DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S MANUAL

TESTER CYLINDER COMPRESSION

(BACHARACH INDUSTRIAL INSTRUMENT CO., MODEL YUF)

(4910-808-4300)

Headquarters, Department of the Army, Washington D. C.

11 June 1965

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INSTRUCTIONS
on use and care of
MOTORITE Diesel Compression Tester
Model YUF

GENERAL

The MOTORITE Diesel Compression Tester Model YUF is an instrument for measuring cylinder compression pressures of Diesel engines. Its operation is based on principle of trapping gases from cylinder of a running engine by means of a trapping valve and measuring the trapped pressure with a pressure gauge. Cylinder compression pressures of any make of Diesel engine may be checked by mounting trapping valve element (or cartridge) in an appropriate adapter fitting designed to replace the fuel injector employed by particular engine involved.

OPERATING PROCEDURE

Before Mounting on Engine

Screw CARTRIDGE (1) into ADAPTER SHANK (2), tightening snugly by using light wrench force on flate of cartridge. Screw ADAPTER HEAD (3) tightly into adapter shank. Then screw assembled adapter into UNION NUT (4) of CHECK VALVE ASSEMBLY (5).

Remove injector from engine cylinder. Turn engine over several revolutions to clear passageway.

On certain compression-ignition engines, access to combustion chamber may be had without disturbing injector, by using some other connection. In latter event, all fuel lines to cylinder under test must be disconnected. On spark ignition engines, where passageway other than spark plug hole is used, ignition wire must be disconnected. Temperatures and pressures developed under firing conditions are too high for MOTORITE and Bacharach Industrial Instrument Company disclaims responsibility for damage or inaccuracy resulting from such improper use.

Attaching to Engine

Install adapter in cylinder in such a position as to keep hose and gauge assembly clear of moving engine parts. When installing HOSE (6) care should be taken to avoid sharp bends. Union nut (4) can be loosened to facilitate installation of adapter and positioning of hose and gauge assembly, then retightened. If gasket is required at bottom of adapter fitting, be sure that it is in good condition and properly installed. Clamp or screw adapter fitting securely in place.

When using MOTORITE on Diesel engines which start on gasoline, engine should be first started up before installing Tester. After warming up engine, install MOTORITE as instructed above and disconnect spark plug wire of cylinder being checked. Restart (running engine on remaining cylinders) and shift engine to Diesel cycle promptly. Then check cylinder compression pressure using instructions given below.

Taking Readings

Run engine at cranking or idling speed unless other speed is recommended by engine manufacturer. Read maximum cylinder pressure from GAUGE (7). Additional pressure readings can be taken by depressing BUTTON (8) on VENT VALVE ASSEMBLY (9) then releasing and allowing pointer of gauge to read maximum deflection.

Venting After Use

Before removing MOTORITE from engine, vent the Tester by depressing BUTTON (8).

MAINTENANCE PROCEDURE

MOTORITE should be maintained in a pressure-tight condition, since excessive leakage affects accuracy. Unnecessary dismantling should therefore be avoided.

To check leakage, trap pressure in excess of 300 psi in MOTORITE by running MOTORITE on engine until gauge reads engine cylinder. Unscrew CHECK VALVE ASSEMBLY (5) from ADAPTER SHANK (2) one turn. Depress BUTTON (8) for an instant to reduce pressure to region of 300 psi. If gauge pointer drops less than 10 psi in 15 seconds from 300 psi, leakage rate of assembly above check valve