

TM 9-834

WAR DEPARTMENT TECHNICAL MANUAL

VEHICULAR GENERAL
PURPOSE UNIT
EQUIPMENT

WAR DEPARTMENT

1 JUNE 1944

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*WAR DEPARTMENT
1 June 1944*

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TM 9-834, Vehicular General Purpose Unit Equipment, is published for the information and guidance of all concerned.

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The Adjutant General.

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PART ONE

GENERAL

Section I

INTRODUCTION

1. SCOPE.

a. This technical manual* is published for the information and guidance of the personnel to whom this equipment is assigned. It contains information on the operation, lubrication, and adjustment of Vehicular General Purpose Unit Equipment.

b. This manual has the following arrangement:

- (1) Part One, General, is the introduction to the manual.
- (2) Part Two contains information on the operation, lubrication, and adjustment of bench and test equipment.
- (3) Part Three contains information on the operation, lubrication, and adjustment of air compressors.
- (4) Part Four contains information on the operation, lubrication, and adjustment of battery chargers.

*To provide operating instructions with the materiel, this technical manual has been published in advance of complete technical review. Any errors or omissions will be corrected by changes, or, if extensive, by an early revision.

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VEHICULAR GENERAL PURPOSE UNIT EQUIPMENT

PART TWO

TEST AND BENCH EQUIPMENT

Section II

CLEANER AND TESTER, SPARK PLUG—No. 40-C-1011
(Globe Union Co.)**2. DESCRIPTION.**

a. The spark plug cleaner and tester is of metal construction, and is supplied in both floor and bench models. It is designed to sandblast clean, and make spark gap tests, on $\frac{7}{8}$ -inch, 10-, 14-, and 18-mm spark plugs. This unit operates from a 12-volt d-c outside power source. Battery clips are provided for this purpose. An outside source of compressed air is required for the sandblast cleaning operation.

3. CONTROLS AND INSTRUMENTS (fig. 1).

a. **Push Button.** The test button located on the front of the case is pushed to supply ignition voltage to the spark plug during the gap test.

b. **Air Valve Control.** The air valve control is a wing-type handle on the top of the cleaner-tester, and is marked "AIR." It has three positions, which are marked on the top of the case, namely: "OFF," "AIR," and "SAND." This control is used to control the flow of air and sand for sandblast cleaning of plugs.

c. **Needle Valve.** The needle valve, located between the two test openings on top of the case, is turned clockwise to decrease, and counter-clockwise to increase the pressure of air for the spark plug gap test.

d. **Pressure Gage.** The pressure gage, mounted in the top of the case at the right-hand test opening, registers the pressure applied during the spark plug gap test. It is calibrated from 0 to 300 pounds per square inch.

e. **Mirror.** The metal mirror, mounted at an angle to the rear of the plug test openings, is used to observe action of the spark during the gap test.

f. **Adapters and Gaskets.** The adapters and gaskets are kept on two posts to the rear of the cleaner-tester when not in use. They are used to install different size plugs in the test openings.

g. **Gap Gages.** Three wire-type gages are supplied with the unit for the purpose of checking and adjusting spark plug gaps.

CLEANER AND TESTER, SPARK PLUG—No. 40-C-1011**4. OPERATION.**

a. **Preliminary Instructions.** Install cleaner-tester on a bench or other suitable base with tester openings to the front, air control valve to the left, and spark plug cleaner opening to the right. Screw or bolt down through the holes provided in the base of the unit. Connect air line from 125 to 150 pounds per square inch air supply to $\frac{1}{4}$ -inch pipe tapped air inlet to the rear of the air control valve. Ground the case by connecting the ground clip in the rear of the unit to the nearest suitable water pipe or ground pipe. **CAUTION:** *Spark plug gap test will not be satisfactory without case adequately grounded.* Remove air

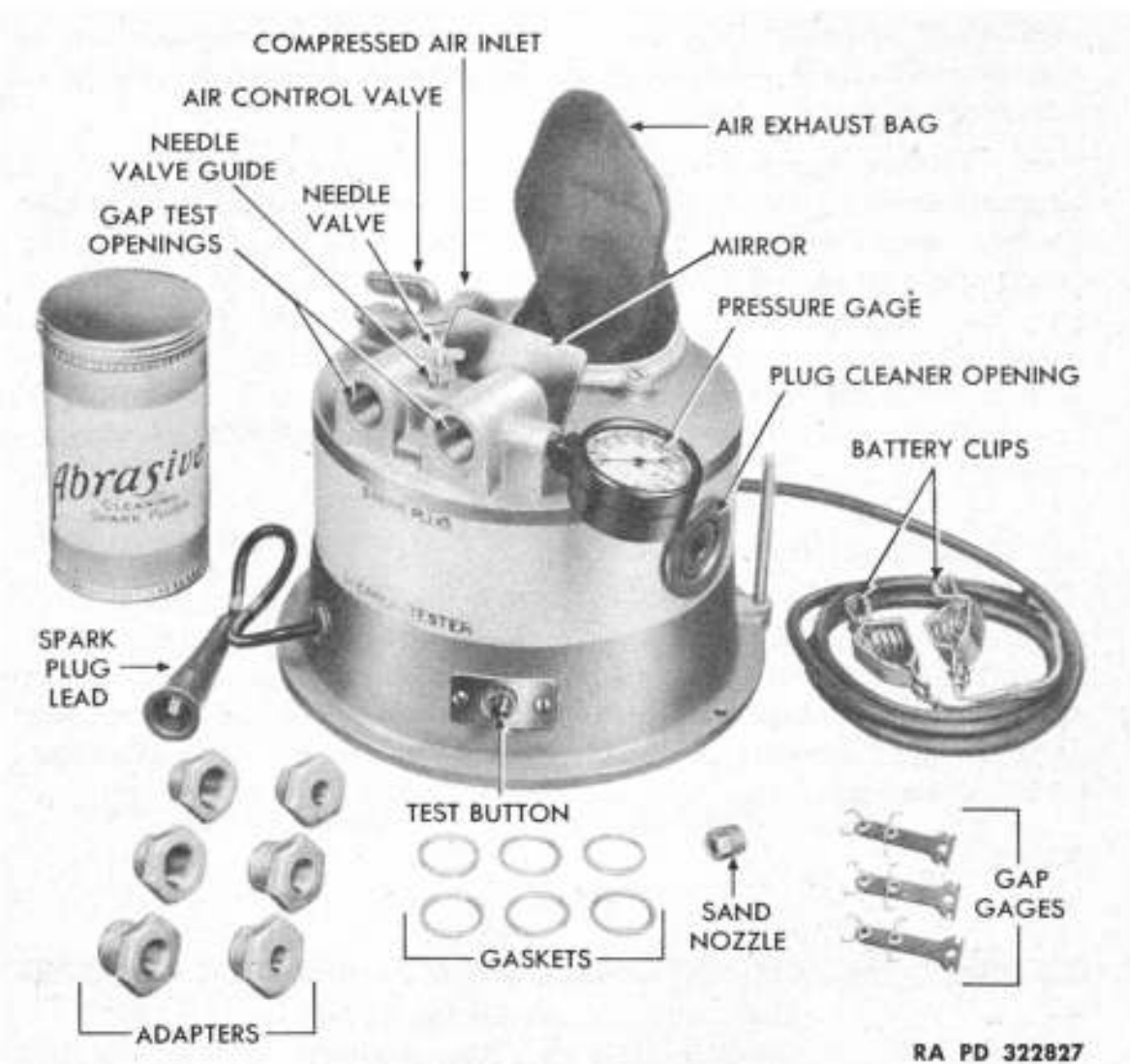


Figure 1—Spark Plug Cleaner and Tester

exhaust bag and screen, and pour 1 to $1\frac{1}{2}$ pounds of abrasive into sand chamber. Replace bag and screen, and tighten securely in place. Attach battery clips to 12-volt storage battery (white wire to negative and black wire to positive terminal).

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b. **Sandblast Cleaning.** If there are not two spark plugs in the gap test openings, be sure the needle valve is closed before doing sandblast cleaning. Make sure plug is free of any excess oil or water and, using right hand, insert plug in cleaner opening. With left hand, turn air control valve to "SAND" position. Oscillate outer end of plug with a circular motion, so that cleaner blast can penetrate all crevices, for about 5 seconds. Without removing plug from opening, turn air valve 180° to the "AIR" position, and again oscillate plug for a few seconds to clear out all particles of loosened carbon or cleaning compound. Return the air valve to "OFF" position and remove the cleaned plug. Shake out, or jar loose any particles of abrasive remaining between the plug porcelain and shell. **CAUTION:** *Do not turn the air control valve to "SAND" position when there is no plug in the cleaner opening, as cleaning compound would be blown out through the cleaner opening at sufficient velocity to be injurious.*

c. **Testing Spark Plug Gap.** Adjust gap of old plug. Screw old plug and new plug to be compared into gap test openings, using copper gaskets and adapters when necessary. Clip high-tension spark plug lead to plug to be observed. Regulate air pressure to correct amount for plug being tested. Press the test button, gradually opening needle valve until pressure has been increased 20 pounds above normal. While pressure is being increased, observe action of the spark in the mirror to see if the spark remains bright and steady, without flickering or missing.

5. MAINTENANCE.

a. **Air Exhaust Bag.** When air exhaust bag becomes about half-filled with carbon and worn-out abrasive, remove the bag and screen. Clean the screen with dry-cleaning solvent and compressed air, being careful not to damage the mesh. Empty contents of bag and replace an equivalent amount of abrasive compound in the sand chamber. Install screen and bag.

Section III**CLEANER, ENGINE, KEROSENE SPRAY—No. 40-C-1008-20****(Binks Mfg. Co., Model No. 160-B)****(DeVilbiss Mfg. Co., Type HM-551)****6. DESCRIPTION.**

a. The engine cleaner gun is operated by compressed air, and is designed for throwing a spray of kerosene for cleaning engines and other metal parts. The cleaner is completely assembled with nozzle, control, and a one-quart liquid container for holding cleaning fluid. The differences in the types of guns are in the controls. One type (fig. 2) has