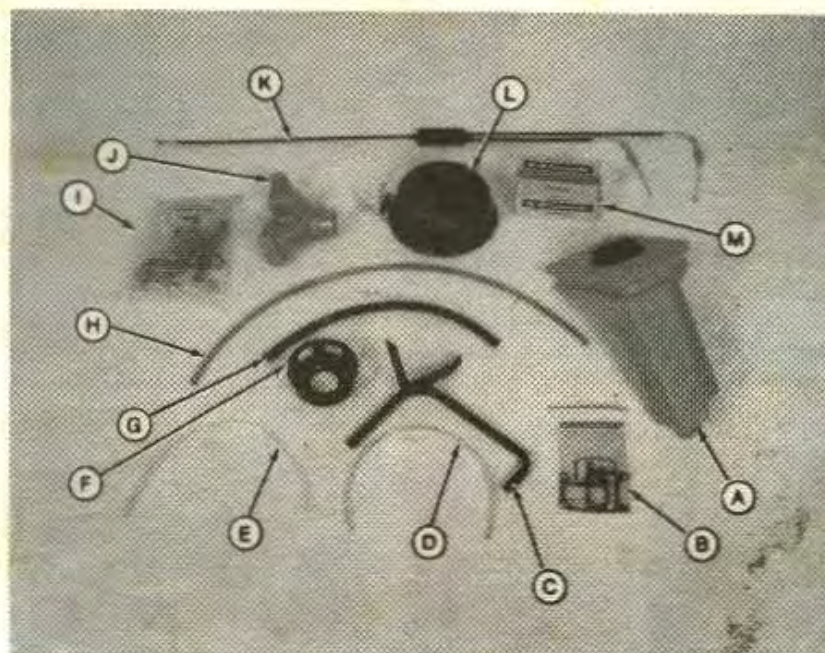




INSTRUCTIONS TO INSTALL
BM21200 OIL INJECTION KIT
SPORTFIRE SNOWMOBILE
SERIAL NO. (120,001-190,000)

PARTS IN KIT

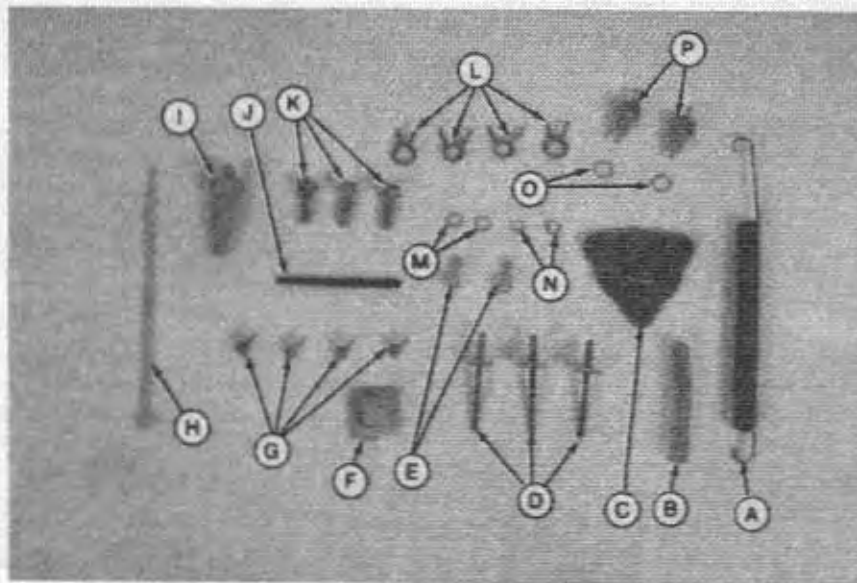


A - Oil Reservoir
B - Manifold Gaskets
C - Reservoir Bracket
D - Oil Line (450 mm)
E - Oil Line (420 mm)
F - Starter Cup
G - Hose Guard

H - Hose
I - Bag Of Parts
J - Intake Manifold
K - Throttle Cable
L - Recoil Starter
M - Oil Pump

Figure 1

PARTS IN BAG



- A - Retaining Spring
- B - Hose (2-1/2 inch)
- C - Pump Drive
- D - Pop Rivets
- E - Bolt (2)
- F - Clamp
- G - Small Clamp (4)
- H - Tie Strap

- I - Filter
- J - Drive Shaft
- K - Bolt (3)
- L - Large Clamp (4)
- M - Flat Washer
- N - Lock Washer
- O - Gasket
- P - Check Valve (2)

Figure 2

IMPORTANT: Refer to Figures 1 and 2. Identify all parts in kit and in bag of parts before installation. Report any shortages of parts to your branch house immediately.

INSTALL KIT

1. Remove muffler.
2. Remove air duct. Retaining screws can be reached through holes in air duct. Fan cover will come off with air duct.

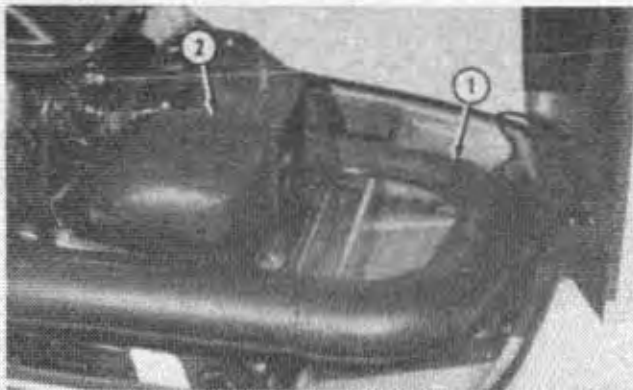


Figure 3

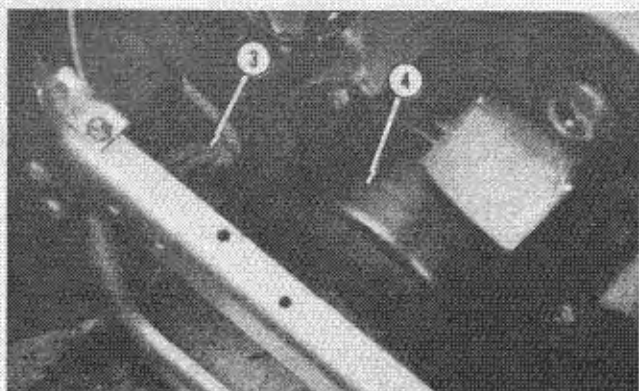


Figure 4

3. Pull on recoil start rope, tie a knot in rope and remove handle.
4. Remove recoil starter.

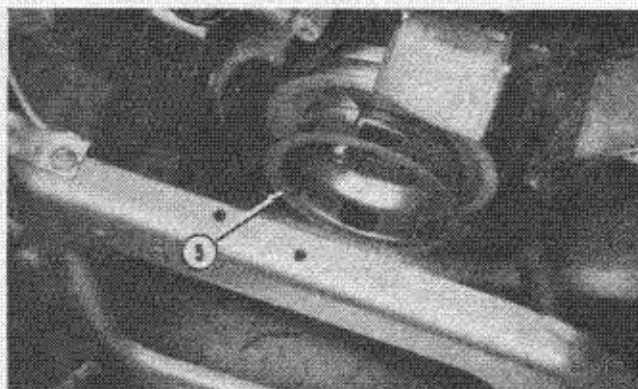


Figure 5

5. Remove starter cup from flywheel. DO NOT REMOVE fan belt pulley.

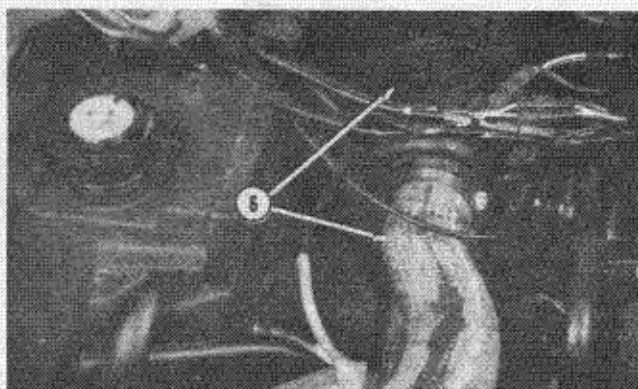


Figure 6

6. Remove air inlet tube. Remove air silencer.

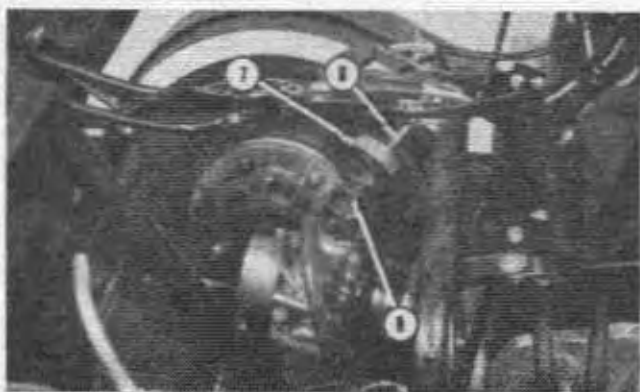


Figure 7

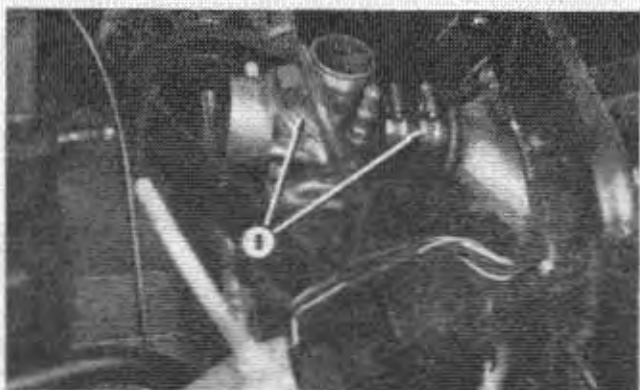


Figure 8

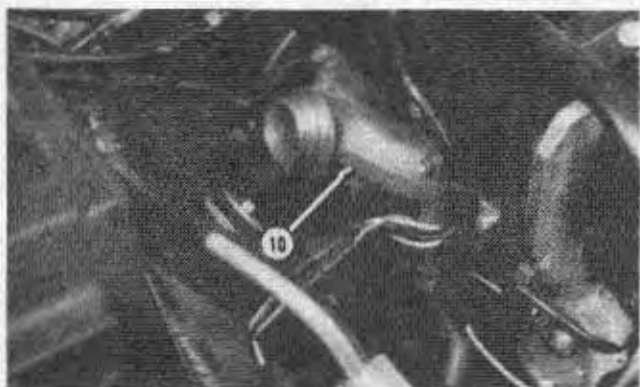


Figure 9

7. Remove throttle valve assembly.

8. Remove throttle cable end from slide valve. Note how cable goes into slide valve for reassembly. Remove throttle cable from cap. Set slide valve assembly aside.

9. Remove carburetor and boot from intake manifold. Move carburetor out of the way.

10. Remove intake manifold and gaskets. Remove gasket material from engine.

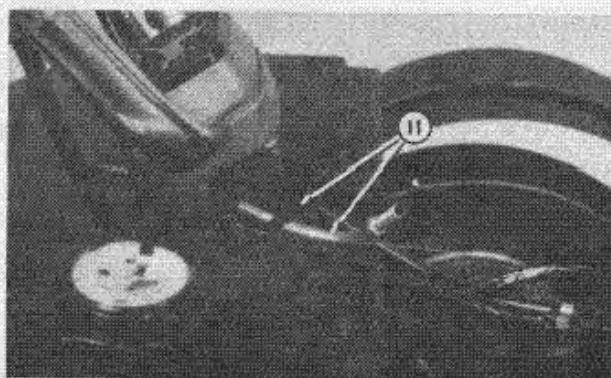


Figure 10

11. Pull throttle cable thru tie strap on steering post.

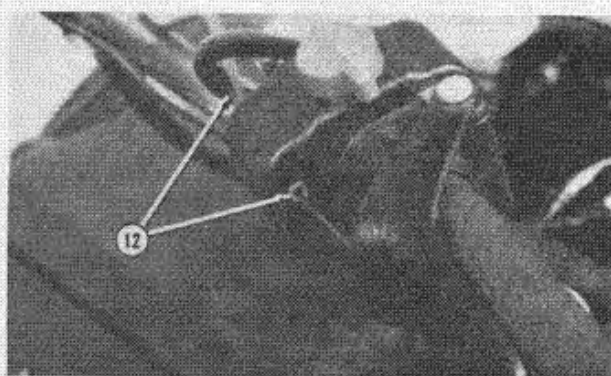


Figure 11

NOTE: Use care when removing throttle lever E-ring to prevent losing it.

12. Remove throttle cable housing E-ring at throttle retainer. Remove throttle cable from lever.

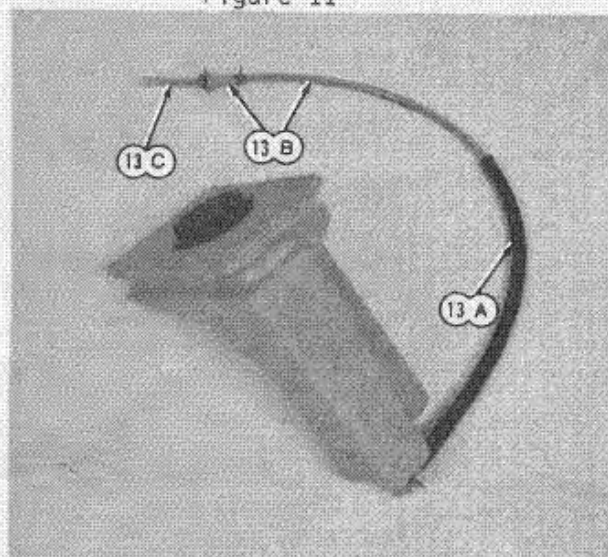


Figure 12

13. Assemble oil reservoir as follows:

- A. Install hose guard on 27 inch hose as shown.
- B. Attach two clamps to 27 inch hose. Attach one end to oil reservoir. Attach oil filter to other end of hose (small end of filter points toward oil reservoir). Slip clamps over reservoir and filter fitting.
- C. Attach one clamp to 2-1/2 inch hose. Attach end of hose to oil filter. Slip clamp over filter fitting.

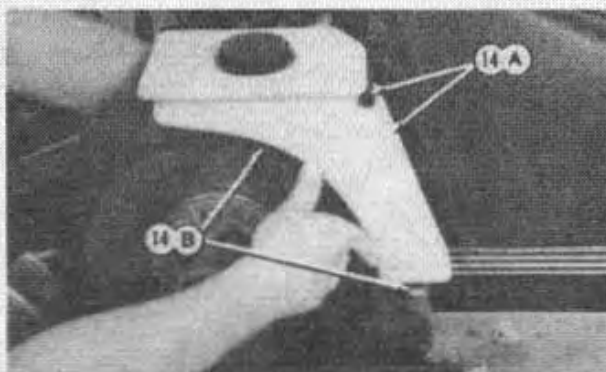


Figure 13



Figure 14

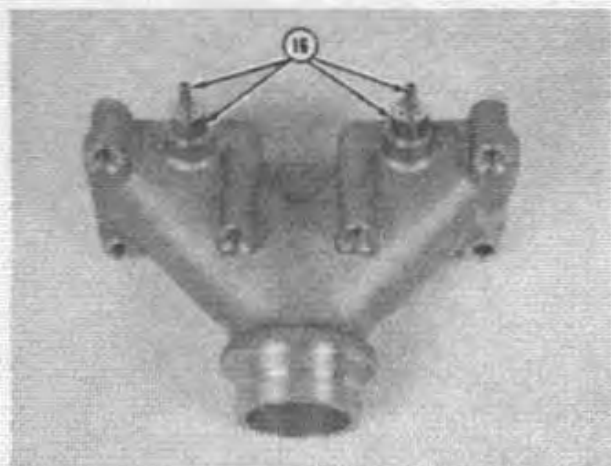


Figure 15

14. Mount oil reservoir bracket as follows:

- A. Set assembled reservoir in reservoir bracket. Guide oil hose and filter between clutch guard and steering post support. Set reservoir bracket against steering post support.
- B. Check that oil reservoir, fitting and hose clear all around and that the reservoir bracket holes (3) line up on steering post support.
- C. While holding reservoir bracket in place, move oil reservoir out of the way and mark location of three bracket holes. Remove reservoir bracket and center punch the locations marked.
- D. Drill 3 holes using 13/64 inch drill bit through ONE WALL OF SUPPORT ONLY. Use care when drilling to prevent the drill bit from slipping off the support and possibly puncturing the fuel tank.
- E. Attach reservoir bracket to steering post support with three pop rivets.

15. Secure oil reservoir in reservoir bracket with spring.

16. Install gaskets and check valve in new intake manifold. Tighten to 4.3 to 4.8 ft lbs (5.8 to 6.5 Nm) torque.

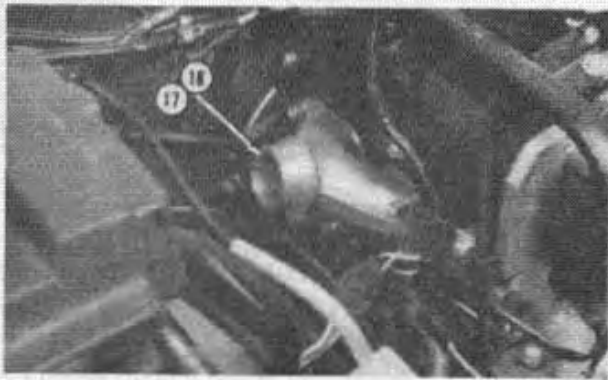


Figure 16

17. Install cap screws, lock washers and flat washers in intake manifold.

NOTE: Flat washers go against intake manifold. Longer cap screws go in lower inside holes of intake manifold.

18. Install new intake manifold gaskets and manifold on engine. Tighten cap screws to 4.3 to 4.8 ft lbs (5.8 to 6.5 Nm) torque.

19. Set new recoil starter into engine compartment. Once the new drive hub and starter cup are installed, the recoil starter cannot be installed past the tunnel support and new starter cup.

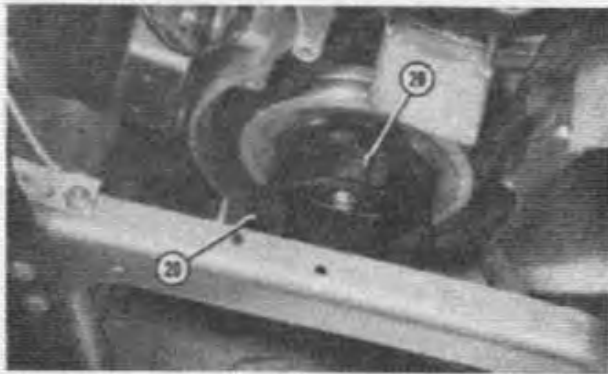


Figure 17

20. Install new starter cup and drive hub as follows:

- A. Install new bolts through new starter cup.
- B. Slip drive hub over bolts. The extended center of drive hub must be away from flywheel.
- C. Install starter cup and drive hub on flywheel. Tighten bolts to 4.3 to 4.8 ft lbs (5.8 to 6.5 Nm) torque.

21. Cover drive shaft with John Deere AT30408 High Temperature Grease, or equivalent. Slip drive shaft into drive hub until it bottoms.

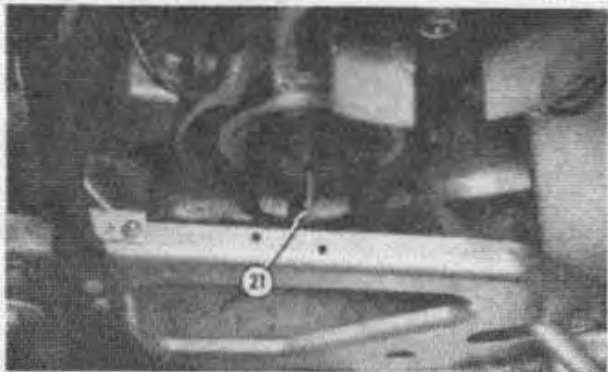


Figure 18

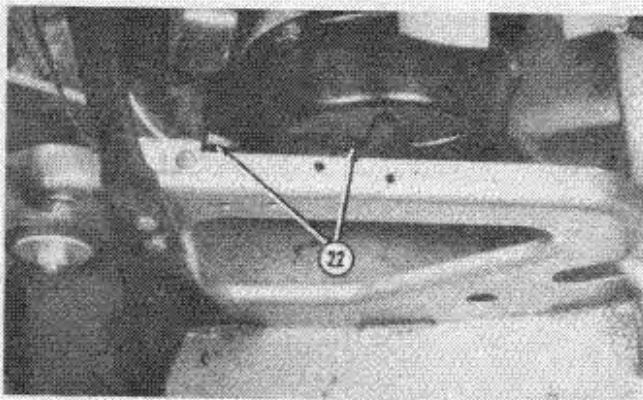


Figure 19

22. Install new recoil starter checking that drive shaft goes through hole in center of starter. Install recoil cap screws and lock washers. Tighten to 4.3 to 4.8 ft lbs (5.8 to 6.5 Nm) torque. Guide end of recoil start rope through rope guide and install handle. Remove knot in rope. Burn end of rope.

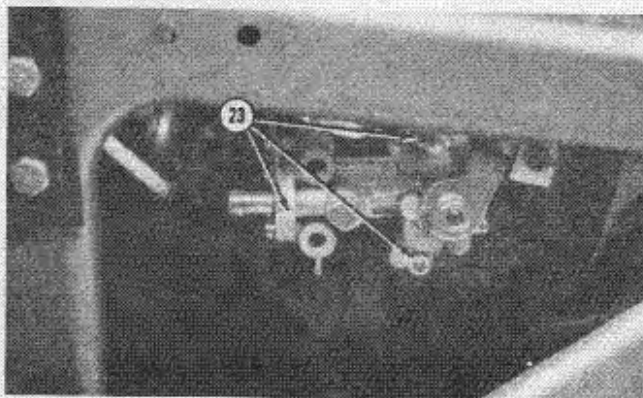


Figure 20

23. Install oil pump on recoil starter as follows:

- A. Align square hole in oil pump with drive shaft in recoil starter and slip oil pump onto recoil starter.
- B. Secure oil pump to starter with cap screws, flat washers and lock washers. The flat washers go next to pump body. Tighten cap screws to 3.6 to 4.0 ft lbs (4.9 to 5.4 Nm) torque.

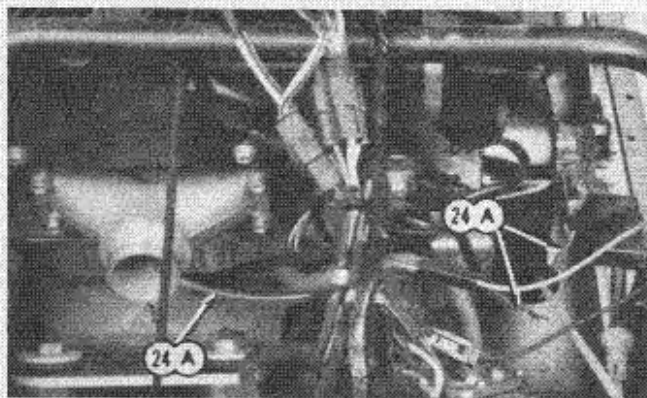


Figure 21

24. Install oil lines as follows:

- A. Install longer line ((450 mm) 17-3/4 inches) from BOTTOM fitting of oil pump to clutch side check valve on intake manifold. Route line below recoil start rope and BEHIND CDI box. Attach clamps to oil line and slip over oil pump and check valve fittings.

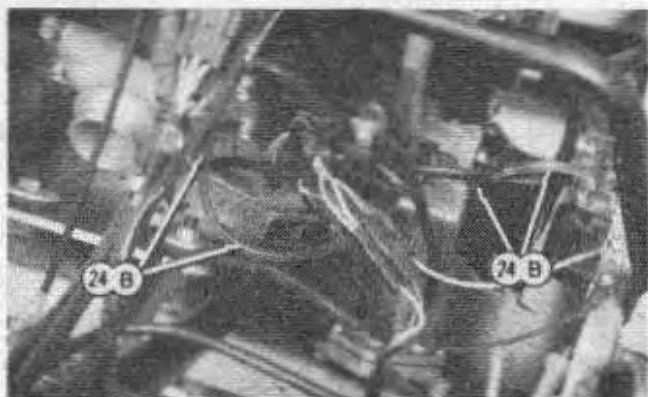


Figure 22

- B. Install shorter line ((420 mm) 16-1/2 inches) from TOP fitting of oil pump to recoil starter side check valve on intake manifold. Route line above recoil starter rope and BEHIND CID box. Attach clamps to oil line and slip over oil pump and check valve fittings.

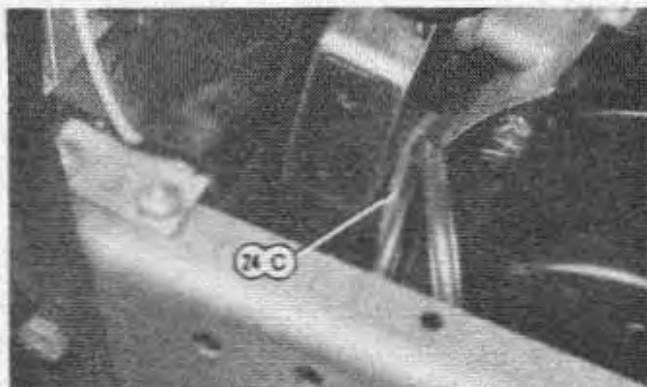


Figure 23

- C. Use tie strap from kit to secure oil lines to CDI box as shown. Adjust lines to keep them away from recoil start rope.

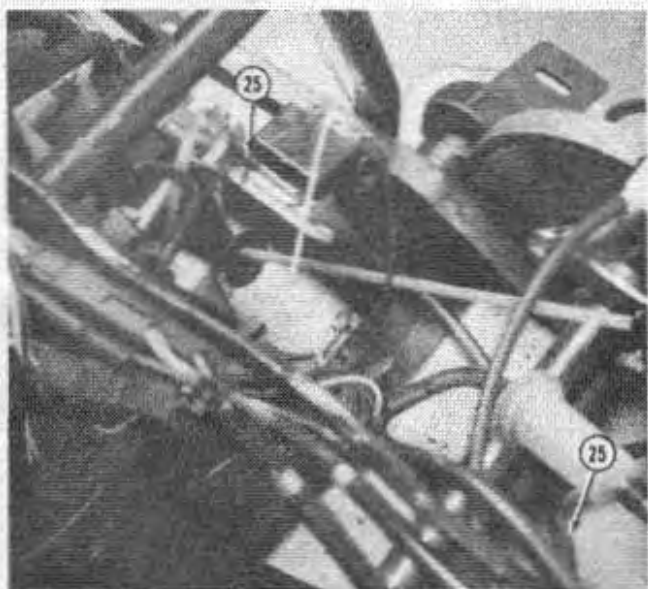


Figure 24

25. Route oil reservoir line along fuel tank, behind air silencer bracket, under electrical harness and under jackshaft. Attach end of line to oil pump inlet with clamp.

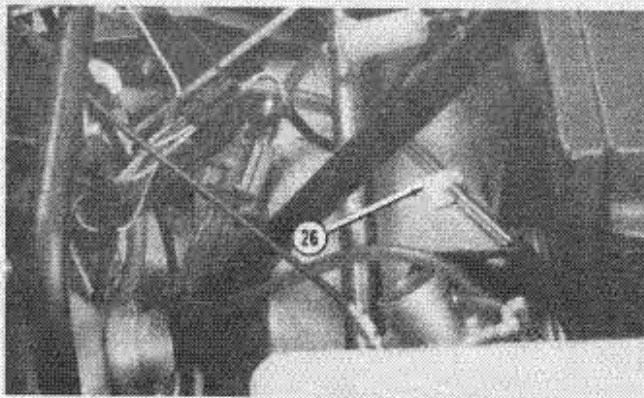


Figure 25

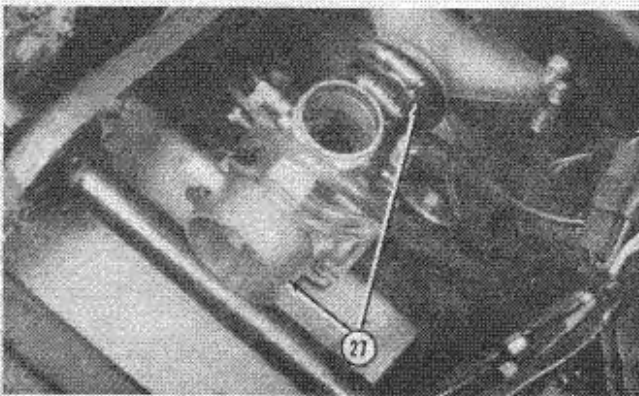


Figure 26

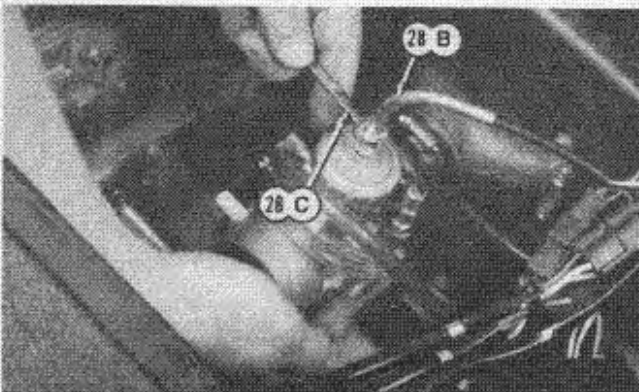


Figure 27

26. Install oil line clamp as shown. Install oil line in clamp.

27. Install carburetor and boot in intake manifold.

28. Install throttle cable as follows:

- A. Install throttle lever end of cable through tie strap on steering post and into clamp on handlebar. Install cable into throttle lever housing and secure with E-ring. Install cable end into throttle lever.
- B. Install short cable coming out of throttle cable junction box into carburetor cap. Install throttle cable into slide valve.
- C. Lock throttle lever against handgrip with a clamp or strong rubber band. Place your finger in throat of carburetor so you can feel the backside of throttle valve. Loosen jam nut and turn adjusting sleeve until the backside of throttle valve is flush with the bore. Tighten jam nut. Remove clamp or rubber band from throttle lever.

NOTE: If necessary, use a mirror to check that backside of throttle valve is flush with the bore.

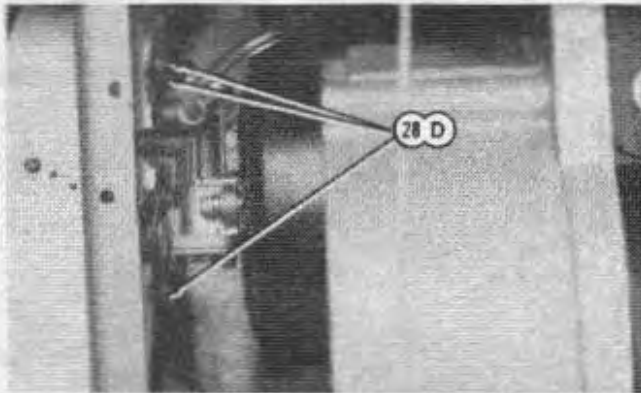


Figure 28

- D. On remaining cable, remove front nut (closest to end of cable) from adjusting sleeve. Install cable on oil pump lever. Install cable and adjusting sleeve on oil pump bracket. Reinstall front nut. Using rear nut, back adjusting sleeve out until mark on control lever aligns with mark on oil pump. Tighten jam nuts and recheck adjustment.

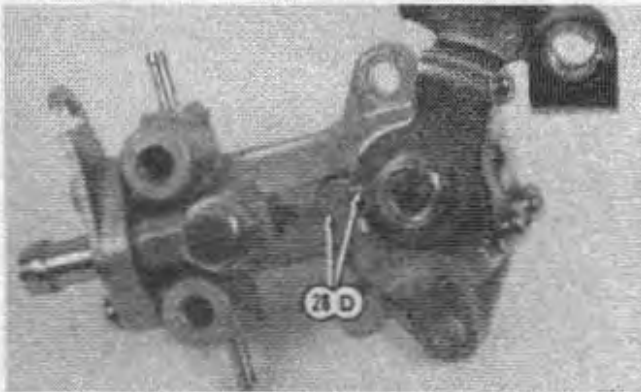


Figure 29

- E. Press throttle lever on handgrip and observe throttle valve and oil pump control lever. The throttle valve and lever should both start to move at exactly the same time. The throttle valve must not move before the oil pump control lever.

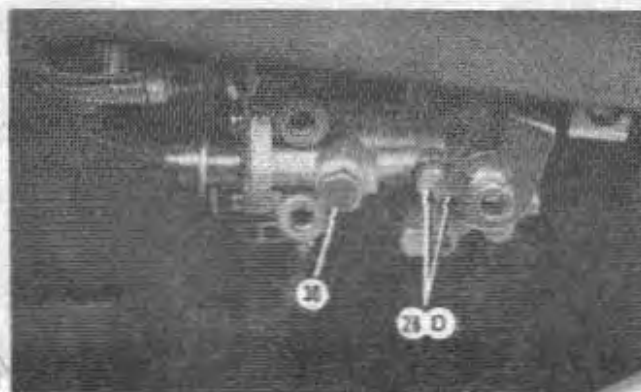


Figure 30

29. Fill oil reservoir with BIA (Boating Industry Approved) approved 2-cycle oil.
30. Remove bleed screw. Hold oil pump control lever in the full open position until all air is deleted from the oil line feeding the pump. Install bleed screw.
31. Install muffler.

32. Fill fuel tank with a 50:1 mixture of oil and fuel. Start and run engine at idle speed. Hold oil pump control lever in the full open position until all air is out of oil lines running to intake manifold (approximately 1 minute). Stop engine.
33. Install fan cover and air duct.
34. Install air silencer and air inlet tube.

IMPORTANT: Leave pre-mix gasoline in the fuel tank and use up. After that use ONLY GASOLINE in the fuel tank and John Deere 2-cycle oil or BIA approved oil in oil reservoir. For temperatures of -20°F (-29°C) or below, use a 50:1 pre-mix in the fuel tank and fill the oil tank with 2-cycle oil.