
SUBJECT: SERVICING THE IMPULSE STARTER

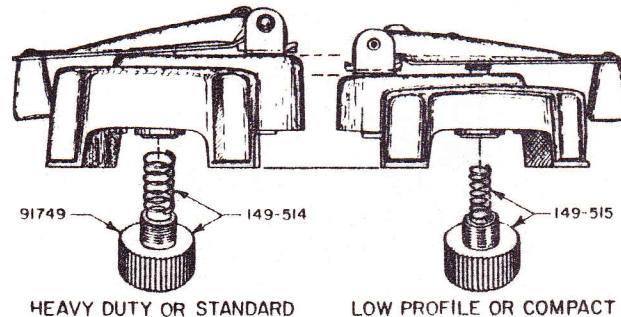
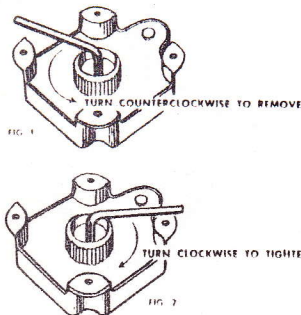
A problem may be encountered with the pawls of the cup assembly not engaging properly with the starter ratchet gear, resulting in failure to crank the engine or damage to the ratchet gear itself. When pawls are not engaging drive ratchet gear, replace cup assembly #91119. In those cases where partial engagement has resulted in damage to the drive ratchet gear, replace cup assembly #91119 and respective drive ratchet gear. To remove drive ratchet gear insert 3/8 inch allen wrench into drive ratchet gear and apply pressure in a counterclockwise direction (Figure 1). Remove ratchet gear. Screw in replacement ratchet gear in a clockwise direction (Figure 2).

When it is necessary to replace ratchet gear, and/or cup assembly, the unit can be serviced by removing the four hold-down nuts and then removing the impulse starter. CAUTION: Be certain that impulse starter has been discharged and is free on studs. Refer to "Servicing Impulse Starter" on last page of Service Bulletin #91, revised April 1961.

To remove the cup assembly, a rope can be wrapped around the cup to hold crankshaft while flywheel nut is removed. Reverse procedure can be used on reassembly and torquing of the flywheel nut. Refer to Paragraph 3 for torque.

The spring illustrated in Fig. 3 has to be reinstalled as this spring pushes button up to lock starter when winding; if button does not come up remove ratchet and check to be certain spring has not been lost by previous removal of ratchet.

1. Use ratchet No. 91749 (265-207) and spring (263-334) for heavy duty (C91116) and standard (C13534) starters (Fig. 3). The ratchet 91749 (265-207) and spring (263-334) are now supplied in Kit No. 149-514.
2. Use Kit No. 149-515 for servicing low profile starter illustrated in Fig. 4 (Consists of 265-210 ratchet and 263-335 spring).



3. Low profile compact starter furnished through Service Parts Dept. will be only the starter with hardened parts for application to both horizontal and vertical Gem, Clintalloy, and Panther engines and is part no. C13540 (C265-206-5). This starter assembly will replace the standard starter (C13534) in Kit MC91538 at a later date.

When replacing the cup assembly to the flywheel, care should be taken to insure that the alignment bosses are properly fitted to the holes in the flywheel. The flywheel nut should then be torqued to the following specifications:

350-400 In. Lbs. 1/2" threaded crankshaft. (Use compression or split lock washer)
Use 350 In. Lbs. 7/16" threaded crankshaft. (Use compression or split lock washer)

When malfunction of the starter is attributed to internal defects, do not disassemble. Replace the complete starter. Prior to complete replacement it is recommended that the starter be checked on another unit as the problem may be due to the engine or equipment. Refer to Service Bulletin #94 for additional information. When the above is handled under warranty the flat rate allowance is \$.75 for replacement of the ratchet gear or starter. If starter cup must be replaced separately, with ratchet gear, or with starter, \$ 1.50 will be allowed.

Crediting will be based on the following part numbers and prices as listed in current price list and/or supplement.

MC91537 Heavy Duty Impulse Starter Kit for Horiz. & Vert. Gem, Clintalloy, Long Life and Panther consists of the following:

- 1 C91116 Heavy Duty Impulse Starter
- 1 91119 Cup Assembly
- 1 90872 Screen, rotating (Small)
- 1 90937 Screen, rotating (Large)
- 1 90989 Ring, Adapter
- 1 P91720 Spacer-1/2 cup ass'y to 7/16"
- 4 4832 Screws
- 4 4107-A Nut & L'Washer Ass'y.
- 4 91757-B Screw
- 4 5997 Nut, Barrel
- 4 5998 Washer, Barrel Nut

MC91538 Standard Impulse Starter Kit for Gem, Clintalloy and Panther, consist of the following:

- 1 C13534 Standard Impulse Starter or C13540 (C265-206-5) Low Profile Compact impulse Starter.
- 1 91119 Cup Assembly
- 1 90872 Screen, rotating (Small)
- 1 P91720 Spacer 1/2" Cup Ass'y to 7/16"
- 4 4832 Screws
- 4 4107-A Nut & L'Washer Ass'y.
- 4 5997 Nut, Barrel
- 4 5998 Washer, Barrel Nut

MC92023 Heavy Duty Impulse Starter Kit for Horiz. & Vert. Gem, Clintalloy, and Panther consists of the following:

- 1 C91116 Heavy Duty Impulse Starter
- 1 91119 Cup Assembly
- 1 P91720 Spacer-1/2" Cup Ass'y to 7/16"
- 1 90872 Screen, rotating (Small)

NOTE: Refer to Service Bulletin #94 for additional application information on Standard and Low Profile Starters.

NOTE: Credit will normally not be allowed for replacement of standard or low profile starter with heavy duty starter; if heavy duty starter is requested; customer should pay the difference when warranty failure necessitates replacement of standard or low profile starter and heavy duty starter is requested by customer.

IDENTIFICATION

Heavy duty starter has cross hatched markings in button area; standard impulse has smooth surface in corresponding area. Low profile starter for Vertical Panther, Gem, and Clintalloy has a black handle (If painted, paint will need to be scraped to expose actual handle material color.) Low profile compact starter for vertical or horizontal Panther, Gem and Clintalloy has white handle.