"The Lumber Co." Portable Sawmill

INSTRUCTION MANUAL

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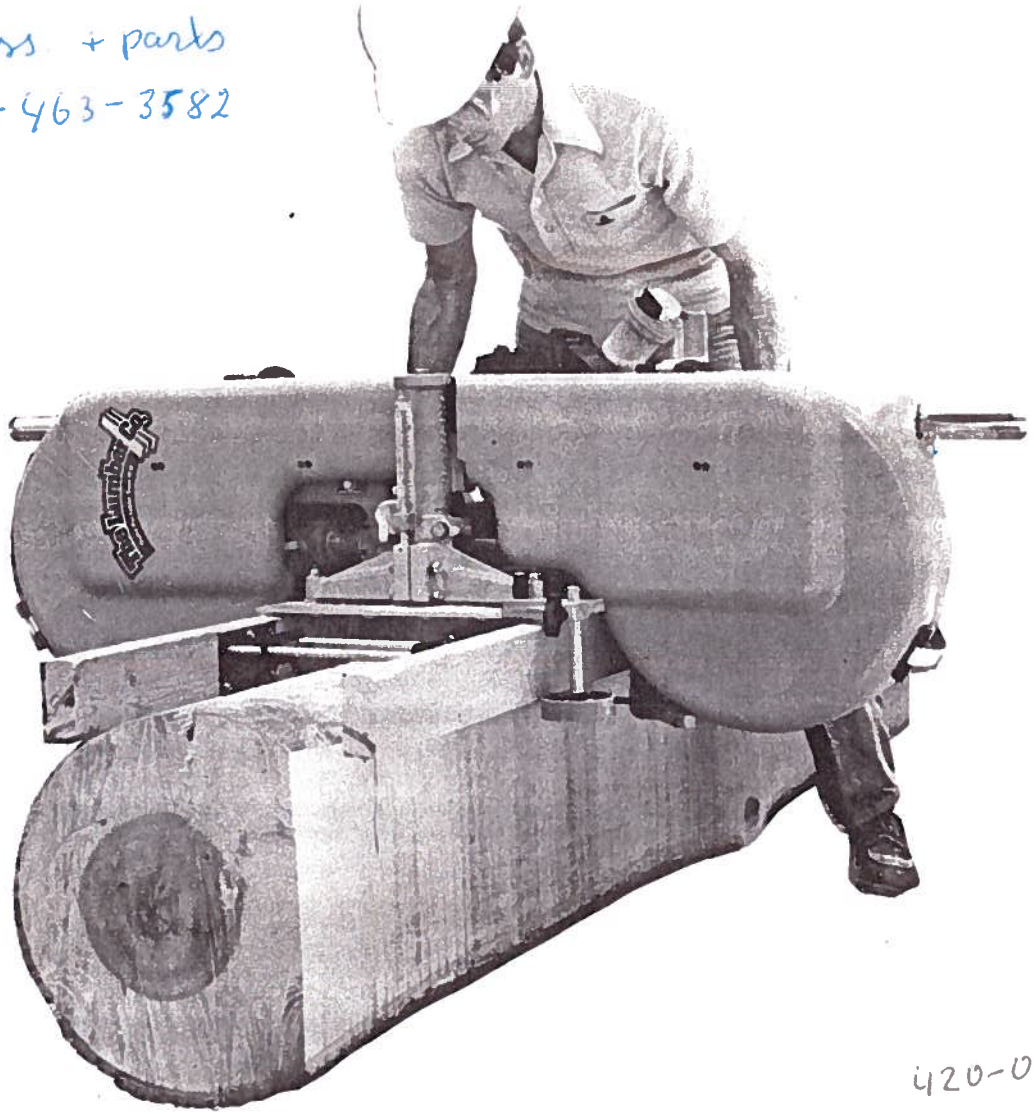

420-0102

Dated 12/1/85

Part No. 426-11-651-0003

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DELTA

"THE LUMBER CO." PORTABLE SAWMILL
SUPPLEMENT TO THE INSTRUCTION MANUAL

DELTA

The following guidelines are intended to help you get maximum blade life and maximum performance out of "The Lumber Co." Portable Sawmill. They are either additions or changes to the original instruction manual and should be considered along with it. Please have the original manual on hand as you read this booklet and refer to the sections effected as required.

IMPORTANT: All instructions must be followed closely in order to have "The Lumber Co." unit function properly.

SAFETY RULES

Refer to the section entitled SAFETY RULES in your instruction manual. Safety rule number 5 states that a face mask or dust mask should be worn while operating the machine. This is very important as certain types of wood are toxic and may cause nausea.

THE BLADE

Please study these [illegible] for blade safety and maintenance:

1. Always handle [illegible] with care as they are very sharp.
2. When unpacking [illegible] them teeth down on a flat surface with a cardboard [illegible] underneath to protect the teeth. Hold the [illegible] loops first [illegible] cut the plastic tie; repeat for the second tie.
3. Always use [illegible] when putting a blade on the saw or removing a blade.
4. Make sure [illegible] position properly with the teeth overhanging the wheel.
5. Make sure the [illegible] to be cut do not have any dirt, sand or gravel in the bark. If there is, [illegible] clean or strip the bark away.
6. Inspect the [illegible] possible foreign objects embedded in the log and remove them.
7. Never jam the [illegible] into the log at the start of the cut. Start the blade against [illegible] first few inches slowly to allow the blade to reach [illegible]
8. Knots [illegible] of a log and may [illegible] slower cutting [illegible]

9. While cutting, keep pitch build-up off the blade by using a lubricant on the moving blade. A mixture of water and kerosene works best at removing the pitch build-up. However, it will stain the wood. If this is not desirable, a mixture of soap and water is a good alternative. Store the solution in a plastic squeeze bottle and keep your hand at a safe distance while squirting the solution on the moving blade. Fig. 1.

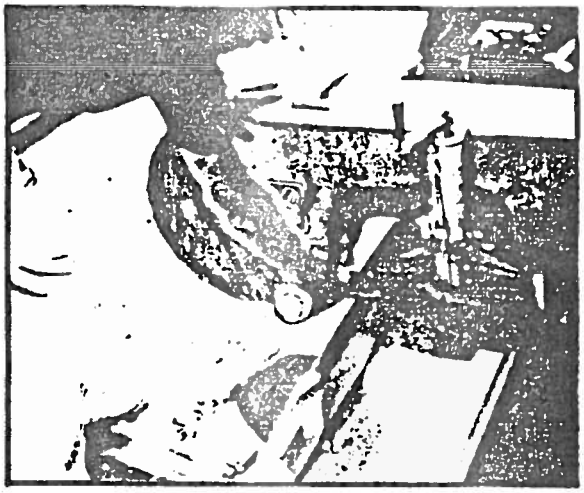

Fig. 1

10. Keep the blade sharp. Forcing a dull blade to cut is more damaging to the blade life than sharpening.

11. Always release the blade tension if the unit is not in use for more than one hour.

12. When sharpening the blade use a three corner file and file the top and face of each tooth straight across the blade. File each tooth to a sharp point. File each tooth an equal amount so all teeth remain the same height.

Refer to the section on how to install the blade in your instruction manual and study the following points:

1. There are two kinds of blades for hardwood and softwood. Make sure you have the right kind of blade before installing it.

2. The most recently manufactured portable sawmills have a decal on them indicating in which direction the sawblade teeth should go. Unfortunately, the first units made do not have such a decal. For owners of those units, the blade teeth must always go to the left of the operator.

3. The blade must not ride against the blade guide shoulder.

PREPARING THE LOG

Refer to the section of your instruction manual on PREPARING THE LOG and consider the following points:

1. Although "The Lumber Co." Portable Sawmill is capable of cutting a log up to 23" wide, the ideal width is 12" to 16".

2. Logs which grow from a hillside have tremendous stress and the plank being cut tends to curl up putting pressure on the blade. Therefore, the saw will cut much more slowly.

3. All knots, branches and bark must be removed and the log should be as clean and straight as possible. Watch out for stones which may have been embedded in the log while rolling it on the ground. Also, a grey-blue colouring in the wood may mean the log contains metal from either bullets or nails. Check for this effect after each cut.

4. The feed end of the log should be supported at a higher position than the out-feed end. The downward slope created makes it easier for the operator to move the saw down the log while cutting.

   Select support logs large enough to hold the log to be cut and cut them into the shape indicated in the diagram. Fig. 2.

Fig. 2

Feed End Support

Out-feed End Support
(shorter)

Once the log is supported at both ends, make sure it is steady and cannot shift or roll. If it is not steady, insert wedges between the log and the support until the problem is corrected.

THE GUIDE RAIL ASSEMBLY

Refer to the section of your instruction manual PREPARING THE LOG which describes how to assemble and mount the Guide Rail.

1. The Guide Rail is used for making the first cut in the log. They must be perfectly [illegible] a straight cut.

2. It is suggested that welding the rods (A) Fig. 3 of the Guide Rail brackets to the plates (B) provides greater stability as the screws tend to come loose from much use. Also if the 2x4's used as the Guide Rails become warped over time, they must be replaced with straight 2x4's.

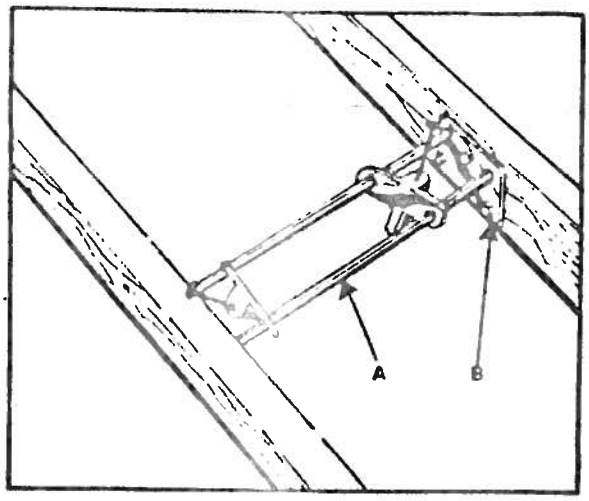

Fig. 3

3. If your Guide Rail Assembly is not performing well, a modified 10' aluminum ladder may be used as an alternative or a 2'x12' plank as suggested in the orginal manual. If a plank is used, it must be absolutely straight. If the log itself is not straight, wedges must be inserted between the plank and the log. Fig. 4.

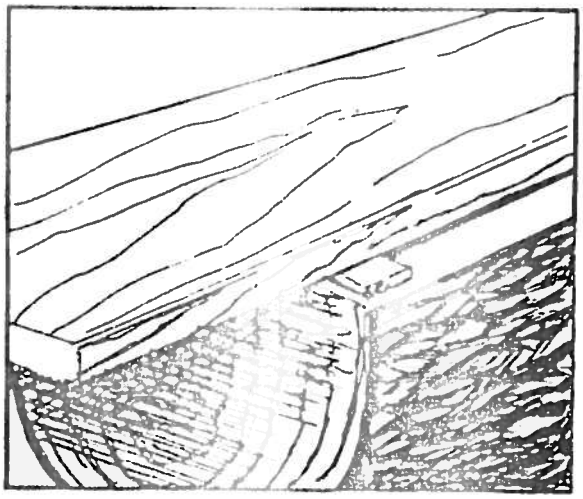

Fig. 4

CUTTING THE LOG

Refer to the section of you manual entitled CUTTING THE LOG.

1. When mounting the saw on the log, make sure the nylon strips on the underside of the platen are in contact with the guide rails and not the aluminum platen itself. If the aluminum platen drags on the guide rails, the platen and the blade will no longer be parallel and the cut will be difficult.

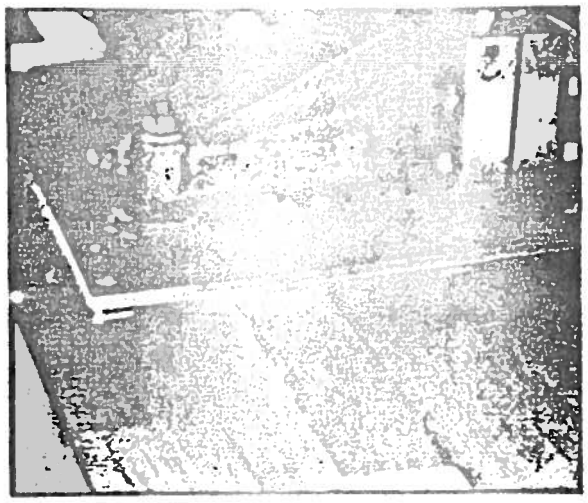

Fig. 5

2. With certain types of wood, gum and pitch will build up on the blade wheels and cause the blade to stall in the log. You will notice a noise change in the RPM's as the blade is about to stall. Prevent this from happening by pulling back [illegible] to allow the machine to pick up speed. Once it does, s[illegible] lubricant of either water and soap, or water and kerosene onto [illegible] blade before resuming the cut. See Fig. 1.

3. The surface of the log should be scraped clean after each cut, removing freshly cut sawdust.

USING A TEMPLATE

Sometimes it is necessary to use a template with the cuts following the first cut. For example, if the first cut is not straight, a corrective cut may be necessary. A template consisting of a 2'x12' plank of wood should be placed on the cut surface [illegible] to level it. You may even want to use the template every [illegible] straight cut.

When usi[illegible] It is best if it is longer than your log. This will allow you to re[illegible] end of the template enabling you to [illegible] your cut and make [illegible] This added control is another good reason [illegible] use the template [illegible] cut. Fig. 6.

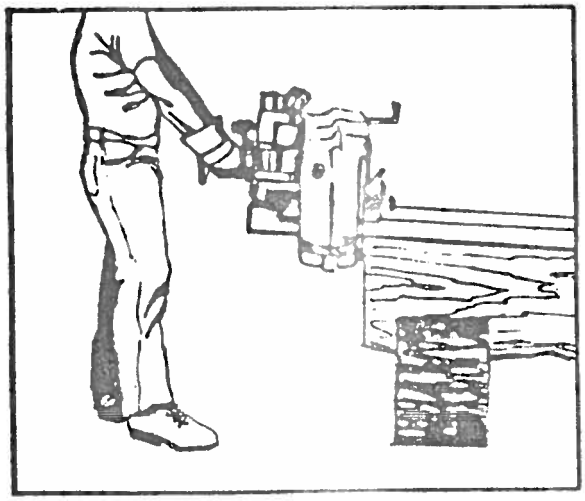

Fig. 6

RESAW KIT

When using the Resaw Kit it is necessary to operate "The Lumber Co." in a vertical position. This creates a no-load condition on the blade and results in the blade life being half of what is normally expected when operating the unit in a horizontal position.

To get increased blade life it is recommended that you use a .022 thickness blade if available in your area.

ASSEMBLING BLADE GUIDES

1. With the blade assembled and tensioned, assemble the blade guides to the bottom side of the table using two 5/16"-18 x 1" flat head screws, flatwasher and hex nuts. Place the flat side of the guides against the blade without deflecting it. The blade should pull through the guides without dragging.

WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY.

IMPORTANT

As with all machinery there are certain hazards involved with operation and use of the machine. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

This machine was designed for certain applications only. Delta Machinery strongly recommends that this machine NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the machine until you have written Delta Machinery and we have advised you.

DELTA INTERNATIONAL MACHINERY CORP.
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SAFETY RULES

1. **READ AND UNDERSTAND INSTRUCTION MANUAL BEFORE OPERATING THE SAW.**
2. **ALWAYS WEAR EYE PROTECTION AND LEATHER GLOVES.**
3. **USE SAFETY FOOTWEAR AND SNUG-FITTING CLOTHING. DO NOT WEAR SCARFS, JEWELRY, OR NECKTIES WHICH COULD BE DRAWN INTO THE ENGINE OR CATCH ON UNDERBRUSH.**
4. **WHEN OPERATING THE LUMBER COMPANY FOR MORE THAN FOUR HOURS IN A 24-HOUR PERIOD, HEARING PROTECTION SUCH AS EAR PLUGS OR EAR MUFFLERS MUST BE WORN. FREQUENT LUMBER COMPANY USERS SHOULD HAVE REGULAR HEARING CHECK-UPS AND MAKE CERTAIN THAT HEARING PROTECTION BEING USED IS ADEQUATE.**
5. **ALWAYS WEAR A FACE OR DUST MASK WHEN SWIRLING WIND RESULTS IN SAWDUST GETTING INTO NOSE AND MOUTH.**
6. **ALWAYS USE CAUTION WHEN HANDLING FUEL. MOVE FUEL CAN AT LEAST 10 FEET FROM SAW BEFORE STARTING THE ENGINE.**
7. **ALWAYS TENSION BLADE BEFORE OPERATING AND RELEASE BLADE TENSION AT THE END OF EACH WORK DAY.**
8. **HAVE SAW COVERS AND GUARDS IN PLACE AT ALL TIMES.**
9. **REPLACE COVERS BEFORE STARTING ENGINE.**
10. **ATTACH GUIDE RAIL ASSEMBLY OR A 2 X 12 BOARD, USED FOR FIRST CUT, SECURELY TO LOG.**
11. **POSITION THE LOG SO THAT IT IS STEADY AND CANNOT SHIFT OR ROLL.**
12. **STAND BEHIND SAW AT ALL TIMES.**
13. **NEVER STAND OR HAVE ANY PART OF YOUR BODY IN LINE WITH THE PATH OF THE SAW BLADE.**
14. **AVOID AWKWARD OPERATIONS AND HAND POSITIONS WHERE A SUDDEN SLIP COULD CAUSE YOUR HAND TO MOVE INTO THE BLADE.**
15. **AVOID BREATHING EXHAUST FUMES.**
16. **STOP ENGINE WHEN CUT IS COMPLETE.**
17. **OBTAIN HELP TO POSITION SAW ON AND OFF LOG.**
18. **ALWAYS CARRY THE SAW WITH THE ENGINE STOPPED.**
19. **DO NOT OPERATE WHILE UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR MEDICATION.**

UNPACKING

Carefully remove the saw from its carton. Be certain that all loose components and hardware, instructions for gasoline engine, parts list, warranties, etc. are accounted for before disposing of any packing material.

ASSEMBLY

1. Assemble the front guide bracket (A) to the platen (B) as shown in Fig. 2, by inserting carriage bolt (C) up through the platen and bracket and securing with a flat washer, lockwasher and knob (D). NOTE: WHEEL MUST BE TO THE OUTSIDE AS SHOWN.

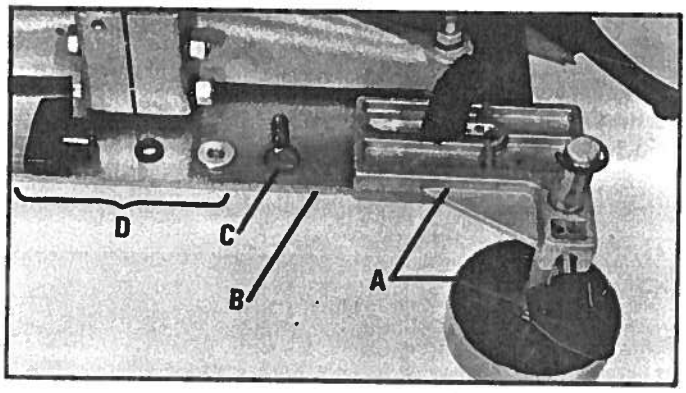

Fig. 2

2. Assemble the rear guide bracket (E) Fig. 3, to the platen (B) in the same manner as the front guide bracket. NOTE: The front and rear guide brackets are **not** interchangeable, wheels must be to the outside.

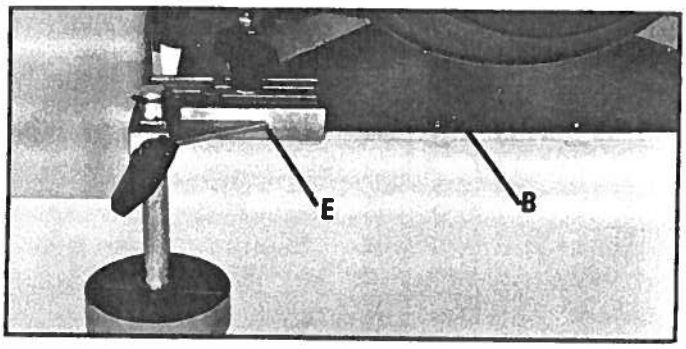

Fig. 3

3. Slide throttle control (F) Fig. 4, onto right handle (R), as shown.

4. Thread locknut (H) Fig. 4, to within 1/2" of end of threads on right handle and assemble lockwasher and flat washer (J) onto threaded end of handle.

5. Thread handle (R) Fig. 4, into the housing as tightly as possible. Then securely tighten locknut (H) against the housing.

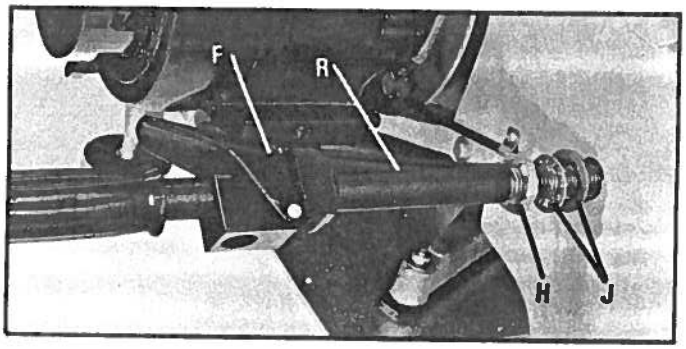

Fig. 4

6. Position throttle control (F) as shown in Fig. 5, and tighten set screw using allen wrench (K) supplied (throttle housing may crack if set screw is overtightened).

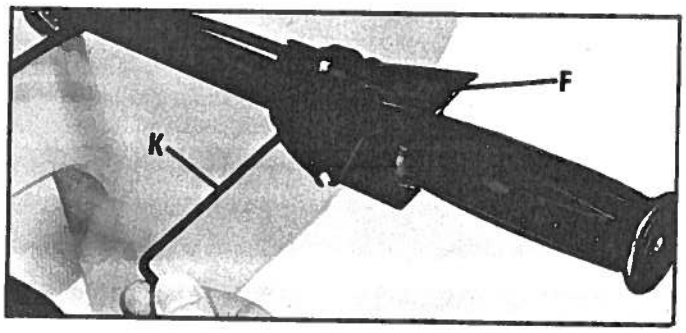

Fig. 5

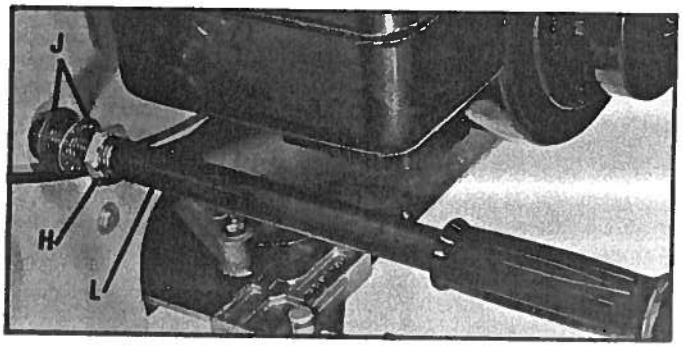

Fig. 6

7. Thread locknut (H) Fig. 6, to within 1/2" of end of threads on left handle (L) and assemble lockwasher and flat washer (J) onto threaded end of handle.

8. Thread the handle (L) Fig. 7, into the housing as tightly as possible. Then securely tighten locknut (H) against the housing.

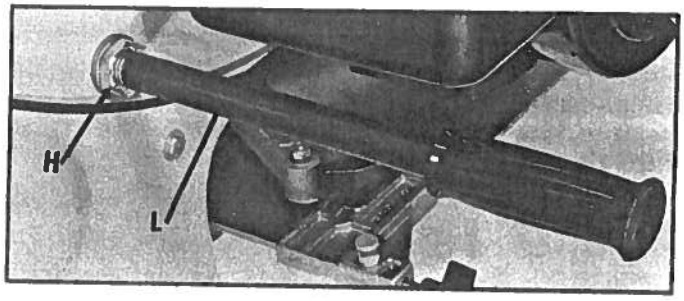

Fig. 7

ENGINE CONTROLS

Refer to the instructions provided by the engine manufacturer for instructions on starting, maintenance, adjustment and service of the engine. The following is provided to give general instruction and location of the major components of the engine.

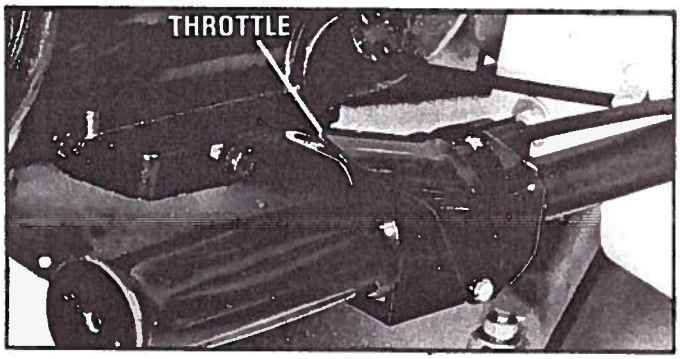

Fig. 8

Throttle: The throttle is located on the right hand handle of the machine, as shown in Fig. 8.

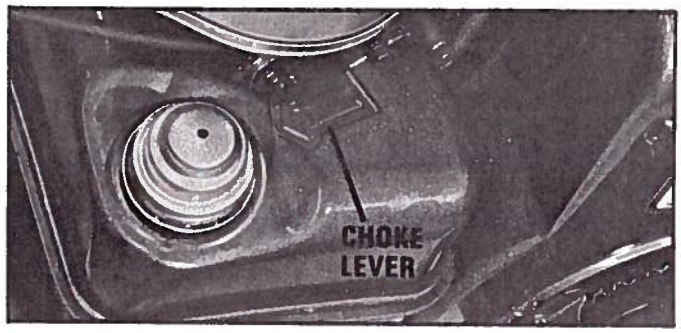

Fig. 11

Choke: The choke lever is shown in Figs. 11 and 12. When starting the engine the choke lever is in the horizontal position as shown in Fig. 11. When the engine is running, the choke lever should be in the vertical position, as shown in Fig. 12.

Fig. 13

Air Filter: The air filter is shown in Fig. 13. The sponge and paper elements in the filter shown in Fig. 14, should be cleaned daily. Do not use oil on the sponge element. Wash with soap and water or kerosene and squeeze dry.

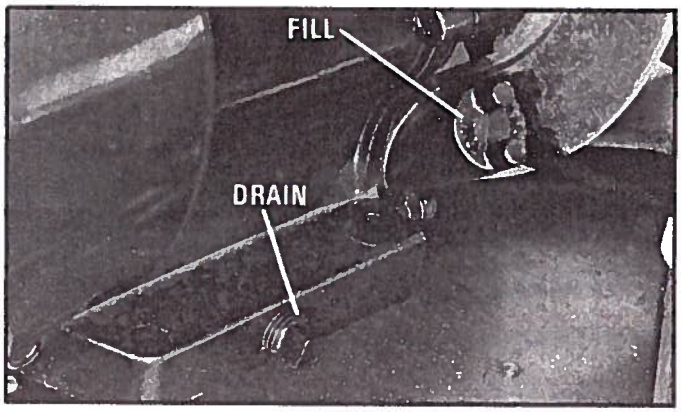

Fig. 9

Oil fill and crankcase drain plugs: See Fig. 9, for the location of these items.

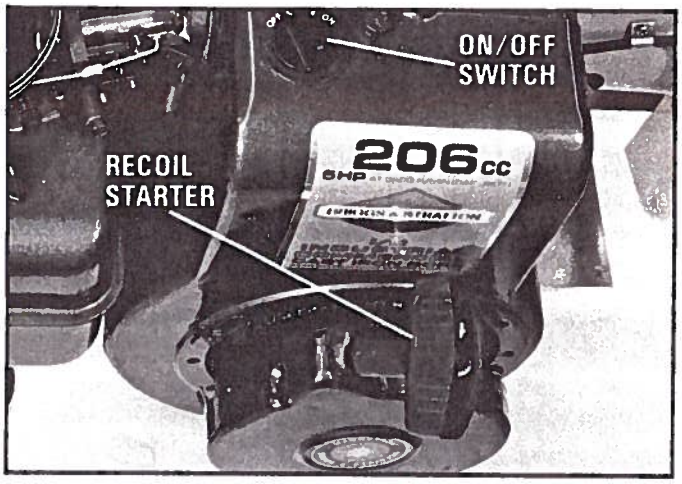

Fig. 10

ON/OFF Switch and Recoil Starter are shown in Fig. 10.

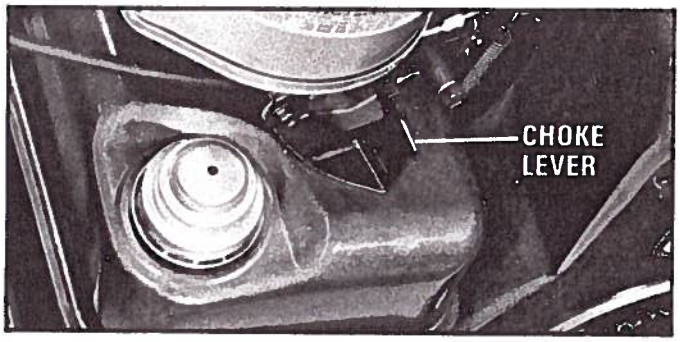

Fig. 12

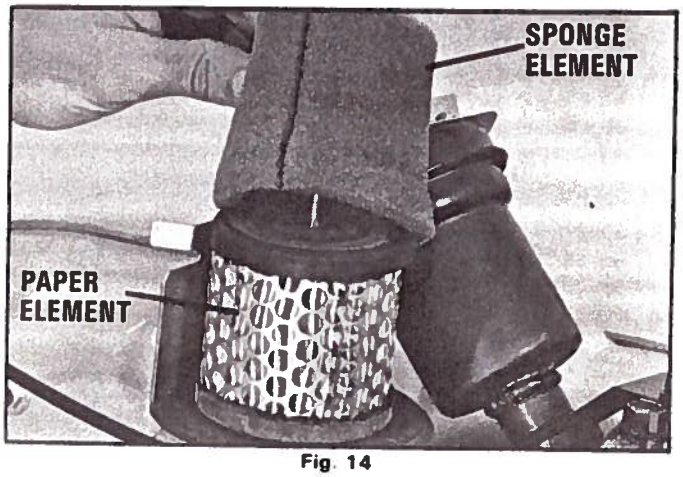

Fig. 14

INSTALLING THE BLADE, ADJUSTING BLADE TENSION AND TRACKING THE BLADE.

Fig. 15

INSTALLING THE BLADE

Always wear leather gloves when installing or removing the blade.

1. Remove the two front covers from the saw.

2. Two 1-1/2" wide, 3/4 pitch, 120" long stellite tipped blades are supplied as standard equipment with each machine. Before installing a new blade, the direction of the teeth must be reversed by turning the blade inside out, as shown in Figs. 15 and 16. With the blade teeth pointing toward you and your foot firmly positioned on the blade, as shown in Fig. 15, slowly turn the blade inside out so that the teeth will point in the opposite direction, as shown in Fig. 16. When the blade is almost completely turned inside out remove your foot from the blade. Extreme care should be taken to prevent the teeth from coming into contact with any part of your body.

Fig. 16

3. Turn blade tension nut (A) Fig. 17, counter-clockwise by hand and slide wheel assembly (B) toward the center of saw, as shown.

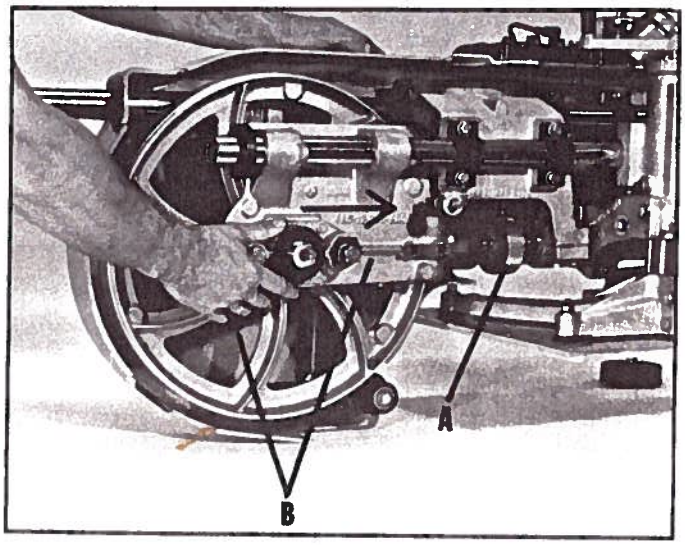

Fig. 17

4. Install blade on both wheels. Turn blade tension nut (A) Fig. 18, clockwise by hand to pre-tension the blade.

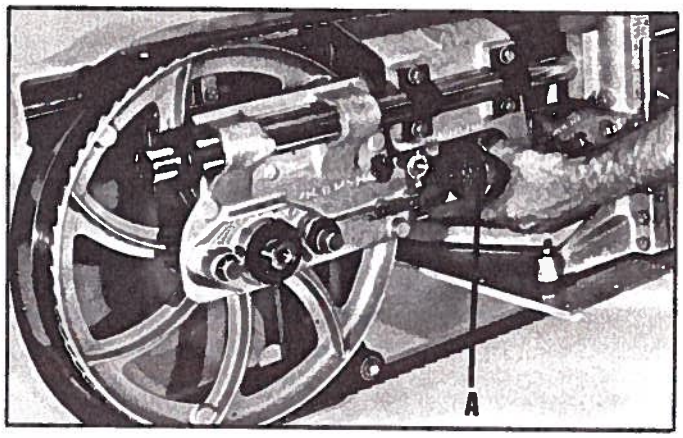

Fig. 18

NOTE: EARLY MODELS ONLY - Both the idler wheel, shown in Fig. 19, and the drive wheel are 1¾" wide and are equipped with a recess at the teeth end of the wheel. Make certain the blade teeth are flush with the outside rim of both wheels, as shown in Fig. 19.

NOTE: CURRENT MODELS ONLY - The idler wheel, shown in Fig. 19, is 1½" wide and DOES NOT have a recess. The drive wheel is 1¾" wide and is equipped with a recess on the teeth end of the wheel. Make certain the blade teeth overhang the rim of the idler wheel, shown in Fig. 19, by approximately ¼" and that the teeth are flush with the drive wheel.

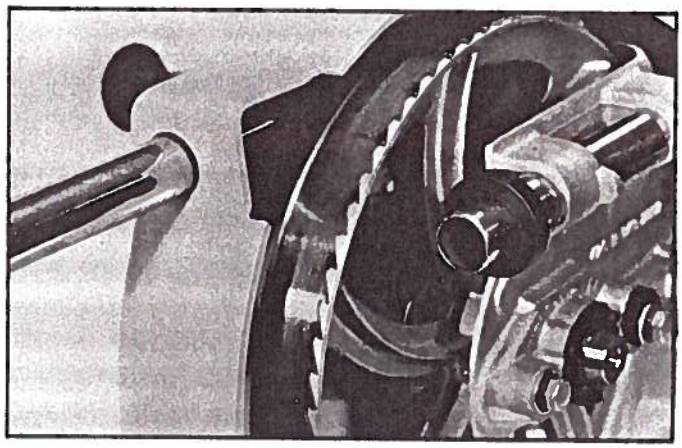
Fig. 19

ADJUSTING BLADE TENSION

NOTE: Always tension blade before operating the machine and release tension at the end of each work day.

5. Turn blade tension adjusting nut (A) Fig. 20, with special spanner wrench (C), supplied with the saw, until the two indicator lines (D) and (E) are in alignment with each other. The blade is then properly tensioned.

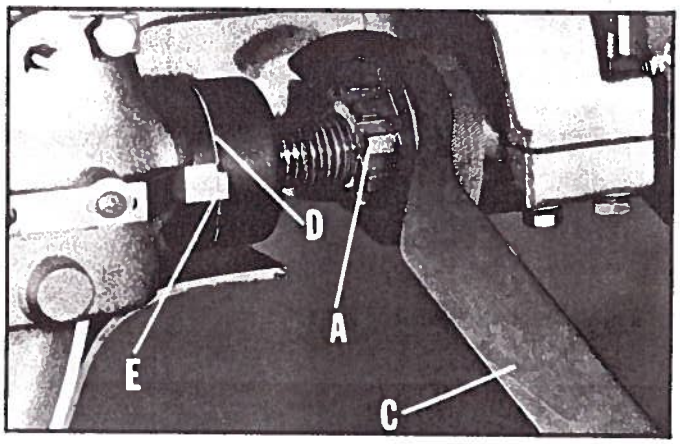

Fig. 20

TRACKING THE BLADE

The blade tracking adjustment has been set at the factory, however, rough handling during shipment may make minor adjustments necessary.

6. Turn the wheel (F) Fig. 21, counterclockwise by hand.

NOTE: EARLY MODELS ONLY
Check to see that the blade (G) Fig. 21, rides evenly on both wheels with the blade teeth flush with the outside rim of the wheels.

NOTE: CURRENT MODELS ONLY
Check to see that the blade (G) Fig. 21 rides evenly on both wheels with the blade teeth overhanging the rim of the idler wheel (F) Fig. 21, approximately ¼" and with the blade teeth flush with the rim of the drive wheel.

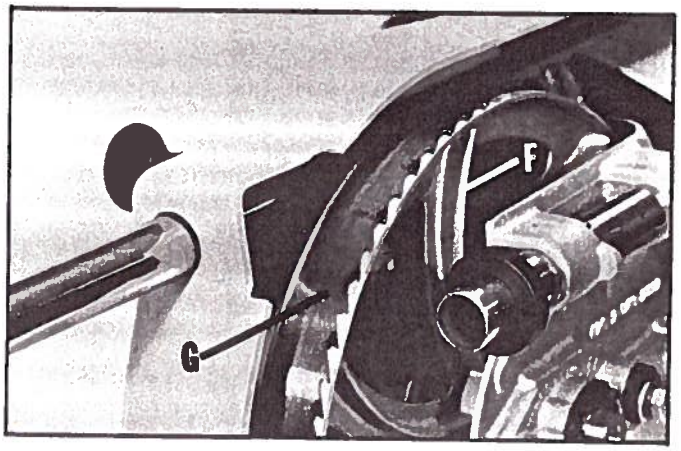

Fig. 21

7. If an adjustment is necessary, release blade tension by turning blade tension nut (A) counterclockwise. Loosen screw (H) Fig. 22. With special wrench (J), hold adjusting nut (K) to prevent it from turning and loosen screw (L). Mark the original position of the adjusting nut (K) to the casting. Then turn adjusting nut (K) clockwise to move blade "out" or counterclockwise to move blade "in" using wrench (J). NOTE: The tracking adjustment requires that the adjusting nut (K) be turned only slightly. Tighten screw (H) Fig. 22, and while holding adjusting nut (K) with the wrench (J), to prevent the nut (K) from turning, tighten screw (L).

8. Retension the blade and turn the wheel counterclockwise again by hand to check if the blade is tracking properly. If necessary repeat Step 7.

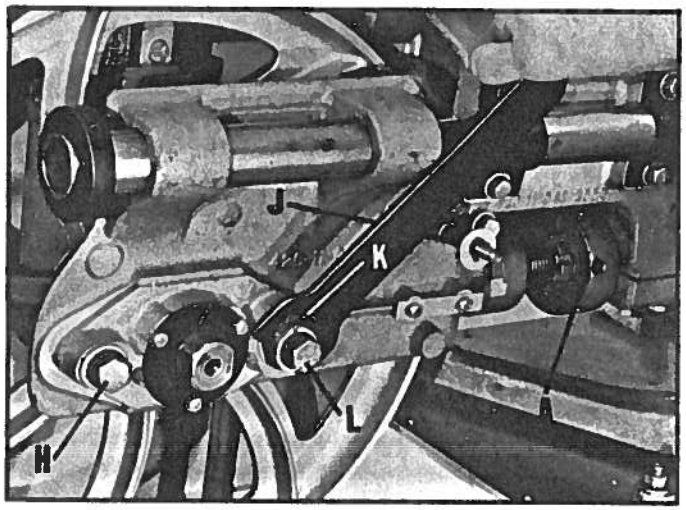

Fig. 22

ADJUSTING FOR DEPTH OF CUT

1. Loosen column lock handle (A) Fig. 23.
2. Rotate the depth of cut handle (B) Fig. 23, to raise or lower the platen (C), to the desired distance from the saw blade.
3. Then tighten column lock handle (A) Fig. 23.

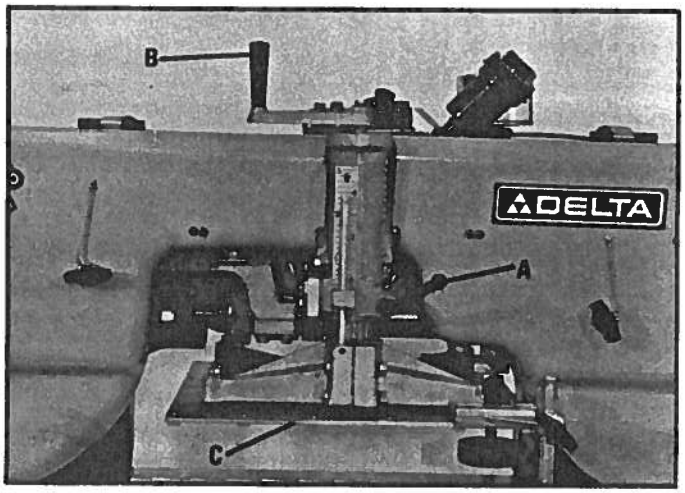

Fig. 23

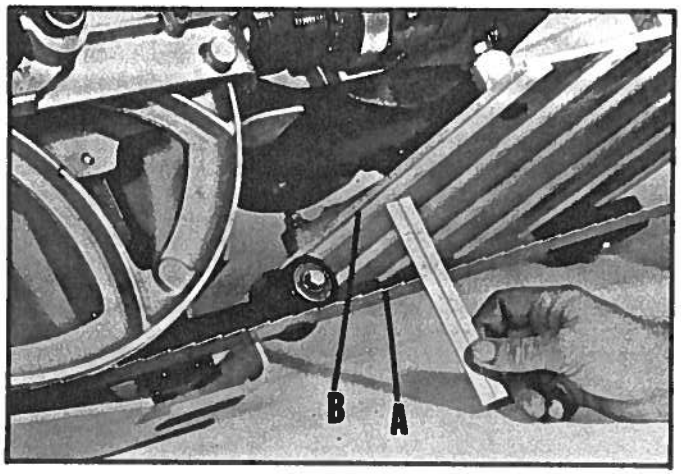

Fig. 24

ADJUSTING DEPTH OF CUT POINTER

1. Measure the distance from the top of the saw blade (A) Fig. 24, to the bottom of the nylon guide strip (B) located underneath the platen.

2. Loosen set screw (C) Fig. 26, and adjust pointer (D) to same measurement as in STEP 1.
3. Tighten set screw (C) Fig. 25.

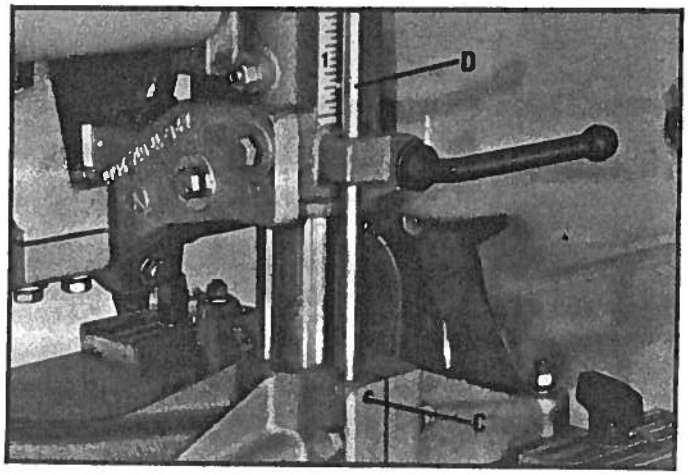

Fig. 25

ADJUSTING COLUMN GIB

A gib (A) Fig. 26, is located on the column of your saw to prevent the platen from rotating and when adjusted properly the column will move easily up and down

If the column binds when raising or lowering the platen or if there is excessive "play" between the column and bracket, the column gib (A) must be adjusted as follows:

1. Loosen nut (B) and tighten or loosen brass screw (C) until a good sliding fit is obtained between the column and bracket. Then tighten locknut (B)

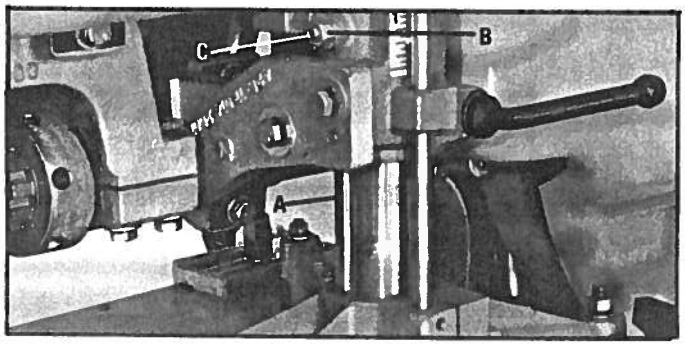

Fig 26

ADJUSTING PLATEN AND BLADE GUIDE ROLLERS

The platen and blade guide rollers are adjusted at the factory and should not be disturbed unless difficulty in accurate cutting is encountered. If an adjustment is necessary, proceed as follows:

1. Check and make certain the blade is tracking properly as explained previously in this manual.

2. Release blade tension. Loosen screw (A) Fig. 27, with wrench (B) and remove blade guide roller assembly (C). Remove blade guide roller assembly from other wheel in the same manner. Then re-apply tension to the blade.

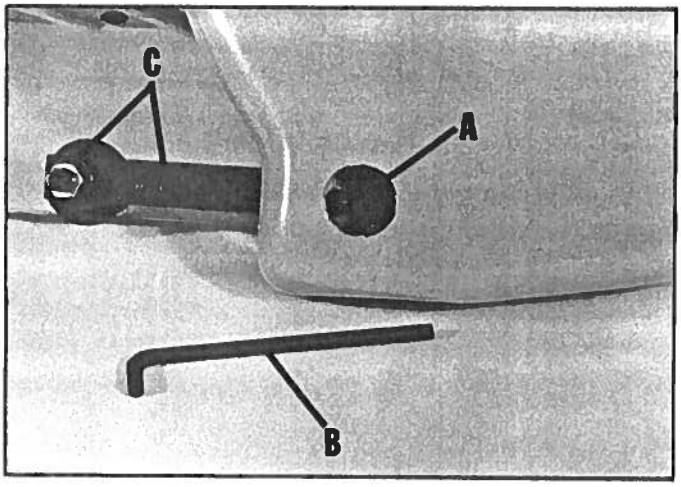

Fig 27

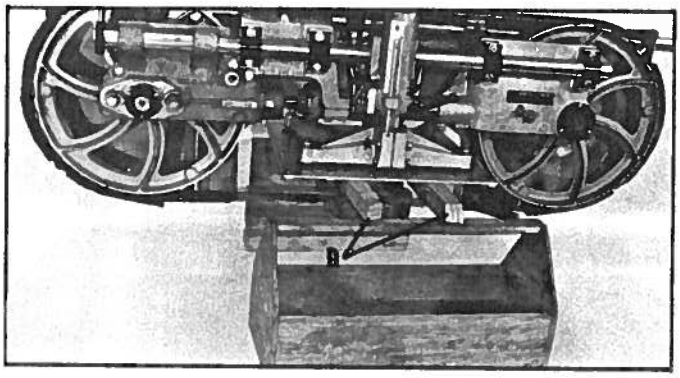

Fig 28

3. Position two pieces of wood. (D) directly underneath the platen, as shown in Fig. 28. Place the saw with the two pieces of wood on a supporting surface so that the weight of the machine is on the platen, as shown.

4. While holding the special gage (E) Fig. 29, against the bottom of the platen, move the platen up or down until the blade just touches the gage (E), as shown. **NOTE:** The gage (E) must not rest on one of the stellite tips of the blade. Then tighten the column lock lever and do not raise or lower the platen any further until the platen and blade guide rollers have been checked and adjusted if necessary. Check both ends of the platen with the special gage (E) between the blade and the bottom of the platen to see if the platen is parallel with the saw blade. If the platen is not parallel with the saw blade an adjustment must be made as follows:

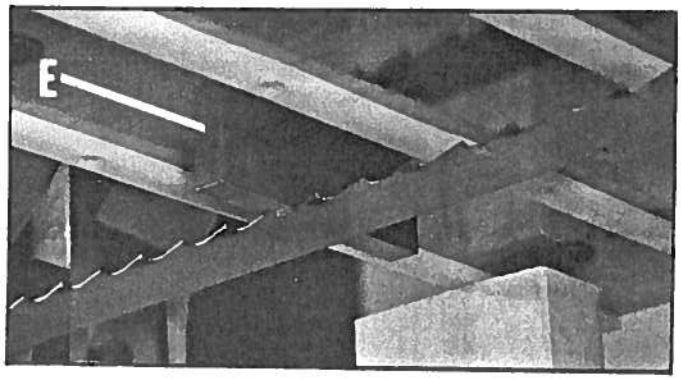

Fig 29

5. Loosen the four hex nuts (F) Fig. 30. Four leveling screws are provided, one of which is shown at (G). Adjust leveling screws as necessary to make the platen parallel to the saw blade. This is always a four point adjustment. Never adjust one point or two points diagonally as this might put stress on the platen causing it to twist.

6. When you are certain the platen is parallel with the saw blade, tighten the four hex screws (F) Fig. 30.

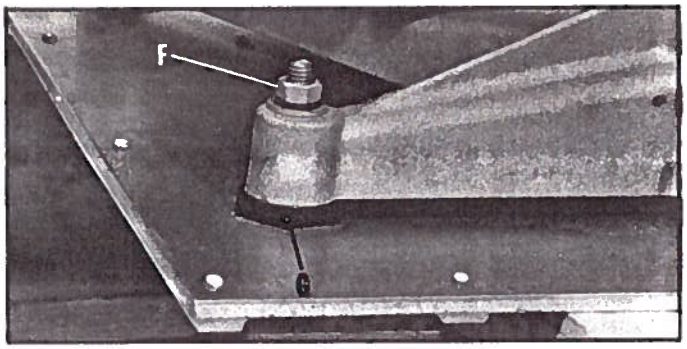

Fig. 30

7. Release blade tension and replace the two blade guide assemblies that were removed in STEP 2, and re-apply correct tension to the blade.

8. The blade guide rollers (H) Fig. 31, are designed to apply 1/8" downward pressure on the blade (J).

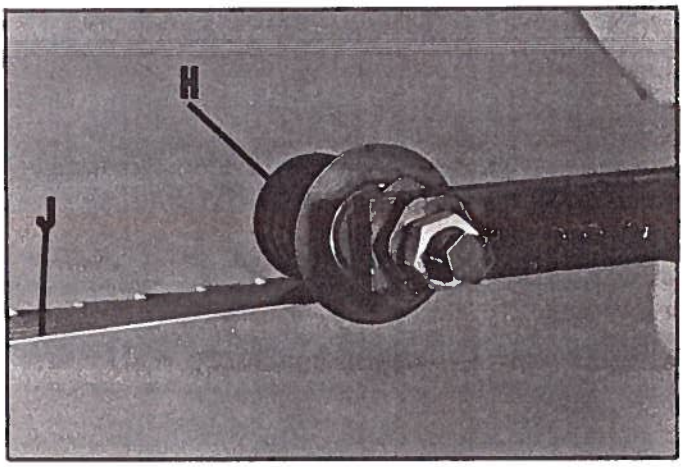

Fig. 31

9. To check if the blade guide rollers are providing the necessary 1/8" downward pressure on the blade, hold the special gage (E) Fig. 32, against the bottom of the platen and see if there is 1/8" clearance between the bottom of the gage block (E) and the blade. Check on both ends of the platen. If an adjustment to the blade guide rollers is necessary, proceed as follows:

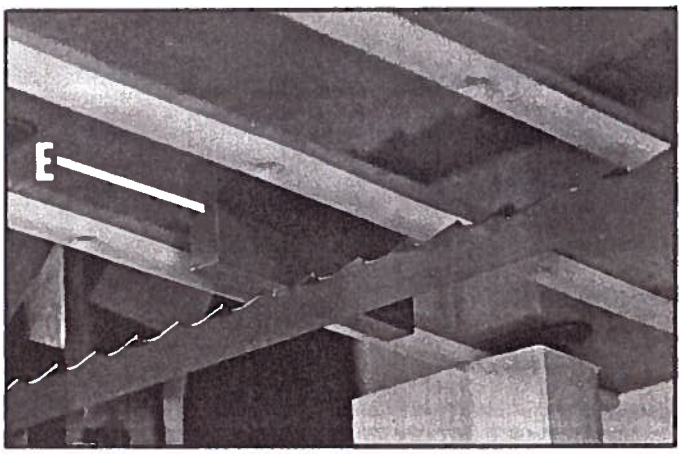

Fig. 32

10. While holding screw (K) Fig. 33, loosen nut (L). Up or down movement of the blade guide roller (H) is made by turning nut (M). Maximum downward adjustment of the guide roller (H) is when one of the flats on the nut (M) is in line with the top of the bar (N). Then, holding screw (K) tighten nut (L) being careful not to disturb adjusting nut (M). The other blade guide roller is adjusted in the same manner.

11. When the blade is tracking properly, the flange (O) Fig.33, of the blade roller (H) must be approximately 1/4" away from the back of the blade. If an adjustment is necessary, hold screw (K) and loosen nut (L). The blade roller (H) can be moved in or out by turning screw (K) being careful not to disturb adjusting nut (M). Then tighten nut (L).

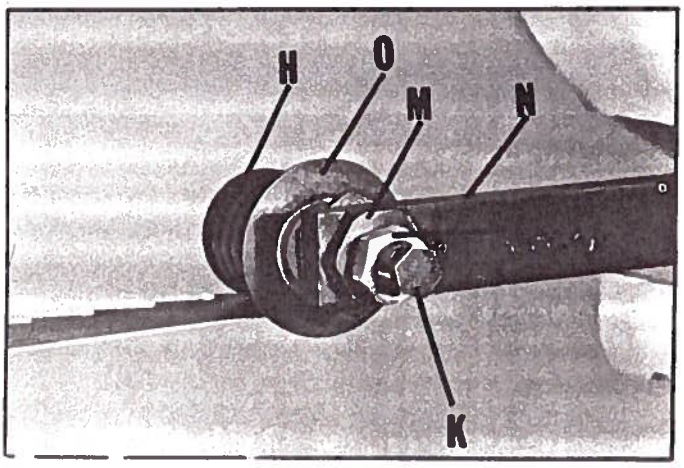

Fig. 33

ADJUSTING GUIDE BRACKET

For most cutting operations the guide wheels (A) Fig. 34 should be adjusted so they are in line with the saw blade by loosening knob (B) and moving wheel shaft up or down.

The wheel brackets (C) can be adjusted from in or out on the platen to keep the saw centered on the log, by loosening knob (D) Fig. 34.

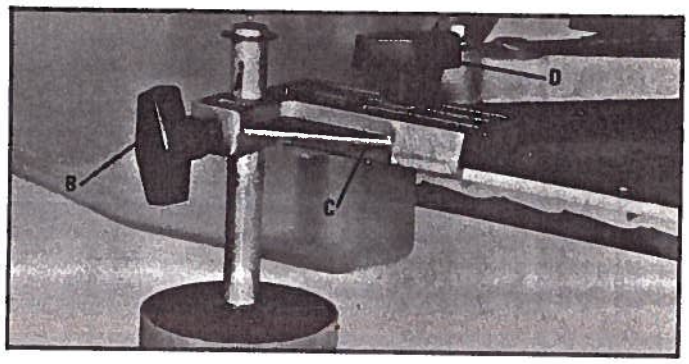

Fig. 34

ADJUSTING BELT TENSION

The belt (A) Fig. 34-A, should be tensioned so there is approximately 1/4" deflection in the center span of the pulleys using light finger pressure. To adjust belt tension proceed as follows:

1. Remove both front covers from the machine.
2. Remove blade.
3. Loosen six screws (B) Fig. 34-A.

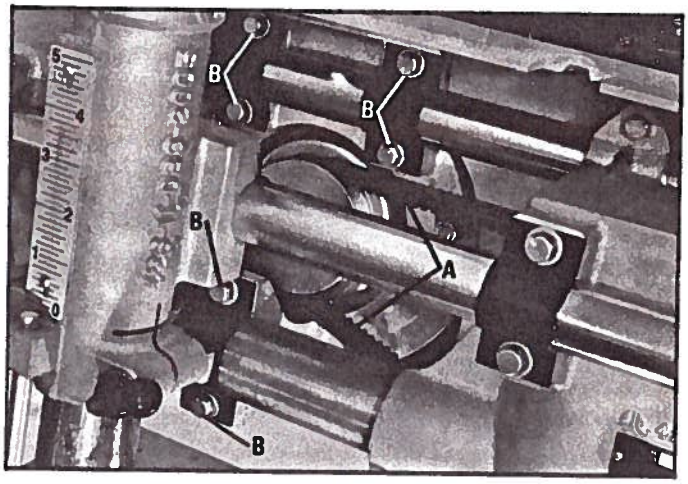

Fig. 34-A

4. Using pry bar (C) Fig. 34-B, pry motor housing (D) away from the driven pulley until there is 1/4" deflection of the belt in the center span of the pulleys.
5. Tighten six screws (B) Fig. 34-A, and replace blade and both front covers.

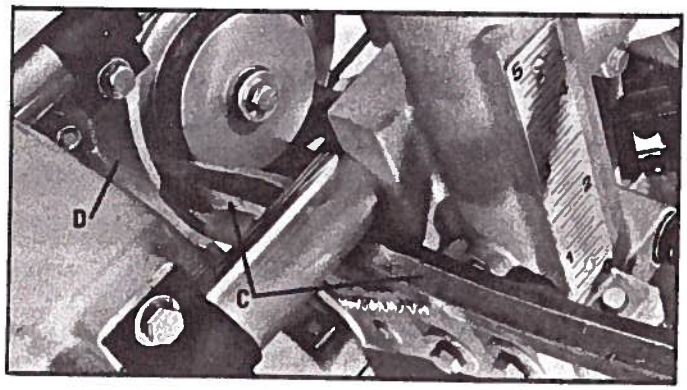

Fig. 34-B

PREPARING THE LOG

To make square lumber from a round log, reference points must first be established in order to calculate your milling patterns. Milling to the heart center (A) on either straight or tapered logs, as shown in Fig. 35 and 36 will produce the most straight-grained boards per log.

On tapered logs where the heart center is way off average center as shown in Fig. 36, you will be able to produce a larger number of boards by milling to the average center (B) of the log rather than to the heart (A) Fig. 36. However, the result will be that many of the boards will have cross grain and will be of lower grade. For example a board milled to the heart center has straight grain, as shown at (A) Fig. 37, while a board milled to an averge center cuts across fibers, resulting in cross grain, as shown at (B) Fig. 37.

Before you can begin to make any lumber you must establish a level surface on each log to guide the first cut. Our example is milling to the heart center of a log, as follows:

1. Position the log so that it is steady and cannot shift or roll.

Fig. 38

2. Mark both ends of the log at the heart center, as shown in Fig. 38.

3. Then, using a level, extend the horizontal line (C) Fig. 39, across the log. Repeat on opposite end of log. Both lines must be level. NOTE: To obtain maximum yield from the log all cuts will be referenced from the horizontal line. However, if it is desired to square the log, a vertical line (D) must also be drawn on both ends of the log, as shown in Fig. 39.

4. Assemble brackets (E) Fig. 40, to two 2x4's as shown. Place 2x4's on a level surface when assembling brackets (E) Fig. 40.

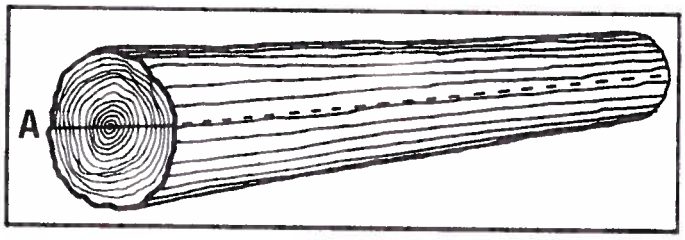

Fig. 35

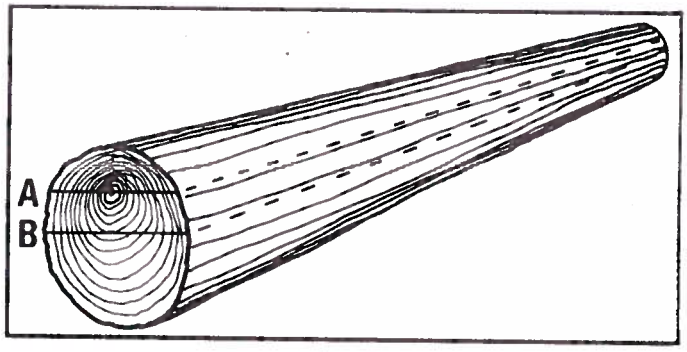

Fig. 36

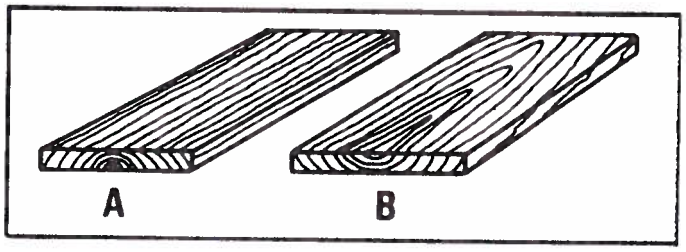

Fig. 37

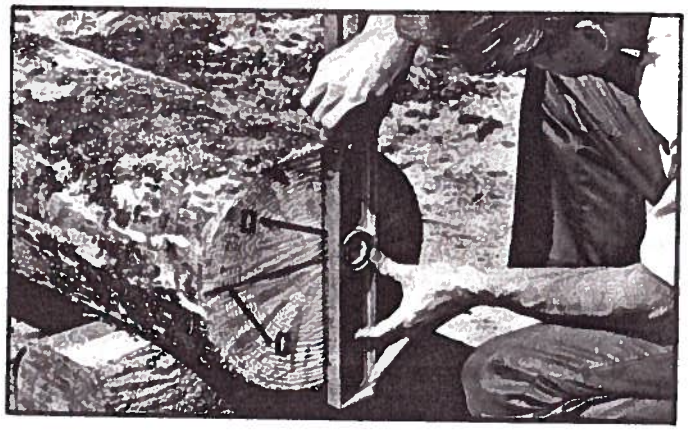

Fig. 39

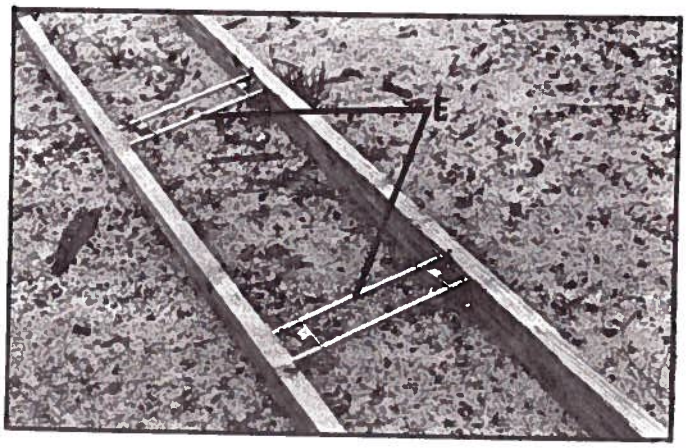

Fig. 40

5. Position the 2x4's and brackets "guide rail assembly" on the log, as shown in Fig. 41. Drive four spikes (F) into the log. NOTE: The 2"x4" guide rails must extend at least 6" beyond both ends of the log. An extra long log will require more than two brackets.

Important: We suggest for most normal cutting operations that three brackets be used. Two as close as possible to each end of the log and one in the center.

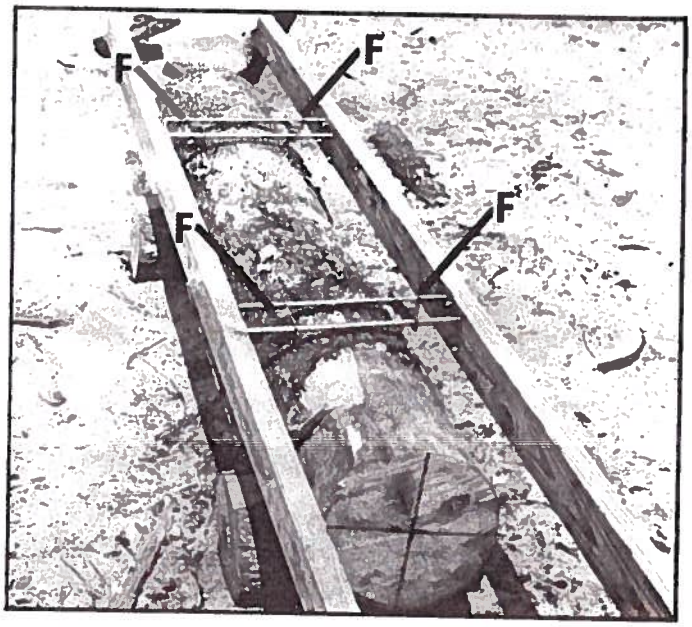

Fig. 41

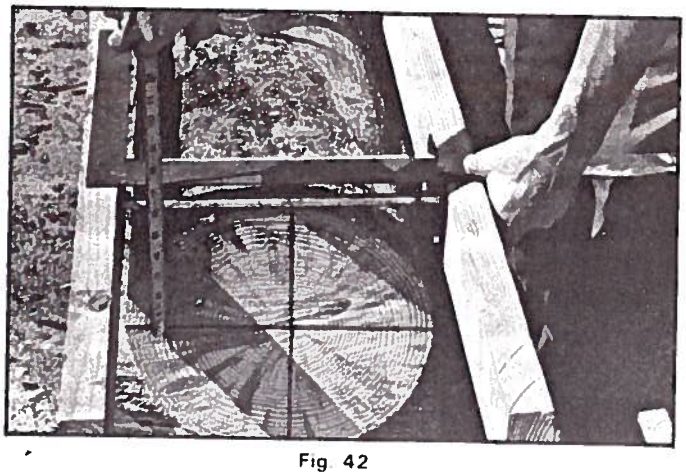

Fig. 42

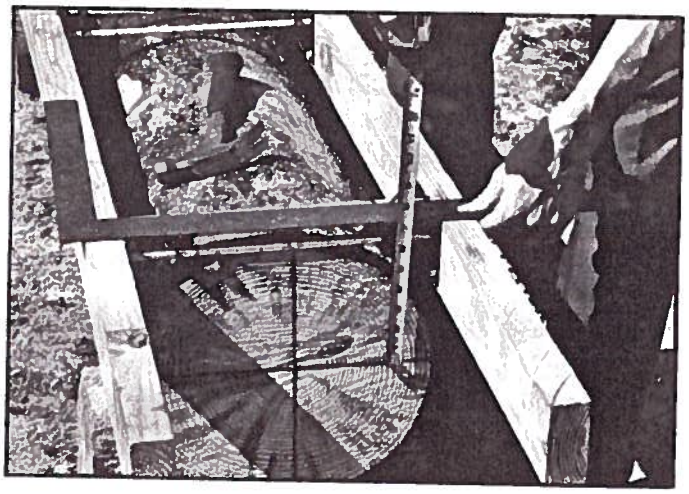

Fig. 43

6. Measure from the top of the guide rail to the centerline on the right and left edges of the log, as shown in Figs. 42 and 43. Measure at the opposite end of the log in the same manner. This distance should be the same at all four points indicating the guide rail assembly is parallel to the grain of the log. Moving the nail guides on the guide brackets "in" or "out" adjusts the height of the guide rail.

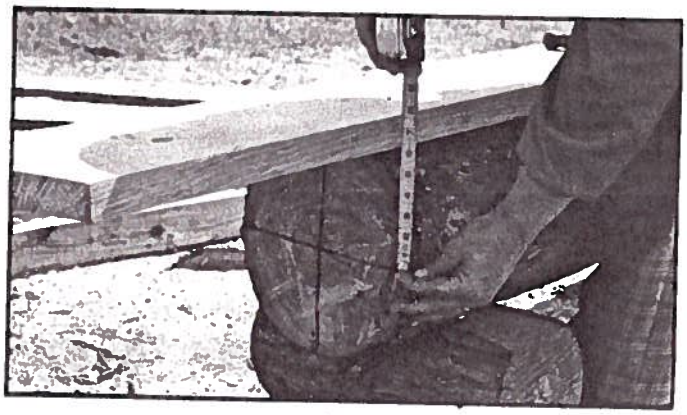

Fig. 44

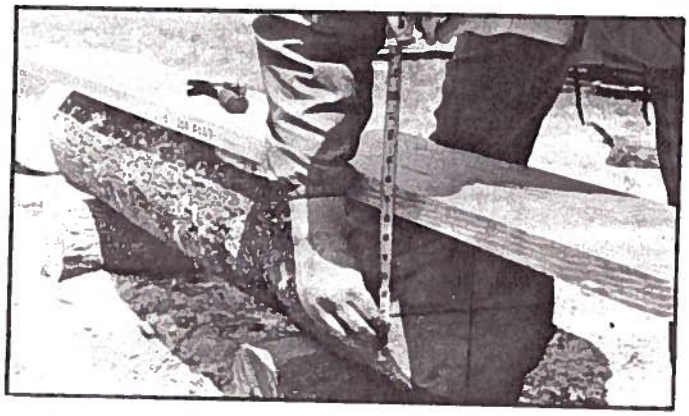

Fig. 45

7. A 2"x 12" plank, shown in Figs. 44 and 45, can be used as an alternative to the guide rail assembly. Place shims under the plank where necessary to position it true to the centerline and use several nails to spike the plank to the log.

CUTTING THE LOG

1. Set the saw for the maximum depth of cut.

2. Start the engine (see instructions supplied with engine).

3. Place the saw on the guide rail. Be sure platen is resting firmly on rails to insure that the blade will be parallel to the guide rails during the beginning of the cut. Begin feeding into the log. The front guide roller (A) Fig. 46 and rear guide roller should follow the guide rail. NOTE: If sawdust and gum builds up on the blade wheels, a blade lubricant of soapy water or water and kerosene should be used.

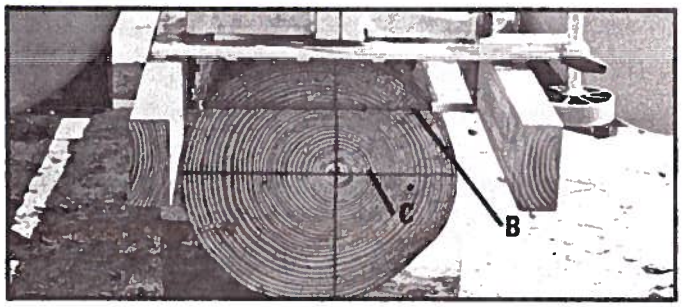

Fig. 47

4. Notice that when the first cut is completed as shown in Fig. 47, the first cut (B) is parallel to centerline (C).

5. When the saw cut is complete, obtain the help of a second person and lift the saw off the log as shown in Fig. 48. This is always a two person operation. Never attempt to lift the saw from the log single-handedly.

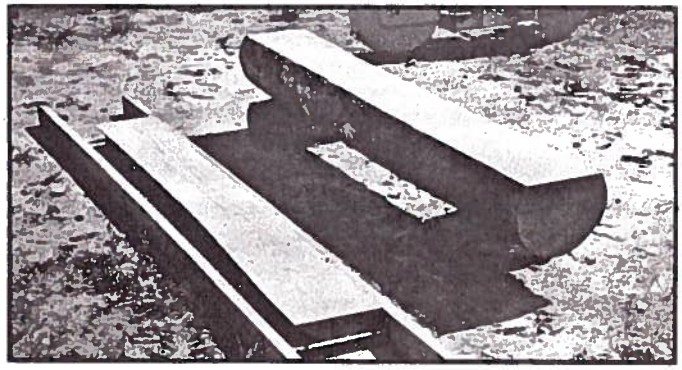

Fig. 49

6. Fig. 49, shows the top of the log and guide rail assembly removed from the saw.

7. The remainder of the log can now be sawed with the saw platen riding on the previously cut surface, as shown in Fig. 50. NOTE: If for any reason, the first cut is slightly irregular, the second cut can be trued up by nailing a 2" x 12" plank directly on the first cut surface. It may be desirable with certain applications to use the 2" x 12" plank for all cuts.

If you wish to have one straight edge on your finished lumber, proceed as follow:

8. Position the 2 x 4's and brackets "guide rail assembly" on the log, as shown in Fig. 51.

9. Measure from the top of the guide rail to the centerline (D) on the right and left edges of the log, as shown in Fig. 51. Measure at the opposite end of the log in the same manner. This measurement should be the same at all four points. Then drive the spikes into the log.

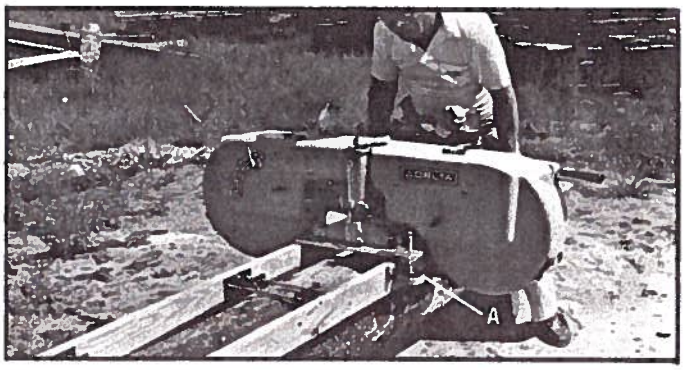

Fig. 46

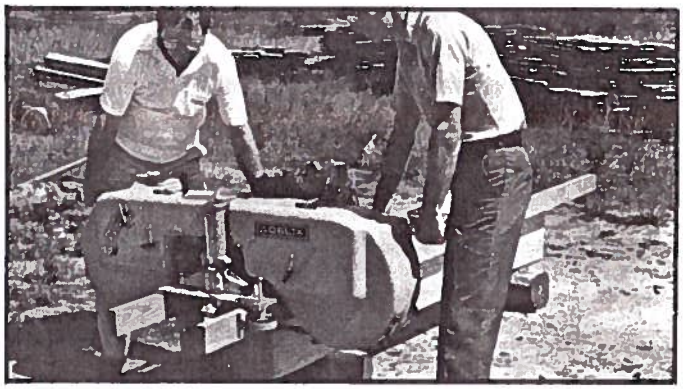

Fig. 48

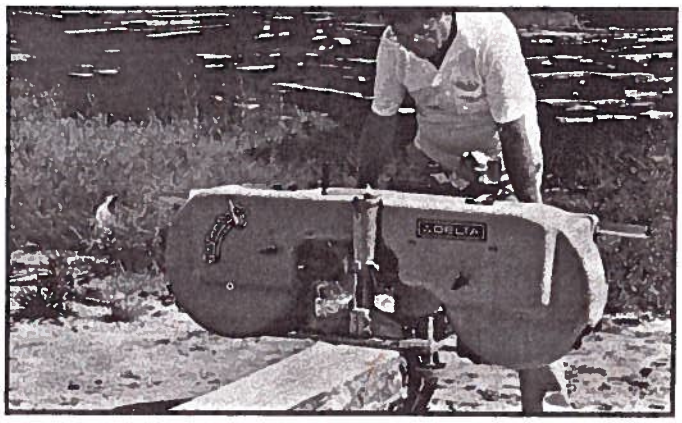

Fig. 50

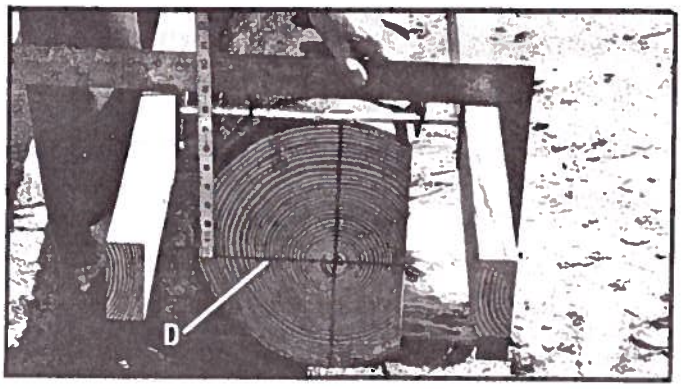

Fig. 51

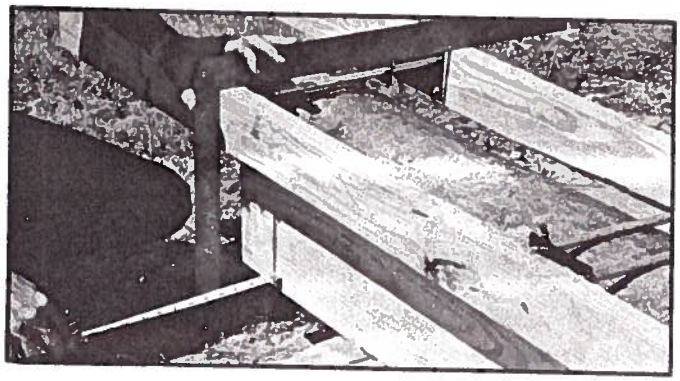

Fig. 52

10. Using a framing square, as shown in Fig. 52, measure from the square to the top and bottom edges of the first cut surface. These measurements should be the same, indicating that the guide rail assembly is square to the first cut surface.

11. Set the saw for the maximum depth of cut and make the cut in the same manner as the first cut, as shown in Fig. 53.

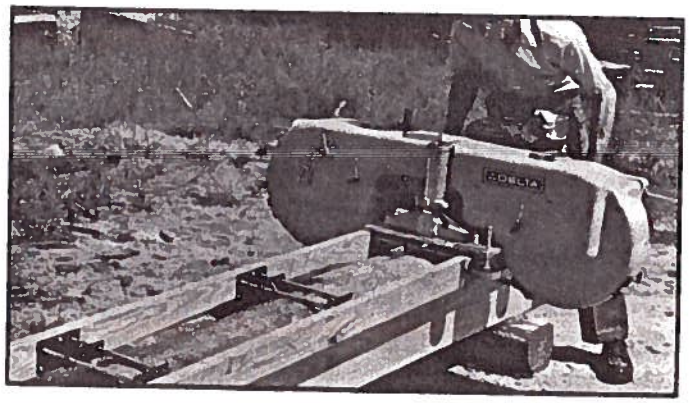

Fig. 53

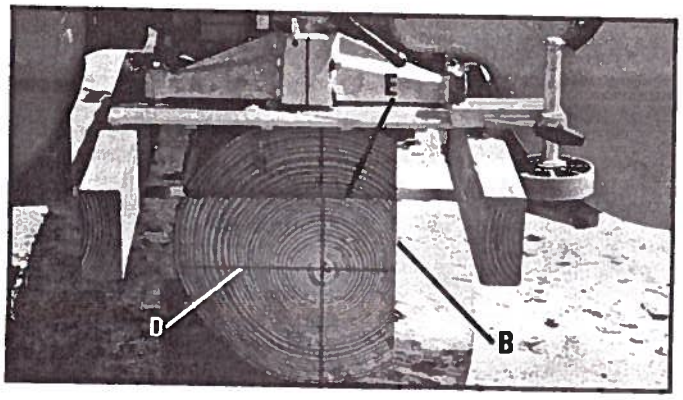

Fig. 54

12. Note in Fig. 54, that when the cut is completed, the second cut (E) is parallel to centerline (D) and square to first cut (B).

13. Fig. 55, shows the "squared" log which can be cut into boards of any desired dimension at the field site.

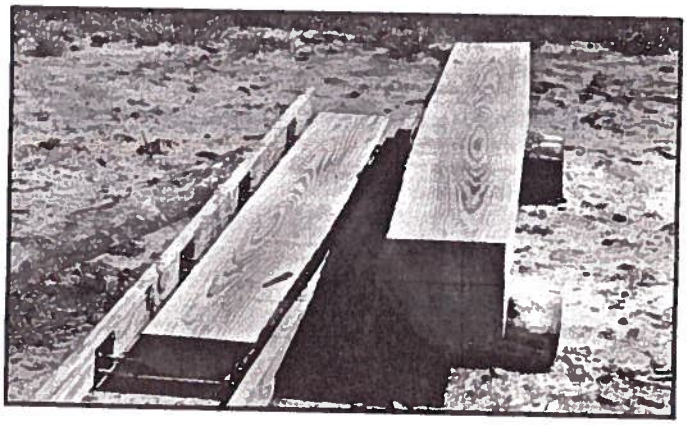

Fig. 55

ACCESSORIES

36-364 **Guide Board Brackets** (set of three)

36-366 **Upright Stand**

BLADES

36-373 120" long, 1½" wide, ¾ pitch Stellite Tipped (3 per box)

Jordan Industrial Products Inc.
414 Canfor N. West. ~~520 - 6351~~
606 - 3100

PARTS DISTRIBUTION CENTERS FOR DELTA INTERNATIONAL MACHINERY

Even quality built equipment such as the Delta machine you have purchased, may require occasional replacement parts to maintain it in good working condition over the years. To order replacement parts, write or call one of the following Delta Parts Distribution Centers:

Van Nuys, CA 91406
16259 Stagg Street
Phone: (818)989-1242

Memphis, TN 38118
4290 Raines Road
Phone: (901)363-8800

Always include the following information:

1. Model No. and Serial No. and all specifications shown on the Model No./Serial No. plate

2. Part number or numbers as shown in the Replacement Parts list supplied with your Delta machine.

DELTA

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DELTA

Part No. 426-11-655-0003
Dated 4-1-86

CAT. NO. 36-366 RESAW KIT FOR THE "THE LUMBER CO." PORTABLE SAWMILL

INTRODUCTION

The 36-366 Sawmill Resaw Kit is a readily installed accessory which converts the "Lumber Co." portable sawmill to a vertical band saw, ideally suited for resawing milled lumber at the field site.

BASE ASSEMBLY

1. Remove the two support braces from the engine base (not shown). Keep the hardware because it must be used to reconvert the saw from the resaw position to the saw mill.

2. Assemble bracket (A) Figs. 1 and 2 to the engine base as shown in Fig. 2, using two 5/16-18 X 1-1/4" hex head screws (B) lockwashers and hex nuts (C). Attach a 1-3/8" clamp to the inside of the bracket (not shown) by using two 5/16-18 X 1" hex screws, flat washers, lockwashers and hex nuts.

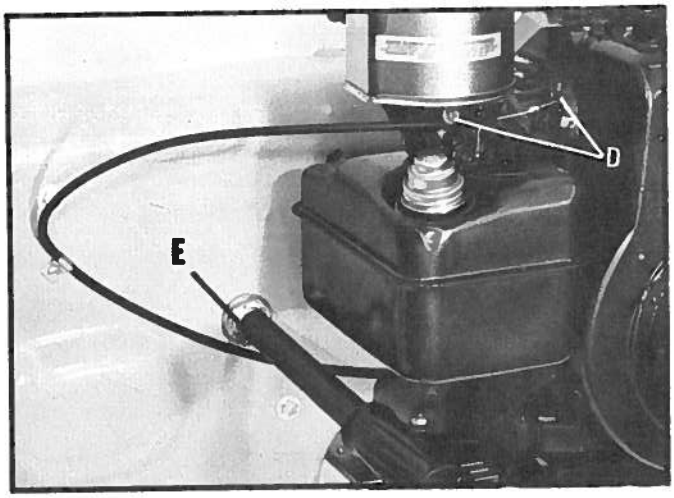


Fig. 3

3. Disconnect the throttle cable from the engine at points (D) Fig. 3, and remove the left handle bar (E).

4. Assemble front base angle (F), rear base angle (G) and two side base angles (H) as shown in Fig. 4, using eight 5/16-18 X 1" flat head screws, flat washers, lockwashers and hex nuts. Do not tighten the hex nuts at this time. It is important that there is a distance of 19-3/4" maintained between the horizontal base angles (F) and (G) Fig. 4. This measurement must be taken from the outside of the angles. Once the base angles are properly spaced, tighten the eight hex nuts.

5. Attach three 1-3/8" clamps, (J), (K) and (L) Fig. 4 to the side base angles (H) as shown using six 5/16-18 X 1" hex screws, flat washers, lockwashers and hex nuts. Place the flat washers under the screw heads and the lockwashers under the hex nuts.

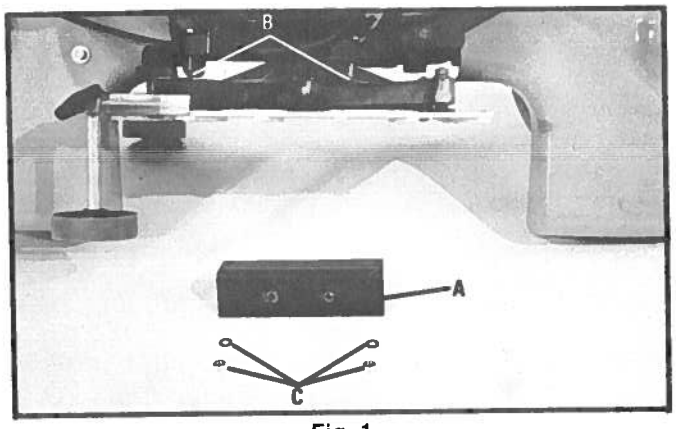


Fig. 1

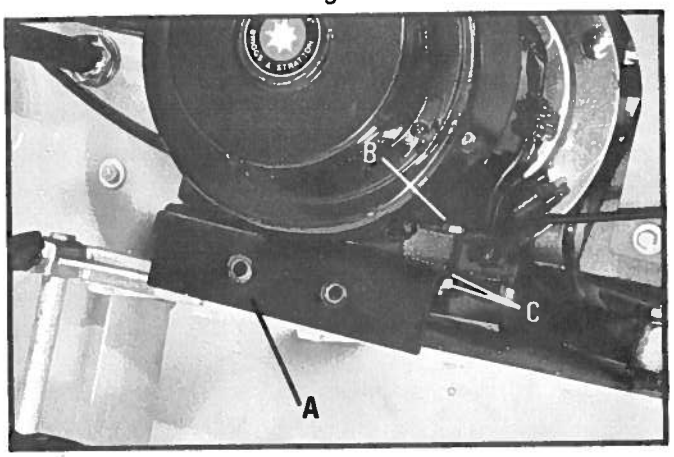


Fig. 2

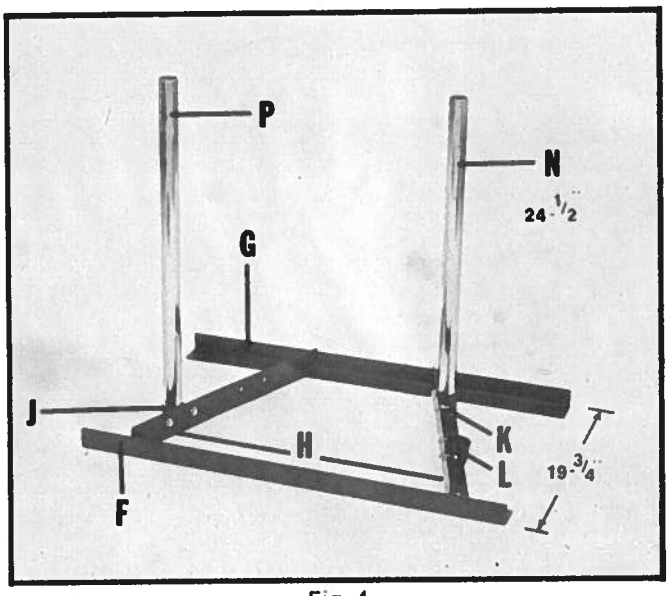


Fig. 4

6. Assemble the two support legs for the machine and table in the positions shown in Fig. 4. The shorter leg (N) measuring 24-1/2" must be inserted into clamp (K) on the side base angle. The longer leg (P) must be inserted into clamp (J) of the side base angle.

RESAW ASSEMBLY INSTRUCTIONS

Supplemental Sheet

Read before assembling.

1. Prior to standing the unit upright, two additional stabilizer braces (Items A & B, Fig. 1) from the engine base to the back covers must be removed. Remove the 1/4-20 hex head screws into the covers and the 5/16-18 hex head screws in the engine base. Keep all the parts and hardware as they will be needed later.

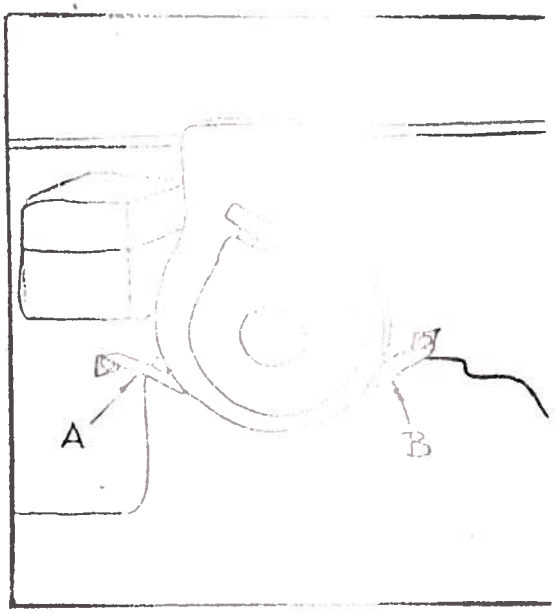


FIG. #1

2. After completing the assembly instructions outlined in the manual, an additional stabilizer brace (Item C, 3/16" thick x 1" wide x 12 3/16" long) has to be mounted (see Fig. 2). This brace runs from the right rear mounting hole in the engine base (Item D) to the center boss under the table casting (Item E). To assemble first remove the 5/16-18 x 1 1/4" bolt, washers and nut already in the engine base hole for attaching the engine support bracket (Item F). Place one end of the stabilizer brace under the bottom of the engine support bracket and assemble with the 5/16-18 x 1 1/2 bolt, washers and nut removed from the original stabilizer bracket in Step 1. (The 5/16-18 x 1 1/4 bolt just removed will not be used.) Attach the other end of the stabilizer brace to the center boss (Item E) (with the tapped hole) under the table casting, using the 5/16-18 x 7/8 hex head bolt, flat washer and lockwasher supplied.

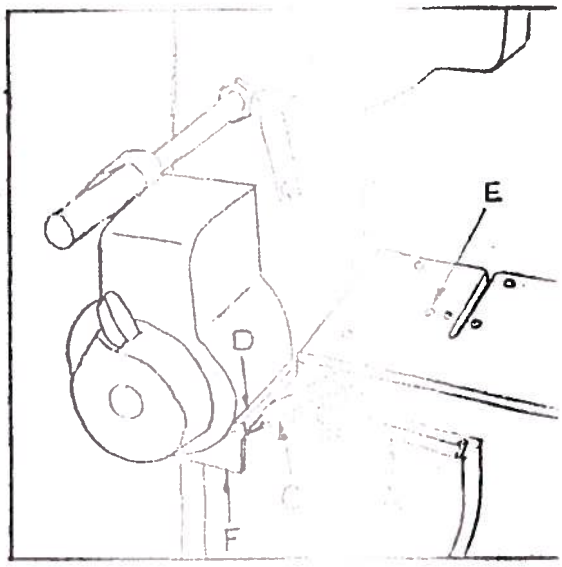


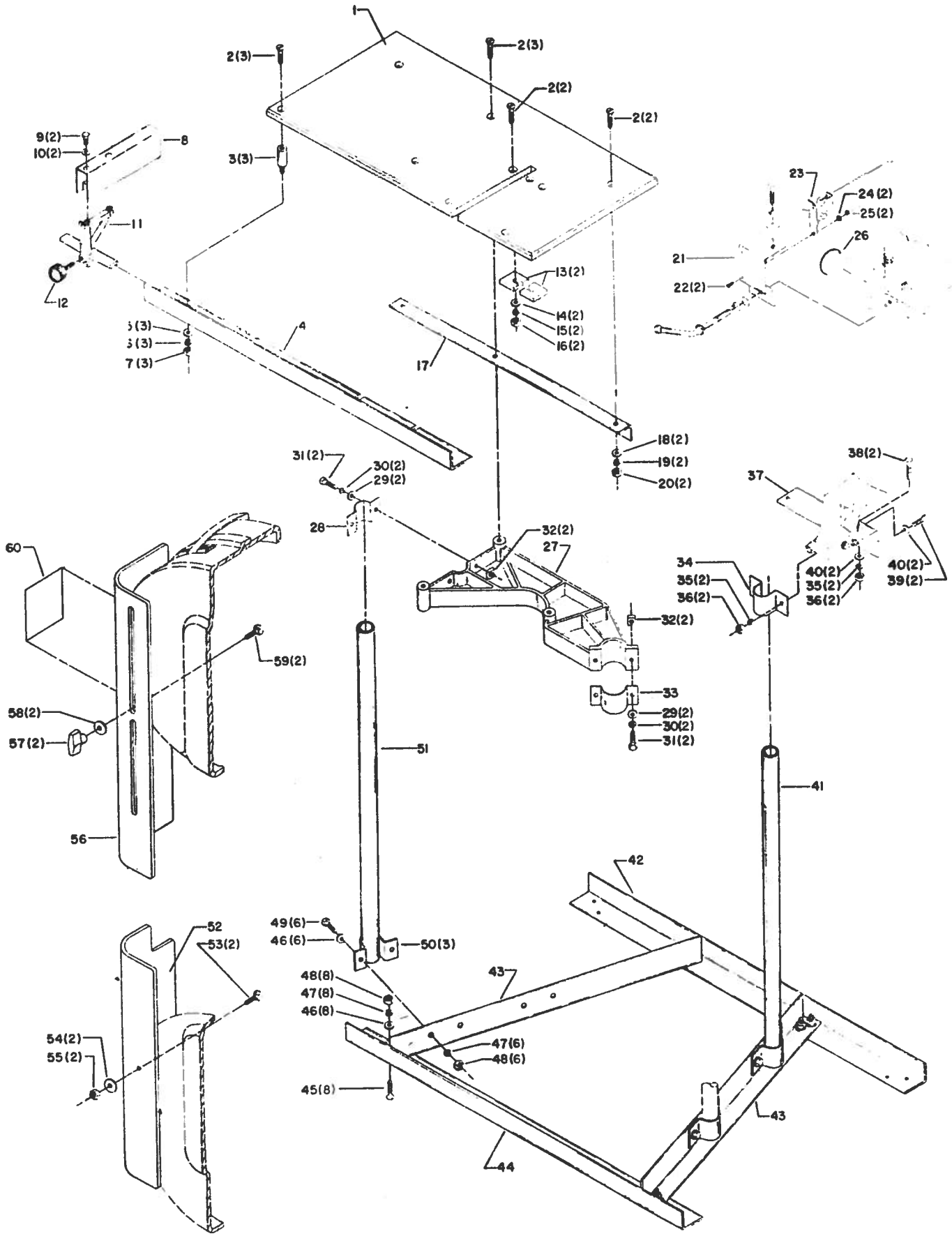
FIG. #2

3. Re-assemble the two screws which attached the original stabilizer braces (Items A & B, Fig. 2) to the back covers, by placing the brace flat against the cover and bolting it through the hole that was originally at the engine base. Assemble the one remaining 5/16-18 x 1 1/2 bolt removed from the original stabilizer braces in Step 1 in place of the other 5/16-18 x 1 1/4" bolt in the engine support bracket (Item F). When the unit is taken down from the resaw position back to the Sawmill position, these 5/16-18 x 1 1/2 bolts will be used to attach the stabilizer braces again.

DELTA

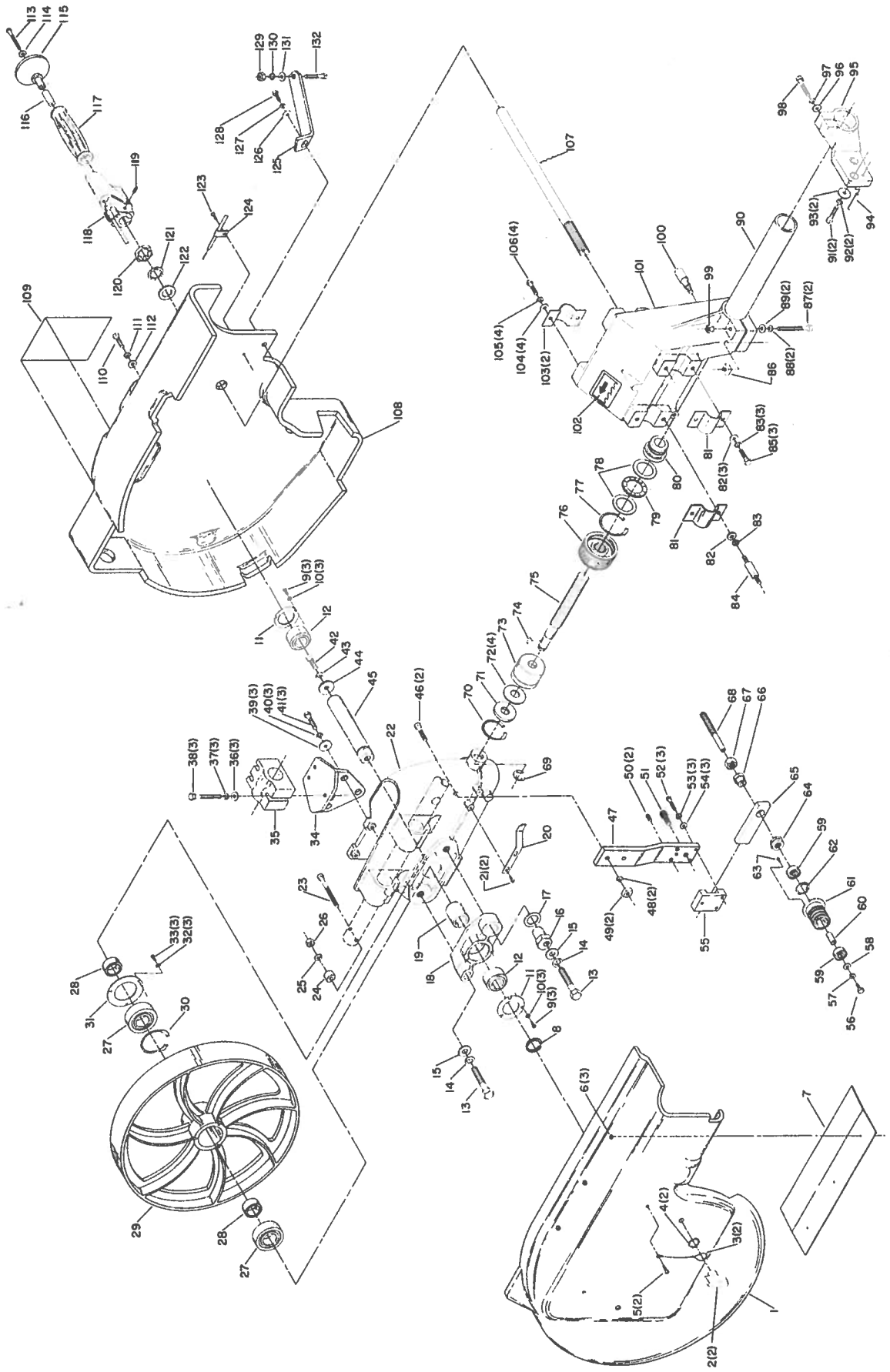
36-366
RESAW KIT FOR "THE LUMBER COMPANY"

LC-1-1
426-11-655-0002
Dated 4-5-85



REPLACEMENT PARTS

REF. NO.	PART NO.	DESCRIPTION
1	426-11-091-0001	Table
2	901-02-030-0431	5/16-18 x 1" Flat Hd Screw
3	426-11-104-0006	Spacer
4	426-11-055-0005	Fence Guide Rail
5	904-01-010-1604	5/16" Washer
6	904-02-010-1703	5/16" Lockwasher
7	902-01-010-1300	5/16-18 Hex Nut
8	426-11-343-0001	Fence Body Assembly
9	901-01-060-0605	5/16-18 x 1/2" Hex Hd Cap Screw
10	904-01-010-1620	11/32" Washer
11	419-96-084-0001	Fence Slide
12	432-02-411-0001	Knob Assembly
13	426-11-055-0004	Blade Guide
14	904-01-010-1604	5/16" Washer
15	904-02-010-1703	5/16" Lockwasher
16	902-01-010-1300	5/16-18 Hex Nut
17	426-11-129-0005	Rear Table Angle
18	904-01-010-1604	5/16" Washer
19	904-02-010-1703	5/16" Lockwasher
20	902-01-010-1300	5/16-18 Hex Nut
21	426-11-014-0009	Throttle Bracket
22	901-02-010-0561	#10-32 x 3/8" Rd Hd Screw
23	925-09-013-1446	Throttle Cable
24	904-03-030-1795	#10 External Tooth Lockwasher
25	902-01-120-1203	#10-32 Hex Nut
26	426-11-074-0001	Hole Plug
27	426-11-089-0006	Table Support
28	426-11-027-0001	Clamp
29	904-01-010-1604	5/16" Washer
30	904-02-010-1703	5/16" Lockwasher
31	901-01-060-0649	5/16-18 x 1" Hex Hd Cap Screw
32	902-02-040-1303	5/16-18 Sq Nut
33	426-11-027-0002	Clamp
34	426-11-027-0006	Clamp
35	904-02-010-1703	5/16" Lockwasher
36	902-01-010-1300	5/16-18 Hex Nut
37	426-11-014-0007	Engine Support Bracket
38	901-01-060-0602	5/16-18 x 1 1/4" Hex Hd Cap Screw
39	901-01-060-0649	5/16-18 x 1" Hex Hd Cap Screw
40	904-01-010-1604	5/16" Washer
41	426-11-066-0002	Engine Support Leg
42	429-11-129-0002	Rear Base Angle
43	426-11-129-0003	Side Base Angle
44	426-11-129-0001	Front Base Angle
45	901-02-030-0431	5/16-18 x 1" Flat Hd Screw
46	904-01-010-1604	5/16" Washer
47	904-02-010-1703	5/16" Lockwasher
48	902-01-010-1300	5/16-18 Hex Nut
49	901-01-060-0649	5/16-18 x 1" Hex Hd Cap Screw
50	426-11-027-0006	Clamp
51	426-11-066-0001	Table Support Leg
52	426-11-054-0003	Bottom Guard
53	901-11-020-0808	5/16-18 x 1" Carriage Bolt
54	904-01-031-7717	Special Washer
55	902-01-010-1300	5/16-18 Hex Nut
56	426-11-054-0002	Top Guard
57	424-12-060-0003	Knob
58	904-01-031-7717	Special Washer
59	901-11-020-0808	5/16-18 x 1" Carriage Bolt
60	426-11-754-0005	Warning Decal



REPLACEMENT PARTS

REF. NO.	PART NO.	DESCRIPTION
1	426-11-031-0009	Right Front Cover
2	424-12-060-0003	Knob
3	426-11-323-0001	Cable Assembly
4	426-11-079-0007	Ring
5	901-05-163-1229	#10-16 x 1/2" Pan Hd Hi-Lo Screw
6	903-03-023-1464	Rivet
7	426-11-072-0008	Front Cover Plate
8	904-15-013-1462	Retaining Ring
9	901-06-121-7381	#10-24 x 1/2" Thrd Form Pan Hd Screw
10	904-03-030-1795	#10 Ext Tooth Lockwasher
11	426-11-079-0003	Bearing Retainer
12	920-90-023-1410	Spherical Bearing
13	901-01-060-3112	1/2-13 x 2 1/2" Hex Hd Cap Screw
14	904-02-020-1705	1/2" Lockwasher
15	904-01-010-1636	1/2" Flat Washer
16	426-11-042-0001	Eccentric
17	426-11-104-0002	Eccentric Washer
18	426-11-072-0001	Tracking Plate
19	426-11-104-0003	Drive Wheel Spacer
20	426-11-132-0002	Tension Scale
21	901-06-121-7381	#10-24 x 1/2" Thrd Form Pan Hd Screw
22	426-11-349-0001	Tensioning Wheel Frame
23	901-01-060-5759	5/16-18 x 2 3/4" Hex Hd Cap Screw
24	422-04-104-0001	Spacer
25	904-02-010-1703	5/16" Lockwasher
26	902-01-010-1300	5/16-18 Hex Nut
27	920-04-010-7283	Bearing
28	426-11-104-0001	Bearing Spacer
29	426-11-100-0002	Tension End Wheel
30	904-15-101-7128	Retaining Ring
31	426-11-079-0001	Bearing Ring
32	904-03-030-1795	#10 Ext Tooth Lockwasher
33	901-06-121-7381	#10-24 x 1/2" Thrd Form Pan Hd Screw
34	426-11-014-0003	Guide Block Bracket
35	426-11-010-0001	Rail Guide Block
36	904-01-010-1604	5/16" Flat Washer
37	904-02-010-1703	5/16" Lockwasher
38	901-01-060-3125	5/16-18 x 2 1/2" Hex Hd Cap Screw
39	904-01-031-2937	5/16" Flat Washer
40	904-02-010-1703	5/16" Lockwasher
41	901-01-060-0602	5/16-18 x 1 1/4" Hex Hd Cap Screw
42	901-01-060-0642	3/8-16 x 1" Hex Hd Cap Screw
43	904-02-020-1704	3/8" Lockwasher
44	904-01-033-1407	Special Washer
45	426-11-106-0004	Tension Wheel Shaft
46	901-01-060-0602	5/16-18 x 1 1/4" Hex Hd Cap Screw
47	426-11-089-0012	Blade Roller Support
48	904-02-010-1703	5/16" Lockwasher
49	902-02-040-1303	5/16-18 Sq Nut
50	901-04-190-0207	5/16-18 x 1/2" Hex Soc Set Screw
51	901-03-010-0791	3/8-16 x 3/4" Soc Hd Cap Screw
52	901-01-060-0623	1/4-20 x 1" Hex Hd Cap Screw
53	904-02-020-1702	1/4" Lockwasher
54	904-01-010-1614	1/4" Flat Washer
55	426-11-010-0002	Guide Block
56	901-01-060-0611	1/4-20 x 1/2" Hex Hd Cap Screw
57	904-02-020-1702	1/4" Lockwasher
58	904-01-010-1614	1/4" Flat Washer
59	920-08-020-5352	Ball Bearing
60	426-11-104-0007	Spacer
61	426-11-080-0002	Roller
62	904-15-102-0174	Internal Retaining Ring
63	901-06-110-3000	#6-32 x 1/4" Rd Hd Self Tap Screw
64	426-11-079-0008	Nut
65	426-11-004-0003	Guide Bar
66	426-11-042-0002	Eccentric
67	902-01-020-1227	1/2-20 Hex Nut
68	426-11-111-0008	Stud
69	904-15-060-7443	E-Ring
70	904-15-103-1427	Inv. Internal Retaining Ring
71	426-11-072-0002	Tension Spring Plate
72	928-04-013-1408	Disc Spring Washer
73	426-11-031-0008	Tensioning Spring Housing
74	927-01-100-2619	1/8 x 1/2" Hi-Pro Key
75	426-11-112-0002	Tensioning Screw
76	426-11-079-0004	Tension Screw Nut
77	904-15-101-7128	Retaining Ring
78	920-45-023-1412	Thrust Washer
79	920-45-013-1411	Thrust Bearing
80	426-11-017-0001	Tension Screw Guide Bushing
81	426-11-027-0001	Clamp
82	904-01-010-1604	5/16" Flat Washer
83	904-02-010-1703	5/16" Lockwasher
84	426-11-111-0009	Front Cover Stud
85	901-01-060-0649	5/16-18 x 1" Hex Hd Cap Screw
86	902-02-040-1303	5/16-18 Sq Nut
87	901-01-060-3125	5/16-18 x 2 1/2" Hex Hd Cap Screw
88	904-02-010-1703	5/16" Lockwasher
89	904-01-010-1604	5/16" Flat Washer
90	426-11-089-0003	Frame Support Column
91	901-01-060-0602	5/16-18 x 1 1/4" Hex Hd Cap Screw
92	904-02-010-1703	5/16" Lockwasher
93	904-01-031-2937	5/16" Flat Washer
94	905-02-010-7105	1/40 x 1 1/4" Groove Pin
95	426-11-014-0001	Platen Support Bracket
96	904-01-010-1605	5/16" Flat Washer
97	904-02-010-1703	5/16" Lockwasher
98	901-01-060-0609	5/16-18 x 1 1/2" Hex Hd Cap Screw
99	902-01-010-1300	5/16-18 Hex Nut
100	426-11-111-0002	Cover Mounting Stud
101	426-11-049-0006	Right Stationary Wheel Frame
102	426-11-754-0007	Blade Direction Decal
103	426-11-027-0001	Clamp
104	904-01-010-1604	5/16" Flat Washer
105	904-02-010-1703	5/16" Lockwasher
106	901-01-060-0649	5/16-18 x 1" Hex Hd Cap Screw
107	426-11-138-0001	Handle
108	426-11-031-0007	Right Rear Cover
109	426-11-752-0007	Warning Label
110	901-01-060-0612	1/4-20 x 5/8" Hex Hd Cap Screw
111	904-02-020-1702	1/4" Lockwasher
112	904-01-031-4993	1/4" Flat Washer
113	901-02-010-0536	1/4-20 x 1 3/4" Rd Hd Screw
114	904-01-031-4993	1/4" Flat Washer
115	426-11-138-0006	Push Handle
116	426-11-079-0009	Retainer
117	426-11-138-0002	Grip
118	925-09-013-1465	Throttle Control
119	901-04-150-0232	1/4-20 x 3/8" Hex Soc Set Screw
120	902-10-013-1405	Pal Nut
121	904-03-023-1426	7/8" Int Tooth Lockwasher
122	904-01-031-5713	Special Washer
123	901-05-163-1229	#10-16 x 1/2" Pan Hd Hi-Lo Screw
124	426-11-027-0004	Throttle Cable Clamp
125	426-11-089-0007	Engine Support Brace
126	904-01-010-1614	1/4" Flat Washer
127	904-02-020-1702	1/4" Lockwasher
128	901-01-060-0623	1/4-20 x 1" Hex Hd Cap Screw
129	902-01-010-1300	5/16-18 Hex Nut
130	904-02-010-1703	5/16" Lockwasher
131	904-01-010-1604	5/16" Flat Washer
132	901-01-060-0609	5/16-18 x 1 1/2" Hex Hd Cap Screw
**	426-11-754-0004	Decal

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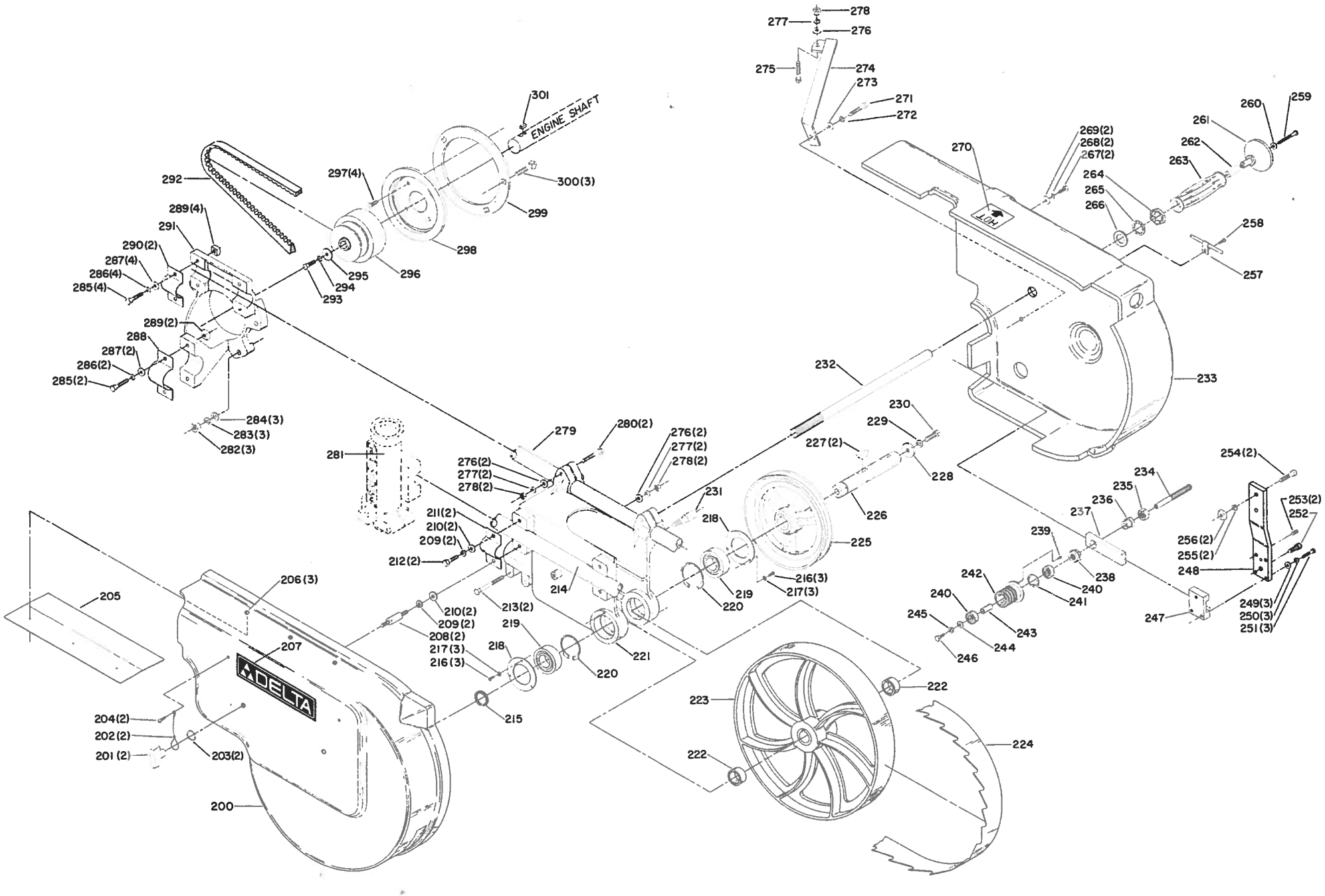
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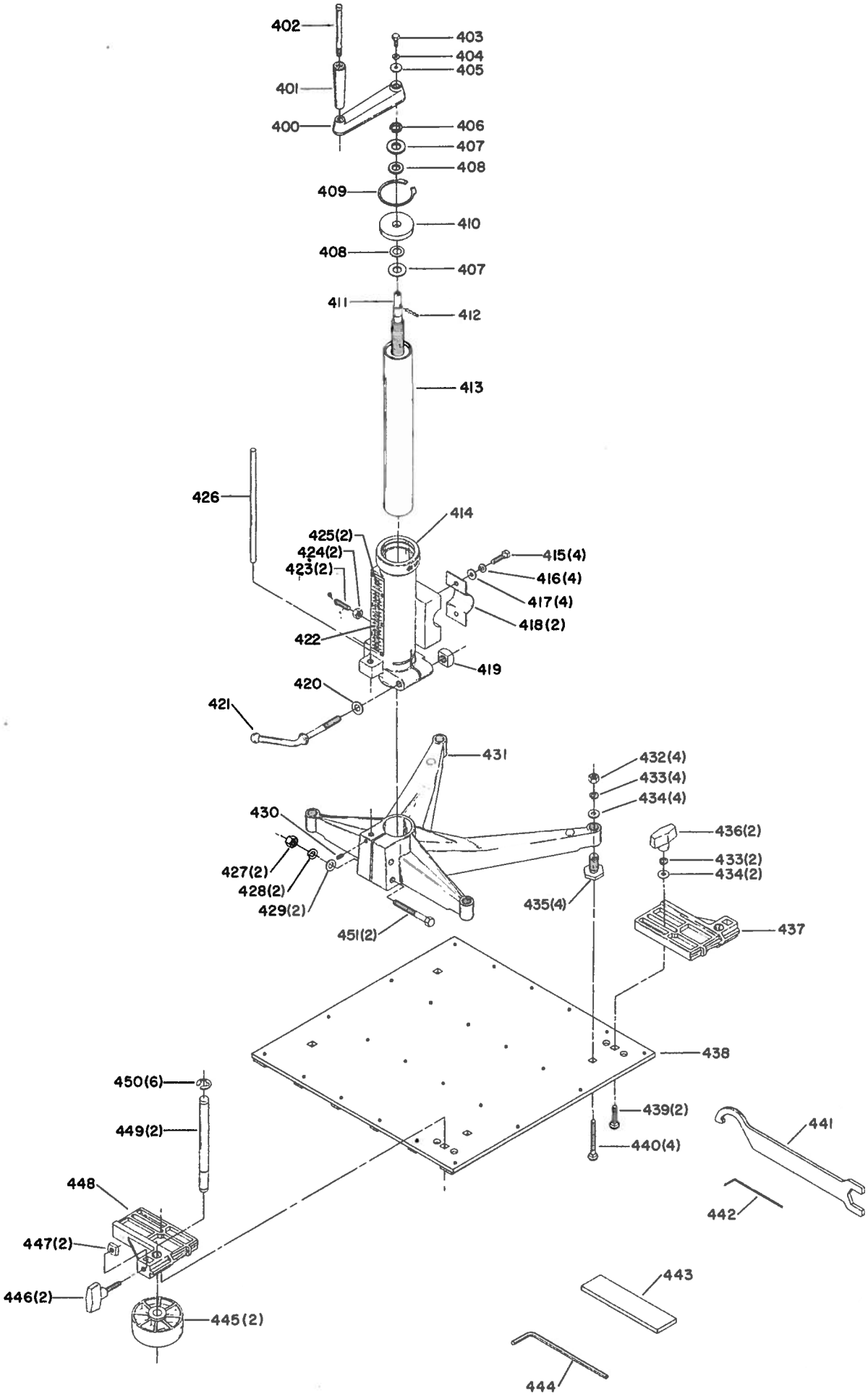
REPLACEMENT PARTS

REF. NO.	PART NO.	DESCRIPTION
200	426-11-031-0010	Left Front Cover
201	424-12-060-0003	Knob
202	426-11-323-0001	Cable Assembly
203	426-11-079-0007	Ring
204	901-05-163-1229	#10-16 x 1/2" Pan Hd Hi-Lo Screw
205	426-11-072-0008	Front Cover Plate
206	903-03-023-1464	Rivet
207	426-11-754-0001	Nameplate
208	426-11-111-0009	Front Cover Stud
209	904-02-010-1703	5/16" Lockwasher
210	904-01-010-1604	5/16" Flat Washer
211	426-11-027-0001	Clamp
212	901-01-060-0602	5/16-18 x 1 1/4" Hex Hd Cap Screw
213	901-01-060-3125	5/16-18 x 2 1/2" Hex Hd Cap Screw
214	426-11-089-0002	Upper Support Rail
215	904-15-013-1462	Retaining Ring
216	901-06-121-7381	#10-24 x 1/2" Thrd Form Pan Hd Screw
217	904-03-030-1795	#10 Ext Tooth Lockwasher
218	426-11-079-0001	Bearing Retainer
219	920-04-010-7283	Ball Bearing
220	904-15-101-7128	Retaining Ring
221	426-11-049-0004	Drive Wheel Frame
222	426-11-104-0001	Bearing Spacer
223	426-11-100-0001	Drive End Wheel
224	Accessory Item	Blade
225	426-11-130-0001	Pulley
226	426-11-106-0003	Drive Wheel Shaft
227	927-01-100-2640	1/4 x 1" Hi-Pro Key
228	904-01-033-1407	Special Washer
229	904-02-020-1704	3/8" Lockwasher
230	901-01-060-0642	3/8-16 x 1" Hex Hd Cap Screw
231	426-11-111-0002	Cover Mounting Stud
232	426-11-138-0001	Handle
233	426-11-031-0006	Left Rear Cover
234	426-11-111-0008	Stud
235	902-01-020-1227	1/2-20 Hex Nut
236	426-11-042-0002	Eccentric
237	426-11-004-0003	Guide Bar
238	426-11-079-0008	Nut
239	901-06-110-3000	#6-32 x 1/4" Rd Hd Self Tap Screw
240	920-08-020-5352	Ball Bearing
241	904-15-102-0174	Int. Retaining Ring
242	426-11-080-0002	Roller
243	426-11-104-0007	Spacer
244	904-01-010-1614	1/4" Flat Washer
245	904-02-020-1702	1/4" Lockwasher
246	901-01-060-0611	1/4-20 x 1/2" Hex Hd Cap Screw
247	426-11-010-0002	Guide Block
248	426-11-089-0012	Blade Roller Support
249	904-01-010-1614	1/4" Flat Washer
250	904-02-020-1702	1/4" Lockwasher
251	901-01-060-0623	1/4-20 x 1" Hex Hd Cap Screw
252	901-03-010-0791	3/8-16 x 3/4" Soc Hd Cap Screw
253	901-04-190-0207	5/16-18 x 1/2" Hex Soc Set Screw
254	901-01-060-0602	5/16-18 x 1 1/4" Hex Hd Cap Screw
255	904-02-010-1703	5/16" Lockwasher
256	902-02-040-1303	5/16-18 Sq Nut
257	426-11-027-0004	Throttle Cable Clamp
258	901-05-163-1229	#10-16 x 1/2" Pan Hd Hi-Lo Screw
259	901-02-010-0536	1/4-20 x 1 3/4" Rd Hd Screw
260	904-01-031-4993	1/4" Flat Washer
261	426-11-138-0006	Push Handle
262	426-11-079-0009	Retainer
263	426-11-138-0002	Grip
264	902-10-013-1405	Pal Nut
265	904-03-023-1426	7/8" Int Tooth Lockwasher
266	904-01-031-5713	Special Washer
267	901-01-060-0612	1/4-20 x 5/8" Hex Hd Cap Screw
268	904-02-020-1702	1/4" Lockwasher
269	904-01-031-4993	1/4" Flat Washer
270	426-11-754-0006	Decal
271	901-01-060-0623	1/4-20 x 1" Hex Hd Cap Screw
272	904-02-020-1702	1/4" Lockwasher
273	904-01-010-1614	1/4" Flat Washer
274	426-11-389-0001	Engine Support Brace
275	901-01-060-0609	5/16-18 x 1 1/2" Hex Hd Cap Screw
276	904-01-010-1604	5/16" Flat Washer
277	904-02-010-1703	5/16" Lockwasher
278	902-01-010-1300	5/16-18 Hex Nut
279	426-11-089-0004	Upper Back Support Rail
280	901-01-060-0613	5/16-18 x 1 3/4" Hex Hd Cap Screw
281	426-11-089-0013	Platen Column Support
282	902-01-010-5900	3/8-16 Hex Nut
283	904-02-020-1704	3/8" Lockwasher
284	904-01-010-1615	3/8" Flat Washer
285	901-01-060-0602	5/16-18 x 1 1/4" Hex Hd Cap Screw
286	904-02-010-1703	5/16" Lockwasher
287	904-01-010-1604	5/16" Flat Washer
288	426-11-027-0002	Engine Support Tubing Clamp
289	902-02-040-1303	5/16-18 Sq Nut
290	426-11-027-0001	Clamp
291	426-11-089-0005	Engine Support
292	426-11-133-0001	V-Belt
293	901-01-103-1425	5/16-24 x 3/4" Hex Hd Cap Screw
294	904-02-010-1703	5/16" Lockwasher
295	904-01-031-2937	5/16" Flat Washer
296	426-11-028-0001	Clutch
297	901-03-033-1404	5/16-24 x 3/4" Hex Soc Flat Hd Set Screw
298	426-11-096-0001	Engine Turret
299	426-11-079-0005	Engine Retainer Ring
300	901-11-020-0823	3/8-16 x 1 1/2" Carriage Bolt
301	927-03-011-3721	3/16 x 1/2" Key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REPLACEMENT PARTS

REF. NO.	PART NO.	DESCRIPTION
400	424-02-333-0008	Crank Assembly, Incl:
401	1086395	Grip
402	422-04-071-5002	Pin
403	901-01-060-0611	1/4-20 x 1/2" Hex Hd Cap Screw
404	904-02-020-1702	1/4" Lockwasher
405	904-01-031-4993	1/4" Flat Washer
406	904-15-012-0294	Retaining Ring
407	904-01-031-2923	5/8" Flat Washer
408	904-07-010-5564	5/8" Fiber Washer
409	904-15-101-7128	Retaining Ring
410	426-11-107-0001	Elevating Screw Hub
411	426-11-112-0003	Elevating Screw
412	905-01-010-2732	5/32 x 1" Roll Pin
413	426-11-330-0002	Column Assembly
414	426-11-089-0013	Platen Column Support
415	901-01-060-0649	5/16-18 x 1" Hex Hd Cap Screw
416	904-02-010-1703	5/16" Lockwasher
417	904-01-010-1604	5/16" Flat Washer
418	426-11-027-0001	Clamp
419	902-02-010-1304	7/16-14 Sq Nut
420	904-01-010-1638	7/16" Flat Washer
421	426-11-138-0005	Handle
422	426-11-132-0001	Platen Scale
423	901-04-193-1403	5/16-18 x 1" Brass Set Screw
424	902-01-010-1300	5/16-18 Hex Nut
425	901-06-110-3000	#6-32 x 1/4" Thrd Form Screw
426	426-11-108-0001	Platen Pointer Rod
427	902-01-010-5900	3/8-16 Hex Nut
428	904-02-020-1704	3/8" Lockwasher
429	904-01-010-1615	5/16" Flat Washer
430	901-04-150-0208	1/4-20 x 1/4" Hex Soc Set Screw
431	426-11-070-0001	Pedestal
432	902-01-010-1300	5/16-18 Hex Nut
433	904-02-010-1703	5/16" Lockwasher
434	904-01-010-1604	5/16" Flat Washer
435	426-11-111-0003	Leveling Stud
436	424-12-060-0003	Knob
437	426-11-014-0008	Platen Guide Bracket
438	426-11-373-0002	Platen Assembly
439	901-11-020-0830	5/16-18 x 1 1/2" Carriage Bolt
440	901-11-020-0820	5/16-18 x 2 1/4" Carriage Bolt
441	426-11-101-0002	Wrench
442	955-03-020-2167	Wrench
443	426-11-050-0002	Blade Gage
444	955-03-020-2200	Wrench
445	426-11-080-0001	Platen Guide Roller
446	426-11-438-0001	Knob w/Plug
447	902-02-040-1303	5/16-18 Sq Nut
448	426-11-014-0006	Platen Guide Bracket
449	426-11-110-0001	Platen Guide Post
450	904-15-061-7148	E-Ring
451	901-01-060-0644	3/8-16 x 2 1/2" Hex Hd Cap Screw

MAGNATRON
206 cc
5 h.p. at 3600 R/MIN
Model 132232
TYPE 0133 01
code 8406 2606

82.

Engine Manufactured by Briggs & Stratton Co., Inc.

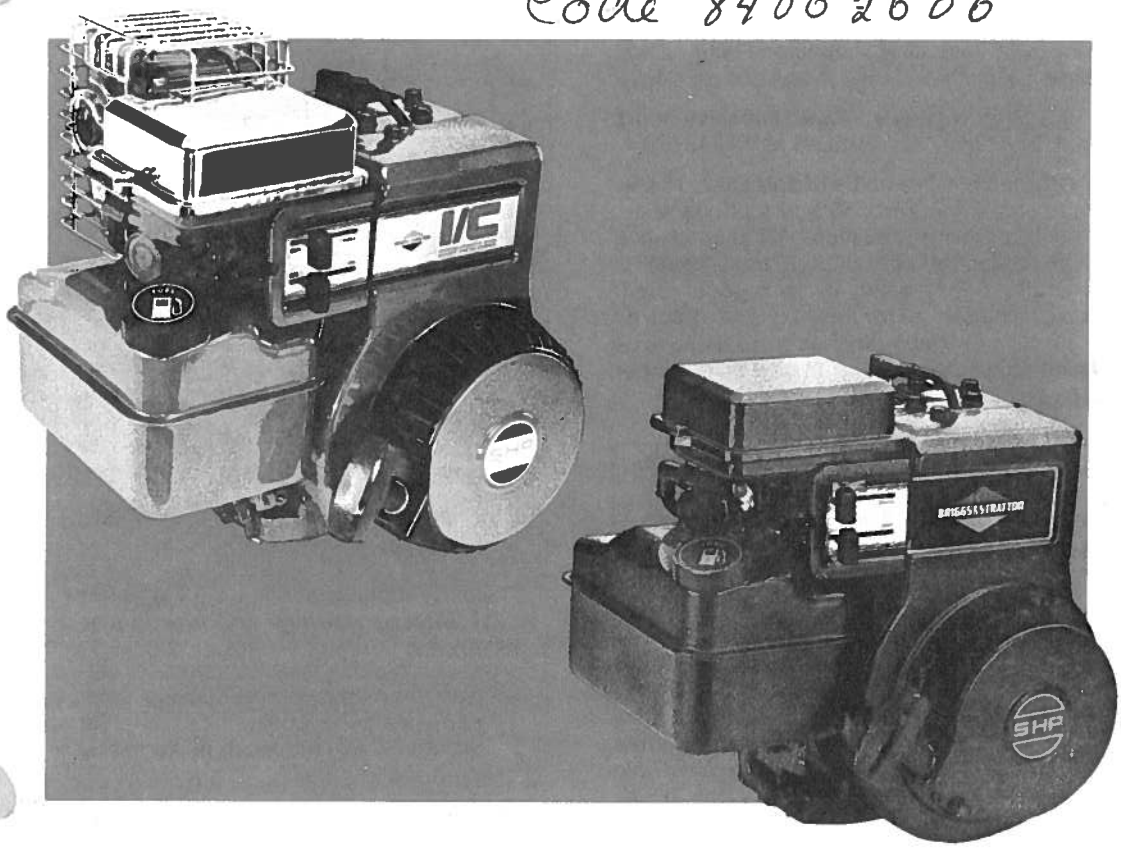
Please Refer to Engine Owner's Manual for Service Information.

Doug Roland

Operating and Maintenance Instructions

Model Series 130200, 132200

magnatron
206 cc
5h.p. at 3600 R/Min.
model 132232
type 0133 01
Code 84062606



Briggs & Stratton Corporation
Milwaukee, Wisconsin 53201

FORM NO. 271979-8/86
PRINTED IN U.S.A.

IN THE INTEREST OF SAFETY

WARNING: DO NOT RUN THE ENGINE IN AN ENCLOSED AREA. Exhaust gases contain carbon monoxide, an odorless and deadly poison.

A FIRE OR EXPLOSION CAN OCCUR RESULTING IN PERSONAL INJURY IF THE FOLLOWING INSTRUCTIONS ARE NOT FOLLOWED:

1. DO NOT FILL GASOLINE TANK while engine is running. Allow engine to cool for two minutes before refueling.
2. DO NOT operate the engine when an odor of gasoline is present or other explosive conditions exist.
3. If gasoline is spilled, move machine away from the area of the spill and avoid creating any source of ignition until the gasoline has evaporated.
4. DO NOT STORE, SPILL OR USE GASOLINE NEAR AN OPEN FLAME, or devices such as a stove, furnace, water heater which utilize a pilot light, or devices which can create a spark.
5. Refuel outdoors preferably, or only in well ventilated areas.
6. DO NOT OPÉRATE ENGINE WITHOUT A MUFFLER. Inspect muffler periodically and replace, if necessary.
7. Periodically clean the muffler area to prevent grass, dirt and combustible material from accumulating.
8. DO NOT use this engine on any forest covered, brush covered or grass covered unimproved land unless a spark arrester is attached to the muffler.
9. DO NOT operate the engine if air cleaner or cover directly over the carburetor air intake is removed.
10. DO NOT choke carburetor to stop the engine.

CAUTION: DO NOT RUN ENGINE AT EXCESSIVE SPEEDS. Operating an engine at excessive speeds increases the danger of personal injury.

1. DO NOT TAMPER WITH GOVERNOR SPRINGS, GOVERNOR LINKS OR OTHER PARTS WHICH MAY INCREASE THE GOVERNED ENGINE SPEED.
2. A.N.S.I. Standard Safety Specifications for r power lawn mowers specify a maximum blad speed of 19,000 feet per minute (96.5 meters per second), primarily to reduce the danger from thrown objects.
3. DO NOT tamper with the engine speed selected by the original equipment manufacturer.
4. DO NOT TOUCH hot mufflers, cylinders or fins as contact may cause burns.
5. Dirt and grass clippings or other debris, in cooling fins or governor parts can affect engine speed. See cleaning instructions in MAINTENANCE section.
6. TO PREVENT HAND OR ARM INJURY, always pull starter cord rapidly to avoid kickback; starting engine with a loose blade or without a blade may cause a severe kickback.
7. ALWAYS KEEP HANDS AND FEET CLEAR OF MOVING OR ROTATING PARTS.
8. TO PREVENT ACCIDENTAL STARTING when servicing the engine or equipment, always remove the spark plug or wire from the spark plug and insert in holding tab shown on page 3. Disconnect negative wire from battery terminal if equipped with a 12 volt starting system.

WHEN WORKING ON EQUIPMENT

DO NOT STRIKE FLYWHEEL with a hard object or metal tool as this may cause flywheel to shatter in operation, causing personal injury or property damage. To remove flywheel, use Briggs & Stratton approved tools only.

IN THE INTEREST OF ENVIRONMENT

A muffler which leaks because of rust or damage can permit an increased exhaust noise level. Therefore, examine the muffler periodically to be sure it is functioning effectively. To purchase a new muffler, see SERVICE AND REPAIR INFORMATION.

CAUTION: If this engine is not equipped with a spark arrester and is to be used on any forest covered, brush covered, or grass covered unimproved land, before using on such land a spark arrester must be added to the muffler. The arrester must be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. See your Authorized Briggs & Stratton Service Center for spark arrester muffler options.

THIS SYMBOL MEANS WARNING or CAUTION. PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY OCCUR UNLESS INSTRUCTIONS ARE FOLLOWED CAREFULLY.

SERVICE & REPAIR INFORMATION

Service or repair is needed, contact an Authorized Briggs & Stratton Service Center. To serve you promptly and efficiently, the Service Center will need the model, type and code number on your engine.

Each Authorized Service Center carries a stock of original Briggs & Stratton repair parts and is equipped with special service tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines.

Major engine repairs should not be attempted unless you have the proper tools and a thorough knowledge of internal combustion engine repair procedure.

Your nearest service center is listed in the "Yellow Pages" under "Engines, Gasoline" or "Gasoline Engines". He is one of over 25,000 authorized dealers available to serve you.

This illustrated book includes "Theories of Operation", common specifications and detailed information covering the adjustment, tune-up and repair procedures for 2 through 16 H.P. single cylinder, 4 cycle models. It is available from any Authorized Briggs & Stratton Service Center. Order as Part Number 270962.

GENERAL INFORMATION

These engines are single-cylinder L-head, air-cooled type.

MODEL SERIES 130200 and 132200

Bore..... 2-9/16" (65.09 mm)
Stroke ..... 2-7/16" (61.91 mm)
Displacement ..... 12.57 cu. in. (206.0 cc)
Horsepower Max..... 5.0 @ 3600 RPM
Torque (Ft.-Lbs.) Max..... 7.66 @ 3000 RPM

The horsepower ratings listed are established in accordance with the Society of Automotive Engineers Test Code-J607. For practical operation, the horsepower loading should not exceed 85% of these ratings. Engine power will decrease 3-1/2% for each 1,000 feet (304.8 m) above sea level and 1% for each 10° above 60°F (16°C).

In some areas, local law requires the use of a resistor spark plug so as to suppress ignition signals. If an engine was originally equipped with a resistor spark plug, be sure to use the same type of spark plug for replacement.

TUNE-UP SPECIFICATIONS

Spark Plug Type	Champion	Autolite
Short Plug	CJ-8	235
Long Plug	J-8C	295
Resistor Short Plug	RCJ-8	245
Resistor Long Plug	RJ-8C	306

Spark Plug Gap ..... .030" (.76 mm)
Intake Valve
Clearance ..... .005"-.007" (.13-.18 mm)
Exhaust Valve
Clearance ..... .009"-.011" (.23-.28 mm)

WARNING: For electrical safety, always remove cable from negative (-) side of the battery before attempting any repairs or maintenance.

STORAGE INSTRUCTIONS

Engines to be stored over 30 days should be completely drained of fuel to prevent gum deposits forming on essential carburetor parts, fuel filter and tank.

NOTE: The use of a fuel additive, such as STA-BIL ® or an equivalent, will minimize the formation of fuel gum deposits during storage. Such an additive may be added to the gasoline in the fuel tank of the engine, or to the gasoline in a storage container.

a. All fuel should be removed from the tank. Run the engine until it stops from lack of fuel.

b. While engine is still warm, drain oil from crankcase. Refill with fresh oil.

c. Remove spark plug, pour approximately 1/2 ounce (15 cc) of engine oil into cylinder and crank slowly to distribute oil. Replace spark plug.

d. Clean dirt and chaff from cylinder, cylinder head fins, blower housing, rotating screen and muffler areas.

e. Store in a clean and dry area.

f. Charge battery and store as recommended by the manufacturer, if so equipped.

BRIGGS & STRATTON ENGINES ARE MADE UNDER ONE OR MORE OF THE FOLLOWING PATENTS
2,999,491 3,305,223 3,526,146 3,625,492 3,745,393 3,971,353 4,233,043
3,194,224 3,457,804 3,572,218 3,650,354 3,961,724 4,168,288 4,270,509
3,276,439 3,465,740 3,625,071 3,738,345 3,968,854 4,189,040

DESIGN
D-247,177
OTHER PATENTS PENDING

BEFORE STARTING

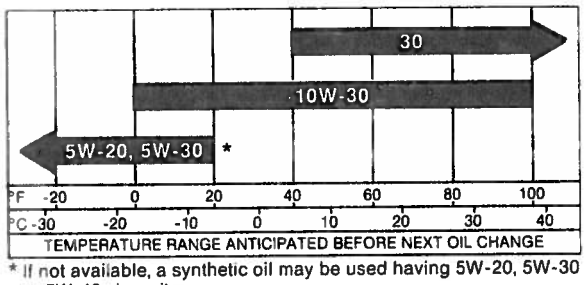
READ THE OPERATING INSTRUCTIONS OF THE EQUIPMENT THIS ENGINE POWERS

OIL RECOMMENDATIONS

Note: Engine is shipped WITHOUT oil.

Use a high quality detergent oil classified "For Service SF, SE, SD or SC." Detergent oils keep the engine cleaner and retard the formation of gum and varnish deposits. No special additives should be used with recommended oils.

RECOMMENDED SAE VISCOSITY GRADES



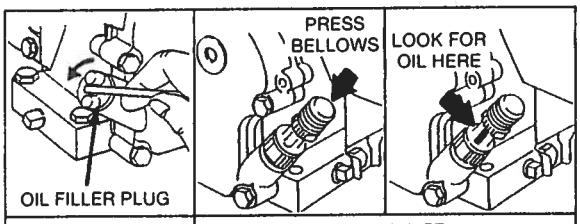
* If not available, a synthetic oil may be used having 5W-20, 5W-30 or 5W-40 viscosity.

NOTE: 10W-40 oil may be used if 10W-30 is not available.

TO FILL CRANKCASE WITH OIL

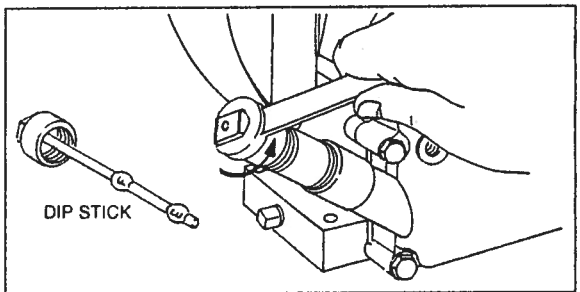
Place engine level. Clean area around oil fill before removing oil fill plug or oil minder.

OIL FILL PLUG. Remove oil fill plug or (optional) oil-minder. Fill crankcase to point of overflowing. POUR SLOWLY. Capacity approximately 1-1/4 pints (0.6 liters). Replace oil fill plug or oil-minder.



OIL FILL PLUG | OIL-MINDER

EXTENDED OIL FILL (Optional). Remove cap and dipstick. **FILL TO FULL MARK** on dipstick, POUR SLOWLY. Capacity approximately 1-1/4 pints (0.6 liters). When checking oil level, screw dipstick assembly firmly but slowly until cap bottoms on tube. **DO NOT OVERFILL** or excessive smoking may occur when engine is run. Dipstick assembly must be securely assembled to tube at all times when engine is operating.



EXTENDED OIL FILL

CHARGE BATTERY

Charge battery before use on engines equipped w (OPTIONAL) 12V electric starter motor. See manu facturer's recommendations.

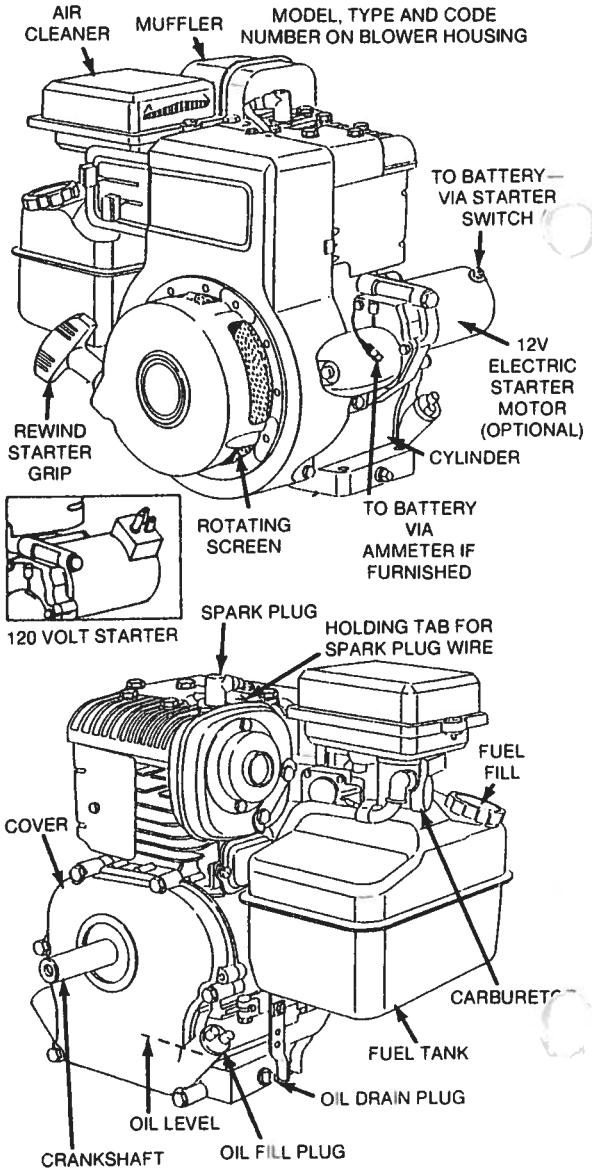
FUEL RECOMMENDATIONS

Our engines will operate satisfactorily on any gasoline intended for automotive use. DO NOT MIX OIL WITH GASOLINE.

We recommend the use of clean, fresh, lead-free gasoline. Leaded gasoline may be used if lead-free is not available. A minimum of 77 octane is recommended. The use of lead-free gasoline results in fewer combustion deposits and longer valve life.

NOTE: We DO NOT recommend the use of gasoline which contains alcohol, such as gasohol. However, if gasoline with alcohol is used, it MUST NOT contain more than 10 percent Ethanol and MUST be removed from the engine during storage. DO NOT use gasoline containing Methanol. See STORAGE INSTRUCTIONS.

DO NOT fill fuel tank to point of overflowing. Allow approximately 1/4" of tank space for fuel expansion.



FORM NO. 271979-8/86
PRINTED IN U.S.A.

STARTING

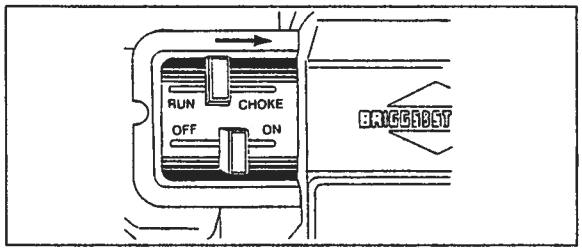
Start store and fuel engine in a level position.

DO NOT use a pressurized starting fluid as severe internal engine damage may occur due to loss of lubrication.

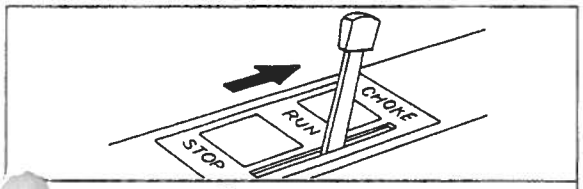
CHOKE ENGINE:

Engine may be equipped with either Manual or Choke-A-Matic or Remote controls.

MANUAL CHOKE: Move lever as illustrated.



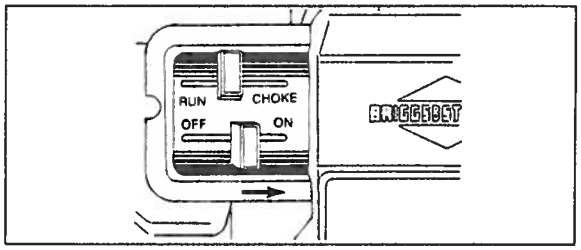
CHOKE-A-MATIC — Move controls as far as possible toward "CHOKE" or "START".



TYPICAL CONTROL

NOTE: Engine may not start if controls on powered equipment do not close choke fully. See ADJUSTMENT section.

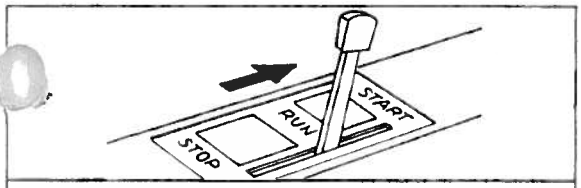
STOP SWITCH: Move STOP switch to "ON" position as illustrated, if so equipped.



CAUTION: DO NOT operate engine with lever in partial choke position. Excessive speeds may occur.

NOTE: A warm engine requires less choking than a cold engine.

SPEED CONTROL LEVER: Move speed control lever to "RUN," "FAST" or "START" position if so equipped.



TYPICAL SPEED CONTROL

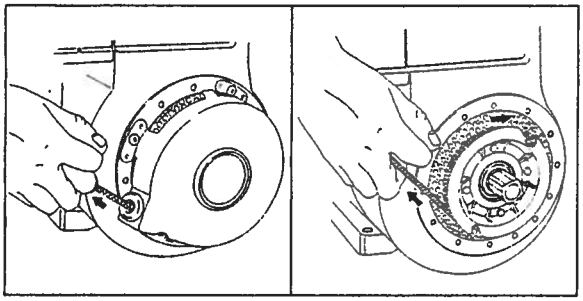
TO START ENGINE

WARNING: ALWAYS KEEP HANDS AND FEET CLEAR OF MOWER BLADE OR OTHER ROTATING MACHINERY.

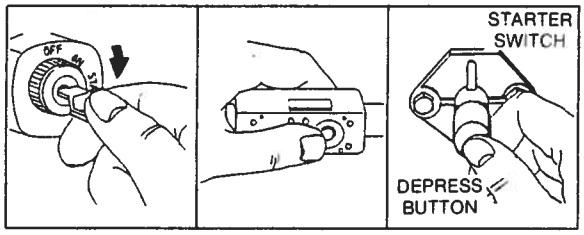
Rewind Starter. (Can be used to start engine if the battery is run low or if engine cannot be started electrically. Place engine controls in "START" and key in "ON" position.) Grasp starter grip as illustrated and pull slowly until starter engages. Then pull cord rapidly to overcome compression, prevent kickback and start engine. Repeat if necessary with choke opened slightly. When engine starts, open choke gradually.

Rope Starter. Wind the starter rope around the pulley in direction shown by arrow. Pull the rope with a quick full arm stroke to overcome compression and prevent kickback. Repeat if necessary with choke opened slightly. When engine starts open choke gradually.

CAUTION: When using rope starter to crank engine, use caution so knotted end of rope does not strike persons standing nearby.



Electric Starter. On engines equipped with 12 volt starting systems, turn key to "START" position or press starter button. On engines equipped with 120 volt starting systems, press "ON" button of conductor cord's integral "ON-OFF" switch. Release as soon as engine starts and gradually open choke.



TIPS TO OBTAIN BEST STARTING PERFORMANCE:

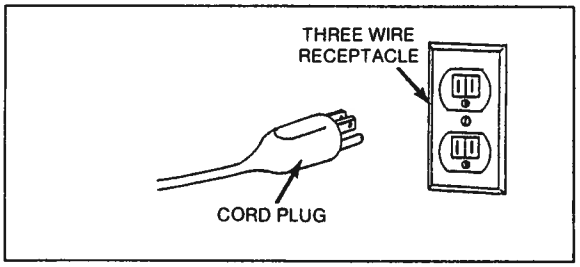
1. The best starter life is provided by using short starting cycles of several seconds. Prolonged cranking can damage the starter motor if cranked more than 15 seconds per minute.

2. Keep the battery fully charged. This assures quick and easy starts.

3. Disengage load from engine during start.

STARTING (Cont.)

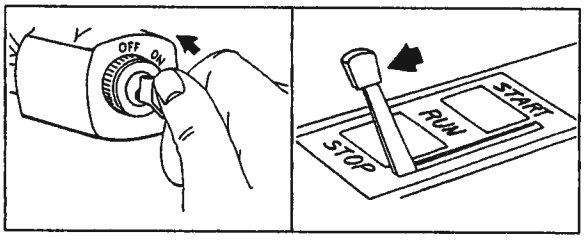
CAUTION: The 120 volt electric starter is equipped with a three-prong plug for your safety. The longer prong in this plug is connected to the starter motor housing. When the starter motor is plugged into the three wire cord supplied, and the cord is plugged into a properly grounded receptacle, it will protect the user from shock should the starter motor insulation fail for any reason. If a longer extension cord is used with this starter, it should also have three-prong and three-hole plugs.



TO STOP ENGINE

Move control to SLOW, then STOP position if equipped. Turn key or switch to STOP or OFF position. Do not choke carburetor to stop the engine.

CAUTION: Always remove key from switch when leaving equipment unattended or when equipment is not in use.



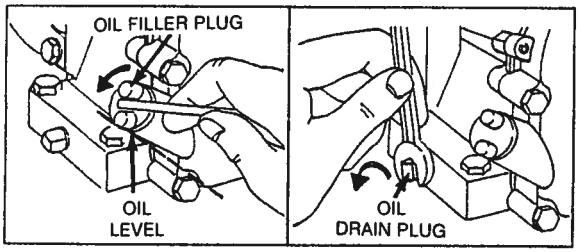
When equipment is not in operation, provide protection from direct exposure to weather.

MAINTENANCE

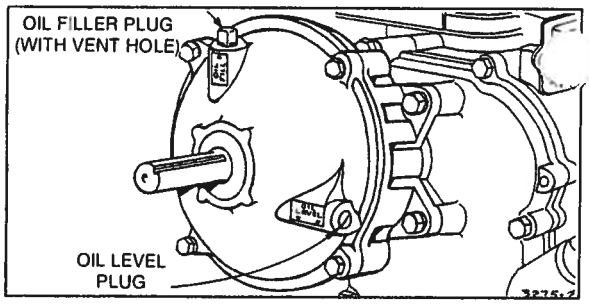
CAUTION: TO PREVENT ACCIDENTAL STARTING when servicing the engine or equipment, always remove the spark plug or wire from the spark plug and insert in holding tab shown on page 3. Disconnect negative wire from battery terminal, if equipped with 12 volt starting system.

CHECK OIL LEVEL regularly — after each five hours of operation. BE SURE OIL LEVEL IS MAINTAINED.

CHANGE OIL after first five hours of operation. Thereafter change engine oil every 50 hours of operation, under normal operating conditions. Change engine oil every 25 hours of operation if the engine is operated under heavy load, or in high ambient temperatures. Remove oil drain plug and drain oil while engine is warm. Replace drain plug. Remove oil fill plug or oil-minder and refill with new oil of proper grade. Replace oil fill plug or oil-minder.



CHANGE OIL (GEAR REDUCTION optional). Remove oil level plug and oil fill plug. Drain oil every 100 hours of operation. To refill, pour 10W-30 oil into filler hole until it runs out level check hole. Replace both plugs. Oil fill plug has a vent hole and must be installed on top of gear case cover.



TO SERVICE AIR CLEANER

Clean cartridge at three month intervals or every 25 hours, whichever occurs first.

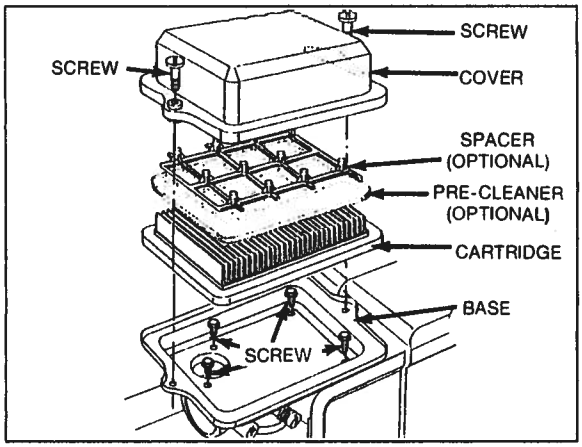
NOTE: Service more often under dusty conditions.

CARTRIDGE AIR CLEANER

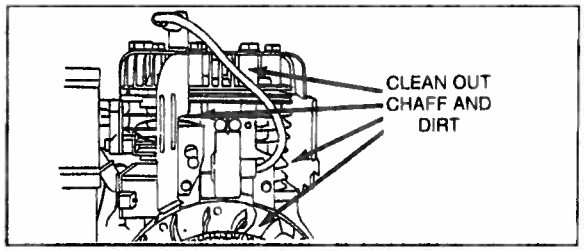
1. Loosen screws and tilt cover as illustrated.
2. Carefully remove pre-cleaner (when so equipped) and cartridge.
3. Clean by tapping gently on a flat surface. If very dirty, replace cartridge and pre-cleaner or clean as follows:
   a. Wash in a low or non-sudsing detergent and warm water solution. CAUTION: Do not use petroleum solvents such as kerosene, to clean cartridge.
   b. Rinse throughly with flowing water from inside out until water is clear.

c. Allow cartridge and pre-cleaner (when so equipped) to stand and air dry throughly before using. DO NOT OIL CARTRIDGE OR PRE—CLEANER (WHEN SO EQUIPPED). DO NOT USE PRESSURIZED AIR TO CLEAN OR DRY CARTRIDGE.

4. Install cartridge, and pre-cleaner (when so equipped) then close cover and fasten screws securely.

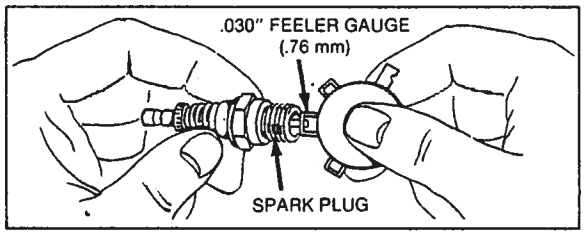


CLEAN COOLING SYSTEM—Grass, chaff or dirt may clog the rotating screen and the air cooling system, especially after prolonged service cutting dry grass. Yearly or every 100 hours, whichever occurs first, remove the blower housing and clean the area shown to avoid overspeeding, overheating and engine damage. Clean more often if necessary.



WARNING: Periodically clean muffler area to remove all grass, dirt and combustible debris.

SPARK PLUG—Clean and reset gap at .030" every 100 hours of operation.



NOTE: Do not blast clean spark plug. Spark plug should be cleaned by scraping or wire brushing and washing with a commercial solvent.

CAUTION: Sparking can occur if wire terminal does not fit firmly on spark plug, or if stop switch vibrates against spark plug. Reform terminal or repair switch if necessary.

REMOVE COMBUSTION DEPOSITS every 100-300 hours of operation. Remove cylinder head and cylinder head shield. Scrap and wire brush the combustion deposits from cylinder, cylinder head, top of piston and around valves. Use a soft brush to remove deposits. Re-assemble gasket, cylinder head and cylinder head shield. Turn screws down finger tight, with the three longer screws around the exhaust valve, if so equipped. Torque cylinder head screws in a staggered sequence to 140 inch pounds (15.82 Nm).

SPARK ARRESTER EQUIPPED MUFFLER — If engine muffler is equipped with spark arrester screen assembly, remove every 50 hours for cleaning and inspection. Replace if damaged.

CLEAN ENGINE — Remove dirt and debris with a cloth or brush. Cleaning with a forceful spray of water is not recommended as water could contaminate the fuel system.

ADJUSTMENTS

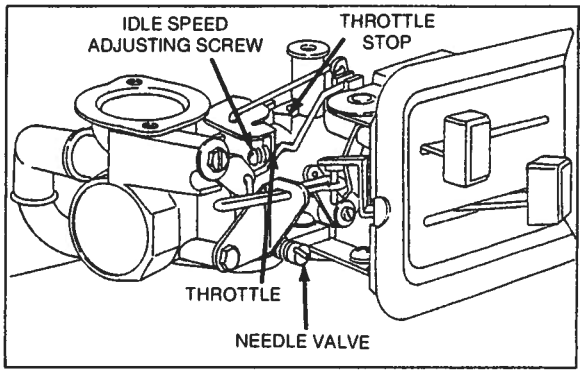
CARBURETOR ADJUSTMENTS

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude or load.

NOTE: The air cleaner must be assembled to carburetor when running engine.

TO ADJUST CARBURETOR — Gently turn valve clockwise until it just closes. Valve may be damaged by turning it in too far.

Open needle valve 1-1/2 turns counterclockwise. The initial adjustment will permit the engine to be started and warmed up (approximately 5 minutes) prior to final adjustment.



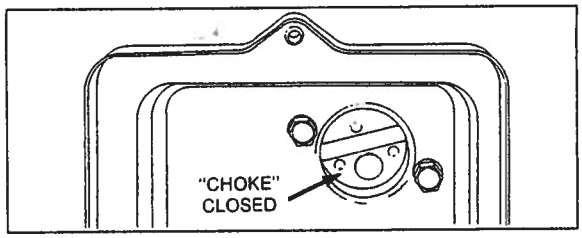
Place speed control in "SLOW" position. Turn needle valve in until engine slows (clockwise - lean mixture). Then turn it out past smooth operating point until engine runs unevenly (rich mixture). Now turn needle valve to the midpoint between rich and lean so the engine runs smoothly. Next adjust idle RPM. Rotate throttle counterclockwise and hold against stop while adjusting idle speed screw to obtain 1750 RPM. Release throttle. Engine should accelerate without hesitation or sputtering. If engine does not accelerate properly, the carburetor should be readjusted, usually to a slightly richer mixture.

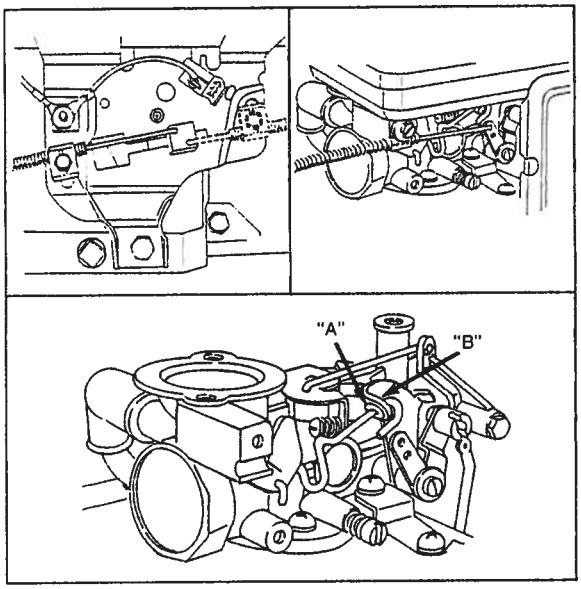
CONTROL ADJUSTMENTS

Proper choke and speed control operation is dependent upon correct adjustment of speed controls on the powered equipment.

TO CHECK OPERATION OF CHOKE CONTROLS:

Remove air cleaner. Move speed control lever to "CHOKE" position. Choke should be fully closed as shown. Replace air cleaner.





To Adjust:

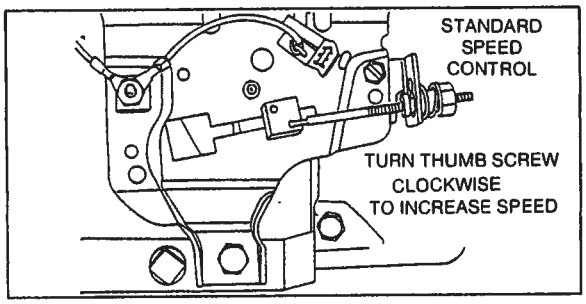
Place speed control lever on equipment in "FAST" position. Choke operating link washer "A" should be just touching bell crank lever at "B." See illustration.

SPEED CONTROL ADJUSTMENT

The acceptable operating speed range is 1800 to 3600 RPM. Idle speed is 1750 RPM. The manufacturer of the equipment on which the engine is used, specifies the top governed no load speed at which the engine may be operated. DO NOT EXCEED this speed.

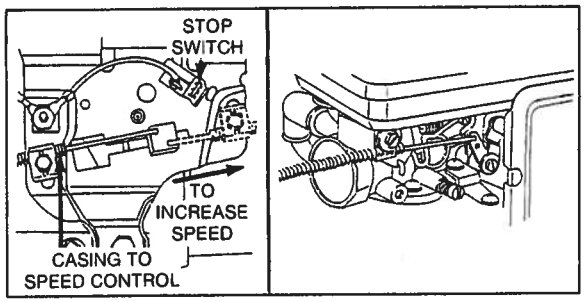
STANDARD SPEED CONTROL ADJUSTMENT

Speed adjusting thumb nut is located on side of engine. To increase speed, turn thumb nut clockwise.



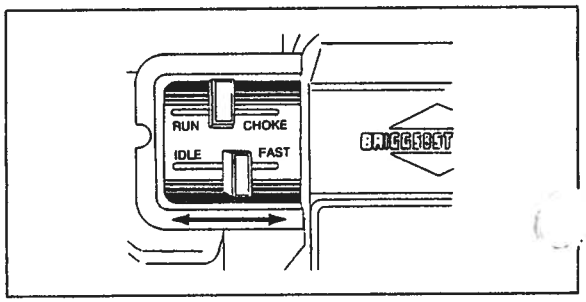
SPEED CONTROL

Controls on powered equipment should move governor speed control lever in direction illustrated to increase speed. Casing from speed controls may be connected to engine at points indicated. Wire travel is shown by arrows. Lever must make good contact with stop switch, if so equipped.



MANUAL SPEED CONTROL

Move knob as shown to change engine speed.



BRIGGS & STRATTON®

FORM MS-8506-4/90
REPLACES FORM MS-8506-8/88
FILE IN SECT. 2 OF SERVICE MANUAL

Illustrated Parts List
Industrial/Commercial
Model Series
132200 to 132299

TYPE NUMBERS
0111 through 0147
0200 through 0218
0222 through 0268
2035 through 2038
and 2049
2130 through 2143
2149, 2150, 2175

TO FIND

THE CORRECT NUMBER OF THE PART YOU NEED:

FOLLOW THE INSTRUCTIONS BELOW

A. Refer to Engine Model, Type and Code Number that is stamped on the blower housing of engine. Engine type numbers such as 012301 are listed herein only as 0123. The two digits (01 or 02, etc.) to the right of the space are not needed for parts identification. Then use the Illustrated Parts List covering the Model Series.

B. Refer to Illustrated Parts section and compare the old part with illustration. The number on the illustration is the Reference Number. Assemblies include all parts shown in frames. All parts shown in assembly frames on which individual reference numbers are given can be purchased separately.

C. After the Reference Number has been identified, refer to the Numerical Parts List, where Reference and Master Part Number are listed. THE MASTER PART IS USED ON ALL TYPE NUMBERS EXCEPT THOSE TYPE NUMBERS UNDER "NOTE".

D. If a "Note" appears below the Master Part Number, this means that this part differs from the Master Part for certain types. If the Type number is listed under "Note", order the part referred to.

E. If the Engine Type Number does not appear after any part number listed under "Note", use the Master Part Number.

F. For Type Numbers higher than those covered by this book, please refer to the factory if you are unable to identify the part by comparison.

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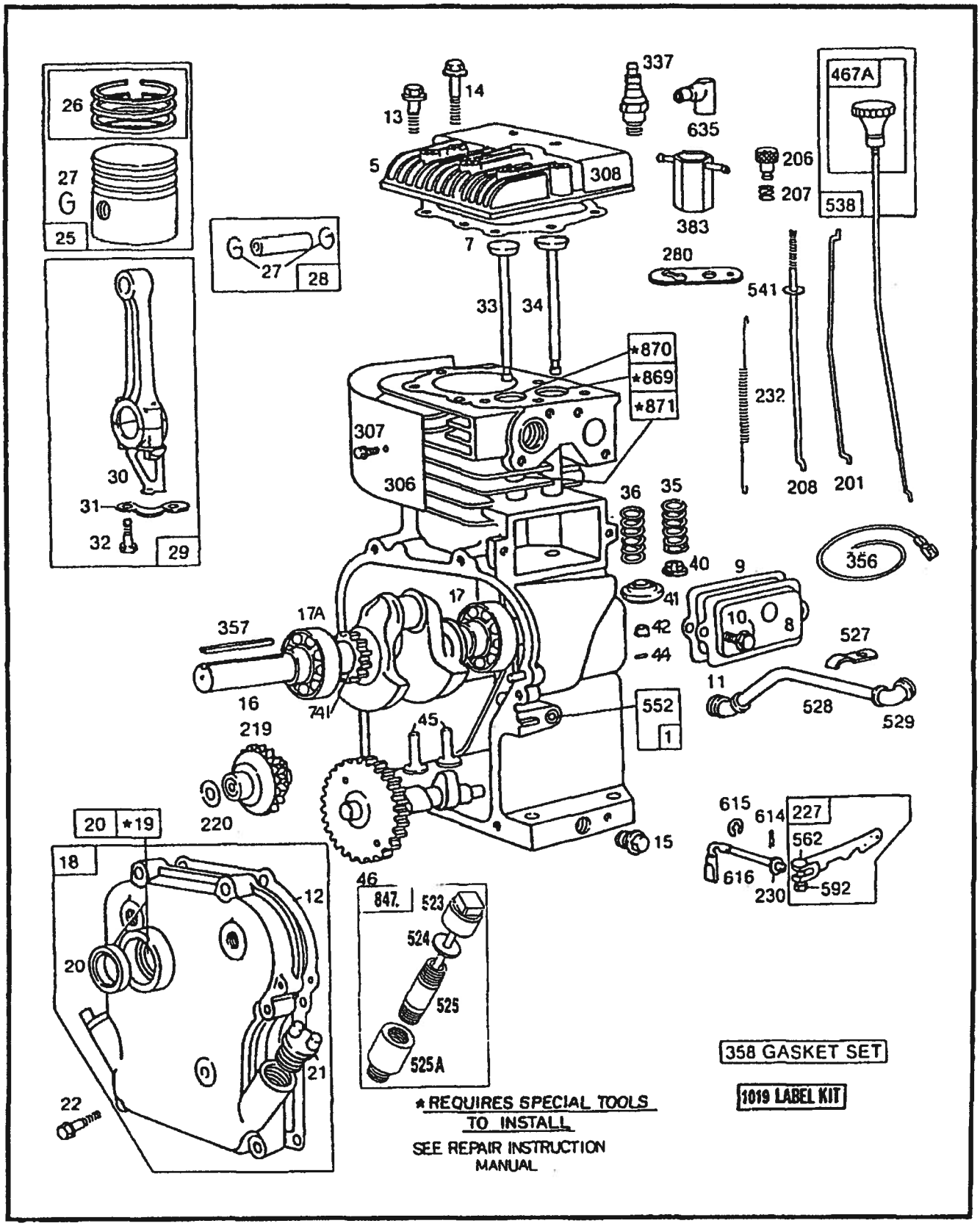
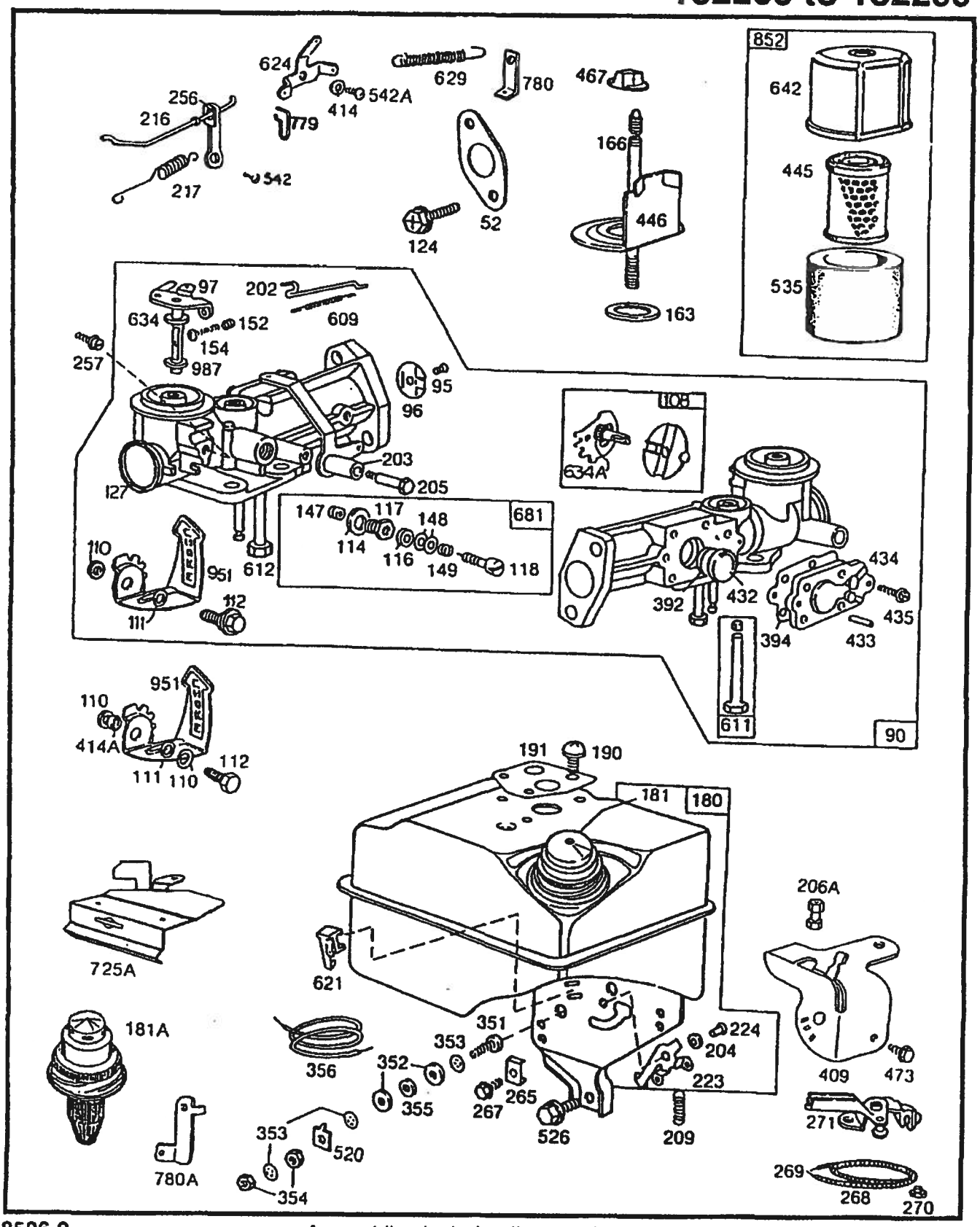
132200 to 132299



8506-1 Assemblies include all parts shown in frames. 30

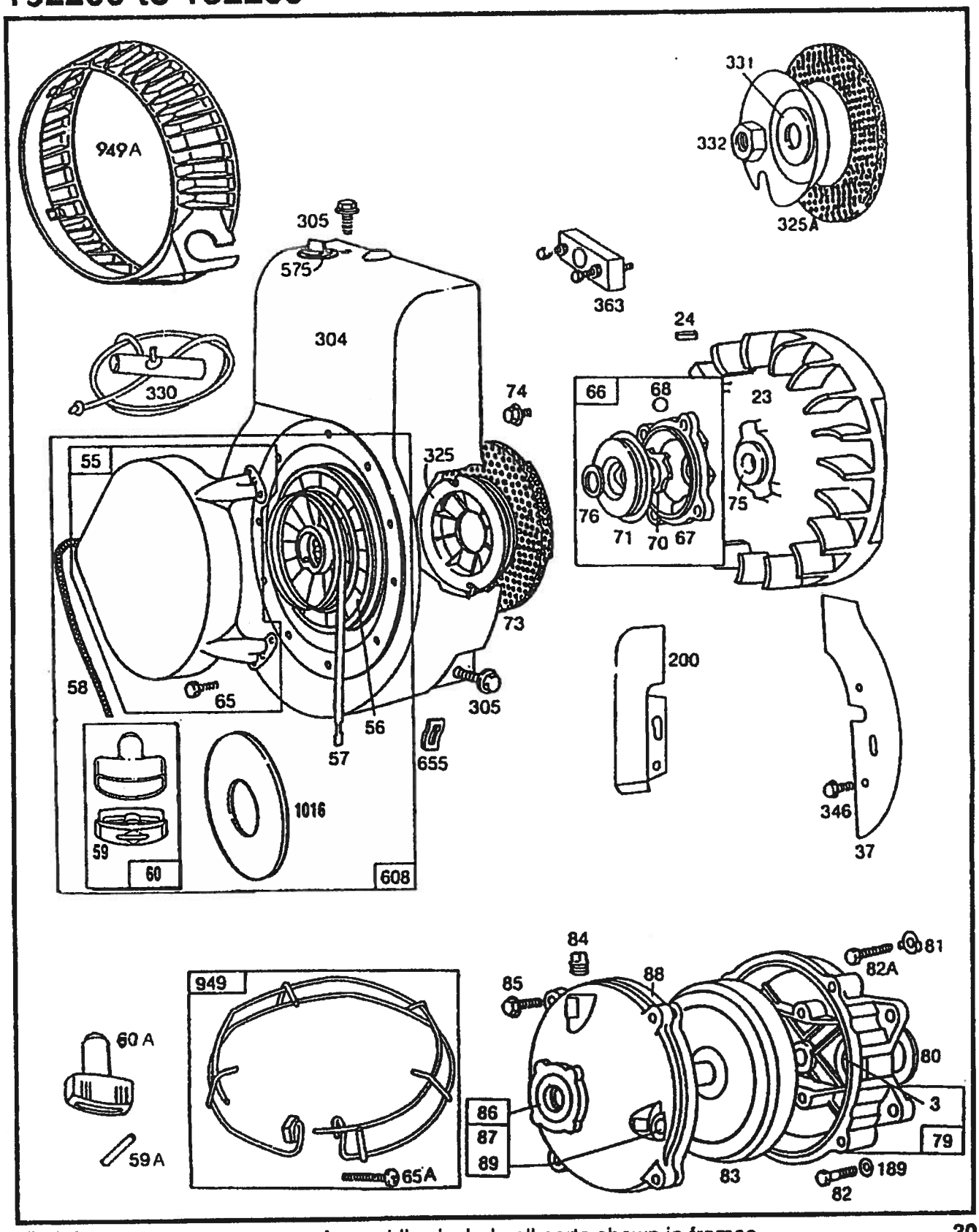


8506-2

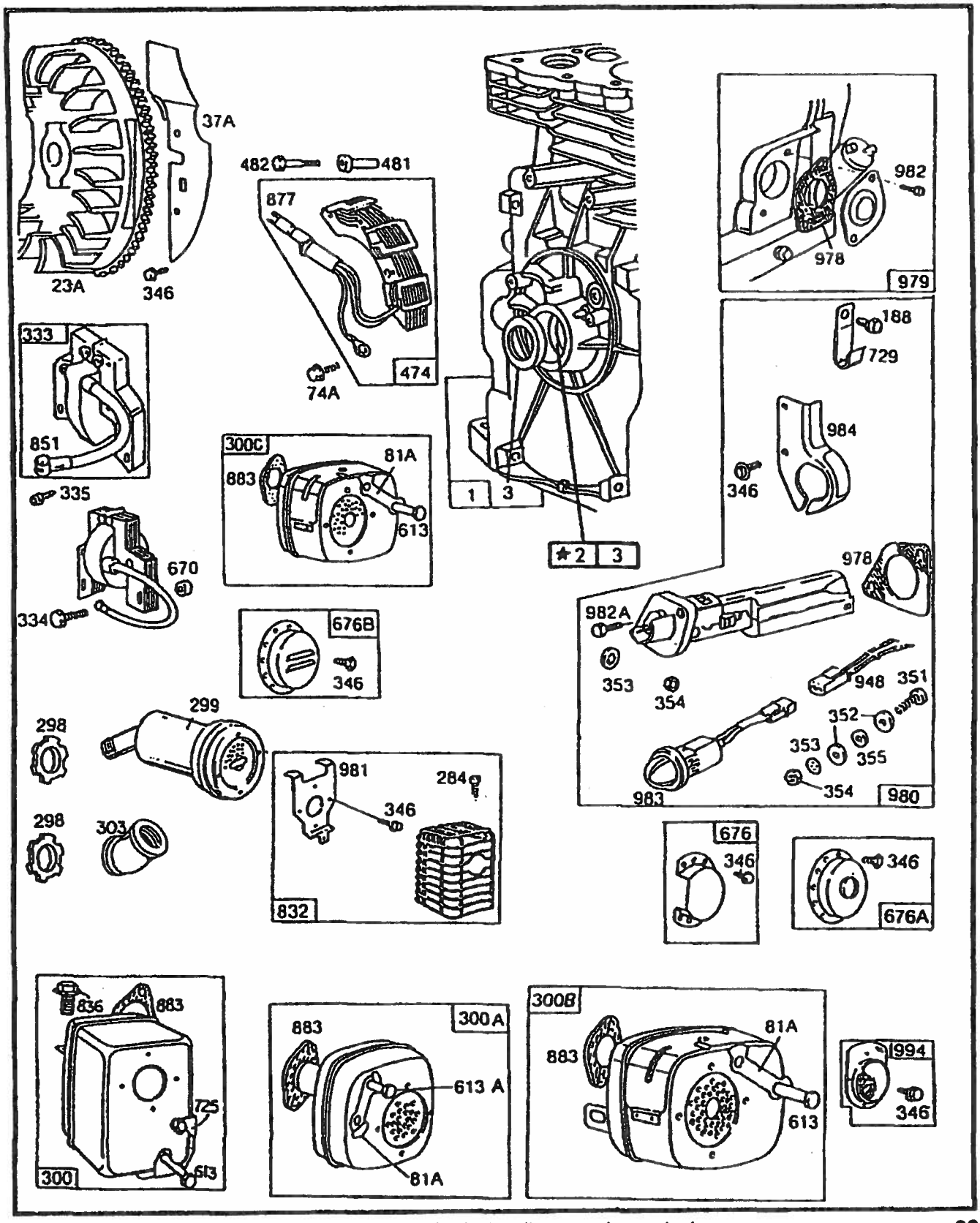
Assemblies include all parts shown in frames.

30

132200 to 132299

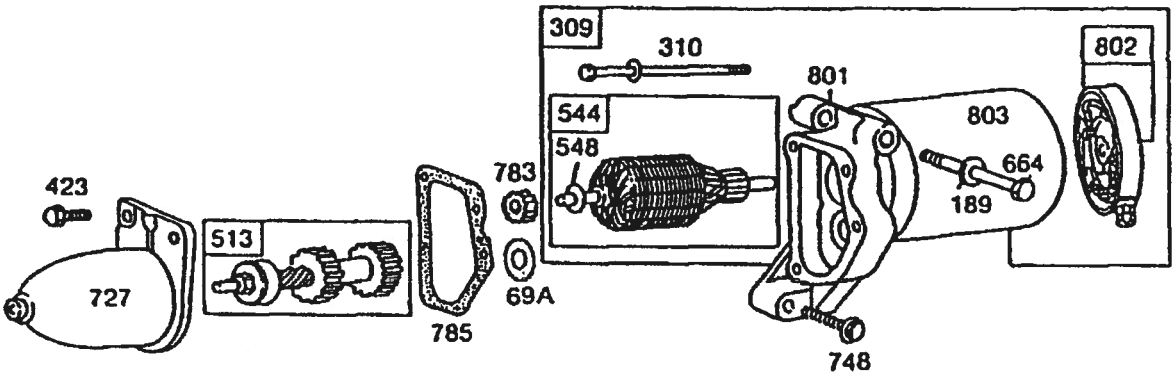


8506-3 Assemblies include all parts shown in frames. 30



8506-4 Assemblies include all parts shown in frames. 30

132200 to 132299



Reference Number	309	513	544	802	803
Starter Motor Mfr.	Motor	Drive Assembly	Armature Assembly	End Cap Ass'y. Commutator	Housing Assembly
American Bosch					
12V	390551*	390581	390467	390465	390468

*Uses #92813 Lockwasher and #231082 Hex Nut.

Reference Numbers									
69A	310	423	548	664	727	748	783	785	801
Washer 93676	Motor Bolt 93648	Sem. Screw 93654	Washer 93649	Mtg. Screw 93358	Drive Hsg. 390543	Mtg. Screw 93534	Pinion 230972	Gasket 270718	Mtg. Head 390544

REF. NO.	PART NO.	DESCRIPTION
1	393839	Cylinder Assembly
	Note:	397673 Cylinder Assy. Used on Engines with OIL GARD®
2	297565	Bushing—Cylinder
	Note:	Requires special tools for installation.
3	299819	Seal—Oil
5	211542	Head—Cylinder
7	* 270383	Gasket—Cylinder Head
8	294176	Breather—Valve Chamber
9	* 27549	Gasket—Valve Cover
10	93394	Screw—Breather Mtg. Sem
11	66578	Grommet—Breather Tube
12	* 270080	Gasket—Crankcase—.015" thick (Standard)
	* 270125	Gasket—Crankcase—.005" thick
	* 270126	Gasket—Crankcase—.009" thick
13	93368	Screw—Cylinder Head (2-3/32" long)
	Note:	93583 Stud—Cylinder Head 22963 Washer Used on Type Nos. 0204, 0223, 0231, 0244, 0246.
14	93369	Screw—Cylinder Head (2-15/32" long)
	Note:	93583 Stud—Cylinder Head 22963 Washer Used on Type No. 0223, 0231, 0246, 0249.
15	91249	Plug—Pipe, 1/4" Std., Square Head
	Note:	93448 Plug—Pipe (Hex—Socket) 94174 Plug—Oil Drain (Magnetic)
16	493898	Crankshaft
	Note:	**To Replace Crankshaft Gear Pin, Order Part No. 230978.** 397084 Crankshaft Used on Type No. 0117, 0238, 0239, 0247. 397088 Crankshaft Used on Type Nos. 0145, 0240. 397090 Crankshaft Used on Type Nos. 0115, 0131, 0136, 0140, 0200, 0201, 0209, 0210, 0230, 0235, 0250, 0253, 0258, 0262, 2038, 2138, 2139. 397099 Crankshaft Used on Type Nos. 0130, 0216, 0266, 2150. 397101 Crankshaft Used on Type No. 0256. 398318 Crankshaft Used on Type Nos. 0142, 0232, 0244. 492089 Crankshaft Used on Type Nos. 0121, 0132, 0146, 0205, 0207, 0211, 0225, 0231, 0237, 0263, 0265, 2035, 2130, 2135, 2175. 493770 Crankshaft Used on Type Nos. 0116, 0137, 0147, 0203, 0233, 0241, 0242, 0255, 0267, 2049, 2149.
17	99157	Bearing—Ball (Magneto Side)
17A	99158	Bearing—Ball (P.T.O. Side)
18	298204	Cover Assembly—Crankcase
	Note:	298183 Cover Assy.—Crankcase Used on Type Nos. 0117, 0238, 0247. 298517 Cover Assy.—Crankcase Used on Model Series *132212, 132251 and 132252* except as listed under note. 398335 Cover Assy.—Crankcase Used on Type Nos. 0142, 0232, 0239.
19	297603	Bushing—Crankcase Cover
	Note:	398336 Bushing—Crankcase Cover Used on Type Nos. 0142, 0232, 0239. All bushings require special tools for installation.
20	393812	Seal—Oil
	Note:	298504 Oil Seal and Spacer Used on Type Nos. 0142, 0232, 0239, 0244. 294606 Seal—Oil (Crankshaft) and 391484 Seal—Oil (Auxiliary P.T.O. Shaft) Used on Type Nos. 0117, 0238, 0247.
21	66768	Plug—Oil Filler
22	93032	Screw—Crankcase Cover Mounting Sem
23	297229	Flywheel—Magneto
23A	390509	Flywheel Assembly
24	222698	Key—Flywheel
25	393819	Piston Assembly—Standard
	393820	Piston Assembly—.010" O.S.
	393821	Piston Assembly—.020" O.S.
	393822	Piston Assembly—.030" O.S.
		The Following Piston Ring Sets Are Used After Code Date 85042100.
26	399067	Ring Set—Std. Piston
	399014	Ring Set—.010" O.S. Piston
	399015	Ring Set—.020" O.S. Piston
	399016	Ring Set—.030" O.S. Piston

* Included In Gasket Set—Part No. 397145

132200 to 132299

REF. NO.	PART NO.	DESCRIPTION
		The Following Piston Ring Sets Are Used Before Code Date 85042200.
	Note:	For Chrome Piston Ring Set—Standard Size—Order Part No. 299742.
	393835	Ring Set—Standard Piston
	393836	Ring Set—.010" O.S. Piston
	393837	Ring Set—.020" O.S. Piston
	393838	Ring Set—.030" O.S. Piston
27	26026	Lock—Piston Pin
28	298909	Pin Assy.—Piston—Standard
	298908	Pin Assy.—Piston—.005" O.S.
29	299430	Rod Assy.—Connecting
	Note:	For Connecting Rod with .020" undersize Crankpin Bore—Order No. 390459.
30	221890	Dipper—Connecting Rod
31	221876	Lock—Screw Head
32	92296	Screw—Connecting Rod
33	260860	Valve—Exhaust
	Note:	211119 Valve—Exhaust Used on Type Nos. 0207, 0208, 0263.
34	261044	Valve—Intake
35	260552	Spring—Intake Valve
36	26826	Spring—Exhaust Valve
	Note:	26478 Spring—Exhaust Valve Used on Type Nos. 0207, 0208, 0263.
37	222443	Guard—Flywheel
37A	222578	Guard—Flywheel (Used on Engines with Electric Starters)
40	93312	Retainer—Intake Valve Spring
41	292259	Rotocap—Exhaust Valve
42	230127	Retainer—Exhaust Valve Rotocap

* Included in Gasket Set—Part No. 397145

REF. NO.	PART NO.	DESCRIPTION
	Note:	93312 Retainer—Exhaust Valve Spring Used on Type Nos. 0207, 0208, 0263.
44	230126	Pin—Exhaust Valve Rotocap Retainer
45	260642	Tappet—Valve
46	212733	Gear—Cam
	Note:	212780 Gear—Cam Used on Type Nos. 0117, 0238, 0247.
52	* 27355	Gasket—Carburetor Mounting (2)
55	397123	Housing—Rewind Starter
	Note:	299431 Housing—Rewind Starter Used on Type Nos. 0206, 0218, 0223, 0230, 0231, 0238. 0262, 0268.
56	295871	Pulley—Rewind Starter (Includes 63" long rope) If longer rope is required, order rope No. 66894 and cut to length.
57	490179	Spring—Rewind Starter
58	66884	Rope—Rewind Starter—63" long (For use with Plastic Pulley) If longer rope is required, order rope No. 66894 and cut to length.
59	490653	Insert—Starter Handle
59A	230228	Pin—Starter Grip
60	490652	Handle—Rewind Starter
60A	66728	Grip—Starter Rope
65	94063	Screw—Housing Mtg. Sem
	Note:	94128 Screw—Sem 92987 Nut—Hex Used on Type Nos. 0206, 0218, 0223, 0230, 0231, 0238, 0262, 0268.
65A	94124	Screw—Guard Retaining
66	399671	Clutch Assembly—Rewind starter
67	394897	Housing—Rewind Starter Clutch
68	63770	Ball—Clutch

REF. NO.	PART NO.	DESCRIPTION
70	298799	Ratchet—Rewind Starter Clutch
71	394506	Washer—Clutch Retainer (Rubber Coated)
	Note:	221653 Washer—Clutch Retainer (Non-Coated)
73	221923	Screen—Starter Pulley
74	94062	Screw—Sem
	Note:	93490 Screw—Sem Used on Type Nos. 0206, 0218, 0223, 0230, 0231, 0238, 0254, 0262, 0268.
74A	93490	Screw—Sem Used to Mount Alternator Ground Wire.
75	220865	Washer—Spring
76	68238	Washer—Ratchet Sealing
79	290779	Case Assembly—Gear
80	27667	Gasket—Gear Case
81	220234	Lock—Screw
81A	222263	Lock—Screw
82	91541	Screw—Cap, Hex. Hd.—5/16-24 x 7/8"
82A	92279	Screw—Cap, Hex. Hd.—5/16-24 x 1-1/2"
83	211293	Shaft and Gear—Drive
84	92617	Plug—Breather
85	92747	Screw—Gear Case Mounting Sem
86	291730	Cover Assy.—Gear Case
87	19011	Seal—Oil
88	27313	Gasket—Gear Case Cover
89	93448	Plug—Oil Drain
90	397135	Carburetor Assembly
	Note:	397940 Carburetor Assembly Used on Type Nos. 0134, 0137, 0141, 0212, 0217, 0218, 0227, 0252, 0254, 0268.
95	93499	Screw—Throttle Valve to Shaft Sem
96	211203	Throttle—Carburetor
97	299212	Shaft and Lever—Throttle
108	397134	Valve & Shaft Group—Choke
110	66432	Washer—Choke Lever

REF. NO.	PART NO.	DESCRIPTION
111	94060	Washer—Spring
112	94164	Screw—Choke Lever (Used after Code Date 86011200)
	Note:	93686 Screw—Choke Lever (Used before Code Date 86011300)
114	66594	Gasket—Needle Valve Nut
116	65978	Packing—Needle Valve
117	230590	Nut—Needle Valve
118	23433	Valve—Needle
124	93357	Screw—Hex. Head
127	22831	Plug—Welch
147	230591	Seat—Needle Valve
148	22235	Washer—Needle Valve (2)
149	26336	Spring—Needle Valve
152	260575	Spring—Throttle Adjustment
154	93527	Screw—Machine, Rd. Hd.—5-40 x 5/8"
163	271139	Gasket—Air Cleaner Mounting
166	231332	Stud—Air Cleaner
180	397137	Tank Assembly—Fuel
	Note:	397648 Tank Assy.—Fuel Used on Type Nos. 0133, 0257.
181	394818	Cap—Fuel Tank
181A	397567	Cap—Fuel Tank
188	93559	Screw-Hex Head
189	90366	Washer—Lock, 5/16 x 1/8 x 1/16
190	93440	Screw—Fuel Tank Mounting Sem
	Note:	94094 Screw—Tank Mounting (1) Used on Type Nos. 0138, 0204, 0223, 0248, 0249, 0268, 2143.
191	* 271592	Gasket—Fuel Tank Mounting
200	221480	Guide—Air
201	261558	Link—Governor
202	260678	Link—Throttle
203	393919	Assembly—Bell Crank and Bushing
204	222962	Bushing—Governor Lever (Flat)
	Note:	230943 Bushing—Governor Lever Used on Type Nos. 0143, 0144, 0145, 0146, 0147, 0202, 0203, 0205, 0231, 0236, 0238, 0240, 0242, 0265.
205	93638	Screw—Shoulder
206	231266	Nut—Control Rod
206A	280012	Nut—Control Rod
207	26855	Spring—Control Rod
208	261985	Rod—Control
	Note:	230946 Rod—Control Used on Type Nos. 0134, 0137, 0141, 0212, 0213, 0217, 0218, 0227, 0252, 0254, 0268. 261297 Rod—Control Used on Type No. 0215.
209	260695	Spring—Governor
	Note:	260902 Spring—Governor Used on Type Nos. 0216, 0224, 0241, 0242, 0266.
216	397709	Link—Choke (Includes Bell Crank) (Used after Code Date 84060100)
	Note:	398175 Link—Choke (Includes Bell Crank) (Used before Code Date 84053100)
217	261951	Spring—Choke Link
219	391737	Gear—Governor
220	221551	Washer—Thrust
223	221517	Lever—Governor Control
224	93491	Rivet—Governor Control Lever Mounting
	Note:	93440 Screw—Sem Used with 230943 Bushing (1/2" dia. Flange) and 93569 Spring Washer Used on Type Nos. 0143, 0144, 0145, 0146, 0147, 0202, 0203, 0205, 0231, 0236, 0238, 0240, 0242, 0265.
227	393920	Lever Assy.—Governor
230	222450	Washer—Governor Lever
232	260478	Spring—Governor Link
256	397709	Crank—Bell (Includes Choke Link) (Used after Code Date 84060100)
	Note:	398175 Crank—Bell (Includes Choke Link) (Used before Code Date 84053100)
257	93543	Screw—Fil. Hd. Sem
265	221535	Clamp—Casing
267	93496	Screw—Sem
268	66986	Casing—Control Wire—48" long
	Note:	If longer casing is needed, specify length in inches; if a shorter casing is needed, order No. 66986 and cut to required length.
269	26099	Wire—Control, 54" long
	Note:	If longer wire is needed, specify length in inches; if shorter wire is needed, order No. 26099 and cut to required length.
270	63426	Locknut—Control Wire Casing
271	290568	Lever Assy.—Control
280	223236	Strap—Control Rod
	Note:	230944 Guide—Control Rod Used in 223236 Strap on Type Nos. 0241, 0248, 2035, 2036, 2049, 2130, 2135, 2136, 2137, 2143, 2149, 2150, 2175. 390341 Strap—Control Rod Used on Type Nos. 0143, 0144, 0145, 0146, 0147, 0202,

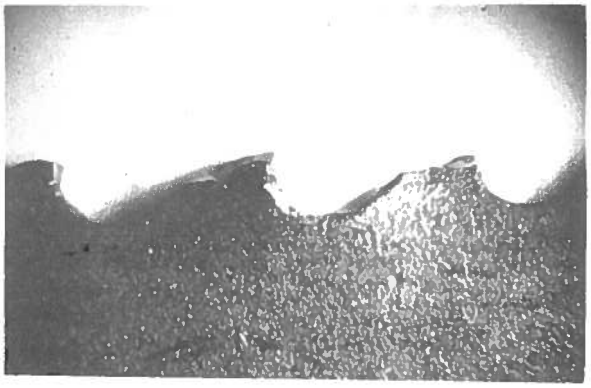
* Included in Gasket Set—Part No. 397145

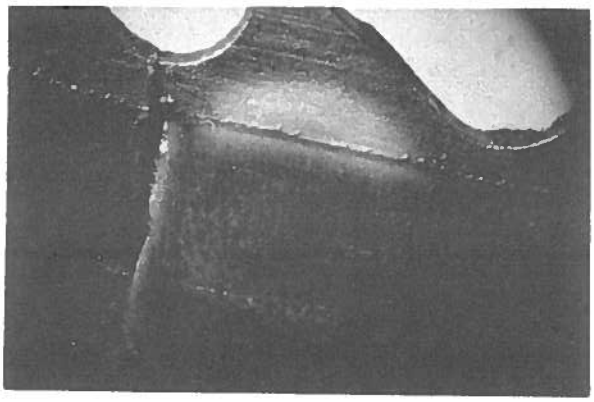
132200 to 132299

REF. NO.	PART NO.	DESCRIPTION
		0203, 0205, 0231, 0236, 0238, 0240, 0242, 0265.
284	93572	Screw—Self Tapping
298	261409	Locknut—Muffler
299	393368	Muffler—Exhaust (Round Lo-Tone)
	Note:	393010 Muffler—Exhaust (Round Lo-Tone) Uses: 223327 Bracket—Muffler Used on Type Nos. 0133, 0239, 0257, 0268.
300	396001	Muffler—Exhaust (Lo-Tone)
300A	393615	Muffler—Exhaust
300B	391313	Muffler—Exhaust
	Note:	391232 Guard—Muffler Uses: 94153 Screw—Guard and Retainer Mounting (Used After Code Date 88090200.) 93415 Screw (Guard and Retainer Mounting) (Used Before Code Date 88090300.) 93606 Screw (Guard to Muffler Mounting) 222379 Retainer—Muffler (Used Before Code Date 88090300.) 222361 Brace—Muffler Used on Type Nos. 0226.
300C	390918	Muffler—Exhaust (Lo-Tone)
303	94089	Elbow—Exhaust, 45°
304	396923	Housing—Blower
	Note:	397654 Housing—Blower Used on Type Nos. 0130, 0216, 0266, 2150. 397719 Housing—Blower Used on Type Nos. 0142, 0212, 0224, 0227, 0229, 0232, 0239, 0243, 0244, 0245, 0246, 0247, 0248, 0249, 0250, 0251, 0252, 0253, 0255, 0256, 0257, 0259, 0260, 0261, 0265, 0267. 398345 Housing—Blower Used on Type Nos. 0206, 0218, 0223, 0230, 0231, 0238, 0254, 0262, 0263, 0268.
305	93158	Screw—Blower Housing Mounting
306	221511	Shield—Cylinder
307	93490	Screw—Cylinder Shield Sem (Used after Code Date 87020800.)
	Note:	93042 Screw—Cylinder Shield (Used before Code Date 87020900.)
308	221512	Cover—Cylinder Head
325	280457	Starter Pulley—Rope
325A	299421	Starter Pulley (With Screen)
330	69932	Rope—Starter
331	220865	Washer—Flywheel
332	92284	Nut—Flywheel
333	397358	Armature Group
334	93813	Screw—Armature Mounting Sem (2)
335	93414	Screw—Armature Mounting Sem
337	298809	Plug—Spark 1-1/2" High—37-42 M.M.
	Note:	293918 Plug—Spark 1-1/2"—37 M.M. (Resistor Type)
346	93705	Screw—Sem
351	93735	Screw—Terminal
352	66068	Washer
353	92791	Washer—Lock—Shakeproof (3)
354	90576	Nut—Hex.—8-32 (2)
355	66554	Washer—Insulating
356	398874	Wire—Ground
	Note:	397535 Wire—Ground Used on Type Nos. 0130, 0131, 0132, 0133, 0134, 0136, 0137, 0138, 0139, 0140, 0143, 0144, 0145, 0146, 0147, 0201. 398808 Wire—Ground Used on Type Nos. 0142, 0212, 0217, 0224, 0227, 0229, 0232, 0239, 0243, 0244, 0246, 0247, 0252, 0254, 0267, 0268.
357	91539	Key
358	397145	Gasket Set
363	19069	Flywheel Puller (Optional Accessory)
383	89838	Wrench—Spark Plug
392	260455	Spring—Fuel Pump Diaphragm
394	270026	Diaphragm
409	299837	Lever-Trol—Speed Control
414	220982	Washer
414A	231325	Spacer (Used before Code Date 86011300)
432	221377	Cap—Spring
433	93265	Pin—Diaphragm Cover
434	210959	Cover—Diaphragm
435	93141	Screw—Diaphragm Cover
445	396424	Cartridge—Air Cleaner
446	395642	Base—Air Cleaner
467	212706	Knob—Air Cleaner
467A	391908	Knob—Choke Rod
473	93812	Screw—Sem
474	394173	Stator Assembly—Alternator
481	230970	Bushing—Stator
482	93839	Screw—Alternator Armature Mounting
520	93722	Terminal—Spade
523	297357	Cap—Oil Filler
524	65304	Gasket—Oil Filler Cap
525	91258	Nipple—Oil Filler
525A	394684	Adapter—Oil Filler Pipe
526	93343	Screw—Tank Bracket Mounting Sem

REF. NO.	PART NO.	DESCRIPTION
527	221514	Clamp—Breather Tube
528	231328	Tube—Breather
	Note:	231386 Tube—Breather Used on Engines with Heat Shield Ref. 725A.
529	67838	Grommet—Breather Tube
535	271466	Element—Air Cleaner
538	390756	Rod—Control
541	22398	Washer
542	94025	Screw
542A	93141	Screw
552	231079	Bushing—Governor Crank
562	92613	Bolt—Governor Lever
575	396691	Stop Switch—Rotary
592	231082	Nut—Hex.—10-24
608	397124	Starter Assy.—Rewind
	Note:	390463 Starter Assy.—Rewind Used on Type Nos. 0206, 0218, 0223, 0230, 0231, 0238, 0254, 0262, 0268.
609	260694	Spring—Throttle Link
611	391813	Fuel Pipe and Clip Assembly
612	296811	Pipe—Fuel
613	94054	Screw—Hex Hd. Shoulder
	Note:	94042 Screw—Hex Hd. Shoulder Used on Type Nos. 0226, 0246.
613A	93935	Screw—Hex Head
614	93306	Cotter—Hair Pin
615	93307	Retainer—E-Ring
616	231077	Crank—Governor
621	297472	Switch—Stop
624	390383	Crank—Bell
	Note:	222476 Crank—Bell Used on Type No. 0215.
629	261094	Spring—Throttle Return
634	271853	Washer—Throttle Shaft (Foam)
	Note:	270167 Washer—Throttle Shaft (Felt)
634A	270382	Washer (Foam)
635	66538	Elbow—Spark Plug
642	223306	Cover—Air Cleaner
655	222598	Anchor—Spring
665	298858	Oil Minder
670	261065	Spacer—Armature
676	393757	Deflector—Exhaust (Side Outlet)
676A	395700	Deflector—Exhaust (Direct Outlet)
676B	393758	Deflector—Exhaust (Louvered)
681	299060	Needle Valve Kit
725	223303	Shield—Heat
725A	223334	Shield—Heat
729	223528	Clip—Wire
741	261696	Gear—Timing (Plain Bearing)
	Note:	262060 Gear—Timing (Ball Bearing)
779	390383	Link—Bell Crank (Includes Bell Crank)
780	223169	Anchor—Spring
780A	222267	Anchor—spring Uses: 222268 Connector—Control Cable 93496 Screw for Mounting to Tank Bracket
832	398069	Guard—Muffler
836	93559	Screw—Hex. Head
847	493955	Tube Assy—Oil
851	221798	Cable Terminal—Ignition
852	396397	Cleaner Group—Air
869	211787	Seat—Intake Valve (Standard)
870	211436	Seat—Exhaust Valve (Standard)
	Note:	For Options see Repair Manual.
871	262001	Guide—Exhaust Valve
	Note:	63709 Guide—Intake Valve See Repair Instruction Manual.
883	270918	Gasket—Muffler
948	398661	Harness—Wire
949	396580	Guard—Rewind Starter
949A	280680	Guard—Rewind Starter
951	223286	Lever—Choke
978	271738	Gasket—Oil Switch
979	398194	Cover—Oil Gard® Hole
980	398182	Switch—Oil Gard®
981	223373	Bracket—Muffler Guard
982	94139	Screw—Oil Gard® Cover
982A	94146	Screw— Oil Gard® Mtg.
983	398660	Light—Indicator
984	223527	Bracket—Indicator Light
987	398970	Seal—Throttle Shaft (Used after Code Date 85071400.)
994	399541	Spark Arrester
1016	490817	Spacer
1019	491102	Label Kit

A GUIDE TO SAW BLADE FAILURE





....WHAT YOU SEE
....WHAT IT CAN MEAN

LENOX

AMERICAN SAW & MFG. COMPANY

301 CHESTNUT STREET
EAST LONGMEADOW
800/526-3038
800/332-3044 (MASS.)

SUPPLIED BY

JORDAN INDUSTRIAL PRODUCTS INC.

Call (604) 520-6351
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TABLE OF CONTENTS

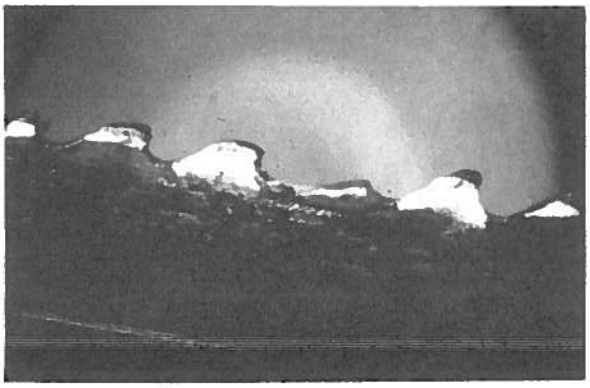
There are many variables that influence the successful operation of bandsaws. Cutting operations can be short-circuited by: Broken Teeth, Stripped Teeth, Broken Blades, Dulled Blades, Chips welded in the gullet, Blade Hang-ups and Saws stopping altogether. You name it, it's happened! Generally it's considered to be the fault of the blade; after all, it's the blade that breaks, or stops, or hangs up, Right? Not necessarily! It's the whole process that stops.

The bandsaw, the blade and the operator work together as a production system to make sure, clean, efficient, profitable cuts, and when something happens - it's often not the blade!

That's why we've put together this guide - so that you can better identify a failed blade and determine what might have caused it.

In many cases, the problem can be solved by making minor machine adjustments. But if you have questions that this guide can't answer, contact your Lenox Representative for further assistance, or call our toll free number 800-628-3030 and ask for Technical Services. We're on hand to help!

1. WHAT WE SEE --
HEAVY WEAR ON TIPS &
CORNERS OF TEETH



WHAT IT CAN MEAN:

a. Band speed may be too fast for material being cut, generating a high tooth tip temperature and causing rapid wear of the tooth

b. Feed rate may be too low causing teeth to rub instead of cut, such as on work hardenable materials

c. Coolant may be wrong type, or may not be doing its job of cooling the tooth properly

d. Material being cut may be hard or abrasive - example: fiberglass

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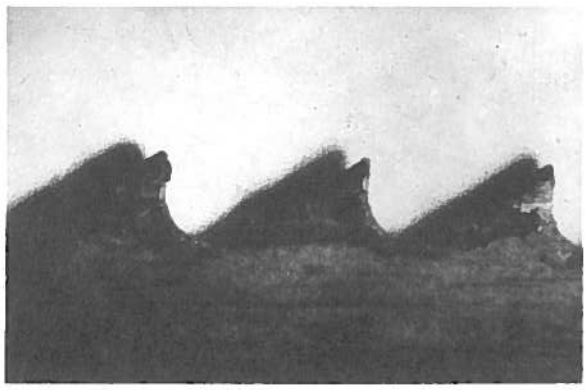


2. WHAT WE SEE--
WEAR ON SIDES OF TEETH

WHAT IT CAN MEAN:

a. Insufficient overall set allowing sides of teeth to rub on the slot

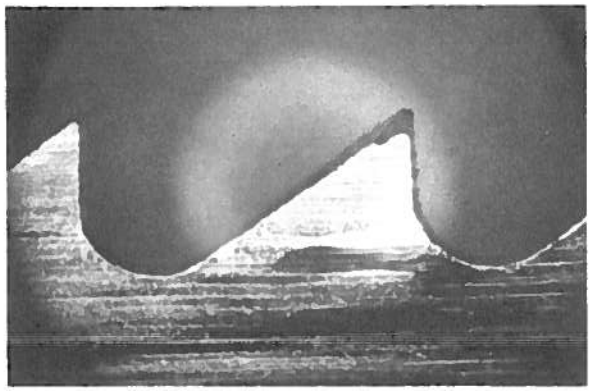
b. Teeth may be hitting some part of machine causing rapid wear on one side

c. Speed may be too fast for material being cut so that excessive temperature causes rapid wear

d. Band may be too wide for radius being cut, teeth rub on the side of the slot

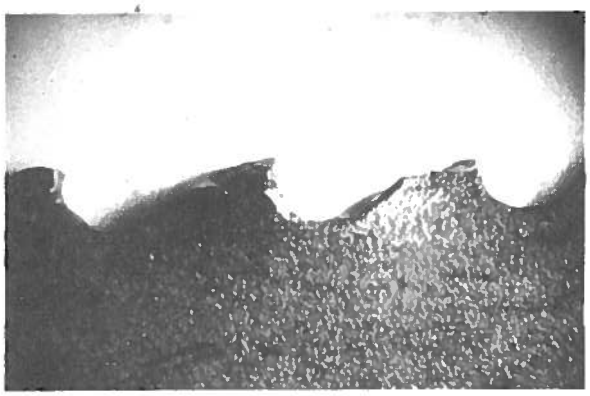
e. Material being cut may be hard or abrasive

3. WHAT WE SEE --
SCORING ON SIDES OF TEETH



WHAT IT CAN MEAN:

a. Teeth running between side guides

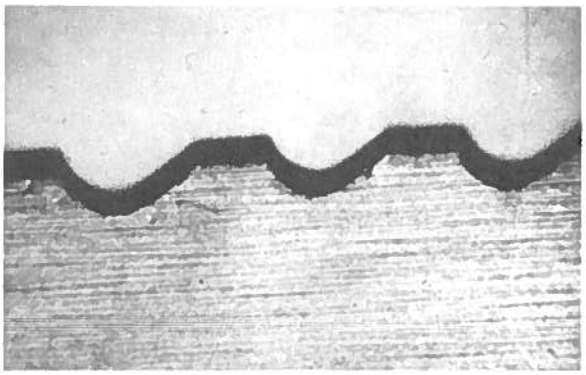


4. WHAT WE SEE --
CHIPPED & BROKEN TEETH

WHAT IT CAN MEAN:

a. Handling damage
b. Feed rate may be excessive
c. Feed pressure may be too high
d. Improper break-in
e. Wrong tooth pitch
f. Teeth may be hitting part of machine
g. Hard material being cut
h. Hard surface scale on material being cut
i. Hard spots in material being cut
j. Material being cut not properly positioned
k. Movement or vibraton of material being cut
l. Wrong or improperly applied coolant
m. Chip brush not working, or no chip brush
n. Improperly aligned butt weld

5. WHAT WE SEE --
TOOTH STRIPPAGE



WHAT IT CAN MEAN:

a. Handling damage
b. Feed rate may be excessive
c. Feed pressure may be too high
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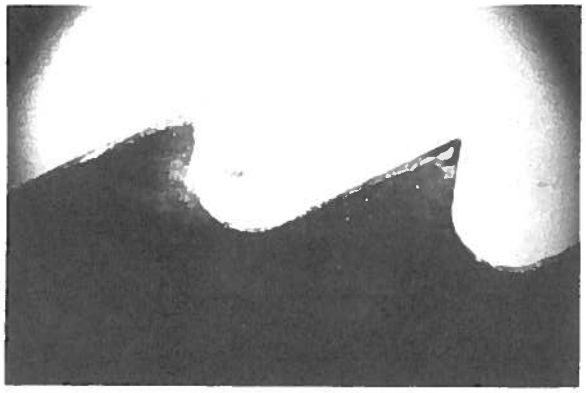


6. WHAT WE SEE --
METAL CHIPS WELDED (stuck) TO
TOOTH TIPS

WHAT IT CAN MEAN:

a. Feed pressure may be too high producing a weld between tooth tip and chip

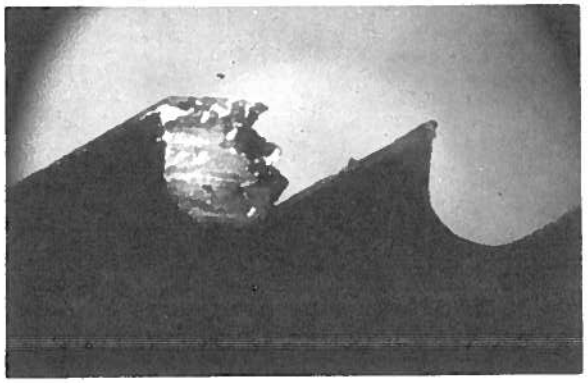
b. Chip brush not working, or absent, so chips that weld are not knocked off

c. Band speed may be too fast, high tip temperature promotes welding

d. Wrong or improperly applied coolant, or lack of coolant. Proper application of coolant interferes with a strong weld.

e. Some materials have a greater chip welding tendency than others
Example: Titanium

7. WHAT WE SEE --
TOOTH GULLETS LOADED
WITH CHIPS



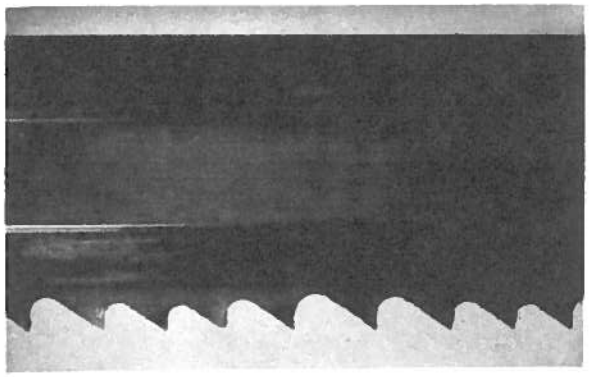
WHAT IT CAN MEAN:

a. Tooth pitch too fine, not enough gullet room for chip that forms before the tooth exits the workpiece

b. Excessive feed may produce so large a chip that it packs tightly in the gullet

c. Chip brush may be absent, or not working properly to remove chips on each pass. Multiple passes cause chips to wedge in gullet

d. Coolant problem



8. WHAT WE SEE --
HEAVY WEAR ON SIDES OF BANDS

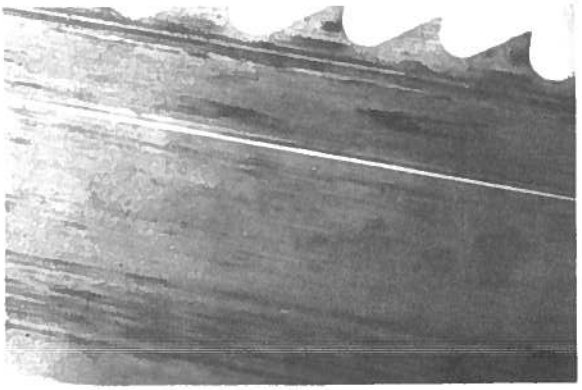
WHAT IT CAN MEAN:

a. Guide adjustment may be too close

b. Worn guides do not ride on the side of the band properly and may cause heavy wear

c. Guides out of alignment can produce the same result

9. WHAT WE SEE --
SCORING ON SIDES OF BANDS



WHAT IT CAN MEAN:

a. Worn or broken guides may score the sides

b. Guides out of alignment may score the sides if they do not produce excessive wear

c. Band rubbing on some part of machine such as the wheel housing or band guard

d. Chips not being cleared from the cut may score the sides

e. Abrasive material being cut can produce scoring

f. If the blade is too wide for radius being cut the sides will be scored

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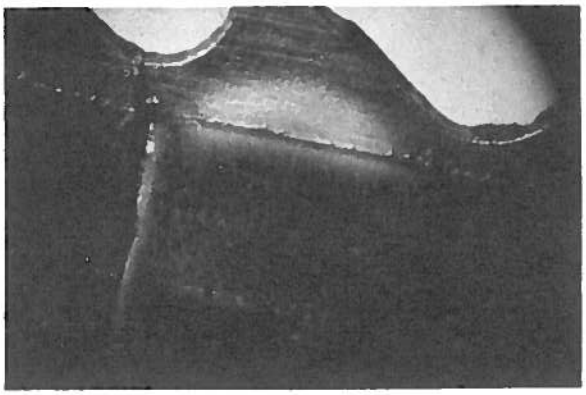
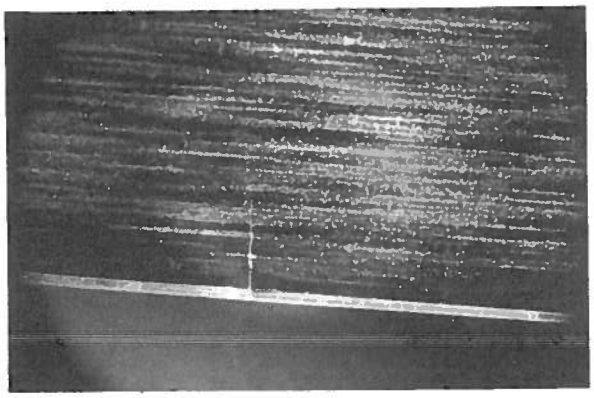


10. WHAT WE SEE --
CRACKS IN THE GULLETS

WHAT IT CAN MEAN:

a. Blade may be too thick for small wheel diameter causing cracking because of a high bending stress
b. Improper guide alignment or adjustment may put excessive stress on the gullet
c. Excessive tightening tension is a possible cause of gullet cracks
d. Excessive feed pressure has a great effect on the total stress leading to gullet cracks
e. Excessive speed for band type may lead to early fatigue failure
f. Improper band tracking has the same adverse effect as misaligned guides
g. Teeth running between side guides

11. WHAT WE SEE --
CRACKS IN THE BACK
EDGE OF BAND



WHAT IT CAN MEAN:

a. Excessive feed pressure may cause cracks in the back edge by work hardening the back edge. Also, excessive feed pressure in conjunction with deep scratches or nicks in the back edge can start a crack

b. A worn or defective back-up guide may work harden or damage the back edge so a crack can start

c. Side guides out of alignment

d. Improper band tracking, especially if the band rides on a wheel flange is a frequent cause of cracking

e. Excessive band tension may cause cracking in the back edge if some other factor is also present. Normal fatigue failures will start in a gullet

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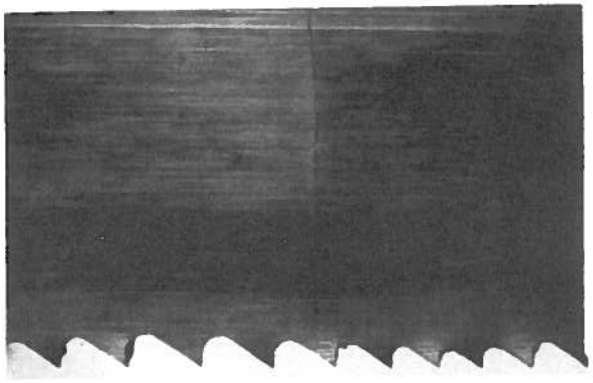


12. WHAT WE SEE --
CRACKS ON SIDES OF BANDS

WHAT IT CAN MEAN:

a. Guides may be too tight causing work hardening of the side of the band and cracking

b. Defective guides can do the same thing

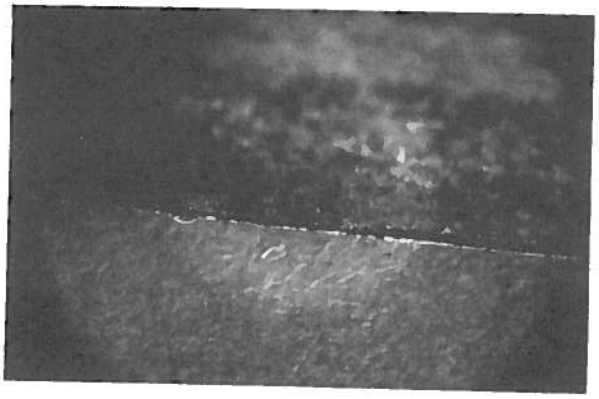
13. WHAT WE SEE --
HEAVY WEAR OF BACK EDGE

WHAT IT CAN MEAN:

a. A worn or defective back-up guide may promote swaging or heavy wear

b. Improper tracking on the wheels may be a cause of wear or swaging on the back edge

c. Excessive feed pressure will swage the back edge



14. WHAT WE SEE --
SWAGING OF BACK EDGE

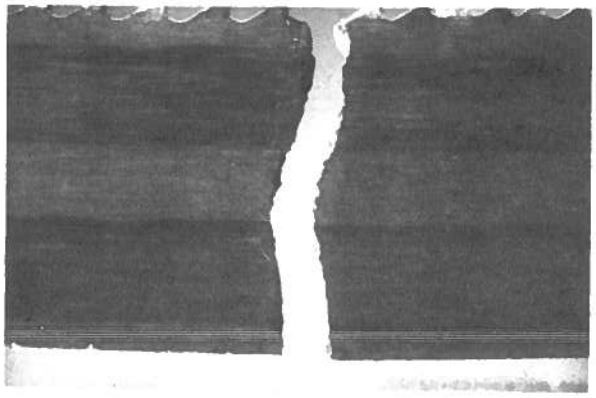
WHAT IT CAN MEAN:

a. A worn or defective back-up guide may promote swaging or heavy wear

b. Improper tracking on the wheels may be a cause of wear or swaging on the back edge

c. Excessive feed pressure will swage the back edge

15. WHAT WE SEE --
BANDS BROKEN IN THE BODY



WHAT IT CAN MEAN:

a. Any of the factors that cause cracking will also cause breaking

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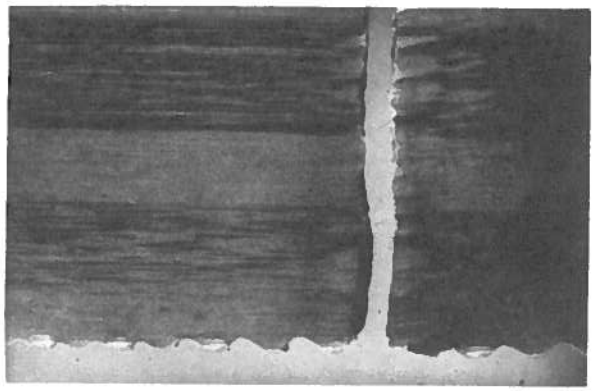


16. WHAT WE SEE --
BANDS BROKEN AT BUTT WELD

WHAT IT CAN MEAN:

Any of the factors which cause bands to break in the body may cause them to break at a weld. In addition, the following factors may cause the break to occur at a weld:

a. Defective weld - overheated metal or oxide in weld

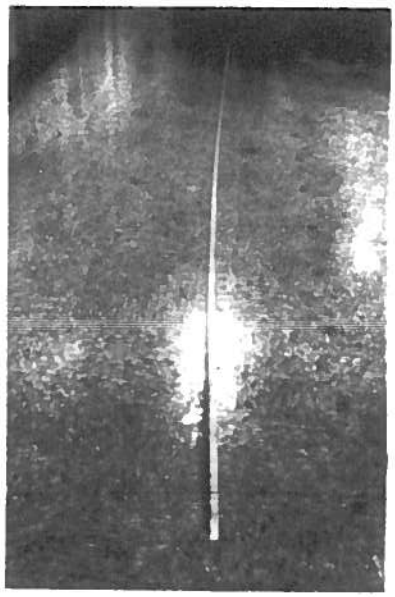
b. Improper anneal

c. Excessively deep or rough weld grind

d. Failure to remove gullet flash

e. Sharp notch left in gullet

17. WHAT WE SEE --
BAND IS LONG ON THE TOOTH EDGE



WHAT IT CAN MEAN:

a. The back edge of band may be riding heavily against the back-up guide

b. Uneven guide pressure from worn or improperly adjusted side guides rubbing the sides near the teeth may cause the band to go "long" on the tooth edge

c. Worn band wheels which apply an uneven tension may cause "long" edge camber

d. Excessive feed pressure which bends the band over the back-up guides leads to "long" edge camber

e. Teeth may be running between side guides causing drag and lengthening the tooth edge

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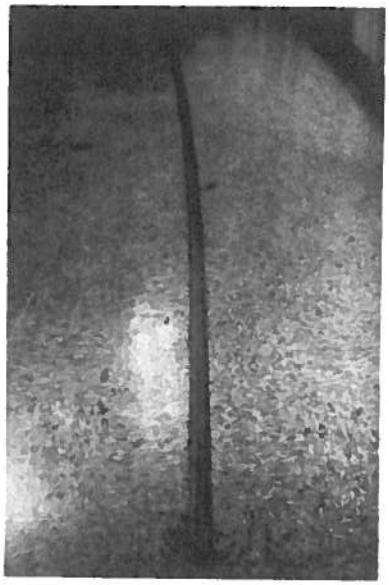


18. WHAT WE SEE --
BAND IS SHORT ON THE TOOTH EDGE

WHAT IT CAN MEAN:

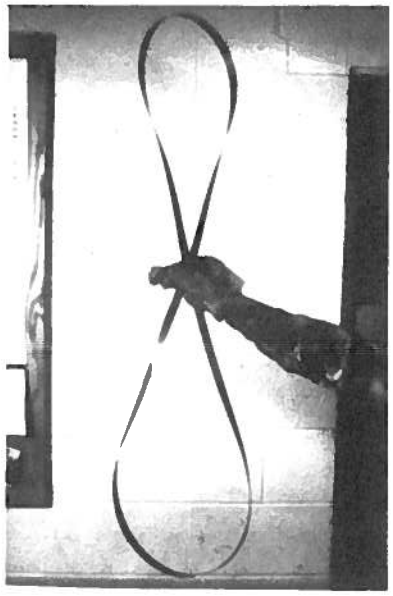
a. Uneven guide pressure from worn or improperly adjusted side guides rubbing near the back edge can cause "short" edge camber

b. Worn band wheels which apply an uneven tension may cause "short" edge camber also

c. Excessive feed pressure which bows the band excessively between the guides may cause "short" camber

d. If the guides are too far apart, excessive bow may produce the same effect

19. WHAT WE SEE --
BAND IS TWISTED



WHAT IT CAN MEAN:

a. A twisted band is an indication of long or short on tooth edge (See # 17, and # 18)

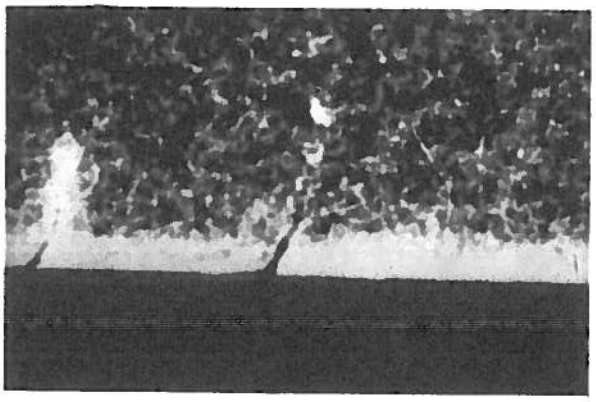
b. Excessive band tension

20. WHAT WE SEE --
BAND HAS COIL SET

WHAT IT CAN MEAN:

a. Uneven guide pressure from worn or improperly adjusted guides, especially if roller guide is stuck (one side)

21. WHAT WE SEE --
WORK HARDENING OF BACK EDGE

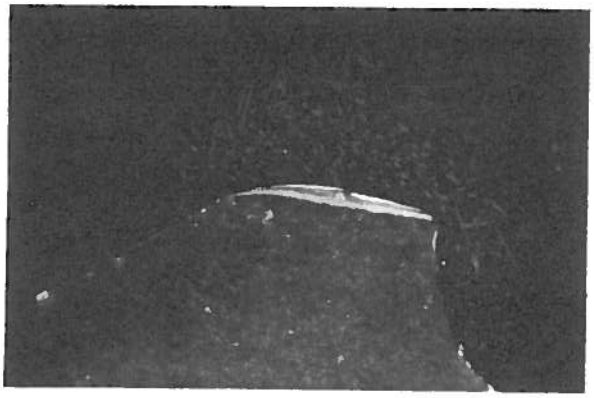


WHAT IT CAN MEAN:

a. Excessive feed pressure

b. Excessive band speed

c. Guides broken or out of alignment



22. WHAT WE SEE --
CARBON BAND, TEETH DAMAGED BY
FRICTIONAL HEAT

WHAT IT CAN MEAN:

a. The band has been run too fast for the material being cut