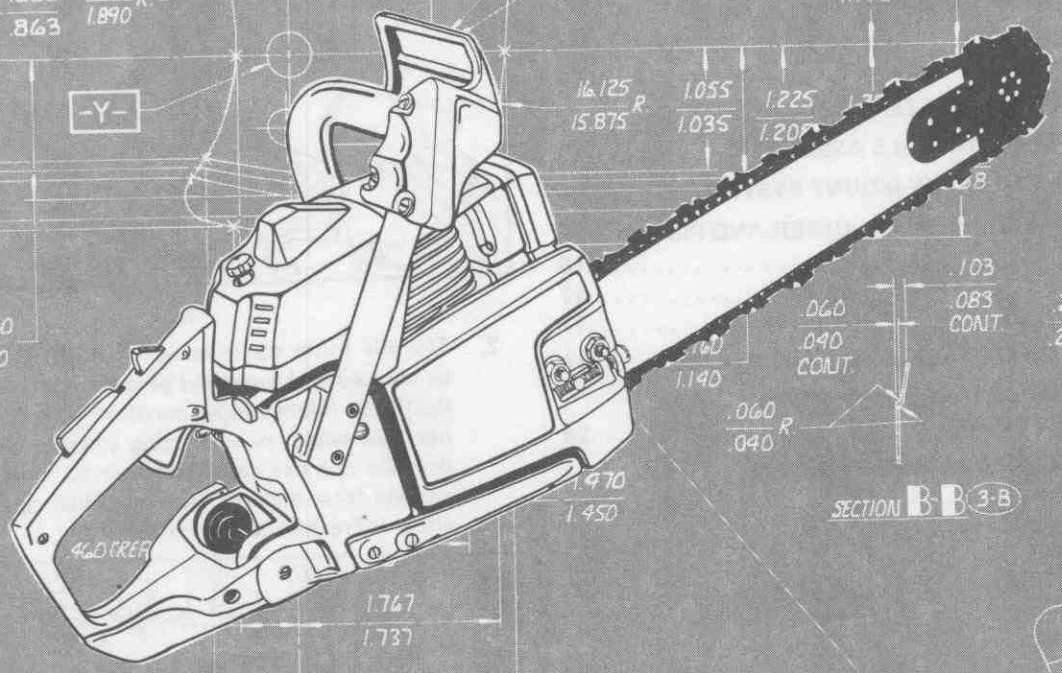
BEAIRD-POULAN / WEED EATER

CHAIN SAW

service manual



FOR MODELS:
3400
3700
4000

BEAIRD-POULAN / WEED EATER
Division Emerson Electric Co.
P.O. Box 9329
Shreveport, Louisiana 71129

64126 3/7/84

TABLE OF CONTENTS

NOTE: Illustrations may differ from actual models due to design changes. However, service and maintenance procedures remain the same.

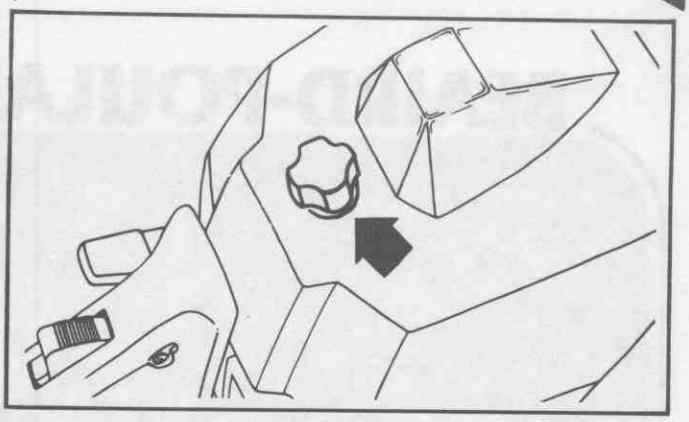


Fig. 1

1. Pull Choke Knob OUT to close Choke Shutter Plate in Carburetor to prevent any foreign material from entering carburetor and engine. Remove the Carburetor Cover Hold Down Knob and Carburetor Cover.

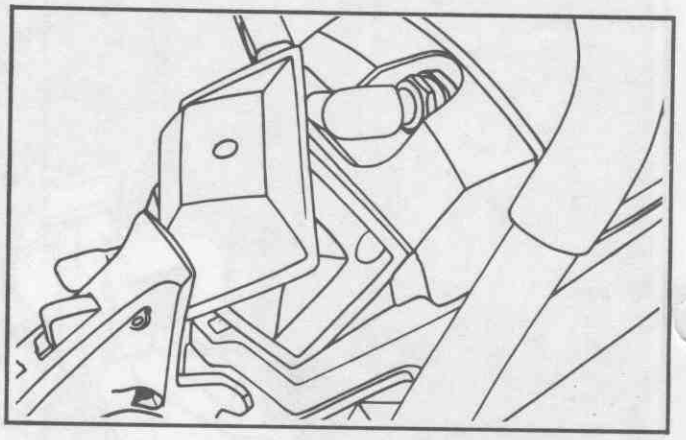


Fig. 2

2. The Air Filter can now be lifted off. The Filter should be cleaned and inspected at regular intervals. Tap Filter lightly to remove loose particles, then wash with clean, non-flammable, non-irritating solvent and allow to air dry. Do not use compressed air to blow dry—this will damage filter material. Replace Filter or Filter Gasket if either is cracked or broken.

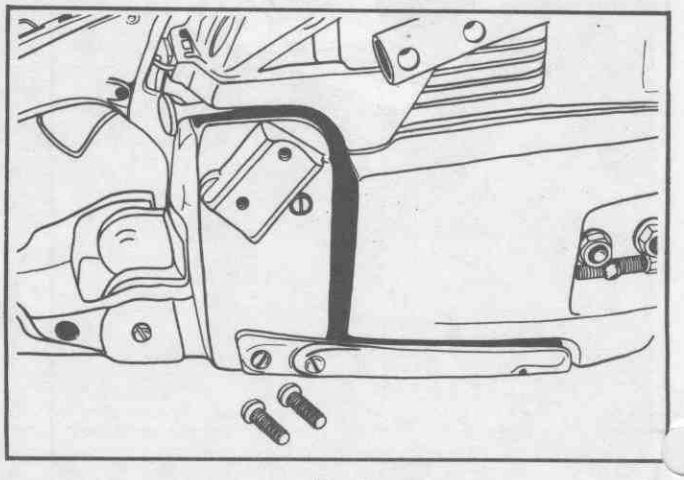


Fig. 3

3. Remove two screws that attach the Handlebar to the Rear Handle, and rotate the Handlebar forward.

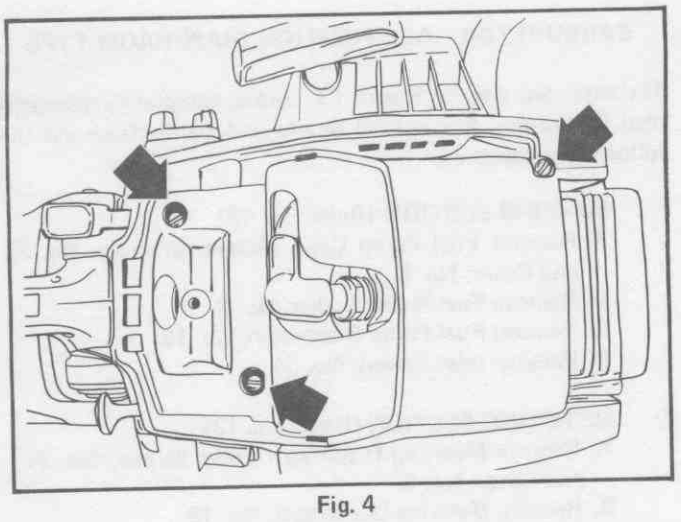


Fig. 4

4. With the cover and filter removed, the Cylinder Shield Screws are accessible. Remove these three Screws.

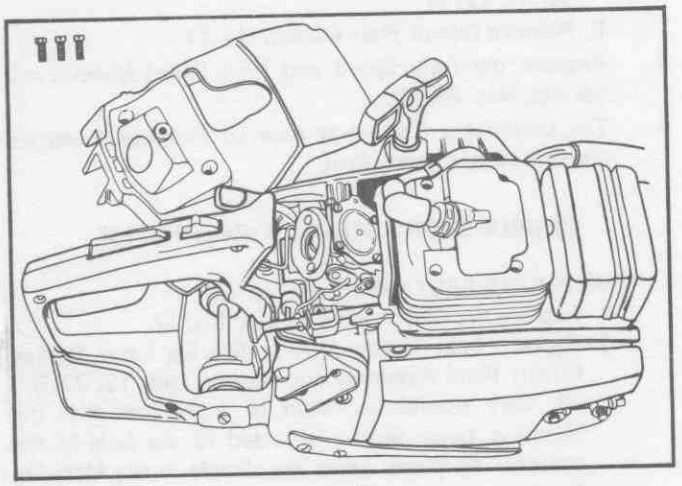


Fig. 5

5. The Cylinder Shield can now be removed. NOTE: When reinstalling Cylinder Shield, make sure that the Fuel Line from the tank to the Carburetor is clear and does not get pinched when Cylinder Shield Screws are tightened.

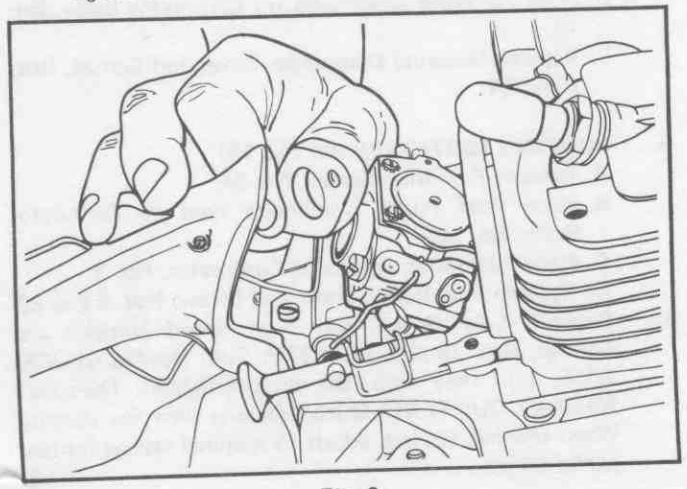


Fig. 6

6. Lift off the Foam Carburetor Shield Seal.

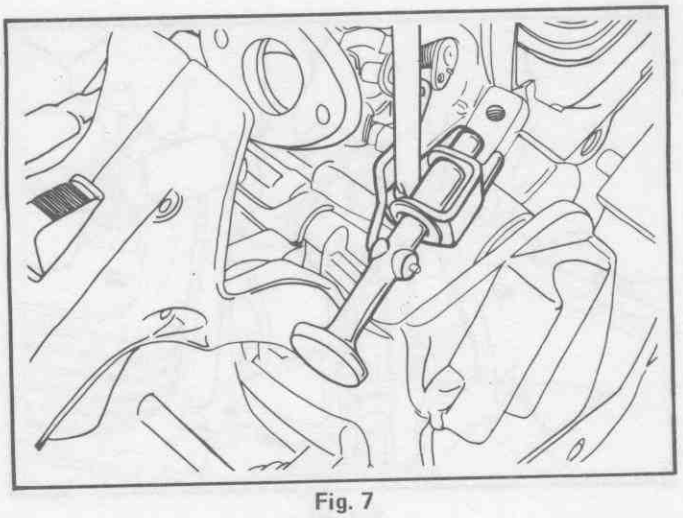


Fig. 7

7. Remove Choke Bracket Screw, separate Choke Wire from Carburetor and lift out Choke Assembly.

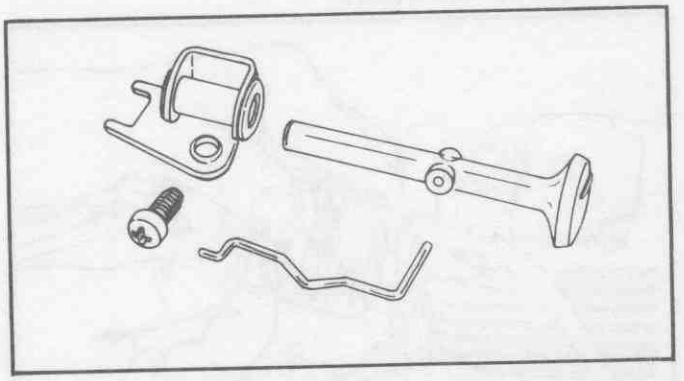


Fig. 8

8. When separated, the choke mechanism includes the parts shown.

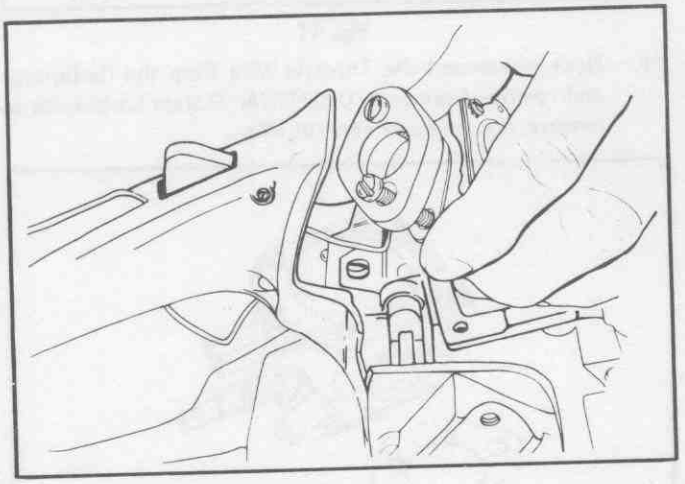


Fig. 9

9. To remove the Carburetor, take out two screws and the Carburetor Seal Bracket.

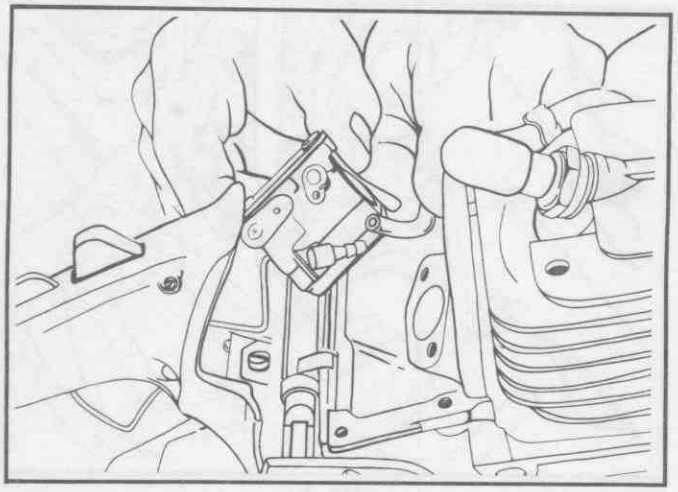


Fig. 10

10. Rotate Carburetor slightly and disconnect Fuel Line from Fuel Inlet Fitting. NOTE: Pull Fuel Line with fingers, do not use pliers.

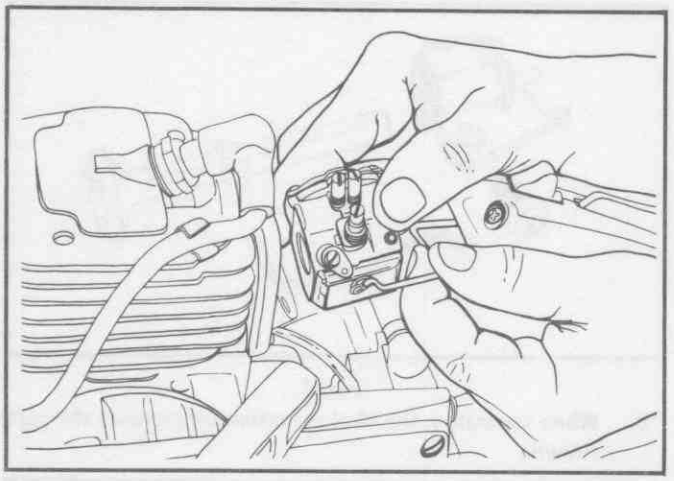


Fig. 11

11. Next disconnect the Throttle Wire from the Carburetor and remove from unit. CAUTION: Rotate Carburetor to remove, do not bend Throttle Wire.

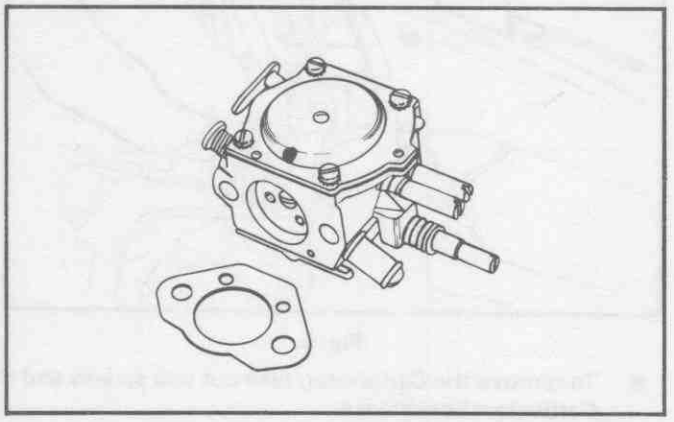


Fig. 12

12. Shown is the Carburetor and Carburetor-to-Adaptor Gasket.

CARBURETOR - ALL POSITION DIAPHRAGM TYPE

The exploded view in Figure 13, shows completely disassembled Carburetor. For normal service and maintenance use the following procedure.

1. **PUMPING SECTION** (Refer Fig. 13)
   - A. Remove Fuel Pump Cover Retaining Screw, No. 22 and Cover, No. 6.
   - B. Remove Fuel Pump Gasket, No. 3.
   - C. Remove Fuel Pump Diaphragm, No. 18.
   - D. Remove Inlet Screen, No. 34.

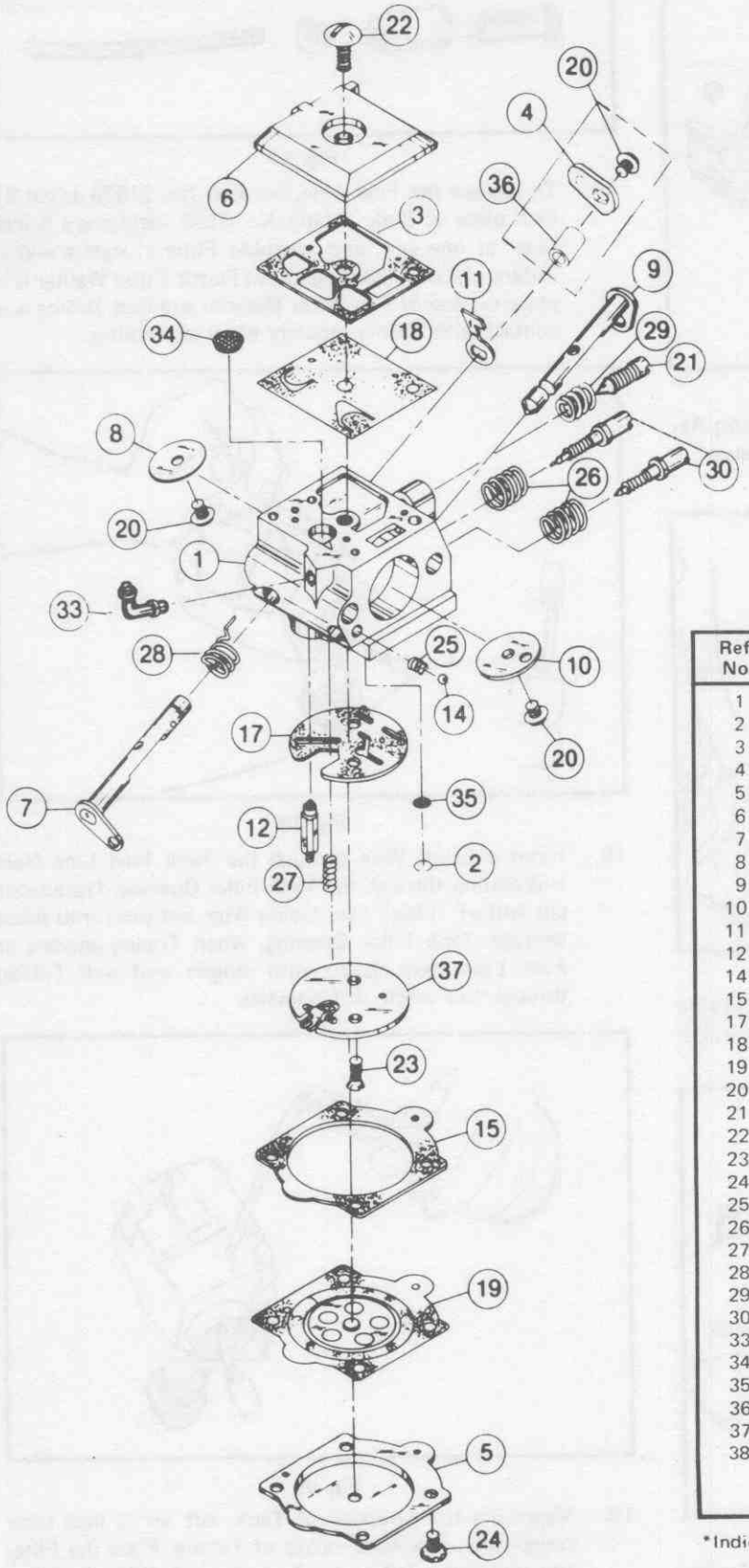
2. **METERING SECTION** (Refer Fig. 13)
   - A. Remove Metering Diaphragm Cover Screws, No. 24 and Cover, No. 5.
   - B. Remove Metering Diaphragm, No. 19.
   - C. Remove Metering Diaphragm Gasket, No. 15.
   - D. Remove Circuit Plate Screws, Circuit Plate Assembly, Inlet Needle Valve, and Metering Lever Spring, Nos. 23, 37, 12, 27.
   - E. Remove Circuit Plate Gasket, No. 17.
3. Remove the Low Speed and High Speed Needles and Springs, Nos. 26, 30.
4. The Carburetor Body may now be thoroughly cleaned and critical parts inspected.

CARBURETOR ASSEMBLY (Refer Fig. 13)

1. **METERING SECTION** (Refer Fig. 13)
   - A. Replace the Circuit Plate Gasket, No. 17.
   - B. Replace Inlet Needle Valve, Metering Lever Spring, Circuit Plate Assembly and Screws, Nos. 12, 27, 37, 23. Care should be taken to make sure that the Metering Lever Spring is seated in the hole in the chamber floor and under the dimple in the Metering Lever.
   - C. Check Metering Lever height by laying straightedge across the Carburetor Body Casting. The Metering Lever should just touch the straightedge.
   - D. Place the Metering Diaphragm Gasket on Carburetor, No. 15.
   - E. Place Metering Diaphragm on Carburetor Body, No. 19.
   - F. Replace Metering Diaphragm Cover and Screws, Nos. 5 and 24.

2. **PUMPING SECTION** (Refer Fig. 13)
   - A. Replace Fuel Inlet Screen, No. 34.
   - B. Place Fuel Pump Diaphragm next to Carburetor Body, No. 18.
   - C. Place Fuel Pump Gasket on Carburetor, No. 3.
   - D. Replace Fuel Pump Cover and Screw, Nos. 6 and 22.
3. Replace Low Speed and High Speed Needles and Springs, Nos. 26 and 30. NOTE: Turn Needles CLOCKWISE until they stop. Do not overtighten. Then turn Needles COUNTERCLOCKWISE one turn for starting. When saw has started, adjust to nominal setting for best performance.

CARBURETOR ASSEMBLY



Ref. No.	Qty. Req.	Description
1	1	Body Ass'y - Carb.
2	1	*Ring - Screen Retaining
3	1	*Gasket - Fuel Pump
4	1	Lever - Throttle (Outer)
5	1	Cover - Mtrg. Diaphragm
6	1	Cover - Fuel Pump
7	1	Shaft Ass'y - Throttle
8	1	Valve - Throttle
9	1	Shaft Ass'y - Choke
10	1	Valve - Choke
11	1	Stop - Throttle
12	1	*Valve - Inlet Needle
14	1	*Ball - Choke Friction
15	1	*Gasket - Mtrg. Diaphragm
17	1	*Gasket - Circuit
18	1	*Diaphragm - Fuel
19	1	*Diaph. Ass'y - Mtrg.
20	2	*Screw - Valve
21	1	Screw - Idle Adj.
22	1	Screw - Pump Cover
23	2	*Screw - Circuit Plate
24	4	*Screw Ass'y - Mtrg. Cover
25	1	*Spring - Choke Friction
26	2	*Spring - Needle's
27	1	*Spring - Mtrg. Lever
28	1	Spring - Throttle Ret.
29	1	Spring - Idle Screw
30	2	Needle - Hi & Lo
33	1	Fitting - Inlet (Elbow)
34	1	*Screen - Inlet
35	1	*Screen - Check Valve
36	1	Bushing - Throttle Lv.
37	1	Plate Ass'y - Circuit
38	1	Gasket Kit (Gasket Only)
	1	*Kit - Kwik Repair
	1	Kit - Gasket/Diaphragm

*Indicates contents of Repair Parts Kit

Fig. 13

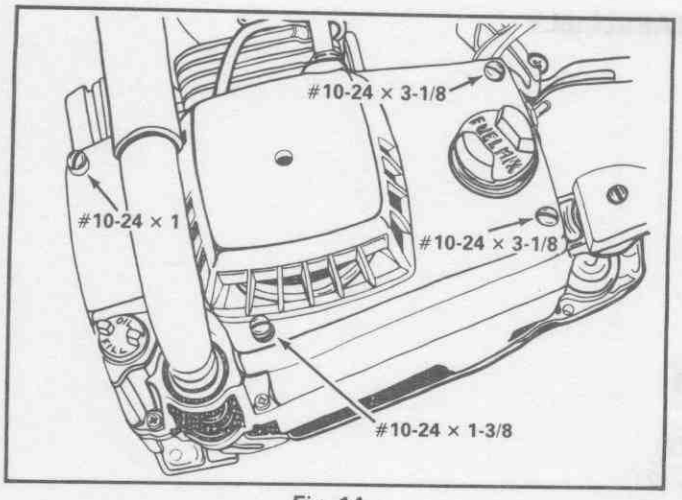


Fig. 14

14. To gain access to the Fuel Tank, the Fan Housing Assembly must be removed by taking out four Screws.

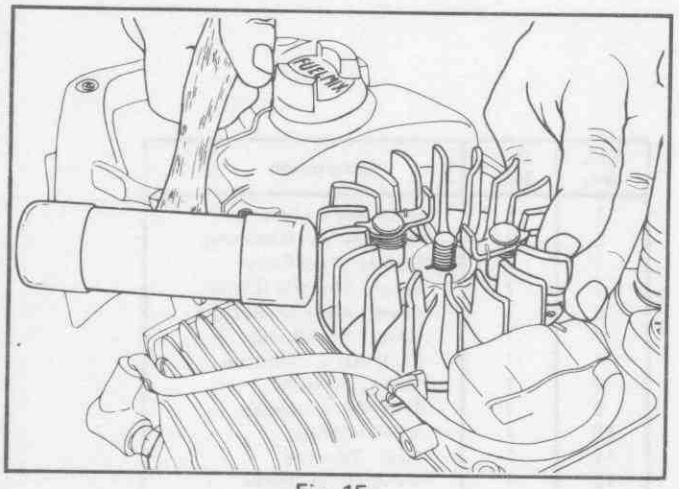


Fig. 15

15. Next, remove Flywheel Nut. Tap on counterweight side of Flywheel (opposite Magnets) with soft hammer. Lift Flywheel Assembly from unit.

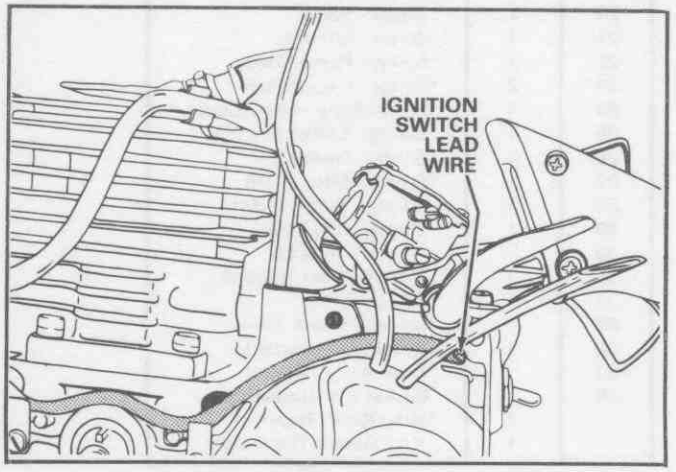


Fig. 16

16. Remove Air Filter Cover, Cylinder Shield, Choke Assembly, and Carburetor. With the Flywheel removed, the Fuel Tank is now accessible and may be removed. The Fuel Line from the Tank to the Carburetor must be disconnected at the Carburetor, and disconnect the Ignition Switch Lead Wire from the Ignition Switch.

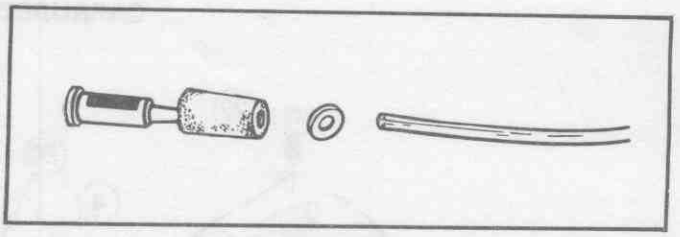


Fig. 17

17. To replace the Fuel Line, use Part No. 21028 or cut 9¼ inch piece of Bulk Tubing, No. 8133, including a ½ inch taper at one end, and assemble Filter at square end of Tubing. NOTE: Make sure that Plastic Filter Washer is in place on top of Felt Filter Material and that Tubing is in contact with Washer securely when assembling.

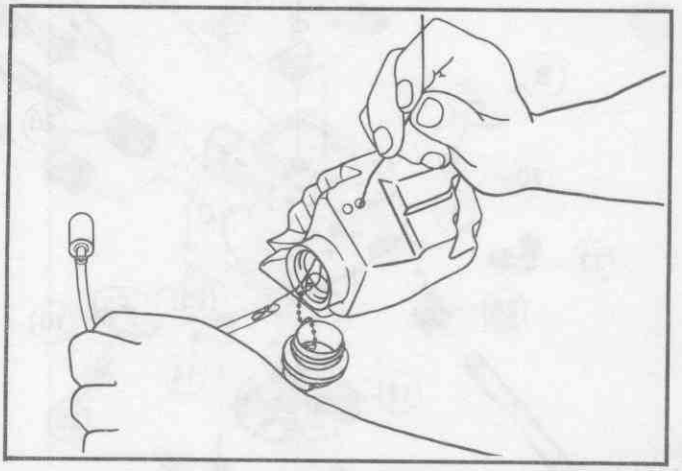


Fig. 18

18. Insert a Guide Wire through the Tank Fuel Line Hole and exiting through the Tank Filler Opening. Place taper cut end of Tubing over Guide Wire and push into place through Tank Filler Opening. When Tubing appears at Fuel Line Hole, grasp with fingers and pull Tubing through to a length of 5½ inches.

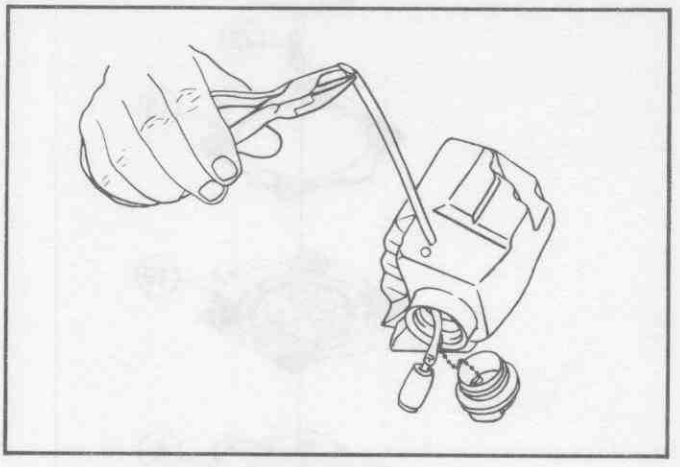


Fig. 19

19. Measuring from outside of Tank, cut off ½ inch taper completely, leaving 5 inches of Tubing. Place the Filter and remaining Tubing in Tank through Filler Opening, and place Tank in position making sure that the Ignition Switch Lead Wire is in the groove on the Tank. Slide Tank in position and reconnect the Ignition Wire to the Ignition Switch. Position Fuel Line through slot in Crankcase and under the Carburetor. Position Vent Line under Ignition Switch.

SECTION II – STARTER ASSEMBLY

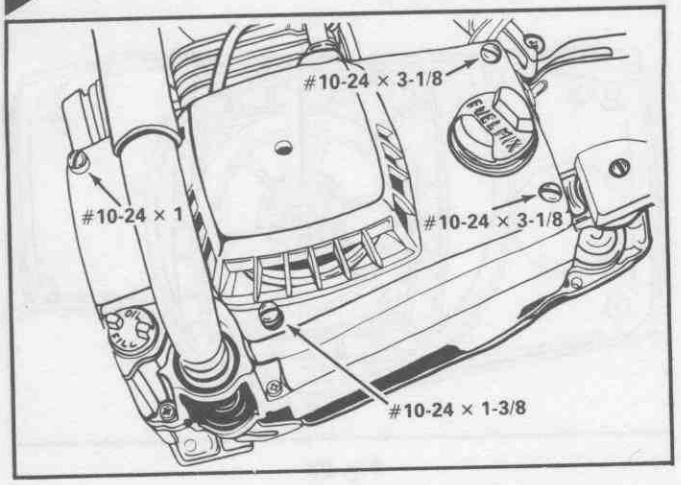


Fig. 20

20. For Starter Assembly service, remove four Screws to remove Fan Housing Assembly from saw. NOTE: Screw Lengths.

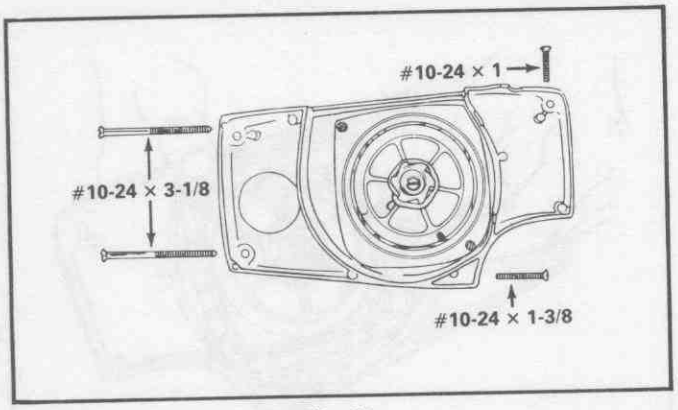


Fig. 21

21. With the Fan Housing Assembly removed, the Starter Assembly is now accessible.

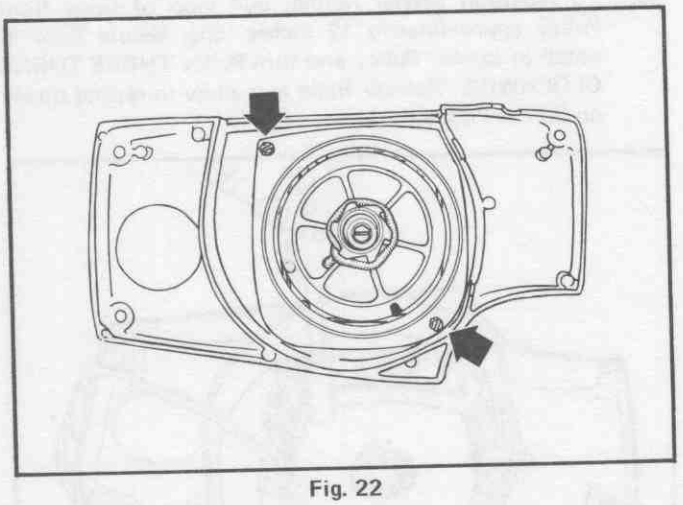


Fig. 22

22. Remove two Screws and Air Baffle Plate.

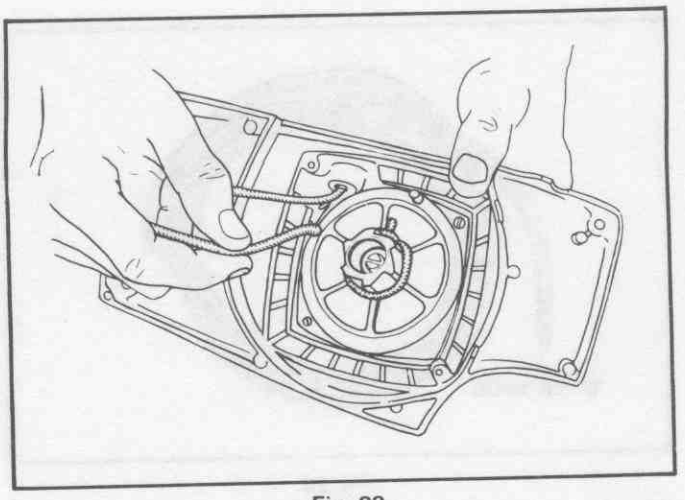


Fig. 23

23. Before performing any service on the Starter Assembly, release the Starter Spring tension. Pull 10-12 inches of Rope from Starter Pulley and secure in notch in Pulley. Then allow Pulley to rotate COUNTERCLOCKWISE until Spring tension is relieved.

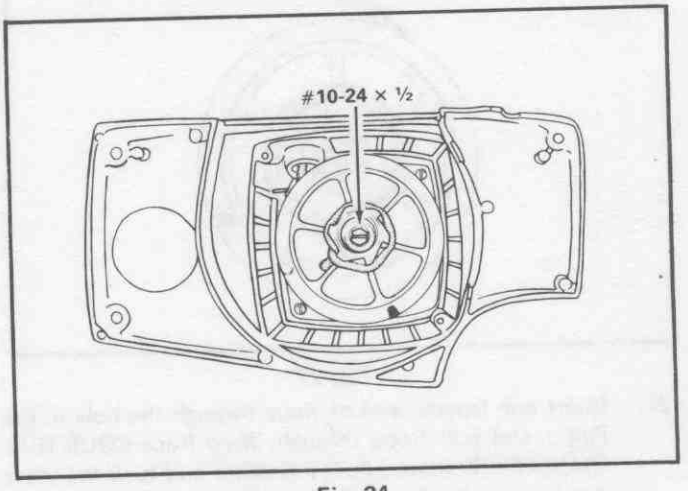


Fig. 24

24. The Starter Pulley can be removed by taking out Starter Pulley Screw.

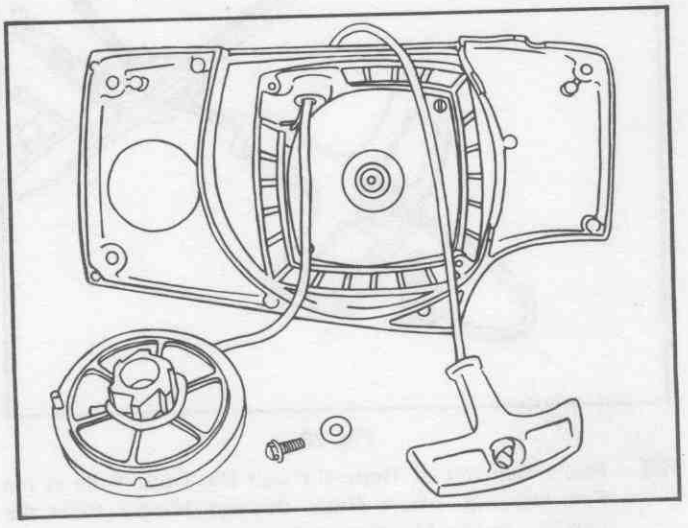


Fig. 25

25. The Pulley can now be lifted out of the Fan Housing.

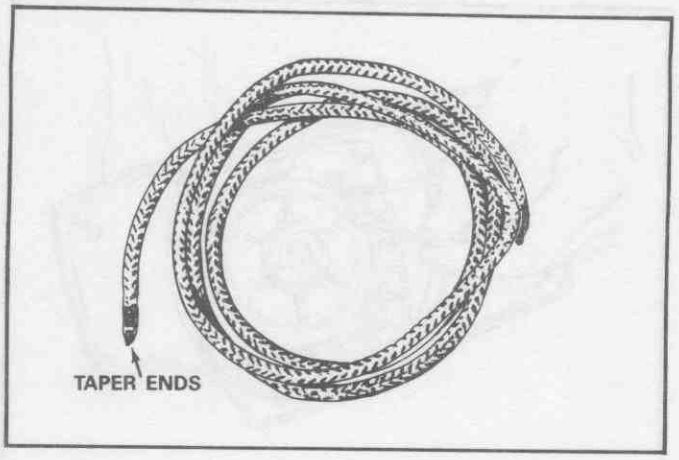


Fig. 26

26. To replace Starter Rope use Part No. 42052 or 48 inches of Bulk Rope No. 8128. Heat both ends of Rope and form points.

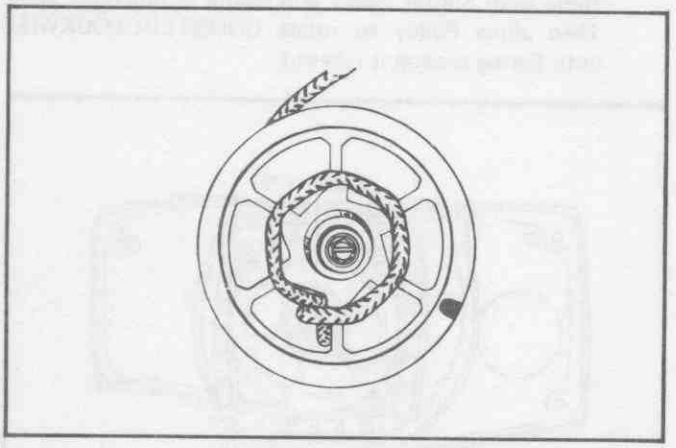


Fig. 27

27. Insert one tapered end of Rope through the hole in the Pulley and pull Rope through. Wrap Rope COUNTER-CLOCKWISE around Pulley Ratchet and tuck the loose end back under Rope leaving 3/16 inch to 5/16 inch tail. Pull Rope to tighten.

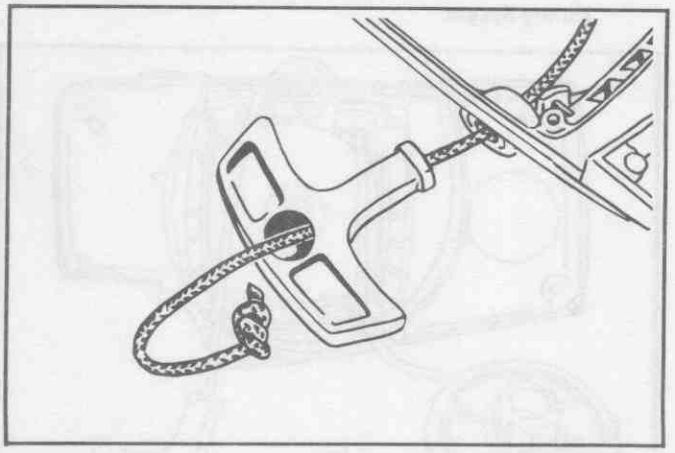


Fig. 28

28. Pass other end of Rope through the Rope Hole in the Fan Housing. Insert Rope through Handle from the bottom, tie double knot in Rope, insert tailend of knot into Handle first, then pull slack out of Rope. Wrap Rope CLOCKWISE on Starter Pulley.

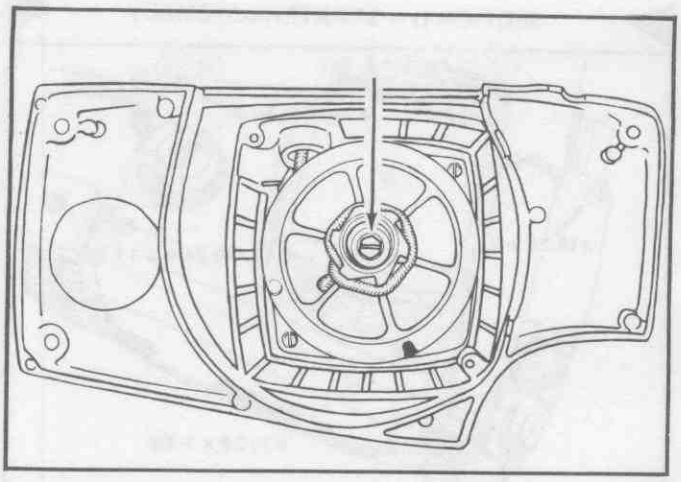


Fig. 29

29. Apply light grade Silicone Lubricant to Starter Pulley Bore and place Starter Pulley in position. Secure with Screw.

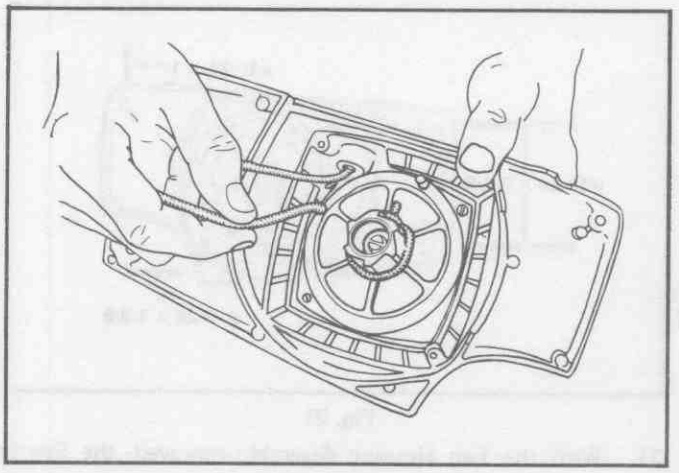


Fig. 30

30. To retension Starter Spring, pull loop of Rope from Pulley approximately 12 inches long. Secure Rope in notch in Starter Pulley and turn Pulley THREE TURNS CLOCKWISE. Release Rope and allow to rewind slowly on Starter Pulley.

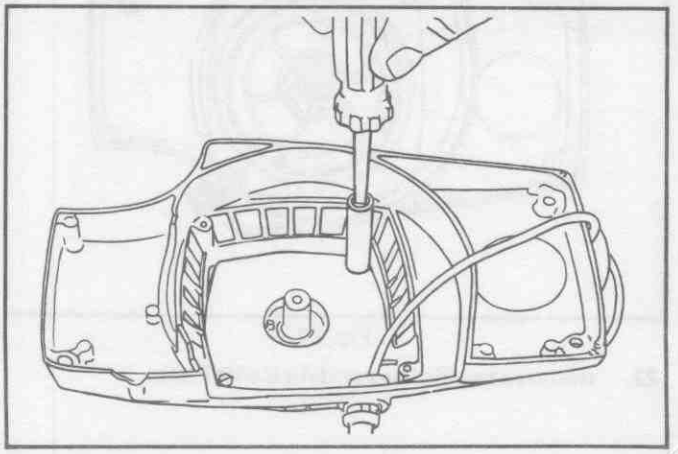


Fig. 31

31. To replace the Starter Spring, follow the procedures described in Fig. 22 thru 25. Next remove two Screws and remove Starter Spring Shield.

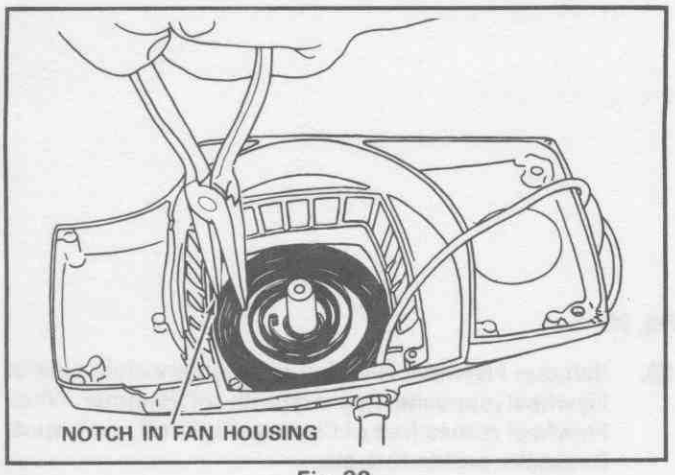


Fig. 32

32. Grasp Starter Spring firmly at notch in Fan Housing with needle nose pliers and lift out of Fan Housing carefully. Spring may uncoil rapidly if not held firmly. Note CLOCKWISE rotation of Spring. With Spring removed, inspect Inner Spring Disc and replace if necessary. After replacing Spring, reinstall or replace the Recoil Spring Bushing as necessary. **CAUTION:** Spring is under considerable pressure and may release rapidly and dangerously if not handled properly.

SECTION III – IGNITION

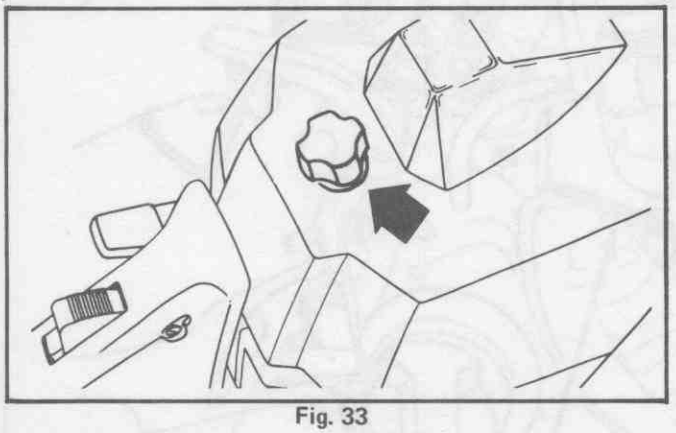


Fig. 33

33. Pull Choke Knob OUT to close the Carburetor Choke Shutter. Remove the Carburetor Cover Hold Down Knob and Carburetor Cover.

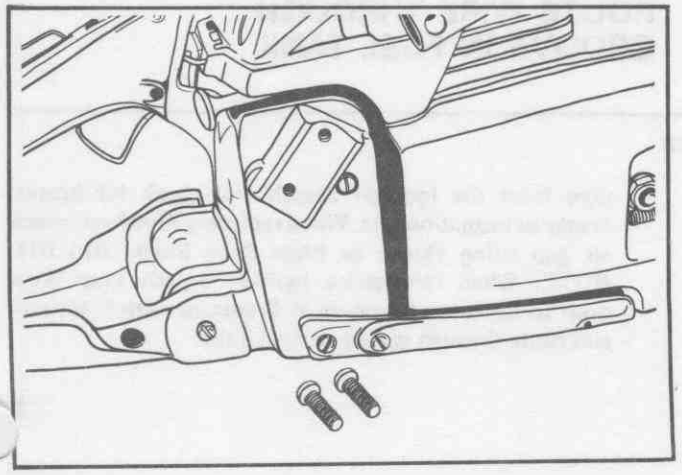


Fig. 34

34. Remove two Screws that attach the Handlebar to the Rear Handle, and rotate the Handlebar forward.

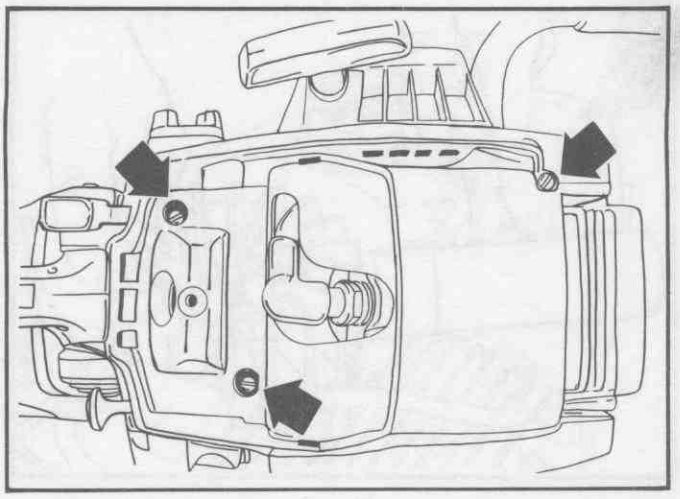


Fig. 35

35. With the Cover and Filter removed, the Cylinder Shield Screws are accessible. Remove these three Screws.

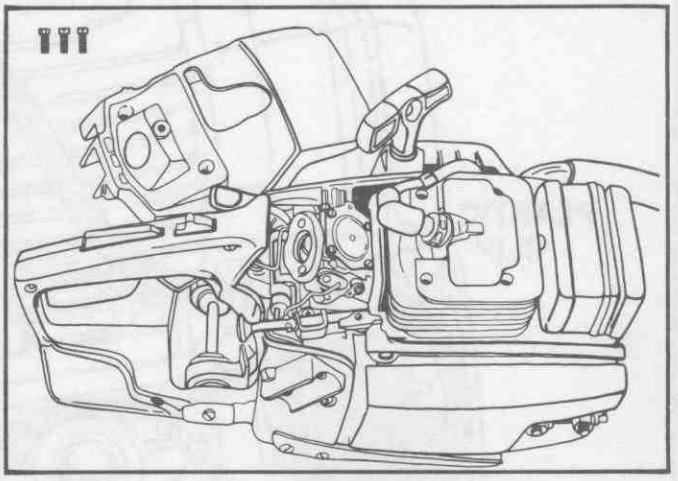


Fig. 36

36. The Cylinder Shield can now be removed.

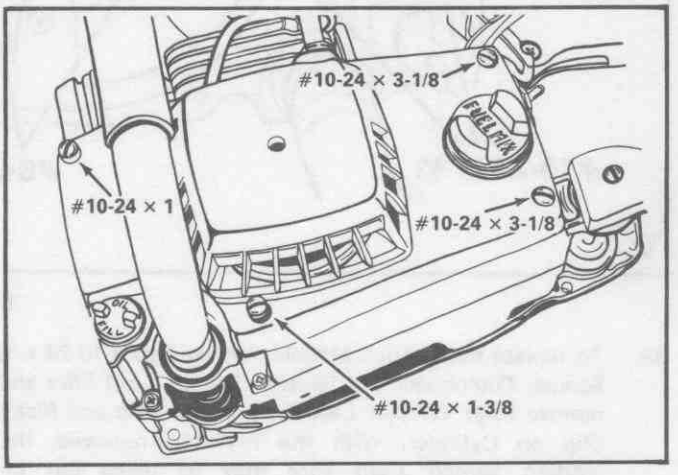


Fig. 37

37. The Fan Housing Assembly must be removed by taking out four Screws. NOTE: Screw Lengths.

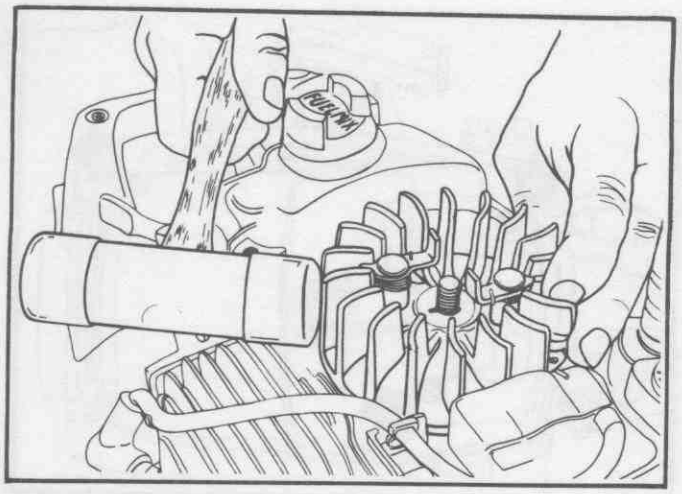


Fig. 38

38. Remove Flywheel Nut. Tap on counterweight side of Flywheel (opposite Magnets) with soft hammer. When Flywheel comes free of Crankshaft, lift off and inspect for cracks, broken fins, etc.

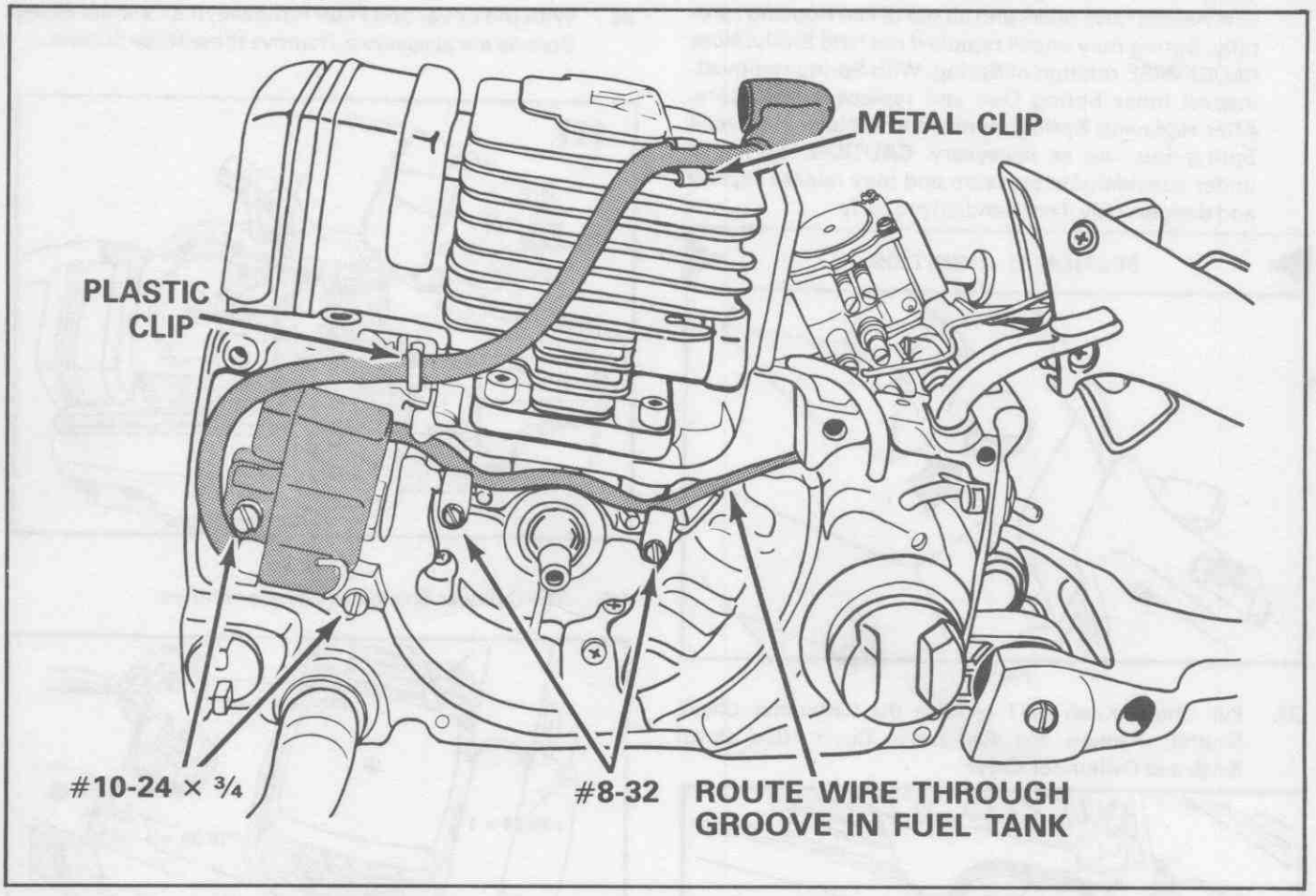


Fig. 39

39. To replace the Ignition Module, remove two # 10-24 x ¾ Screws. Disconnect the Ignition Switch Lead Wire and remove High Tension Lead from Plastic Clip and Metal Clip on Cylinder. With the Flywheel removed, the Ignition Switch Lead Wire may be taken out by removing two # 8-32 Screws and Clamps. Disconnect the wire from the Ignition Switch and check for breaks, cracks in insulation, etc. When replacing Flywheel, check air gap using Plastic or Brass Shim Stock .010-.014. NOTE: When reinstalling Ignition Switch Lead Wire, push to bottom of grooves in Crankcase with blunt tool and route through groove in Fuel Tank.

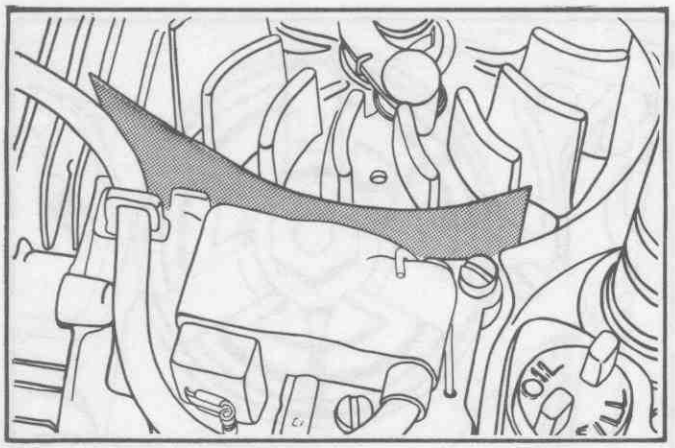


Fig. 40

40. When replacing the Module, set the air gap between the Module and Magnets in the Flywheel at .010-.014, using Plastic or Brass Shim Stock. Allow Magnets in the Flywheel to pull the Module to the proper gap. Do not force the Module against the Flywheel.

SECTION IV – CLUTCH

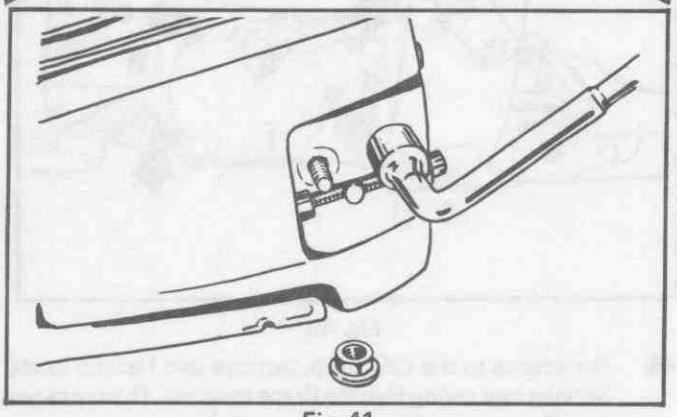


Fig. 41

41. To gain access to the Clutch Assembly, remove two 5/16-18 Bar Clamp Nuts and Bar Clamp. NOTE: Remove the Fan Housing Assembly to avoid damage to the Starter Pulley or Flywheel when servicing the Clutch Assembly.

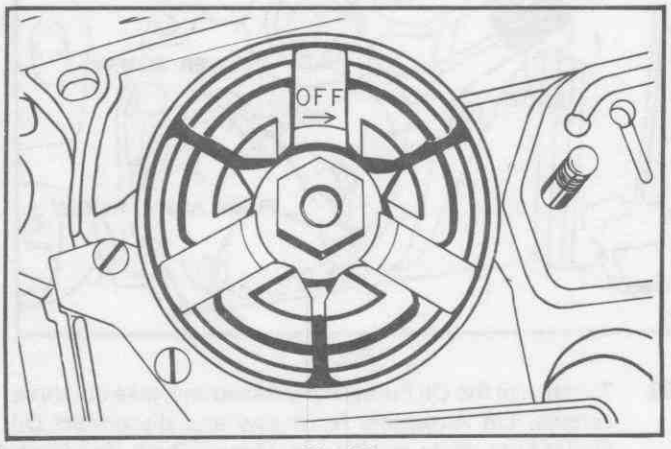


Fig. 42

42. The threads on the Crankshaft are LEFT-HANDED, and Clutch Assembly can be removed by using a ¾ inch wrench or socket. Note arrow indicating direction of rotation to remove. CAUTION: Do not use hammer type impact driver or punch to remove the Clutch. When removing, take the Clutch Drum and Clutch Assembly off together to prevent the Clutch Spring from separating from the Clutch Assembly.

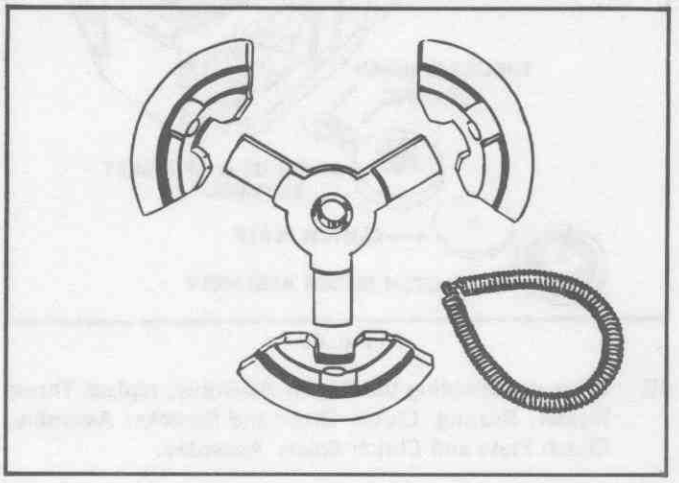


Fig. 43

43. The Clutch Spider Assembly includes the Clutch Spider, Shoes and Spring.

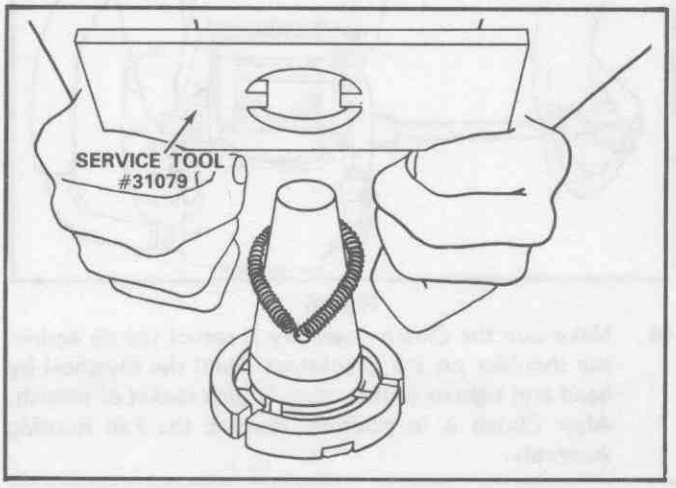


Fig. 44

44. When reassembling Spider Assembly, use Service Tool No. 31079 to reinstall Clutch Spring. When removing Tool, pull the Cone out first to make sure the Spring is in position. **CAUTION:** Spring is under pressure and may release rapidly and dangerously if not handled properly.

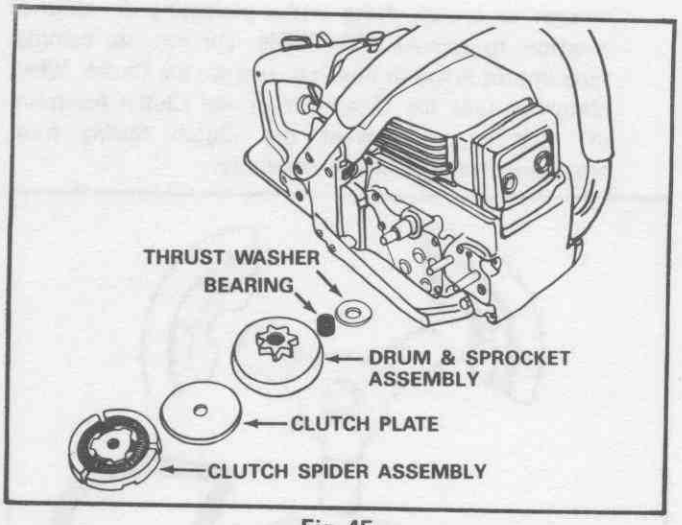


Fig. 45

45. When reassembling the Clutch Assembly, replace Thrust Washer, Bearing, Clutch Drum and Sprocket Assembly, Clutch Plate and Clutch Spider Assembly.

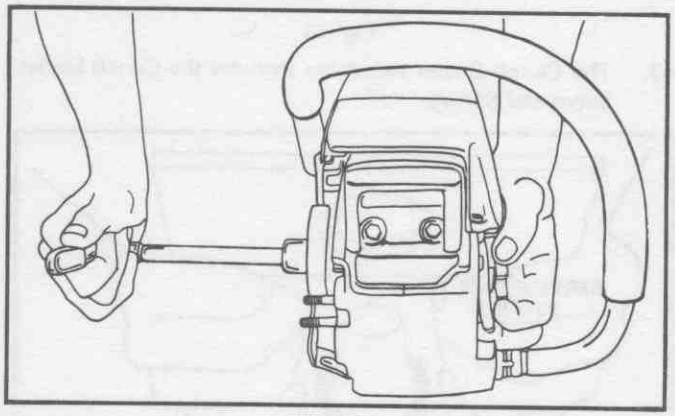


Fig. 46

46. Make sure the Clutch Assembly is seated tightly against the shoulder on the Crankshaft. Hold the Flywheel by hand and tighten Clutch using ¾ inch socket or wrench. After Clutch is in position, reinstall the Fan Housing Assembly.

SECTION V – OILING SYSTEM

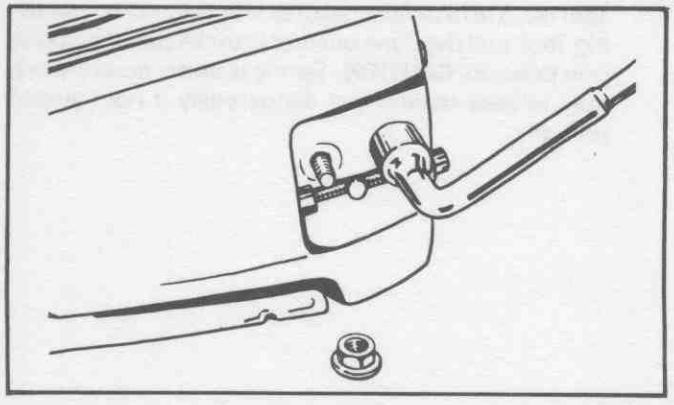


Fig. 47

47. For access to the Oiling System, remove the Bar Clamp.

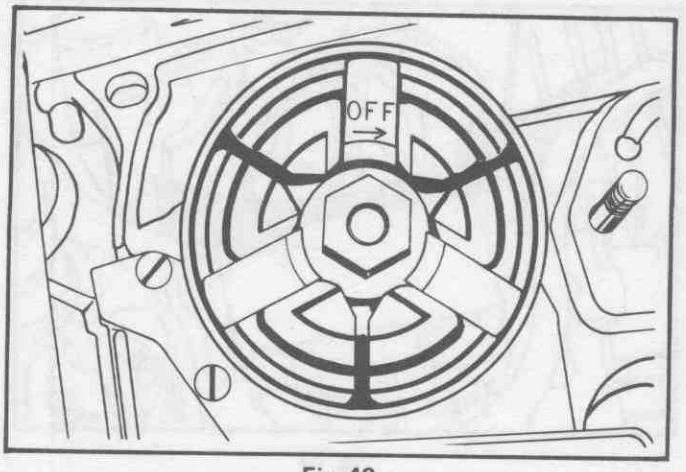


Fig. 48

48. Next remove the Clutch Assembly.

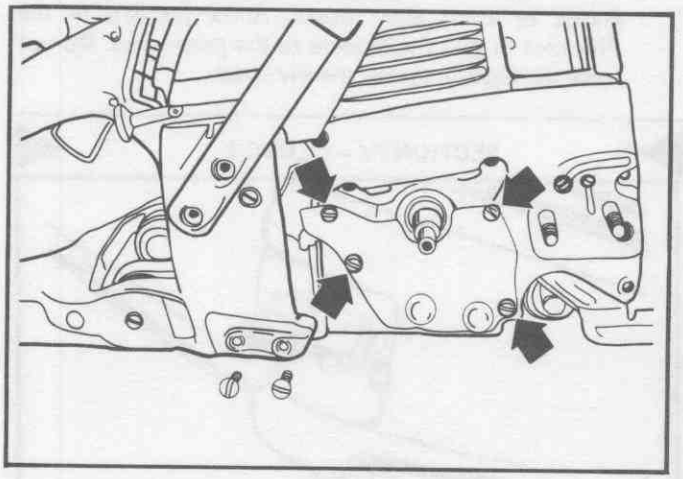


Fig. 49

49. For access to the Oil Pump, remove two Handle Brace Screws and swing Handle Brace forward. Then remove four Screws and Oil Pump Cover Plate.

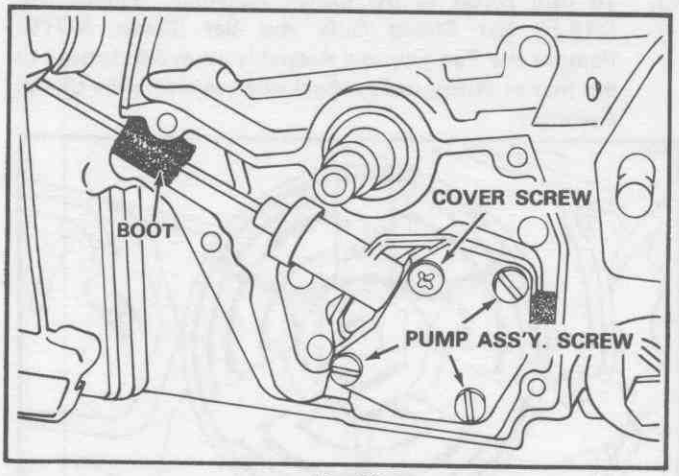


Fig. 50

50. To remove the Oil Pump Body Assembly, take out three screws. Lift Assembly from saw and disconnect Oil Outlet Line. Note position of Manual Push Rod Boot. Remove the Oil Pump Cover Screw.

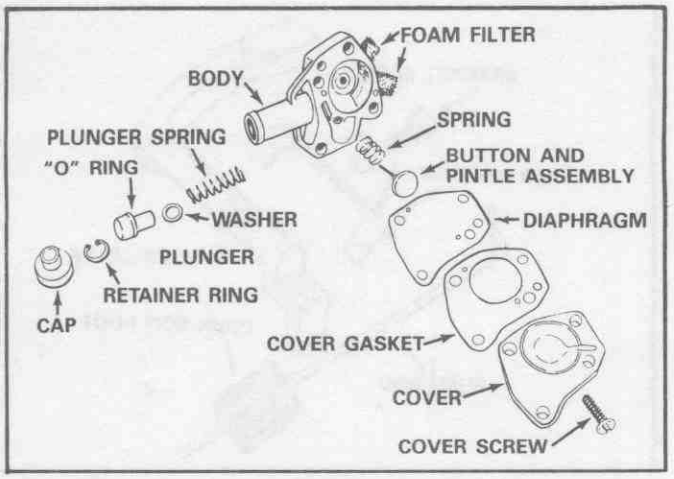


Fig. 51

51. The Oil Pump Body Assembly includes Oil Pump Body, Oil Pump Cap, Plunger Retainer Ring, Plunger, Plunger "O" Ring, Plunger Spring Washer, Plunger Spring, Oil Pump Cover, Cover Gasket, Diaphragm, Button and Pintle Assembly, Spring, Oil Inlet Line and Filter Assembly (not shown) and Oil Pump Assembly Gasket (not shown). Clean, visually inspect, and replace any parts that are worn or damaged. NOTE: When re-assembling the Oil Pump Body, internal components should be lubricated with SAE 30 weight oil.

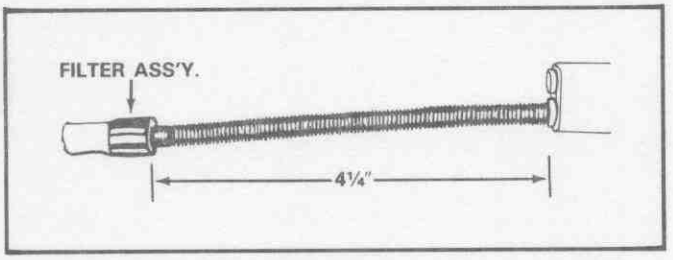


Fig. 52

52. The Oil Inlet Line Assembly includes Line No. 21031 or 4¼ inches of Bulk Line No. 8133, Oil Pick-up Filter, and Oil Line Protector Spring. When installing make sure that Oil Line and Spring go over Barb on Fitting marked "I" on Oil Pump Body. Also make sure the Spring is positioned over the Oil Filter Barb.

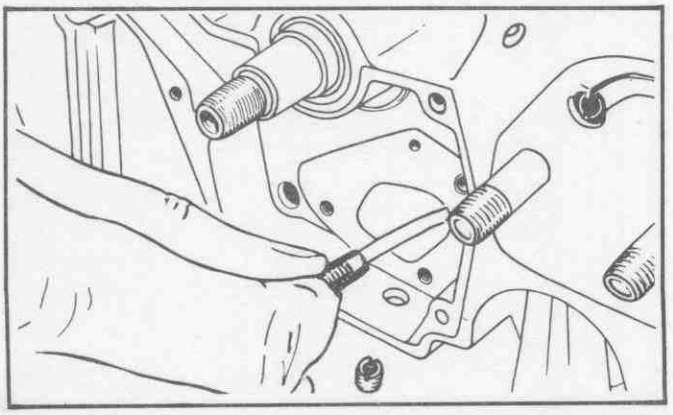


Fig. 53

53. To replace the oil discharge line, pull the high pressure nylon tubing through the opening in the bar pad.

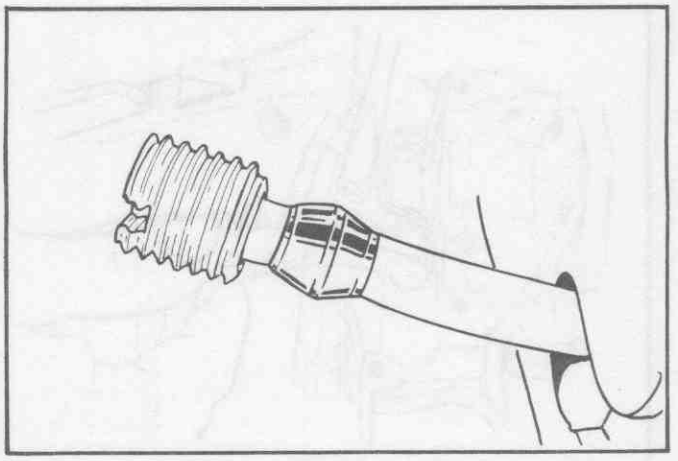


Fig. 54

54. Place the sleeve and compression nut on the tubing and secure to the crankcase.

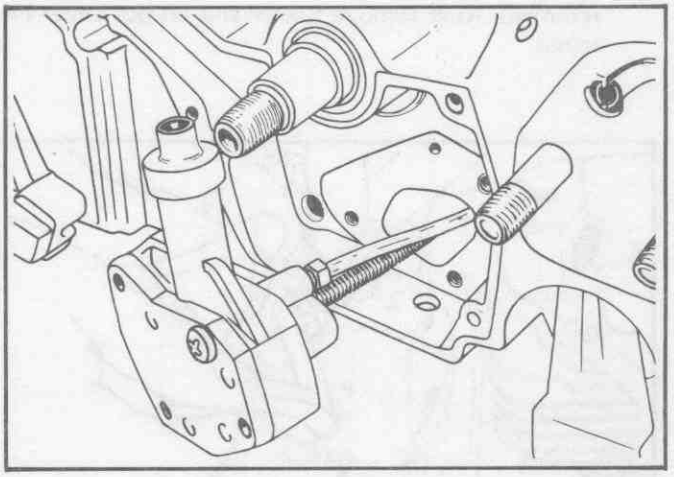


Fig. 55

55. Attach the other sleeve and compression nut to the oil pump body. Replace and secure the oil pump.

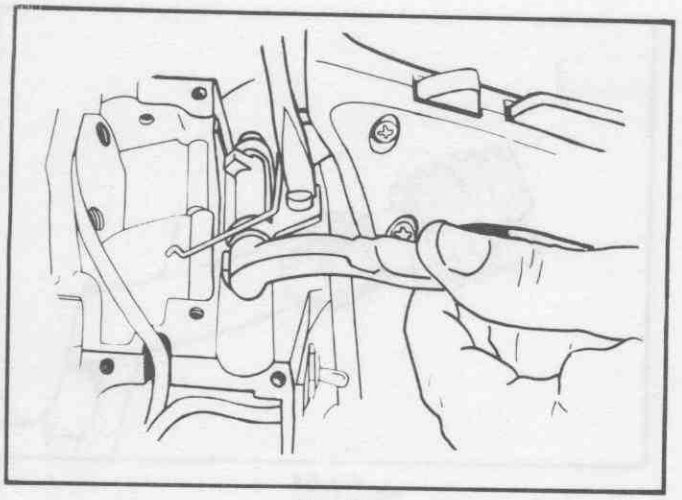


Fig. 56

56. To remove the Manual Oiler Lever and Push Rod, the Air Filter Cover, Air Filter, and Cylinder Shield must be removed. Next remove Screw and lift out Lever Retainer.

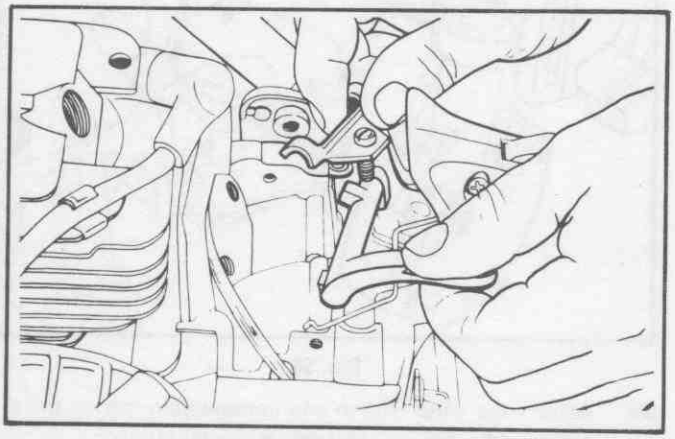


Fig. 57

57. Disconnect Pump Lever from Push Rod and remove. If it is necessary to remove the Manual Pump Rod, the Rod Boot should be removed also. When replacing slide Boot on Rod, reinstall and make sure Boot is in correct position. See Fig. 50.

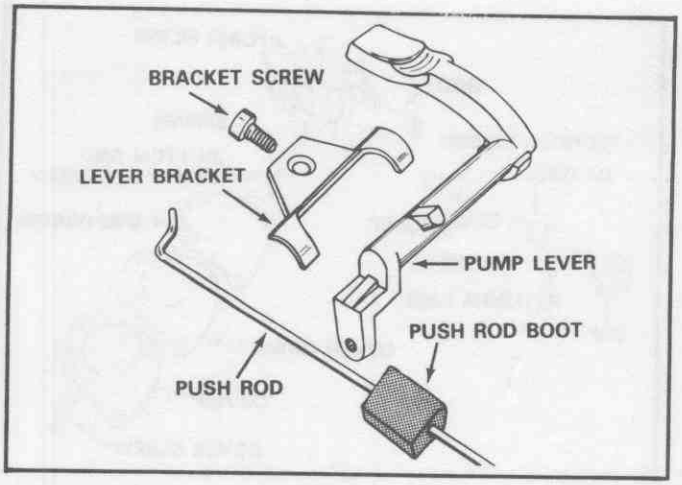


Fig. 58

58. The Manual Oiler consists of Pump Lever, Push Rod, Push Rod Boot, Lever Bracket, and Bracket Screw.

SECTION VI – REAR HANDLE ASSEMBLY

Remove two Screws from rear of Handlebar and rotate forward. Remove two Screws from the Handle Brace and rotate forward.

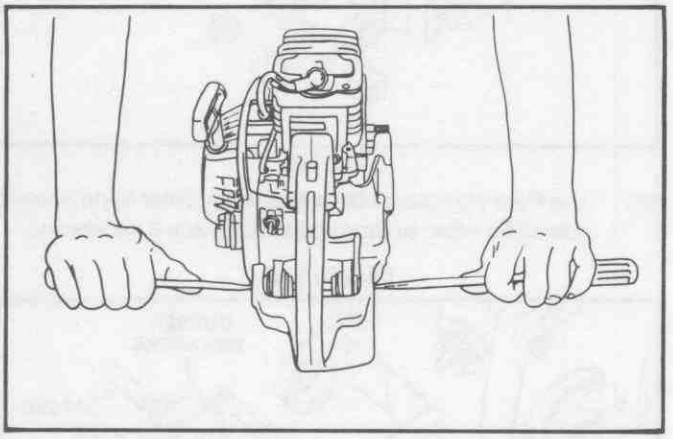


Fig. 59

59. Using two screwdrivers, remove two Screws from Lower Rear Handle Isolation Mount. Remove one Screw from side Isolation Mount. Squeeze Throttle Trigger and disconnect Throttle Wire — *Do Not Bend.* The Rear Handle Assembly can now be removed from the saw.

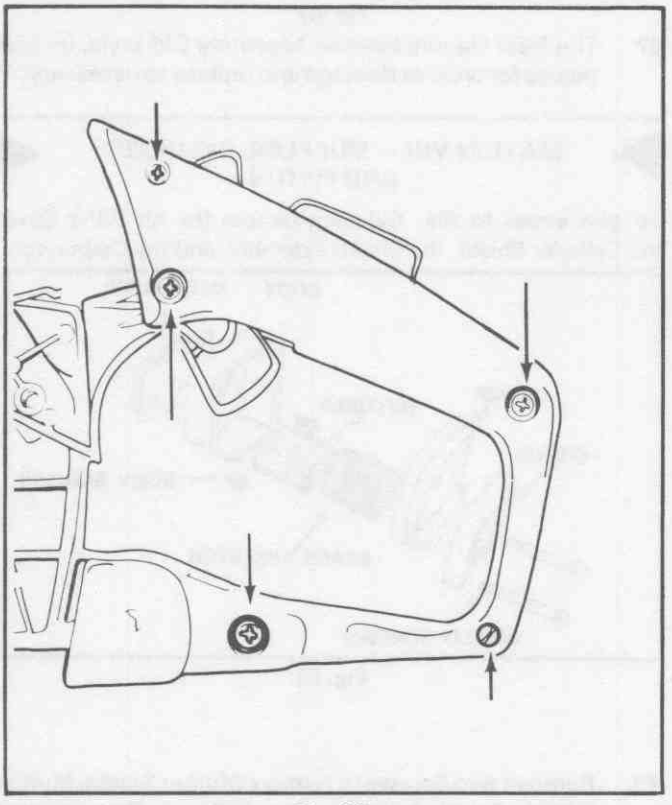


Fig. 60

60. Separate Handle by removing five Screws.

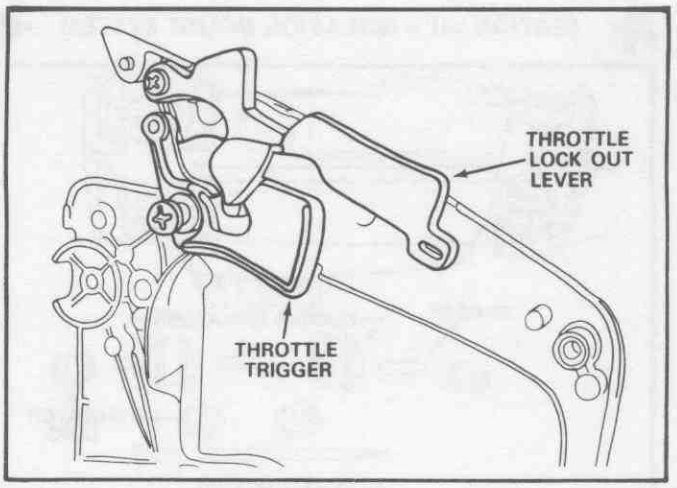


Fig. 61

61. Remove the Throttle Lock-Out Lever and Pivot Bushing, Trigger and Pivot Bushing, and the Throttle Lock-Out Lever Spring. Inspect for wear or damage and replace as necessary.

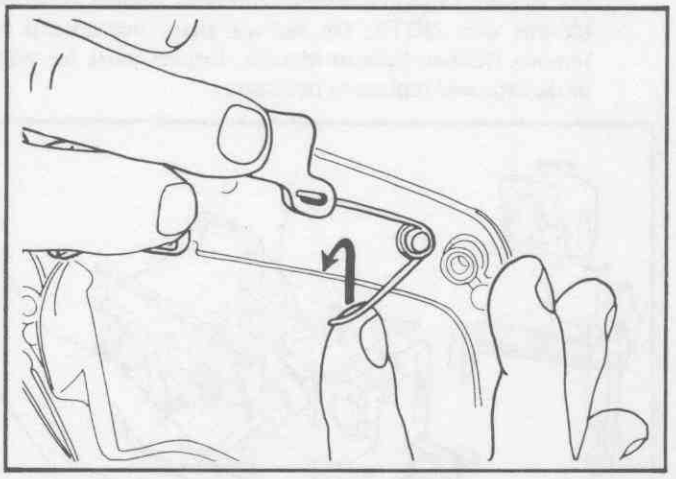


Fig. 62

62. When reinstalling Lockout Lever Spring, position loop over post in Right Handle Half. Raise lower arm of Spring and position inside Handle.

SECTION VII – ISOLATION MOUNT SYSTEM

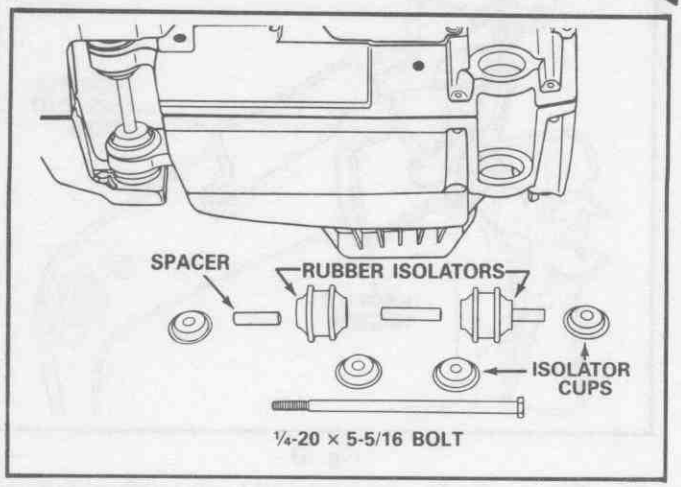


Fig. 63

63. To disassemble the Front Isolator Mount, remove the Front Handlebar, and the Rear Handle Brace. Remove the Isolator Cups and Spacers and push Rubber Isolation Mounts out. NOTE: Do not use sharp instruments to remove Rubber Isolator Mounts. Inspect parts for wear or damage and replace as necessary.

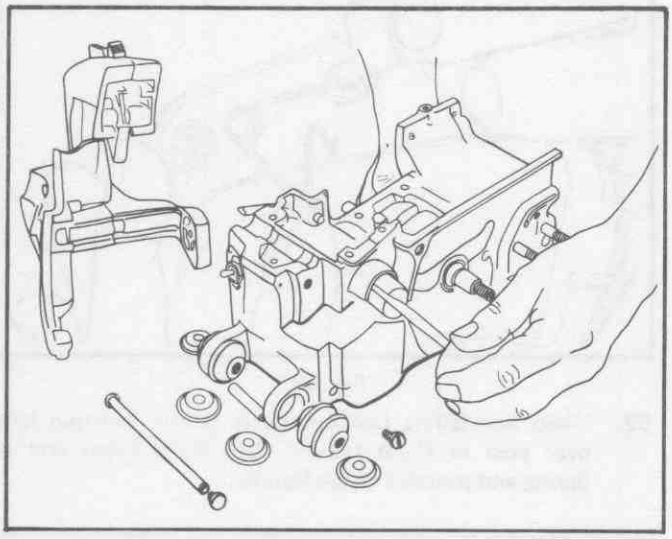


Fig. 64

Remove Rear Handle Assembly from saw.

Remove the Side Isolator Mount using Service Tool No. 31054.

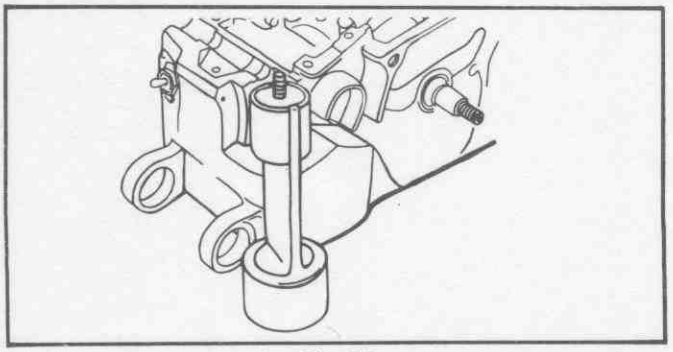


Fig. 65

65. When removing or installing the Side Isolator Mount, make sure the Tool engages the Mount fully.

NEW STYLE

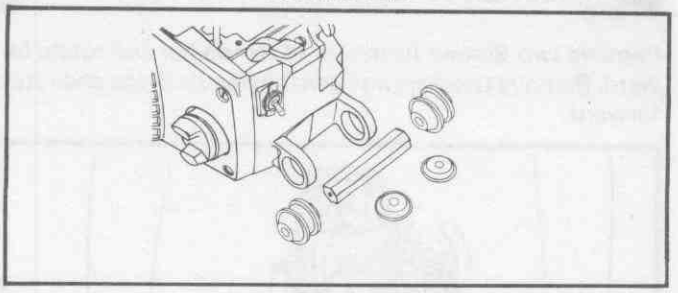


Fig. 66

66. The Rear Handle Isolator Assembly New Style. Inspect pieces for wear or damage and replace if necessary.

OLD STYLE

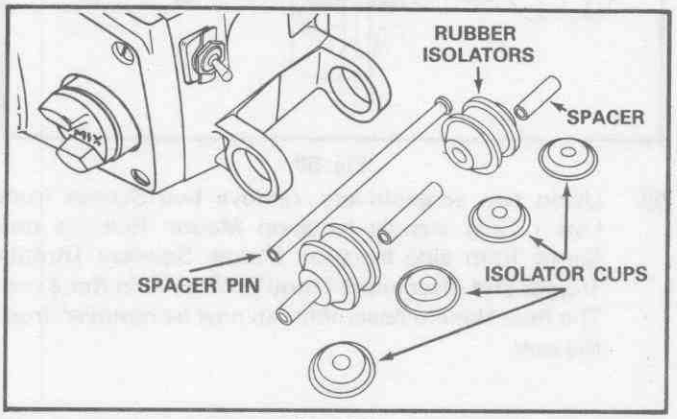


Fig. 67

67. The Rear Handle Isolator Assembly Old Style. Inspect pieces for wear or damage and replace as necessary.

SECTION VIII – MUFFLER, CYLINDER AND PISTON

To gain access to the Cylinder, remove the Air Filter Cover, the Cylinder Shield, the Choke Assembly, and the Carburetor.

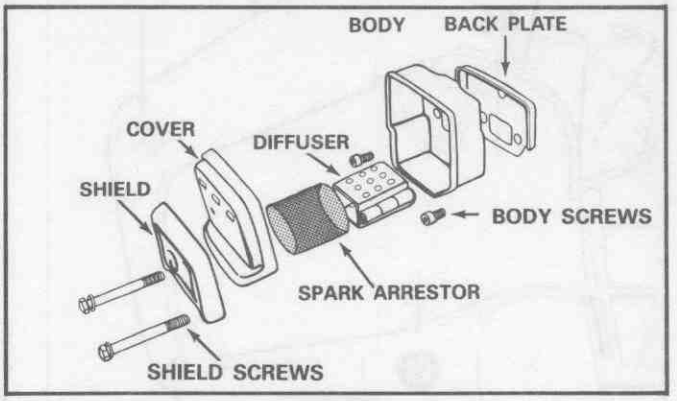


Fig. 68

68. Remove two Screws to remove Muffler Shield, Muffler Cover, Spark Arrestor, and Diffuser. Remove two Screws to remove the Muffler Body and Back Plate from the Cylinder. Inspect and clean or replace parts as necessary. Rotate Crankshaft so Piston covers th Exhaust Port, and using non-metallic tool scrape ca bon out of Exhaust Port. NOTE: It is not necessary to remove the Muffler for access to the Cylinder.

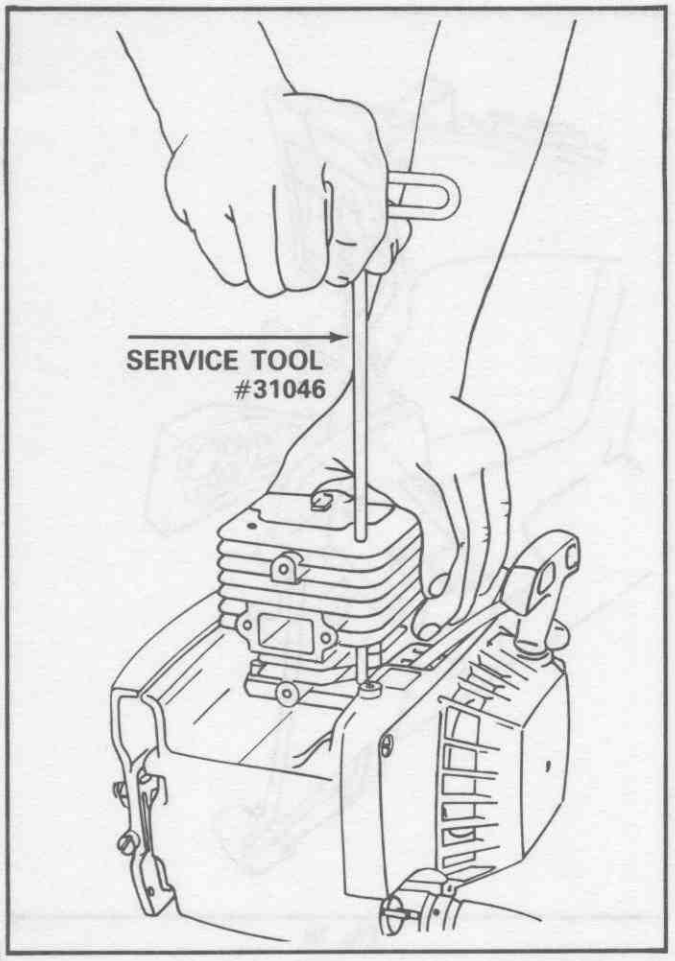


Fig. 69

69. Remove four ¼-20 x 7/8 Cylinder Mounting Screws using Service Tool No. 31046. NOTE: When replacing *DO NOT* substitute Screws longer than 7/8 inch.

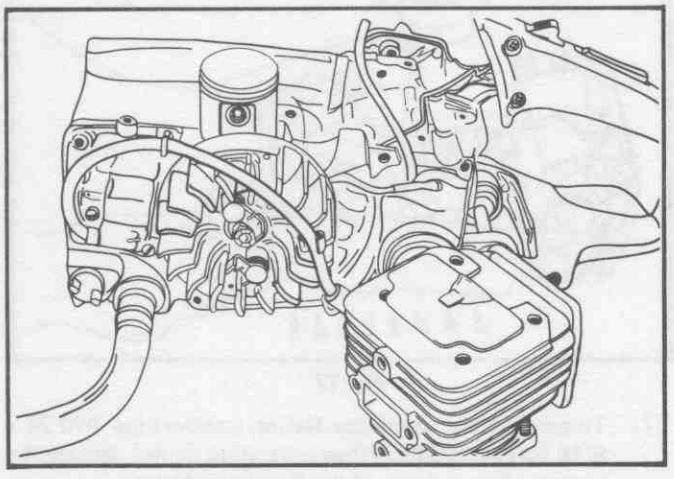


Fig. 70

70. The Cylinder can now be lifted off Piston. Carefully lift off Cylinder Gasket. When replacing use NEW Gasket.

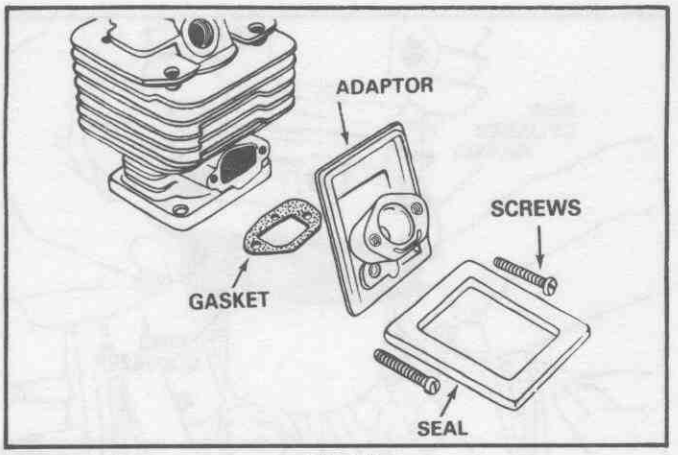


Fig. 71

71. Once the Cylinder is lifted off, the Carburetor Adaptor and Gasket can be removed by taking out two Screws. The Carburetor Adaptor Seal should be inspected and replaced if worn or damaged. The Adaptor Gasket should be discarded and replaced with a new one.

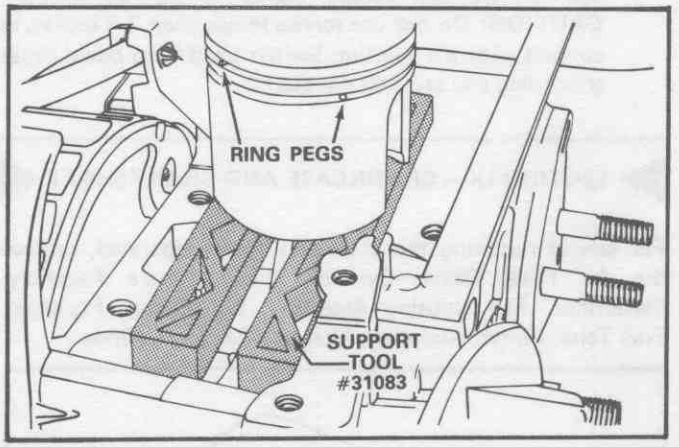


Fig. 72

72. To replace the Piston, remove the Rings and place the Rod Support Service Tool No. 31083 in position to secure the Connecting Rod. Note the position of Ring Pegs toward rear of saw.

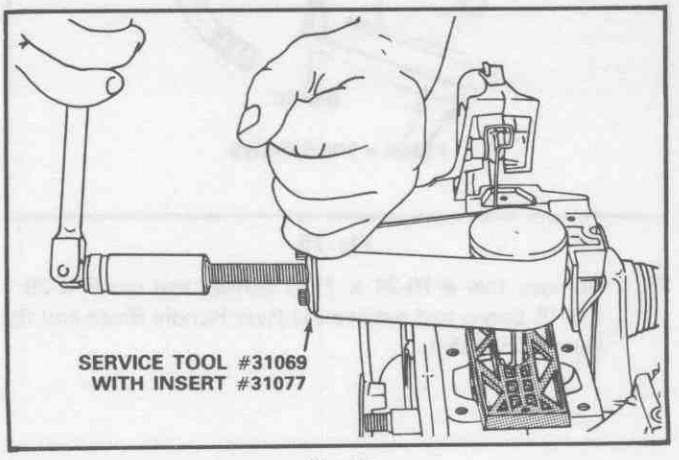


Fig. 73

73. Position Service Tool No. 31069 on Piston and using Insert No. 31077, push Piston Pin out of Piston. CAUTION: Do not tap Piston Pin to remove or install. This will cause damage to the Connecting Rod. Reverse this procedure to reinstall the Piston. NOTE: When reinstalling Piston Pin, visually center in Piston.

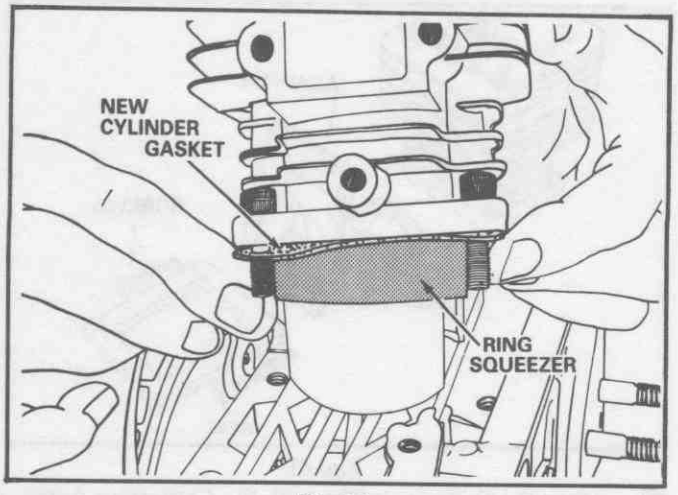


Fig. 74

74. After Piston has been installed, place NEW Cylinder Gasket in position, place Rings on Piston, and using Ring Squeezer, slide Cylinder in place. Replace four ¼-20 x 7/8 Screws and torque evenly to 90-100 inch-lbs. CAUTION: Do not use screws longer than 7/8 inches, as contact with the Ignition Switch Lead Wire could cause grounding and saw will not start.

SECTION IX – CRANKCASE AND CRANKSHAFT

For service requiring the Crankcase to be separated, remove the Air Filter Cover, Cylinder Shield, Choke Assembly, Carburetor, Fan Housing Assembly, Bar Clamp, Flywheel, Fuel Tank, Clutch Assembly, Manual Oiler and Cylinder.

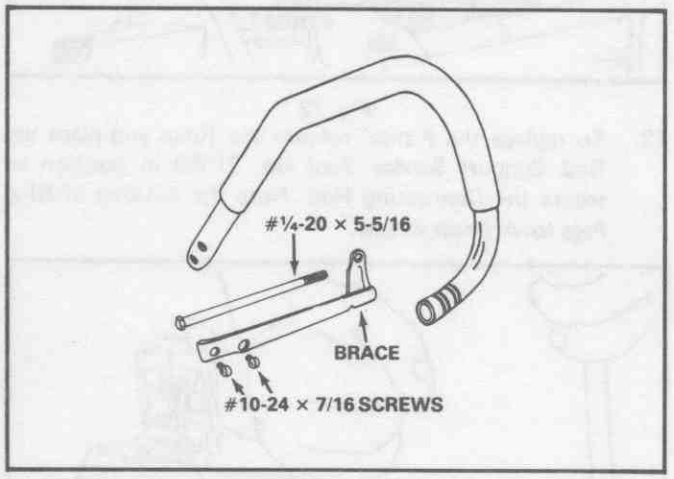


Fig. 75

75. Remove two #10-24 x 7/16 Screws and one# ¼-20 x 5-5/16 Screw and remove the Rear Handle Brace and the Front Handlebar.

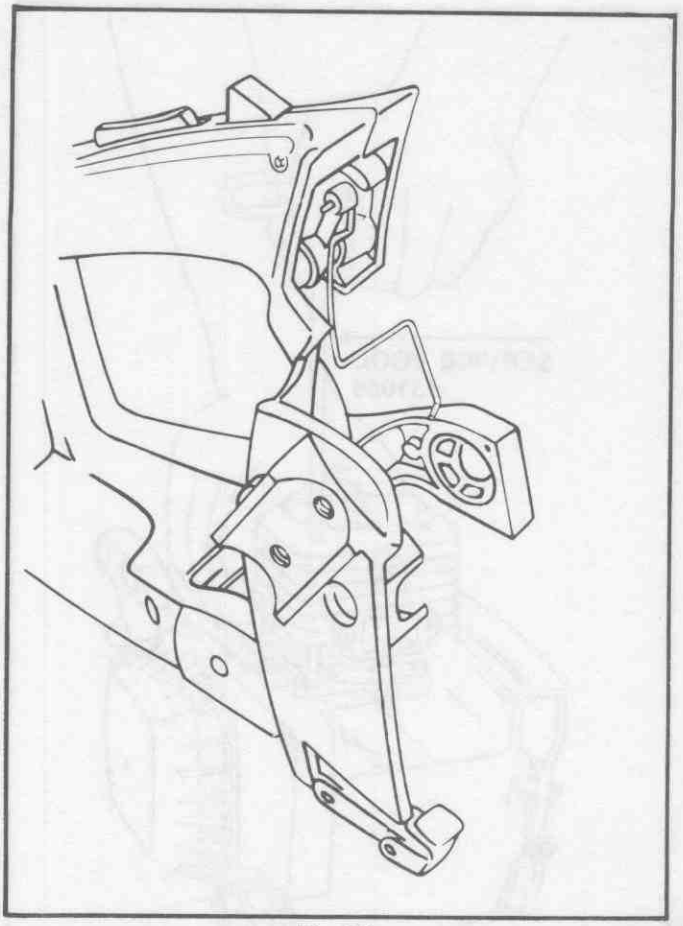


Fig. 76

76. Separate Rear Handle Assembly from saw.

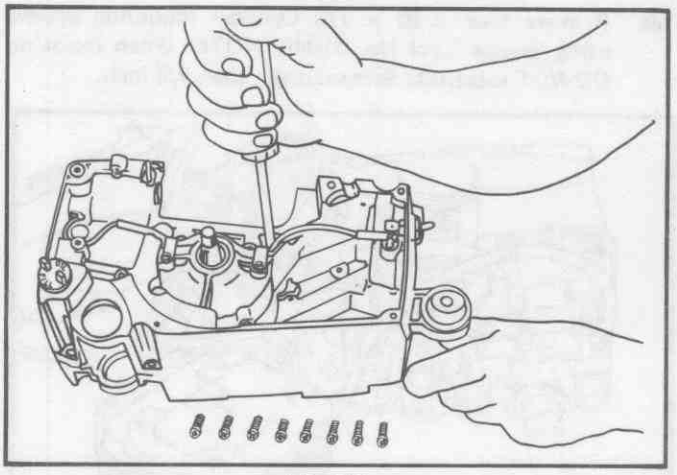


Fig. 77

77. To separate the Crankcase Halves, remove nine #10-24 x 9/16 Screws. NOTE: When separating do not damage the inner mating surfaces of the Crankcase Halves.

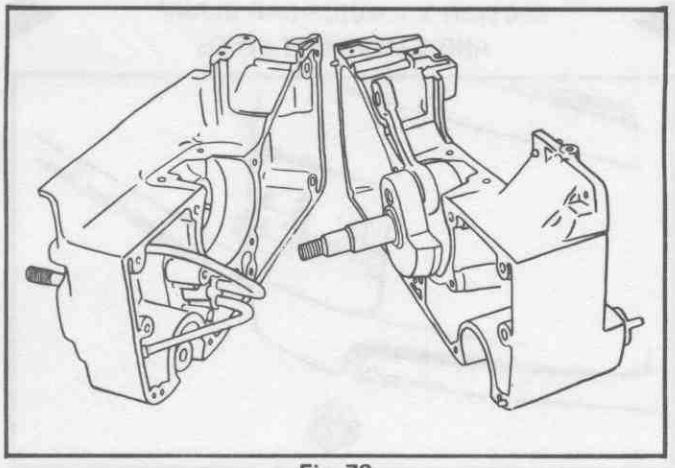


Fig. 78

78. When the Crankcase Halves are separated, the Crankshaft Assembly and Thrust Washers can be removed.

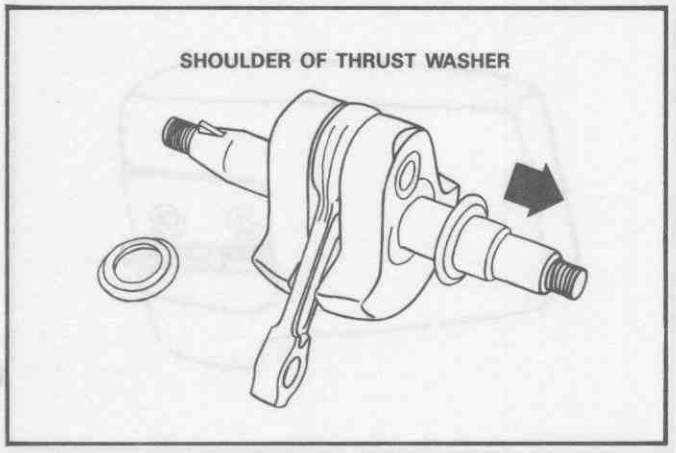


Fig. 79

79. The Crankshaft, Connecting Rod, and Connecting Rod Bearings are a Complete Assembly and must be replaced as a unit. Note the position of the Thrust Washers with the shoulder toward the Crankshaft Bearings.

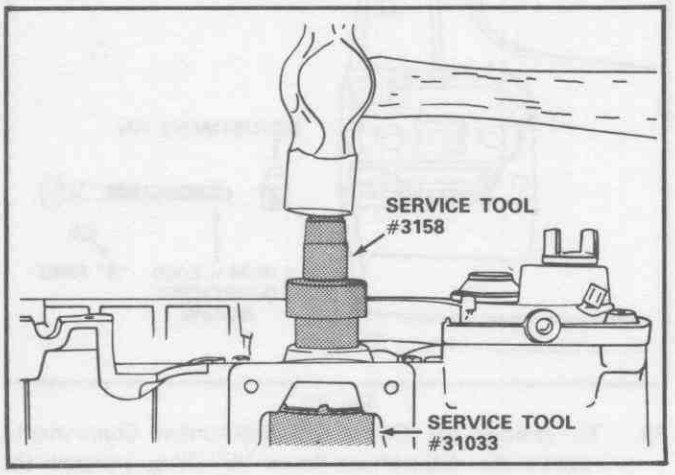


Fig. 80

80. Remove the Crankshaft Seals and place Crankcase Half with Inner Thrust Face down on Support No. 31033. Using Service Tool No. 3158, tap Crankshaft Bearings out of Crankcase Halves.

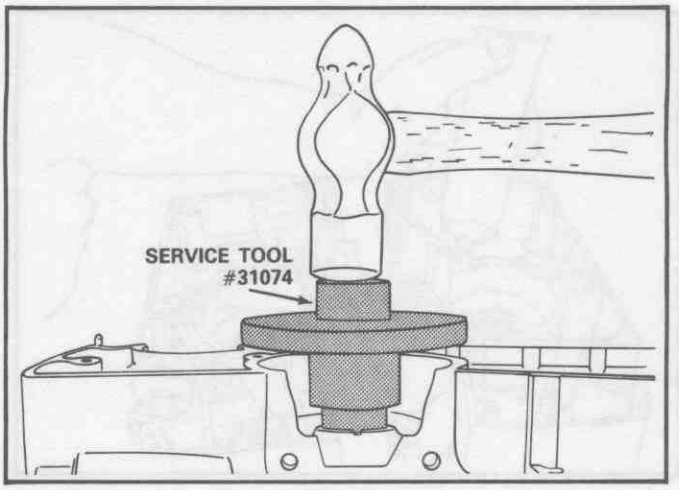


Fig. 81

81. To reinstall Crankshaft Bearings, place Crankcase Half with Inner Thrust Face Up on Support No. 31033. Set Bearing in Bearing Boss with the numbered Face UP, and tap Bearing in place using Bearing Driver No. 31074 until shoulder on tool rests on mating surface of Crankcase Casting. This will provide the proper Bearing Depth Setting.

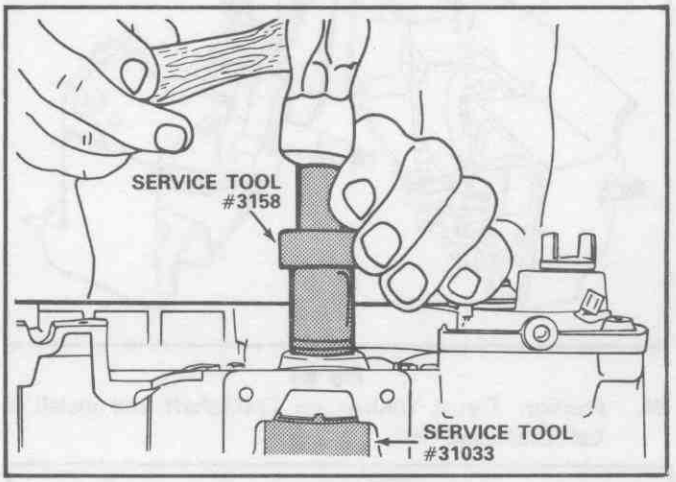


Fig. 82

82. Next, turn the Crankcase Half over so the Inner Thrust Face is down on Support No. 31033. Place Crankshaft Seal in position with Seal Lip toward the Bearing and tap in place using Tool No. 3158. The Seal should be flush to .015 inside the outer surface of the Bearing Boss.

NOTE: Service Crankcase will include Crankshaft Seals and Bearings installed. Always replace complete Crankcase.

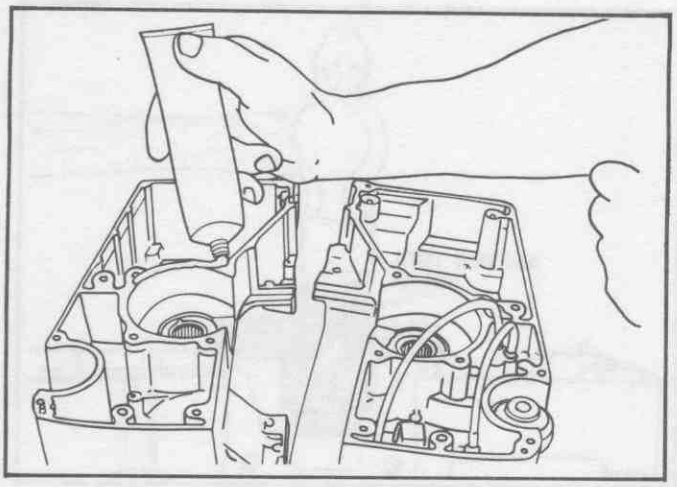


Fig. 83

83. Apply a 1/32 bead uniformly to Left Crankcase Mating Surface of Part No. 30054 Sealant. Do not substitute. NOTE: Crankcase Halves must be assembled within 15 minutes after application.

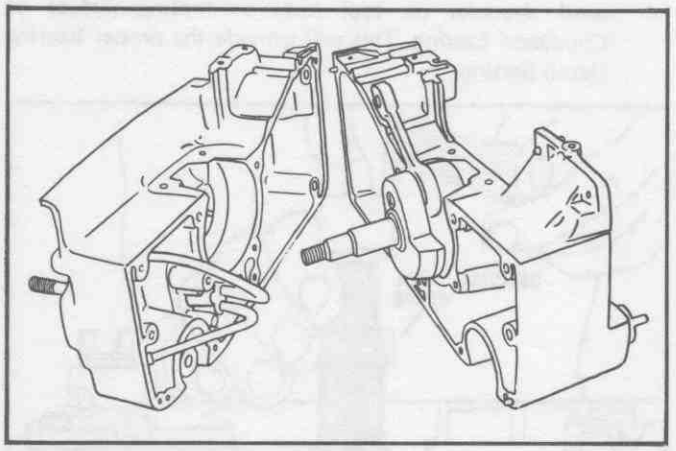


Fig. 84

84. Position Thrust Washers on Crankshaft and install in Left Crankcase Half.

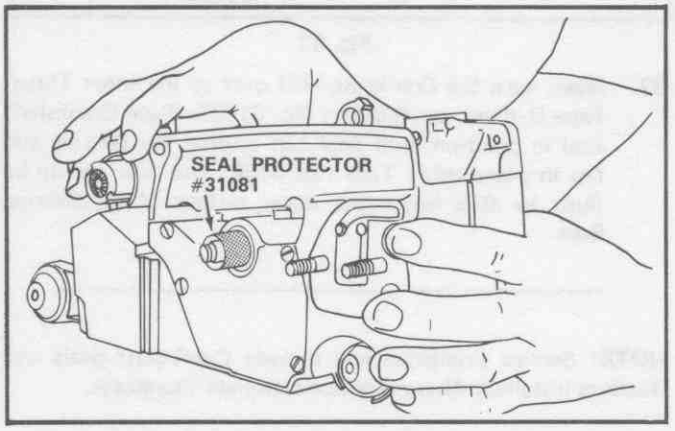


Fig. 85

85. Insert Seal Protector, No. 31081 in Right Crankcase Seal. Guide Crankshaft through Bearing and Seal, and press Crankcase Halves together. Apply Loctite or equivalent to and reinstall nine #10-24 Screws and torque to 45-50 inch pounds. After Crankcase Halves are assembled, trim excess Sealant from cylinder area and inside of Crankcase.

SECTION X – GUIDE BAR CLAMP AND BAR MOUNT STUDS

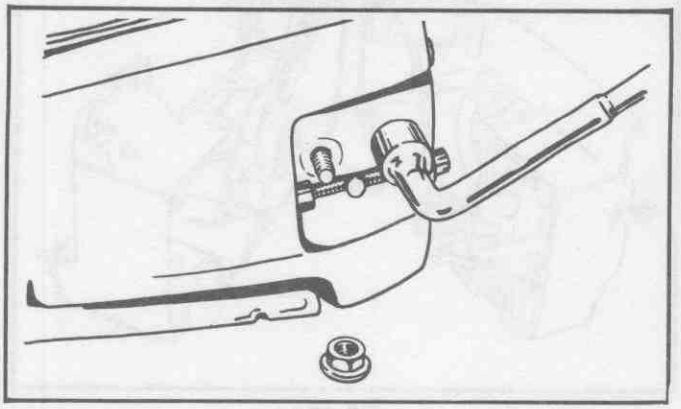


Fig. 86

86. To remove the Guide Bar Clamp, take off two Guide Bar Nuts.

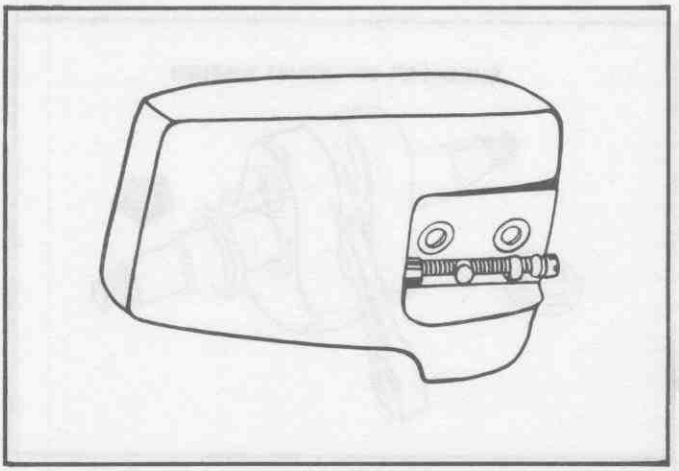


Fig. 87

87. Guide Bar Clamp Assembly removed showing Guide Bar Adjustment.

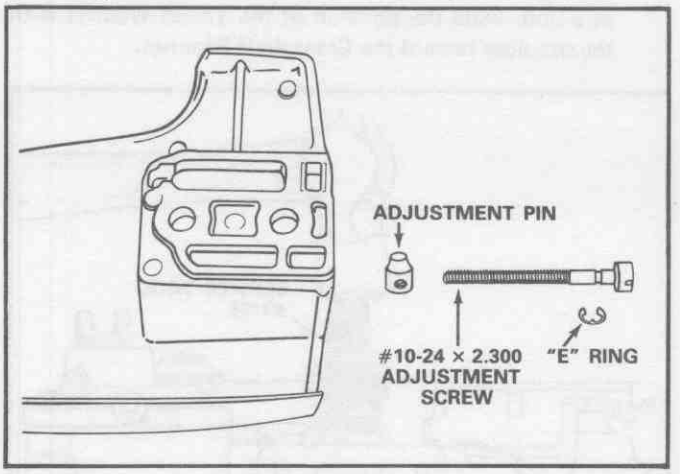


Fig. 88

88. To remove the Guide Bar Adjustment Components, remove the Adjustment Screw "E" Ring, unscrew the Adjustment Screw from the Bar Adjustment Pin, and slide Screw out of Bar Clamp. When reinstalling, make sure Pin is toward the INSIDE of the Bar Clamp.

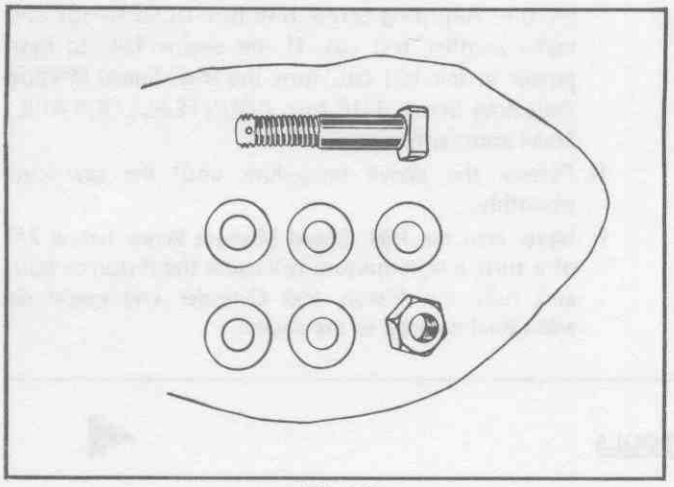


Fig. 89

89. Should replacement of a Guide Bar Stud become necessary, Part No. 30039 Stud Replacement Kit may be used without separating the Crankcase Halves. Press damaged or broken Stud into the Oil Tank.

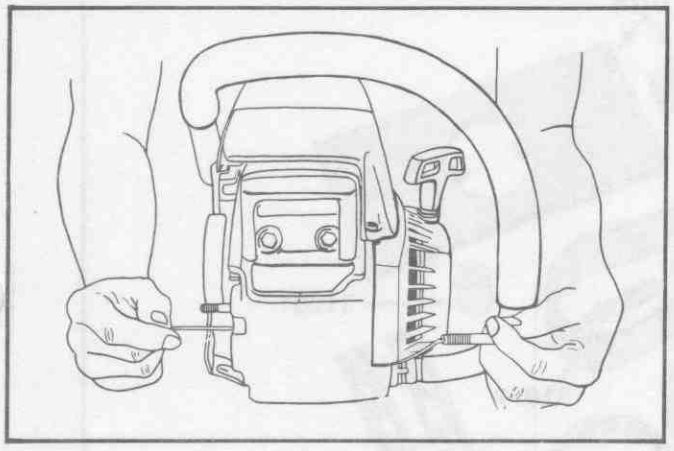


Fig. 90

90. Remove old Stud through the Oil Filler Hole and insert a piece of small diameter wire through the open Stud Hole and out the Oil Filler Opening. Attach wire through the hole in the Replacement Stud. Apply a small amount of Loctite or Sealer to the underside of the Stud Head and pull through Stud Hole until snug.

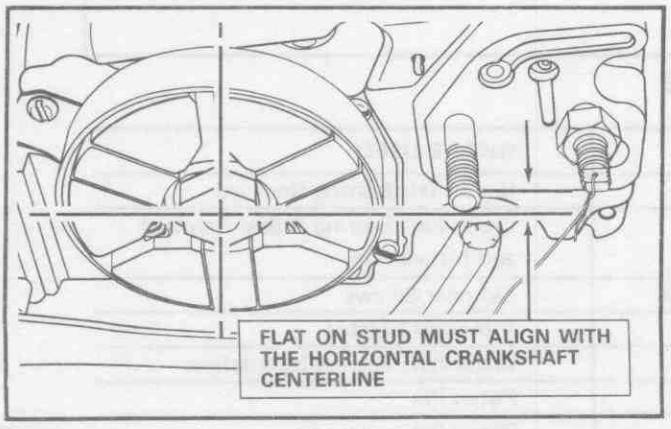


Fig. 91

91. Place Guide Bar Nut on Stud, remove wire and rotate Stud until the flat on the Stud aligns with the horizontal centerline of the Crankshaft.

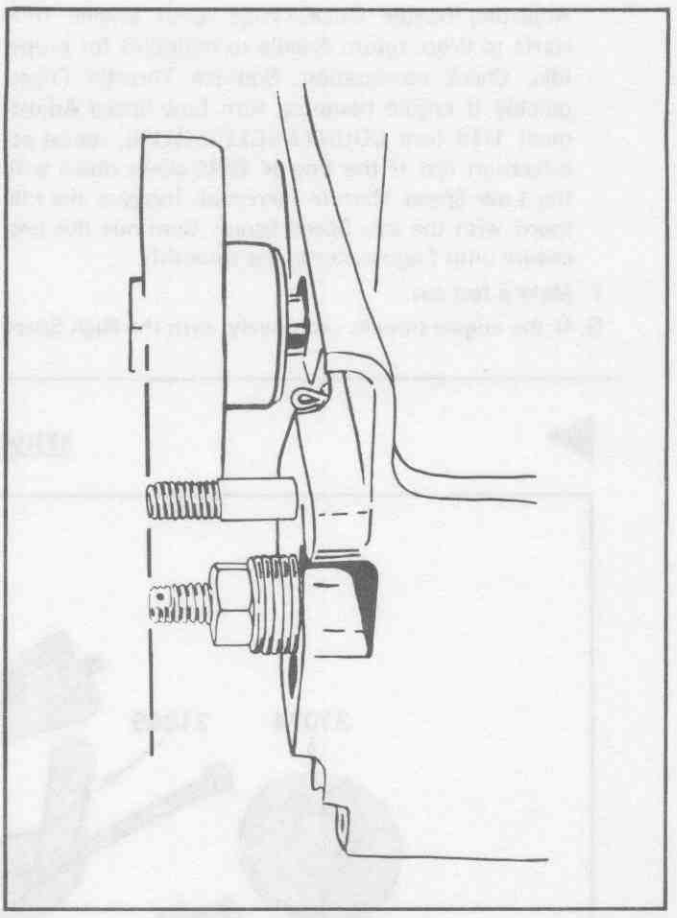


Fig. 92

92. Using a spacer or washers, tighten Nut on Bar Stud to pull Stud Head into casting until tight. CAUTION: Do not overtighten. Inspect progress of Stud by viewing through Oil Filler Hole. Make sure that flat square head is properly aligned with the recess provided in the casting.

SECTION XI – GENERAL INFORMATION

1. SPECIFICATIONS

A. IDLE SPEED	2800-3200 RPM
B. MODULE AIR GAP	.010-.014
C. SPARK PLUG	Champion CJ-8Y or RCJ-8Y Where required
D. SPARK PLUG GAP	.023-.028
E. FUEL MIXTURE	16:1 Ratio Gasoline and Oil Pre-Mix

2. CARBURETOR ADJUSTMENT PROCEDURE

A. Turn Low and High Speed Adjusting Needles CLOCKWISE until they stop. CAUTION: Do not overtighten.

B. Turn Low and High Speed Adjusting Needles COUNTERCLOCKWISE *ONE FULL TURN.*

C. Fill Fuel Tank with proper fuel mixture.

D. Start Engine and run for a few minutes until it has reached operating temperature.

E. Adjust the Idle Adjusting Screw for best idle, turn Low Speed Adjusting Screw COUNTERCLOCKWISE until Engine RPM starts to drop, move Mixture

Adjusting Needle CLOCKWISE until Engine RPM starts to drop, return Needle to midpoint for proper idle. Check acceleration. Squeeze Throttle Trigger quickly if engine hesitates, turn Low Speed Adjustment 1/16 turn COUNTERCLOCKWISE, repeat acceleration test if the Engine RPM slows down with the Low Speed Mixture increased, increase the idle speed with the Idle Speed Screw. Continue this procedure until Engine accelerates smoothly.

F. Make a test cut.

G. If the engine smokes excessively, turn the High Speed Mixture Adjusting Screw 1/16 turn CLOCKWISE and make another test cut. If the engine fails to have power in the test cut, turn the High Speed Mixture Adjusting Screw 1/16 turn COUNTERCLOCKWISE. Make another test cut.

H. Follow the above procedure until the saw cuts smoothly.

I. Never lean the High Speed Mixture Screw below 7/8 of a turn, a lean mixture will cause the Piston to burn and ruin the Piston and Cylinder and could do additional damage to the engine.

SERVICE TOOLS

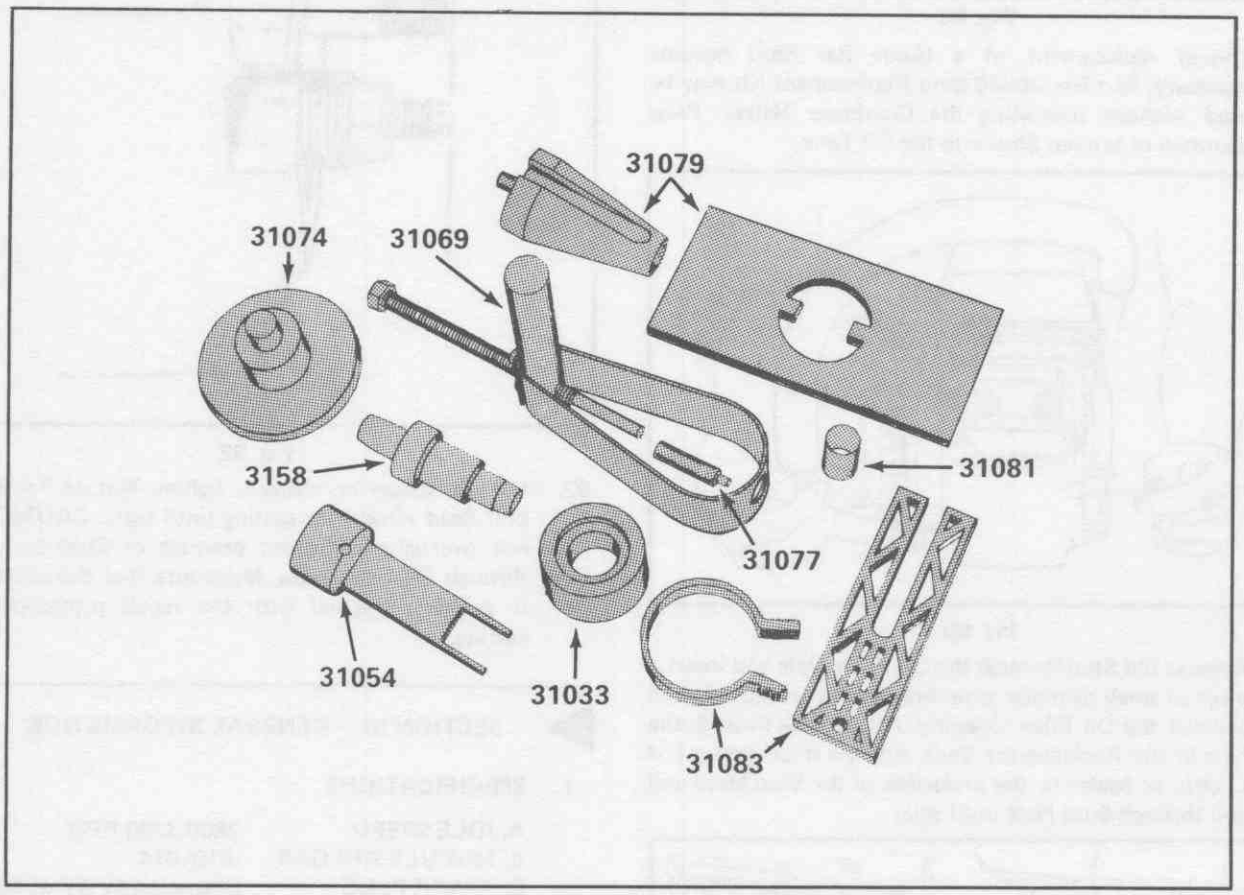


Fig. 93

PART NO.	NAME	WHERE USED
3158	BEARING & SEAL TOOL	Crankshaft Bearing Removal
31033	CRANKCASE SUPPORT	Crankshaft Bearing & Seal Removal and Installation
31046	3/16" "T" HANDLE HEX WRENCH	Cylinder Screws
31054	WRENCH	Vibration Isolator
31074	BEARING DRIVER	Crankshaft Bearing Installation
31069	PISTON PIN TOOL	Piston Pin
31077	INSERT	Piston Pin
31079	GUIDE	Clutch Spring
31081	SEAL PROTECTOR	Crankshaft Seals
31083	RING SQUEEZER AND CONNECTING ROD SUPPORT KIT	Piston Rings

TORQUE TABLE

LOCATION ON UNIT	NUMBER USED	TORQUE SPECIFICATION
FLYWHEEL NUT	1	15-20 ft.-lbs.
AIR BAFFLE	2	15-20 ft.-lbs.
OIL CAP	1	10-15 in.-lbs.
FUEL CAP	1	10-15 in.-lbs.
SPARK PLUG	1	18-22 ft.-lbs.
CARBURETOR	2	30-35 in.-lbs.
GUIDE BAR	2	
GUIDE BAR ADJUSTING SCREW	1	

Loctite or equivalent should be used on the following screws only:

STARTER SPRING DISC	2	15-20 in.-lbs.
IGNITION WIRE CLAMPS	2	15-20 in.-lbs.
STARTER PULLEY	1	45-50 in.-lbs.
FAN HOUSING	1	30-35 in.-lbs.
FAN HOUSING	1	30-35 in.-lbs.
FAN HOUSING	2	30-35 in.-lbs.
CRANKCASE	9	45-50 in.-lbs.
IGNITION MODULE	2	45-50 in.-lbs.
CYLINDER	4	90-100 in.-lbs.
MUFFLER BODY	2	90-100 in.-lbs.
MUFFLER COVER	2	75-80 in.-lbs.
CARBURETOR ADAPTOR	2	30-40 in.-lbs.
CHOKE BRACKET	1	45-50 in.-lbs.
CYLINDER SHIELD	3	30-40 in.-lbs.
OIL PUMP TO CRANKCASE	3	25-30 in.-lbs.
OIL PUMP TO COVER	1	15-20 in.-lbs.
MANUAL OIL LEVER BRACKET	1	45-50 in.-lbs.
REAR HANDLE (TRIGGER)	1	45-50 in.-lbs.
REAR HANDLE (LOCK-OUT LEVER)	1	30-35 in.-lbs.
REAR HANDLE	1	30-35 in.-lbs.
REAR HANDLE	1	45-50 in.-lbs.
SIDE ISOLATOR	1	45-50 in.-lbs.
HANDLE BRACE	2	45-50 in.-lbs.
HANDLEBAR @ REAR HANDLE	2	45-50 in.-lbs.
OIL PUMP SHIELD	4	15-20 in.-lbs.
FRONT ISOLATOR	1	
REAR ISOLATOR	2	45-50 in.-lbs.

**Special Fasteners*

PROBLEM	CAUSE	REMEDY
ENGINE HARD TO START OR WILL NOT START	1. SWITCH OFF	1. Flip Switch to "RUN" position.
	2. FUEL TANK EMPTY	2. Fill Tank with proper fuel mixture.
	3. SPARK PLUG NOT FIRING	3. Remove Spark Plug, check for fouling, broken Insulator, and proper gap. If these appear normal, refer to SECTION III, IGNITION SYSTEM.
	4. SHORT IN WIRING	4. Inspect wiring for bare spots, broken or cut wiring and repair as necessary.
	5. IGNITION MODULE	5. Remove Spark Plug, reconnect High Tension Lead, move Switch to "RUN" position. Ground Plug against Cylinder pull Starter Rope and observe Plug Electrode. If no spark is seen, refer to SECTION III, IGNITION SYSTEM.
	6. FUEL NOT GETTING TO CARBURETOR	6. Check for dirty Fuel Filter in Tank. Check for pinched or split Fuel Line. Check operation of Fuel Tank Vent. Make sure that Choke Knob operates Choke Shutter Plate in Carburetor.
	7. CARBURETOR MISADJUSTED	7. Refer to Carburetor Adjustment procedure in GENERAL SPECIFICATIONS.
	8. ENGINE FLOODED	8. Make sure Choke is OPEN. Remove, dry, set gap, and replace Spark Plug. Pull Starter until Engine starts and hold at full throttle until Engine clears itself.
	9. LOW COMPRESSION	9. Determine cause and repair as necessary.
ENGINE WILL NOT RESTART AFTER RUNNING OR REFUELING (HOT START)	1. HEAT TRANSFER TO CARBURETOR CAUSES FUEL TO VAPORIZE	1. Pull Choke Knob OUT, flip Switch to "RUN" position, squeeze Throttle Trigger, and pull Starter Rope until Engine fires. After Engine fires once, push Choke Knob in HALFWAY. Pull Starter Rope until Engine starts, hold at FULL throttle for a few seconds then push Choke Knob IN completely.
ENGINE LACKS POWER OR DIES	1. CARBURETOR MISADJUSTED	1. Refer Carburetor Adjustment in GENERAL SPECIFICATIONS.
	2. AIR FILTER DIRTY	2. Clean or replace.
	3. FOULED SPARK PLUG	3. Clean or regap or replace.
	4. CARBON BUILD UP	4. Clean Muffler and Cylinder Exhaust Port.
	5. CARBURETOR DIRTY	5. Clean Carburetor.
	6. LOW COMPRESSION	6. Determine cause and repair.

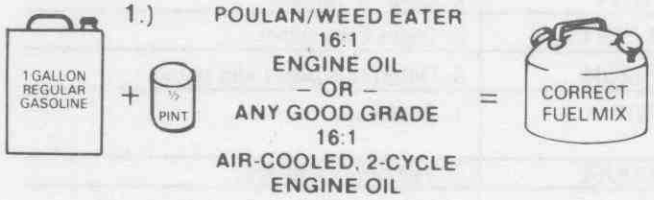
TROUBLE SHOOTING *(continued)*

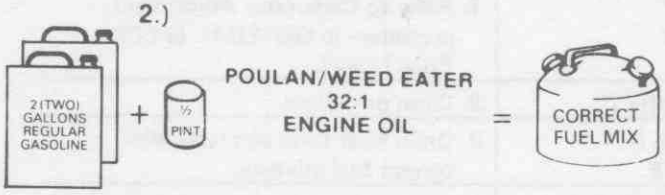
PROBLEM	CAUSE	REMEDY
ENGINE WILL NOT IDLE PROPERLY	1. CARBURETOR MISADJUSTED	1. Refer Carburetor Adjustment in GENERAL SPECIFICATIONS.
	2. AIR FILTER DIRTY	2. Clean or replace.
	3. CARBURETOR DIRTY	3. Clean Carburetor.
	4. LOW COMPRESSION	4. Determine cause and repair.
LOW COMPRESSION	1. WORN RINGS OR CYLINDER	1. Replace.
	2. SPARK PLUG LOOSE	2. Tighten or replace.
ENGINE SMOKES EXCESSIVELY	1. CARBURETOR MISADJUSTED	1. Refer to Carburetor Adjustment procedure in GENERAL SPECIFICATIONS.
	2. AIR FILTER DIRTY	2. Clean or replace.
	3. TOO MUCH OIL IN FUEL MIXTURE	3. Drain Fuel Tank and refill with correct fuel mixture.
	4. CHOKE NOT OPENING COMPLETELY	4. Repair as necessary.
	5. CARBURETOR INLET NEEDLE STUCK OR WORN	5. Refer SECTION I, CARBURETOR.
ENGINE RUNS HOT	1. WRONG FUEL MIXTURE	1. Drain Fuel Tank and refill with correct fuel mixture.
	2. WRONG SPARK PLUG	2. Refer GENERAL SPECIFICATIONS.
	3. CLOGGED AIR COOLING PASSAGES	3. Clean Cylinder Fins and Crankcase Assembly of foreign materials.
	4. CARBURETOR MISADJUSTED	4. Refer to Carburetor Adjustment procedure in GENERAL SPECIFICATIONS.
	5. CARBON BUILD-UP	5. Clean Muffler and Cylinder Exhaust Port.
	6. NOT ENOUGH FUEL GETTING TO CARBURETOR	6. Check for dirty Filter, and kinked, pinched or broken fuel lines.
	7. CRANKCASE SEALS OR GASKETS LEAKING	7. Determine cause and repair as necessary.
OILER SYSTEM NOT OPERATING PROPERLY	1. GUIDE BAR OIL HOLE BLOCKED	1. Remove Bar, Chain, and Guide Plates and clean.
	2. OIL FILTER DIRTY	2. Clean or replace.
	3. PICK-UP OR DISCHARGE LINE KINKED OR BROKEN	3. Replace.
	4. PUMP DIAPHRAGM DAMAGED	4. Replace.

SECTION IX — FUEL MIXING INFORMATION

A. USE THE FOLLOWING FUEL MIXTURES:

Two types of Poulan/Weed Eater Engine Oil are available — one, specifically to be blended at a 16:1 ratio and the other at a 32:1 ratio.





CAUTION: If you use a 32:1 fuel mix, you *must* use Poulan/Weed Eater 32:1 Engine Oil or engine damage can occur.

B. DO NOT USE:

- **AUTOMOTIVE OIL —**
  — Does not have proper additives for 2-cycle engines and could cause damage.

- **GASOLINE CONTAINING *ALCOHOL* (High Test, Premium or Gasohol) —**
  — Stiffens critical carburetor fuel metering elements and causes engine damage from overheating.
  — Increases vapor lock.
  — Attracts water causing corrosion damage.

C. HOW TO MIX FUEL

1. Pour one-half of the gasoline into an approved marked container. *Do not try to mix fuel directly in the fuel tank.*
2. Add entire measure of 2-cycle Engine Oil.
3. Mix.
4. Add remainder of gasoline.
5. Mix thoroughly for one minute.

D. IMPORTANT POINTS TO REMEMBER

1. **Use only recommended fuel mixtures.**
2. **Eliminate all sources of sparks or flame in the areas where fuel is mixed, poured, or stored.** There should be no smoking, open flames or work that could cause sparks.
3. **Mix and store fuel in an approved, marked container.**
4. **Mix and pour fuel in a well-ventilated area.** Gasoline vapors are harmful to your health and are a serious fire hazard.
5. **Avoid over filling the fuel tank.** Allow 3/4 inch for expansion. Tighten Fuel Cap securely.
6. **Wipe up all fuel spills before starting the engine.**
7. **Move at least 10 feet (3 meters) away from fuel and fueling site before starting the engine.**