



**Cold Start Kit**  
**Groundsmaster® 580-D**  
 Model No. 30590

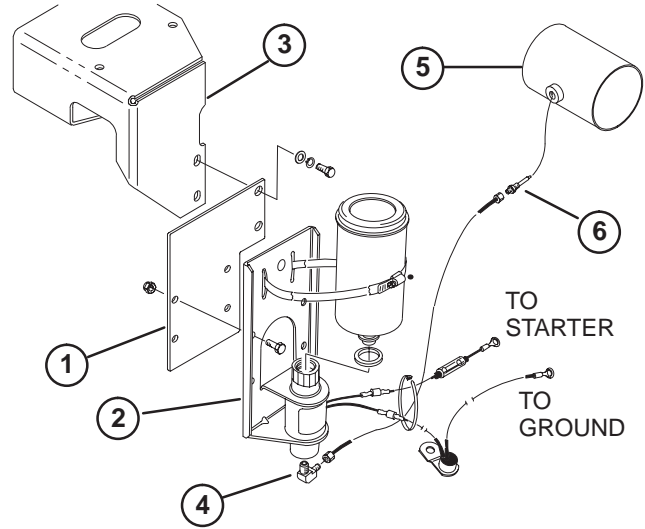
**Installation Instructions**

**Danger**

This kit must not be used on Groundsmaster 580-D, Model 30582-240000001.

**Warning**

Do not smoke when installing, maintaining, testing or trouble shooting the cold starting system. Make sure you are in a well ventilated area away from heat, open flames or sparks. Wear goggles when testing to avoid eye injury. Starting fluid is extremely flammable and toxic. It can be harmful or fatal if swallowed. Avoid contact with skin or eyes or breathing the fumes. If fluid or fumes enter or irritate the eyes, flush with large quantities of water for 15 minutes and contact a physician. Contents of canister are under pressure. Store in a cool area. Do not incinerate, puncture or attempt to dismantle canister.



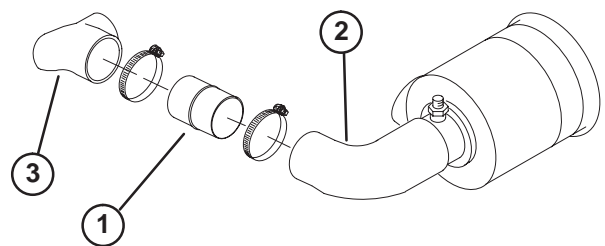
**Figure 1**

- |                           |                       |
|---------------------------|-----------------------|
| 1. Valve assembly bracket | 5. Cold start tube    |
| 2. Injector bracket       | 6. Nozzle             |
| 3. Air cleaner base       | 7. Temperature switch |
| 4. Elbow fitting          |                       |

**Important** The Groundsmaster 580 D glow plug circuit is designed so it can be used with the cold starting kit. The glow plug circuit does not need to be dismantled to use the cold starting kit. The glow plugs are energized only when the ignition key is in the RUN position and the kit will only inject ether during cranking.

1. Mount valve assembly bracket to injector bracket with (4) capscrews and locknuts (Fig. 1).
2. Remove fasteners securing dipstick bracket to air cleaner base. Discard fasteners.
3. Mount valve assembly, injector bracket and dipstick bracket to air cleaner base with (2) capscrews, lockwashers and flat washers (Fig. 1).
4. Thread elbow fitting (left-hand dry seal threads) into bottom of valve finger tight (Fig. 1). With wrench, tighten fitting an additional 1 or 2 turns until it points toward rear of machine.

5. Remove (2) hose clamps securing intake tube between air cleaner hose and turbo charger hose (Fig. 2). Remove tube. Replace with cold start tube (Fig. 1) and secure with clamps previously removed.



**Figure 2**

- |                     |                       |
|---------------------|-----------------------|
| 1. Intake tube      | 3. Turbo charger hose |
| 2. Air cleaner hose |                       |

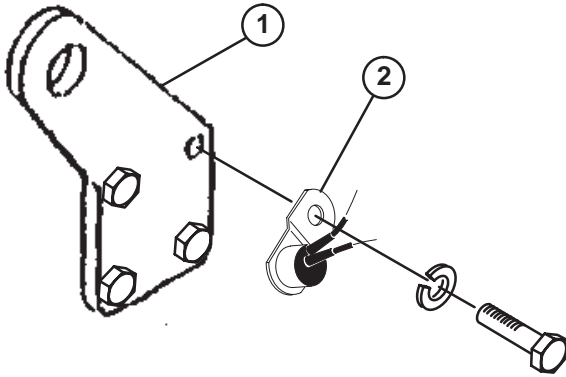
6. Thread nozzle into port on cold start tube (Fig. 1). Make sure nozzle orifice in tube points toward air cleaner. Mark on nozzle indicates direction of orifice.
7. Insert plastic tubing into protective sheathing.

**Important** Do not shorten tubing, use all provided.

8. Insert tube ends into fittings (Fig. 1). Connect tubing fittings to fitting on valve and nozzle on cold start tube. Tighten fittings (1) additional turn after finger tight. Check to make sure tubing is being compressed in fittings when tightening.

**Important** Make sure tubing does not contact any hot surfaces, sharp edges or moving parts which could cause damage to tubing.

9. Remove bolt and washer securing upper right corner of rear lifting bracket to back of cylinder head (above bell housing) (Fig. 3).



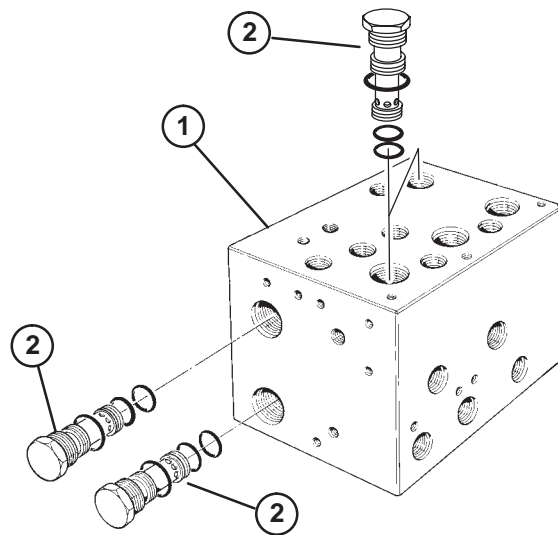
**Figure 3**

1. Rear lifting bracket
2. Temperature switch

10. Install temperature switch to rear lifting bracket with bolt and washer previously removed (Fig. 3). Bottom of switch must contact bracket.
11. Disconnect positive (+) cable from battery. Secure fused wire (white w/blue stripes) from valve to start terminal on starter solenoid.
12. Remove capscrew securing ground wire to top of bell housing. Secure ground wire from temperature switch to bell housing with capscrew removed.
13. Make sure wire connections from valve are secure and reconnect battery cable.
14. Secure both wires from valve and tubing together with wire tie included in kit.

**Important** Make sure wires or tubing does not contact any hot surfaces, sharp edges or moving parts which could cause damage.

15. Remove cartridge valves BY1, BY2 and BY3 from PTO manifold block, located at rear of engine compartment (Fig. 4). Replace with valve cartridges provided.



**Figure 4**

1. PTO manifold
2. Cartridge valve