tension blade. Do not over tension. See section titled Adjusting Blade Tension.
10. Close blade cover door and secure with lock knobs.
11. Attach red blade guard and brush assembly.
12. Connect machine to the power source.
13. Run saw and make sure blade is tracking properly.



### Adjusting Blade Square to Table

1. Disconnect machine from the power source.
2. Place machinist's square on the table next to the blade as in Figure 12.
3. Check to see blade makes contact with the square along the entire width of the blade.
4. If adjustment is necessary, loosen bolts (A, Fig. 12) and rotate blade guide assemblies slightly in the same direction until blade makes contact with the square along its entire width.
5. Tighten bolts (A, Fig. 12).
6. Connect machine to the power source.

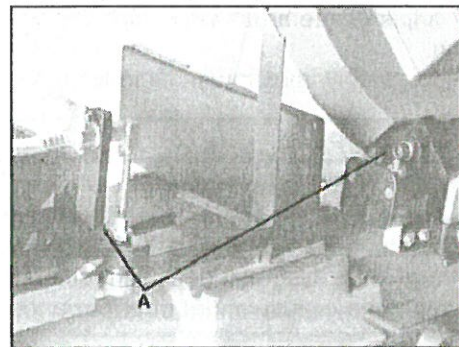


Fig. 12

Note: If adjustment to square blade to table is necessary, be sure to check blade adjustments again.

## Adjusting Blade Square to Vise

1. Disconnect machine from the power source.
2. Place a machinist's square as pictured in fig. 13 square should lie along entire length of vise and blade without a gap.
3. If adjustment is necessary, loosen bolts holding vise and adjust vise so that square lines up properly. Tighten bolts.
4. Connect machine to the power source.

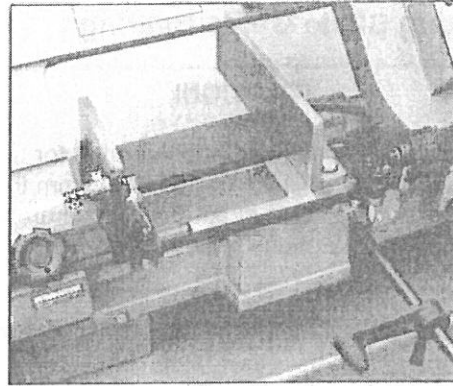


Fig. 13

## Adjusting Blade tracking



Blade tracking adjustment requires running the saw with the back cover open. This adjustment must be completed by qualified persons only! Failure to comply may cause serious injury!

Note: Before making any tracking adjustments, try a new blade. Warped blades do not track well.

Blade tracking has been set at the factory and should not require adjustment. If a tracking problem occurs, adjust the machine as follows:

1. Move saw bow to the vertical position and lock in place by shutting off the hydraulic cylinder valve.
2. Confirm that blade tension is set properly. To adjust, see section titled *Adjusting Blade Tension*.
3. Open back cover by loosening lock screws.
4. Run saw and observe blade. Blade should run next to but not tightly against wheel flange.
5. Loosen bolts (A, Fig.14), if blade is far away or too close to the wheel flange that need to adjust blade track.
6. Turn setscrew (B) while observing blade tracking on wheel. Turn setscrew clockwise to track blade closer to the wheel flange. Turn set screw counter-clockwise to track blade away from the wheel flange.
7. Once tracking is set, tighten bolts (A).

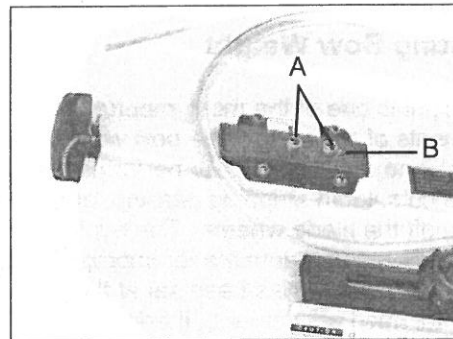


Fig. 14

## Adjusting Blade Guide Bearings

### !CAUTION!

This machine is designed and intended for use with blades that are 19mm wide by 0.9mm thick by 2360mm long. Use of blades with different specification may cause inferior performance.

1. Disconnect machine from the power source.
2. Raise arm to vertical position and lock in place by turning off the hydraulic cylinder valve.
3. Loosen hex cap screw (A, Fig. 15) and adjust assembly up or down so that back roller bearing is approximately 0.08mm-0.12mm from the back of the blade, tighten the screw A after adjustment.
4. Turn nut (B) to adjust eccentric bearing snug to the blade. Blade should still move up and down freely when grasped as in Fig. 16. Warning! Make sure power is disconnected and hands are protected before handling blade. Be sure that blade teeth do not interfere with the roller bearings:
5. Repeat for other blade guide assembly.
6. Connect machine to the power source.

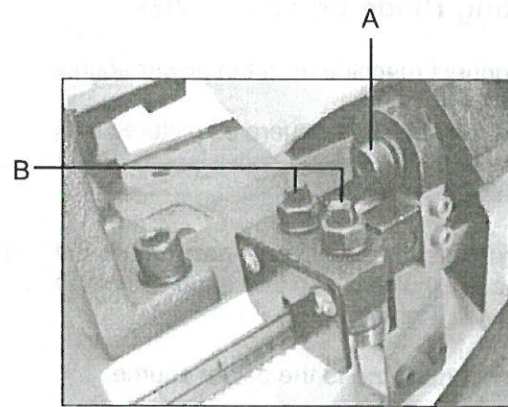


Fig. 15

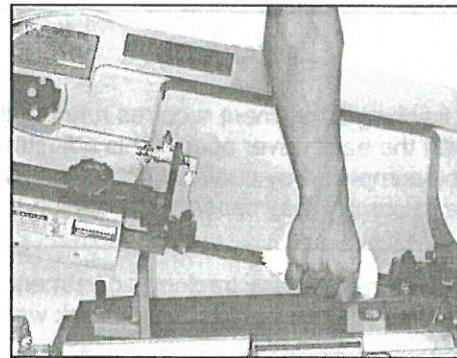


Fig. 16

## Adjusting Bow Weight

Bow weight is one of the most important adjustments of the saw. If the bow weight is not set properly, one can expect poor performance, crooked cuts, tooth stripping, stalling, and the blade popping off the blade wheels. The hydraulic feed rate unit will not compensate for improper bow weight. Bow weight has been set at the factory and should not need adjustment. If adjustment is necessary:

1. Disconnect machine from the power source.
2. Turn hydraulic cylinder valve ON and place saw bow in horizontal position.
3. Turn feed rate valve on hydraulic cylinder counter-clockwise until it stops.
4. Place a fish-type scale under blade tension handle and lift the saw bow. Scale should indicate approximately 5-6kgs.
5. Adjust tension to approximately 5-6kgs by turning bolt (A, Fig. 17).
6. Connect machine to the power source.

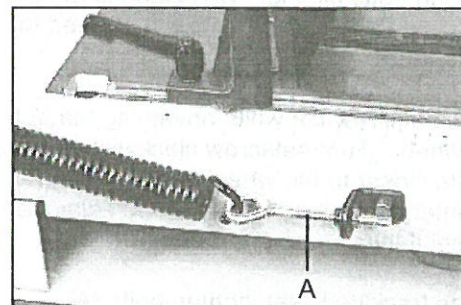


Fig. 17

## Lubrication

Ball bearings on the blade guide assemblies and the blade wheels are permanently sealed and require no lubrication.

Lightly lubricate vise screw with #2 tube grease.

Change gear box oil after the first 90 days of operation. There after, change every six months.

### To change gear box oil:

1. Disconnect machine from the power source.
2. Place saw bow in the horizontal position.
3. Remove screws (A, Fig. 18) from the gear box
4. Draw off the oil from gear box.
5. Place the saw bow in the horizontal position again. Wipe out remaining oil with a rag.
6. Tighten the screw (A, Fig. 18) and remove the plug (B, Fig 18) Fill gear box with approximately 0.3liter of 90-weight gear oil.
7. Fasten screw (B, Fig 18).
8. Connect machine to the power source.

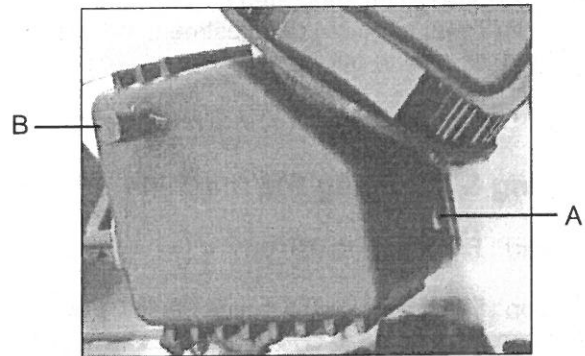


Fig. 18

## Maintenance

 **WARNING**

Disconnect machine from the power source before making any repair or adjustment!  
Failure to comply may cause serious injury!

1. Keep all surfaces clean and free of rust, slag, chips, and coolant build-up.
2. Do not use compressed air to clean band saw. Compressed air may force chips into the guide bearings and other critical areas of the saw.
3. Use a small paint brush or parts cleaning brush to remove metal particles.
4. Wipe saw down with a clean dry cloth and oil all unpainted surfaces with light machine oil.
5. Keep blade guides clean and free of metal chips.
6. Check guide bearings frequently to make sure they are properly adjusted and turning freely.

## Chip Cleaning Brush



Do not attempt to adjust blade brush with the machine running! Adjust only when the machine's power cord has been removed from the power source!  
Failure to comply may cause serious injury!

It is very important that the blade cleaning brush be properly adjusted and kept in good working order. Replace the brush if it becomes damaged or worn out. Blade life will be shortened severely if the brush is allowed to go out of adjustment, becomes damaged, or is worn out.

## Starting & Stopping the machine

1. "Start": Flip toggle switch up
2. "Stop": Flip toggle switch down. Machine will automatically stop at end of cutting.

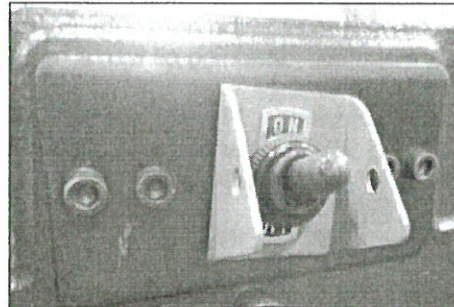


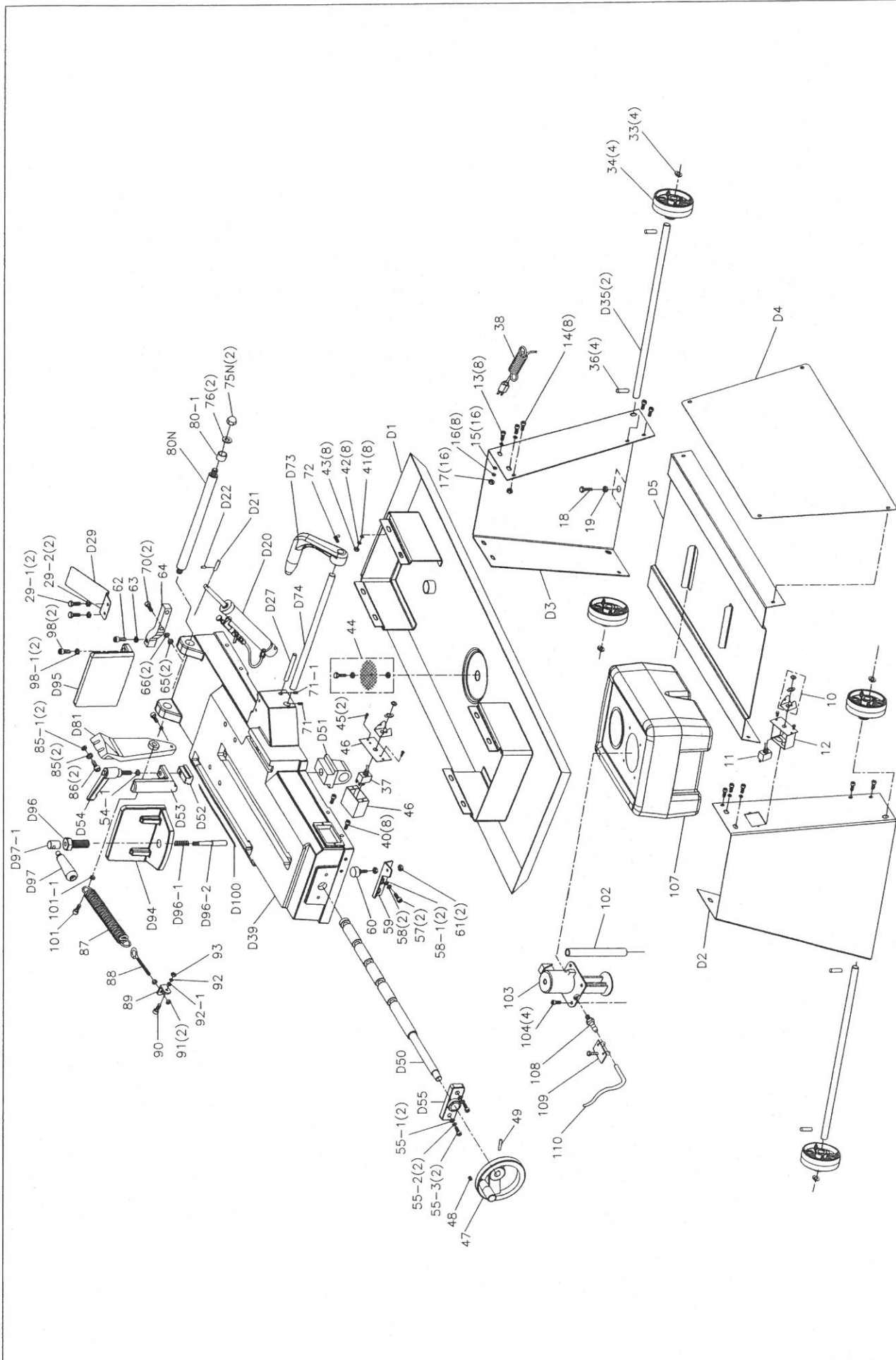
Fig. 19

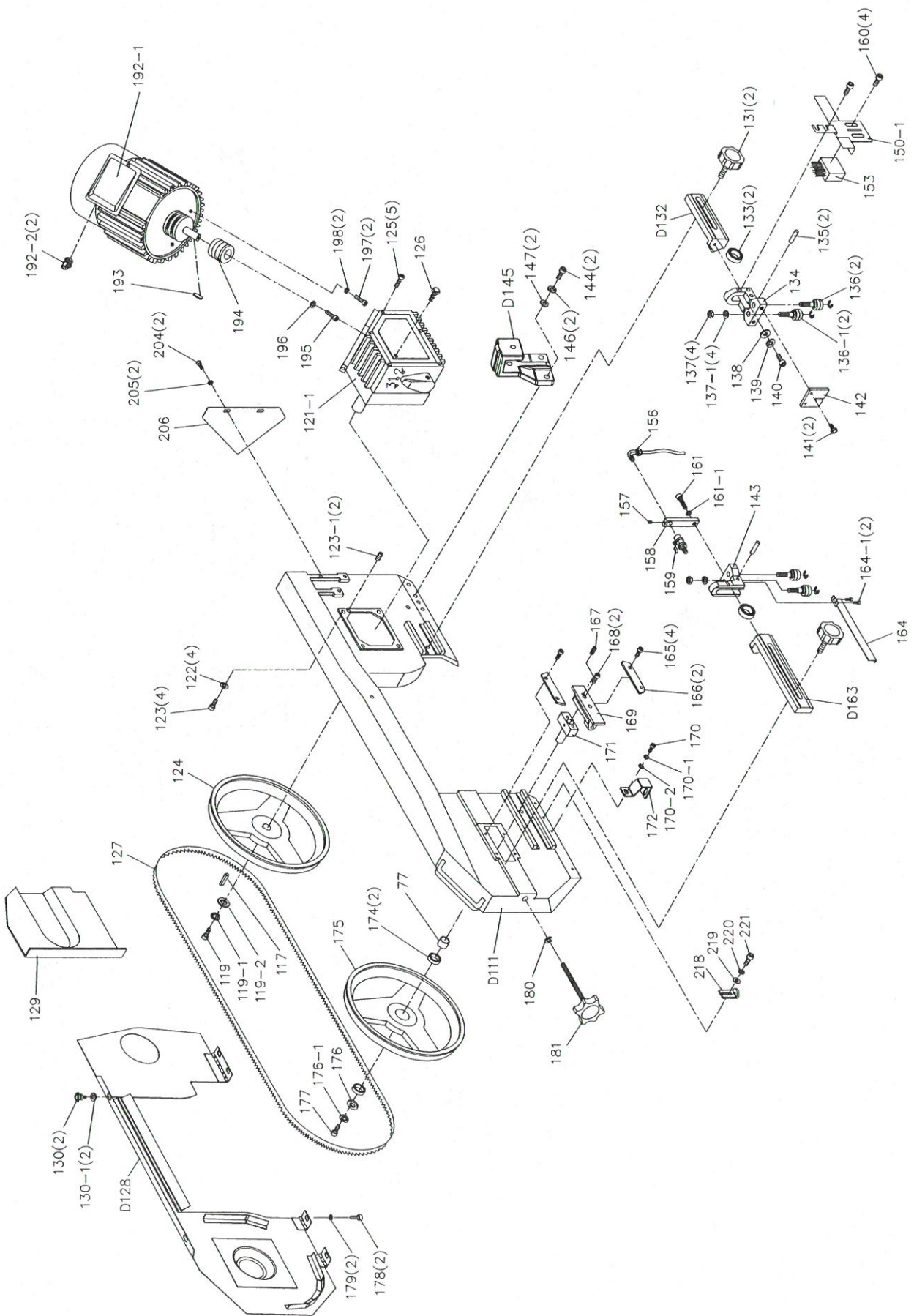
## PART LIST

PART NO.	DESCRIPTION	SIZE	Q'TY	PART NO.	DESCRIPTION	SIZE	Q'TY
D1	BOTTOM PAN		1	55-1	SPRING WASHER	5/16	2
D2	LEG (LEFT)		1	55-2	WASHER	5/16	2
D3	LEG (RIGHT)		1	55-3	HEX. SOC. SCREW	5/16x1	2
D4	SKIRT		1	57	HEX. SOC. SCREW	5/16x5/8	2
D5	SHELF		1	58	SPRING WASHER	5/16	2
10	SWITCH BRACKET		1	58-1	WASHER	5/16	2
11	TOGGLE SWITCH		1	59	SUPPORT PLATE		1
12	ELECTRICAL BOX		1	60	STOP SCREW		1
13	HEX. SOC. SCREW	5/16x3/4	8	61	NUT	5/16	2
14	HEX. SOC. SCREW	5/16x1/2	8	62	HEX. SOC. SCREW	3/8x1	1
15	WASHER	5/16	16	63	NUT	3/8x4mm	1
16	SPRING WASHER	5/16	8	64	90° POSITION SUPPORT		1
17	NUT	5/16	16	65	NUT	3/8	2
18	HEX. HD. SCREW	3/8x2-1/2	1	66	SPRING WASHER	3/8	2
19	NUT	3/8	1	70	HEX. SOC. SCREW	3/8x1-1/2	2
D20	CYLINDER		1	71	SET SCREW	5/16x3/4	1
D21	UPPER ROD		1	71-1	SET SCREW	1/4x1/2	1
D22	SPRING PIN	3/32	1	72	THUMB SCREW		1
D27	LOWER ROD		1	D73	STOP BLOCK		1
D29	CYLINDER COVER		1	D74	WORK STOP ROD		1
29-1	HEX. HD. SCREW	1/4x1/2	2	75N	FIBER HEX. NUT	1/2	2
29-2	SPRING WASHER	1/4	2	76	WASHER	1/2	2
33	WASHER	5/8x1.2x25	4	77	BEARING BUSHING		1
34	WHEEL		4	80N	SUPPORT SHAFT	22mm	1
D35	WHEEL SHAFT		2	80-1	BUSHING	Ø22x28x7	1
36	CUTTER PIN	3/32	4	D81	PIVOT ARM		1
37	TOGGLE SWITCH		1	85	SPRING WASHER	3/8	2
38	ELECTRIC CORD ASSEMBLY		1	85-1	WASHER	3/8x2x27	2
D39	TABLE		1	86	HEX. SOC. SCREW	3/8x1-1/2	2
40	HEX. SOC. SCREW	5/16x1	8	87	SPRING		1
41	WASHER	5/16	8	88	ADJUSTABLE SPRING ROD		1
42	SPRING WASHER	5/16	8	89	SPRING BRACKET		1
43	NUT	5/16	8	90	HEX. SOC. SCREW	5/16x1	1
44	FILTER		1	91	NUT	3/8	2
45	HEX. SOC. SCREW	3/16x3/8	2	92	SPRING WASHER	5/16	1
46	ELECTRIC BOX ASSEMBLY		1	92-1	WASHER	5/16	1
47	HANDLE WHEEL		1	93	NUT	5/16	1
48	SET SCREW	5/16x3/8	1	D94	FRONT VISE		1
49	KEY	5x5x20	1	D95	REAR VISE		1
D50	LEAD SCREW		1	D96	VISE BOLT		1
D51	NUT SEAT		1	D96-1	SPRING	1.2mm	1
D52	T NUT SEAT		1	D96-2	VISE THRUST SHAFT		1
D53	FREE VISE		1	D97	HANDLE	3/8	1
D54	HANDLE	3/8x35	1	D97-1	VISE NUT BLOCK		1
54-1	SPRING WASHER	3/8	1	98	HEX. SOC. SCREW	1/2x1-1/4	2
D55	LEAD SCREW SEAT		1	98-1	SPRING WASHER	1/2	2

## PART LIST

PART NO.	DESCRIPTION	SIZE	Q'TY	PART NO.	DESCRIPTION	SIZE	Q'TY
D100	SCALE		1	150-1	BRUSH HOLDER		1
101	HEX. SOC. SCREW	3/8x1-3/4	1	153	BRUSH		1
101-1	NUT	3/8	1	156	NOZZLE		1
102	HOSE	1"	1	157	SET SCREW	1/4x3/8	1
103	PUMP		1	158	NOZZLE SUPPORT		1
104	HEX. SOC. SCREW	1/4x1/2	4	159	VALVE		1
107	COOLANT TANK		1	160	HEX. SOC. SCREW	3/16x3/8	4
108	HOSE FITTING		1	161	HEX. SOC. SCREW	5/16x1-1/8	1
109	HOSE CLAMP	13mm	1	161-1	SPRING WASHER	5/16	1
110	HOSE	5/16	1	D163	ADJUSTABLE BRACKET (FRONT)		1
D111	SAW BOW		1	164	BLADE GUARD		1
117	KEY	6x6x20	1	164-1	HEX. SOC. SCREW	3/16x1/4	2
119	HEX. SOC. SCREW	3/8x1	1	165	HEX. SOC. SCREW	1/4x1/2	4
119-1	SPRING WASHER	3/8	1	166	SLIDING GUIDE PLATE		2
119-2	WASHER	3/8x4x35	1	167	SET SCREW	5/16x3/4	1
121-1	GEAR BOX		1	168	HEX. SOC. SCREW	5/16x1-1/2	2
122	SPRING WASHER	5/16	4	169	BLADE TENSION SLIDING BLOCK		1
123	HEX. SOC. SCREW	5/16x1-1/4	4	170	HEX. SOC. SCREW	1/4x1/2	1
123-1	ADJ. SCREW	1/4x3/8x3	2	170-1	SPRING WASHER	1/4	1
124	BLADE WHEEL (REAR)		1	170-2	WASHER	1/4x1.2x16	1
125	HEX. SOC. SCREW	6x20mm	5	171	SLIDING DRAW BLOCK		1
126	VENT PLUG		1	172	BRACKET		1
127	BLADE		1	174	BALL BEARING	6203ZZ	2
D128	BLADE BACK COVER		1	175	BLADE WHEEL (FRONT)		1
129	WHEEL COVER		1	176	WASHER	5/16x2x25	1
130	PLUM SCREW	1/4x13	2	176-1	SPRING WASHER	5/16	1
130-1	WASHER	1/4	2	177	HEX. SOC. SCREW	5/16x3/4	1
131	ADJUSTABLE GUIDE KNOB	3/8x30	2	178	HEX. SOC. SCREW	1/4x1/2	2
D132	ADJUSTABLE BRACKET (REAR)		1	179	WASHER	1/4x1.2x16	2
133	BALL BEARING	608Z	2	180	WASHER	3/8x2x25	1
134	ADJUSTABLE BLADE SEAT (REAR)		1	181	BLADE ADJUSTABLE HANDLE	3/8x138	1
135	BEARING PIN		2	192-1	MOTOR		1
136	ECCENTRIC SHAFT ASSEMBLY		2	192-2	STRAIN RELIEF		2
136-1	CENTER SHAFT ASSEMBLY		2	193	KEY	5mm	1
137	NUT	3/8x24UNF	4	194	WORM SHAFT		1
137-1	SPRING WASHER	3/8	4	195	HEX. SOC. SCREW	6x20mm	1
138	WASHER	5/16x2x18	1	196	GEAR FLANGE		1
139	SPRING WASHER	5/16	1	197	HEX. SOC. SCREW	8x20mm	2
140	HEX. SOC. SCREW	5/16x1-1/8	1	198	SPRING WASHER	8mm	2
141	FLAT HEAD SCREW	1/4x1/2	2	204	HEX. SOC. SCREW	1/4x1/2	2
142	VERTICAL CUTTING PLATE (SMALL)		1	205	WASHER	1/4x1.2x16	2
143	ADJUSTABLE BLADE SEAT (FRONT)		1	206	SUPPORT PLATE		1
144	HEX. SOC. SCREW	3/8x1-1/4	2	218	SHUT-OFF BRACKET		1
D145	TOP SUPPORT		1	219	WASHER	1/4x1.2x16	1
146	SPRING WASHER	3/8	2	220	SPRING WASHER	1/4	1
147	NUT	3/8	2	221	HEX. SOC. SCREW	1/4x1/2	1





## WARRANTY

Palmgren warrants their products to be free of defects in material or workmanship. This warranty does not cover defects due directly or indirectly to misuse, abuse, normal wear and tear, failure to properly maintain the product, heated, ground or otherwise altered, or used for a purpose other than that for which it was intended. The warranty does not cover expendable and/or wear parts (i.e. v-belts, coated screws, abrasives), damage to tools arising from alteration, abuse or use other than their intended purpose, packing and freight. The duration of this warranty is expressly limited to the terms noted below beginning from the date of delivery to the original user. The Palmgren products carry the following warranties on parts with a 1 year warranty on labor:

- USA Machine vises – Lifetime
- IQ Machine vises – Lifetime
- Bench vises – Lifetime
- Positioning tables – Lifetime
- Bench grinders, buffers and belt grinders – 3 years
- Tapping machines – 2 years
- Drilling machines – 2 years
- Finishing machines – 2 years
- Band saws – 2 years
- Work stands – 2 years
- Arbor presses – 2 years
- Milling machines – 2 years
- Lathes – 2 years
- Accessories – 1 year

The obligation of Palmgren is limited solely to the repair or replacement, at our option, at its factory or authorized repair agent of any part that should prove deficient. Purchaser must lubricate and maintain the product under normal operating conditions at all times. Prior to operation become familiar with product and the included materials, i.e. warnings, cautions and manuals. **Failure to follow these instructions will void the warranty.**

This warranty is the purchaser's exclusive remedy against Palmgren for any deficiency in its products. Under no circumstances is Palmgren liable for any direct, indirect, incidental, special or consequential damages including lost profits in any way related to the use or inability to use our products. This warranty gives you specific legal rights which may vary from state to state.

### SERVICE & REPAIR

1. If a Palmgren product requires a repair or warranty service **DO NOT** return the product to the place of purchase.
2. All warranty related work must be evaluated and approved by Palmgren/C.H. Hanson.
3. Prior to returning any item the user must obtain factory approval and a valid RGA number.
4. For instructions and RGA number call toll free (800) 827-3398.



