



MODEL NO. 66-7700

INSTALLATION INSTRUCTIONS

12 VOLT STARTING MOTOR KIT

Since this instruction sheet covers only a minimal amount of information necessary to maintain and operate your machine, we suggest that you keep this material with your Operator's Manual so that both may be referred to for instructions concerning safe operation and proper maintenance procedures.

NOTE: Battery and battery charger are not included in starting motor kit. Recommended battery is 12 volt, type SAE No. 22F, Ref. No. 17MJ1C. Recommended battery chargers are 110 volt Toro charger (26-3870) for use in Canada, 220 volt Toro charger (26-7140) for use in Europe or a comparable 1 to 5 amp. charger.

BATTERY DIMENSIONS

Length: 241mm (9.50 inches)

Width: 172mm (6.79 inches)

Height: 208mm (8.17 inches)

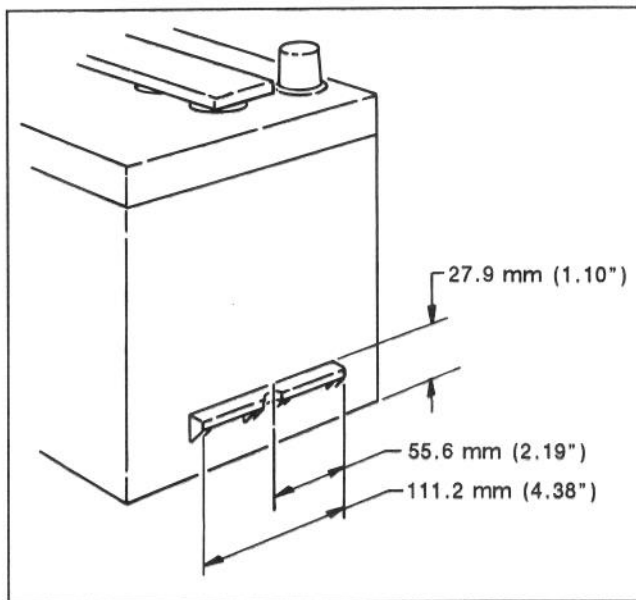


Figure 1

INSTALL 12 VOLT STARTING MOTOR KIT

1. Drain gasoline from fuel tank ; refer to Operator's Manual for proper instructions. Wipe up any gasoline that may spill. Do not reconnect fuel line after tank is drained.
2. Drain oil from crankcase; refer to Operator's Manual for proper instructions.
3. After oil is drained, remove drain pipe nipple from engine (Fig.2).

4. Remove nut securing chute gear bracket and move bracket aside.

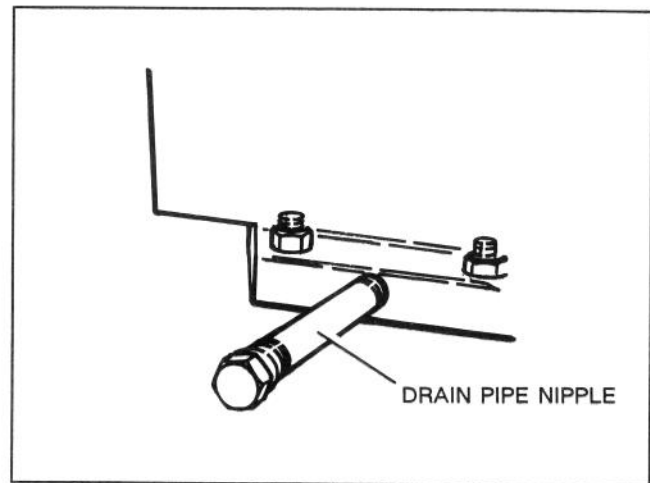


Figure 2

5. Remove drain plug from left side of engine (Fig.3) and reinstall in right side.

NOTE: Use thread sealent as necessary for steps 5, 6, and 7.

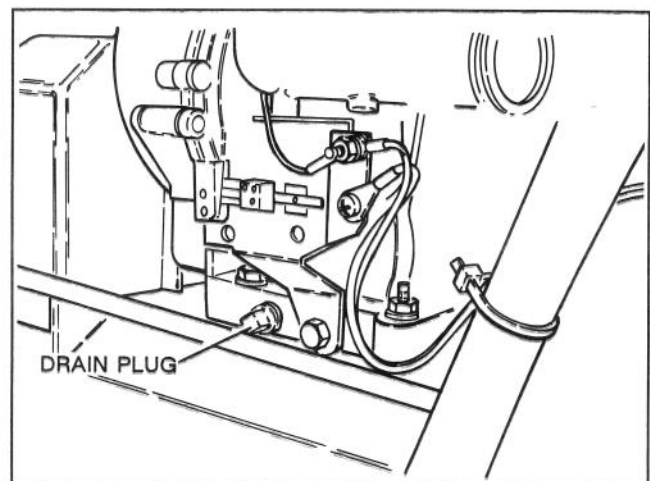


Figure 3

6. Thread elbow into left side of engine so it points to rear and down about 45° (Fig.4).

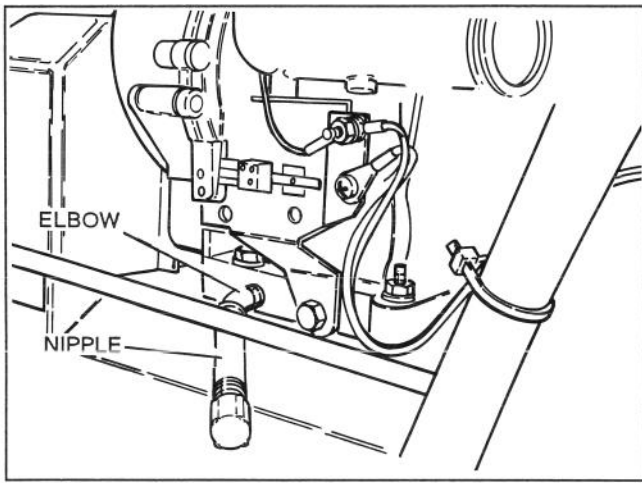


Figure 4

7. Thread new pipe nipple into elbow and install pipe cap previously removed onto pipe nipple.

8. Reinstall nut onto chute gear bracket and adjust worm gear according to operators manual.

9. Remove (2) bolts securing upper fuel tank bracket to engine (Fig.5). Remove fuel tank.

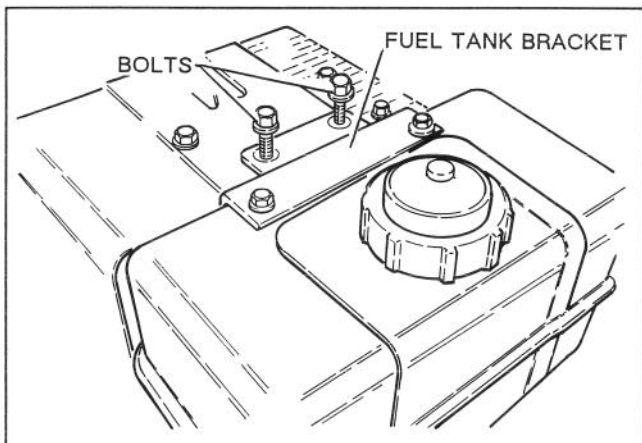


Figure 5

10. Remove (2) screws securing bottom fuel tank bracket to engine (Fig.6).

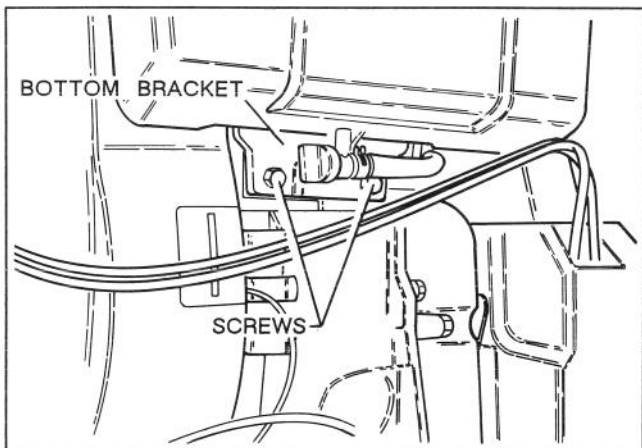


Figure 6

11. Remove and discard fuel shut-off valve in bottom of tank.

12. Carefully thread new shut-off valve into fuel tank one or two turns (Fig.7). Use care to avoid crossthreading.

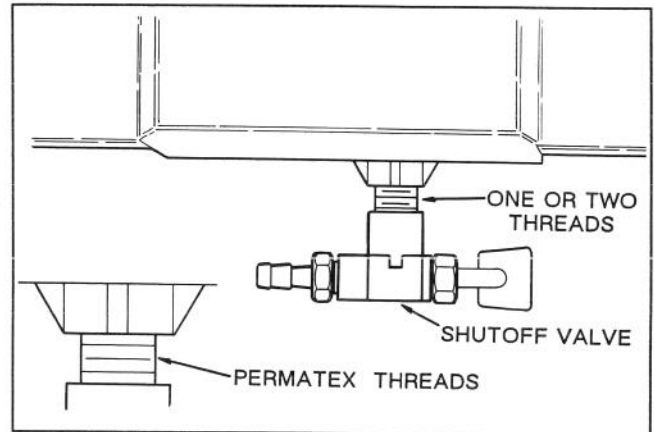


Figure 7

13. After starting threads, apply sealer (Permatex No. 2) around the entire diameter of the threads.

14. Tighten the valve until one or two threads are exposed. If necessary, you may tighten up to one additional turn to obtain the proper angular position of the valve.

15. Remove and discard two self tapping screws securing pinion cover to engine and remove cover (Fig.8).

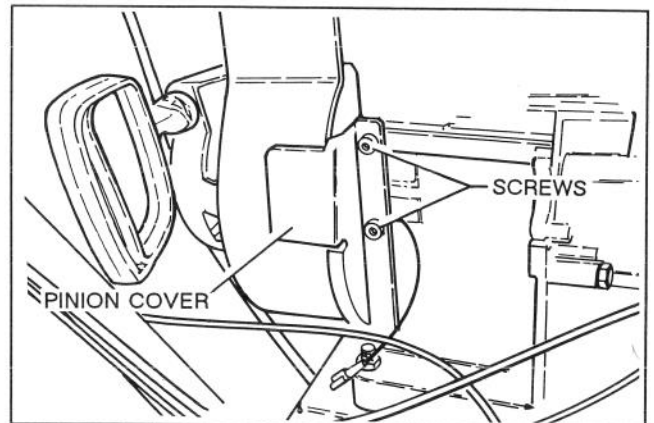


Figure 8

16. Remove and discard two flange head screws securing front of right handle bracket to engine frame (Fig.9).

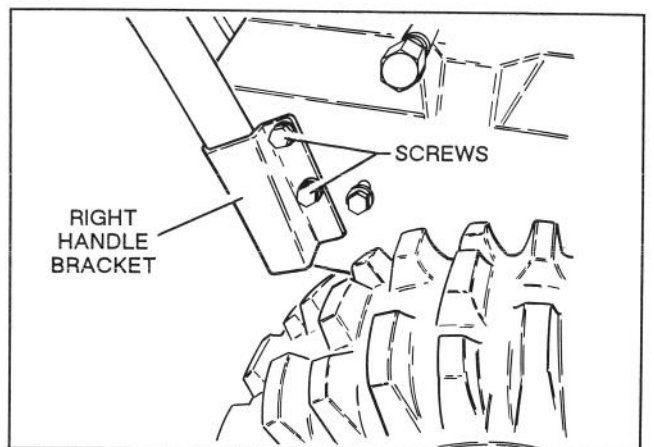


Figure 9

17. Remove three thread forming screws securing upper belt cover to engine base and slide cover up cables (Fig.10). Do not lose cable cover.

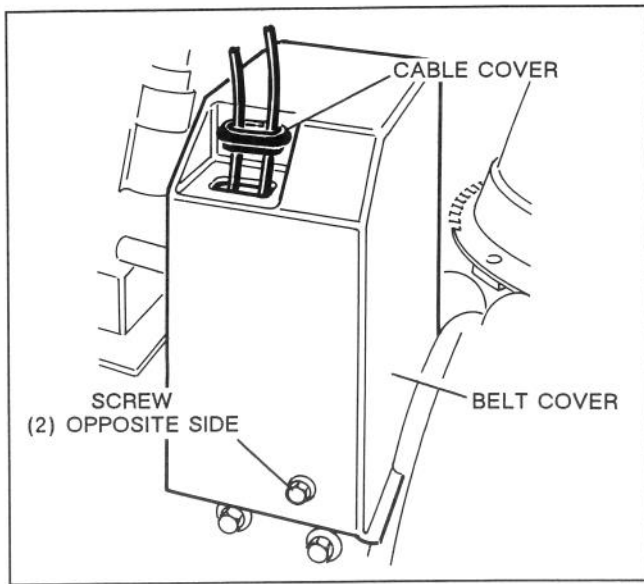


Figure 10

18. Remove and discard two flange head capscrews securing idler pulley assembly to engine frame as shown (Fig.11).

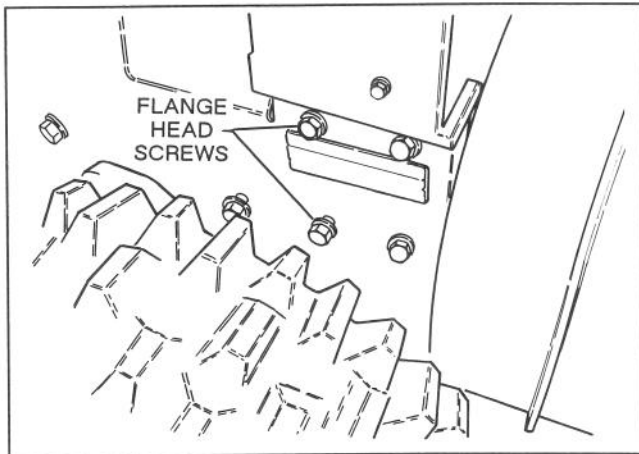


Figure 11

19. Secure starter motor assembly, negative (black) battery cable and black wire of charging plug (wire with ring terminal end) to engine with (2) 19mm (3/4") lg. capscrews as shown in fig.12 & fig. 16. Wires to be attached to bottom mounting screw.

NOTE: A two lead wire connector, to be used with charging plug, is provided for use with a non plug in type charger.

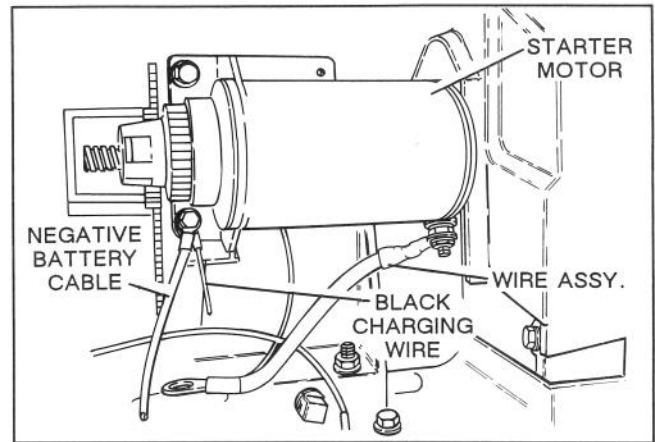


Figure 12

20. Secure solenoid mounting plate to battery mounting plate with (2) thread forming screws as shown in fig.13.

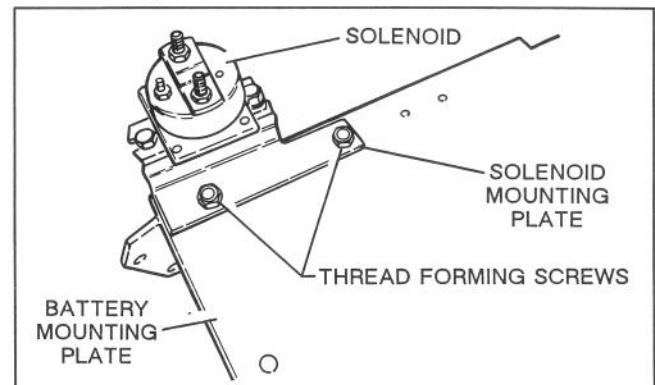


Figure 13

21. Secure solenoid to mounting plate with (2) capscrews and locknuts as shown in fig.13.

22. Tip unit on end and remove right wheel for easier access. Mount rear of battery mounting plate and handle bracket to engine frame with (2) 19mm (3/4") lg. flange head screws (Fig.14).

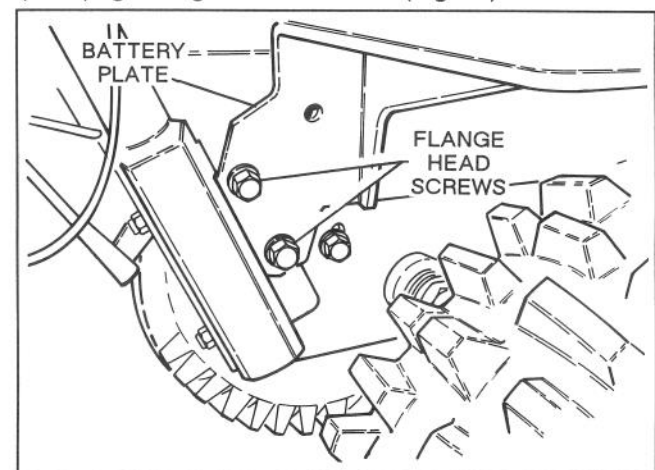


Figure 14

23. Mount front of battery mounting plate to engine frame and idler assembly with (2) 25mm (1") lg. flange head capscrews (Fig.15).

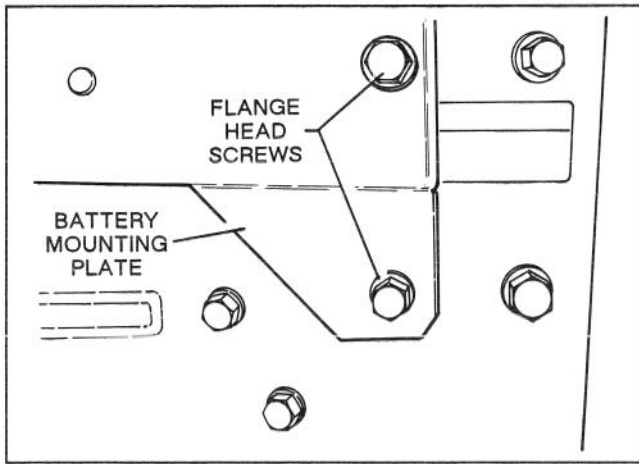


Figure 15

NOTE: Make sure idler pulleys are aligned with belts when securing idler pulley assembly.

24. Reinstall belt cover with (3) screws previously removed. Make sure cable cover is plugged into belt cover.

25. Install wire assembly connecting starter motor to inside terminal of solenoid (Fig.16).

26. Cut red wire from engine to length and attach ring terminal. Connect positive battery cable, red wire of wire harness, red wire of charging plug, and red wire from engine to outside terminal of solenoid (Fig.16).

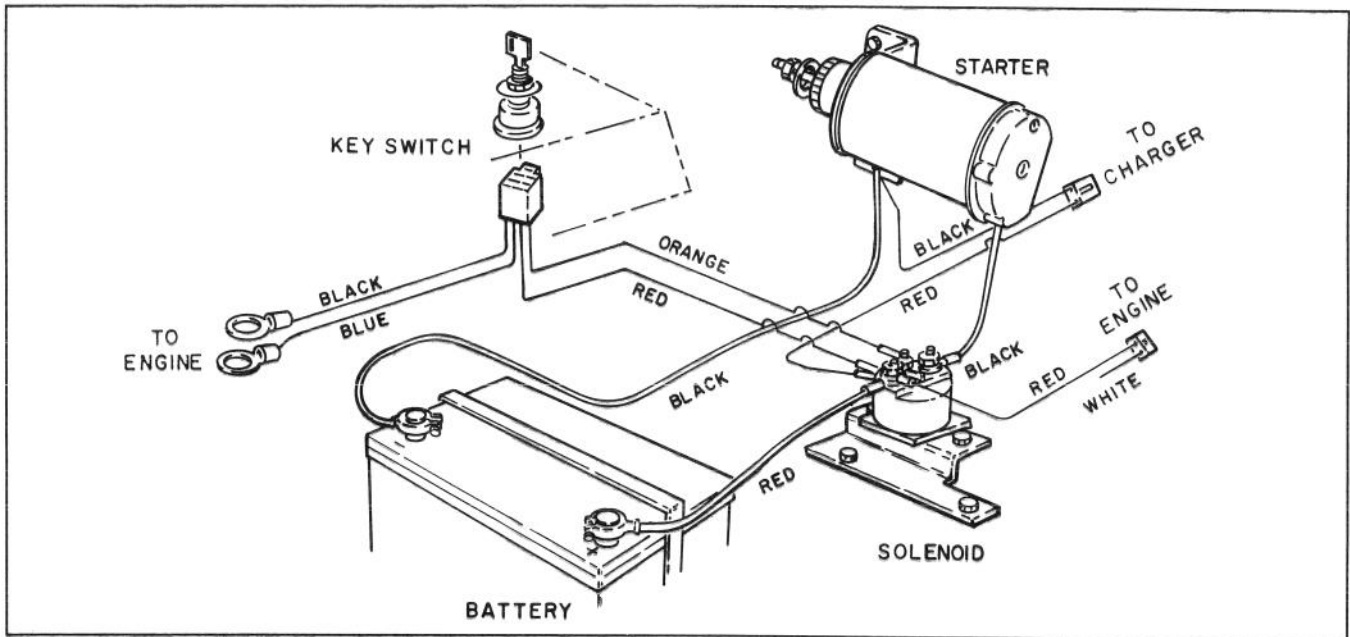


Figure 16

27. Connect orange wire of wire harness to small terminal on solenoid with internal tooth lockwasher and #10 nut (Fig.16).

28. Install new pinion cover to engine with (2) new self tapping screws (Fig.17).

29. Position drip shield behind fuel tank lower mounting bracket and secure both to engine with (2) screws previously removed (Fig.17).

30. Reinstall end of fuel line to fuel tank shutoff valve and secure with clamp (Fig.18).

31. Secure fuel tank and upper tank bracket to engine with (2) bolts previously removed. Torque bolts to 18.64 N.m (165 in. lbs.).

32. Cut existing fuel line in half and install fuel filter with (2) clamps.

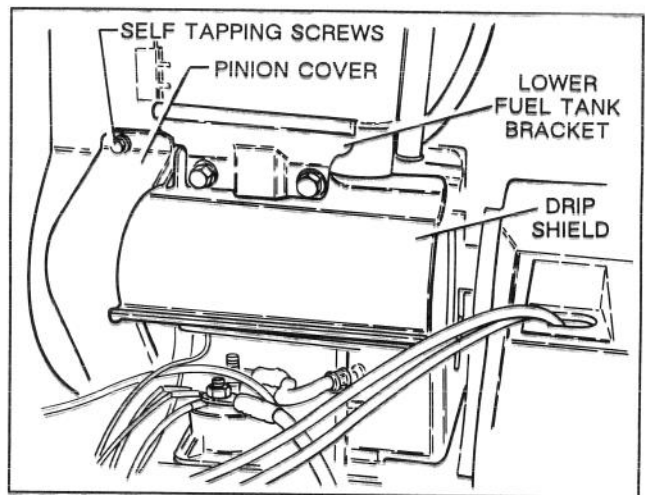


Figure 17

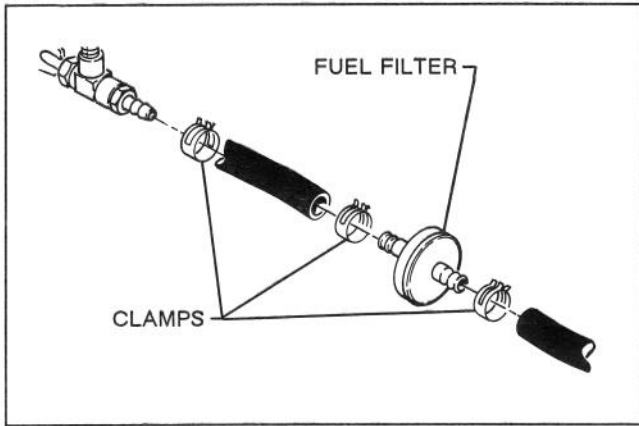


Figure 18

33. Disconnect and remove on-off key switch from control panel. Discard key switch.

34. Disconnect and discard (2) wires connected to engine from switch.

35. Install new ignition switch as shown in fig.19. Make sure that flat on key switch and switch adaptor face front of machine.

36. Secure decal on control panel around hole for switch.

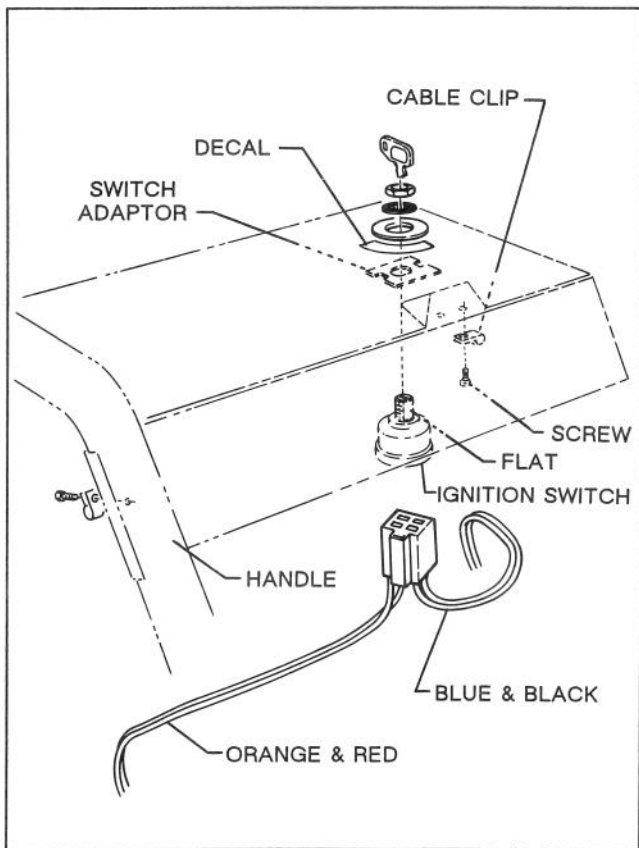


Figure 19

37. Route orange & red wires through cable clips as shown. Plug harness into switch.

38. Route black and blue wires from switch harness down left handle and secure to appropriate connections on left side of engine where wires were previously removed (Fig.20).

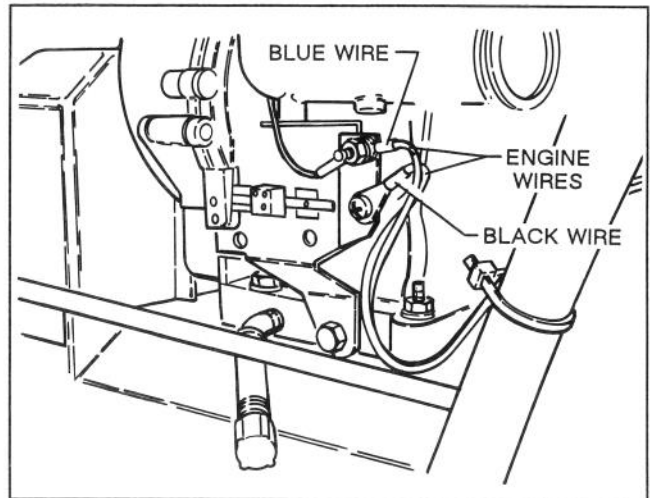


Figure 20

39. Secure wiring to left and right handles with tie wraps (2 per side).

40. Set battery onto mounting plate of snowthrower. Battery posts to be positioned to the outside, not toward the fuel tank (Fig.21).

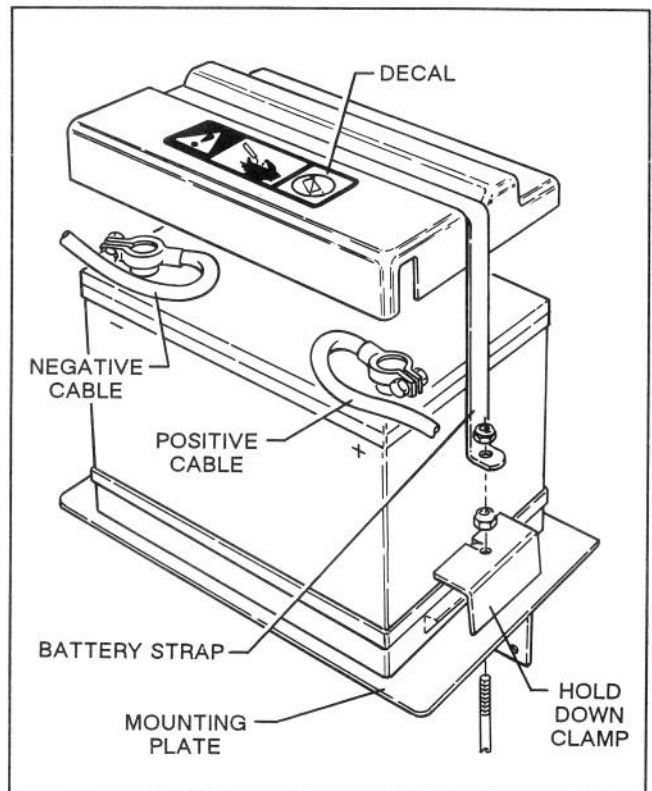


Figure 21

41. Secure black (negative) battery cable to negative (-) battery post. Route cable as shown in fig. 21, so battery cover fits over cable. Tighten cable clamp.

42. Secure red (positive) battery cable to positive (+) battery post as shown in Fig. 21. Tighten cable clamp.

43. Install cover on top of battery. Secure battery to mounting plate. Secure battery in place with capscrews, battery hold down clamps and nuts. Install decal on battery cover as shown (Fig.21).

44. Install battery strap onto battery cover and slide mounting ends of strap onto ends of capscrews (Fig.21). Secure parts in place with (2) nuts.

45. Secure all wires with remaining tie wraps.

46. Install warning decal on impeller housing (Fig. 22).

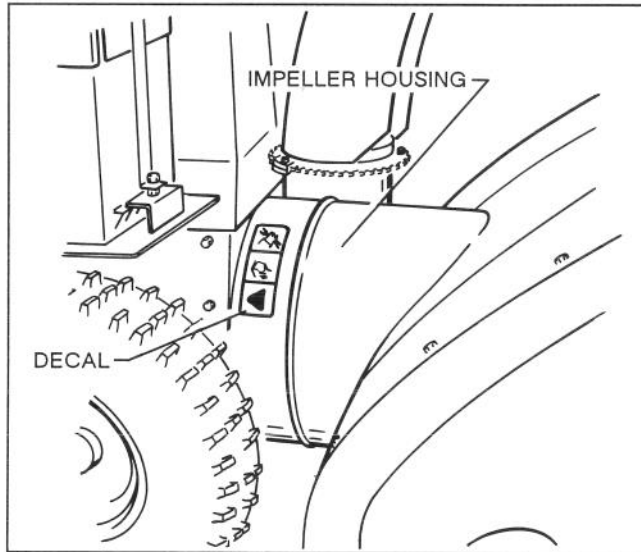


Figure 22

MAINTAINING AND CHARGING BATTERY

Before charging the 12 volt battery, make sure the battery case is not cracked. Also, remove vent caps and look into filler holes. Top of plates must not have ice crystals on them. If ice crystals are evident, do not charge the battery; take battery into warm area (not in living quarters) so it can warm up. After ice crystals are dissolved, battery can be charged.



CAUTION

Charge battery in a well-ventilated area because gases are produced while battery is being charged. Do not inhale the gases because nausea may result. Also, the gases are explosive; therefore, stay away from open flame and electrical spark, and do not smoke while battery is being charged.

1. Connect battery charger to charging plug on snowthrower.
2. Plug charger into a grounded outlet of proper voltage.
3. Charge the battery for 24 to 36 hours or follow the instructions supplied by manufacturer of charger.
4. After battery is charged, remove power cord of charger from wall outlet. Next, disconnect charger from snowthrower.



CAUTION

Charger must be unplugged from wall outlet before connecting charger to or disconnecting charger from battery or a spark could cause the battery to explode.

5. Remove vent caps from battery. Next, check level of electrolyte in each cell. Add drinking water to the battery if electrolyte is not up to the ring at bottom of filler neck. **ADD WATER ONLY AFTER CHARGING THE BATTERY.** If large quantity of water again has to be added, install vent caps and charge battery again.

NOTE: A connector with two lead wires is provided if it is necessary to use a non plug-in type charger.