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# Instruction Sheet

E-344 9-90

## Replacing "B" Series Engine With Performer™ Engine

These instructions cover basic modifications required when replacing B Series with Performer engines in Ingersoll® tractors. They are intended to supplement details and specifications included in the tractor service manual and the engine service manual. Before starting installation, read the entire procedure and refer to illustrations as needed.

**CAUTION** This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

**WARNING** This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

**WARNING** Ignition of explosive battery gases can result in severe personal injury. Do not smoke or allow any ignition source near the battery.

**WARNING** Ignition of fuel can result in severe personal injury or death. Do not smoke or allow any spark, pilot light, or arcing equipment near the fuel system.

**WARNING** Accidental starting of the engine can result in severe personal injury or death. Disconnect the negative battery cable and spark plug wires while servicing engine, controls, or associated equipment.

### TRACTOR SHEET METAL MODIFICATION

1. Modify the air flow sheet metal on the starter side to allow clearance for the following:

- Starter and starter wiring (Figure 1)
- Engine block gusset (Figure 2)
- Hydraulic oil cooler line (Figure 1)

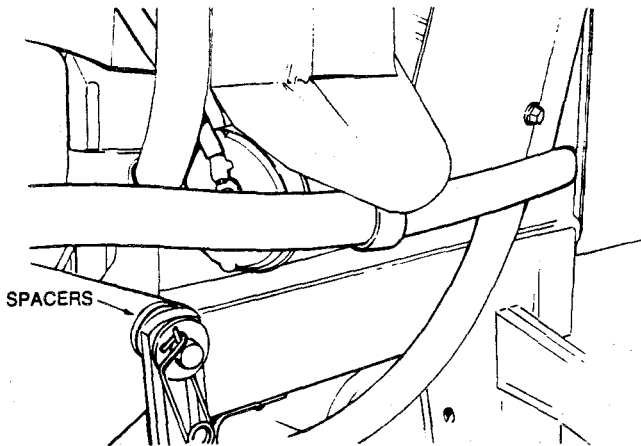


FIGURE 1. SHEET METAL MODIFICATION FOR STARTER

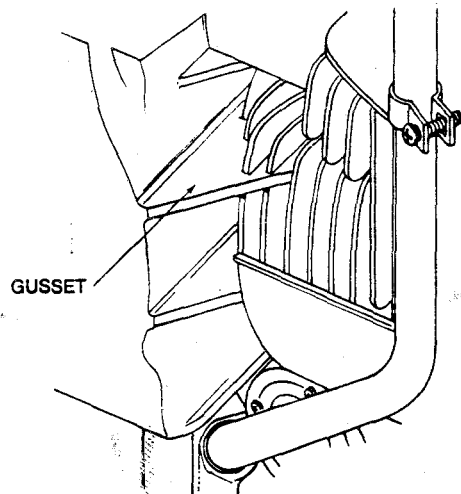


FIGURE 2. SHEET METAL MODIFICATION FOR ENGINE GUSSET

2. Modify the exhaust tube cover on oil filter side to accommodate higher blower housing sheet metal. Approximately .25 inches must be removed.

3. Modify tractor hood on starter side to allow clearance for and prevent abrasion of the oil cooler line. (Figure 3)

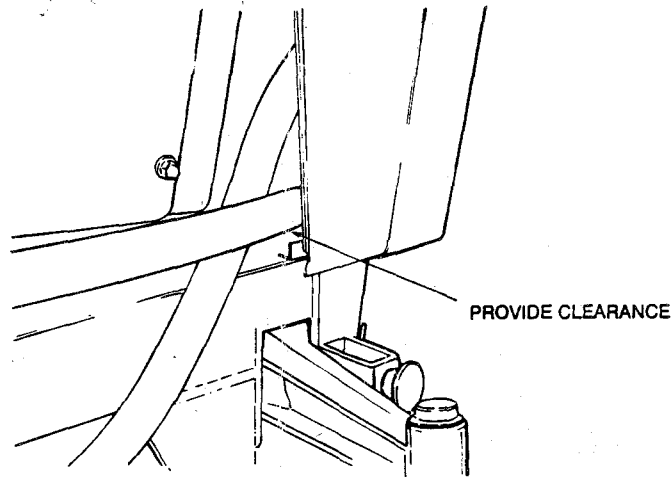


FIGURE 3. HOOD MODIFICATION FOR OIL LINE

## HYDRAULIC OIL LINES

1. Cut the lower oil cooler tube (metal) at the rear engine mounting hole. Approximately 13-15 inches of the tube should be removed.
2. Flare the end of the tube to help retain new line.
3. Install and clamp new oil cooler lines that conform to SAE J517-100R4. Approximate lengths are 35 inches for upper and 21 inches for lower lines.
4. Route and secure oil lines. Use the "J" clamp provided on the engine to hold the lower hose toward the cylinder air housing. (Figure 4)

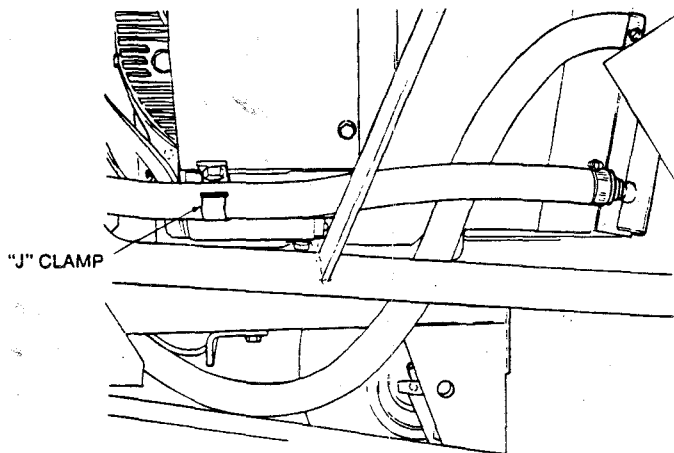


FIGURE 4. HYDRAULIC OIL LINE ROUTING AND J CLAMP

## ENGINE OIL DRAIN

1. Install an engine oil drain line of a suitable length to clear tractor frame.

## WIRING

1. Install new positive and negative battery cables.
2. Cut connectors from the new alternator lead wires and replace with terminals and connector provided.

## SNOWBLOWER ATTACHMENT

1. Two 3/16 inch thick spacers are needed when mounting the snowblower attachment. They are used to keep snow-blower attachment bracket away from the engine and lower oil cooler line. (Figure 1)