



Cylinder-Crankcase Kit, P/N 87681

Cylinder-Crankcase Kit, P/N 87681, which has a chrome-bore cylinder, is service replacement for the 4.3 cubic inch (70 cc) direct-drive 7-10A saw, and will backfit the 6-10A saw. All kits include the cylinder-crankcase assembly and the following parts.

<u>Part No.</u>	<u>Description</u>	<u>Qty. Rqd.</u>
87152	Insert Bearing	1
110851	Pin - Dowel	1
87866	Valve - DSP	1
85505	Washer - Valve	1
69772	Spacer - Fuel tank	1
110288	Screw - Hx 8-32 x 3/4	2
110618	Screw - Hx 8-32 x 1-3/8	1
62842	Washer - Sealing	4
68846	Button - Switch	1
62950A	Base - Switch	1
62451	Contact - Switch	1
62973A	Wire Asy - Stop switch	1
103672	Screw - Fil hd 8-32 x 1/2	1
89642	Gasket - Automatic oiler	1
87663	Body & Duct Asy - Muffler	1
88779	Cover Asy - Muffler	1
104534	Screw - Socket Muffler 10-24 x 1-7/16	1
101563	Screw - Socket Muffler 10-24 x 1-1/4	1
24236	Washer - Muffler	3
110529	Screw - Hx Muffler body	1
68187	Screw - Hx Muffler body	1
67922	Lockplate - Muffler body	1
84007	Gasket - Muffler	1
110865	Screw - Hx 10-24 x 7/8 (torque patch)	1
110531	Rivet - 3/16 x 7/32 Nylon	2

The location and method of holding the bearing insert on the clutch end of the crankshaft have been improved in this cylinder-crankcase kit. When assembling this cylinder-crankcase kit, the old retaining ring and old insert are to be discarded.

NOTE 1. Use only tool-steel or cast-iron piston rings in this cylinder: do not use chrome rings. Oversize pistons are not available for this cylinder.

NOTE 2. If an early automatic oil pump, which is mounted with three screws, is to be used in this cylinder-crankcase kit, holes for the mounting screws must be punched out or drilled in the oil tank. Perform this operation before beginning other assembly operations (see Subsection, 'Type I Pump: Magnesium Alloy, Three-Screw Mount').

ASSEMBLY

1. Insert the Dowel Pin, P/N 110851, into the pin recess in the crankcase half, on the clutch side of the crankcase. Note that the locating hole in the Insert, P/N 87152, is not centered. Press the bearing into the insert flush with the long end of the insert (farthest from the locating hole).

2. Oil the lips of the seal before installation, and then press the oil seal into the opposite (short) end of the insert.

When completing the assembly, be sure that the locating hole in the insert is aligned with the corresponding hole in the cylinder-crankcase, and that the insert is held in place by the dowel pin; otherwise, damage may occur when the two parts of the cylinder-crankcase are joined and tightened together.

3. Use the four new Sealing Washers, P/N 62842, with the four Screws, P/N 62105, for joining the two parts of the cylinder-crankcase assembly.
4. Remove and discard the following parts before re-installing the fuel tank assembly: (A) two roundhead screws from the bottom of the airbox that secure the DSP bracket, (B) DSP bracket, (C) spring, (D) DSP lever assembly, and (E) DSP control button/stop switch assembly.
5. Remove and keep the following parts for re-installation: (A) Roll Pin 3/16 x 15/16", P/N 110378; (B) Trigger, P/N 88796; and (C) Trigger Spring, P/N 87178.
6. Install the Stop Switch Button, P/N 68846, Base, P/N 62950A, Contact, P/N 62451, Wire Assembly, P/N 62973A, and attach these parts with screw, P/N 103672 (Fig. 1). When the stop switch assembly is installed, re-install the throttle, throttle return spring, and throttle pin. Plug the two holes in the airbox with Rivets, P/N 110531, (install from top so that head of rivet is inside airbox).
7. Before re-installing the shroud, remove a section above the spark plug opening for the DSP valve (Fig. 2). Figure 3 can be cut out and used as a template for modifying the shroud. After removing the section shown, file the edges for smoothness.

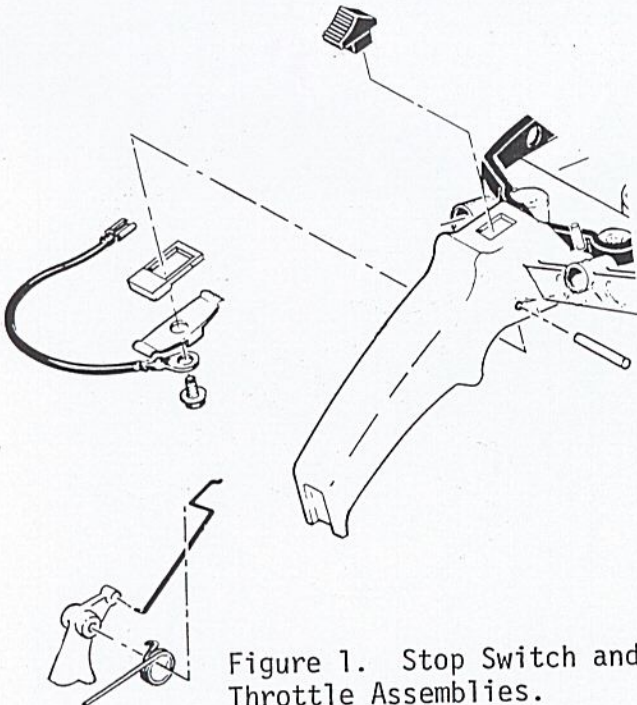


Figure 1. Stop Switch and Throttle Assemblies.

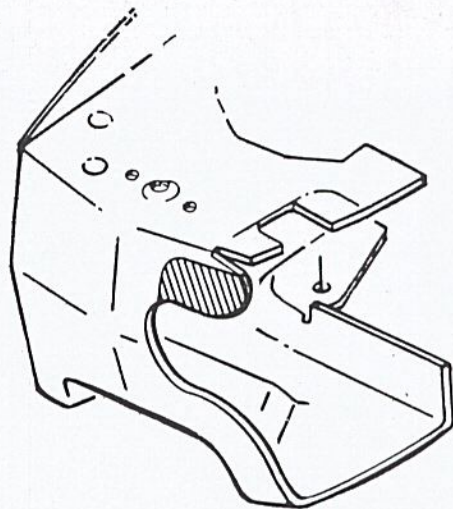


Figure 2. Shaded Area To Be Removed From Shroud.

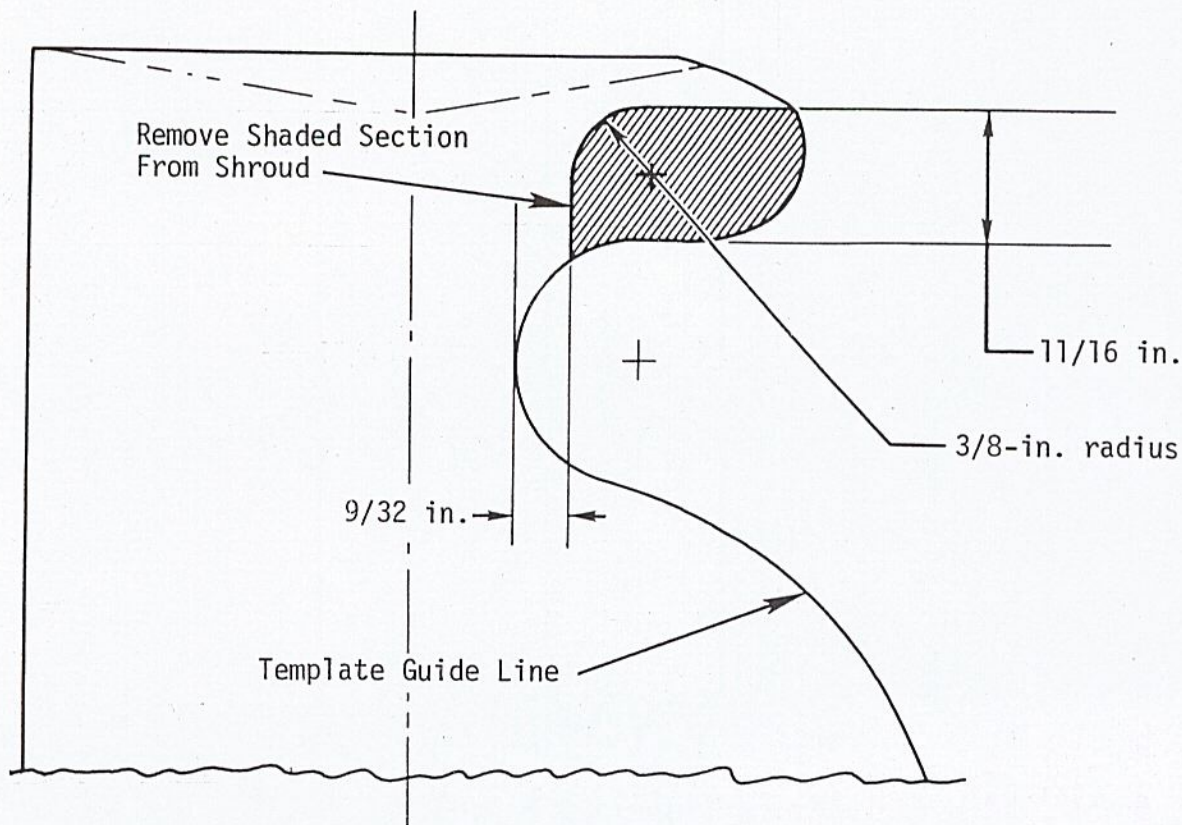
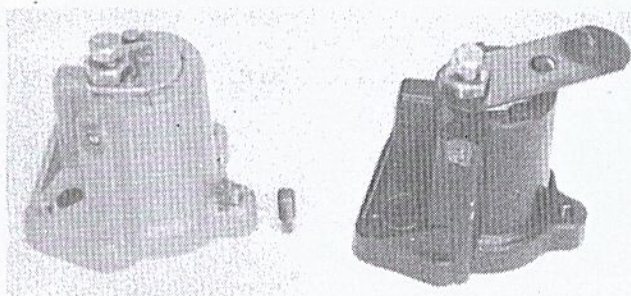


Figure 3. Full-Size Template For Shroud Modification.

AUTOMATIC CHAIN OIL PUMP INSTALLATION

This cylinder-crankcase kit will backfit three different types of automatic chain oil pumps: Type I, magnesium alloy three-screw mount; Type II, magnesium alloy single-screw mount; and Type III, wear-resistant plastic, single-screw mount. Figure 4 shows Types II and III oil pumps; Type I looks essentially the same as Type II.

As shown in Figure 5, this cylinder-crankcase assembly has a cast-in locating boss for the automatic chain oil pump.



Type II Pump (Type I Looks Essentially The Same). Note Set Screw. Type III Pump. Note Clamp P/N 89114.

Figure 4. Automatic Chain Oil Pumps compared.



Figure 5. (Note: Saw is upside down, with oil tank cover off.) Pencil pointing to oil pump-locating boss.

Oil Pump Gasket

The new Gasket, P/N 89642 (NEW), has a notch for the locating boss, and replaces the old Gasket, P/N 89642 (OLD), which has no notch (Fig. 6). The (NEW) gasket is further distinguished by adhesive backing on one side that is covered by light brown backing (which is to be removed before installation).

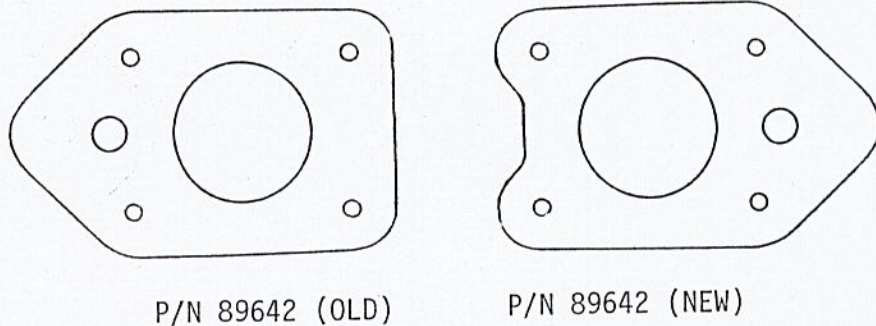


Figure 6. (OLD) and (NEW) Gaskets compared.

Type I Pump: Magnesium Alloy, Three-Screw Mount

Type I automatic chain oil pump can only be installed with three mounting screws screwed into the pump from outside the oil tank. A sharp punch, centered in the depression (Fig. 7), will usually knock out the bottom when struck with a small (12 ounce/335 gram) hammer. If the bottom of the depression is not knocked out, drill out the hole with a 7/32-in. (5.5 mm) drill. Dress the holes with a 7/32-in. file.

NOTE: Be sure to center the drill, because if part of the side of the depression is drilled away, there can be an oil and air leak.

Also, it will be necessary to cut or punch a mounting hole at the peaked end of the Gasket, P/N 89642 (NEW), and enlarge the two at the other end (Fig. 8). Clean all filings and other debris away, and with the gasket in place, torque each of the mounting screws to 55 to 60 in.-lb (63 to 69 cm-kg).

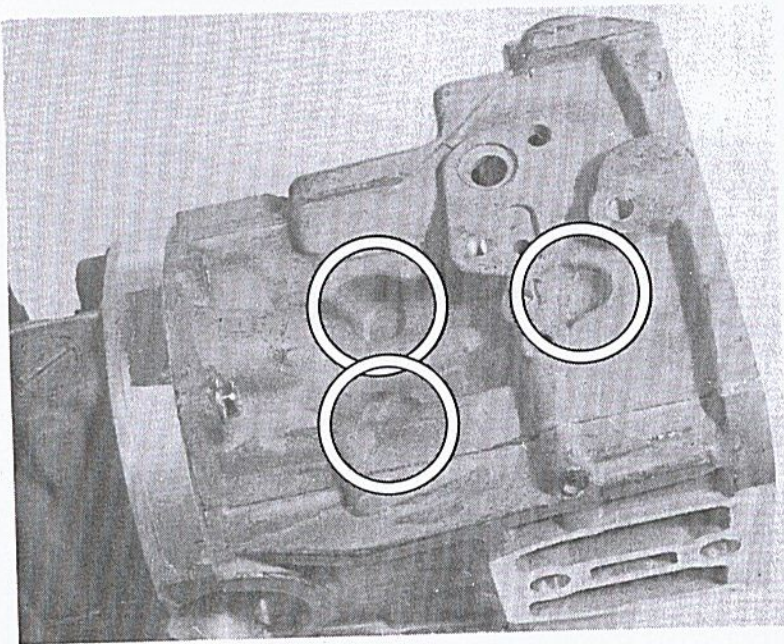


Figure 7. Depressions In Oil Tank For Mount

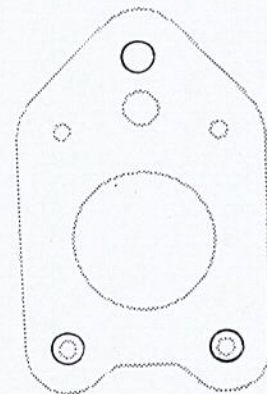


Figure 8. Locations and Size of Holes For Three-Screw Mount Type I Pump.

Type II Pump: Magnesium Alloy, Single-Screw Mount

Both Type II and Type III pumps are installed with the single mounting screw screwed into the tank wall from inside the tank. Also, it is necessary with this cylinder-crankcase kit to remove Set Screw, P/N 110643 (or 88645), before installing a Type II or III pump (Fig. 4).

Remove the set screw, ensure the mount pad area is free of dirt and debris, place the Gasket, P/N 89642 (NEW), in position, and with the torque-patch Screw, P/N 110865, placed through the single mounting hole in the pump body, torque it to 55 to 60 in.-lb (63 to 69 cm-kg).

Type III Pump: Wear-Resistant Plastic, Single-Screw Mount

Type III pump, now furnished for service replacement, is of wear-resistant plastic, and is interchangeable with the metal pump. The Clamp, P/N 89114, is also used with the Type III pump for better mounting stability; in addition, Washer, P/N 24236, is used with the torque-patch Screw, P/N 110865, to better distribute the mounting load and protect the pump body.

Remove the set screw, ensure the mount pad area is free of dirt and debris, place the Gasket, P/N 89642 (NEW), in position, and with the torque-patch Screw, P/N 110854, placed through the single mounting hole in the pump body, torque it to 23 to 27 in.-lb (26.5 to 31 cm-kg).

NOTE: Torque values for the Type III pump mount screw must be held between 23 to 27 in.-lb (26.5 to 31 cm-kg) to ensure that the pump (1) will be held securely in place, and (2) will operate freely.

MUFFLER INSTALLATION

Installation of the muffler in this kit is the same as for earlier mufflers, except that the Muffler Cover, P/N 88779, is held with two Washers, P/N 24236, and the two screws of different lengths.

Attach the body and duct assembly to the cylinder at the exhaust port. Then, position the engine so that the intake port is up, and place the muffler cover on the body and duct assembly so that the louvers open downward.

NOTE: It is important that the correct length screw be properly located to prevent damage to the cylinder.

With a washer in position, place the longer Screw 10-24 x 1-7/16, P/N 104534, in the upper hole. With the other washer in position, place the shorter 1-1/4 in. Screw, P/N 101563, in the lower hole. Tighten both screws securely.

DSP VALVE INSTALLATION

Place Valve Washer, P/N 85505, under seat of DSP Valve, P/N 87866, and install valve in cylinder head. Torque to 110 to 120 in.-lb (127 to 138 cm-kg).

DSP VALVE OPERATION

Push the button in to open the DSP valve to release compression. The valve should close automatically when the engine is accelerated.