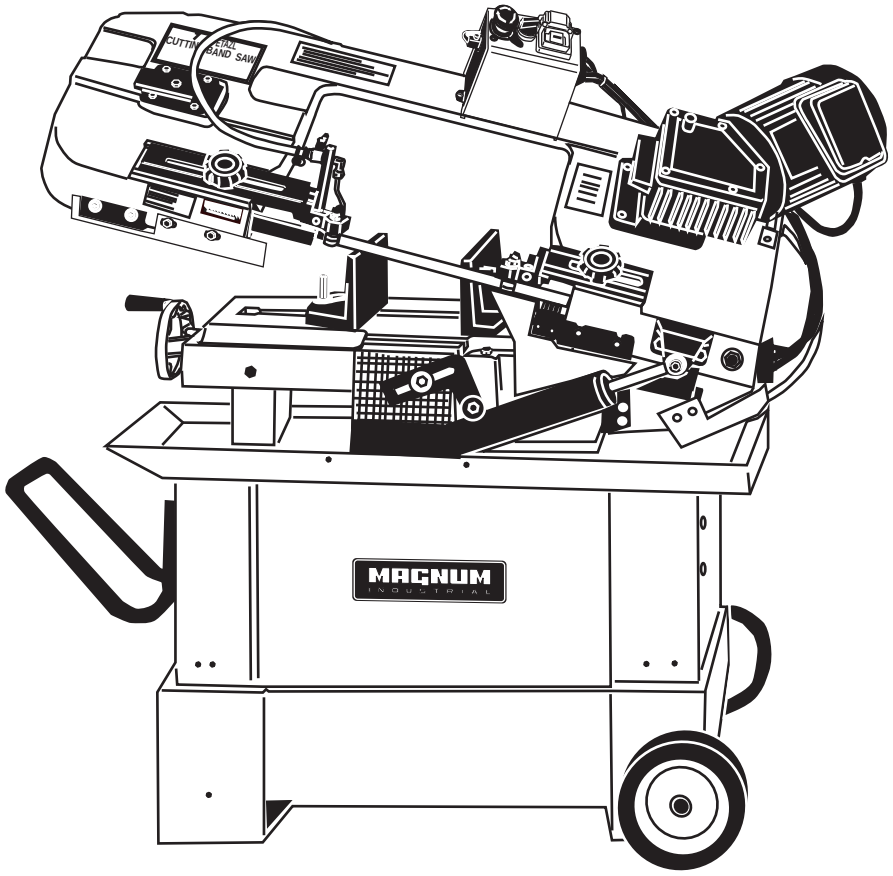
MAGNUM
INDUSTRIAL

MODEL NO.: MI-93350



OPERATING MANUAL

For Your Own Safety Read Instruction
Manual Before Operating Saw

a) Wear eye protection.
b) Do not remove jammed cutoff pieces until blade has stopped.
c) Maintain proper adjustment of blade tension, blade guides, and thrust bearings.
d) Adjust upper guide just to clear workpiece.
e) Hold workpiece firmly against table.

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.
9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table below shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

Minimum gage for cord / Total length of cord in feet

			120V	240V
18	AWG	/	25 ft.	50 ft.
16	AWG	/	50 ft.	100 ft.
14	AWG	/	100 ft.	200 ft.
12	AWG	/	150 ft.	300 ft.

10. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
11. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty. Daily used eyeglasses only have the limited impact resistant lenses, they are NOT safety glasses.
12. SECURE WORK. Use clamps or a vise to hold work when practice. It's safer than using your hand and it frees both hands to operate tool.

13. DON'T OVERREACH. Keep proper footing and balance at all times.

14. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

15. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.

16. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.

17. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.

18. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.

19. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function-check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

20. DIRECTION OF FEED. Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.

21. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

GROUNDING INSTRUCTIONS

CAUTION:THIS TOOL MUST BE GROUNDED WHILE IN USE TO PROTECT THE OPERATOR FROM ELECTRIC SHOCK.

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided-if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded. Use only 3-wire extension cords that have 3-prong grounding type plugs and 3-hole receptacles that accept the tool's plug.

Repair or replace damaged or worn cord immediately.

115 VOLT OPERATION

As received, your tool is ready to run for 115 volt operation. This tool, when wired for 115 volts, is intended for use on a circuit that has an outlet and a plug that looks like the one shown in Fig.1. A temporary adapter, which looks like the adapter illustrated in Fig.2. may be used to connect this plug to a 2-pole receptacle, as shown in Fig.2, if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. THIS ADAPTER IS NOT APPLICABLE IN CANADA. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground, such as a properly grounded outlet box, as shown in Fig.2.

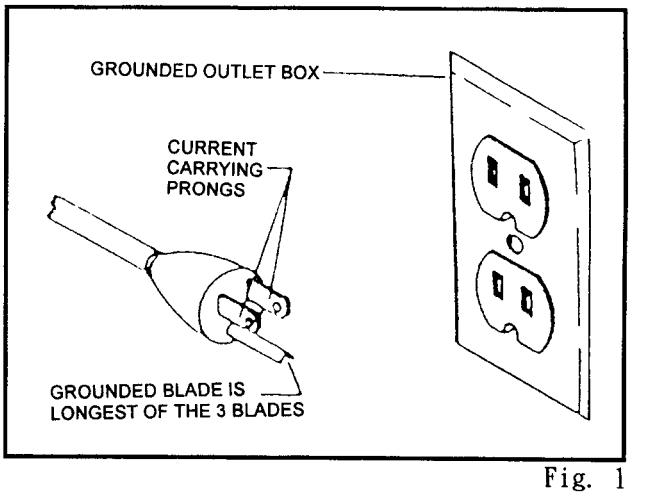


Fig. 1

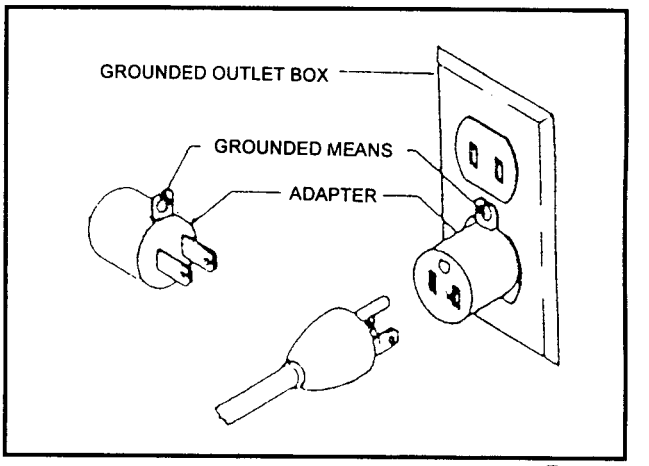


Fig. 2

230 VOLT OPERATION

If it is desired to operate this tool at 220-240 Volt. single phase operation, the following instructions must be followed:

1. Disconnect the machine from the power source.
2. This tool is supplied with 4 motor leads that are connected for 115 Volts, as shown in Fig.3. Reconnect these six motor leads for 230 Volt operation, as shown in Fig.4.
3. The 115 Volt attachment plug, supplied as standard equipment with the tool. must be replaced with a UL/CSA Listed plug suitable for 230 Volts, and rated current of the tool. This plug is illustrated in Fig.5. Contact your local Authorized Service Center or qualified electrician for proper procedures to install the plug. The tool must comply with all local and national electrical codes after the 230 Volt attachment plug is installed.
4. The drill press with a 230 Volt plug should only be connected to an outlet having the same configuration as illustrated by the grounded outlet box in Fig.5.No adapter is available or should be used with the 230 Volt plug.

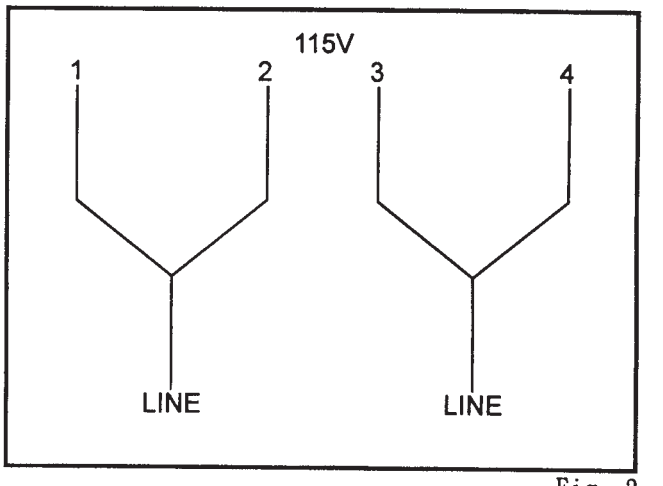


Fig. 3

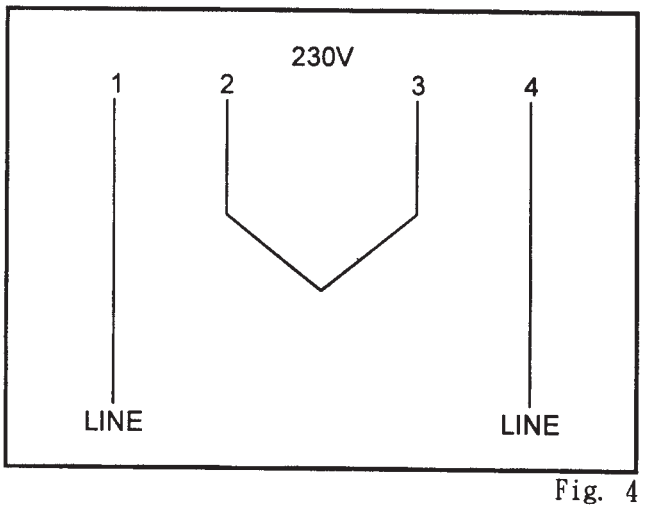


Fig. 4

IMPORTANT: IN ALL CASES (115 OR 230 VOLTS) MAKE CERTAIN THE RECEPTACLE IN QUESTION IS PROPERLY GROUNDED. IF YOU ARE NOT SURE, HAVE A REGISTERED ELECTRICIAN CHECKS THE RECEPTACLE.

CAUTION: when convertingto 220 volt follow above instructions and you must change switch box with 220 volt version and order part # is P-MI-93350-148 - 220 magnetic switch

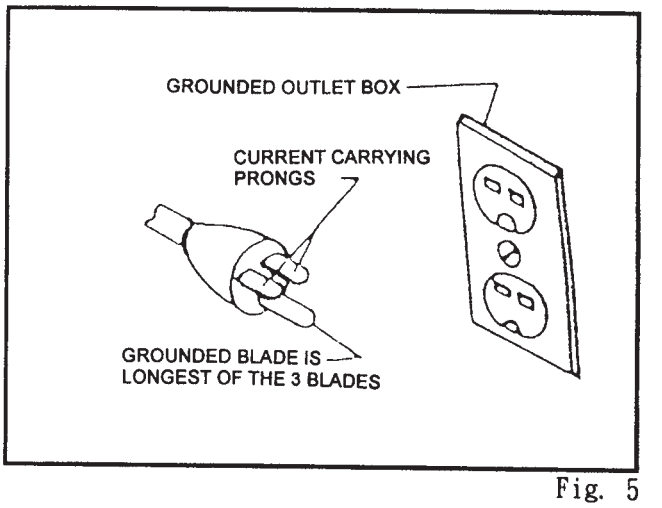
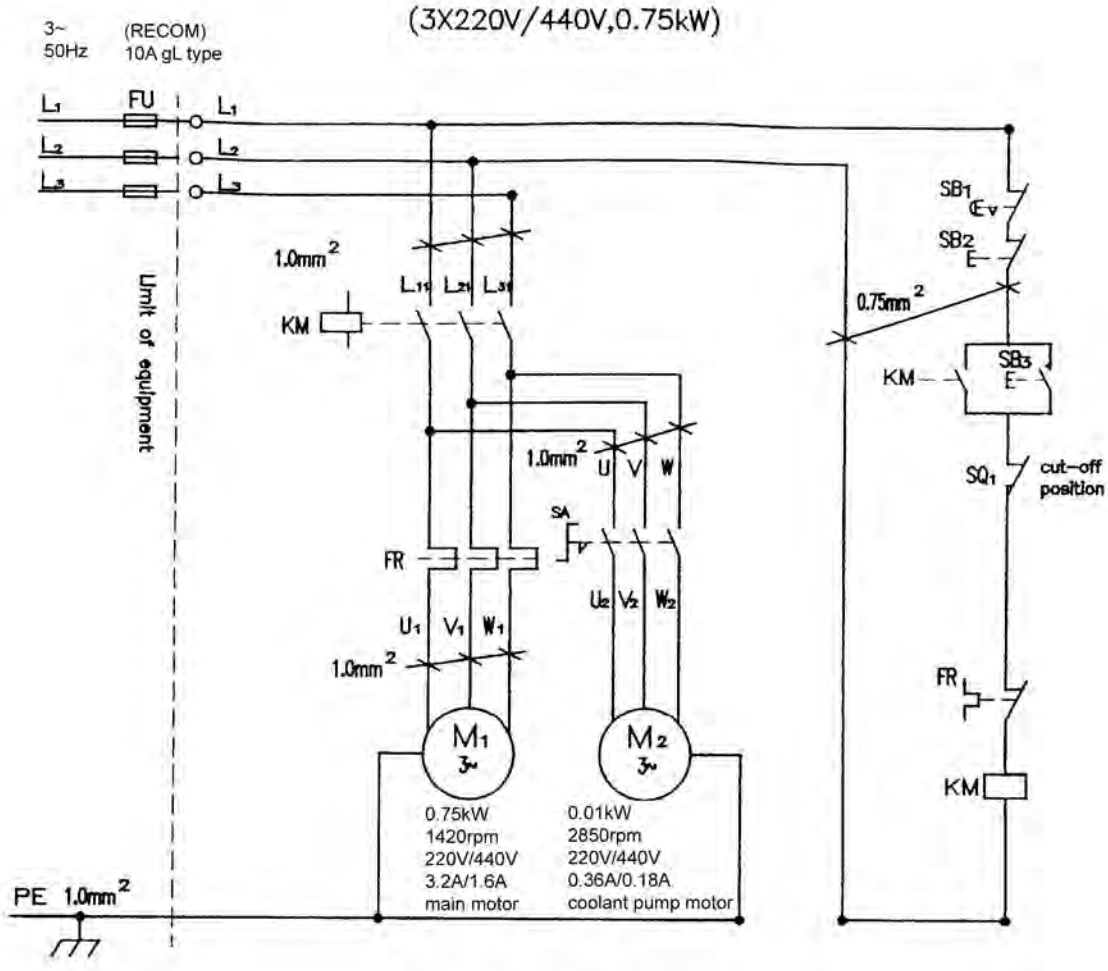
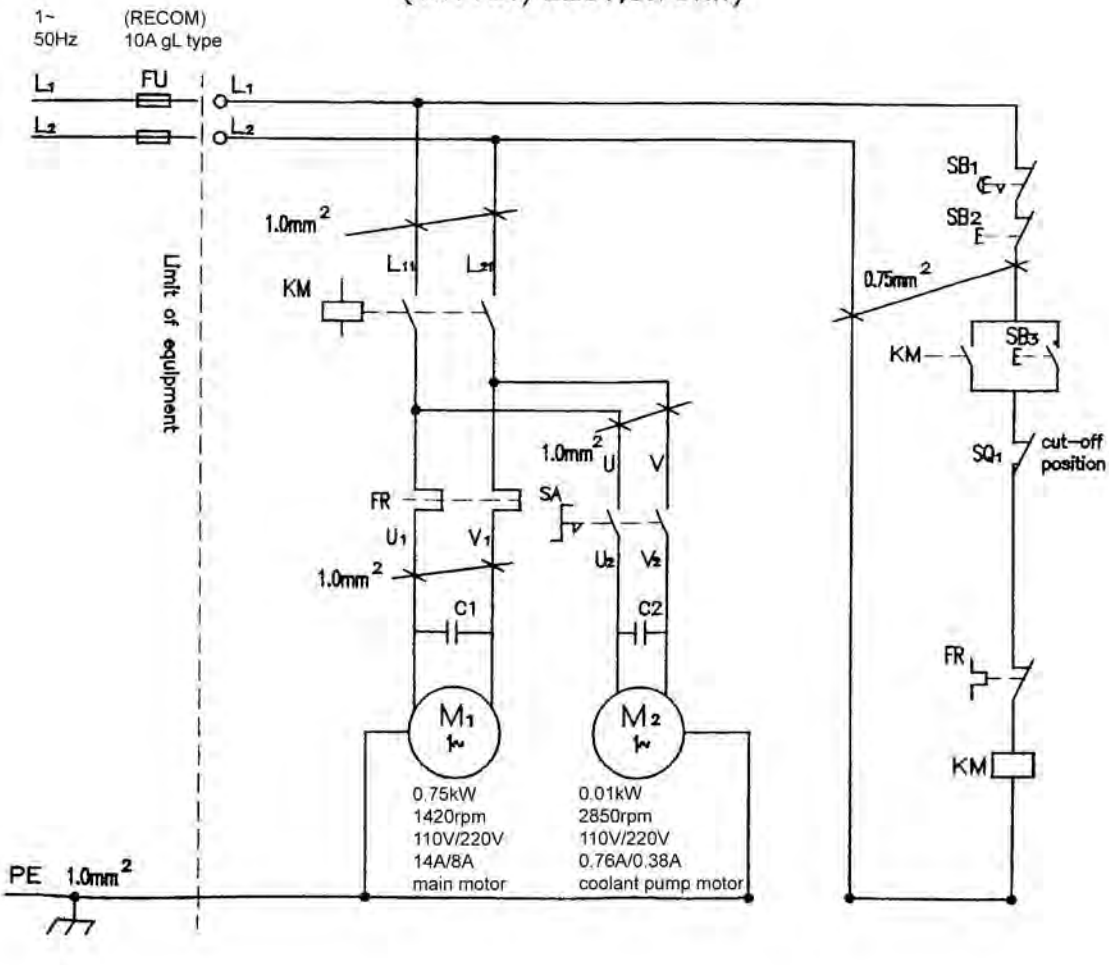


Fig. 5

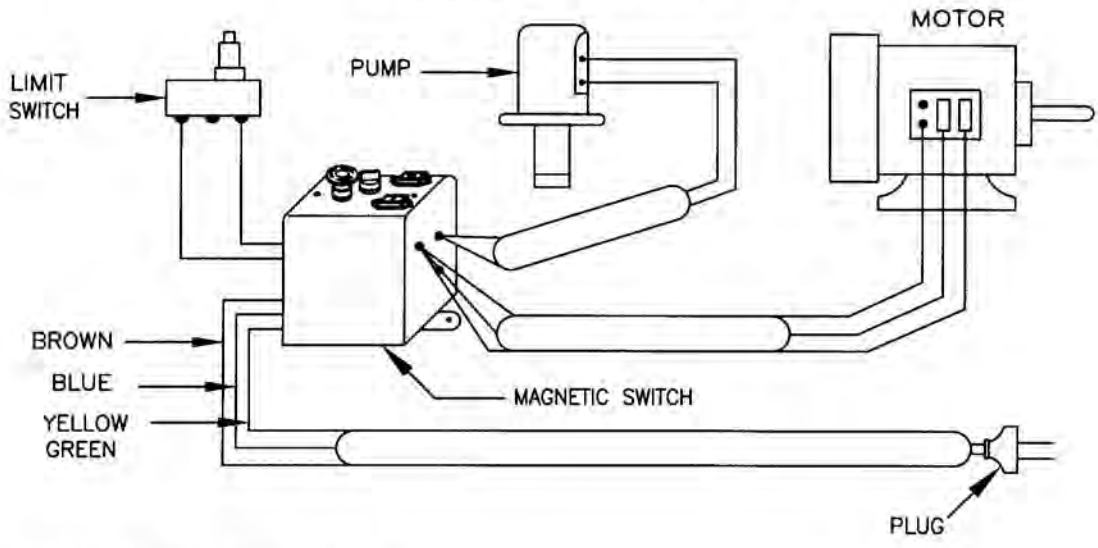
(3X220V/440V,0.75kW)



(1x110V/220V,0.75kW)



WIRING DIAGRAM
MAGNETIC SWITCH (FOR 712SG)



Part list of electrical compoments

Item designation	Description and function	Technical data	Remarks
KM	Magnetic contactor	AC1−12A 600V I_{th} =20 A	CNS 2930 BS 775
FR	Overload relay	$\frac{1.6\sim2.6}{2.1}$ A for 3x440V $\frac{2.8\sim4.5}{3.2}$ A for 3x220V $\frac{5.0\sim8.0}{8}$ A for 1x220V $\frac{12.0\sim18.0}{14}$ A for 1x110V	TH−12
SQ1	Cut off limit switch	250 Vac, 10A	UL
SB1	Push−button Emergency stop	300 Vac, 3.0A 125 Vac, 6.0A 1<<b>>	CSA
SB2 SB3	off on	AP11 1<<b>> AP11 1<<a>>	
SA	Selector switch of pump	3<<a>> for 3 phase 1<<a>> for 1 phase 600 Vac,Max	VDE UL E5579

Shipping Container Contents

1 Saw
1 Wheel Axle
2 Wheel
2 Split Pin
1 Material Stop Bar
1 Material Stop
1 Handle
1 Vertical Cutting Plate
1 Set of stand
1 Filter

Tools Required for Assembly

#2 Cross Point Screwdriver Pliers

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.

Assembly

1. Place blocking under the ends of the saw base to allow stand installation. Caution: Make sure saw is steady while temporarily supported.

2. Slide wheel axles through holes in base

3. Slide wheels onto axle and fasten with pins. Bend pins to hold in place.

4. Slide material stop bar into base and secure by tightening bolt slide material stop onto bar and tighten bolt.

5. Remove transportation strap and keep for later use should the saw be moved any distance.

STARTING SAW

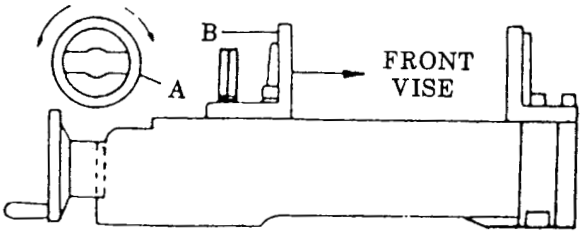
CAUTION:NEVER OPERATE SAW WITHOUT BLADE GUARDS IN PLACE.
Be sure the blade is not in contact with the work when the motor is started. Start he motor, allow the saw to come to full speed, then begin the cut by lefting the head down slowly onto the work. DO NOT DROP OR FORCE. Let the weight of the saw head provide the cutting force. The saw automatically shuts off at the end of the cut.

BLADE SELECTION

A general-use high speed steel blade is furnished with this metal Cutting Band Saw. Additional blades in 4,6,8, and 10 tooth sizes are available. The choices of blade pitch is governed by the thickness of the work to be cut; the thinner the workpiece, the more teeth advised. A minimum of three(3) teeth should engage the workpiece at all times for proper cutting. If the teenth of the blade are so far apart that they straddle the work, severe damage to the workpiece and to the blade can result.

USAGE OF THE QUICK VISE

Your machine is equipped with a " quick action " vise jaw which allows you to instantly position the moveable vise jaw (B). Simply turn handwheel (A) counter clock-wise 1/2 turn and move the vise jaw (B) to the desired position. Then tighten the vise jaw (B) against the workpiece by turning hand wheel-clock wise.



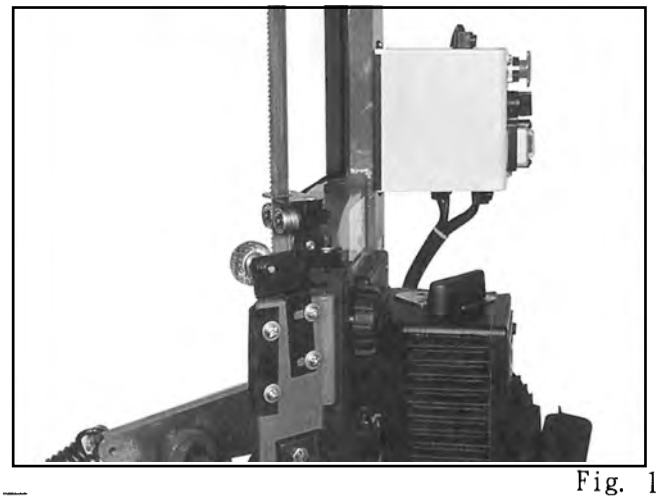
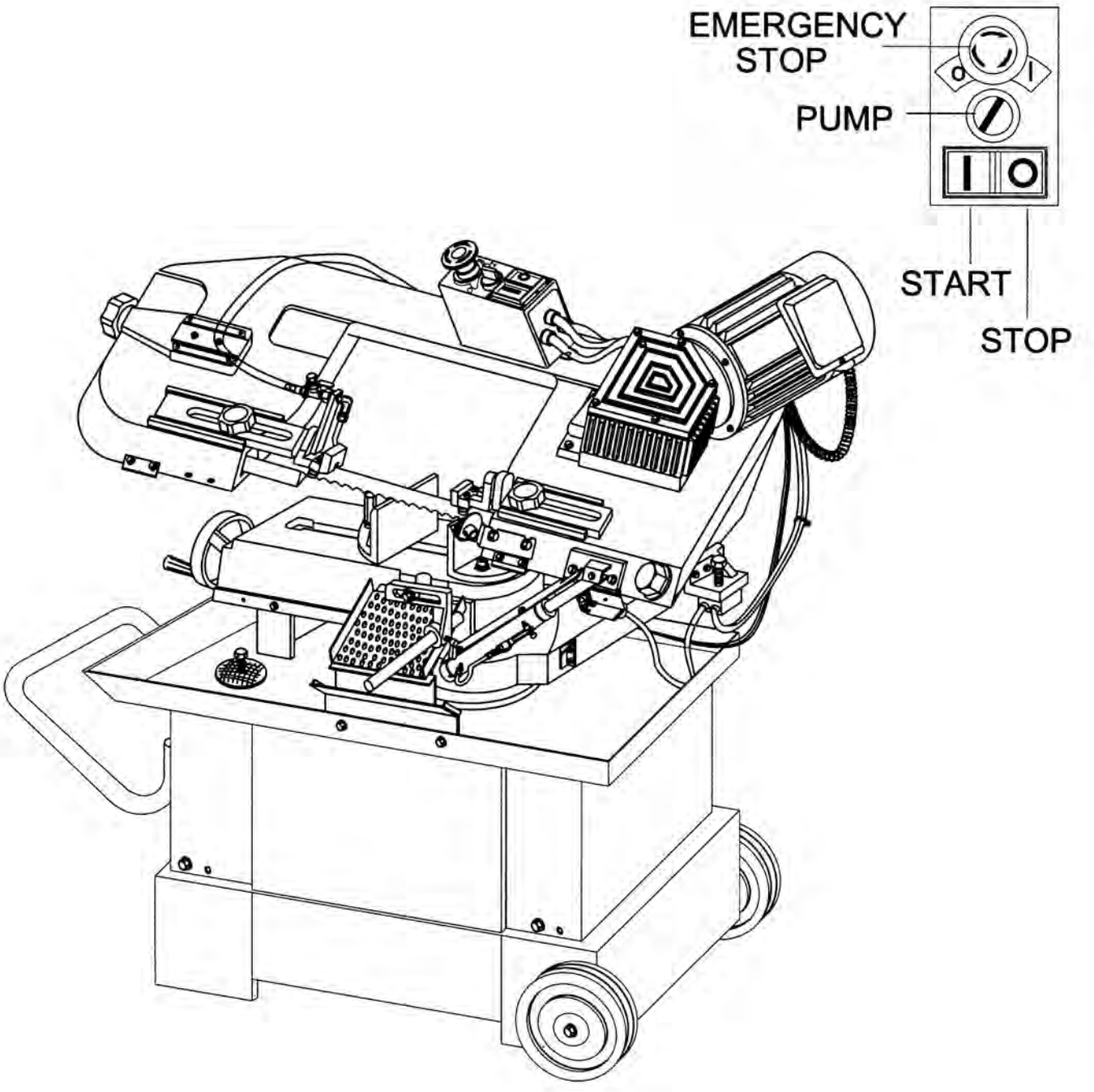


Fig. 1

SPECIFICATION:

CAPACITY 90°	● 180MM (7") ■ 180x250MM (7"x10") ■ 55x280MM (2.1"x11")
CAPACITY 45°	● 105MM (4.1") ■ 120x100MM (4.7"x4")
BLADE SIZE	19MMX0.9MMX2360MM (3/4"X0.032"X93")
MOTOR	1HP 60HZ 1720RPM , 1HP 50HZ 1430RPM
BLADE SPEED	3 SPEED 39.66.82MPM (125.215.270FPM)
MITER SCALE	0° , -45° DEGREE
AUTO SETTING AT	0° , 15° , 30° , 45° DEGREES
PACKING	50"X22.5"X42.5"
WEIGHT	N.W./G.W. 180/210KGS 396/462LBS



Vertical Cutting Plate Assembly

Note: These steps are only necessary if using the bandsaw in the vertical mode.

> ⚠ WARNING
>
> Disconnect bandsaw from the power source before making any repairs or adjustments!
>
> Failure to comply may cause serious injury!

1. Disconnect the bandsaw from the power source.
2. Raise the arm to the vertical position and lock in place by turning the hydraulic cylinder valve to the off position.
3. Remove two screws (A,Fig.2)and remove the deflector plate (B).
4. Guide blade through slot in table and fasten with two screws. See Fig.3

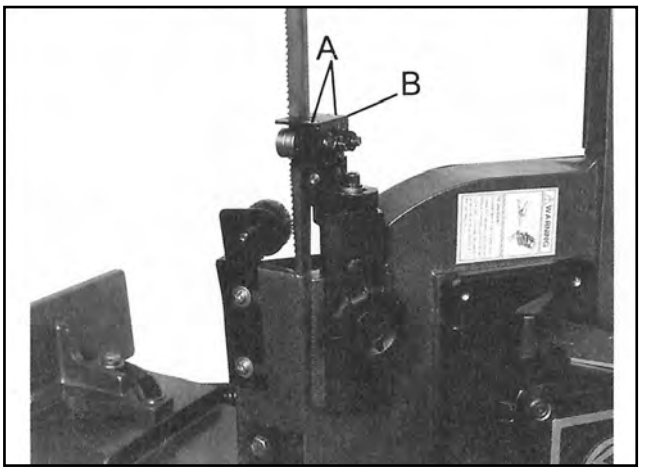


Fig. 2

Coolant Tank Preparation

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 oil often and follow manufacturers instructions as to its uses and precautions.

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

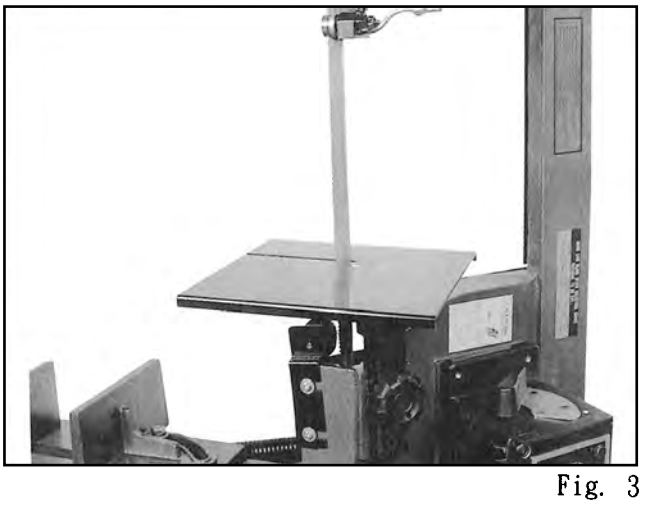


Fig. 3

ELECTRIC BOX

1. Emergency Stop Button-depress to stop all machine function immediately.
2. Coolant Switch-turn arrow to "I" to turn on flow of coolant. Turn arrow to "O" to stop flow of coolant.
3. Start Button - depress to start bandsaw.
4. Stop Button - depress to stop bandsaw.

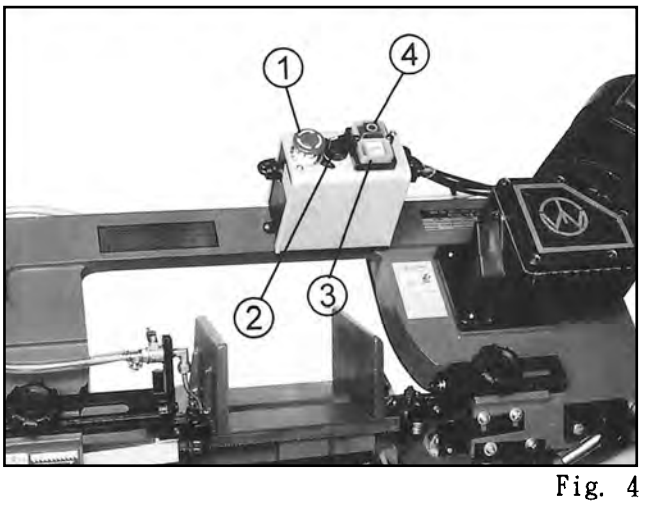


Fig. 4

Changing Blade Speed

To set speed for 1 to 3 position.

1. Disconnect machine from the power source.

2. Turn the handle (A,Fig.5) with one hand, and use the other hand to give a pull at the blade. The blade speed can be freely set at the position marked 1,2,or3.(B).

3. While being set at the position 1, speed comes to 125FPM which is for the cut of Tool steel, Stainless steel, Hard cast iron, Alloy steel, and Hard Bronze.

4. Position 2, speed comes to 215FPM for the cut of mild steel, soft cast iron, medium hard Bronze, hard Aluminum, and Plastics.

5. Position 3, speed up to 270FPM for Plastics, soft, or medium soft Alum, Wood, and other light materials.

6. Connect machine to the power source.

Note: There is the speed selection chart posted on the above of the gear box.

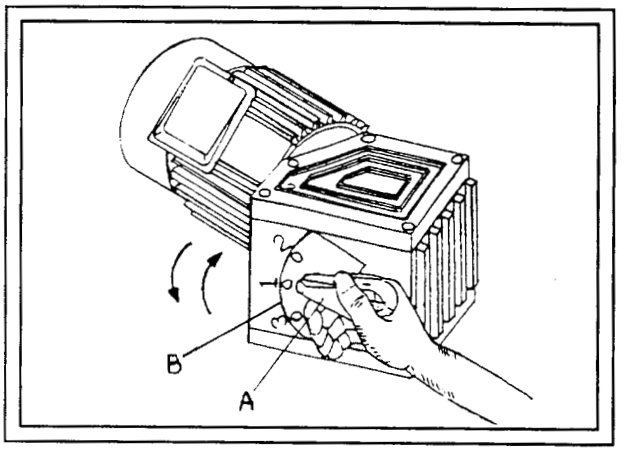
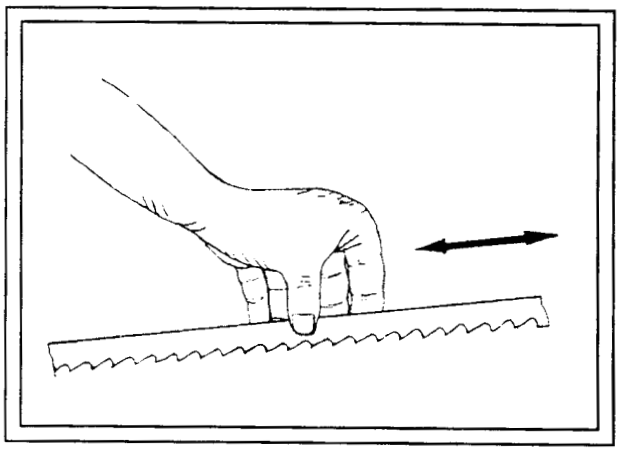


Fig. 5



Hydraulic Feed Selector Operation

The hydraulic feed selector is used to control the blade feed rate and to lock the arm in the vertical position. To increase the feed rate, turn knob(1),(Fig.6) counter-clockwise. To decrease the feed rate, turn knob (1) clockwise. To turn off the flow of hydraulic fluid, turn lever as in figure 6. To turn the hydraulic cylinder on, raise lever (2) to the 12 o'clock position.

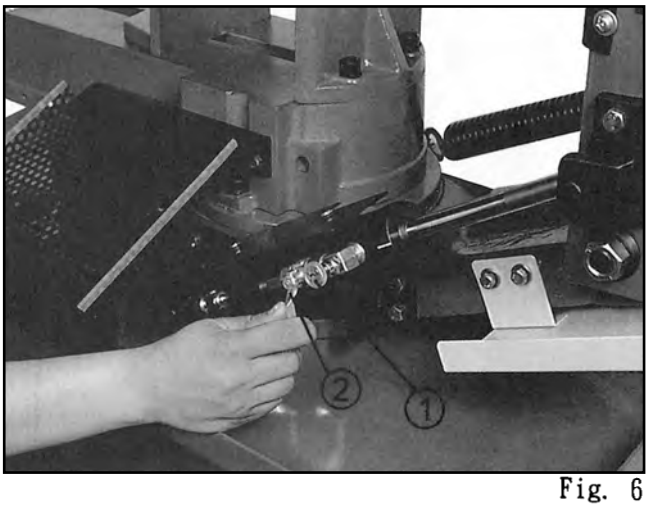


Fig. 6

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 tension is 22,000 to 25,000 lbs. per square inch as measured on a blade tension gauge.

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

1. Install blade between wheel 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.7) one and three quarter to two revolutions clockwise. This equals approximately 23,000 lbs. of blade tension.

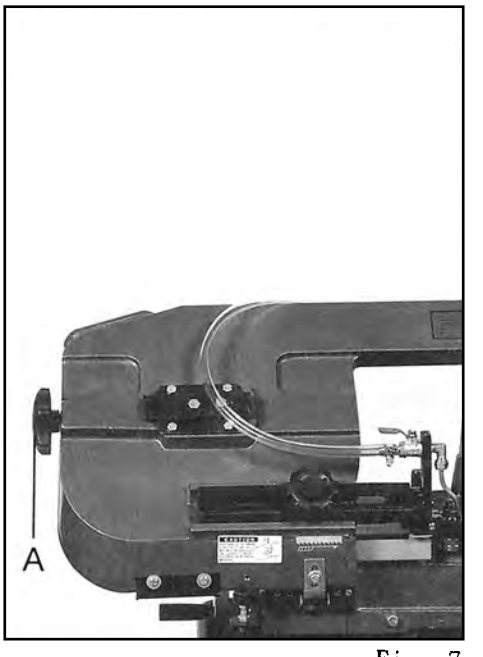


Fig. 7

> **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 sag 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 machine to the power source.

Adjusting Blade Tracking

> ⚠ **WARNING**
>
> 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 will not track.

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 arm to the vertical position and lock in place by turning 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.8)
6. Turn set screw (B) while observing blade tracking on wheel. Turn set screw 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).

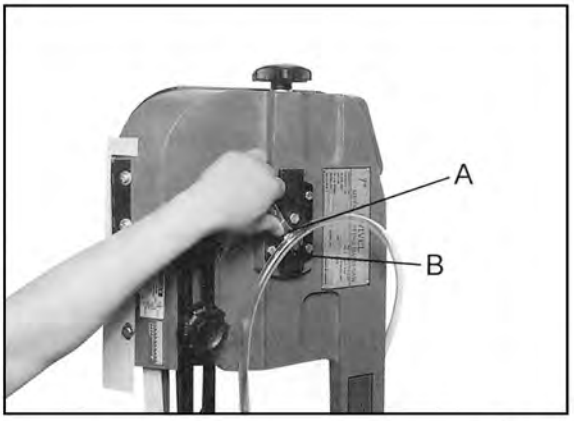


Fig. 8

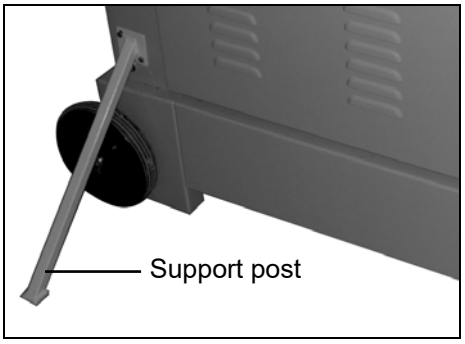
⚠ Warning

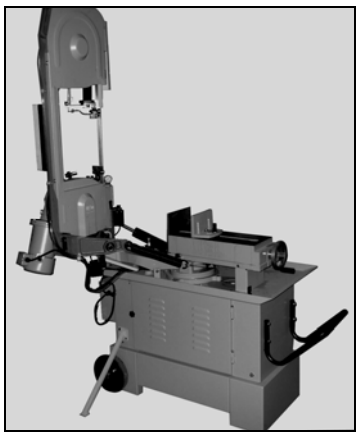
Anti-tilt Post

Don’t try to swivel saw head to 45° then raise saw arm to vertical position to perform vertical cutting that will cause band saw falling down damaged or operator injured.

Install the attached support post by tighten two screws on the base as picture, after unpacking shipping crate for prevent any incorrect operating as above situation.

Vertical cutting only use at 90° that is correct way to avoid any damaged.





Cutting Angles Adjustment

1. Loosen handle knob (A, Fig.9).
2. Rotate the upper assembly along the miter scale (A, Fig.10) to desired cutting angle. This saw allows cutting angle from 0 to 45 degree, and has settings at 2 points (0 and 45 degree).
3. Tighten handle knob (A, Fig.9).

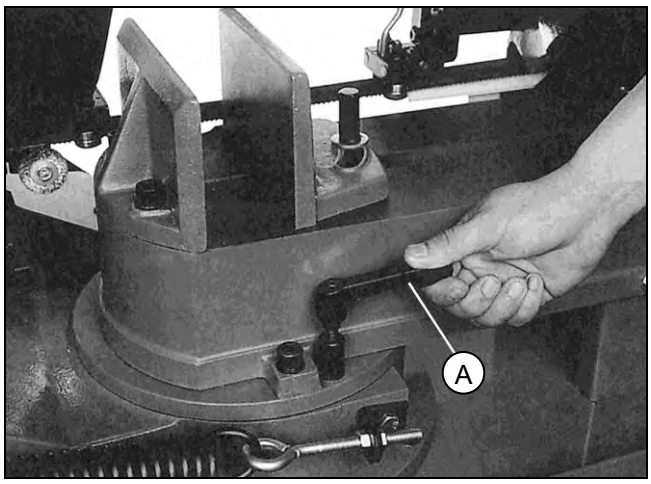


Fig. 9

Adjusting Blade Guide Bearings

CAUTION !

This machine is designed and intended for use with blades that are 3/4" wide by .032" thick by 93" long. Use of blades with different specifications 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.11) and adjust assembly so that back roller bearing is approximately .003"- .005" from the back of the blade.
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.8.
   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.

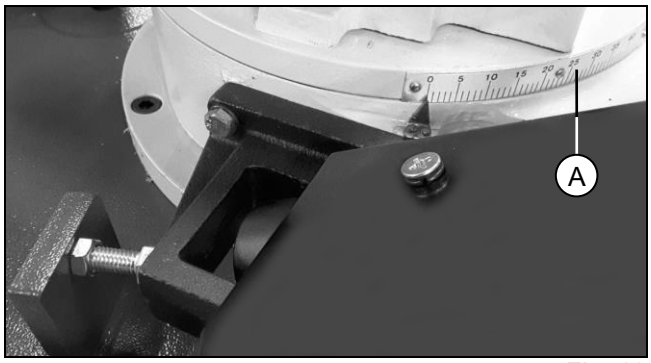


Fig. 10

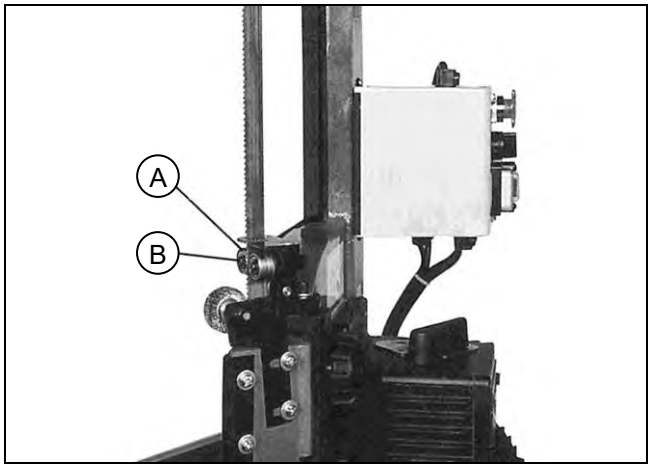


Fig. 11

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 bearings snug against blade See "Adjusting Blade Guide Bearings" for more detail.

4. Check for a slight clearance between the back up rollers and the back of blade.

5. Position both blade guides as close to work as possible.

6. Select proper speed and feed rate for material 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.

10. Keep machine lubricated See "Lubrication " section.

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 19 mm wide by 0.9mm thick by 2360mm long.
Use of blades with different specifications may cause inferior performance.

1. Disconnect machine from the power source.
2. Raise saw arm to vertical position and lock in place by turning hydraulic cylinder off.
3. Remove red blade guard assembly (A, Fig.12) by removing two screws (B).

⚠ 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 arm.

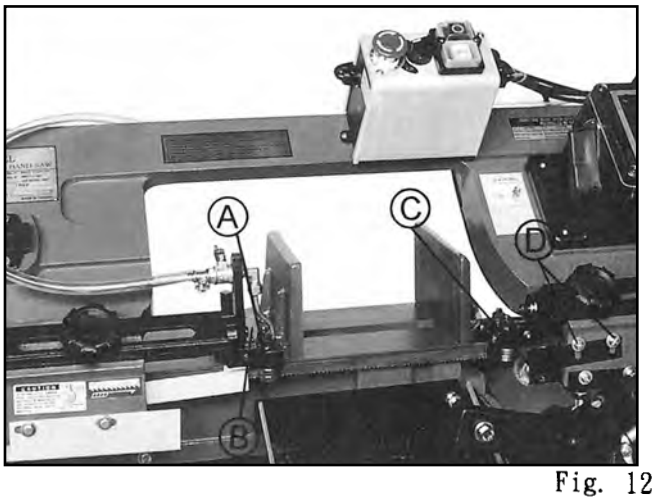
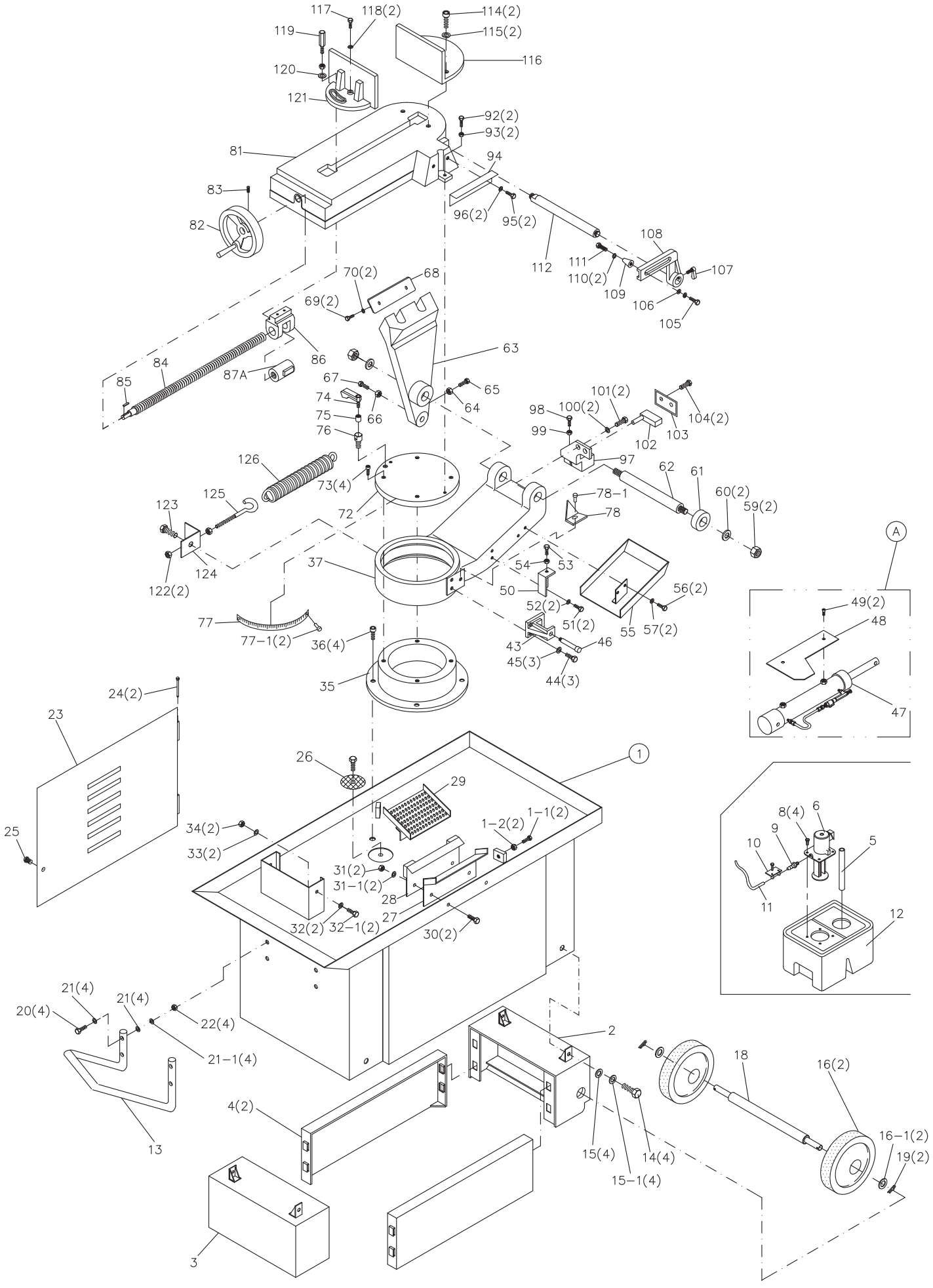


Fig. 12

TROUBLE SHOOTING CHART

SYMPTOM	POSSIBLE CAUSE(s)	CORRECTIVE ACTION
Excessive Blade Breakage	1. Incorrect blade tension	1. Adjust to where blade just does not slip on wheel.
	2. Incorrect speed or feed	2. Check Machinist Handbook
	3. Material loose in vise	3. Clamp work securely
	4. Blade rubs on wheel flange	4. Adjust wheel alignment
	5. Teeth too coares for material	5. Check Machinist Handbook for recommanded blade type
	6. Teeth in contact with work before sawis started	6. Place blade in contact work after motor is started
	7. Misallgned guides	7. Adjust
	8. Blade too thick for wheel diameter	8. Use thinner blade
	9. Cracking at weld	9. Make longer annealing cycle
Permature Blade Dulling	1. Teeth too corase	1. Use finer tooth blade
	2. Too much speed	2. Try next lower speed
	3. Inadequate feed pressure	3. Decrease spring tension on side of saw
	4. Hard spots or scale in/on material	4. Reduce speed increase feed pressure (Scale) Increase feed pressure (Hard Spots)
	5. Work hardening of material (especially stainless steel)	5. Increase feed pressure by reducing spring tension.
	6. Blade installed backwards	6. Remove blade twist inside out and reinstall blade.
	7. Insufficient blade tension	7. Increase tension to proper level
Bad Cuts (crooked)	1. Work not square	1. Adjust vise to be square with blade Always clamp work tightly in vise.
	2. Feed pressure too great	2. Reduce pressure by increasing spring tension on side of saw.
	3. Guide bearing not adjusted properly	3. Adjust guide bearing to 001 greater than max. thickness. including weld of the saw.
	4. Inadequate blade tension	4. Increas adequate tension a little at a time.
	5. Blade guides spaced out too much	5. Move guide as close to work as possible.
	6. Dull blade	6. Replace blade
	7. Speed incorrect	7. Check manual for recommended speeds
	8. Blade guide assembly loosen	8. Tighten
	9. Blade guide bearing assembly loose	9. Tighten
	10. Blade tracks too far away from wheel flanges	10. Retrack blade according to operating instructions.
Bade cuts (Rough)	1. Too much speed or feed	1. Reduce speed and feed
	2. Blade is too coarse	2. Replace with finer blade
Blad is twisting	1. Cut is binding blade	1. Decrease feed pressure
	2. Too much blade tension	2. Decrease blade tension
Unusual Wear on Side/Back of Blade	1. Blade guides worn	1. Replace
	2. Blade guide bearings not adjusted properly.	2. Adjust as per operators manual
	3. Blade guide bearing bracket is loosen	3. Tighten
Teeth Ripping from blade	1. Tooth Too coarse for work	1. Use finer tooth blade
	2. Too heavy feed / too slow feed	2. Increase feed pressure and/or speed
	3. Vibrating work place	3. Clamp work Securely
	4. Gullets loading	4. Use coarse tooth blade or brush to remove chips
Motor Running too Hot	1. Blade tension too high.	1. Reduce tension on blade
	2. Blade is too coarse for work (Pipes especially)	2. Use finer blade
	3.Blade is too fine for work (Heavier, soft materially)	3. Use coarser blade
	4.Gear not aligned properly	4. Adjust gears so that worm is in center or gear
	5.Idler wheel needs lubrication	5. Oil bearing/shaft on idler wheel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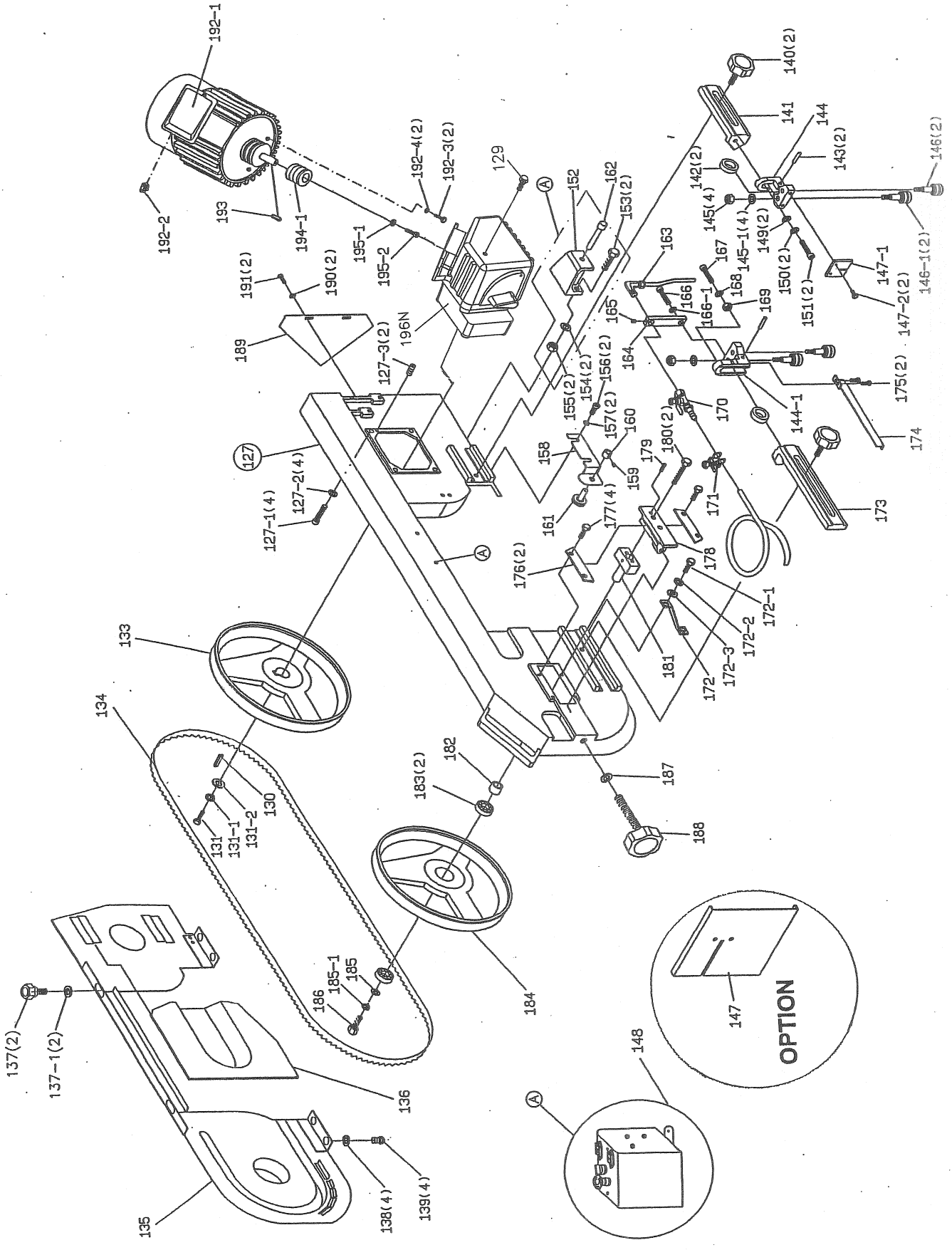

OPTION

PARTS LIST FOR MI-93350

ITEM NO.	DESCRIPTION	SIZE	Q'ty
MI-93350-01	BOTTOM DISH		1
MI-93350-01-1	HEX. HD. SCREW	3/8X1-1/2	2
MI-93350-01-2	NUT	3/8	2
MI-93350-02	FEET-STAND (RIGHT)		1
MI-93350-03	FEET-STAND (LEFT)		1
MI-93350-04	PANEL		2
MI-93350-05	HOSE	1"	1
MI-93350-06	PUMP		1
MI-93350-08	ROUND HD. SCREW	1/4X1/2	4
MI-93350-09	HOSE FITTING		1
MI-93350-10	HOSE CLAMP		1
MI-93350-11	HOSE	5/16	1
MI-93350-12	COOLANT TANK	6L	1
MI-93350-13	HAND		1
MI-93350-14	HEX. HD. SCREW	5/16X3/4	4
MI-93350-15	WASHER	5/16	4
MI-93350-15-1	SPRING WASHER	5/16	4
MI-93350-16	WHEEL	8"	2
MI-93350-16-1	WASHER		1
MI-93350-18	WHEEL SHAFT		1
MI-93350-19	SPRING PIN		2
MI-93350-20	HEX. HD, SCREW	5/16X1-1/2	4
MI-93350-21	WASHER	5/16	8
MI-93350-21-1	SPRING WASHER	5/16	4
MI-93350-22	NUT	5/16	4
MI-93350-23	DOOR		1
MI-93350-24	PIN		2
MI-93350-25	LOCK KNOB	1/4X3/4	1
MI-93350-26	FILTER	5/16X1-1/2	1
MI-93350-27	BRACKET		1
MI-93350-28	BRACKET		1
MI-93350-29	CHIP GUIDE PLATE		1
MI-93350-30	HEX HD, SCREW	5/16X3/4	2
MI-93350-31	NUT	5/16	2
MI-93350-31-1	SPRING WASHER	5/16	2
MI-93350-32	WASHER	5/16	2
MI-93350-32-1	HEX, HDSCREW	5/16	2
MI-93350-33	SPRNG WASHER	5/16	2
MI-93350-34	NUT	5/16	2
MI-93350-35	LOW BASE OF DISC		1
MI-93350-36	HEX. SOCKET CAP SCREW	M10X20	4
MI-93350-37	SWIVEL BASE		1
MI-93350-43	BOTTOM SUPPORT		1
MI-93350-44	HEX. HD SCREW	5/16X1	3
MI-93350-45	SPRING WASHER	5/16	3
MI-93350-46	SUPPORT ROD		1

PARTS LIST FOR MI-93350

ITEM NO.	DESCRIPTION	SIZE	Q'ty
MI-93350-47	HYDRAULIC CYLINDER		1
MI-93350-48	CYLINDER COVER		1
MI-93350-49	ROUND HD. SCREW	1/4X1/4	2
MI-93350-50	SUPPORT PLATE		1
MI-93350-51	HEX. HD. SCREW	3/8X1	2
MI-93350-52	SPRING WASHER	3/8	2
MI-93350-53	HEX.HD. SCREW	M12X40	1
MI-93350-54	NUT	M12	1
MI-93350-55	SPLASH GUARD		1
MI-93350-56	HEX. HD SCREW	5/18X384	2
MI-93350-60	WASHER		2
MI-93350-61	BUSHING		1
MI-93350-62	SUPPORT SHAFT		1
MI-93350-63	PIVOT ARM		1
MI-93350-64	NUT	5/16	1
MI-93350-65	HEX HD. SCREW	5/16X1-1/2	1
MI-93350-66	NUT	3/8	1
MI-93350-67	HEX HD. SCREW	3/8X1-3/4	1
MI-93350-68	PLATE		1
MI-93350-69	HEX HD. SCREW	3/8X1-1/2	2
MI-93350-70	SPRING WASHER	3/8	2
MI-93350-72	UPPER OF DISC		1
MI-93350-73	HEX. SOCKET CAP SCREW	M10X20	4
MI-93350-74	LOCK HANDLE	3/8X50	1
MI-93350-75	BRONZE BUSHING		1
MI-93350-76	THRUST SHAFT		1
MI-93350-77	SCALE		1
MI-93350-77-1	RIVET	2.3x4mm	2
MI-93350-78-1	RIVET	2.3x4mm	1
MI-93350-78	ANGLE INDICATOR		1
MI-93350-81	TABLE		1
MI-93350-82	HANDLE WHEEL ASSEMBLY		1
MI-93350-83	SET SCREW	5/16X3/8	1
MI-93350-84	LEAD SCREW		1
MI-93350-85	KEY	5MM	1
MI-93350-86	LEAD SCREW BRACKET		1
MI-93350-87A	ACME NUT ASSEMBLY		1
MI-93350-92	HEX. SOCKET CAP SCREW	M12X30	2
MI-93350-93	SPRING WASHER	1/2	2
MI-93350-94	TOP SUPPORT		1
MI-93350-95	HEX HD. SCREW	5/16X3/4	2
MI-93350-96	SPRING WASHER	5/16	2
MI-93350-97	90' SUPPORT		1
MI-93350-98	HEX. HD. SCREW	M10X40	1
MI-93350-99	NUT	M10	1
MI-93350-100	SPRING WASHER	3/8	2

PARTS LIST FOR MI-93350

ITEM NO.	DESCRIPTION	SIZE	Q'ty
MI-93350-101	HEX, HD, SCREW	3/8X1-1/4	2
MI-93350-102	LIMIT SWITCH		1
MI-93350-103	UMIT SWITCH COVER		1
MI-93350-104	SCREW CAP	3/16X3/8	2
MI-93350-105	HEX.HD SCREW	5/16X3/4	1
MI-93350-106	WASHER	5/16	1
MI-93350-107	THUMB SCREW		1
MI-93350-108	STOP BRACKET		1
MI-93350-109	WORK STOP		1
MI-93350-110	SPRING WASHER	5/16	2
MI-93350-111	HEX. HD. SCREW	5/16X3/4	1
MI-93350-112	STOP ROD		1
MI-93350-114	HEX, HD, SCREW	M12X35	2
MI-93350-115	SPRING WASHER	1/2	2
MI-93350-116	REAR VISE		1
MI-93350-117	HEX HD, SCREW	3/8X1-1/2	1
MI-93350-118	SPRING WASHER	3/8	2
MI-93350-119	SCREW HANDLE		1
MI-93350-120	WASHER	3/8	1
MI-93350-121	FRONT VISE		1
MI-93350-122	NUT	3/8	2
MI-93350-123	HEX. HO SCREW	3/8X3/4	1
MI-93350-124	SPRING BRACKET		1
MI-93350-125	SPRING ADJUSTING ROD	3/8	1
MI-93350-126	SPRING		1
MI-93350-127	SAW BOW		1
MI-93350-127-1	HEX, HD, SCREW	5/16X1-1/4	4
MI-93350-127-2	SPRING WASHER	5/16	4
MI-93350-127-3	ADJ. SCREW	1/4X3/8	2
MI-93350-129	VENT PLUG		1
MI-93350-130	KEY	6/20	1
MI-93350-131	HEX HD. SCREW	3/8X7/8	1
MI-93350-131-1	SPRING WASHER	3/8	1
MI-93350-131-2	WASHER	3/8X35X4	1
MI-93350-133	BLADE WHEEL (REAR)		1
MI-93350-134	BLADE		1
MI-93350-135	BLADE BACK COVER		1
MI-93350-136	WHEEL COVER		1
MI-93350-137	PLUM SCREW		2
MI-93350-137-1	WASHER	1/4	4
MI-93350-138	WASHER	1/4	4
MI-93350-139	ROUND HD. SCREW	1/4X1/2	4
MI-93350-140	GUIDE ADJUSTABLE KNOB	3/8X1-1/4	2
MI-93350-141	ADJUSTABLE BRACKET (REAR)		1
MI-93350-142	BALL BEARING	608ZZ	2
MI-93350-143	BEARING PIN	8MM	2

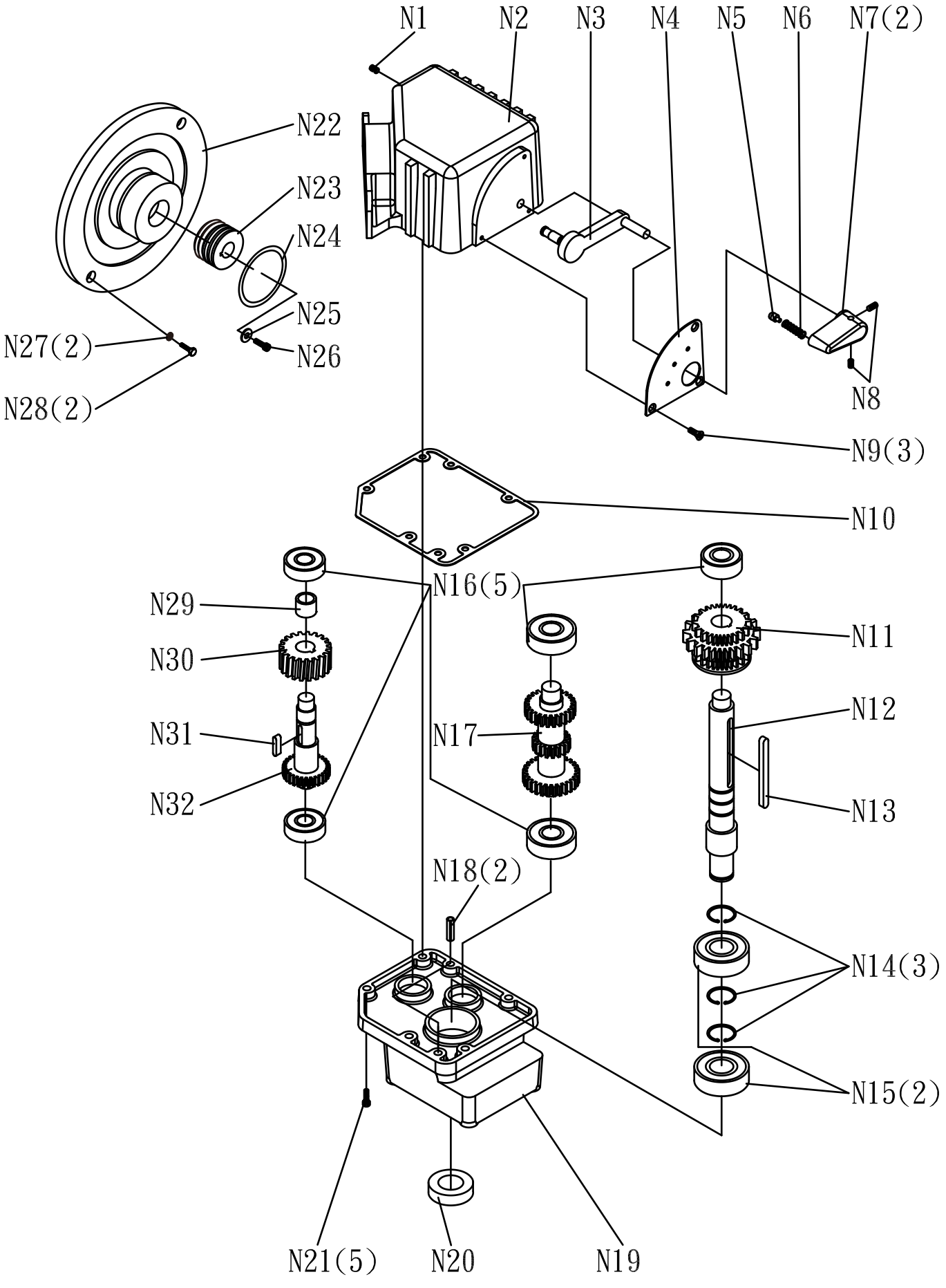
PARTS LIST FOR MI-93350

ITEM NO.	DESCRIPTION	SIZE	Q'ty
MI-93350-144	BLADE ADJUSTABLE SEAT (REAR)		1
MI-93350-144-1	BLADE ADJUSTABLE SEAT (FRONT)		1
MI-93350-145	NUT	3/8X24UNF	4
MI-93350-145-1	SPRING WASHER	3/8	4
MI-93350-146	ECCENTRIC SHAFT ASSEMBLY		2
MI-93350-146-1	CENTER SHAFT ASSEMBLY		2
MI-93350-147	VERTICAI CLITTING PLATE	OPTION	1
MI-93350-147-1	VERTICAL CUTTING PLATE ISMALLI		1
MI-93350-147-2	HD, SCREW	1/4X1/2	2
MI-93350-148	MAGNETIC SWITCH		1
MI-93350-149	WASHER	5/16	2
MI-93350-150	SPRING WASHER	5/16	2
MI-93350-151	HEX. SOC. SCREW	5/16X1-1/8	2
MI-93350-152	TOP SUPPORT		1
MI-93350-153	HEX. HD. SCREW	3/8X1-1/4	2
MI-93350-154	SPRING WASHER	3/8	2
MI-93350-155	NUT	3/8	2
MI-93350-156	ROUND HD. SCREW	1/4X1/2	2
MI-93350-157	WASHER	1/4	2
MI-93350-158	BRUSH HOLDER		1
MI-93350-159	SET SCREW	1/4X1/4	1
MI-93350-160	FIXED BUSHING		1
MI-93350-161	BRUSH	1-1/2X6MM	1
MI-93350-162	SUPPORT ROD		1
MI-93350-163	NOZZLE COCK		1
MI-93350-164	NOZZLE COCK SUPPORT		1
MI-93350-165	SET SCREW	1/4X1/2	1
MI-93350-166	HEX. SOC. SCREW	5/16X1-1/8	1
MI-93350-166-1	SPRING WASHER	5/16	1
MI-93350-167	HEX. SOC. SCREW	5/16X1	1
MI-93350-168	SPRING WASHER	5/16	1
MI-93350-169	WASHER	5/16	1
MI-93350-170	VALVE		1
MI-93350-171	HOSE CLAMP	13MM	1
MI-93350-172	BRACKET		1
MI-93350-172-1	HEX HD. SCREW	1/4X1/2	1
MI-93350-172-2	SPRING WASHER	1/4	1
MI-93350-172-3	WASHER	1/4	1
MI-93350-173	ADJUSTABLE BRACKET (FRONT)		1
MI-93350-174	BLADE GUARD		1
MI-93350-175	ROUND HD. SCREW	3/16X1/4	2
MI-93350-176	SLIDING GUIDE PLATE		2
MI-93350-177	HEX. HD. SCREW	1/4X1/2	4
MI-93350-178	BLADE TENSION SLIDING BLOCK		1
MI-93350-179	SET SCREW	5/16X3/4	1
MI-93350-180	HEX. HD. SCREW	5/16X1-1/2	2

PARTS LIST FOR MI-93350

ITEM NO.	DESCRIPTION	SIZE	Q'ty
MI-93350-181	SLIDING DRAW BLOCK		1
MI-93350-182	BEARING BUSHING		1
MI-93350-183	BALL BEARING	6203ZZ	2
MI-93350-184	BLADE WHEEL (FRONT)		1
MI-93350-185	WASHER	5/16	1
MI-93350-185-1	SPRING WASHER	5/16	1
MI-93350-186	HEX. HD. SCREW	5/16X3/4	1
MI-93350-187	WASHER	3/8	1
MI-93350-188	GUIDE ADJUSTABLE KNOB		1
MI-93350-189	SUPPORT PLATE		1
MI-93350-190	WASHER	1/4	2
MI-93350-191	HEX. HD. SCREW	1/4X3/8	2
MI-93350-192-1	MOTOR		1
MI-93350-192-2	STRAIN RELIEF		1
MI-93350-192-3	HEX, HD, SCREW	8X25MM	2
MI-93350-192-4	SPRING WASHER	8MM	2
MI-93350-193	KEY	5MM	1
MI-93350-194-1	WORM SHAFT		1
MI-93350-195-1	GEAR FLANGE		1
MI-93350-195-2	HEX. SOC. SCREW	6X20MM	1
MI-93350-196N	GEAR BOX		1

MI-93350-196N GEAR BOX



PART LIST FOR MI-93350-196N GEAR BOX

PART NO.	DESCRIPTION	Q'TY
MI-93350-196N1	Drain Plug	1
MI-93350-196N2	Gear Box	1
MI-93350-196N3	Adjustable Bracket	1
MI-93350-196N4	Indicator Plate	1
MI-93350-196N5	Position Pin	1
MI-93350-196N6	Compression Spring	1
MI-93350-196N7	Plastic Handle	1
MI-93350-196N8	Socket Set Screws	2
MI-93350-196N9	Hex Socket Flat Screw	3
MI-93350-196N10	Gasket	1
MI-93350-196N11	Drive Gear Assembly	1
MI-93350-196N12	Drive Shaft	1
MI-93350-196N13	Key	1
MI-93350-196N14	C-Ring	3
MI-93350-196N15	Ball Bearing	2
MI-93350-196N16	Ball Bearing	5
MI-93350-196N17	Transfer Gears Assembly	1
MI-93350-196N18	Set Pins	2
MI-93350-196N19	Gear Box Cover	1
MI-93350-196N20	Oil Seal	1
MI-93350-196N21	Hex. Soc. Cap Screw	5
MI-93350-196N22	Motor Cover	1
MI-93350-196N23	Worm Shaft	1
MI-93350-196N24	O-Ring	1
MI-93350-196N25	Gear Flange	1
MI-93350-196N26	Hex. Soc. Cap Screw	1
MI-93350-196N27	Spring Washer	2
MI-93350-196N28	Hex. Head Screw	2
MI-93350-196N29	Spacer Bushing	1
MI-93350-196N30	Worm Gear	1
MI-93350-196N31	Key	1
MI-93350-196N32	Input Gears	1