

**FUNCTION OF ETHER STARTING FLUID AID**

Since the engine depends on heat in the combustion chamber to ignite the fuel, starting the engine in cold weather may be a problem. Since the starting fluid (ether) has a low ignition point, heat generated in the combustion chamber during compression is able to ignite it.

Heat from this ignition then ignites the fuel/air mixture and normal combustion takes place.



**CAUTION: Ether starting fluid is highly flammable.**

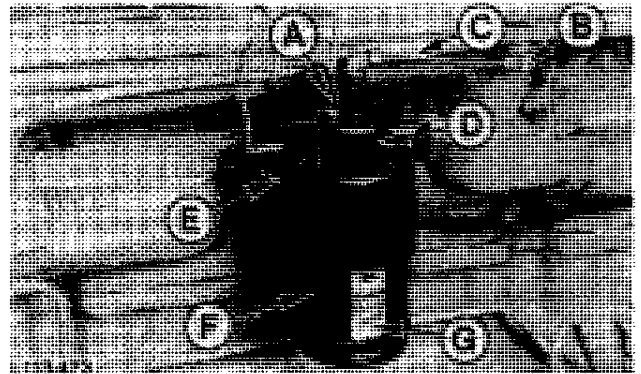
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**Electric Ether Starting Aid**

The ether pressure can (G) is operated via a solenoid switch (D). Pushing the push-button switch opens valve on pressure can, thereby ether flows into inlet manifold.

**IMPORTANT: Turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid at brief intervals only while engine is turning.**

**IMPORTANT: Ensure that fluid can is always attached to adapter to prevent dust and dirt from being drawn into engine.**



A-Connector  
B-Nozzle holder  
C-Pressure line  
D-Solenoid switch

E-Cap screw (2 used)  
F-Pressure can holder  
G-Pressure can with ether starting fluid

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**Manual Ether Starting Aid**

To use the starting aid, valve of pressure can (A) is opened by pushing up on can for a short period against can connection. Thereby ether fluid flows into intake manifold.

**IMPORTANT: Turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid at brief intervals only while engine is turning.**



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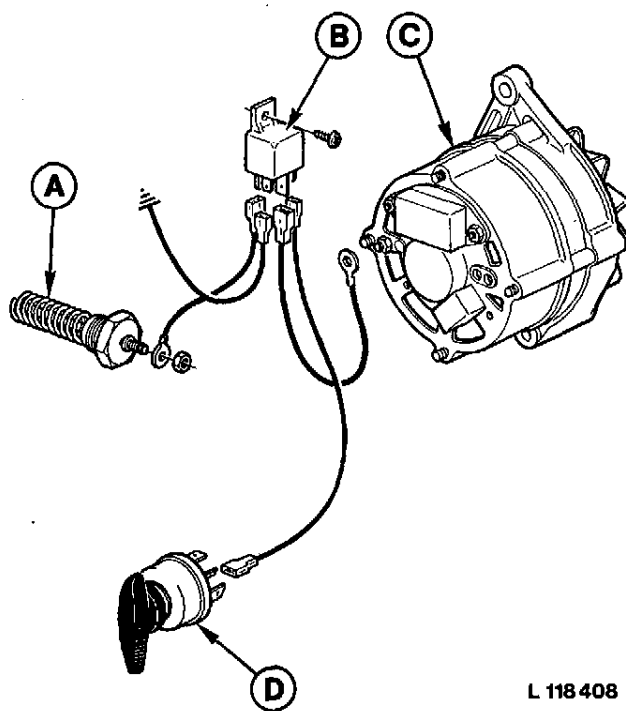
### FUNCTION OF ELECTRIC STARTING AID

Since the engine depends on the heat in the combustion chamber to ignite the fuel, starting the engine in cold weather may be a problem.

The air drawn into the engine is heated by glow plug (A) and improves starting in cold weather.

The glow plug is installed in air intake manifold. By turning starter switch (D) clockwise to first position electrical circuit is closed.

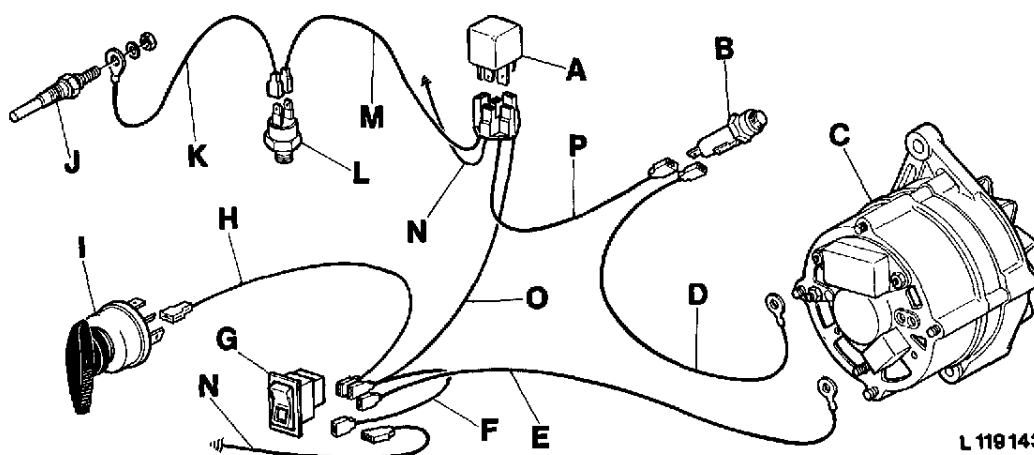
- A-Glow plug
- B-Relay
- C-Alternator
- D-Starter switch



L 118 408

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**FUNCTION OF FUEL PREHEATER**



- |  |  |  |                                     |
|--|--|--|-------------------------------------|
| A-Relay                                  | F-Wire jumper                                | K-Cable from thermal switch to glow plug | N-Ground cable                      |
| B-Fuse holder                            | G-Toggle switch                              | L-Thermal switch                         | O-Cable from toggle switch to relay |
| C-Alternator                             | H-Cable from starter switch to toggle switch | M-Cable from relay to thermal switch     | P-Cable from fuse holder to relay   |
| D-Cable from alternator to fuse holder   | I-Starter switch                             |  |                                     |
| E-Cable from alternator to toggle switch | J-Glow plug                                  |  |                                     |

The fuel preheater is operated by means of toggle switch (G). Glow plug (J) is switched off automatically by means of thermal switch (L) if fuel preheater is switched on for too long with engine stationary.

The glow plug and thermal switch are integrated into the fuel filter plate.

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## Group 15 SPEED CONTROL LINKAGE

### DESCRIPTION

The desired engine speed is selected by means of the hand throttle (A) or foot throttle (D). The position of these levers controls – through the governor on the fuel injection pump – the amount of fuel being injected into the cylinders.

The hand throttle is self-locking: Two spring-loaded friction disks (B) hold the lever in the position selected.

With engine running at slow idle speed, hand throttle lever (A) lies against stop screw (C).

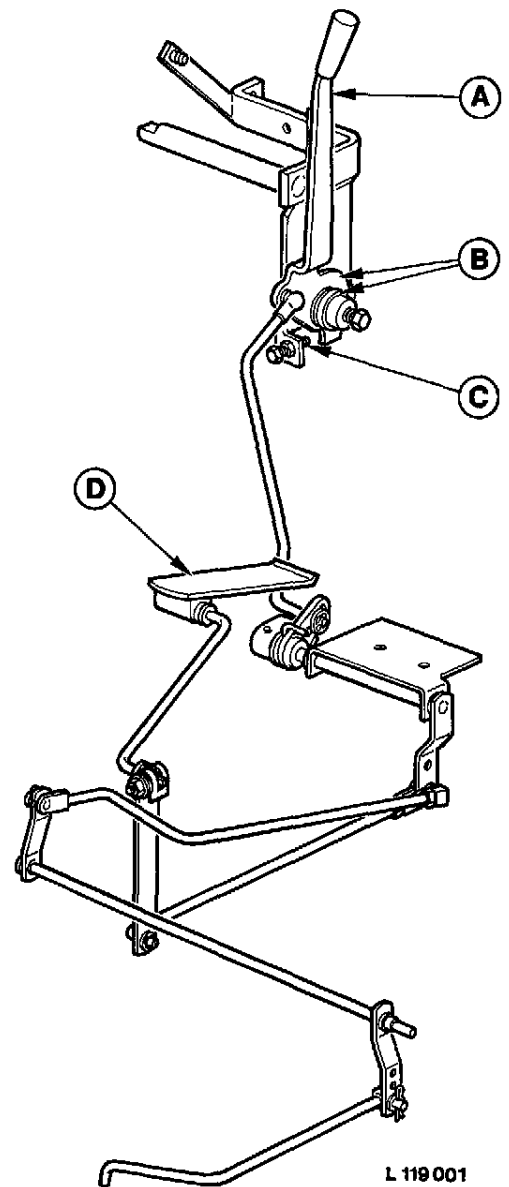
If hand throttle lever is pushed forward until speed control lever lies against forward stop on pump, the engine runs at fast idle speed.

The engine is stopped by means of a shut-off cable. One end of this cable is connected to the fuel injection pump lever, the other to a knob in the dash.

A–Hand throttle  
B–Friction disks

C–Stop screw  
D–Foot throttle

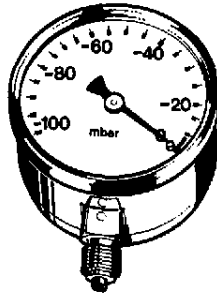
*NOTE: The illustration shows speed control linkage of a tractor equipped with SG2 cab.*



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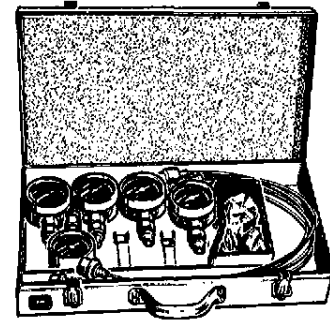
**SPECIAL TOOLS**

**FKM10242**



**(A)**

**FKM10002**



**(B)**

L 119 002

**A,B—Measuring air intake  
system vacuum**

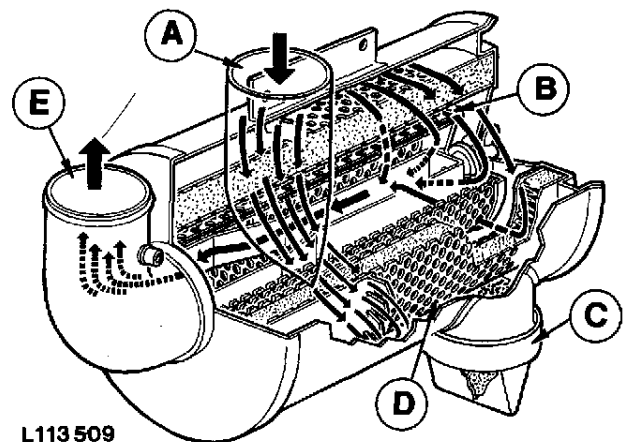
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**FUNCTION OF THE AIR CLEANER**

Under the influence of suction generated by the engine, unfiltered air flows through air inlet tube (A) and is forced into a high-speed centrifugal motion by tilted fin insert. By this circulating action, most of the dirt and dust particles are separated from the air and collected in the dust unloading valve (C).

The remaining dirt is removed as the air flows through primary element (D) and secondary (safety) filter (B) before being drawn into the engine.

- A—Air inlet**
- B—Secondary (safety) element**
- C—Dust unloading valve**
- D—Primary element**
- E—Air outlet**



L113 509

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### FUNCTION OF THE AIR CLEANER (CONTD.)

The secondary (safety) filter (B) ensures that should primary element (D) fail, no unfiltered air is drawn into the engine.

A restriction warning switch in conjunction with an air cleaner indicator light located in the dash indicates when air cleaner element requires cleaning (see Operator's Manual).

Should the restriction warning switch appear to be faulty, check air intake system as follows. Carry out this check also after adjustment or reconditioning of the engine.

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### CHECKING AIR INTAKE SYSTEM

Clean air cleaner.

Remove air pre-cleaner (when equipped).

Depending on tractor equipment, remove glow plug of electric starting aid or adapter of ether starting aid or plug in intake manifold.  
Connect vacuum gauge.

Run engine until it reaches operating temperature.

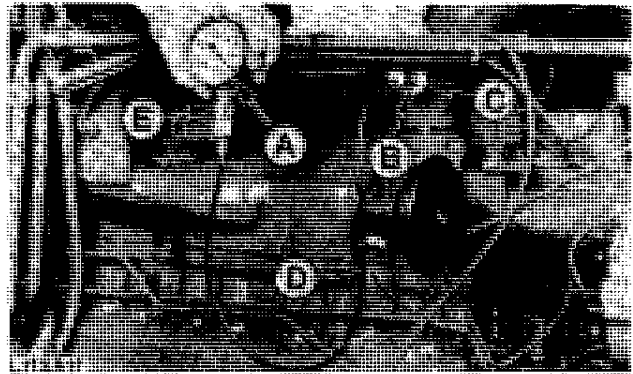
Run engine at fast idle speed.

With a clean element installed, vacuum shown on gauge should be approx. 3.5 kPa (35 mbar; 14 in. water head), but should never exceed 6 kPa (60 mbar; 25 in. water head).

If this is the case, there is a restriction in the air intake system. Determine and remedy the cause.

A-Vacuum gauge FKM10242  
B-Connector FKM10303\*  
C-Male connector JT05495\*  
D-Pressure hose FKM10209\*  
E-Connector FKM10302\*

\* Part of testing kit FKM10002



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