

INSTALLATION INSTRUCTIONS

1. To Install In Place of a Rope Starter

To install an Impulse Starter on an engine previously equipped with a rope starter the following procedure should be followed:

A. Remove blower housing from engine and remove starter pulley. Replace with impulse starter cup assembly as illustrated in Fig. 1. There are two protrusions or alignment pins in the starter cup that must fit either into drilled holes in the flywheel or into the flywheel fins (Fig. 1-A). On certain flywheels it is necessary to drill holes in the flywheel for these pins. If it is necessary, then center pulley on crankshaft and mark flywheel, remove pulley and drill holes according to markings.



FIG. 1

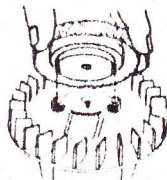


FIG. 1-A

Impulse Starter application requires use of compression or split lock washer and 350-400 inch lbs. of torque (Use 350 inch lbs. of torque on 7/16 inch flywheel nut.)

B. Replace blower housing. Tighten all nuts.

C. Place impulse starter in position so the ratchet engage the special teeth on the new starter cup.

D. Turn the entire starter clockwise so the teeth mesh firmly.

E. Holding the starter firmly in this position carefully mark the four holes on the housing where the mounting legs are to be located. (Fig. 2)

F. Remove starter and blower housing.

G. Punch or drill the four (4) 7/32" holes at the location of the marks. Fig. 3

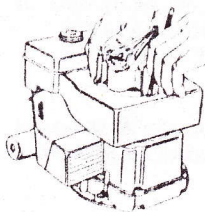


FIG. 2

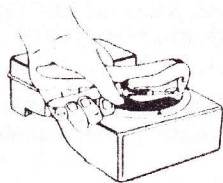


FIG. 3

H. Attach impulse starter using the four projection weld screws (Part No. 4832) and nuts (Part No. 4107-A) supplied with the kit.

I. Replace blower housing on engine and tighten all bolts

CAUTION: A tipped or bent blower housing can cause misalignment and damage to impulse starter.

J. Check alignment again as alignment is one of the most important factors for long life and proper operation.

On the V-1200 it is necessary to use mounting ring (90989) and this ring can be adapted to the blower housing by lining the inside of the mounting ring with the cut-out in the blower housing (Fig. 4). It is also necessary to use the large diameter screen (Part No. 90937) as supplied in the kit. All other procedures for adaptation are the same as the first. Refer to Service Bulletin #93 for Kit application to respective engine.

2. To Install In Place of a Recoil Starter

When applying a Clinton Impulse starter to an engine which has previously used a recoil starter, the studs are already in place and it is only necessary to change the old starter cup to the impulse starter cup and attach the new impulse starter.

If the studs are too short to extend through the impulse starter casting it will be necessary to drill the holes oversize with a 5/16" drill so the four (4) barrel nuts (Part No. 5997) and lock washers (Part No. 5998), included in the kit, can be used to hold the new starter in position (Fig. 5).

3. To Install on Other Than Clinton Engines

Basically the same procedure as previously described is used to install Clinton impulse starters to other engines. However, it may be necessary to use washers or spacers beneath the starter cup of the impulse starter to secure the proper relationship between the starter and the starter cup.

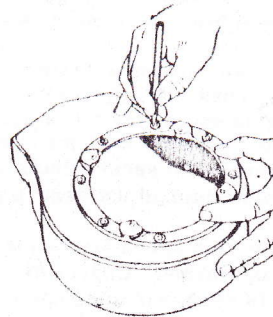


FIG. 4

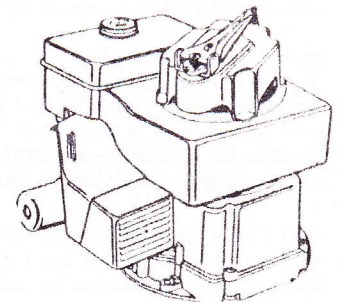


FIG. 5

4. CAUTION: Do not attempt to disassemble or adjust an impulse starter... REPLACE any defective starter with a new one and return the defective starter to the Clinton Authorized Service Account, for return to factory. Refer to Service Bulletin 93 for individual parts and ratchet service information.

TO WIND:

Place starter handle in position shown in Fig. 6 and turn clockwise until fully wound.

TO START:

CAUTION: First, check to be certain that feet, clothes, and hands are clear of moving parts of engine-powered equipment.

Place handle back over starter in folded position and press down with hand to release the starting mechanism (Fig. 7).

CAUTION: Read Paragraph "I" on back side of this page prior to working on engine-powered equipment, engine or starter.

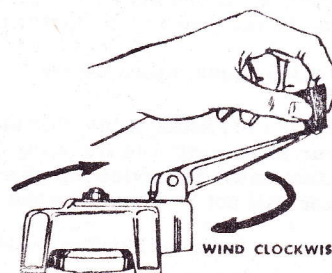


FIG. 6

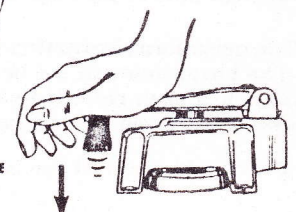


FIG. 7

PRESS DOWN

CAUTION: If engine stalled due to overload, first clear overload before winding impulse starter; for example, if lawnmower is plugged by cuttings or heavy growth such as weeds, back off prior to attempting a start so that blade moves freely and engine can start. If clutch equipped, disengage clutch prior to start. Be sure impulse starter is not loaded prior to cleaning.

CAUTION: Prior to starting a new engine and before each use of the engine the following items should be checked:

- A. With engine base level, check oil level of crankcase and refill to full level. Refer to Operation and Maintenance Manual.
- B. Check fuel supply and refill. For 2-cycle engine fill with 2-cycle mix. Refer to Operation and Maintenance Manual.
- C. Open fuel shut-off if engine so equipped. Refer to Operation and Maintenance Manual.
- D. Air Cleaner service after engine usage. Refer to Operation and Maintenance Manual.
- E. Shorting Device or Switch:
Move shorting clip away from spark plug. If engine equipped with stop switch move to "on" position.
- F. Move choke lever to "choke" position and move throttle to "fast" position or open throttle by adjusting fixed speed control or by remote control lever. Refer to Operation and Maintenance Manual.
- G. If engine does not start after several attempts, recheck B, C, D, E, F and if all are correct, check the carburetor adjustment. Refer to Operation and Maintenance Manual.
- H. After engine has operated one or two minutes and if further carburetor adjustment is required, adjust power needle first:
 1. To adjust power needle, move speed control to fast position and then turn power needle clockwise until engine misfires; move power needle open or counterclockwise until engine smooths out. If power needle is opened too far, engine exhaust will seem dull and heavy and engine may again misfire.
 2. Move throttle to "slow" position and adjust throttle stop screw (refer to Operation and Maintenance Manual) to keep engine operating at low speed. Turn idle adjustment needle clockwise or toward "closed" position very slowly and continue closing needle as long as engine operation improves as far as sound or vibration. Normally, engine speed will increase if a more desirable air-fuel mixture is being secured by adjustment. In some cases idle needle may need to be opened (counterclockwise) to secure desired operation. The stop screw may need to be turned (counterclockwise) to slow engine speed as idle adjustment is made.
 3. After idle adjustment, re-adjust high speed according to H-1 and then open power needle approximately 1/4 turn to secure richer setting for load operation. **CAUTION:** In the case of power adjustment on 2-cycle engine, the smoothest engine operation no load is very lean and engine will stop almost immediately when load applied; when this occurs power needle must be opened (counterclockwise) to operate properly and engine will smooth out only when load applied. Too rich a power setting, even under load, will result in rough sound and excessive smoke.

I. Servicing Engine-Powered Equipment

Prior to servicing engine-powered equipment, first remove spark plug wire and spark plug. Wind starter and release using care to note that starter has cranked engine freely and all torque has been discharged from starter. If discharge is questioned, loosen starter hold-down nuts and see if starter is free on studs. If starter is loose on studs, starter is completely discharged or relocked; if held tightly to studs, starter is not completely discharged. Failure to completely discharge or to relock may be caused by obstruction of equipment; binding of starter to cup or engine malfunction. To release torque turn engine or equipment to relieve torque a partial turn of engine crankshaft will allow starter to relock and this can be noted as starter will have a free movement on mounting studs. If starter relocks remove and then correct equipment or engine problem. **USE EXTREME CARE WHEN STARTER MOUNTED AS FREEING AN OBSTRUCTION COULD ALLOW STARTER TO CRANK A PARTIAL REVOLUTION AND IT COULD CAUSE INJURY FROM A BLADE, BELT OR OTHER MOVING PARTS OF THE EQUIPMENT.**

If it is determined that the malfunction is either the engine or the starter take both the engine and starter to the Authorized Clinton Service Account, so that the problem can be corrected. If starter questionable, try on another engine as problem may be misalignment of starter or engine or equipment malfunction.

CAUTION: Do not, under any circumstances, attempt to disassemble the starter as it contains a very heavy spring that can cause injury and for this reason the starter will be serviced as a complete unit if a problem occurs with the starter. (See Service Bulletin 93 for parts to be serviced.)

NOTE: The impulse starter carries the same warranty as the Clinton engine to which it is mounted. Disassembly and/or repair of engine by other than Authorized Clinton Service Account voids warranty. Alignment of starter to starter cup is very important and misalignment can be the reason for starter not cranking engine.

A tipped or bent blower housing can also cause misalignment.

NOTE: The occasional hesitation prior to release of the starter is caused by the piston traveling thru its compression stroke. The hesitation will not occur if the piston is traveling on any other stroke at the time of release. This Bulletin has been released so that Sales & Service may forewarn the customer of the starting procedure of the low profile impulse starter and the customer will not be alarmed when the hesitation occurs.

Refer to Service Bulletin 91 for parts. . . Refer to Service Bulletin 94 for addition information on starting.