TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS LIST

FOR

TESTER, ENGINE DISTRIBUTOR

PART NO. 7808

NSN 4910-00-392-2939

HEADQUARTERS, DEPARTMENT OF THE ARMY

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WASHINGTON, DC, *1 March 1983*

Operator's, Organizational, Direct Support And General Support Maintenance Manual Including Repair Parts List For

TESTER, ENGINE DISTRIBUTOR
PART NO. 7808
(NSN 4910-00-392-2939)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS-SE, Rock Island, IL 61299. A reply will be furnished to you.

NOTE

This manual is published for the purpose of identifying an authorized commercial manual for the use of the personnel to whom this equipment is issued.

Manufactured by: Hydraulic Technology Inc.
9725 Lurline Avenue
Chatsworth, CA 91311

Procured under Contract No. DAAA09-79-C-4452

This technical manual is an authentication of the manufacturers' commercial literature and does not conform with the format and content specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

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INSTRUCTIONS FOR REQUISITIONING PARTS

NOT IDENTIFIED BY NSN

When requisitioning parts not identified by National Stock Number, it is mandatory that the following information be furnished the supply officer.

1 - Manufacturer's Federal Supply Code Number. 29516

2 - Manufacturer's Part Number exactly as listed herein.

3 - Nomenclature exactly as listed herein, including dimensions, if necessary.

4 - Manufacturer's Model Number. 7808

5 - Manufacturer's Serial Number (End Item).

6 - Any other information such as Type, Frame Number, and Electrical Characteristics, if applicable.

7 - If DD Form 1348 is used, fill in all blocks except 4, 5, 6, and Remarks field in accordance with AR 725-50.

Complete Form as Follows:

(a) In blocks 4, 5, 6, list manufacturer's Federal Supply Code Number - 29516 followed by a colon and manufacturer's Part Number for the repair part.

(b) Complete Remarks field as follows:

Noun: (nomenclature of repair part)
For: NSN: 4910-00-392-2939
Manufacturer: Hydraulic Technology Inc.
9725 Lurline Avenue
Model: Chatsworth, CA 91311
Serial: (of end item)

Any other pertinent information such as Frame Number, Type, Dimensions, etc.

SECTION I
INTRODUCTION AND DESCRIPTION

1-1. INTRODUCTION

1-2. This publication is issued as the basic manual for operation and service of the Tester, Engine Distributor NSN 4910-00-392-2939, Manufacturers Part No. 7808, Manufactured by Hydraulic Technology Inc. FSCM 29516, Chatsworth, California.

1-3. PURPOSE OF EQUIPMENT

1-4. The tester provides performance testing facilities for testing battery ignition distributors removed from the engine. The tester has the capabilities to test both standard breaker point distributors and pulse generator electronic types.

1-6. LEADING PARTICULARS

1-7. See table 1-1.

1-8. DESCRIPTION

1-9. The tester is completely self contained, requiring only connection to a proper electrical power source for operation. All of the tester components are housed in a steel cabinet assembly. A removable cover completely encloses the instrument and control panel when the tester is not in use. The tester is designed for bench mounting and has provision for bolting down to the bench. The tester is used to determine whether a distributor will meet its specified tolerances for proper operation in an engine. The distributor being tested may be driven at any required speed up to 2500 rpm in either direction of rotation. A vacuum system and controls are provided to simulate engine vacuum for vacuum advance systems. A stroboscope is provided to accurately measure cam angle, spark advance (vacuum and mechanical) and cam lobe accuracy of both single and dual distributors. An amplifier is provided for testing electronic pulse generator distributors. The tachometer is used to indicate the shaft speed of the distributor under test and the dwell meter provides a direct reading of the points dwell.

1-10. CAUTIONS AND IDENTIFYING MARKINGS

1-11. All cautions and identifying markings are located directly on the instrument panel and are self explanatory.

Table 1-1. Table of Leading Particulars

Operating Speed Range	200 to 2500 rpm. to 2500 rpm.
Electrical Power Requirements	115 volt 60 hz 6 amps 1 phase.
Weight	130 lbs.
Loose Equipment	Adapters and Spring Scale are stored in storage compartment (See table 2-1).
Test Component Attachment	Self centering vise with height adjustment.
Test Instrumentation:	
Stroboscope	Measures cam angle, lobe accuracy, advance and retard.
Tachometer	Measures distributor speed; Dual range 0 to 500 and 0 to 2500 rpm.
Dwell Meter	Measures dwell angle on 4, 6 and 8 lobe distributors.
Vacuum Gauge	Measures vacuum to be applied for automatic advance systems.
Rotation	Clockwise and counterclockwise.

SECTION II
SPECIAL SERVICE TOOLS

2-1. SPECIAL TOOLS AND ADAPTERS.

2-2. Table 2-1 is a tabular listing of the special tools and adapters furnished with the tester.

Table 2-1. List of Special Tools and Adapters

7808-301	Tester, Spring, Resiliency	1
7808-302	Adapter, Vacuum 1/8“ -27 NPT	1
7808-303	Adapter, Vacuum 5/16’’ -24 NF	1
7808-304	Adapter, 3/8’’ -24 NF	1
7808-305	Adapter, Vacuum 7/16’’ -20 NF	1
7808-306	Bushing, l/4’’ -18 NPT to 1/8" -27 NPT	1
7808-307	Wrench, Chuck: bar type	2

SECTION III
PREPARATION FOR USE, STORAGE, OR SHIPMENT

3-1. PREPARATION FOR USE

3-2. The test stand as shipped is completely assembled and wired. To ready the stand for operation requires the installation of a power cable, not supplied by the manufacturer.

3-3. UNCRATING

a. Examine the exterior of the crate for possible shipping damage.

b. Remove crate.

3-4. PRELIMINARY INSPECTION

a. Inspect the exterior of the tester for evidence of damage.

b. Remove front and rear covers.

c. Inspect the interior of the tester for secure mounting of all parts, loose or missing hardware, evidence of corrosion, and for other damage which could cause a malfunction.

d. Check loose equipment. Accessory equipment is stored in a compartment at the top of the machine. Refer to table 2-1 for a numerical listing and quantities.

3-5. INSTALLATION OF POWER INPUT CABLE.

a. Install the power input cable. The tester is supplied with a power input cable and plug and with a strain relief bushing for the cable entry.

b. Connect the input cable to the terminal strip provided. Connect the green ground wire to the cabinet (the terminal strip mounting screws are convenient for this purpose).

3-6. INSTALLATION

a. The tester should be mounted on a sturdy work bench, using the holes in the base.

b. Allow at least 6 inches at the rear of the tester for ventilation.

c. Connect power cable to a source of 115 volts 60 hz 1 phase.

d. Check operation of the tester in both directions of operation. If the machine does not operate refer to section V.

e. Check calibration of the tester instrumentation. Calibration instructions will be found in section VI.

3-7. PREPARATION FOR STORAGE

a. Apply a coating of VV-L-800 preservative oil to exposed ferrous surfaces.

b. Place cover over instrument panel.

c. No other special storage procedures are required.

3-8. PREPARATION FOR SHIPMENT

a. No special shipping instructions are required.

SECTION IV
OPERATING INSTRUCTIONS

4-1. INSTRUMENTATION AND CONTROLS

4-2. To facilitate the identification of the instruments and controls, the nomenclature used in this section corresponds with the tester nomenclature. See figure 4-1 and table 4-1.

4-3. OPERATION

4-4. The following instructions are general and do not contain specific test parameters. Refer to the manufacturers handbook or the military distributor manual for specific test procedures and the requirements for the distributor being tested.

4-5. DISTRIBUTOR MOUNTING

a. Using the elevation crank (Item 4, Fig. 4-1), raise the clamp arms high enough to permit the distributor shaft to clear the chuck.

b. Position the distributor in the clamp with the vacuum chamber pointing to the left. Tighten the clamp arms on the machined surface of the distributor body.

c. Using the elevation crank lower the distributor shaft into the chuck for about 3/4". Do not try to bottom the shaft in the chuck.

d. Tighten the chuck, making sure that the shaft is positioned in the center of its up and down end pIay travel. Tighten the elevation clamp lock screw.

4-6. DISTRIBUTOR RESISTANCE TEST

(Not applicable to electronic pulse generators)

4-7. This test indicates the resistance of the distributor circuit from the terminal through the points to the distributor body. Excessive resistance in the points circuit will degrade the coil operation

Table 4-1. Operating Instruments and Controls

Index No.	Instrument Or Control	Description	Function
1	Vacuum Gauge	Gauge	Measures vacuum created by tester pump applied to distributor under test.
2	Tachometer	Meter	Measures speed of distributor under test.
3	Dwell meter	Meter	Measures distributor dwell angle when distributor is rotating.
4	Elevation crank	Handwheel	Raises elevating mechanism to position clamp arms to accommodate different size distributors.
5	Std. Dist.	Testlead	Connection point to distributor under test for standard breaker point distributors.
6	Pulse Gen.	Testlead	Connection point for electronic pulse generator type distributors.
7	Dwell	Testlead	Connection for measuring dwell.
8	Vacuum hose	Rubber hose	Vacuum connection to distributor under test.
9	Regulator	Control valve	Regulates vacuum applied to test item.
10	Vacuum On/Off	Switch	Starts and stops vacuum pump.
11	Dwell Calibrate	Potentiometer	Adjusts dwell meter.
12	Tach range High/Low	Switch	Selects tachometer range 0 to 2500 or 0 to 500 rpm.
13	Main power switch CW-OFF-CCW	Switch	Starts and stops tester in either direction of rotation.
14	Speed adjust	Handwheel	Increases and decreases speed of tester.
15	Stroboscope	Disc assembly	Indicates the point of ignition established by the unit under test.
16	Chuck	3 jaw chuck	drives the shaft of the unit under test.
17	Distributor clamp	Clamp arms	Hold distributor in position for testing.
18	Standard distributor/ Pulse generator	Switch	Selects internal circuits for type of distributor being tested.
19	Accessory compartment	Metal door	Storage compartment for adapters and accessories

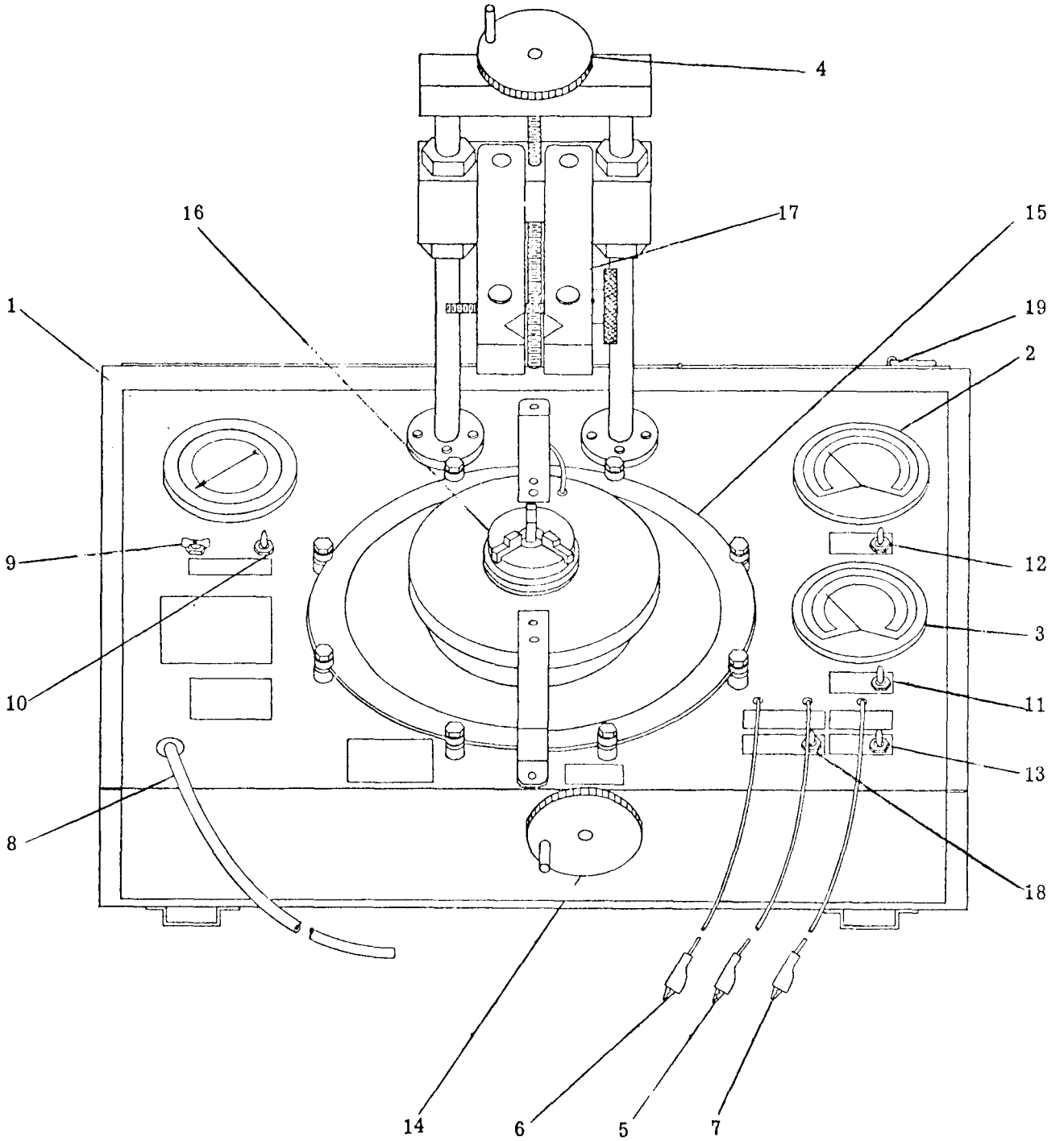

Figure 4-1, Distributor Tester, Configuration

in the engine and will also affect the tester operation. Perform this test as follows;

a. With motor switch positioned for the proper direction of rotation for the distributor mounted and the speed set for zero rpm, clip the distributor DWELL lead to the distributor body or ground it to the cabinet.

b. Adjust the DWELL CALIBRATE control to position the meter pointer at the highest graduation mark (90/45/60°)

c. Connect the DWELL lead to the distributor terminal.

d. Rotate the distributor shaft by hand until the points are closed. The dwell meter pointer will return to the set position unless resistance is present in the distributor. If the pointer droop is in excess of 7% the distributor resistance is excessive. The source of the excessive resistance may be isolated by making step by step checks with the DWELL test lead through the distributor from the terminal to the body. On distributors with two sets of points, each set must be checked independently while the other is blocked open. As the test lead is being moved, if the meter reading indicates less resistance than the previous step, it is a measure of the resistance between the present point of contact and the previous one.

e. With points closed, adjust DWELL CALIBRATE control to the full scale mark.

4-8. BREAKER POINT SPRING TENSION TEST

4-9. Proper tension of the breaker point spring is an essential to normal operating life and efficiency of the distributor throughout its speed range. Excessive spring tension will cause rapid wear of the cam follower block, while insufficient tension will cause high speed bouncing of the points and consequent misfiring.

4-10. Place the end of the spring tension tester near the contact of the movable point and slowly pull at right angles to the point lever. Note the reading on the tension tester at the instant the points separate. The dwell meter may be used to indicate the point of separation precisely.

4-11. Alternately opening and closing of the points using the spring tension tester will show up pivot friction which can be caused by lack of lubrication or damage.

4-12. CAM LOBE ACCURACY

4-13. Connect distributor lead to the distributor. Use the lead marked STD DIST for standard breaker point ignition and use the test lead marked PULSE GEN for electronic pulse generator type distributors. Place the selector switch in either the STD DISTRIBUTOR or PULSE GENERATOR position as required.

4-14. Start the tester in the proper direction of rotation and adjust the speed to approximately 1000 rpm. Rotate the degree ring of tester until the zero on ring is aligned with one of the arrow flashes. Observe the relative position of all arrow flashes. The arrow flashes should be evenly spaced around the degree ring within plus or minus 1 degree. The spacing is as follows:

4 lobe cams 90°
6 lobe cams 60°
8 lobe cams 45°

4-15. BREAKER POINT ALIGNMENT

(Not applicable to pulse generators)

4-16. Observe the slight arc appearing between the breaker points. If the points are properly aligned, the arcing will appear in the center of the points when viewed from above and from the side, Reduce tester speed to 200 rpm.

4-17. BREAKER POINT DWELL

4-18. Connect DWELL test lead to the distributor. Observe the dwell meter and if necessary adjust the point spacing until the dwell meter indicates the required degree of dwell. On distributors equipped with dual points it will be necessary to adjust each set of points individually. The set not being tested may be blocked open using a piece of fibre or other insulator between the contacts. If the proper dwell angle can not be obtained check the following possible sources of trouble;

a. Improper spring tension or sticky pivot.

b. Wrong point set installed.

c. Bent shaft, causing point opening to vary on each cam lobe.

d. Worn cam lobes or defective cam causing a different gap at each lobe. Check the gap at each lobe.

e. Points floating or not following the cam at high speeds.

f. Excessive resistance causing a false dwell reading.

4-19. BREAKER POINT DWELL VARIATION

4-20. While watching the dwell meter, vary the speed from 200 to 1750 rpm. A dwell variation in excess of 2° indicates worn distributor shaft or bushings. Reduce speed to 200 rpm.

4-21. At distributor speeds up to approximately 1000 rpm the stroboscope will display the point of

closing as well as the point of opening of the distributor points. This is an extremely accurate measurement of the points dwell and the actual dwell at each individual lobe may be determined.

4-22. CENTRIFUGAL ADVANCE CALIBRATION TEST

4-23. This test is made to determine if the ignition timing is in conformance with the manufacturers required curve throughout its range of speed. A defective centrifugal advance will downgrade the performance of the engine and can cause knocking and overheating.

4-24. To check the centrifugal advance mechanism proceed as follows;

a. Set zero of the degree ring in line with the arrow flash most convenient to the operator.

b. Increase the distributor speed, pausing at each specified speed to note if the amount of advance occurring is within the range specified.

c. Momentarily exceed the highest speed given as a test point, and then, while returning the speed towards zero, recheck at each test speed to see that the advance at that speed is the same as it was in step b. preceding, and is within specifications.

d. If the advance is excessive in both the ascending and descending modes of test, the governor springs are weak, or the wrong springs are installed.

e. If the advance is low in the ascending mode and excessive in the descending mode the governor weights are sticking and should be freed up.

f. If the advance is insufficient in both modes of test, the governor spring tension is excessive.

4-25. VACUUM CHAMBER DIAPHRAGM TEST

4-26. The following tests apply to both single and dual diaphragm vacuum advance units. Both the vacuum advance side and the spark retard side of the dual units are tested alternately as if they were single units. The test procedure is as follows;

a. If necessary install proper adapter in the distributor port.

b. Hold the vacuum hose doubled to seal off the vacuum, switch on the vacuum pump and adjust the vacuum pump REGULATOR until 15" of vacuum (or the manufacturers specified value) is obtained.

c. Connect hose to the distributor port adapter, the gauge should return to 15" (or other preset value) in a few seconds. If the gauge fails to return, the vacuum chamber is leaking and must be replaced.

4-27. VACUUM CONTROLLED BREAKER PLATE TEST

4-28. The breaker plate must be smooth and even in its travel or the plate will twist, causing a location change of the cam follower which will cause, in turn, a change in dwell angle and consequent deterioration of the engine performance. The test procedure is as follows;

a. Adjust the speed control to approximately 1000 rpm.

b. Connect the DWELL test lead to the distributor.

c. Vary the vacuum regulator to apply a range of 0 to 20 inches hg while at the same time watching the dwell meter for changes.

d. If the dwell reading varies more than 2 degrees from zero to 20 inches hg it would indicate intermittent distributor resistance or, in the case of distributors which have centrally located breaker plate bearings, worn bushings or bearings. Some distributors with side pivoted breaker plates may normally have a change of more than 2 degrees, refer to the manufacturers specifications in these instances.

4-29. VACUUM SPARK ADVANCE TEST

4-30. The vacuum spark advance adjusts the engine timing to provide optimum performance with different load conditions. While performing this test the operator should not fail to observe the mechanical movements of the distributor mechanism. The breaker plate should move smoothly without sticking or warping. To check the vacuum advance unit proceed as follows;

a. With the distributor operating at approximately 200 rpm and no vacuum applied, set the degree ring zero in line with one of the arrows.

b. Refer to the test specifications for the distributor to obtain the proper speed, vacuum and advance specifications.

c. Check the distributor in both ascending (increasing speed) and descending (decreasing speed) modes of operation.

d. If the advance is excessive in both the ascending and descending modes of test, the governor springs are weak or the wrong springs are installed.

e. If the advance is low in the ascending mode and excessive in the descending mode the governor weights are sticking and should be freed up.

f. If the advance is insufficient in both modes of test, the governor spring tension is excessive.

4-31. SYNCHRONIZING POINTS ON DOUBLE BREAKER ARM DISTRIBUTORS

4-32. Set the tester at approximately 200 rpm and check both sets of points by alternating the test lead from one terminal to the other. Use the distributor synchronizing screw to obtain the best match of the arrows on the degree plate. Recheck the synchronization at speeds up to 2000 rpm. If bouncing or shifting of the arrows is encountered at high speeds, the breaker arm springs and pivot bearings are to be suspect.

4-33. WATERPROOF DISTRIBUTORS

a. The seals on waterproofed or sealed distributors should not be broken prior to testing.

b. Mount the distributor in the same manner as the standard distributors and connect the insulated distributor test lead to the connector on the distributor housing.

SECTION V.
TROUBLESHOOTING

5-1. GENERAL

5-2. Failures and malfunctions may often be traced to relatively simple causes. Before troubleshooting a malfunctioning tester, check for available electric power supply, loose broken or frayed wires or broken or slipping drive belt.

5-3. TROUBLESHOOTING PRECAUTIONS

5-4. When troubleshooting this or any electrical equipment, observe the following precautions;

a. Always use a meter range higher than the largest expected voltage when making voltage readings.

b. Connect meter leads with the tester turned off. Turn on tester to read meter, then turn tester off to disconnect meter leads.

c. When disconnecting wiring, always tag wires to facilitate reassembly.

5-5. ELECTRICAL SCHEMATIC

5-6. Figure 5-1 is an electrical schematic of the tester. The numbers on the schematic refer to the figure and index number in the Parts List (Section 7) for the appropriate component.

5-7. TROUBLE ANALYSIS CHECK CHART

5-8. Table 5-1 is a trouble analysis check chart for the distributor tester. The chart contains the most common troubles that may be encountered, probable cause of the trouble, and action that may be taken to correct the condition. Refer to the parts list for parts replacement.

Table 5-1. Trouble analysis check chart.

Trouble	Probable Cause	Corrective Action
Tester will not start	Electrical power switched off or disconnected.	Connect or switch on power.
	Drive belt broken.	Replace
	Defective switch.	Replace
Output rpm low	Worn or defective drive belt.	Replace
	Defective tachometer.	Check Tachometer accuracy.
Speed adjust does not vary speed	Overload due to defective distributor being tested with frozen or tight bearings.	Repair distributor and retest.
	Damaged speed adjust mechanism.	Replace
Tachometer does not function	Defective meter.	Replace
	Defective sensor.	Replace
Vacuum system does not work	Defective vacuum gauge.	Replace
	Defective regulator.	Replace
	Defective vacuum pump.	Replace
Dwell meter does not work	Defective test lead or clip.	Replace
	Defective meter.	Replace
	Defective circuit board.	Replace
Stroboscope does not work	Selector switch in the wrong position for the type of distributor being tested.	Select STD DIST or PULSE GEN as required.
	Defective or unconnected test lead.	Repair or connect as required.
	Defective strobe lamp.	Replace

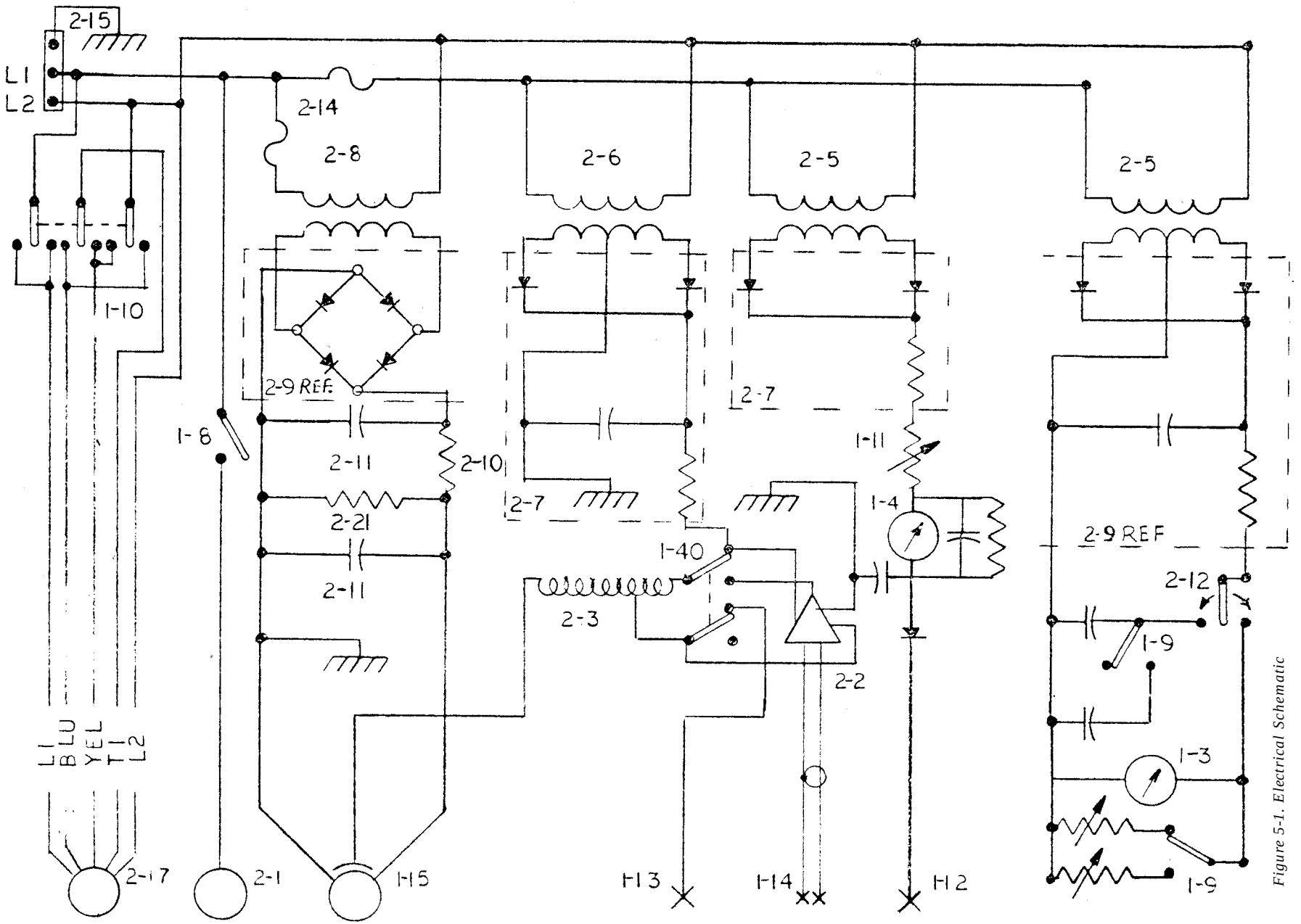

Figure 5-1. Electrical Schematic

SECTION VI
PERIODIC INSPECTION, LUBRICATION, MAINTENANCE AND REPAIR

6-1. INSPECTION AND MAINTENANCE SCHEDULE

6-2. Table 6-1 lists the periodic inspection and maintenance requirements of the tester.

6-3. LUBRICATION

6-4. All of the rotating bearings in this tester are lubricated for the life of the tester, with the exception of the electric motor bearings. The electric motor should be lubricated at three year intervals by removing the oiler caps at each end of the motor and adding lubricating oil.

6-5. The rods of the distributor elevating mechanism should always have a thin film of lubricating oil, MIL-L-2104C or equivalent.

6-6. A small amount of grease may be applied to the leadscrews when required.

6-7. REPAIR.

6-8. The electric meters used in the tester are sealed military types and are considered uneconomical to repair.

6-9. Most of the tester systems are individual modules and can be replaced as such.

Table 6-1. Inspection and Maintenance Schedule

Item	Period	Procedure
Tester interior	40 hours	Inspect for secure mounting of all parts, loose or missing hardware and evidence of corrosion. Thoroughly clean interior. Tighten any loose components. Replace any missing or damaged parts.
Instruments and controls	40 hours	Check for secure mounting and ease of operation, tighten any loose components.
Tachometer and Dwellmeter	40 hours	Check for zero indication.
Accessory Equipment	Monthly	Check inventory of accessory adapters and tools against table 2-1, replace missing items.
Drive belt	Monthly	Check for wear and deterioration, replace if necessary.
Instrument accuracy	6 Months	Check instruments for accuracy and calibration.

SECTION VII
PARTS LIST

7-1. GENERAL

7-2. The purpose of the parts list is for the identification and requisitioning of spare parts.

7-3. The parts list lists and describes assemblies, subassemblies, and detail parts of the tester.

7-4. INSTRUCTIONS TO THE MILITARY USER

7-5. When requisitioning parts not identified by national stock number, it is mandatory that the following information be supplied to the supply office;

a. Manufacturers Federal Supply Code.....29516
b. Manufacturers part number exactly as listed herein.
c. Nomenclature, exactly as listed herein, including dimensions as necessary.
d. Manufacturers Model Number (End item).
e. Manufacturers Serial Number (End item).
f. Any other information, such as type, frame number, and electrical characteristics, if applicable.

7-6. If DD form 1348 is used, fill in all blocks except 4, 5, 6, and remarks field in accordance with AR 725-50. Complete form as follows:

N o u n . . . . . Nomenclature of repair part
For . . . . . NSN of end item
Mfr. . . . . Manufacturer of end item
M o d e l . . . . . Model number of end item
Serial . . . . . Serial number of end item

Any other pertinent information such as, frame number, type, dimensions etc.

7-7. GROUP ASSEMBLY PARTS LIST

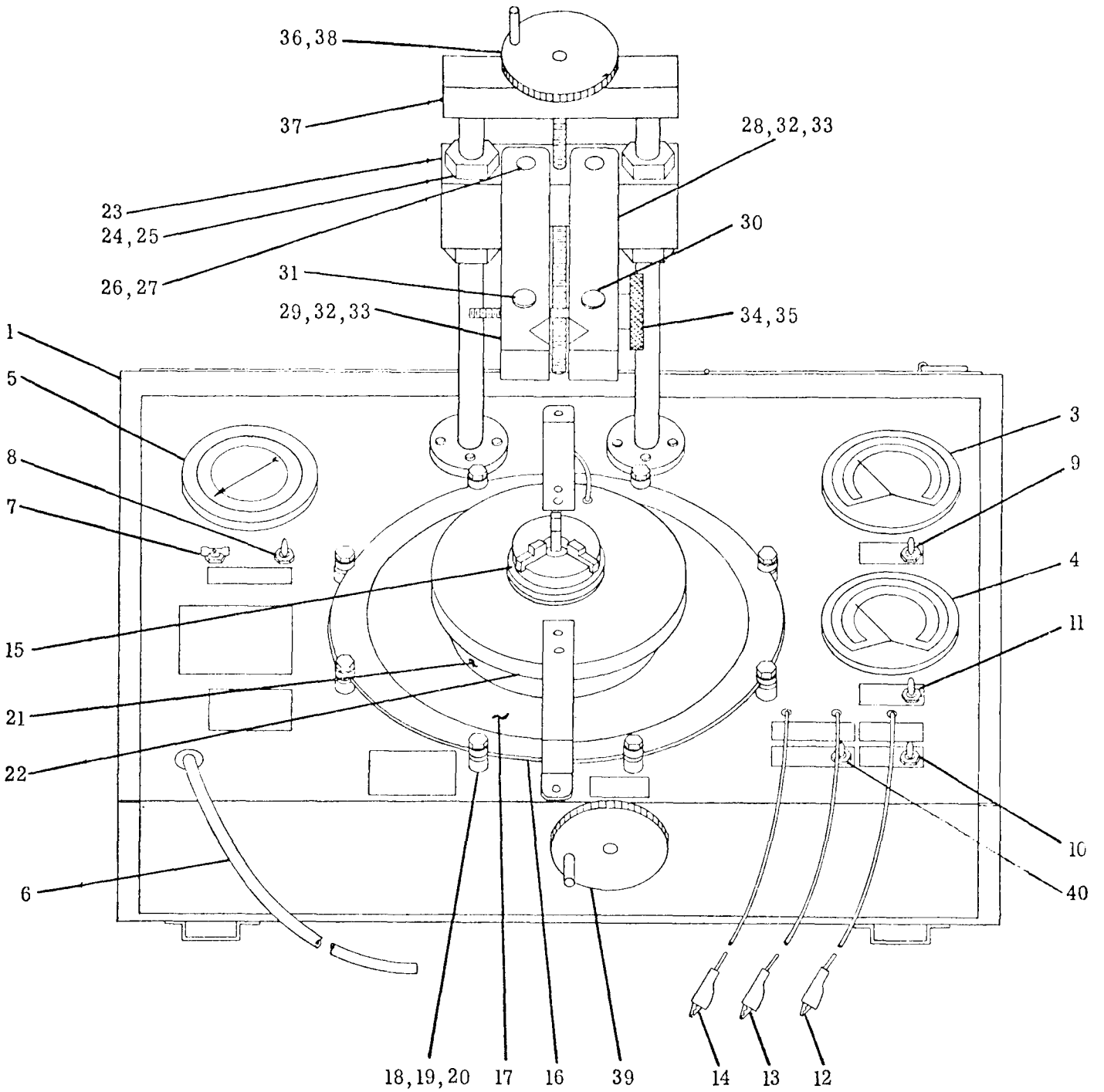

Figure 7-1, Distributor Tester, Front View

GROUP ASSEMBLY PARTS LIST

FIG. & INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASSY.	USABLE ON CODE
7-1-	7808	TESTER, ENGINE DISTRIBUTOR	1	
-1	7808-101	CABINET ASSEMBLY	1	
-2	7808-101-2	COVER	1	
-3	7808-207	METER, TACHOMETER	1	
-4	7808-208	METER, DWELL	1	
-5	7808-209	GAUGE, VACUUM	1	
-6	7808-210	HOSE, VACUUM	1	
-7	7808-211	REGULATOR, VACUUM	1	
-8	7808-212	SWITCH, VACUUM	1	
-9	7808-213	SWITCH, TACHOMETER RANGE SELECTOR	1	
-10	7808-214	SWITCH, THREE POSITION, MAIN POWER	1	
-11	7808-215	CONTROL, DWELL, CALIBRATE	1	
-12	7808-216	TESTLEAD, DWELL	1	
-13	7808-217	TESTLEAD, STANDARD DISTRIBUTOR	1	
-14	7808-218	TESTLEAD, PULSE GENERATOR	1	
-15	7808-204	STROBOSCOPE ASSEMBLY	1	
-16	7808-204-2	PROTRACTOR DIAL	1	
-17	7808-204-1	DISC, INDICATING	1	
-18	7808-204-3	ROLLER, DIAL	8	
-19	7808-204-4	ROLLERSTUD	8	
-20	7808-204-5	ROLLER CUSHION	8	
-21	7808-204-6	HOUSING	1	
-22	7808-204-7	COVER ASSEMBLY	1	
-23	7808-224	ELEVATING MECHANISM	1	
-24	7808-224-1	BUSHING	2	
-25	7808-224-2	NUT	2	
-26	7808-224-3	SHAFT	2	
-27	7808-224-4	SETSCREW	2	
-28	7808-224-5	ARM, SELFCENTERING, RIGHT HAND	1	
-29	7808-224-6	ARM, SELFCENTERING, LEFT HAND	1	
-30	7808-224-7	NUT, CAPTIVE, ROTARY, RIGHT HAND	1	
-31	7808-224-8	NUT, CAPTIVE, ROTARY, LEFT HAND	1	
-32	7808-224-9	JAW, HOLDING	2	
-33	7808-224-10	SCREW	2	
-34	7808-224-11	LEADSCREW, LEFT AND RIGHT HAND	1	
-35	7808-224-12	KNOB	1	
-36	7808-224-13	LEADSCREW, HEIGHT ADJUSTING	1	
-37	7808-224-14	CAP, HEIGHT ADJUSTING	1	
-38	7808-224-15	KNOB, HEIGHT ADJUSTING	1	
-39	7808-259-1	KNOB, SPEED ADJUSTING	1	
-40	7808-275	SWITCH, DISTRIBUTOR TYPE SELECTOR	1	

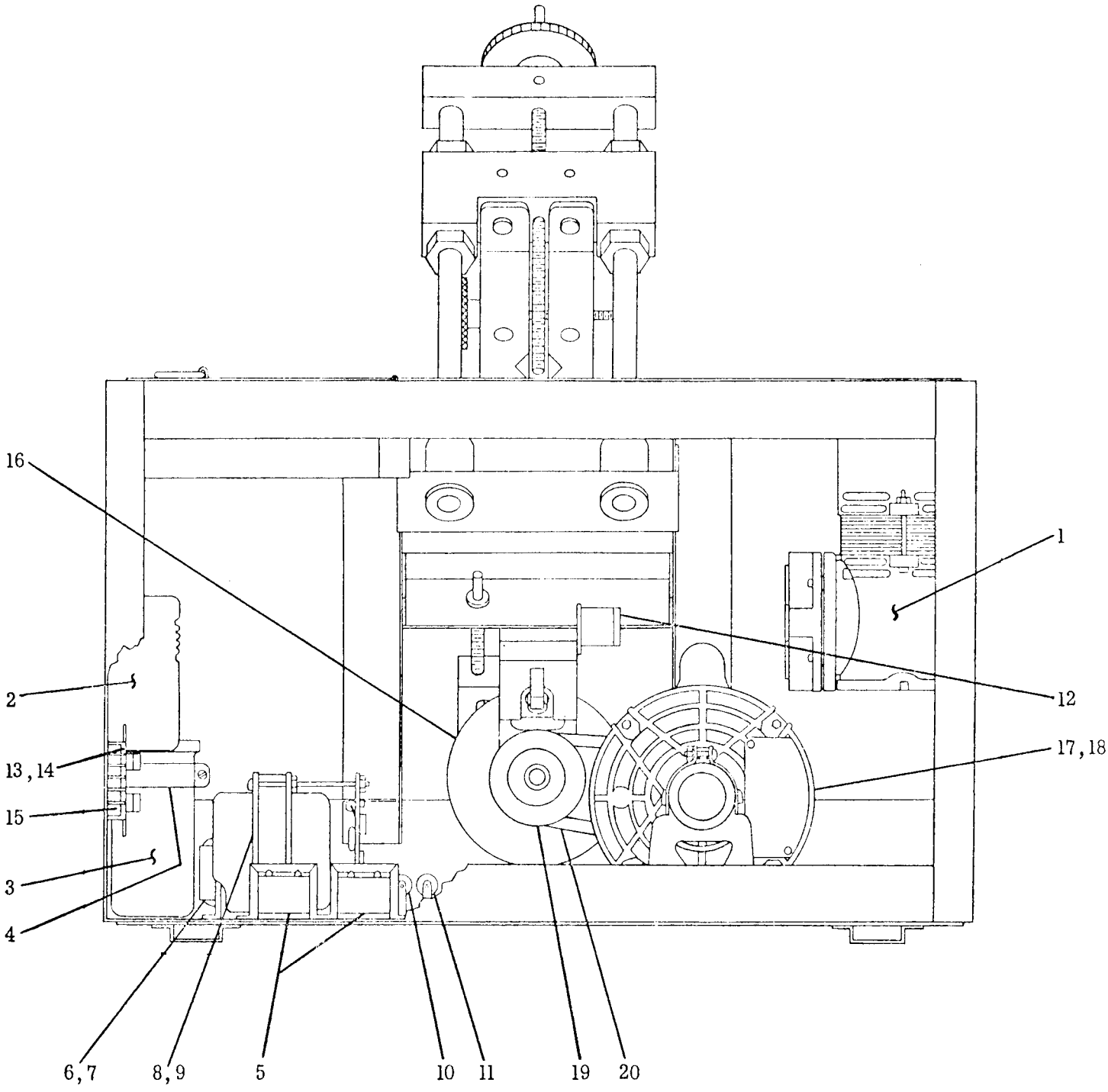

Figure 7-2, Distributor Tester, Rear View

GROUP ASSEMBLY PARTS LIST

FIG. & INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASSY.	USABLE ON CODE
7-2-1	7808-243	PUMP, VACUUM	1	
-2	7808-244	AMPLIFIER ASSEMBLY	1	
-3	7808-245	COIL	1	
-4	7808-246	BRACKET	1	
-5	7808-247	TRANSFORMER	2	
-6	7808-248	TRANSFORMER	1	
-7	7808-249	CIRCUIT CARD ASSEMBLY	1	
-8	7808-250	TRANSFORMER ASSEMBLY	1	
-9	7808-251	CIRCUIT CARD ASSEMBLY	1	
7-2-10	7808-252	RESISTOR	1	
-11	7808-253	CAPACITOR ASSEMBLY	1	
-12	7808-255	TACHOMETER SENSOR	1	
-13	7808-256	FUSEBLOCK	1	
-14	7808-257	FUSE	2	
-15	7808-258	TERMINAL BLOCK	1	
-16	7808-259	DRIVE ASSEMBLY, VARIABLE SPEED	1	
-17	7808-270	MOTOR, ELECTRICAL	1	
-18	7808-271	SHEAVE, DRIVE MOTOR	1	
-19	7808-272	SHEAVE, V/S DRIVE	1	
-20	7808-273	BELT, DRIVE	1	
-21	7808-274	RESISTOR	1	

By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

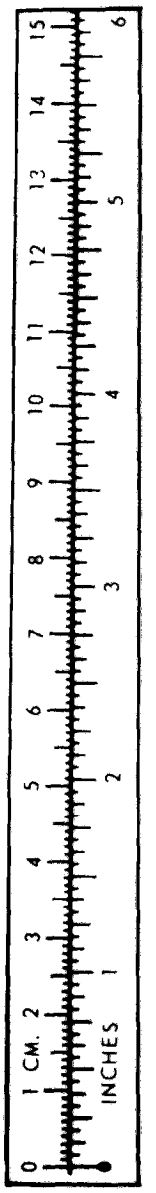
TEMPERATURE

$5/9\ (^0F - 32) = {}^0C$
212^0 Fahrenheit is equivalent to 100^0 Celsius
90^0 Fahrenheit is equivalent to 32.2^0 Celsius
32^0 Fahrenheit is equivalent to 0^0 Celsius
$9/5\ C^0 + 32 = F^0$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621



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