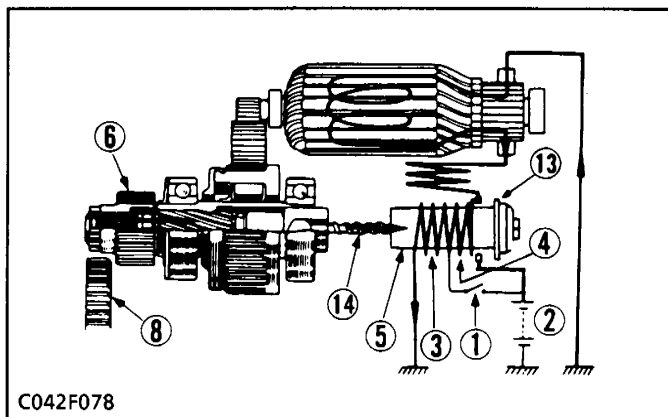


■ When the Engine is Running

When the engine runs so fast that the ring gear (8) starts to turn the pinion gear (6), the roller clutch (11), (12) are actuated to prevent excessive high-speed revolutions of the armature (7).

- | | |
|-----------------|------------------|
| (6) Pinion Gear | (11) Clutch Gear |
| (7) Armature | (12) Roller |
| (8) Ring Gear | |



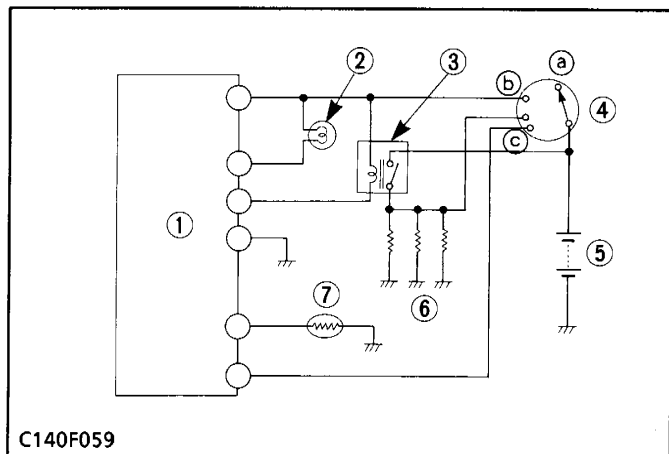
■ When the Main Switch is Released

When the main switch (1) released, the main switch returns from the **START** to the **ON** position and opens the starter circuit. Then, current flows from the battery (2) to the pull-in coil (4) and holding coil (3) through the contact plate (13). Since the magnetic forces of the pull-in coil and holding coil become partially opposed and cancel one another, the plunger (5) is restored by the tension of the return spring (14).

This opens the contacts on the contact plate and separates the pinion gear (6) from the ring gear (8), so that the pinion gear stops rotating.

- | | |
|------------------|--------------------|
| (1) Main Switch | (6) Pinion Gear |
| (2) Battery | (8) Ring Gear |
| (3) Holding Coil | (13) Contact Plate |
| (4) Pull-in Coil | (14) Return Spring |
| (5) Plunger | |

(2) Glow Control System



This preheater employs an **ON** glow system which supplies current to the glow plug (6) for a necessary length of time by simply turning on the main switch (4).

The structure of this system is as shown in the figure. The energizing time of this glow plug (6) is controlled by the temperature of cooling water of the engine. When the glow lamp (2) is turned off, the operator knows that the preheating is completed.

The glow plug (6) is provided with a super glow plug which is capable of heating quickly in a short time.

- | | |
|---------------------|------------------------------|
| (a) OFF | (c) START |
| (b) ON | |
| (1) Glow Controller | (5) Battery |
| (2) Glow Lamp | (6) Glow Plug |
| (3) Glow Relay | (7) Water Temperature Sensor |
| (4) Main Switch | |