

The first position clockwise operates starter for normal starting, first and second positions anti-clockwise operate the "Thermostart" easy starting aid and the starter motor respectively.

Thermostart. C.A.V. Type.

Fitted to Diesel Engine Tractors

The "Thermostart" consists of a combined heating and vaporising coil mounted in the inlet manifold. At the first movement anti-clockwise of the starter switch fuel flows from the reservoir tank, mounted at the rear of the main fuel tank, through the heater, wherein it is vaporised and then ignited by the heater coil. A further movement anti-clockwise of the starter switch operates the starter and the ignited fuel is drawn into the engine. For Service Instructions refer to Diesel Fuel System.

Neutral Safety Switch

Model 5510. Part No. 31601A.

The plunger type neutral safety switch is mounted on the transmission case in a position such that the plunger is compressed by the planetary shifter rail when the dual range selector lever is in the neutral or "Start" position. This closes the starter motor circuit. When the dual range selector lever is in either high or low range the switch plunger is not compressed as it protrudes either into the space

beyond the end of the shifter rail (high range) or into a recess cut into the shifter rail (low range). It is therefore impossible inadvertently to start the engine with the tractor in gear.

Wiring

The wiring on the tractor is comparatively simple, but must be maintained in good condition to prevent hard starting and electrical difficulties. The battery cables are designed to carry a heavy amperage. However, if the terminal contacts are not kept clean and tight, the current carrying capacity is greatly reduced and starting trouble results. It is essential to maintain good earth connections for battery, starter and dynamo.

The high tension wiring system is of 7 mm. diameter wire with a high resistance insulating covering. If this insulation becomes cracked or broken, a current leak may occur, with the result that no spark or a reduced spark reaches the sparking plug.

The low voltage wiring system should be inspected regularly and all connections kept clean and secure. Locations where chafing has worn the covering should be repaired before a short circuit occurs. Advantage should be taken of the replacement wiring harness assembly which is made available as a service part.

COLD CLIMATE EQUIPMENT

HEATER PLUGS

(Fitted to 23C Diesel Engine)

GENERAL (Fig. 27 refers)

The 23C Diesel engine embodying Heater Plugs, is fitted to FE-35 Tractors destined for use in areas where conditions of extreme cold prevail. These plugs are fitted into, and preheat, the combustion chambers, so igniting the injected fuel during the starting sequence.

Incorporated into the tractor's electrical circuit are two 21 thin-plate batteries (which utilise the 19 plate case), a heavy duty heater/starter switch and heavy duty cables from the rear battery to the front and from the front battery to the starter motor, to accommodate the higher current required by the Heater Plug circuit.

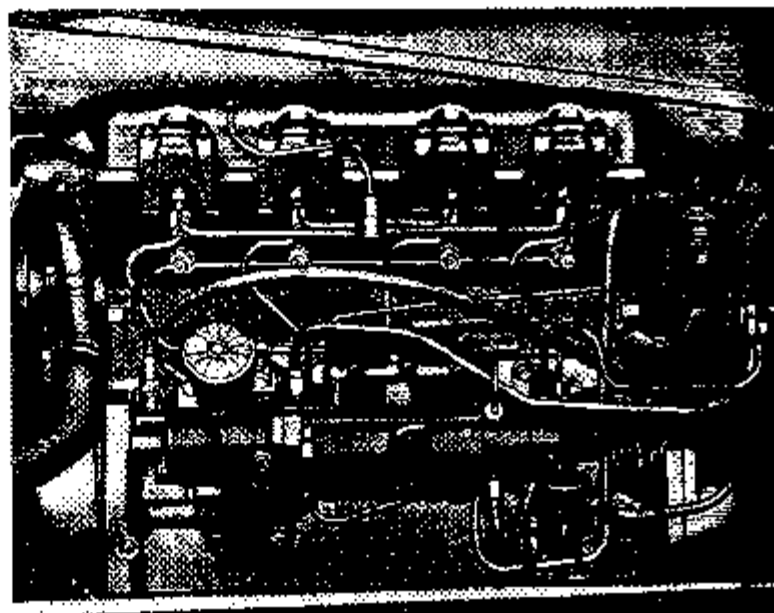


FIG. 27
23C DIESEL ENGINE SHOWING HEATER PLUGS
FITTED BENEATH EACH INJECTOR

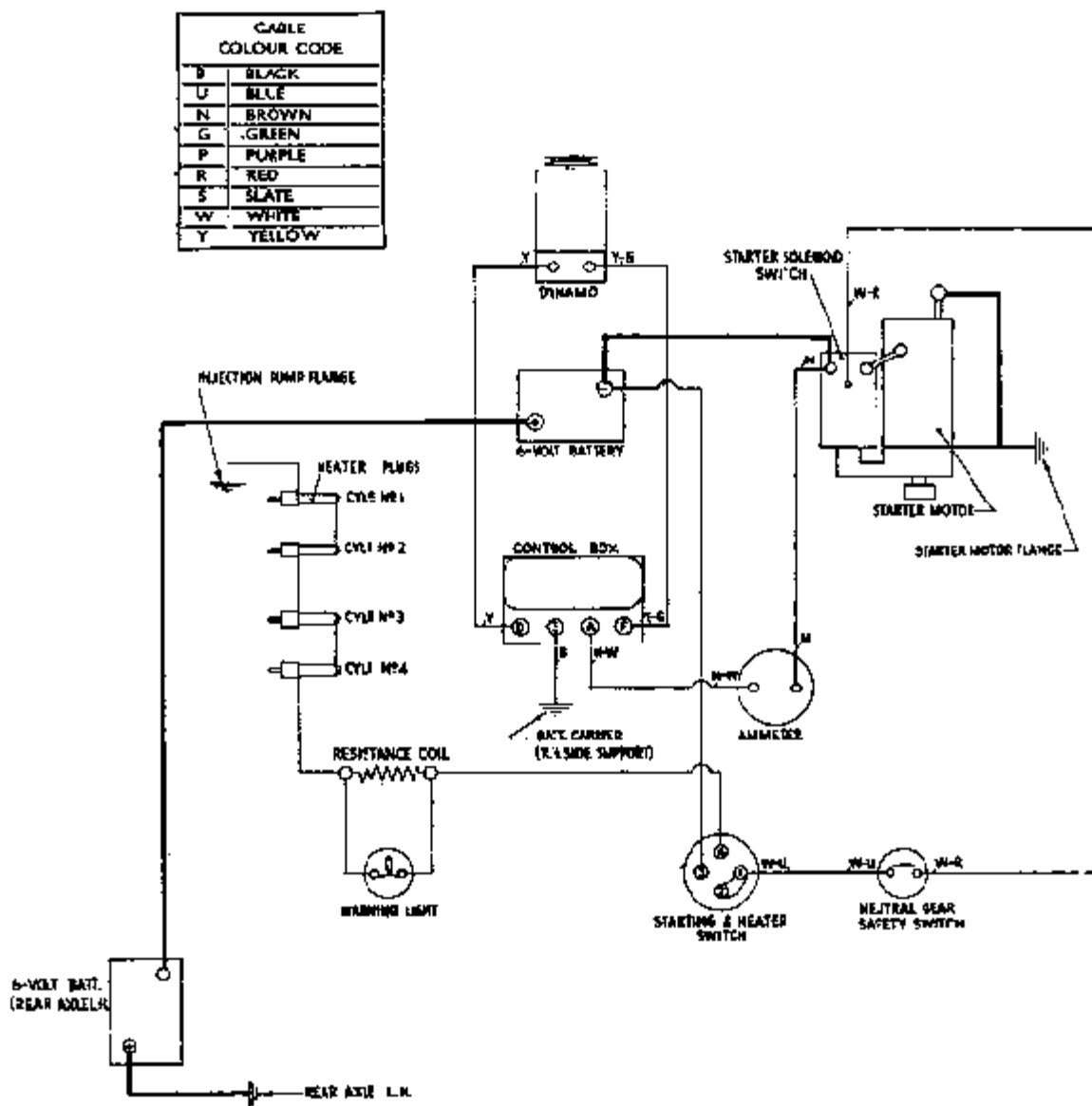


FIG. 28
HEATER PLUG WIRING DIAGRAM

A ballast resistance unit is connected in series with the Heater Plugs to prevent over-loading during the initial "heating" period, and a Warning light assembly is fitted across this resistance to indicate when the plugs are switched on. The plugs are connected in series, and an earth lead is taken to

the injection pump drive casing from No. 1 cylinder Heater Plug.

Tractors fitted with this alternative equipment have the Thermostart and Thermostart reservoir deleted; the manifold has a blanking plug in place of the Thermostart and the return pipe from the fuel filter is connected directly to the main tank.