DEPARTMENT
OF THE ARMY TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS LIST

FOR

SAW, BAND, METAL CUTTING, 14-IN
(ROCKWELL INTERNATIONAL)
(3405-00-409-0063)

HEADQUARTERS,
DEPARTMENT OF THE ARMY

APRIL 1978

This manual is published for the purpose of identifying an authorized commercial manual for the use of the personnel to whom the saw is issued.

Manufactured by: Rockwell International
131 Park Street N.E.
Vienna, VA 22180

Procured under Contract No: DAAA09-75-C-6433

Technical Manual

No. 9-3405-206-14&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC 21 April 1978

Operator, Organizational, Direct Support and General Support Maintenance Manual Including Repair Parts List

for

SAW, BAND, METAL CUTTING, MODEL 28-300 W/49-963, 14-INCH
(NSN 3405-00-409-0063)

REPORTING OF ERRORS

You can help improve this manual by calling attention to errors and by recommending improvements and by stating your reasons for the recommendations. Your letter or DA Form 2028-2 (Recommended Changes to Publications and Blank Forms) should be mailed direct to Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished direct to you. For your convenience, preaddressed DA Form 2028-2's are included as final pages of this manual.

A. Modernly Constructed Wheels -Light weight magnesium wheels are precision balanced with rims fully machined concentric with the shaft hole, for smooth running. Recess in rim eliminates use of cement.

B. Safe, Accurate Upper Blade Guides. Upper guide has separate, safe, remote control micrometer adjustments for ball bearing blade support and blade guide blocks. Guides and blade supports adjust independently.

C. Up-Front, Precision Lower Blade Guides

--Lower blade guides have safe, accurate, remote control micrometer adjustment. Lower guides support blade to within ¾" of table work surface-assure-accurate cutting.

D. Special Table Stop. Adjustable sleeve provides positive stop for table at level position. Can be removed for a 10" left tilt. Table tilts 45" to right.

E. Superior Table Features-Slide take-out slot for blade permits use of solid front trunnion (not split for blade removal) located directly under work load. Rip fence guide rails need not be removed when changing blades.

F. Exact Tension Blade Scale-Direct reading scale on blade tension adjustment shows correct tension for different blade widths. Scale readings are not affected by variable blade lengths.

G. Locked-In Table Insert Cannot Rotate because there is a slot in the insert which meshes with a pin in the table. Therefore, the insert won't get chewed up by the blade and the operator need not endanger his fingers to turn the insert to the correct position.

Double-Sealed, Lubricated-For-Life Ball Bearings for upper and lower wheels and blade supports and all shafts of back gear unit insure many years of trouble free performance.

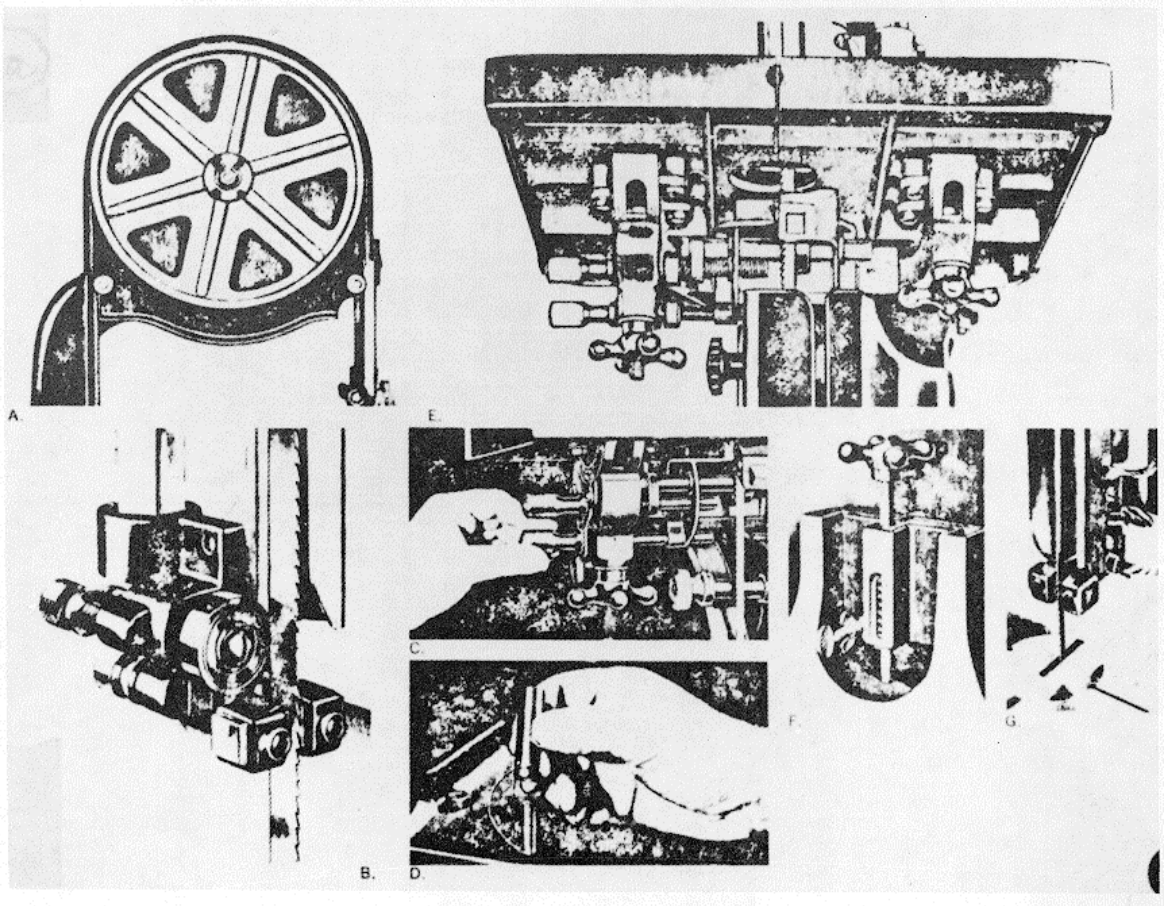
Upper and Lower Wheels completely guarded except portion actually cutting material.

Rugged 14X14" Table has a ⅜ X ¾ miter gage groove. Machined for rip fence. Widely spaced double trunnions and heavy ribbing provide rigid support for work.

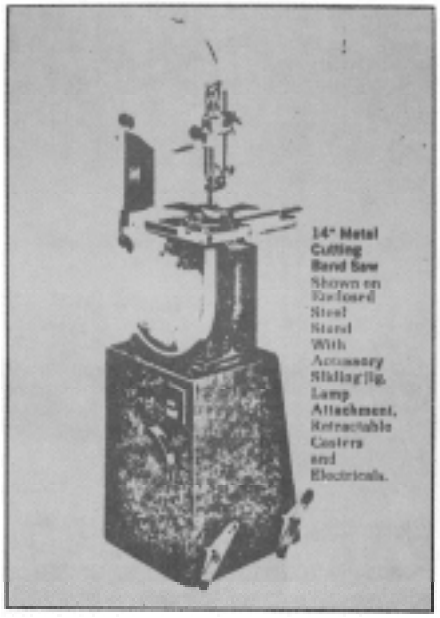
Each guide

Adjusts independently of the other, also adjusts with micrometer accuracy. Guide pins can be set to blade teeth without disturbing the setting of the blade supports blade supports can be set without altering adjustment of guide pins. Ball bearing blade supports are reversible and double-sealed.

Magnesium Wheels are carefully balanced for true running, also rimmed for proper mounting of tire.



14" METAL CUTTING BAND SAW



24-Volt Safety Control System **14"** Metal Cutting Band saws offer a low 24 volts at the push button control station for extra operator safety. Magnetic control system provides on-off control, low-voltage, no-voltage (when power is interrupted, machine can be started only by pressing start button), and motor overload protection. On three phase systems, overload protection is provided on all three legs. Shrouded green start button prevents accidental starts while protruding red stop button is extra large for quick, emergency stops. Switch cover and buttons are made of non-conductive material for added safety.

Basic Machine Without Stand: includes wheel and blade guards, 7" arbor pulley for wood cutting, No. 41-724 4-step arbor pulley ($\frac{3}{4}$" bore) for metal cutting, $\frac{3}{4}$" to $\frac{5}{8}$" and $\frac{3}{4}$ to $\frac{1}{2}$" reducing, bushings for $\frac{3}{4}$" bore 4-step motor pulley, 49-111 (set of 2) matched V-belts, 41-714 motor pulley ($\frac{3}{4}$" bore), blade guides and No. 28-062 (old 1062) metal cutting blade.
This 14" metal cutting band saw has eight cutting speeds 40 to 3000 FPM using a standard motor. There is low band saw speed -40 FPM. There are eight speeds -40, 60, 85, 115, 160, 220 or 335 FPM for metal cutting and a high speed of 3000 FPM for wood cutting. It cuts stainless steel, armor plate, high speed steel, alloy steel, cast iron, transite and other materials as woods and plastics.
This Band saw incorporates a modern drive with a clutch that permits instant changes from direct gear drive (or vice versa) by the simple shift of a knob. V-belts are not disturbed.
This unit can be used to handle both wood and metal cutting jobs.

Overall Dimensions:

Height (On stand)	65 $\frac{1}{2}$" (1663.7 mm)
Width	25" (635 mm)
Front to Rear	17 $\frac{1}{2}$ (444.5 mm)
Capacities:	
Blade to Frame	13 $\frac{3}{4}$" (349.2 mm)
Under Guide and Wheel	6 $\frac{1}{4}$" (158.7 mm)
Under Guide and Wheel (With 28-984 Height Attachment)	12 $\frac{1}{4}$ (311.1 mm)

Speeds:
With 1725 RPM Motor40,60,85,160,220,335,3000 SFM (12,192; 18,288; 25,908; 35,052; 48,768; 67,056; 102,108; 914,400 Surf. MM/Min.)

Table:

Size	14X14" (355.6 x355.6 mm)
Grove	$\frac{3}{8}$" (9.5 mm) Deep by $\frac{3}{4}$ (19.05 mm) Wide
Tilt to Right	45; to Left 10'
Height From Floor	42 $\frac{3}{4}$" (1085.8 mm)

Blade:

Width: Maximum	$\frac{3}{4}$" (19.05 mm)
Length: Maximum	94" (2387.6 mm)
Minimum	91 $\frac{1}{2}$" (2324.1 mm)
Standard	93 $\frac{1}{2}$" (2374.9 mm)

Length (With 28-984 Height Attachment):

Maximum	106" (2692.4 mm)
Minimum	103 $\frac{1}{2}$" (2628.9 mm)
Standard	105" (2667 mm)

No. 28-300 Basic Machine Without Stand: 14: metal cutting band saw with wheel and blade guards, 7" arbor pulley for wood cutting, 41-724 4-step arbor pulley, (with $\frac{3}{4}$" bore), for metal cutting $\frac{3}{4}$" to $\frac{5}{8}$" and $\frac{3}{4}$" to $\frac{1}{2}$" reducing bushings for motor pulley, 49-111 (set of two) matched V-belts, 41-714 4-stop motor pulley (with $\frac{3}{4}$" bore), blade guides and 28-062 (old 1062) metal cutting blade. Without stand, motor or switch, 168 lbs.
No. 50-122 Enclosed Steel Stand. Includes 50-139 basic stand, 50-136 motor plate and 50-135 belt guard, 54 lbs.

Note: See Section J7 for Band Saw Accessories.

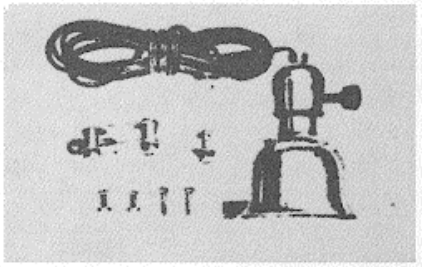
ENCLOSED STEEL STAND WITH BELT GUARD, MOTOR AND CONTROLS (Factory Mounted and Wired)
Note: Enclosed Steel Stands With Electricals Can Be Ordered Either With or Without the Basic No. 28-300 14" Band Saw.

MOTOR	MOTOR CONTROL	MOTOR ENCLOSURE	HERTZ AND MOTOR RPM	MOTOR VOLTAGE	SHIPPING WT., LBS	CATALOG NUMBER	CAT. NO. 200V
Single Phase,	Push Button Switch Only	TEFC	60-1725	115/230	80	49-963	
$\frac{1}{2}$ Horsepower	24V Push Button Station, Magnetic Starter, Transformer and Overload Protection (LVC)	TEFC	60-1725	115/230	81	49-964	
Three Phase, $\frac{1}{2}$ Horsepower	24V Push Button Station, Magnetic Starter Transformer and 3-Leg Overload Protection(LVC)	TEFC	60-1725	230/460	94	49-972	52-113

No. 41032 Motor Pulley, 2 ¾" diameter. ½" bore. ½ lb.
No. 41-033 Motor Pulley, 2 ¾" diameter. ⅝" bore. ½ lb.
No. 41-034 Motor Pulley, 2 ¾" diameter ¾ bore. ½lb.
No. 49-173 V-Belt 57 ⅛" O.C. Used with 50-891 stand. ½lb.

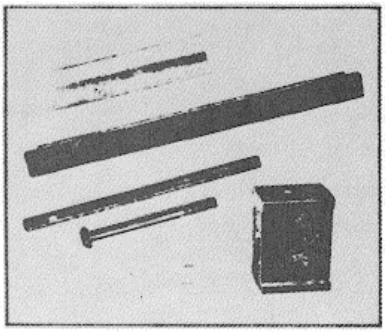
No. 41-712 Motor Pulley, 4-step, ½ "bore, 1 lb
No. 41-713 Motor Pulley 4-step, 5/8" bore, 1 lb
No. 41-714 Motor Pulley 4-step, ¾ " bore, 1 lb
No. 49-111 V-Belts, matched set of two, 41" and 58 5/8" O.C. Used with 50-122 and 50-891 stands. 1 lb.

No. 28-883 (old 883) Guard for V-belt (recommended for use with 50-891 stand). 9 lbs.
No. 50-122 Enclosed Steel Stand. Includes 50-139 basic stand 50-136 motor plate and 50-135 belt guard. 54 lbs.
No. 50-891 Open Steel Stand, 24" high with top 8x16". 26 lbs.

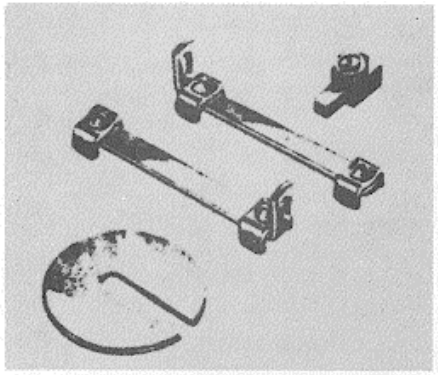


No. 40-882 (old 882) Lamp Attachment Uses standard 15 or 25-watt bulb (not included). Includes mounting bracket, shade, socket and 115 V 8-foot cord with plug. 1 ½ lbs.

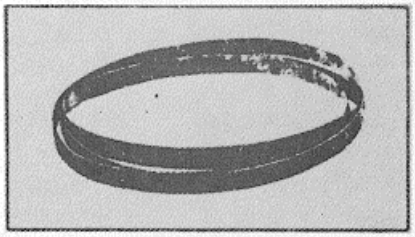
Height Attachment Increases capacity of 14" Hand Saw from 6 ¼" to 12 ¼" under the guide. Add at any time. Needs 105" blades.



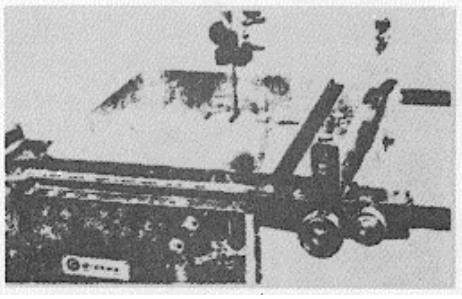
No. 28-894 (old 894) Height Attachment with cast block, dowels and bolt, extension front blade guard, wood black blade guard. 12 lbs.



No. 28-810 Sanding Attachment-Includes flat and curved platens with guides and mounting brackets. 1 lb.

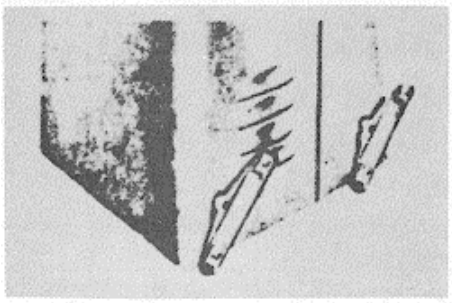


No. 28-836 Sanding Belt Garnet type, five, No. 80 grit, fine, ½ " wide, 91" long. 1 lb.
No. 28-837 Sanding Belt Garnet type, five, No. 40 grit, medium, ½ " wide, 91" long. 1 lb.

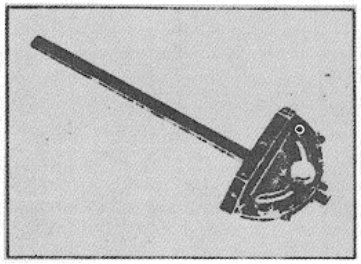


No. 28-843 Rip Fence-With 18" guide bars and mounting screws. 13 lbs.
No. 28-845 Rip Fence-With 32" guide bars and mounting screws. 10 lbs.

RETRACTABLE CASTER SETS



No. 50-111 Retractable Caster Set-For 50-122 enclosed steel stand. Has built-in leveling screws. 13 lbs.



No. 34-895 Sliding Jig For straight and angle operations. Has 3/8 x ¾ x 18" guide bar and pivoting work support body with pointer and calibrations reading through 120° swing. Adjustable, positive stops at 90° and 45°positions. 4 lbs.
No. 34-568 (old 865) Clamp Attachment For Sliding Jig With Clamp bar, two sliding clamp screws, and front and rear posts. 1 ½ " lbs.
No. 34-873 (old 873) Extra Clamp Screw and Block For Clamp Attachment. ½ lb.

WOOD CUTTING BAND SAW BLADES
For 14" Band Saws: 93 ½ " blades are standard: 105" blades use with 28-984 Height Attachment. ½ lb.

Number (93½" Long)	Number (105" Long)	Width	Min. Cut. Rad.	Teeth per In.
28-032 (old 1032)	28-045 (old 1045)	¼"	¼"	6
28-033 (old 1033)	28-046 (old 1046)	⅜"	[illegible]"	6
28-034 (old 1034)	28-047 (old 1047)	½"	[illegible]"	6
28-036 (old 1036)	28-048 (old 1048)	¾"	1 [illegible]"	5
28-038 (old 1038)	28-050 (old 1050)	1"	2½"	5
28-040 (old 1040)	28-052 (old 1052)	1¼"	5 [illegible]"	4

For 20" Band Saws: All blades are 150" long. 2 lbs.

Number	Width	Minimum Cut. Rad.	Teeth per In.
28-725	[illegible]"	[illegible]"	5
28-726	[illegible]"	[illegible]"	5
28-727	⅝"	1 [illegible]"	5
28-728	1"	2 [illegible]"	4
28-729	¾"	5 [illegible]"	4
28-731	1"	7 [illegible]"	4
28-730	1¼"	For resawing	3
28-732	1"	For resawing	2

The above blades can be tile sharpened.

SKIP TOOTH BAND SAW BLADES
For 14" Band Saws: For cutting aluminum, magnesium, plastics and all kinds of wood. All blades are 93 ½" long. ½lb.

Number	Width	Minimum Cut. Rad.	Teeth Per In.
28-884	¼"	[illegible]"	6
28-885	⅜"	1 [illegible]"	4
28-886	½"	2½"	4
28-887	¾"	5 [illegible]"	4

For 20" Band Saws: All blades are 150" long. 2 lbs.

Number	Width	Minimum Cut. Rad.	Teeth Per In.
28-750	¼"	[illegible]"	4
28-751	⅜"	1 [illegible]"	4
28-752	½"	2 [illegible]"	4
28-753	¾"	5 [illegible]"	3
28-754	1"	7 [illegible]"	2

METAL CUTTING BAND SAW BLADES

Those are regular set, hard-edge, flexible-back standard blades for cutting all metals.

For 14" Metal Cutting Band Saw: All blades are 93 ½" long. ½ lb.

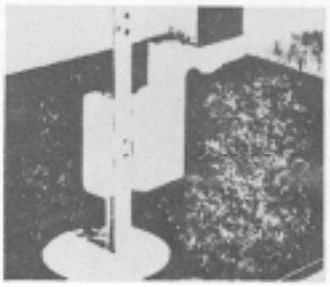
Number	Width	Minimum Cut. Rad.	Teeth Per In.
28-058 (old 1058)	½"	2½"	10
28-060 (old 1060)	½"	2½"	14
28-062 (old 1062)	½"	2½"	18
28-064 (old 1064)	½"	2½"	24

For 20" metal cutting Band Saw: All blades are 150" long. 2 lbs.

Number	Width	Minimum Cut. Rad.	Teeth Per In.
28-742	½"	2½"	10
28-743	½"	2½"	14
28-744	½"	2½"	18
28-745	½"	2½"	24
28-740	¼"	5 7/16"	6
28-741	¼"	5 7/16"	8

No. 25-857 Lamp Attachment, for 115 V, Includes 18" flexible gooseneck, reflector and 8-foot cord with 2-prong plug. Uses standard bulb (not included) up to 75 watts.

No. 28-005 Blade Shear for mounting on welder face. Capacity to 1".

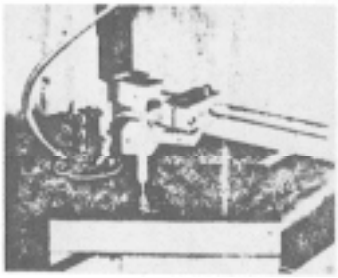


No. 28-700 File Band Guide Attachment. Easily bolts to guide block. Includes mounting hardware. File bands not supplied by Rockwell.

No. 28-701 Blade Welder and Flash Grinder, 115 V, 50/60 cycles, single phase, 3 KVA. Mounts flush into band saw column. Capacity, ⅛" to 1".

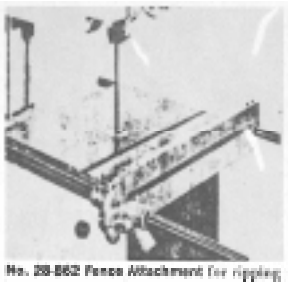
No. 28-702 Blade Welder and Flash Grinder. Same as 28-701 but for 230 V, Single phase.

No. 28-703 30" Angle Blade Guides. Consists of blade fingers, black-up bearing and guide block.

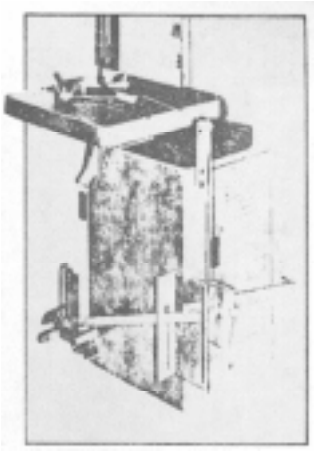


No. 28-704 Circle Cutting Attachment. Attaches quickly to guide arm, permitting radius cuts from 1 ½" to 15" in diameter.

No. 28-705 Screw Feed Attachment. Consists of table mounting bracket, screw with handle, and angle feed block.



No. 28-862 Fence Attachment for ripping and re-sawing lumber. Includes 2 ½" x 27" Micro-Set fence with front and rear locks, two 44" tubular guide rails, mounting screws. Fence may be set anywhere from 15 ½' to left of blade to 25" to right with pointer and calibrations reading from zero to 25" to right.



No. 28-708 Gravity Feed Attachment. Used primarily to avoid operator fatigue. Provides a variable feed pressure of approximately 5 to 20 pounds with standard 30-pound weight provided. Enables operator to devote his entire attention to guiding the work, assuring more accurate cutting. (For additional feed pressure, order extra weights.)

No. 28-826 Extra Weight. For 28-825 Gravity Feed Attachment. With one extra weight, attachment provides approximately 10 to 41 pounds feed pressure, or with two extra weights, 15 to 50 pounds.

No. 28-709 Chip Blower, factory mounted. Consists of pump with pulley and 0 belt.

No. 28-710 Chip Blower. Same as 28-709 except field mounted.

No. 28-711 Safety Lock-Out Switch, factory mounted. For machines with magnetic controls only. Automatically shuts off power when lower wheel door is opened.

No. 41-707 Motor Pulley, ⅞" bore, for 143T and 145T frame motors.

No. 41-708 Motor Pulley, 1 ⅛" bore, for 182T and 184T frame motors.

No. 49-131 V-Belt, 43" O.C., 11M section.

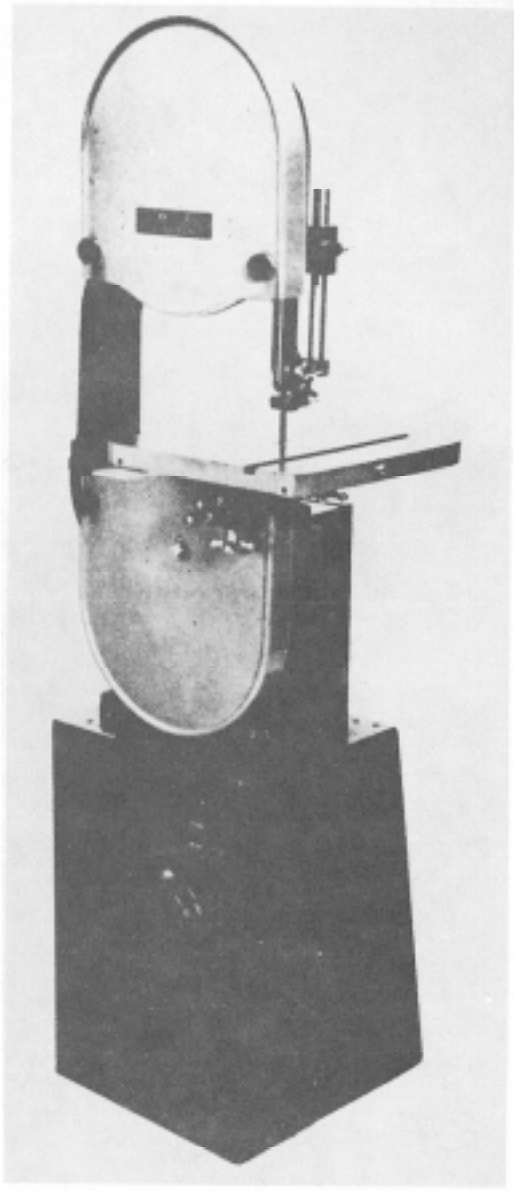
No. 49-132 V-Belt, 53 ½" O.C., 11M section.

No. 49-159 Variable Speed Belt, 55" O.C.

28-300
14" METAL CUTTING BAND SAW

INTRODUCTION

The 14" Metal Cutting Band Saw has eight cutting speeds - 40 to 3000 FPM - using a standard motor. There are eight speeds - 40, 60, 85, 115, 160, 220 or 335 FPM for metal cutting and a high speed of 3000 FPM for wood cutting. It can cut stainless steel, armor plate, high speed, steel, alloy steel, cast iron, transite and such other materials as woods and plastics.



28-00 14" METAL CUTTING BAND SAW SHOWN WITH ENCLOSED STEEL STAND AND ELEC-TRICALS

SAFETY RULES FOR ALL TOOLS

As with all power tools there is a certain amount of hazard involved with the operator and his use of the tool. Using the tool with the respect and caution demanded as far as safety precautions are concerned will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or completely ignored, personal injury to the operator can develop.

There are also certain applications for which this tool was designed. It is strongly recommended that this tool NOT be modified and/or used for any application other than for which it was designed**.**

1. KNOW YOUR POWER TOOL Read the operator's manual carefully. Lear the tools applications and limitations as well as the specific potential hazards peculiar to it.

2. KEEP GUARDS IN PLACE and in working order.

3. GROUND ALL TOOLS. If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter wire must be attached to a known ground. Never remove the third prong.

4. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.

5. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.

6. AVOID DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations. Keep your work area well illuminated.

7. KEEP VISITORS AWAY. All visitors should be kept a safe distance from work area.

8. DON'T FORCE TOOL. It will do the job better and be safer at the rate for which it was designed.

9- USE RIGHT TOOL. Don't force tool or attachment to do a job it was not designed for.

10. WEAR PROPER APPAREL. Rubber-soled footwear is recommended for best footing.

11. USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty.

12. SECURE WORK. Use clamps or a vise to hold work, when practical. It's safer than using your hand and frees both hands to operate tool.

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

14. MAINTAIN TOOLS IN TOP CONDITION. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

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

16. USE RECOMMENDED ACCESSORIES. Consult owner's manual. Use of improper accessories may be hazardous.

17. AVOID ACCIDENTAL STARTING. Make sure switch is in OFF position before plugging in cord.

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

19. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be checked to assure 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.

ADDITIONAL SAFETY RULES FOR BAND SAWS

1. ADJUST the upper guide about 1/8" above the material being cut.

2. MAKE SURE that blade tension and blade tracking are properly adjusted.

3. STOP the machine before removing scrap pieces from the table.

4. ALWAYS keep hands and fingers away from blade.

5. CHECK for proper blade size and type.

6. DO NOT attempt to saw stock that does not have a flat surface, unless a suitable support is used.

7. HOLD material firmly and feed into blade at a moderate speed.

8. TURN OFF machine if the material is to be backed out of an uncompleted cut.

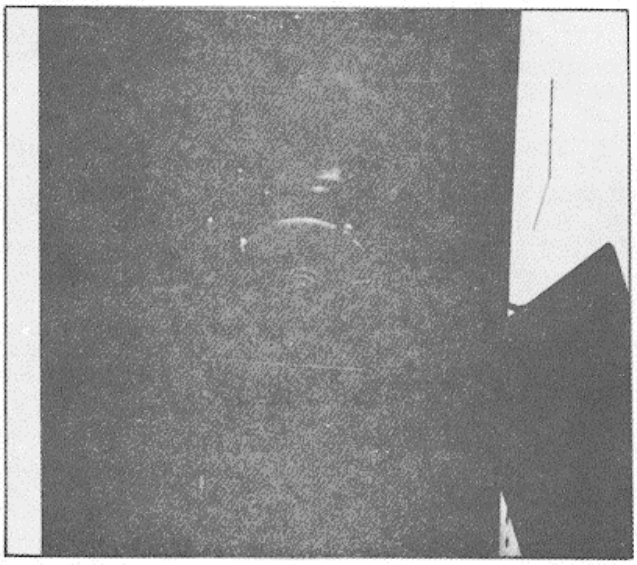
9. MAKE release cuts before cutting long curves.

UNPACKING AND CLEANING

Carefully unpack the band saw, stand, and all loose items from the cartons. Remove the protective coating from the machined surfaces of the band saw. This coating may be removed with a soft cloth moistened pith kerosene (do not use acetone, gasoline or lacquer thinner for this purpose). After cleaning, cover all unpainted surfaces with a good quality paste wax.

ASSEMBLING STAND, MOTOR PLATE, MOTOR, MOTOR PULLEY, AND SWITCH

If this band saw is received complete with stand and electricals factory mounted and wired, as shown in Fig. 2, it is necessary to remove the small knockout (A) located on top of the stand. The motor plate, motor, motor pulley and switch are completely assembled to the stand as shown in Fig. 2 and Fig. 3.



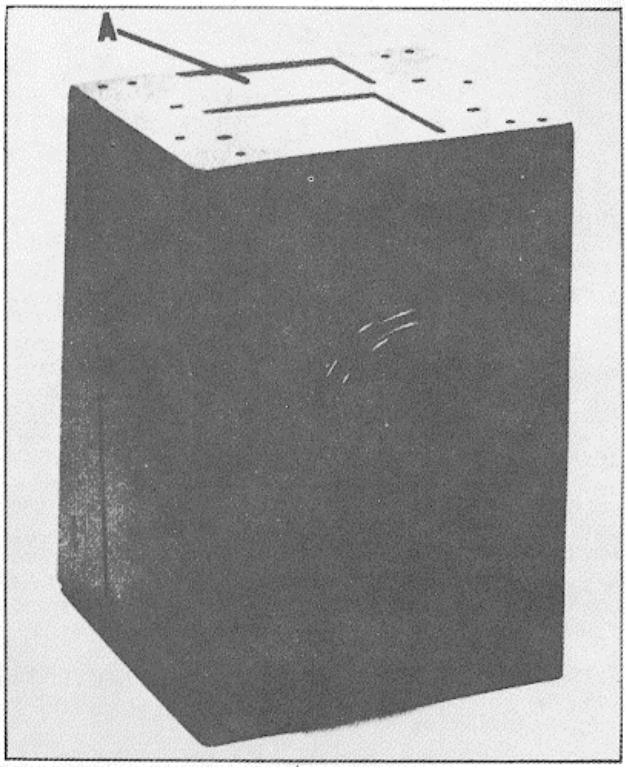


Fig. 3

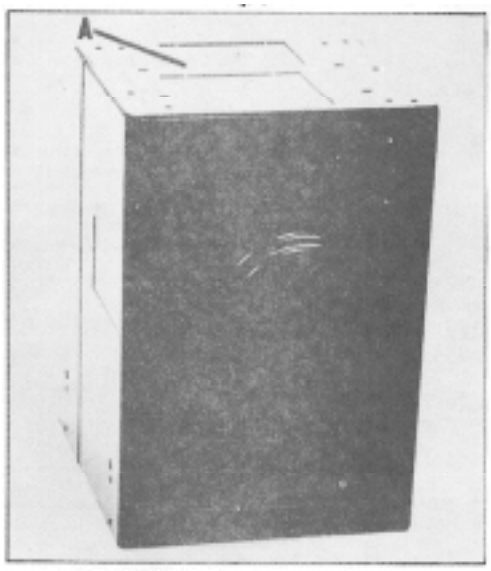


Fig. 4

If this band saw is received with separate stand and electricals NOT factory mounted and wired, the stand is supplied as shown in Fig. 4. Remove the small knockout (A) Fig. 4, located on top of the stand and proceed as follows to assemble the motor plate, motor, motor pulley and switch:

1. Turn the stand upside down.

2. Assemble the motor mounting plate (A) Fig. 5, using the two hex head capscrews flat washers and nuts (B). The other end of the motor is fastened to the side of cabinet using a carriage bolt from the outside of the cabinet and a flat washer and nut on the inside.

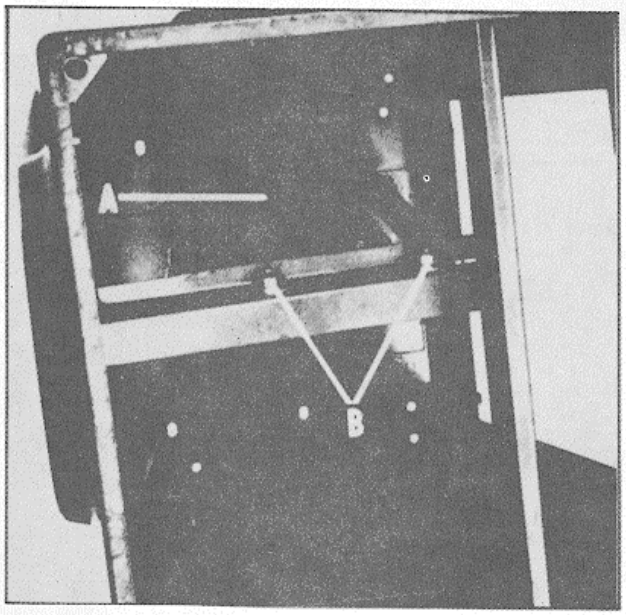


Fig. 5

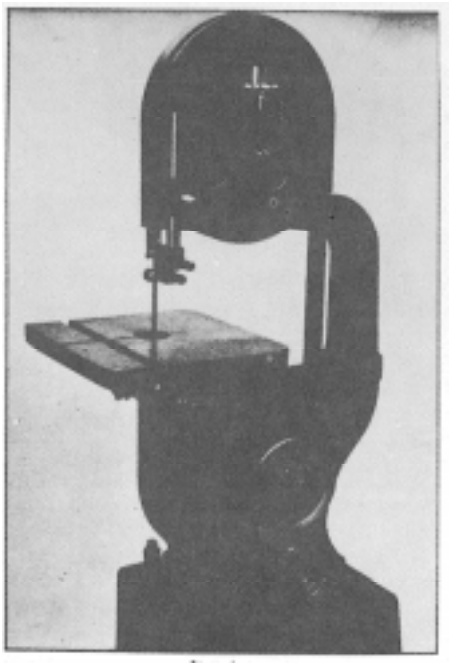


Fig. 6

3. Return the stand to the upright position and assemble band saw to stand using four 1-1/2" roundhead slotted screws, flat washers, lockwashers and nuts, as shown in Fig. 6.

4. Assemble the motor to the motor mounting plate, as shown in Fig. 7, using the four carriage bolts, flat washers and square nuts.

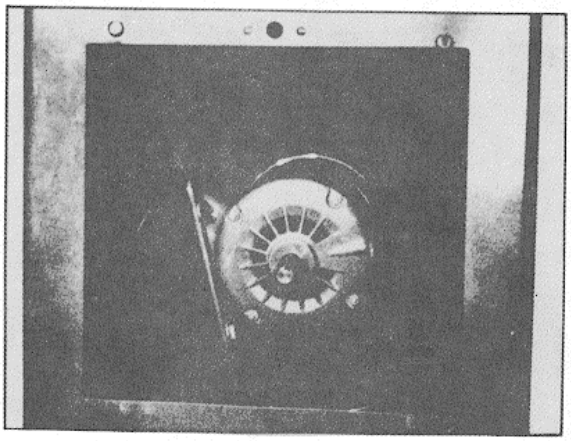


Fig 7

5. Assemble motor pulley (A) Fig. 8, to the motor shaft as shown. When assembling the motor pulley (A) to the motor shaft it is necessary to use 3/4" to 5/8" reducing bushing on the motor shaft. NOTE: motors recommended for use with this band saw have 5/8' motor shafts. The motor pulley (A) Fig. 8 is supplied with a 3/4" bore to enable it to be interchanged with the gear box pulley (B) as explained later in this manual.

6 Using a Straightedge align the inside grooves of the pulleys (A) and (B) to the pulley (C) Fig .8. The pulleys can be moved in or out on the shafts and also the motor mounting plate can be moved if necessary.

7. Assemble the large V-Belt (D) to the inside groove of the motor pulley (A) and to the large pulley (C).
Assemble the smaller V-Belt to any one of the remaining three grooves of the motor pulley (A) and the corresponding groove of the gear box pulley (B) Fig. 8.

8. Adjust for proper belt tension by raising or lowering the motor on the motor mounting plate. Keep pulleys in alignment 'hen doing this. Correct belt tension is obtained when there is approximately 1" deflection in the center span of the pulleys with light finger pressure.

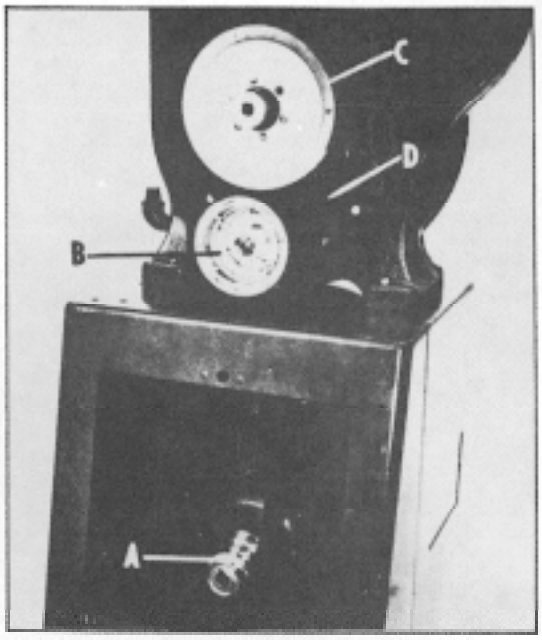


Fig. 8

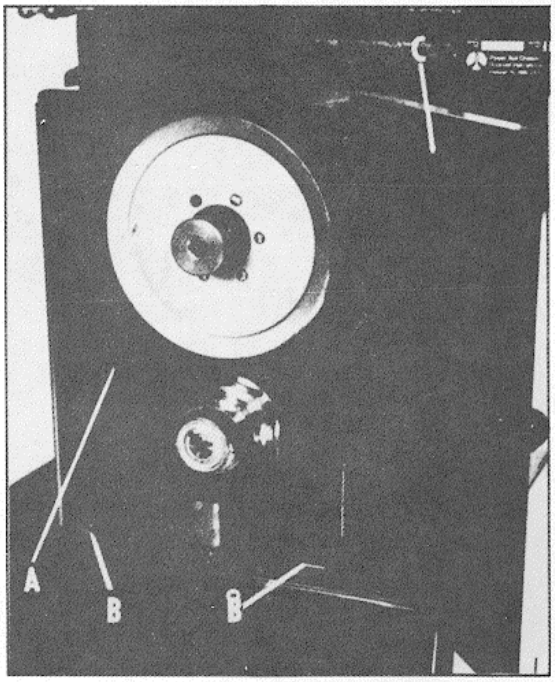


Fig. 9

ASSEMBLING BELT AND PULLEY GUARD
1. Remove both V-belts from the pulleys.

2. Place the belt and pulley guard (A) Fig. 9, on the top shelf over the belt opening and position the two clamps (B) over the guard flanges and under the top of the stand as shown. Use the four roundhead screws in the bottom of clamps to fasten in place.

3. Replace both V-belts and place door (C) Fig. 9, on hinges.
`Fig. 9

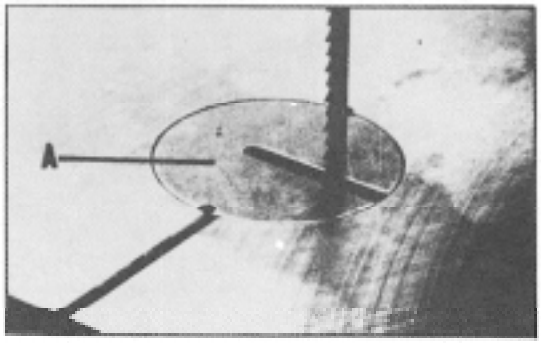


Fig 10

TABLE INSERT
Place table insert (A) Fig. 10, in the hole provided in the table making sure the pin in the table engages one of the indents in the table insert.

TILTING THE TABLE

The table on this band saw can be tilted 45 degree to the right and 10 degrees to the left. To tilt the table, loosen the two star wheels (A) Fig. 11, tilt the table to the desired angle and tighten the two star wheels (A).

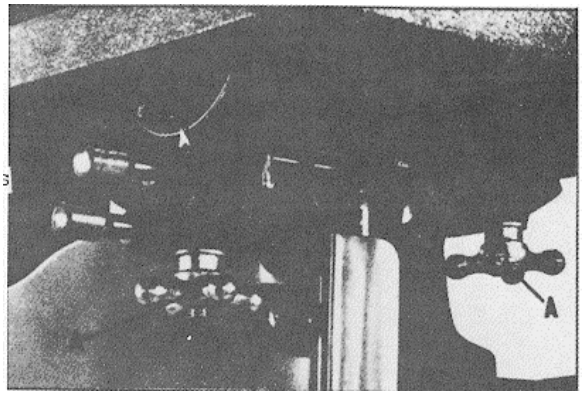


Fig. 11

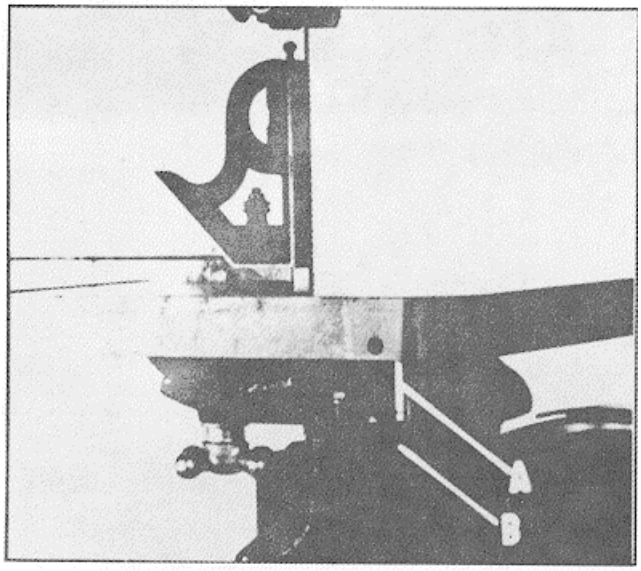


Fig. 12

90 DEGREE TABLE ADJUSTMENT

The band saw is equipped with an adjustable stop to insure that the table is at 90 degrees to the blade.

To adjust:

1. Tilt the table to the right slightly.
2. Place the stop (A) Fig. 12, on the adjusting screw.
3. Tilt the table until it is at a 90-degree angle to the blade, making sure by placing a square on the table and against the blade.
4. When the table is at 90-degree angle to the blade, the stop (A) should come into contact with the bottom of the table. If an adjustment is necessary, loosen nut (B), Fig. 12, and turn adjusting screw until the stop (A) contacts the table.
5. It is necessary to remove the stop (A) Fig. 12, when tilting the table to the left.

ADJUSTING BLADE TENSION

On the back of the upper wheel slide bracket there is a series of graduations. These indicate the proper tension for various widths of blades. With the blade on the wheels, turn the star wheel (A) Fig. 13, to raise or lower the wheel, until the red fiber washer (B) is in line with the proper graduation for the size of blade being used.

The graduations will be found correct for average work and are not affected by rebrazing of the saw blade. We urge you to use these graduations until you have become familiar enough with the operation of the Band Saw to vary the tension for different kinds of blades or work. Over-straining is a common cause of blade breakage and other unsatisfactory blade performance. Relax the tension when the machine is not in use.

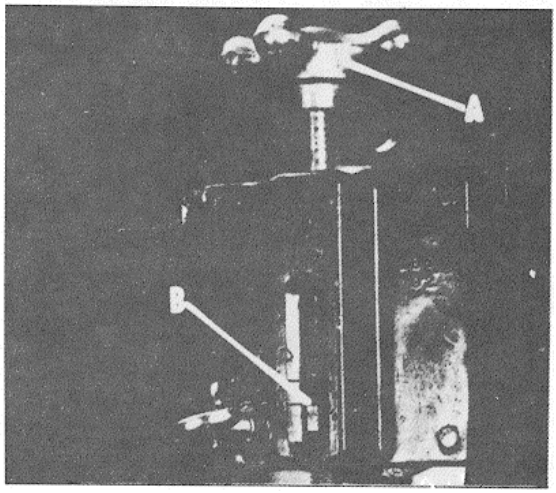


Fig. 13

TRACKING THE BLADE IMPORTANT:

Before tracking the blade, make sure the blade guides and blade support bearings are clear of the blade so as not to interfere with the tracking adjustment.

After tension has been applied to the blade, revolve the wheels slowly forward by hand and watch the blade (A) Fig. 14, to see that it travels in the center of the upper tire. If the blade begins to creep toward the front edge, loosen the wingnut (B) and tighten the thumbscrew (C). This will tilt the top of the wheel toward the back of the machine and will draw the blade toward the center of the tire. If the blade creeps toward the back edge, turn the thumbscrew in the opposite direction. Adjust the thumbscrew (C) only a fraction of a turn at a time. NEVER TRACK THE BLADE WHILE THE MACHINE IS RUNNING. After the blade is tracking in the center of the tires, tighten the wingnut (B) Fig. 14.

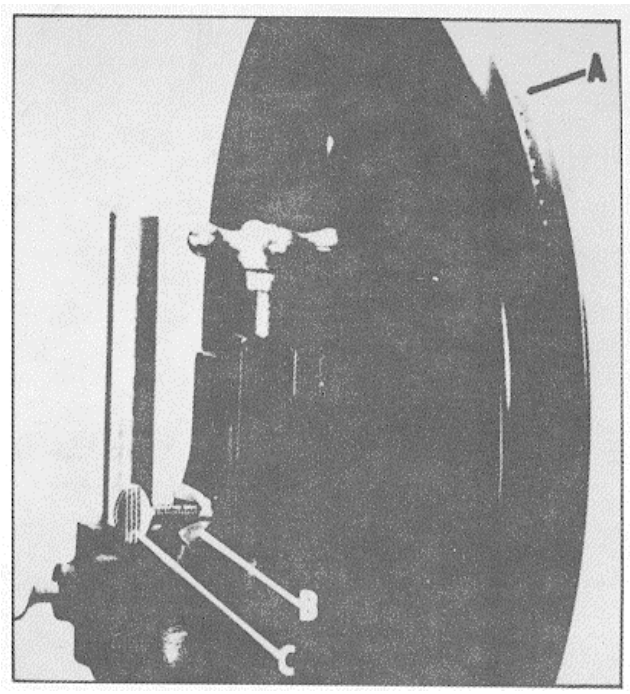


Fig. 14

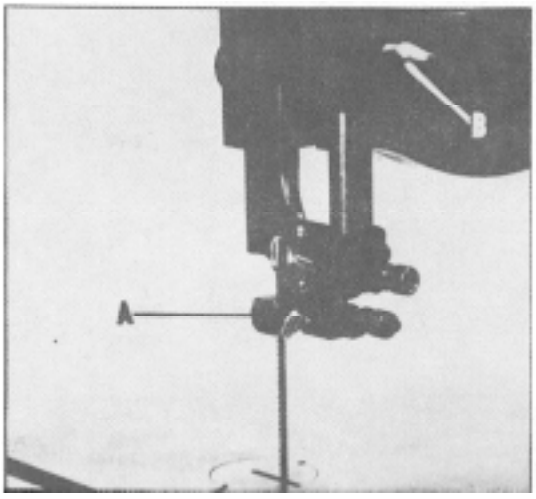


Fig. 15

ADJUSTING UPPER BLADE GUIDE ASSEMBLY

The upper blade guide assembly (A) Fig. 15, should always be set as close as possible to the top surface of the material being cut by loosening thumbscrew (B) and moving the guide assembly (A) to the desired position.

Fig. 16

The upper blade guide assembly should also be adjusted so that the blade guides (A) Fig. 16, are flat with the blade. If an adjustment is necessary, loosen screw (B) and rotate the complete guide assembly (C) until the blade guides are flat with the blade.

ADJUSTING UPPER BLADE GUIDES AND BLADE SUPPORT BEARING

The upper blade guides and blade support bearings are adjusted only after the blade is tensioned and tracking properly. To adjust proceed as follows:

1. The upper blade guides (A) Fig. 17, are held in place by means of the setscrews (B). Loosen the setscrews (B) to move the guides (A) as close as possible to the side of the blade, being careful not to pinch the blade. Then tighten the screws (B).

2. The guides (A) Fig. 17, should then be adjusted so that the front edge of the guides are lust behind the gullets of the saw teeth. The complete guide block bracket can be moved in or out by loosening thumbscrew(C) and turning knurled knob (D) Fig. 17. When guides (A) are set properly, tighten thumbscrew (C).

3. The upper blade support bearing (E) Fig. 17, prevents the blade from being pushed too far to the back which could damage the set in the saw teeth.
The support bearing (E) should be set 1 64" behind the blade by loosening thumbscrew (F) and turning knurled knob (G) to move the support bearing (E) in or out.

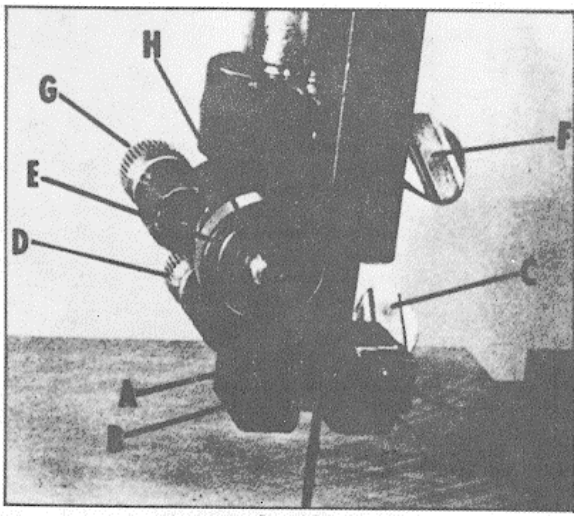


Fig. 17

4. The blade support bearing (L) should also be adjusted so the back edge of the blade overlaps the outside diameter of the ball bearing by about 1 16". The bearing (E) is set on an eccentric and to change position remove screws (H) and bearing (E) Fig. 17. Loosen thumbscrew (F), back out screw (G) and reposition shaft that bearing (E) is attached to.

ADJUSTING LOWER BLADE GUIDES AND BLADE SUPPORT BEARING

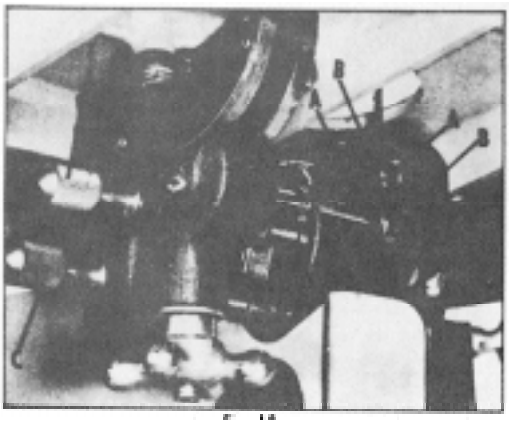


Fig. 18

The lower blade guides and blade support bearing should be adjusted at the same time as the upper guides and bearing as follows:

1. Loosen the two screws (A) Fig. 18, and move the guides (B) as close as possible to the side of the blade being careful not to pinch the blade. Then tighten screws (A).

2. The front edge of the guide blocks (B) should be adjusted so they are just behind the gullets of the saw teeth by turning the knurled knob (C) Fig. 18.

3. The lower blade support bearing (D) Fig. 18, should be adjusted so it is about 1/64" behind the back of the blade by turning the knurled knob (E).

CHANGING SPEEDS

This saw can be changed over instantly from a slow-speed metal cutting band saw to a standard high-speed band saw for wood.
NEVER HAVE THE BAND SAW RUNNING WHEN CHARGING FROM METAL CUTTING TO WOOD CUTTING OR VISE-VERSA.

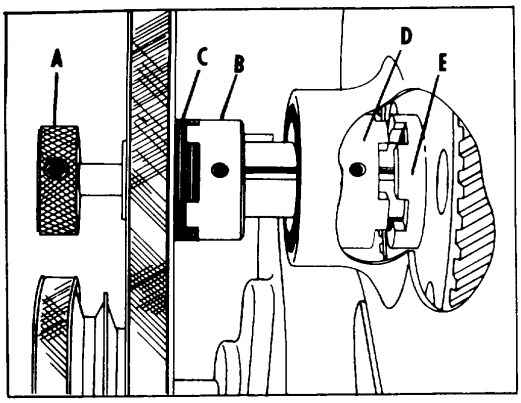


Fig. 19

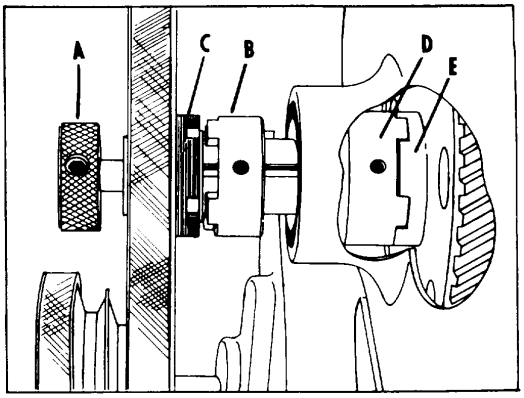


Fig. 20

When using this machine for wood cutting (3000 FPM), the shifter knob (A) Fig. 19, is always pulled out all the way so that the lugs of the clutch (B) are engaged with the hub (C) of the driven pulley. This will disengage the clutch (D) from the hub (E) of the gear that transmits power through the gear box, as shown in Fig. 19, It may be necessary to rotate the pulley manually in order to line up the clutch lugs with the slots in the hub of the pulley. This provides a direct drive from the motor pulley to the driven pulley, by-passing the gear box.

Fig. 20 When using this machine for metal cutting (40, 60, 85, 115, 160, 220 and 335 FPM), the shifter knob (A) Fig. 20, is always pushed in all the way, disengaging the clutch (B) from the hub (C) of the pulley. An additional clutch (FC) is located inside the band saw and must be engaged with the hub (E) of the gear that transmits power through the gear box, as shown in Fig. 20. When pushing in on the shifter knob (A) Fig. 20, rotate the lower wheel of the band saw, and you will be able to feel when engagement occurs.

The following is an explanation for the belt and pulley arrangements to enable the operator to obtain all eight speeds available on the band saw:

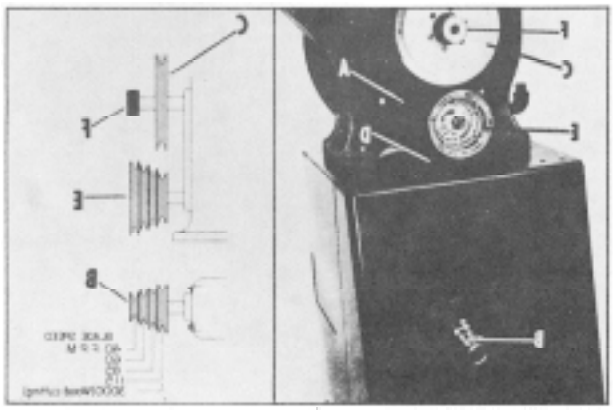


Fig. 21

With the longest belt (A) on the inside groove of the motor pulley (B) and on the driven pulley (C), as shown in Fig. 21, and the small belt (D) on one of the remaining three grooves of the motor pulley and the corresponding groove of the gear box pulley (E), speeds of 40, 60, 85, and 3000 FPM are readily available. To obtain speeds of 40, 60 and 85 FPM, the shifter knob (F) Fig. 21, must be pushed in all the way, and the small belt positioned on one of the three outside grooves of the motor pulley (B) and the gear box pulley (E). 3 To obtain a blade speed of 3000 FPM, pull out the shifter knob (F)

The blade speed of 115 FPM is obtained by pushing in the shifter knob (F) Fig 21, removing the long belt (A) from the pulleys and placing the small belt on the inside groove of the motor pulley (B) and the inside groove of the gear box pulley (E).

Except for the one speed of 115 FPM, both belts may be left on the machine regardless of the speed being used.

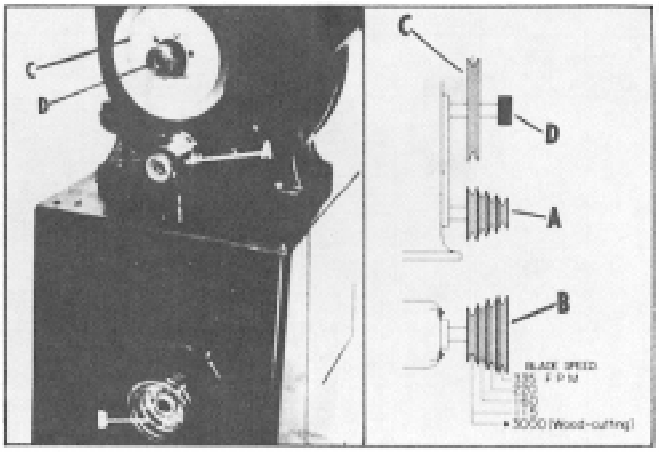


Fig. 22

Blade speeds of 115, 160, 220, 335 and 3000 FPM are available by interchanging the positions of the motor pulley and the gear box pulley. Fig. 22 shows the motor pulley (A) positioned on the gear box shaft and the gear box pulley (B) positioned on the motor shaft. Then with the long belt positioned on the inside groove of pulley (B) and pulley (C) and the small belt positioned to one of the remaining three grooves of the pulleys (A) and (B) Fig. 22, speeds of 160, 220, and 335 FPM are obtained when the shifter knob (D) is pushed in. To obtain the 3000 FPM blade speed simply pull out the shifter knob (D) Fig. 22. Blade speed of 115 FPM is obtained by pushing the shifter knob (D), removing the long belt from pulleys (B) and (C) and placing the small belt on the inside groove of the motor pulley (B) and gear box pulley (A).

Except for the one speed of 115 FPM, both belts may be left on the machine regardless of the speed being used.

CHANGING BLADES

To change blades, proceed as follows:

1. Remove upper and lower wheel guards.

2. Release tension on the band saw blade.

3. Remove the table adjustment pin and table insert.

4. Slip the blade off the wheel and guide it out through the slot in the table.

5. To install a new blade, reverse the above procedure.

SUGGESTED SPEEDS AND BLADES

SUGGESTED METAL CUTTING BLADES AND SPEEDS

MATERIAL	THICKNESS OF MATERIAL: UNDER 1/4"		1/4" TO 3/4"		1" & UP	
STEELS	Teeth Per Inch	Feet Per Minute	Teeth Per Inch	Feet Per Minute	Teeth Per Inch	Feet Per Minute
Angle Iron	24	160	14	160		
Armor Plate	18	40	14	40	10	40
Carbon Steel	24	85	14	60	14	40
Chromium Steel	24-18	85	14	60	14	40
Cold Rolled Steel	24-18	220	14	220	14	160
Drill Rod	14	85	14	60		
Graphite Steel	18	60	14	40	14	40
High Speed Steel	24	85	14	60	14	40
Machinery Steel	18	160	14	160	14	160
Molybdenum Steel	18	85	14	60	14	40
Nickel Steel	18	40	14	40	14	40
Silicon Manganese	18	85	14	85	14	60
Stainless Steel	24	40	14	40	10	40
Structural Steel	24	160	14	160	14	115
Tungsten Steel	18	40	14	40	10	40
FOUNDRY METALS						
Brass-Hard & Soft	18	335	14	335	10	335
Bronze - Aluminum	18	335	14	335	14	335
Bronze - Manganese	18	160	14	115	14	85
Bronze - Naval	18	160	14	115	14	85
Bronze - Phosphorus	18	335	14	335	14	220
Cast Iron - Gray	18	115	14	85	10	60
Cast Iron - Malleable	18	160	14	115	14	85
Cast Steel	18	160	14	115	14	85
Copper - Beryllium	18	160	14	85	10	40
Gunnite	24	335	18	220	14	160
Meehanite	18	160	14	115	10	85
Monel	18	115	14	85	10	60
Nickel - Cold Rolled	14	60	10	40	10	40
Nickel Silver	18	220	14	220	14	220
Silver	24	220	18	220	14	220
NON-METALS						
Bakelite	10	335	10	220	10	160
Cork	10	3000	10	3000	10	3000
Fibre	14	3000	10	3000	10	3000
Hose-Canvas, Rubber	10	3000				
Hose-Metallic	24	220				
Mica	24	335	18	220	14	220
Plastics	14	3000	14	3000	10	3000
Porcelain	24	160	18	115		
Slate	24	335	18	220	14	160
Transite	24	335	18	220	14	85

SUGGESTED SKIP TOOTH BLADES AND SPEEDS

MISCELLANEOUS	THICKNESS OF MATERIAL: UNDER 1/2"		1/2" TO 2"		2" & UP	
	Teeth Per Inch	Feet Per Minute	Teeth Per Inch	Feet Per Minute	Teeth Per Inch	Feet Per Minute
Aluminum	3	3000	3	3000	3	3000
Asbestos	4	3000	4	3000	4	3000
Babbitt	4	3000	3	3000	3	3000
Brake Lining	6	3000	4	3000		
Carbon	4	3000	3	3000	3	3000
Copper - Drawn	6	3000	4	3000	4	3000
Duralumin	3	3000	3	3000	3	3000
Lead	6	3000	4	3000	4	3000
Magnesium	3	3000	3	3000	3	3000
Paper Board	6	3000	4	3000	4	3000
Rubber - Hard	6	3000	4	3000	4	3000
Zinc	6	3000	4	3000	4	3000
Plastics	See Note		4	3000	4	3000
Builders Board	6	3000	4	3000	4	3000
Hardwoods	6	3000	4	3000	4	3000
Plywoods	6	3000	4	3000	4	3000
Softwoods	6	3000	4	3000	4	3000

Note – Some types of plastics lend themselves to more pronounced results with the regular band saw blades

Sheets under 1/4" thickness and tubing under 1/4" wall thickness are not adapted to skip tooth blades

SUGGESTED WOODCUTTING BLADES (3000 FPM)

USE BLADE WIDTH TO SUIT DESIRED RADIUM

WIDTH	MIN CUTTING RADIUS	WIDTH	MIN CUTTING RADIUS
1/8"	1/4"	3/8"	1"
3/16"	1/2"	1/2"	1-1/4"
1/4"	3/4"	3/4"	1-3/4"

Fig. 23

BAND SAW BLADE

A band saw blade is a delicate piece of steel that is subjected to tremendous strain.

Be sure to use blades of the proper thickness, width, and temper for the various types of material to be cut.

Always use the widest blade possible. Use the narrow blades only for sawing small, abrupt curves and for fine delicate work. This will save blades and will produce better work. Band saw blades may be purchased, welded, set and sharpened ready for use. For cutting wood and similar materials they are available in widths of 1/8, 3/16, 1/4, 3/8, 1/2 and 3/4 inches.

Blades for metal cutting should be selected for the particular job they are to do. Blades for cutting thin metal, for example, should be selected so that there will always be at least two teeth in contact with the edge of the work. If the teeth are allowed to straddle the work they will be torn off and the blade ruined.

Generally speaking, thick stock requires larger teeth and a slower cutting speed than thin stock. See Fig. 23 for recommendations of blades and cutting speeds for different materials and thickness.

File and set the wood cutting blades whenever it requires pressure to make them cut. If a blade is broken it can be brazed or welded; however, if it has become badly work-hardened it will soon break in another place. If there is no equipment for filing, set and braze or weld blades take them to a saw filer for reconditioning.

It is not practical to re-sharpen either the skip tooth blades or the regular hard-edge flexible-back metal cutting saw blades.

Any One of a number of conditions may cause a band saw blade to break. Blade breakage is, in some cases, unavoidable, being the natural result of the peculiar stresses to which such blades are subjected. It is, however, often due to avoidable causes, most often to lack of care or judgment on the part of the operator in mounting or adjusting the blade or guides. The most common causes of blade breakage are: (1) faulty alignments and adjustments of the guides, (2) forcing or twisting a wide blade around a curve of short radius, (3) feeding too fast, (4) dullness of the teeth or absence of sufficient set, (5) excessive tightening of the blade, (6) top guide set too high above the work being cut, (7) using a blade with a lumpy or improperly finished braze or weld and, (8) continuous running of the saw blade when not in use for cutting.

New blades for the standard 14 inch band saw are 931/2 inches long. The adjustment will accommodate blades up to a maximum length of 94 inches and to a minimum length of 911/2 inches. When equipped with the No. 28-984 Height Attachment, new blades should be 105 inches long; maximum and minimum lengths are 106 and 1031/2 inches.

OPERATING THE BAND SAW

Before starting the machine, see that all adjustments are properly made and the guards are in place. Turn the pulley by hand to make sure that everything is correct BEFORE turning on the power.

Keep the top guide down close to the work at all times.
Do not force the material against the blade too hard.
Light contact with the blade will permit easier following of the line and prevent undue friction, heating and work-hardening of the blade at its back edge.

KEEP THE SAW BLADE SHARP and there will very little forward pressure required for average cutting. Move the stock against the blade steadily and no faster than will give an easy cutting movement.
Avoid twisting the blade by trying to turn sharp corners.

CUTTING CURVES

When cutting curves, turn the stock carefully so that the blade may follow without being twisted. If a curve is so abrupt that it is necessary to repeatedly back up and cut a new kerf, either a narrow blade is needed or a blade with more set is required. The more set a blade has, the easier it will allow the stock to be turned, but the cut is usually rougher than where a medium amount of set is used.

In withdrawing the piece being cu!, in order to change the cut, or for any other reason, the operator must be careful that he does not accidentally draw the blade off the wheels. In most cases it is easier and safer to turn the stock and saw out through the waste material, rather than try to withdraw the stock from the blade.

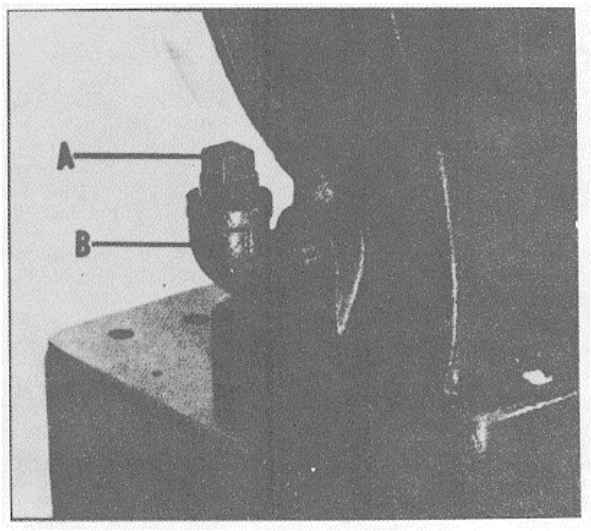


Fig. 24

LUBRICATION

The gear case is filled at the factory with 11: quarts of oil. It should be drained after 1500 to 2000 hours of operation and refilled with a good grade of heavy adhesive gear oil. A pipe plug is provided underneath the band saw and is removed when draining the oil.

All models are equipped with a ,2-inch street elbow (A) Fig. 24, and a pipe plug (B).

Remove the pipe plug (B) Fig. 24, to check the level of oil in the gear case from time to time and keep it filled to insure proper gear lubrication.

The wheels of the band saw are turned on permanently sealed ball bearings, which require no lubrication. Ball bearing blade supports are of the same type. Oil of every kind should be kept away from the blade supports.

ACCESSORIES

No. 41-712 Motor Pulley, 4-step, ½ bore. 1 lb.

No. 41-713 Motor Pulley, 4-step, 5/8" bore. 1 lb.

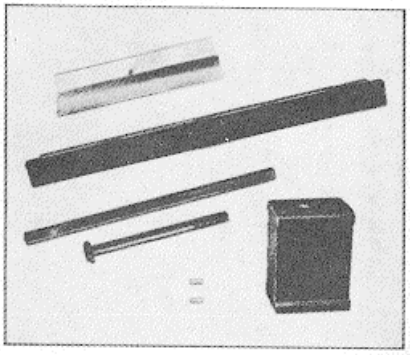
No. 41-714 Motor Pulley, 4-step, 3/4" bore. 1 lb.

No. 49-111 V-Belts, matched set of two, 41" and 58 5/8" O.C. Used with 50-122 and 50-891 stands 1 lb.

No. 50-122 Enclosed Steel Stand. Includes 50-139 basic stand, 50-136 motor plate and 50-135 belt guard 541 lbs.

No. 40-882 (old 882) Lamp Attachment Uses standard 15 or 25-watt bulb (not included). Includes mounting bracket, shade, socket and 115 V 8-foot cord with plug. 1½ lbs.

Height Attachment— Increases capacity of 14" Band Saw from 6¼" to 12¼" under the guide. Add at any time. Needs 105" blades.



No. 28-984 (old 894) Height Attachment with cast block, dowels and bolt, extension front blade guard, wood back blade guard. 12 lbs.

No. 34-895 Sliding Jig— For straight and angle operations. Has 3/8 x 3/4 x 18" guide bar and pivoting work support body with pointer and calibrations reading through 120° swing. Adjustable, positive stops at 90° and 45° positions. 4 lbs.

No. 34 568 (old 865) Clamp Attachment for Sliding Jig—With clamp bar, two sliding clamp screws, and front and rear posts. 1 1/2" lbs.

No. 34-873 (old 873) Extra Clamp Screw and Block—For Clamp Attachment. 1/2 lb.

WOOD CUTTING BAND SAW BLADES

For 14" Band Saws: 93 1/2" blades are standard: 105" blades used with 28-984 Height Attachment. 1/2 lb.

Number (93½" Long)	Number (105" Long)	Width	Min. Cut. Rad.	Teeth per In.
28-032 (old 1032)	28-045 (old 1045)	1/8"	1/4"	6
28-033 (old 1033)	28-046 (old 1046)	3/16"	5/16"	6
28-034 (old 1034)	28-047 (old 1047)	1/4"	3/8"	6
28-036 (old 1036)	28-048 (old 1048)	3/8"	1 7/16"	5
28-038 (old 1038)	28-050 (old 1050)	1/2"	2 1/2"	5
28-040 (old 1040)	28-052 (old 1052)	3/4"	5 7/16"	4

METAL CUTTING BAND SAW BLADES

These are regular set, hard-edge, flexible-back standard blades for cutting all metals.

For 14" Metal Cutting Band Saw: All blades are 931,," long. 93 1/2" long. 1/2 lb.

Number	Width	Minimum Cut. Rad.	Teeth Per In.
28-058 (old 1058)	1/2"	2 1/2"	10
28-060 (old 1060)	1/2"	2 1/2"	14
28-062 (old 1062)	1/2"	2 1/2"	18
28-064 (old 1064)	1/2"	2 1/2"	24

SKIP TOOTH BAND SAW BLADES

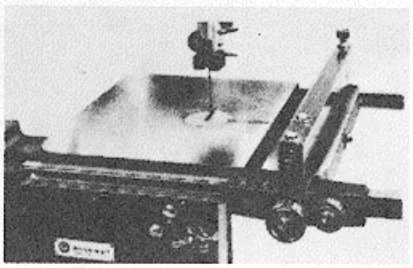
For 14" Band Saws: For cutting aluminum, magnesium, plastics and all kinds of wood. All blades are 93 1/2" long. 1/2 lb.

Number	Width	Minimum Cut. Rad.	Teeth Per In.
28-884	1/4"	5/8"	6
28-885	3/8"	1 7/16"	4
28-886	1/2"	2 1/2"	4
28-887	3/4"	5 7/16"	4

No. 28-810 Sanding Attachment-Includes flat and curved platens with guides and mounting brackets. 1 lb.

No. 28-836 Sanding Belt-Garnet type, five, No. 80 grit. fine. 1', wide, 91" long. 1 lb.

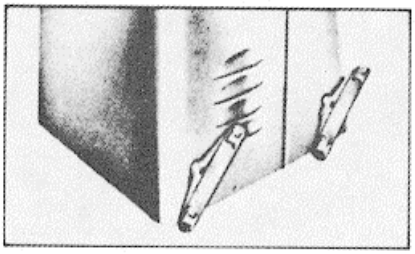
No. 28-837 Sanding Belt-Garnet type, five, No. 40 grit, medium. 1/2" wide, 91" long. 1 lb.



No. 28-843 Rip Fence With 18" guide bars and mounting screws. 13 lbs.

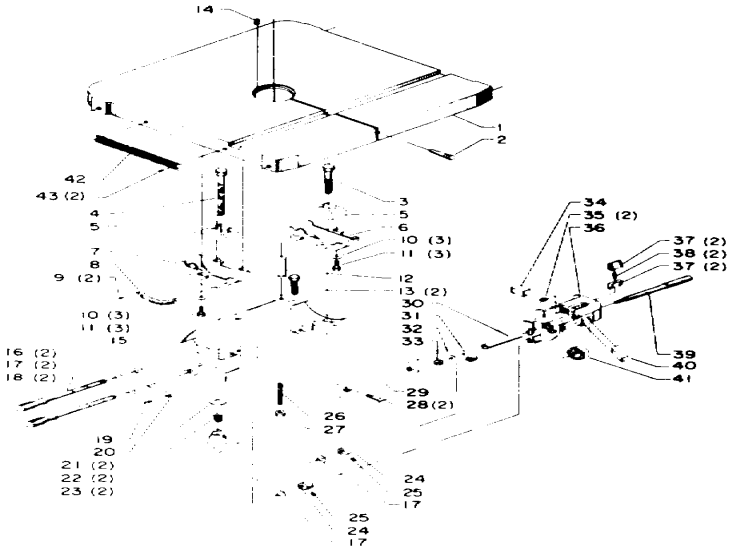
No. 28-845 Rip Fence-With 32" guide bars and mounting screws. 10 lbs.

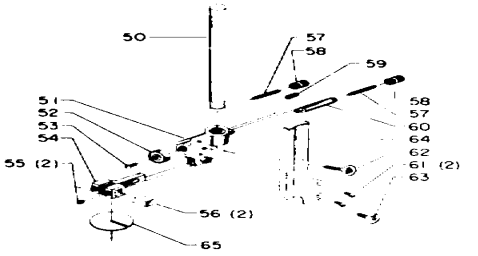
RETRACTABLE CASTER SETS



No. 50-111 Retractable Caster Set-For 50-122 enclosed steel stand. Has built-in leveling screws. 13 lbs.

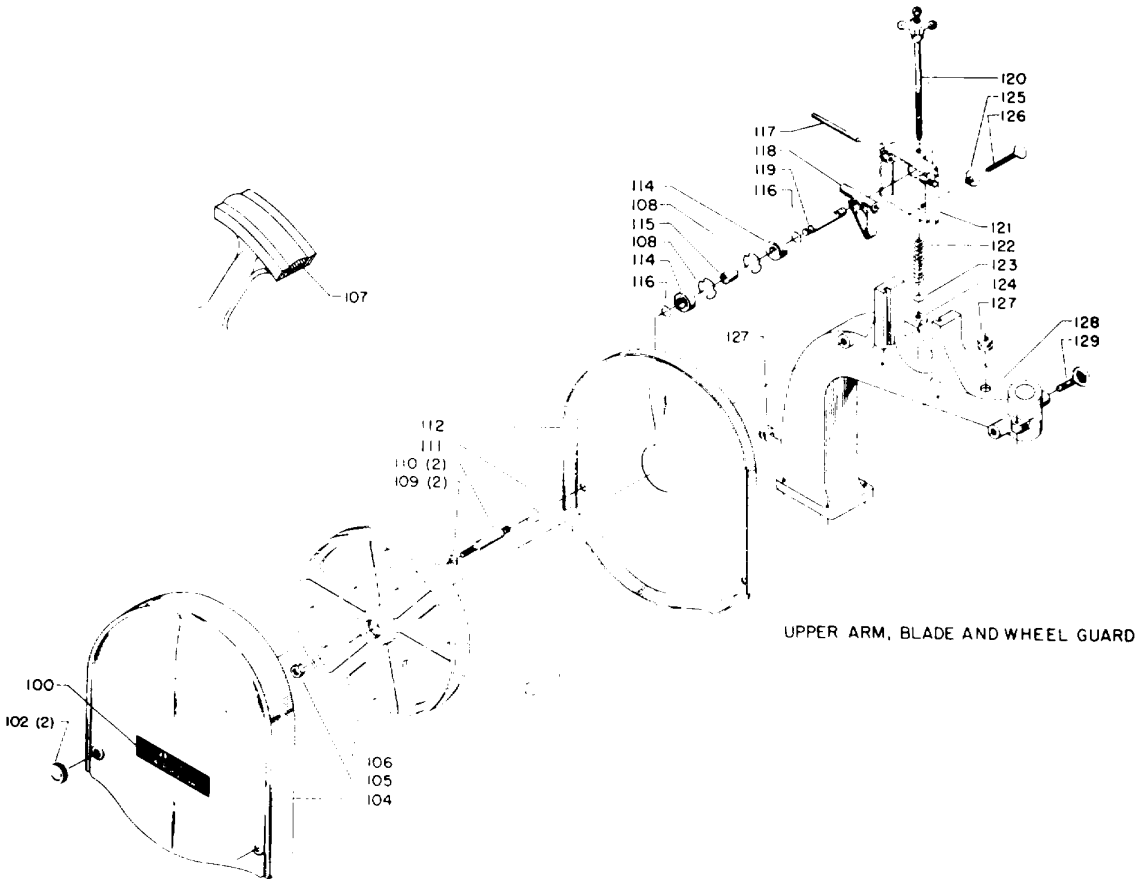
28-300
14" METAL CUTTING BAND SAW





TABLE, TRUNNIONS, AND GUIDE PARTS

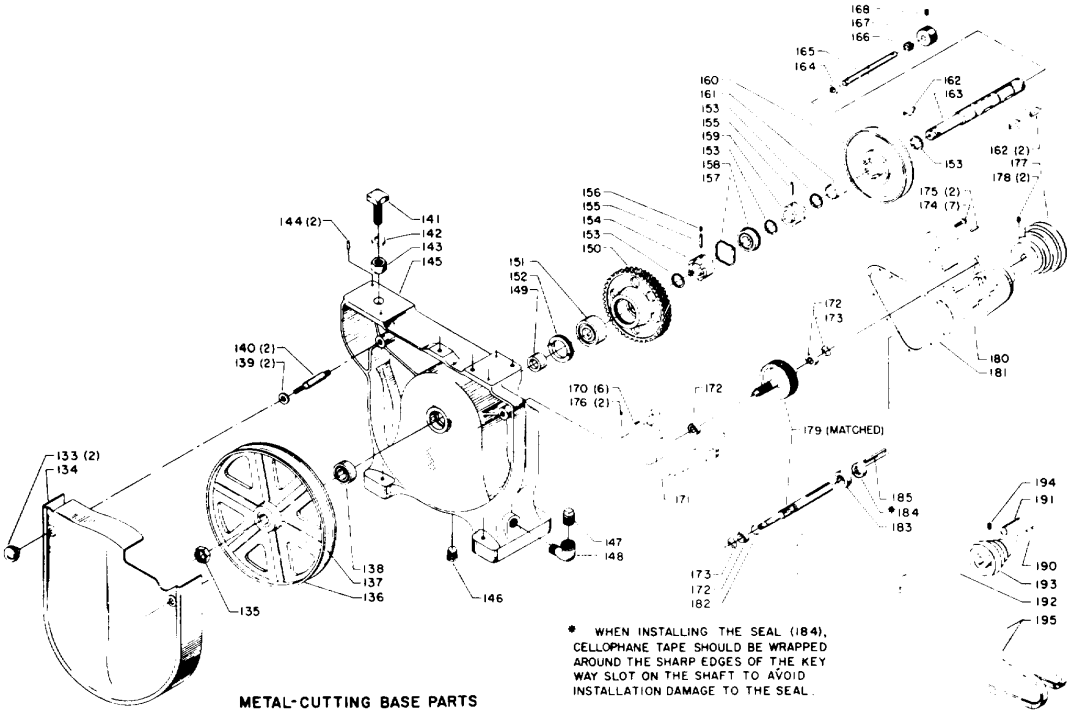
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	LBS-58	Table	32	SP-1603	1/4 x 9/16 x 3/64" Stl. Washer
2	LBS-55	Tapered Table Pin	33	SP-1029	1/4"-20 Hex Nut
3	SP-625	7/16-14 x 2 1/4" Hex. Hd. Capscr.	34	LBS-132	Blade Guide Block
4	SP-631	7/16-14 x 4" Hex. Hd. Capscr.	35	SP-225	5/16-18 x 1/4- Soc. Hd. Setscr.
5	LBS-61	Trunnion Clamp Shoe	36	LBS-160	Support Bracket for Lower Guide
6	LBS-60	Trunnion	37	LBS-161	Wedge for Lower Guide Bracket
7	18S-60-S	Trunnion, Including:	38	LBS-166	Coil Spring
8	LBS-62	Scale	39	LBS-163	Shaft for Lower Support Bearing
9	903-01-102-2693	Alum. Rivet	40	LBS-153	Angle Guide Block
10	SP-1603	1/4 x 9/16 x 3/64" Steel Washer	41	SP-5352	Bearing
11	SP-612	1/4-20 x 5/8" Hex. Hd Capscr.	42	960-02-012-1441	Namcplate (Metal Cutting Model)
12	LBS-4	Removable Base Table Stop	43	SP-2250	#4 x 3/16" Drive Screw
13	SP-602	5/16-18 x 1 1/4' Fil Hd. Capscr.	50	1087780	15/16 x 10" Rnd. Guide Post
14	SP-6711	1/8 x 3/8" Roll Pin	50	LBS -126	7/8 x 10" Hex. Guide Post
15	LBS-10	Trunnion Support Bracket			(Models made prior to 1974)
16	BM-45	13/32" Spring Washer	*		LBS-127-A Upper Blade Guide. Consisting of:
17	LBS-170	25/64" Fiber Washer	51	LBS -127	Bracket
18	LBS-167-S	Adjusting Screw w/Knob	52	SP-5352	Bearing
19	SP-7562	#10-32 x 5/16- Rd. Hd. Scr.	53	SP-509	1/4-20 x 1/2" Rd. Hd. Scr.
20	LBS-46	Pointer	*	LBS -131-S	Bracket w/Guide Blocks,
21	SP-1606	7/16 x 1 x 5/64" Steel Washer			Consisting of:
22	NCS-33	Spring	54		LBS-131 Guide Block Bracket
23	NCS-32	Hand Knob	55		SP-225 5/16-18 x 1/4" Soc. Hd. Setscr.
24	LBS-169-S	Set Collar. Including:	56	LBS-132	Blade Guide Block
25	SP-101	1/4-20 x 1/4" Headless Setscr.	57	LBS-129	Headless Setscr.
26	SP-105	5/16-18 x 2" Headless Setscr.	58	LBS-130	Knurled Nut
27	SP-5435	5/16-18" Hex. Jamnut	59	SP-207	5/16-18 x 1/2" Ft. Hd. Scr.
28	SP-408	5/16-18 x 3/4" Flat Hd. Scr.	60	LBS-128	Hex Shaft
*	LBS-160-S	Lower Blade Guide. Consisting of:	61	SP-514	1/4-20 x 3/8" Rd. Hd. Scr.
29	LBS-165	Rail for Lower Guide Bracket	62	SP-1528	5/16-18 x 1" Thumbscr.
30	LBS-164	Spacing sleeve	63	SP-1520	5/16-18 x 1/2" Thumbscr.
31	LBS-162	Adj. Link for Support Bracket	64	LBS-180	Sliding Blade Guard
65	LBS -265	Steel Insert			



UPPER ARM, BLADE AND WHEEL GUARD

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
100	1088277	Nameplate	116	240-19	19/32 x 7/8 x 1/16" Washer
102	1087256	Knob	*		LBS-102-S Sliding Bracket, Consisting of:
104	LBS-187	Upper Wheel Guard	117	LBS-103	Steel Pin
105	SP-1227	1/2-20 Hex Jamnut	118	LBS-101	Upper Wheel Shaft Hinge
106	LBS-290-R	Upper Wheel, Including:	119	LBS-110	Upper Wheel Shaft
107	LBS-81	Tire	120	LBS-104-S	Blade Tension Screw with Star Wheel
108	LBS -108	Bearing Retainer			
109	SP-1615	13/32" Steel Washer	121	LBS-102	Upper Wheel Sliding Bracket
110	LBS-283	Stud	122	LBS-105	Coil Spring
111	1087232	Cycolac Guard	123	LBS-112	13/32" Fiber Washer
112	LBS-189	Upper Wheel Guard Pan	124	LBS-111	Sq. Nut
** 114	370-22-2	Bearing	125	SP-1403	5/16-18 Wingnut
** 114	SP-5336	Bearing	126	LBS-106	5/16-18 x 2-1/4" Thumbscr.
** 115	1088176	Spacing Sleeve	127	LBS-27	Rubber Grommet
** 115	LBS-109	Spacing Sleeve	128	426-02-089-0005	Upper Frame Arm
129	SP-1531	7/16-14 X 1-1/4" Thumbscr.			

**MODELS MADE PRIOR TO 1974 USE BEARINGS, SP-5336 AND SPACING SLEEVE. LBS-109. BEARINGS, 370-22-2 AND SPACING SLEEVE, 1088176 MAY BE USED IN OLDER MODELS IF THEY ARE USED TOGETHER AND WITH REQUIRED WASHERS. 240-19. INDIVIDUAL PARTS ARE NOT INTERCHANGEABLE.



METAL-CUTTING BASE PARTS

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
133	1087256	Knob	162	SP-2640	#808 Hi-Pro Key
134	LBS -186	Lowe Wheel Guard	163	LBS -291	Shaft
135	BS-224	L H. Hex Nat	164	426-03-017-0003	Felt Bushing
136	LBS -289-S	Lower Wheel, Including:	165	LBS -297	Shifter Rod
137	LBS -81	Tire	166	LBS-300	Threaded Bushing
138	SP-5398	Bearing	167	LBS-298	Knob
139	SP-1615	13/32' Steel Washer	168	SP-261	5/16-18 x 5/16- Soc. Hd. Setscr.
140	LBS-28S	Stud	170	SP-559	#10-32 x 1/2 Rd. Hd. Scr.
141	SP-2352	3/4-10 x 2' Sq. Hd. Bolt	171	LBS -274	Cover
142	SP-1707	3/4' Lockwasher	172	SP-5375	Bearing
143	SP-1027	3/4'-10 Hex Nut	173	SP-7354	Bearing Loading Spring
144	SBS-8	Tapered Dowel Pin	174	SP-626	1/4-20 x 3/4" Hex Hd. Capscr.
145	LBS -287	Base	175	SBS-8	Tapered Dowel Pin
146	SP-2438	1/8" Pipe Plug	176	SP-5075	1/4 x 3/4' Roll Pin
147	SP-2437	1/2" Pipe Plug	177	Cat. #41-724	Pulley. Including:
148	SP-3545	1/2 x 1/2 x 90 Degree Street Elbow	178	SP-201	5/16-18 x 5/16"' Soc. Hd. Setscr.
149	LBS-293	Spacer	179	LBS-272-S	Intermediate Gear w/Shaft(Matched)
*	LBS-292-S	Gear. Consisting of:	180	LBS -275	Gear Housing
150	LBS-292	Gear	181	LBS-205	Gasket
151	SP-5397	Bearing	182	SP-7047	Retaining Ring
152	LBS -299	Retainer Nut	183	SP-5374	Bearing
153	SP-7420	Retaining Ring	184	SP-5253	Seal
154	LBS-294	Clutch	185	SP-2651	3/16 x 3/16 x 2 1/8' Key
155	SP-2732	5/32 x 1' Roll Pin	190	426-03-017-0002	3/4 to 1/2' Reducing Bushing
156	901-04-150-9417	#10-32 x /16 Soc. Hd. Setscr.	191	426-03-017-0004	3/4 to 5/8 Reducing Bushing
157	LBS-301	Washer	192	927-03-101-8019	1/4 x 3/16 x 1 1/4' Key
158	SP-5399	Bearing	19	Cat. #41-714	Motor Pulley, Including
159	LBS-295	Clutch	194	SP-201	5/16-18 x 5/16" Soc. H4 Setscr.
160	LBS-298-S	Drive Pulley. Including:	195	Cat. #49-111	V-Belt (Matched et of 2 belts)
161	LBS-303	Bushing		Cat. #28-062	Band Saw Blade (Not Show)

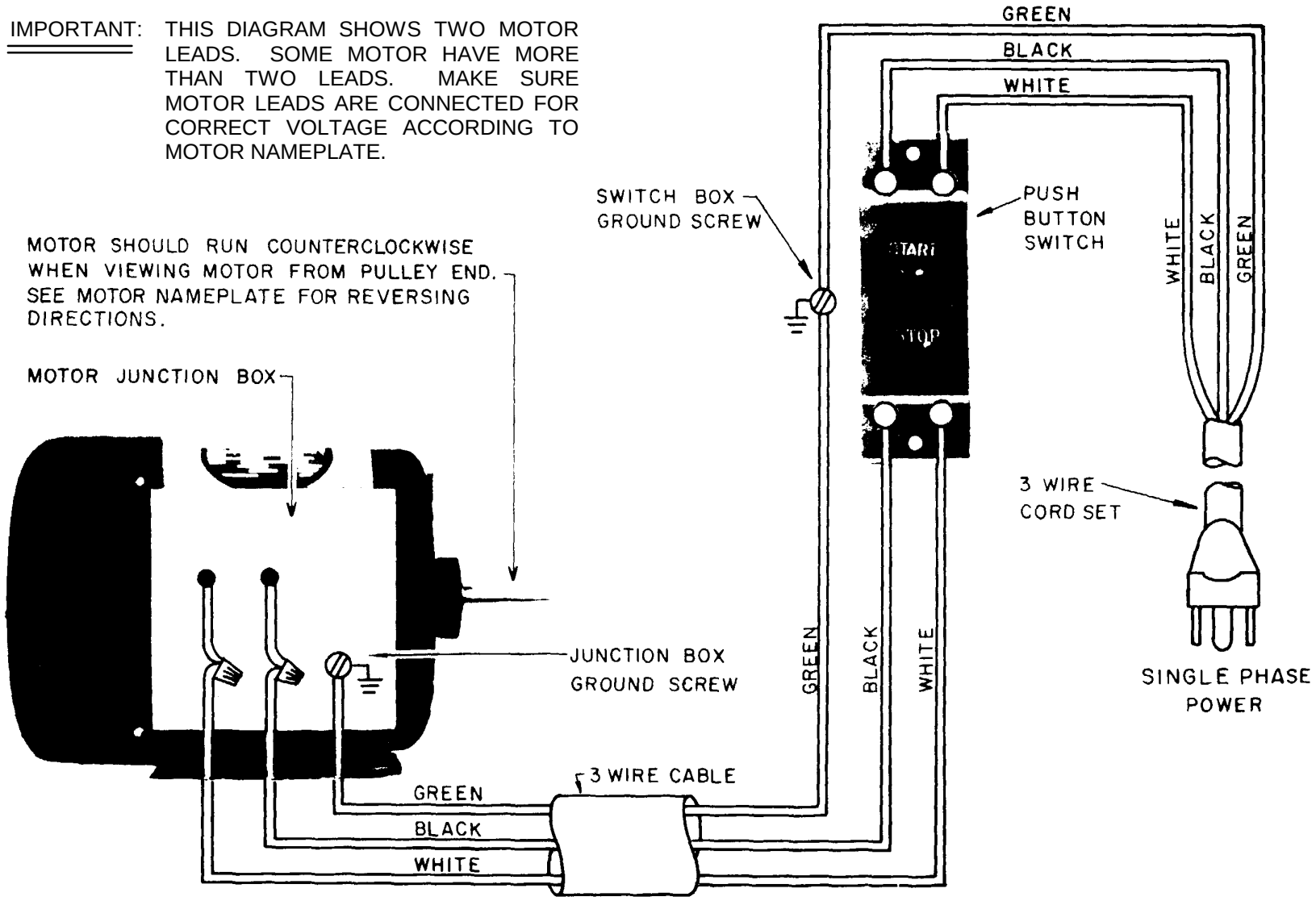
NOT SHOWN ASSEMBLED

ELECTRICAL WIRING DIAGRAMS FOR FACTORY WIRED

6" BELT AND 12" DISC ABRASIVE FINISHING MACHINES
6" ABRASIVE BELT FINISHING MACHINES
14" WOOD AND METAL BAND SAWS
6" AND 8" JOINTERS

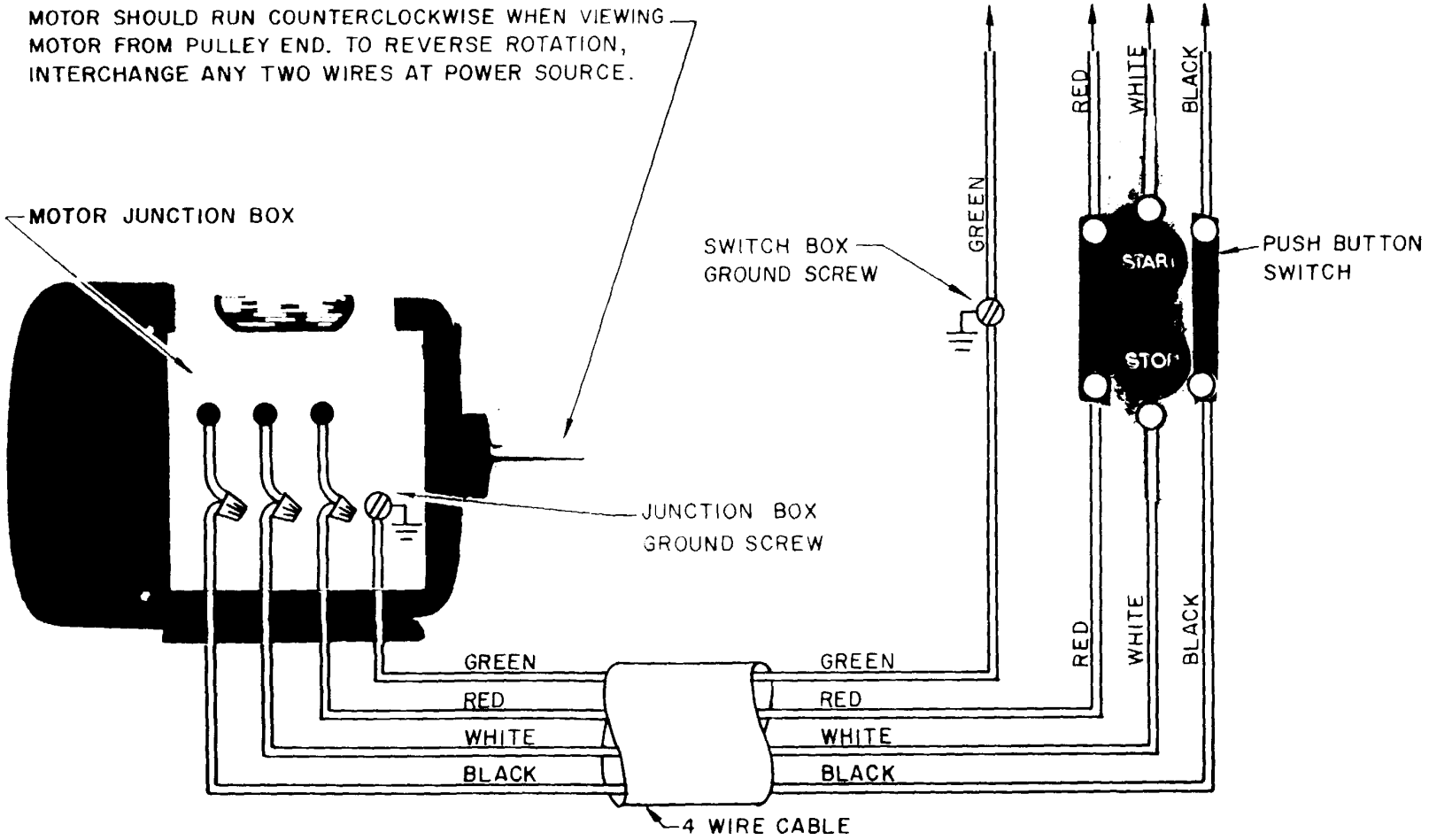
PUSH BUTTON MANUAL SWITCH CONTROL FOR SINGLE PHASE MOTORS

IMPORTANT: THIS DIAGRAM SHOWS TWO MOTOR LEADS. SOME MOTOR HAVE MORE THAN TWO LEADS. MAKE SURE MOTOR LEADS ARE CONNECTED FOR CORRECT VOLTAGE ACCORDING TO MOTOR NAMEPLATE.

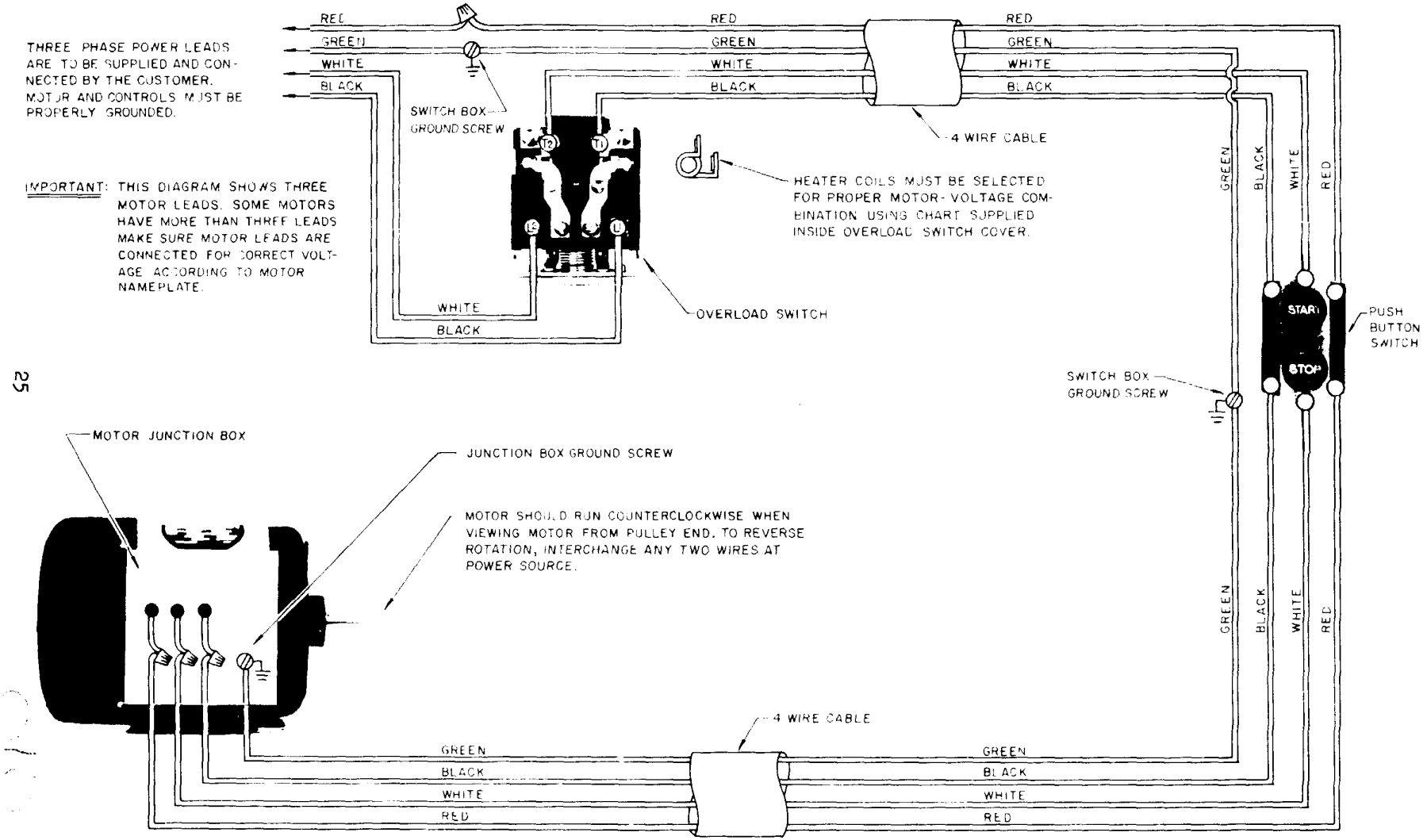


PUSH BUTTON MANUAL SWITCH CONTROL FOR THREE PHASE MOTORS

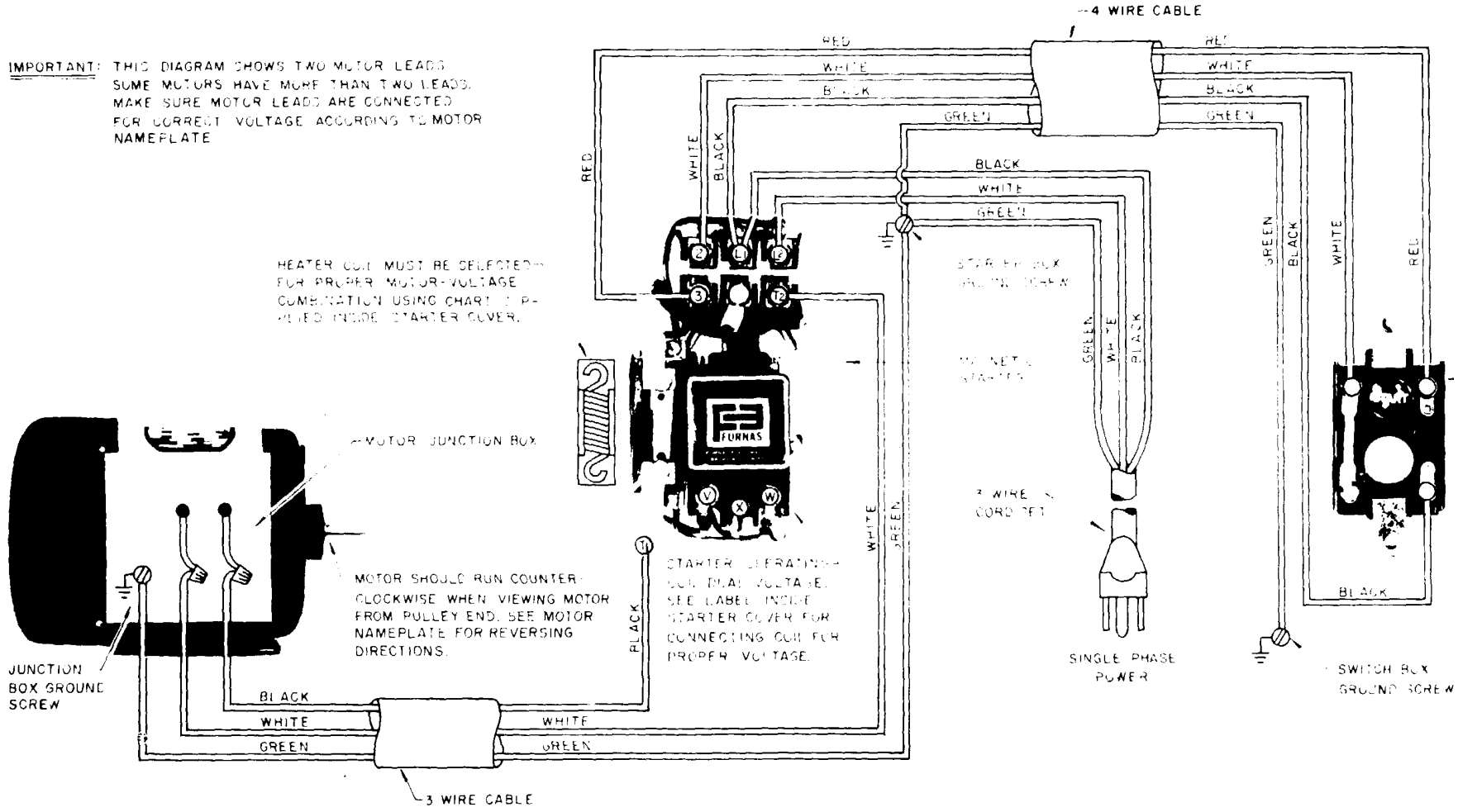
IMPORTANT: THIS DIAGRAM SHOWS THREE MOTOR LEADS. SOME MOTORS HAVE MORE THAN THREE LEADS. MAKE SURE MOTOR LEADS ARE CONNECTED FOR CORRECT VOLTAGE ACCORDING TO MOTOR NAMEPLATE. 3 PHASE POWER LEADS ARE TO BE SUPPLIED AND CONNECTED BY THE OPERATOR MOTOR AND CONTROLS MUST BE PROPERLY GROUNDED.



PUSH BUTTON MANUAL CONTROL WITH OVERLOAD SWITCH FOR THREE PHASE MOTORS



PUSH BUTTON SWITCH AND MAGNETIC STARTER WITH FULL VOLTAGE CONTROL FOR SINGLE PHASE MOTORS



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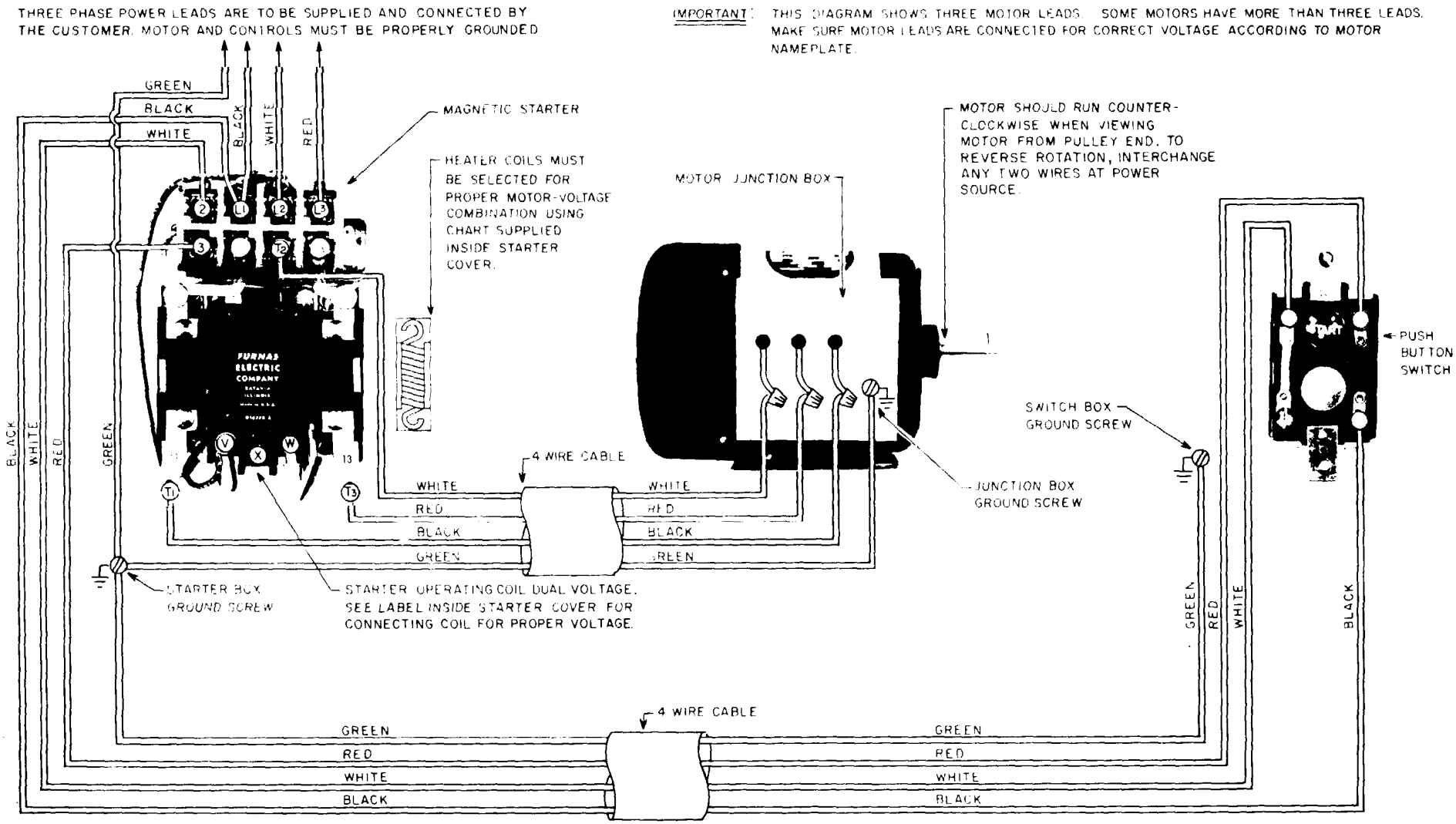
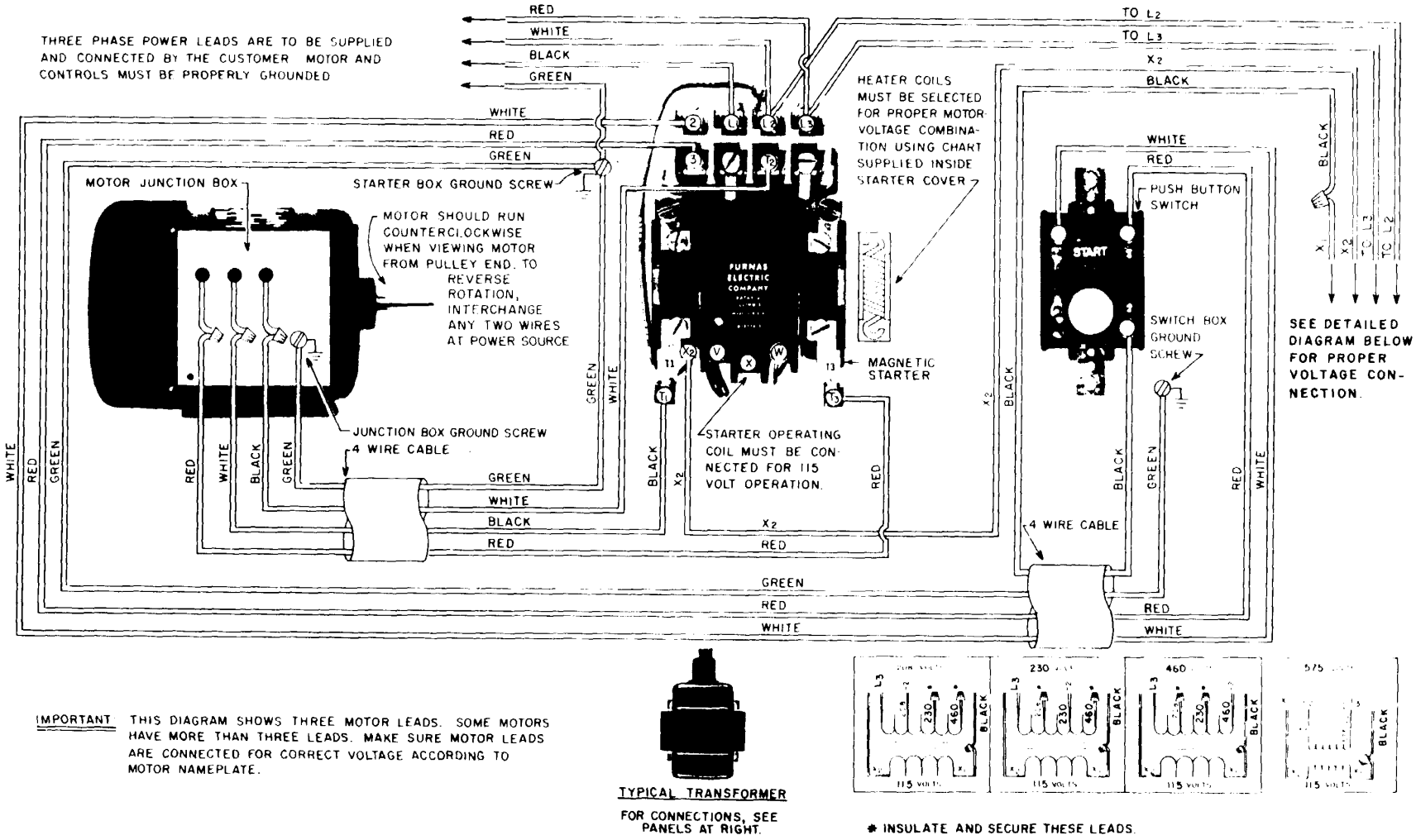
PUSH BUTTON SWITCH AND MAGNETIC STARTER WITH FULL VOLTAGE CONTROL FOR THREE PHASE MOTORS



PUSH BUTTON SWITCH AND MAGNETIC STARTER WITH 115 VOLT CONTROL FOR THREE PHASE MOTORS



IMPORTANT: THIS DIAGRAM SHOWS THREE MOTOR LEADS. SOME MOTORS HAVE MORE THAN THREE LEADS. MAKE SURE MOTOR LEADS ARE CONNECTED FOR CORRECT VOLTAGE ACCORDING TO MOTOR NAMEPLATE.

TYPICAL TRANSFORMER

FOR CONNECTIONS, SEE PANELS AT RIGHT.

* INSULATE AND SECURE THESE LEADS.

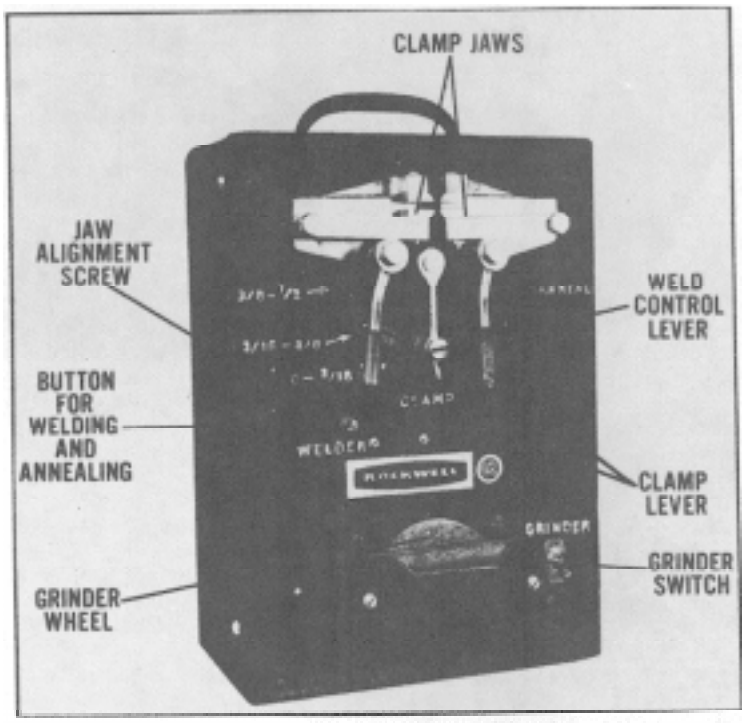


Fig. 1.

INSTALLATION

1. Mount the welder on the Cat. No. 28-462 blade welder bracket and attach the bracket to the side of the band saw. The welder can also be mounted on any flat surface. The two mounting brackets supplied on the base of the welder have been tapped to provide four mounting holes.
2. The 28-463 welder draws 14 amperes and should be connected to a 115 volt single phase, 50 or 60 cycle supply. The 28-464 welder draws 7 amperes and should be connected to a 230 volt, single phase, 50 or 60 cycle supply. DO NOT USE AN EXTENSION CORD. FULL LINE VOLTAGE IS REQUIRED FOR GOOD WELDS.
3. The 28-464 welder is supplied with a single receptacle, which mates with the 230 volt tandem blade plug on the cord supplied with the welder. This receptacle can be mounted interchangeably with single 115 volt receptacles, e.g. the 115 volt receptacles supplied with 20" metal cutting band saws. 230 volt single phase power and a ground wire must be brought to this receptacle.

OPERATION (Wear safety glasses to protect eyes)

1. Square off both ends of the band saw blade. Allow for the length of metal which will be compressed in the weld, so that the original tooth spacing will he retained.

2. Place weld control lever (.A) Fig. 2 in the clamp :Positions Insert the b)lade ends, one at a time, into the jaws, with one edge of the blade against the back of the guides. Center the blade ends in the space between the jaws so the ends just touch each other as shown `Fig. 2

3. Clamp the jaws with clamp levers (B) Fig. 2 by swinging the levers outward and up.

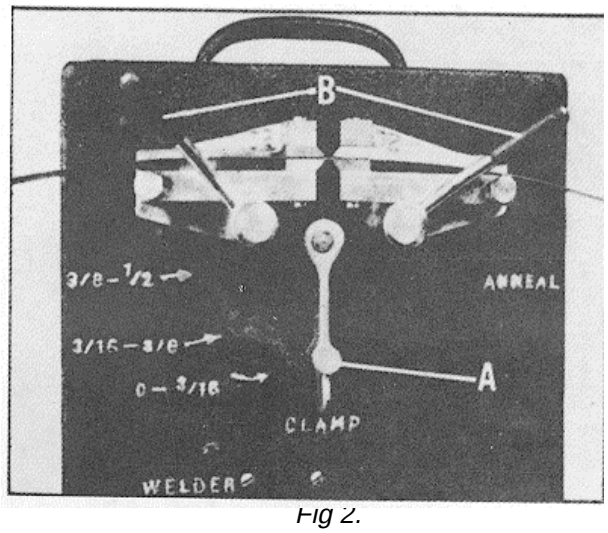
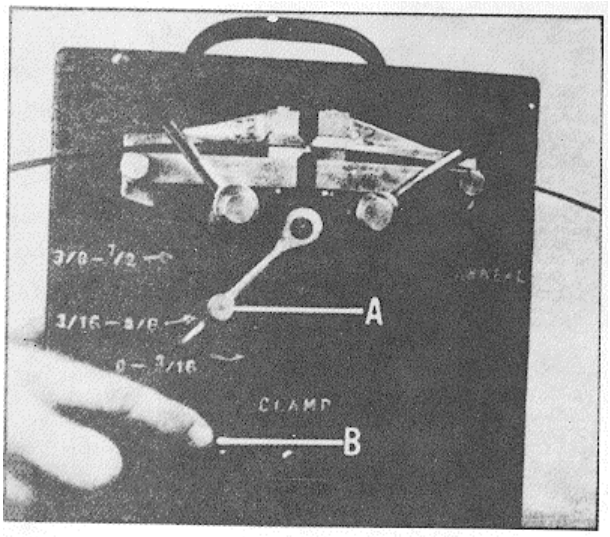


Fig 2.



4. If the jaws are not aligned properly, the jaw alignment screw (See Fig. 1.) should be used to correct this situation. Turning the screw to the right raises and to the left lowers the left jaw. A very slight movement of the screw is sufficient.

5. Move the weld control lever (A) Fig. 3 to the desired width indicated on the welder. Press welder button (B), and hold in. The welder will shut off automatically as the weld completes itself.

6. Unclamp the blade and move weld control lever (A) Fig. 4 to "anneal" as shown.

7. Center the weld between the jaws and reclamp the blade. Gently tap the welder button (B) Fig. 4 until the blade shows dull red. (DO NOT HOLD THE WELDER BUTTON IN.)

8. Allow the blade to cool. Unclamp jaws and remove the blade.

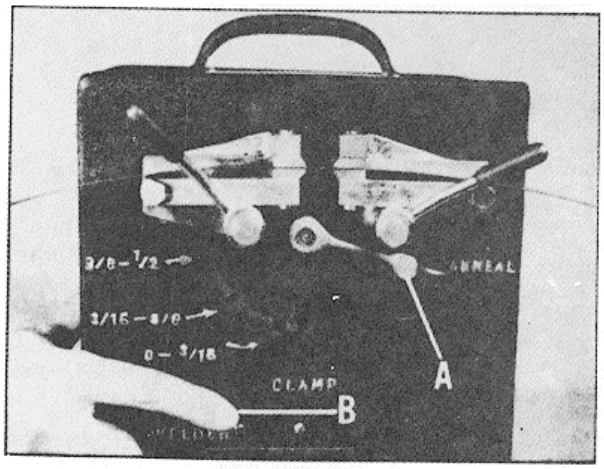


Fig. 4.

9. Turn the grinding switch on and grind off the flash around weld. Use light grinding pressure only to avoid stalling the grinding motor or causing a thin spot which would weaken the blade at the weld. Hold the blade slightly curved, as shown in Fig. 5 to avoid grinding other than where the flash is found in the weld.

10. Repeat STEP 7 for final annealing.

11. Jaw plates should be kept clean. Wipe flash from jaws after every weld as accumulations will destroy alignment. Never file jaw plates.

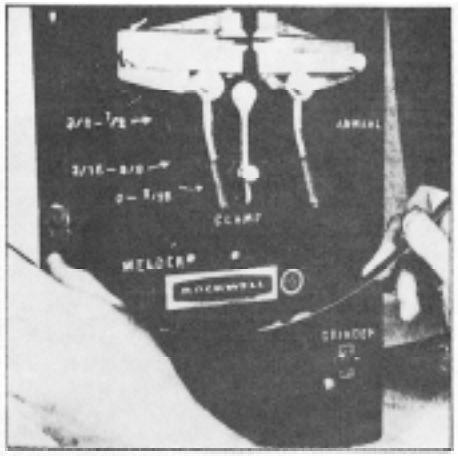
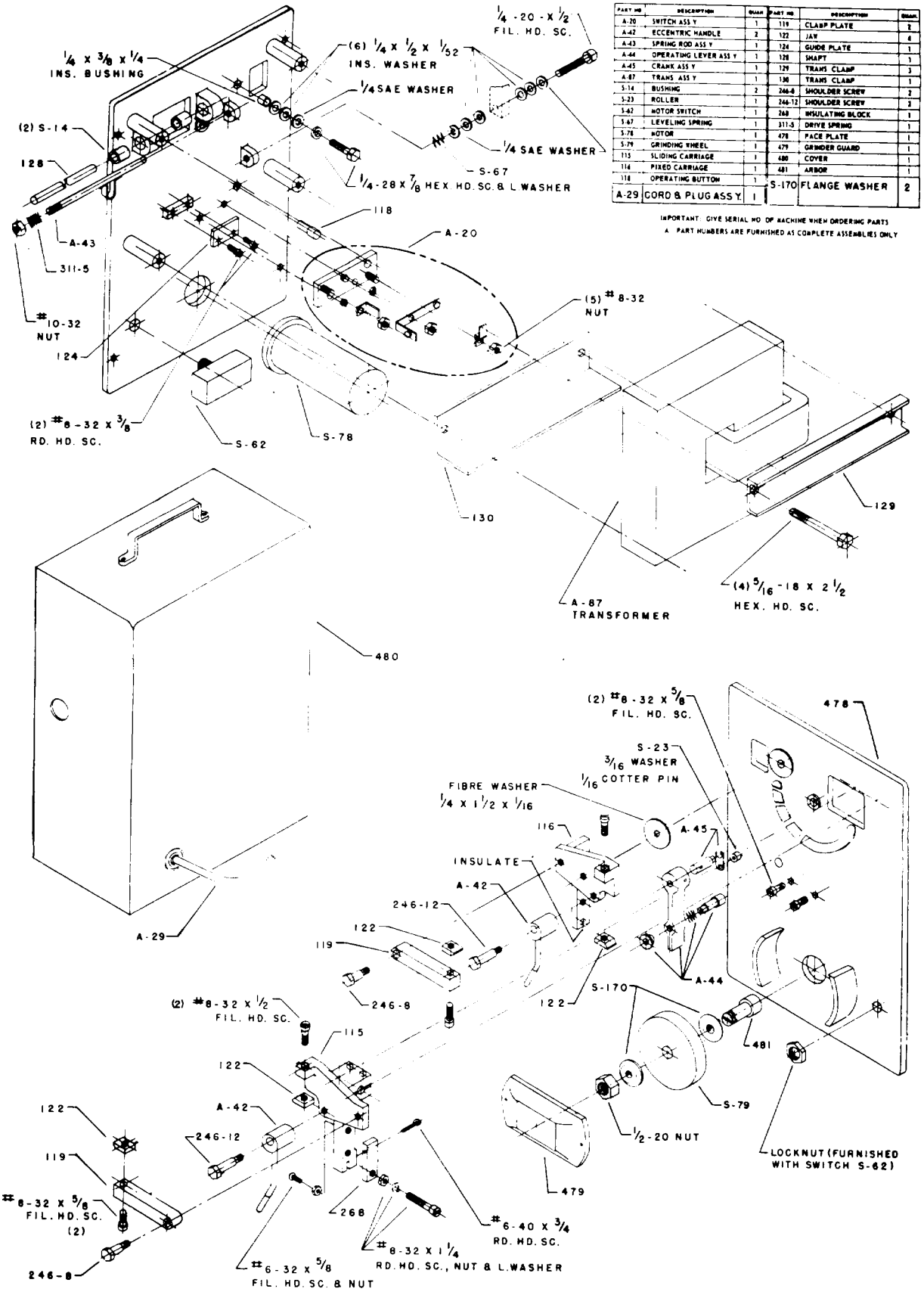


Fig. 5.

REPLACEMENT OF GRINDING WHEEL

1. Use only vitrified silicate bonded aluminum oxide wheels.
2. Remove grinding wheel, guard, and arbor nut.
3. Remove grinding wheel and install new one.
4. Reassemble arbor nut and guard.



PART NO	DESCRIPTION	QUAN	PART NO	DESCRIPTION	QUAN
A-20	SWITCH ASS'Y	1	119	CLAMP PLATE	2
A-42	ECCENTRIC HANDLE	2	122	JAW	4
A-43	SPRING ROD ASS'Y	1	124	GUIDE PLATE	1
A-44	OPERATING LEVER ASS'Y	1	128	SHAFT	1
A-45	CRANK ASS'Y	1	129	TRANS CLAMP	3
A-87	TRANS ASS'Y	1	130	TRANS CLAMP	1
S-14	BUSHING	2	246-8	SHOULDER SCREW	2
S-23	ROLLER	1	246-12	SHOULDER SCREW	2
S-62	MOTOR SWITCH	1	268	INSULATING BLOCK	1
S-67	LEVELING SPRING	1	311-5	DRIVE SPRING	1
S-78	MOTOR	1	478	FACE PLATE	1
S-79	GRINDING WHEEL	1	479	GRINDER GUARD	1
115	SLIDING CARRIAGE	1	480	COVER	1
116	FIXED CARRIAGE	1	481	ARBOR	1
118	OPERATING BUTTON	1	S-170	FLANGE WASHER	2
A-29	CORD & PLUG ASS'Y	1			

IMPORTANT: GIVE SERIAL NO. OF MACHINE WHEN ORDERING PARTS
A PART NUMBERS ARE FURNISHED AS COMPLETE ASSEMBLIES ONLY

Miter Gage is accurately constructed and equipped with individually adjustable index stops at 90 degrees and 45 degrees right and left. Adjustment to the index stop can be made by tightening or loosening the three adjusting screws (A) Fig. 1.

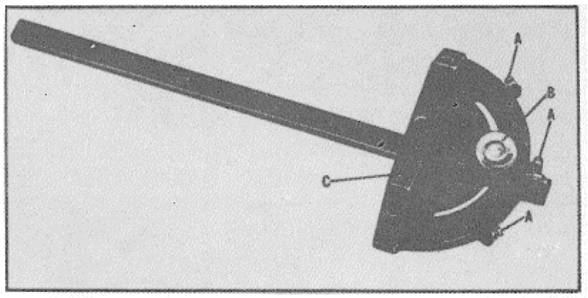
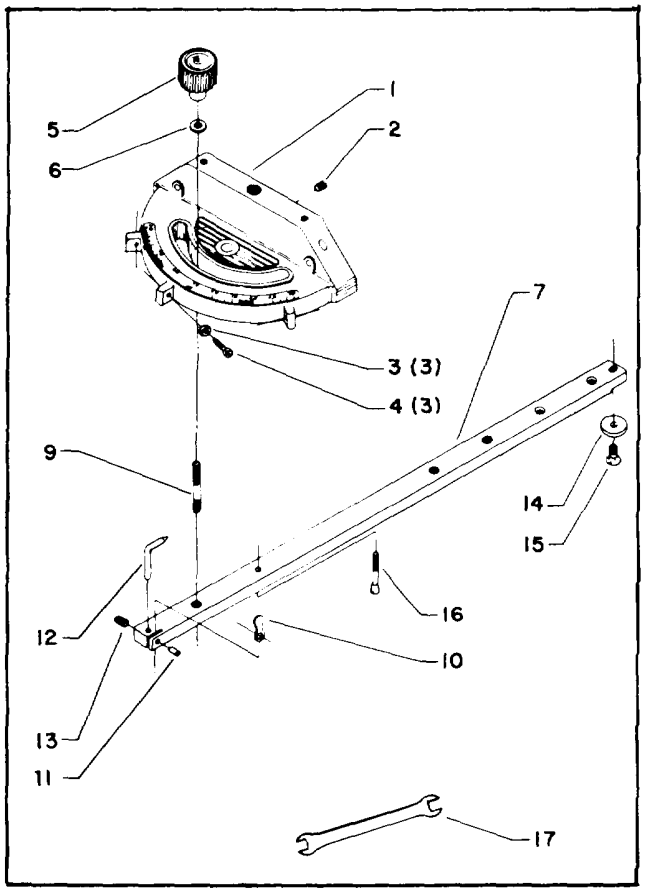


Fig. 1

To operate the miter gage, loosen the lock knob (B) Fig. 1, and move the body of the miter gage (C) to the desired angle. The miter gage body will stop at 0 degrees and 45 degrees both right and left. To rotate the miter gage body past these points, the stop link (ref. #10) Fig. 2, must be flipper out of the way.

The head of the miter gage pivots on a special tapered screw that fastens the head of the miter gage to the bar. If the miter gage head does not pivot freely or after long usage pivots too freely, it can be adjusted by loosening setscrew (ref. #2) Fig. 2, and turning the tapered screw (ref. #16) in or out. Be sure to tighten setscrew (ref. #2) after adjustment is made.

IMPORTANT: THE SPECIAL PLATE (ref. #14) AND FLATHEAD SCREW (ref. #15) FIG. 2, ARE USED WHEN THE MITER GAGE IS USED ON CIRCULAR SAW TABLES THAT ARE EQUIPPED WITH T-SLOT MITER GAGE SLOTS. FOR PRODUCTS NOT EQUIPPED WITH T-SLOT MITER GAGE SLOTS, THESE ITEMS ARE TO BE REMOVED.



Replacement Parts

Ref. No.	Part No.	Description
	Cat. #34-895	Miter Gage, Consisting of:
1	NCS-160-A	Miter Gage Body, including:
2	NCS-177	Special Setscrew
3	NCS-173	Special Nut
4	SP-723	#9-32 X 1/2" Fil Hd. Scr.
5	NCS-164	Lock Knob
6	DSS-79	Fiber Washer
7	422-04-004-0001	Bar
9	NCS-166	Stud
10	NCS-170	Stop Link
11	NCS-171	Special Pin
12	NCS-174	Pointer
13	NCS-177	Special Setscrew 2
14	422-04-072-0001	Plate
15	SP-5750	1/4-28 X 5/16" Flat Hd. Mach. Scr.
16	NCS-168	Special Pivot Screw
17	Cat. #1522	Wrench

By Order of the Secretary of the Army:

BERNARD W. ROGERS
General, United States Army
Chief of Staff

Official:

J. C. PENNINGTON
Brigadier General, United States Army
The Adjutant General

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