



RADIO SUPPRESSION

The latest type Indian Military motorcycles of model 741 series (30:50 cu. in. — 500 c.c.) supplied on contract number W-398-QM-11749 — with engine numbers GDA-18706 to GDA-28974, (War Dept. Registration No.'s 643500 to 653768) — are equipped with radio suppression equipment. This equipment is designed to suppress the motorcycle electrical system so that it will not be detectable nor interfere with radio reception or communication systems.

It is designed to suppress all audible noise radiated within a spectrum of from .5 to 40 megacycles to a level of 2 milliwatts at a specified distance.

The ignition system is suppressed at the following points:

1. Ignition Coil
2. Distributor
3. Spark Plugs
4. Generator

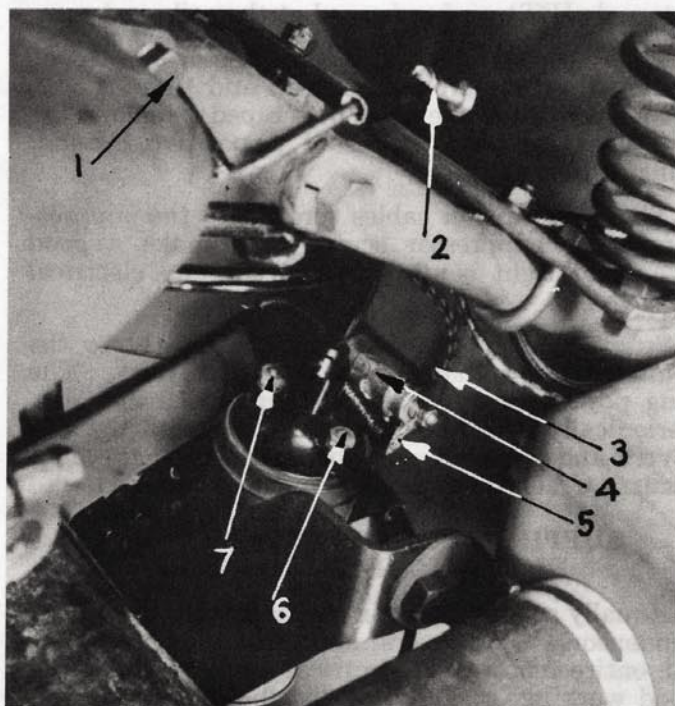


ILLUSTRATION NO. 1

Condenser mounting at coil. Condenser must be grounded to fender with good clean ground.

1. Battery Ground wire to frame; 2. Battery terminal screw; 3. Ignition switch to coil wire (connects at condenser); 4. Condenser; 5. Condenser to coil positive (+) terminal; 6. (-) Negative coil terminal (wire to distributor connects here); 7. Positive (+) coil terminal.

Change No. 1
TM-10-1485
February 20, 1942

1. At the ignition coil, a .5 mfd condenser is used. This is grounded to the rear fender above the coil and cut into the circuit between the switch to coil wire and positive (+) coil terminal. The switch wire is connected to the condenser terminal and a short lead used to connect the condenser to positive (+) terminal of the coil. If connected to the negative (-) coil terminal, in the circuit between the coil and distributor, the engine will operate but an extra electrical load will be placed on the distributor points. This would cause the points to arc, prematurely burn up and interfere with radio communication. (See illustration #1)

To insure a direct ground of the fender to the motorcycle frame, an internal-external (IET) washer is used at the upper frame to fender bolt. (See illustration #2)

2. At the distributor, a suppressor is used in the circuit in the high tension lead from the coil



ILLUSTRATION NO. 2

Showing fender grounded to frame using internal-external (IET) washer. High tension lead to coil must plug in tightly — be clean, free from dirt and moisture.

1. Internal-external (IET) washer used to ground fender to frame; 2. Coil high tension lead; 3. Rain cover; 4. Coil to distributor lead (negative coil terminal).

Supplementary pages to Model 741
Maintenance Manual — TM-10-1485
Manufacturers Form No. M649A

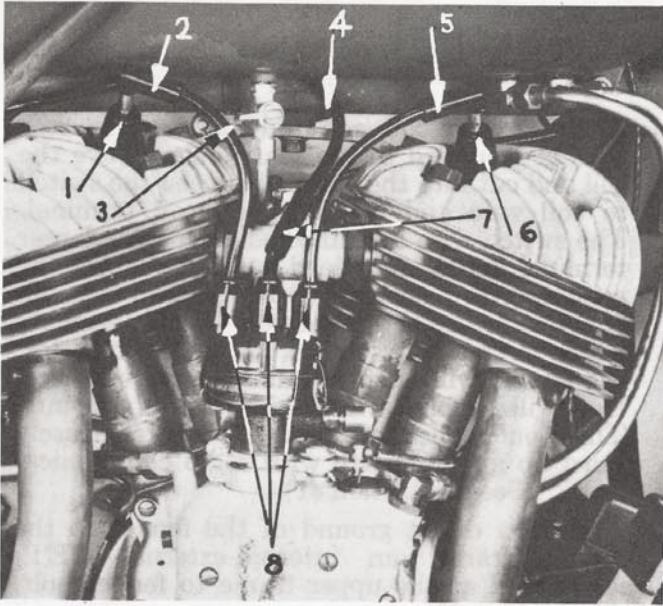


ILLUSTRATION NO. 3

High tension leads from distributor to plugs and distributor to coil must plug in tightly and be free from dirt, moisture. At suppressors, cables must screw in tightly.

1. Spark plug cover; 2. Spark plug suppressor; 3. Rear spark plug high tension cable; 4. Coil to distributor high tension cable; 5. Spark plug suppressor; 6. Spark plug cover; 7. Coil to distributor high tension suppressor; 8. Distributor cap rain covers.

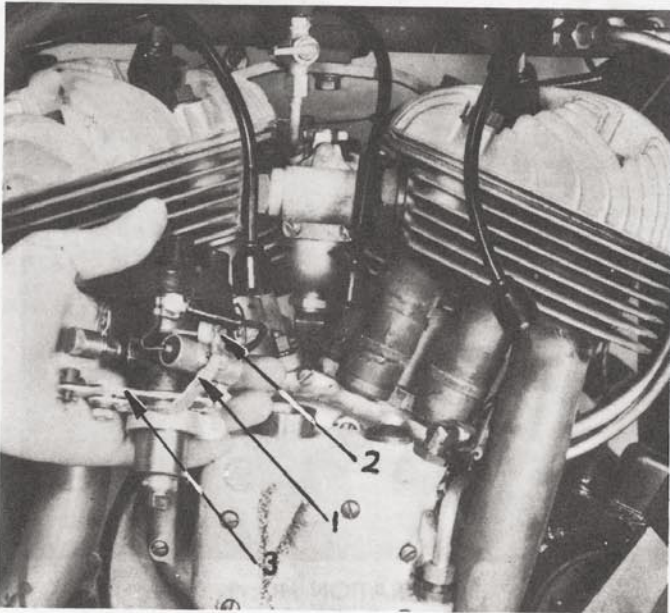


ILLUSTRATION NO. 4

Showing bonding wire connected from distributor body to spark advance clamp to provide positive ground. Retime ignition when replacing distributor.

1. Mesh bonding wire to ground distributor; 2. Wire grounded at distributor body; 3. Wire grounded at spark advance lever (when clamped to oil pump body this will provide direct ground.)

to the center terminal of the distributor cap. (See illustration #3)

To provide a direct ground, the distributor is grounded to the oil pump body by a special bonding wire connected from the side of the distributor body to the spark advance clamp as shown in illustration #4.

3. Suppressors are used at each spark plug with rain shields over the plugs and at the distributor cap.
4. A .5 Mfd condenser is used at the generator. This is mounted to the generator body at the front of the regulator and cut into the circuit with a short lead wire to the generator output post (positive terminal).

PROPER INSTALLATION IMPORTANT

Suppression of electrical interference depends on proper attachment of all suppression equipment. All connections must be clean and tight. Condensers must be grounded to the metal of the motorcycle and generator. When checking, scrape the surfaces clean and tighten so that there will be no chance for a broken circuit. An internal-external (IET) washer is used at the coil condenser.

Where the fender mounts to the frame, make certain that the ground is clean and tight. Both the fender and frame must be scraped clean and the IET washers used to insure a positive ground. (Illustration #2)

The high tension cables screw into the suppressors. The suppressor screw must make a good clean and tight contact to prevent any electrical leakage.

Spark plug suppressors must fit tightly to the spark plug terminal and be free of all dirt. The plug porcelains must also be kept clean and dry. Periodically it will be necessary to take off the rain covers and wipe off any condensation that might occur. Cracked suppressors must be replaced.

SUPPRESSION DEPENDS ON ALL ELECTRICAL EQUIPMENT

Equally as important as proper installation of the condensers, suppressors and grounding washers, the entire motorcycle electrical system must be in good working order. The distributor points must be kept clean to prevent arcing. Points that arc will not be suppressed to the level required to eliminate radio interference.

Generator brushes that are worn or a dirty commutator will cause arcing at the brushes. This will cause an electrical disturbance that cannot be accommodated by the suppression equipment. Keep the commutator and brushes clean at all times.

A breakdown of the generator condenser will cause the generator to ground itself and cut out the charge to the battery.

Battery terminals must be kept clean, tight and free from corrosion at all times. Keep terminal felts oiled and free from corrosion. A poor connection at the Battery or ground or any place in the electrical circuit will cause an electrical disturbance that cannot be accommodated by the suppression equipment.

INSTALLATION TO 741 MODELS WITH ENGINE NOS. GDA 18705 or EARLIER

Conversion parts are available to change over model 741 motorcycles without this equipment. Following are the parts that must be eliminated and the new additional parts to be added:

ELIMINATE FOLLOWING:

Part No.	No. Used	Description
42415	1	Distributor to coil cable
40608	1	Spark plug cable — front
40610	1	Spark plug cable — rear
44341	1	Spark plug cable protector tube
40390	1	Tube and strap clip
44342	1	Tube and support strap
42823	1	Coil to distributor wire assem.

NEW PARTS TO BE INSTALLED

44633	1	Generator capacitor — .5 mfd.
44675	1	Spark plug cable — front
44676	1	Spark plug cable — rear
44648	2	Spark plug suppressor
44674	2	Spark plug rain shield
44677	1	Distributor to coil cable
44678	1	Distributor to suppressor cable
44628	1	Distributor to high tension suppressors
44633	1	Coil Capacitor — .5 mfd.
37759	2	Capacitor lockwasher — special
44694	1	Coil to distributor wire clip
44695	1	Distributor to oil pump body bond wire assy.
44688	1	Coil to distributor wire assy.
44631	1	Coil to capacitor wire assy.
44631	1	Generator to capacitor wire assy.

TROUBLE SHOOTING

If a machine equipped with suppression equipment interferes with radio communication systems, the entire equipment as well as all wiring and electrical accessory equipment on the machine must be checked.

Trouble	Remedy
Broken suppressors	Replace
Shorted condenser	Replace
Cracked High tension cables	Replace
Loose connections at: <ol style="list-style-type: none"> 1. Switch 2. Battery 3. Condensers 4. Spark plugs 5. Distributor 6. Generator 7. Fender Ground 	Scrape clean and tighten Scrape clean and tighten Scrape clean and tighten Scrape clean and tighten Scrape clean and tighten Scrape clean and tighten Scrape clean and tighten
Pitted Distributor points	Clean and adjust or replace if badly pitted or worn
Cracked Distributor cap	Replace
Moisture at Distributor cap	Wipe clean and dry
Moisture at Spark plugs	Wipe clean and dry
Spark Plugs	Clean and reset points, or replace if burned badly
Generator Arcing <ol style="list-style-type: none"> 1. Dirty commutator 2. Worn Brushes 	Clean — see general repair instructions in maintenance manual for this machine Replace — see maintenance manual
No current at points	Condenser at either coil or distributor broke down — replace with .5 mfd condenser
Generator shows no charge at Ammeter	Check condenser. If O.K. check generator according to maintenance manual

NOTES AND ELECTRICAL DATA

TROUBLE SHOOTING

If a machine equipped with suppression equipment indicates with radio communication, then examine the entire equipment as well as all wiring and electrical accessories equipped on the machine. The most frequent causes are:

Generator	1	Check generator - If O.K. to maintenance manual
Ignition	2	Ignition to distributor wire dry
Ignition	3	Ignition to capacitor wire dry
Ignition	4	Ignition to coil wire dry
Ignition	5	Ignition to distributor wire dry
Ignition	6	Ignition to coil wire dry
Ignition	7	Ignition to distributor wire dry
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Ignition	95	Ignition to distributor wire dry
Ignition	96	Ignition to coil wire dry
Ignition	97	Ignition to distributor wire dry
Ignition	98	Ignition to coil wire dry
Ignition	99	Ignition to distributor wire dry
Ignition	100	Ignition to coil wire dry

A breakdown of the generator causes the generator to ground itself and cut off the charge to the battery.

Ignition terminals may be kept clean and free from corrosion at all times. Keep terminals clean.

Location of the battery or ground or any other electrical circuit will cause an electrical disturbance that cannot be recommended by the equipment.

INSTALLATION TO THE MODEL WITH ENGINE FOR EARLIER OR LATER

Conversion parts are available to change over to the 1941 engine without the equipment. Following are the parts that must be eliminated and the new additional parts to be added:

Part No.	Part Name	Qty.
42415	Distributor to coil cable	1
40005	Spark plug cable - front	1
40810	Spark plug cable - rear	1
42411	Spark plug cable - front	1
40000	Tube and strap clip	1
42412	Tube and strap clip	1
42829	Coil to distributor wire leads	1

NEW PARTS TO BE INSTALLED

44620	Generator capacitor - 5 mfd	1
44670	Spark plug cable - front	1
44670	Spark plug cable - rear	1
44648	Spark plug suppressor	2
44671	Spark plug rain shield	2
44671	Distributor to coil cable	1
44678	Distributor to suppressor cable	1
44628	Distributor to spark suppressor	1
44622	Coil capacitor - 5 mfd	1
44608	Generator inductor - special	1
44624	Coil to distributor wire clip	1
44620	Distributor to coil plug cable lead wire cap	1
44628	Coil to distributor wire cap	1
44621	Coil to capacitor wire cap	1
44621	Generator to capacitor wire cap	1