

6625-363-15
TM 11-6625-363-15

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

**OPERATOR, ORGANIZATIONAL
FIELD AND DEPOT MAINTENANCE MANUAL
TESTER, FUEL QUANTITY GAGE
TYPE MD-1**

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DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 16 June 1960

TM 11-6625-363-15 (a reprint of AF TO 33D2-2-5-1, 1 May 1956, and TO 33D2-3-5-4, 1 May 1956,) is published for the use of Army personnel.

By Order of *Wilber M. Brucker*, Secretary of the Army:

L. L. LEMNITZER,
General, United States Army,
Chief of Staff.

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ASA (2)
Tech Stf, DA (1) except CSigO (20).
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USA Abn & Elct Bd (1)
USA Arctic Test Bd (2)
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Eighth US Army (4)
Corps (2)
USMA (2)

Units org under fol TOE:

11-155 (2) 11-587 (2)
11-500 (AA-AE) (2)

NG: State AG (3).

USAR: None.

For explanation of abbreviations used, see AR-320-50.

TECHNICAL MANUAL

Operator, Organizational, Field, and Depot Maintenance Manual, TESTER, FUEL QUANTITY GAGE TYPE MD-1

TM 11-6625-363-15 }
CHANGES No. 1 }

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., 17 June 1963

TM 11-6625-363-15, 16 June 1960, is changed as follows:

Page 1. Add the following after paragraph 1-3.

1-3.1. Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment. DA Pam 310-4 is a current index of technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders that are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc.) and the latest changes to and revisions of each equipment publication.

1-3.2. Forms and Records

a. *Reports of Maintenance and Unsatisfactory*

Equipment. Use equipment forms and records in accordance with instructions in TM 38-750.

b. *Report of Damaged or Improper Shipment.* Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. *Comments on Manual.* Forward all comments on this publication direct to: Commanding Officer, U.S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N.J. (DA Form 1598 (Record of Comments on Publications), DA Form 2496 (Disposition Form), or letter may be used.)

Page 7. Add the following after section IV.

Section IV.1. MAINTENANCE INSTRUCTIONS

4.1-1. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of the tester are listed below, together with a reference to the paragraphs covering the specific maintenance function. The duties assigned do not require tools or test equipment other than those issued with the equipment.

- a. Daily preventive maintenance checks and services (par. 4.1-3).
- b. Weekly preventive maintenance checks and services (par. 4.1-4).
- c. Cleaning (pars. 5-8 and 5-9).
- d. Lubrication (par. 5-14).

4.1-2. Operator's Preventive Maintenance

Operator's preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. *Systematic Care.* The procedures given in

paragraphs 4.1-3, 4.1-4, 5-8, and 5-9, cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. *Preventive Maintenance Checks and Services.* The preventive maintenance checks and services charts (pars. 4.1-3, 4.1-4, and 4.1-7) outline functions to be performed at specific intervals. These checks and services are designed to maintain Army electronic equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the charts indicate what to check, how to check, and what the normal conditions are; the *References* column lists the paragraphs that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator, higher echelon maintenance or repair is required. Records and reports of these checks and services must be made in accordance with TM 38-750.

4.1-3. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Tester.....	Check equipment for completeness and general condition.....	Part II, fig. 1. Para. 5-8 and 5-9.
2	Exterior surfaces.....	Clean exterior surfaces of the equipment.....	
3	External receptacles.....	Inspect external receptacles for breakage and firm seating.	
4	Glass.....	Inspect front-panel glass windows for damaged housing, broken glass, physical damage, dust, or moisture.	
5	Knobs and switches.....	During operation check knobs and switches for proper mechanical action. Action must be positive without backlash, binding, or scraping.	
6	Operation.....	During operation, be alert for any unusual performance, response, or condition.	

4.1-4. Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Cables.....	Inspect external cables for cuts, cracked, or gouged jackets, fraying, or kinks.	
2	Hardware.....	Inspect all exterior hardware for looseness and damage. The tester cover, carrying handle, hinges, input binding posts, and all bolts and screws must be tight and not damaged.	
3	Preservation.....	Inspect the equipment to determine that it is free of bare spots, rust, and corrosion. If these conditions exist, refer to higher echelon for repair.	
4	Lubrication.....	Lubricate the equipment in accordance with paragraph 5-14.	

4.1-5. Scope of Second Echelon Maintenance

The maintenance duties assigned to the organizational maintenance repairman of the tester are listed below, together with a reference to the paragraphs covering the specific function. The duties assigned do not require tools or test equipment other than those issued with the equipment.

- a. Monthly preventive maintenance checks and services (par. 4.1-7).
- b. Rustproofing and painting (par. 5-10).

4.1-6. Monthly Maintenance

Perform the maintenance functions indicated in the monthly preventive maintenance checks and

services chart (par. 4.1-7) once each month. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours a day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage (requires service before operation) does not require monthly preventive maintenance.

4.1-7. Monthly Preventive Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Publications.....	Inspect manual for completeness and to see if it is in usable condition, without missing pages. Be sure that all changes to the manual are on hand.	DA Pam 310-4.
2	Modification work orders.....	Check to see that all URGENT MWO's have been applied and that all ROUTINE MWO's have been scheduled.	DA Pam 310-4.
3	Completeness.....	Check the equipment for completeness and general condition.	Part II, fig. 1.
4	Cleanliness.....	Clean exterior surfaces of the equipment.....	Par. 5-8 and 5-9.

Sequence No.	Item	Procedure	References
5	Preservation.....	Inspect the equipment to determine that it is free of bare spots, rust, and corrosion.	Par. 5-10.
6	External receptacles.....	Inspect external receptacles for breakage and firm seating.	Par. 5-3.
7	Desiccator tube.....	Visually check condition of desiccator tube. (par. 1-15)....	
8	Glass.....	Inspect front-panel glass windows for damaged housing, broken glass, physical damage, dust, or moisture.	
9	Cables.....	Inspect external cables for cuts, cracked, or gouged jackets, fraying, or kinks.	
10	Hardware.....	Inspect all exterior and interior hardware for looseness and damage. The tester cover, carrying handle, hinges, input binding posts, and all bolts and screws must be tight and not damaged.	
11	Lubrication.....	Lubricate the equipment in accordance with paragraph 5-14.	
12	Knobs and switches.....	During operation (item 13), observe that the mechanical action of each knob and switch is smooth and free of external or internal binding.	
13	Performance.....	Be alert for any abnormal condition when operating the equipment.	

Page 7. Delete paragraphs 5-1, 5-2, 5-5, and 5-6.

Page 8. Delete paragraph 5-10 and table IV and substitute:

5-10. Rustproofing and Painting

a. *Rustproofing.* When the finish on the tester has become badly scarred or damaged, rust and corrosion can be prevented by touching up the bared surfaces. Use No. 000 sandpaper to clean the

surface down to the bare metal. Obtain a bright smooth finish.

b. *Painting.* Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TM 9-213.

Page 9. Add the following appendix after section VII.

APPENDIX REFERENCES

Following is a list of references available to the operator, organizational, field and depot maintenance repairman of Tester, Fuel, Quantity Gage Type MD-1:

DA Pam 310-4 Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.

TM 9-213
TM 38-750

Painting Instructions for Field Use.
The Army Equipment Record System and Procedures.

By Order of the Secretary of the Army:

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Distribution:

To be distributed in accordance with DA Form 12-31 requirements for operators and crew, (CV-2) AC-1 aircraft.

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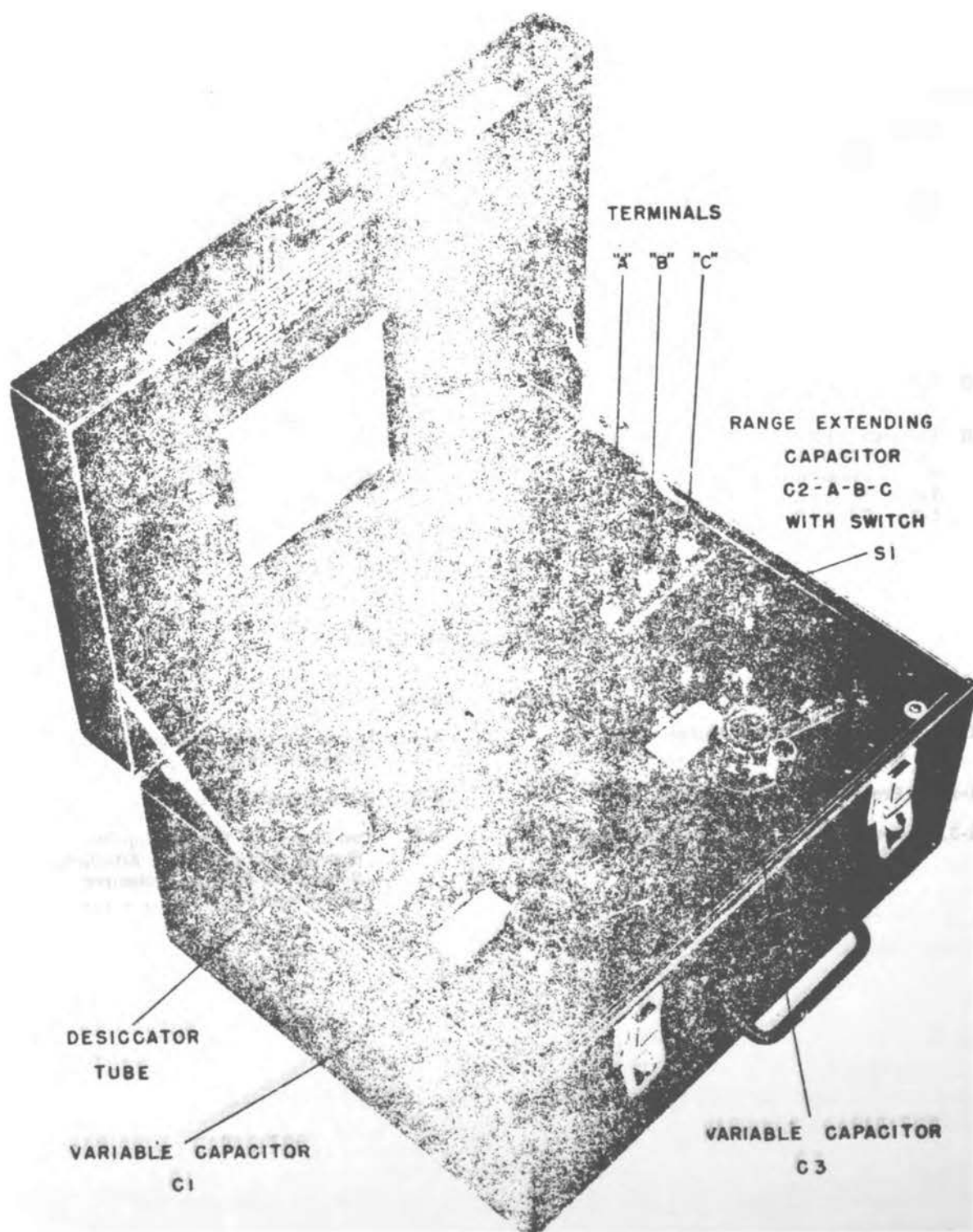


Figure 1-1. Fuel Quantity Gage Tester, Type MD-1.

PART I

OPERATION AND SERVICE INSTRUCTIONS

SECTION I

INTRODUCTION AND DESCRIPTION

1-1. INTRODUCTION.

1-2. This manual contains a description of the Fuel Quantity Gage Tester, Type MD-1, together with operating instructions, periodic inspection, maintenance, trouble shooting, and calibration procedure.

1-3. The tester is manufactured by the General Radio Company, 275 Massachusetts Ave., Cambridge, Mass. under their Type No. P-579 in conformance with MIL-T-8579 specifications.

1-4. PURPOSE AND USE.

1-5. The tester is intended for use in calibrating and adjusting capacitance-type fuel quantity indicating systems as used in modern aircraft, and as manufactured by several different firms. Fuels used in modern jet-engine aircraft vary widely in composition, and as a result exhibit relatively broad variations in dielectric constant and density. Compensation of the dielectric-constant type is employed primarily in the basic capacitor-type fuel gage for purposes of minimizing the errors in indication caused by the variations in the fuels. The composition of fuels used in reciprocating-engine aircraft does not vary appreciably and as a result compensation is not required for fuel gages installed in this group of aircraft.

1-6. DESCRIPTION OF TESTER.

1-7. The tester (see figure 1-1) consists essentially of two calibrator units (C1 and C2 comprising one unit, and C3 the other) mounted on an aluminum panel which in turn is mounted on an aluminum instrument case. A Correction Chart is supplied with the tester (refer to paragraph 1-17). Nine connector cables and three tee adaptors are also furnished (refer to paragraph 1-19).

1-8. The aluminum panel and instrument case combination unit containing the two calibrator units is mounted in the front compartment of an aluminum transit case. The rear compartment of the transit case provides a place in which to store the connector cables and tee adaptors. The aluminum panel and instrument case combination is attached to the transit case through Lord bonded-rubber mountings, and washers are provided for snubbing. Foam rubber strips are cemented to three sides of the transit case and to the partition near the level of the panel of the calibrator units. These rubber strips serve to snub shock or vibratory motion of the calibrator units in a fore-and-aft or sidewise direction. The transit case has a black wrinkle finish, and is provided with a hinged cover, toggle-type hasps, rubber feet on two faces, and a carrying handle.

1-9. The variable capacitor C1 of the first calibrator unit has a direct-calibrated range alone of 50 to 1100 uuf. Higher capacitances, up to a maximum of 6100 uuf direct-reading, can be secured by adding in (by switching) the proper step of the fixed range-extending capacitor C2, which has five steps of successive multiples of 1000 uuf. The variable capacitor C1 and the three fixed capacitors making up C2 have been designed to simulate precisely the action of the tank units required for uncompensated as well as compensated fuel gages.

1-10. The variable capacitor C3, comprising the second calibrator unit, has a direct-calibrated range of 10 to 210 uuf. This variable capacitor has been designed to simulate precisely the action of the compensator sensing unit required for compensated fuel gages.

1-11. The three capacitors, C1, C2 and C3, as stated above are attached to an aluminum panel which is mounted on the sealed aluminum instrument case (see figure 1-2). These three capacitors are of the three-wire variety, that is, they have both electrodes electrically disconnected from shield or ground, and have a metallic shield for grounding purposes.

1-12. The shaft and frame of each of the variable capacitors C1 and C3, are attached mechanically and electrically to the aluminum panel and instrument case combination, which serves as the grounded shield mentioned above in paragraph 1-11. The rotor and stator plates of the variable capacitors are insulated respectively from the shaft and from the frame. Each of the variable capacitors has a spinner knob and dial-locking arm located immediately in front of the glass window on the front panel through which its main dial and vernier dial are visible (see figure 1-1).

1-13. Each of the three fixed capacitors making up C2 is of silvered-mica construction. Each capacitor is completely enclosed in a sealed copper case which provides both shielding and further protection from moisture for the hygroscopic mica. These three fixed capacitors are interconnected by a switch, located in the upper center of the front panel, to provide five equal steps of successive multiples of 1000 uuf (refer to paragraph 1-9).

1-14. The internal wiring of the tester terminates at three mutually different receptacles, located in the upper right-hand corner of the panel (see figure 1-1). These terminals are marked "A", "B" and "C" and the connections made are indicated in the schematic diagram of the tester (see figure 4-1). The shells of all three receptacles are directly connected to the panel.

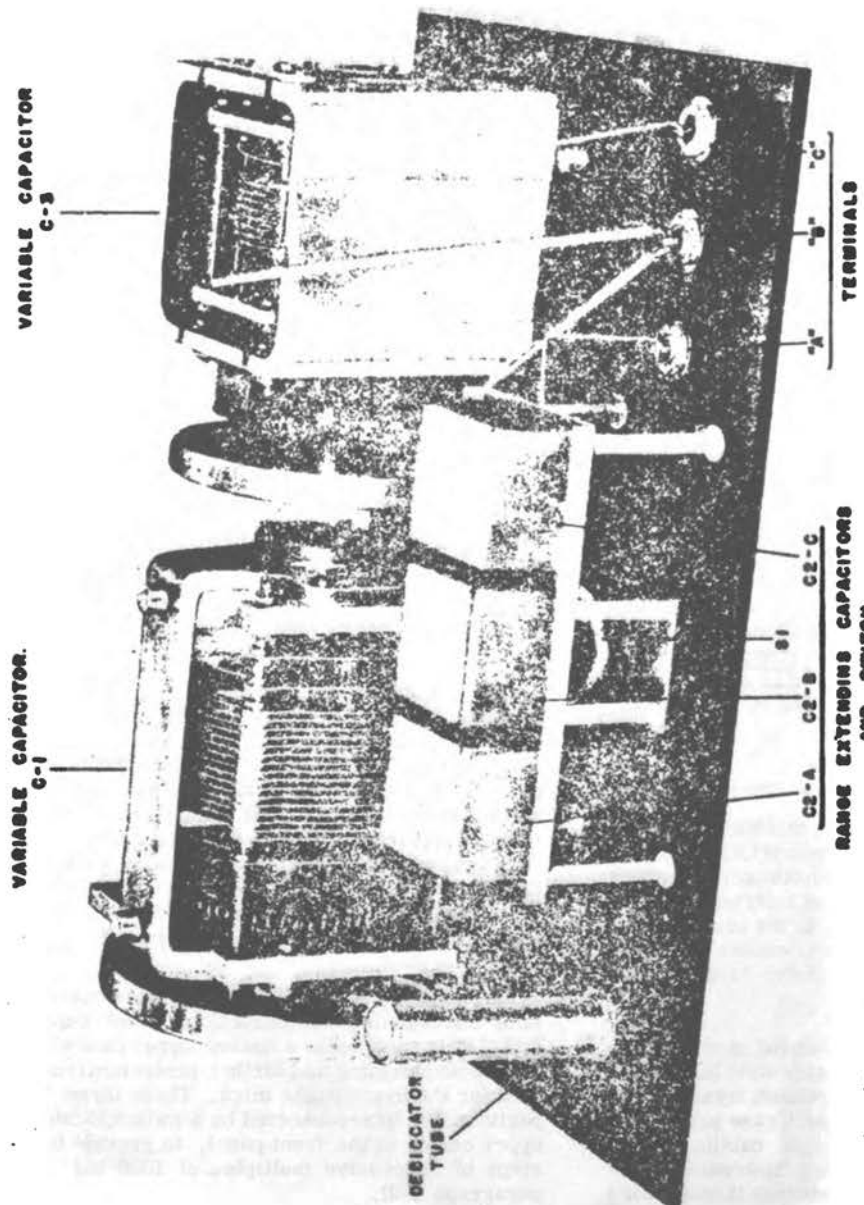


Figure 1-2. Front Panel of Tester, Rear View

1-15. DESCRIPTION OF REMOVABLE DESICCATOR TUBE.

1-16. A removable indicating-type desiccator tube is mounted in the upper left-hand corner of the panel (see figure 1-2). This desiccator tube is a plastic tube filled with 20 grams of silica gel desiccant granules. The granules contain a coloring material to indicate the state of their moisture-absorbing ability. When they are dry, the color is a definite blue. As they take up moisture the color changes to pink, and then to tan, at which time the desiccant will no longer fulfill its function and a new desiccant tube must be installed. The desiccator tube is designated as Protek Plug No. 23274 and is manufactured by Chandler-Evans Division, Niles-Bemont-Pond Company, 1 Charter Oak Blvd., West Hartford, Conn.

1-17. DESCRIPTION OF CORRECTION CHART.

1-18. In a card holder, integral with the inside of the cover of the transit case, will be found an individual Correction Chart for capacitors C1, C2 and C3. This

chart gives actual capacitance corrections. While the capacitors are adjusted closely, they can be measured with greater precision, and corrections reflecting such measurements on a particular tester are entered on this individual Correction Chart. The chart is then laminated between two transparent plastic sheets to give it mechanical and environmental protection. Applying the corrections set forth on this chart will result in obtaining the highest degree of accuracy from the tester. The Correction Chart applies only to the tester to which it is keyed by a written-in Serial No.

1-19. DESCRIPTION OF CONNECTOR CABLES AND TEE ADAPTORS.

1-20. In the rear compartment of the transit case are stowed nine connector cables and three tee adaptors. The cables are listed and identified in Table I. The tee adaptors (and the receptacles mounted on the panel of the tester) are listed and identified in Table II. The manufacturers code used in both tables is given in Table III. The connector cables and tee adaptors are all shown in figure 1-3.

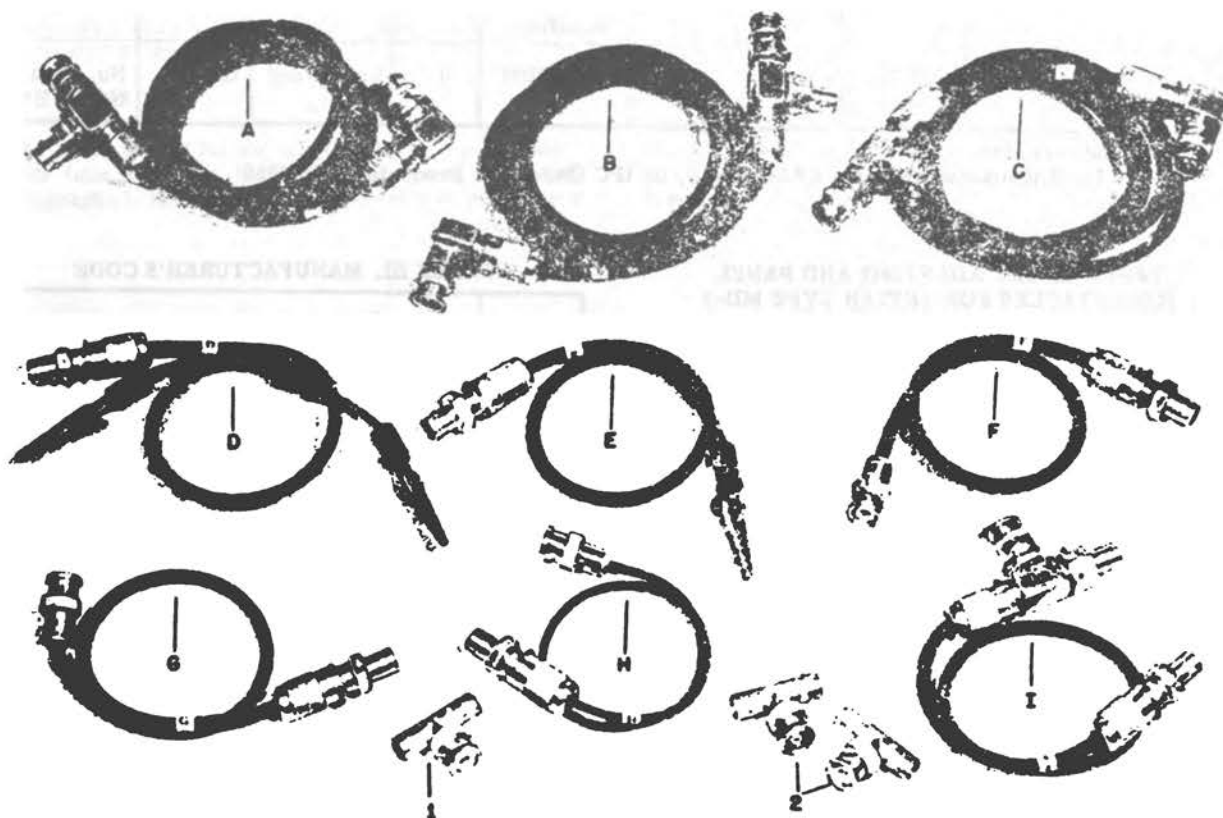


Figure 1-3. Connector Cables and Tee Adaptors supplied with Fuel Quantity Gage Tester, Type MD-1.

TABLE I. CONNECTOR CABLES FOR TESTER TYPE MD-1

Tag End Connector				Other End Connector			Wire			
Tag	Type	Mfr Code	Part No.	Type	Mfr Code	Part No.	Length (ft)	Type	Mfr Code	Part No.
A	Angle	MH	412266H	Tee	MH	412267T	6	Unshielded	GAVM	No. 18 ga., No. 31, B*
B	Angle	MH	412266R	Tee	MH	412267L	6	Coaxial	-	RG-58C/U
C	Angle	MH	412266M	Tee	MH	412267EK	6	Unshielded	GAVM	No. 18 ga., No. 31, B*
D	Straight	MH	412269F	Test Clip	MUE	608, 1 Red, 1 Black	1	Coaxial	-	RG-58C/U
E	Straight	MH	412269B	Test Clip	MUE	608, Red	1	Unshielded	GAVM	No. 18 ga., No. 31, B*
F	Straight	MH	412269F	Straight	-	UG-88/U	1	Coaxial	-	RG-58C/U
G	Straight	MH	412269B	Straight	KE	LC-53-03**	1	Unshielded	GAVM	No. 18 ga., No. 31, B*
H	Straight	MH	412269J	Straight	IPC	13925 (UG-88/U Modified)	1	Unshielded	GAVM	No. 18 ga., No. 31, B*
I	Straight	MH	412269J	Tee	MH	412267BM	1	Unshielded	GAVM	No. 18 ga., No. 31, B*

*B indicates Black

**Or LC (Liquidometer Corp.) EA5202R-2A, or IPC (Industrial Products Co.) 14350

TABLE II. TEE ADAPTORS AND PANEL RECEPTACLES FOR TESTER TYPE MD-1

No.	Mfr Code	Part No.
Adaptors		
1	KE	LC-93-03*
2		UG-274A/U
Receptacles**		
"A"	MH	415607B
"B"	MH	415607A
"C"	MH	415607C

*Or LC (Liquidometer Corp) EA5203R

**Mounted on panel of Tester

TABLE III. MANUFACTURER'S CODE

Code	Name and Address
GAVM	Gavitt Manufacturing Company Brookfield, Mass.
IPC	Industrial Products Company Danbury, Conn.
KE	Kings Electronics Co., Inc. 46 Marbledale Road Tuckahoe, N. Y.
LI	Liquidometer Corporation 36th & Skillman Ave. Long Island City, N. Y.
MH	Minneapolis-Honeywell Regulator Co. Aeronautical Division 2600 Ridgeway Road Minneapolis 13, Minn.
MUE	Mueller Electric Co. 1597 East 31 St. Cleveland, Ohio

SECTION II

SPECIAL SERVICE TOOLS

- 2-1. No special tools or fixtures are required for the operation or maintenance of the tester.

SECTION III

PREPARATION FOR USE, STORAGE, OR SHIPMENT

3-1. PREPARATION FOR USE.

3-2. There are no special instructions needed for preparing the tester for use other than to check the condition of the desiccator tube on the panel. When the tester has been removed from the container in which it was shipped, the removable desiccator tube on the panel should be checked for moisture presence and replaced if necessary (refer to paragraphs 1-15 and 5-3). The tester is then ready for use.

3-3. STORAGE.

3-4. When stored for any length of time, a new desiccator tube should be installed in the panel (refer to paragraphs 1-15 and 5-3) and the tester then sealed in a

moisture-proof container. This container should then be packed in a sturdy cardboard box cushioned with packing material. If storage conditions are apt to be damp, it would be well to place a desiccant inside the cardboard box. Before storage, mark the box "Fuel Quantity Gage Tester, Type MD-1" for identification.

3-5. SHIPMENT.

3-6. When the tester is to be shipped, it should first be packed as instructed above in paragraph 3-3. If the tester is to be shipped to a hot or humid area, make certain the moisture-proof container is securely sealed. Labels indicating that the shipment is "Fragile" should be placed on the exterior of the shipping box.

SECTION IV

OPERATION INSTRUCTIONS

4-1. PRE-OPERATION CONNECTIONS.

4-2. The tester should be connected to the equipment to be tested by means of the connector cables and tee adaptors (see Tables I, II and III and figure 1-3) supplied with the tester (refer to paragraph 1-19) selected as needed to test a particular fuel quantity gage. The connector cables "A", "B" and "C" are provided with tee-connections which along with the three tee adaptors permit the Tester to be simultaneously connected with the respective fuel gage electronic units (amplifiers or power units) and the respective tank unit circuits. The most commonly encountered connections to be made are indicated in the paragraphs which follow.

4-3. Connector cables identified by tags "A", "B" and "C", have been designed to form the main connecting link between the tester and the fuel gage equipment under calibration or testing, or both, for the majority of the fuel gage power units manufactured by Minneapolis-Honeywell.

4-4. When connecting the tester to Fuel Gage Power Calibrator Units, Parts No. G1099B and No. G1099C, manufactured by Minneapolis-Honeywell, it is necessary to employ connector cables "D" and "E" respectively with connector cables "B" and "A".

4-5. When connecting the tester to the BNC-type connectors provided on fuel quantity gage equipment of the capacitor type, manufactured by Simmonds Aerocessories, Inc., the Liquidometer Corporation, or Avien-Kinckerbocker, Inc., it is necessary to employ connector cables "F", "G" and "H", along with two UG-274A/U tee adaptors and one Kings Electronic (KE) type LC-93-03 tee adaptor, for connecting the cable connectors "A", "B" and "C" to the fuel gage amplifiers and power units manufactured by the above-named three firms.

4-6. When connecting the tester to the compensator receptacle provided for Power Unit, Part No. RG7021D, manufactured by Minneapolis-Honeywell, it is neces-

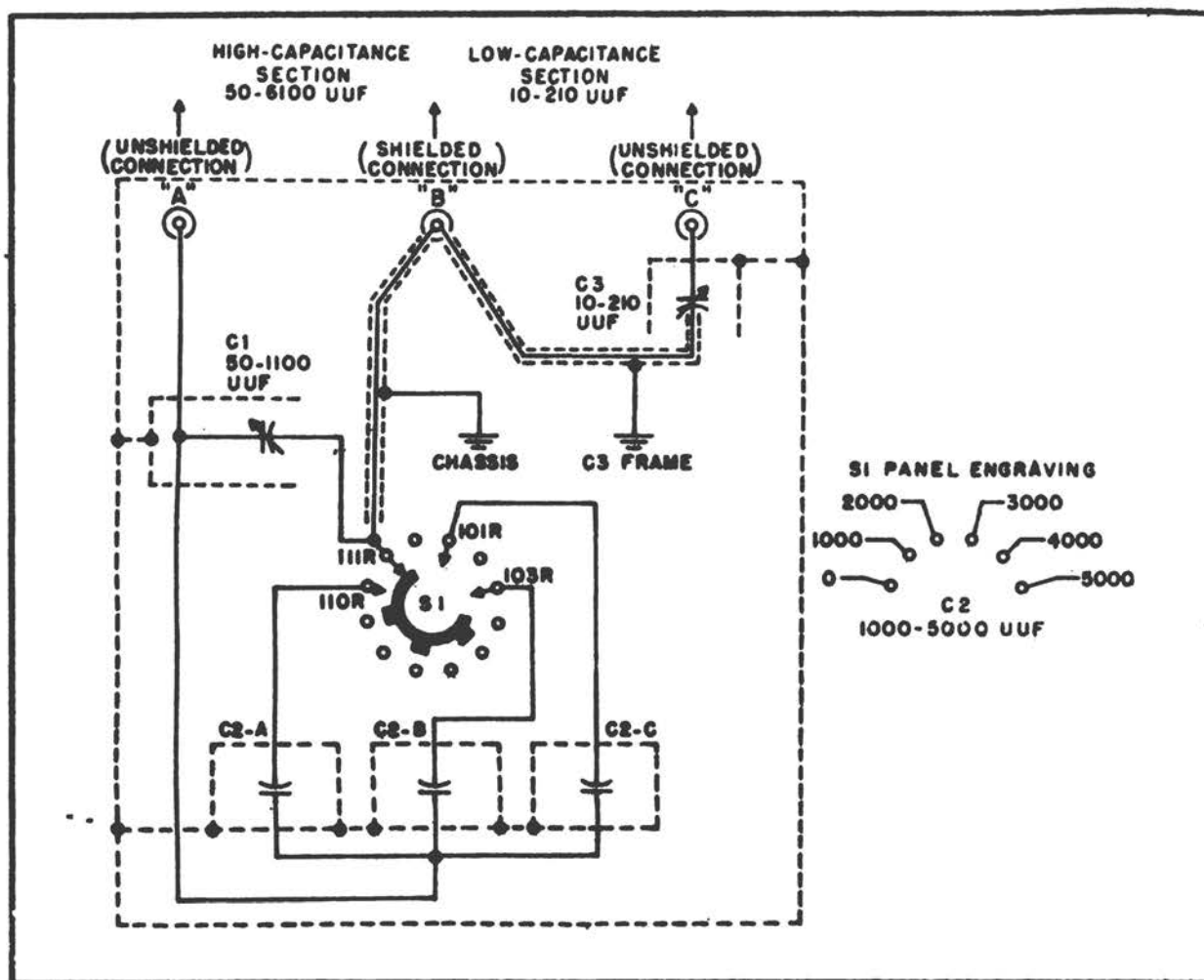


Figure 4-1. Fuel Quantity Gage Tester, Type MD-1, Schematic Diagram

nary to employ connector cable "T" with connector cable "C".

4-7. USE OF CAPACITORS C1 AND C2.

4-8. A schematic diagram of the tester is shown by figure 4-1. Where capacitances greater than the initial range of the variable capacitor C1 are required, the range-extending capacitor C2, set to the proper value, must be used. The capacitances required may be selected by rotating the knobs on the panel of the tester and observing the readings on the main and vernier dials of C1. The vernier dial of C1 is graduated in increments of 0.2 uuf.

4-9. If the range-extending capacitor C2 is used, the reading of C1 plus the setting of C2 will give the capacitance actually in use. For example, if 1558 uuf is the desired capacitance, the 1000 uuf setting for C2 must be used and the selector knob of C1 turned until 578 uuf is indicated on the dials of C1, corrected if desired by the data on the Correction Chart (refer to paragraphs 1-17 and 4-13). After the desired capacitance has been obtained the dial-locking arm should be moved to the locked position.

4-10. USE OF CAPACITOR C3.

4-11. Variable capacitor C3 has both a main and a vernier dial. The vernier dial is graduated in increments of 0.05 uuf. This capacitor is normally used when calibrating and adjusting compensated fuel gages of the capacitor type. When capacitor C3 is needed for a particular adjustment, a cable should be connected to its receptacle (marked "C" on the panel), the dials of C3 set to the desired capacitance, and then locked with the dial-locking arm.

4-12. If the compensating capacitor C3 is not required no cable should be attached to the receptacle marked "C" and the "WARNING" notice on the etched plate mounted on the inside of the hinged cover of the transit case should be carefully read and heeded. This plate is shown by figure 4-2.

4-13. USE OF CORRECTION CHART.

4-14. To obtain the highest degree of accuracy from the tester the Correction Chart should be used (refer to paragraph 1-17). When corrections are to be applied

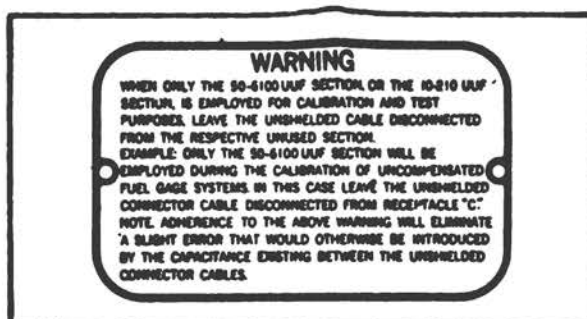


Figure 4-2. Warning Plate of Tester

they should be made as follows:

a. If the correction is listed on the chart in the "Add" column, it should be added to the dial reading to obtain the true capacitance. Conversely, to obtain a particular desired capacitance, the dial must be set to a read-

ing less than the capacitance value by the amount of the "Add" correction.

b. If the correction is listed on the chart in the "Subtract" column it should be subtracted from the dial reading to obtain the true capacitance. Conversely, to obtain a desired capacitance the dial must be set to a reading greater than the capacitance value by the amount of the "Subtract" correction.

c. For example; suppose the correction at 650 uuf. is "Add 0.6 uuf". If the dial is set to 650 the actual capacitance is 650.6 uuf. Conversely, to obtain an actual capacitance of 650 uuf, the dial must be set at 649.4 uuf.

4-15. USE OF TECHNICAL ORDERS.

4-16. For detailed operating instructions relative to the use of the tester with any particular airplane application refer to the applicable -2 Technical Order provided for that airplane.

SECTION V

PERIODIC INSPECTION, MAINTENANCE, AND LUBRICATION

5-1. PERIODIC INSPECTION.

5-2. The tester, connector cables, and tee adaptors should be regularly inspected in accordance with the schedule given in Table IV. Particular attention should be given the removable desiccator tube (refer to paragraph 1-15) and if the tube indicates the presence of internal moisture in the tester a new desiccator tube should be installed as directed in paragraph 5-3.

5-3. REPLACEMENT OF DESICCATOR TUBE.

5-4. The desiccator tube has a small protective dished plastic disc, shaped like a watch glass, cemented to the perforated end of the tube to seal the desiccant against moisture until the tube is put into use. Immediately before inserting a new desiccator tube into the panel, this protective plastic disc must be removed. When installing the new desiccator tube, be sure first, that the rubber O-ring (which will seal the tube to the panel) seats properly in the counter bore around the hole in which the desiccator tube is mounted, if this is not properly done, the seal will not serve its proper function; and second, that the desiccator tube is turned up snugly against the O-ring so as to make a tightly sealed connection. Figure 5-1 shows two desiccator tubes; the one at the top with the protective plastic disc attached, and the one at the bottom with the disc removed.

5-5. MAINTENANCE.

5-6. The tester is a self-contained precision instrument and no maintenance work other than that given in Table IV, should be done. If the tester, along with the connector cables and tee adaptors, does not func-

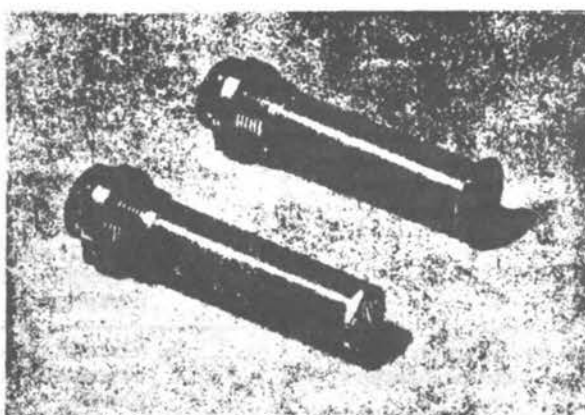


Figure 5-1. Two Desiccator Tubes - Top one showing Protective Disc attached; Bottom one showing Protective Disc removed.

tion satisfactorily it should be returned to the depot for maintenance work.

5-7. CLEANING METHODS.

5-8. When cleaning the tester use only a dry clean cloth, or a very soft hair brush. When cleaning the panel of the tester be especially careful not to damage the glass windows over the main and vernier dials. Clean the Correction Chart only with a slightly water-moistened clean cloth; do not use any type of solvent to clean this chart. Clean the connector cables and tee adaptors only with a dry cloth. Never use a damp cloth to clean the cables.

5-9. If dirt or corrosion exists on the exterior of the

Section V
Paragraphs 5-9 to 5-14

transit case that cannot be removed with a dry cloth, use a cloth moistened slightly with cleaning solvent, and then wipe thoroughly dry. For dirt and corrosion that cannot be removed with solvent alone use crocus cloth; then after cleaning, reclean with solvent and wipe dry. Never use steel wool to clean the transit case; minute particles may somehow enter the tester and cause damage.

5-10. If the finish on the exterior of the transit case becomes badly scarred or damaged, corrosion may be prevented by touch-up painting of the damaged places. To do so, first clean the damaged spots down to a bare metal surface using a No. 00 or 000 sand-paper (do not use steel wool). When ready to paint, refer to service manuals for type of paint to use.

5-11. CONNECTOR CABLES AND TEE ADAPTORS.

5-12. Each connector cable and tee adaptor should be periodically checked for continuity. The direct-cur-

rent resistance of each cable and adaptor shall be measured with a reliable megohm-meter. The measurements shall be taken between the center conductor and each respective connector shell. The readings established shall be not less than 1000 megohms. Each separate tee adaptor shall be checked for proper continuity and also direct-current resistance. The direct-current resistance readings shall be not less than 1000 megohms.

5-13. LUBRICATION.

5-14. While in service, and during periodic inspection, no lubrication is required for the tester. If the tester is returned to a depot for maintenance (refer to Paragraph 6-1) or the unit is completely overhauled, lubricate in accordance with MIL-G-3278 should be applied to (1) the worm (2) to worm shaft bearings (3) condenser rotor shaft bearings. No other lubrication is required.

TABLE IV. PERIODIC INSPECTION CHART

What to Check	How to Check	Precautions
MONTHLY		
1. Operation check.	a. Follow operation instructions given in Section IV.	a. If tester does not function properly return to depot.
2. Exterior of transit case and front panel.	a. Visually inspect for dirt, corrosion, and fungus growth. b. Check for loose panel screws and control knobs. c. Visually check condition of desiccator tube (refer to paragraph 1-15).	a. Clean as directed in paragraph 5-7. b. Tighten, but not beyond a firm fit. c. Install new desiccator tube if necessary (refer to paragraph 5-9).
3. Connector cables and tee adaptors.	a. Visually inspect for dirt, corrosion, and fungus growth. b. Visually inspect for broken or defective connector receptacles and cables. c. Check each cable and tee adaptor for continuity and resistance.	a. Clean as directed in paragraph 5-7. b. Return to depot if repairs are needed. c. Refer to paragraph 5-11, for method of making continuity and resistance tests.
SIX-MONTHS.		
1. Same as MONTHLY check.	a. Same as MONTHLY check.	a. Same as MONTHLY check.
2. Calibration.	a. Follow procedure given in Section VII.	a. Only trained personnel should calibrate the tester.

SECTION VI

TROUBLE SHOOTING

6-1. If the Fuel Quantity Gage Tester, Type MD-1, is suspected of being out of adjustment, or has been subjected to rough usage or handling, or if damage is suspected, no attempt should be made in the field to do any trouble shooting or repair work of any kind. Accordingly, if the tester requires trouble shooting,

maintenance, or repair, it must be returned to the depot designated by the service involved, where the specialized facilities required for maintenance work, calibration, and adjustment are available (refer to paragraph 7-1).

SECTION VII

CALIBRATION

7-1. The Fuel Quantity Gage Tester, Type MD-1, is a precision instrument. It has been laboratory calibrated and, therefore, whenever calibration and adjustment of the instrument is necessary (refer to paragraph 6-1) it must be returned to the depot designated by the service involved, where the specialized facilities required for calibration and adjustment including the Tester, Capacitance Bridge, Precision, Type ME-1 or other equipment suitable for making the required measurements, will be available. Under no circumstances, attempt to adjust the calibration in the field. Any tampering with the tester will disturb the calibration and render the instrument useless.

7-2. At the designated depot, capacitance measuring equipment should be available which is capable of making measurements to assure that the tester when calibrated and ready for trans-shipment will meet the following accuracy requirements quoted from governing specification MIL-T-8579.

a. Direct-Reading Accuracy of Fuel Quantity Gage Tester, Type MD-1 and Accuracy of Correction Chart. See Table V.

b. Dissipation Factor. Dissipation factor of fixed or variable capacitors not to exceed 0.001 at a frequency of 400 cycles per second at a temperature of $\pm 25^{\circ}\text{C}$.

c. Backlash. Backlash less than 1/2 division. (This corresponds to 0.01% of full-scale value.)

d. Drum and Circular Dial Synchronization. Within

1 uuf for C1, and within 0.2 uuf for C3.

e. Dial Lock Operation. Operation of the Dial Lock shall not change dial readings by more than 0.1 uuf for C1 or 0.03 uuf for C3.

f. Test Equipment. Test equipments which will fulfill requirements of the above sub-paragraphs a, b, c, d and e are:

- (1) Type ME-1 Tester Capacitance Bridge Precision.
- (2) The following assembly of instruments as manufactured by General Radio Company.
 - (a). Type 716-CMS4 Capacitance Bridge
 - (b). Type 1214-A Oscillator
 - (c). Type 1231-BMA Amplifier & Null Detector
 - (d). Type 1231-P2 Filter
 - (e). Type P-585 Capacitor Box
 - (f). Type 722-859 Capacitor
 - (g). 3 Type 874-T Connector
 - (h). 4 Type 874-R21 Patch Cord
 - (i). 2 Type 274-NEO Patch Cord

7-3. Even though the tester is not suspected of incorrect operation and calibration, the instrument should have its calibration checked at least once every six months (or at periods specified by the service involved) in order that it may be considered reliable and accurate. Such re-calibration checks must be done only by a designated depot (refer to paragraph 7-1.)

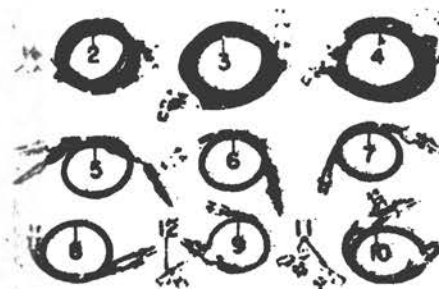
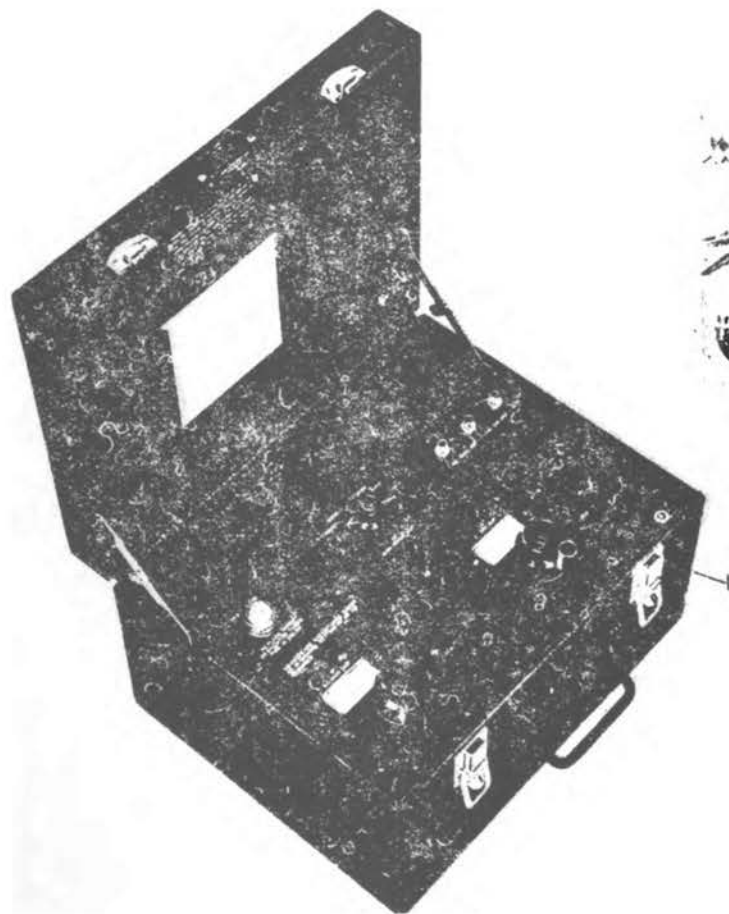
TABLE V. DIRECT READING ACCURACY OF FUEL QUANTITY GAGE TESTER, TYPE MD-1, AND ACCURACY OF CORRECTION CHART

Capacitor	Capacitance Range, uuf	Direct-Reading Accuracy	Chart Accuracy
C1	50-1100	± 0.75 uuf or $\pm 0.5\%$ *	$\pm 0.1\%$ Upscale
C3	10-210	± 0.5 uuf or $\pm 1.5\%$ *	$\pm 0.2\%$
C2	0-5000	$\pm 0.5\%$	$\pm 0.1\%$

*Whichever is greater.

PART II

ILLUSTRATED PARTS BREAKDOWN



INDEX NO.

FIGURE NO. INDEX NO.

FIGURE NO.

1	Tester, Fuel Quantity Gage-Type MD-1	2-3	7	Cable Assembly-F	4
2	Cable Assembly-A	4	8	Cable Assembly-G	4
3	Cable Assembly-B	4	9	Cable Assembly-H	4
4	Cable Assembly-C	4	10	Cable Assembly-I	4
5	Cable Assembly-D	4	11	Adapter, Tee-UG-274A/U	4
6	Cable Assembly-E	4	12	Adapter, Tee-(Liquidometer Corp., Long Island)	4

Figure 1. Tester, Fuel Quantity Gage, Type MD-1, Cable Assemblies and Adapters

TABLE OF CONTENTS

Section	Page Number	Section	Page Number
I INTRODUCTION	1	Exploded View - Panel and . . .	6
II GROUP ASSEMBLY PARTS LIST .	3	Cabinet Assembly	
Exploded View - Tester Fuel . .	4	Cable Assemblies "A" through "T"	9
Quantity Gage, Type MD-1		III NUMERICAL INDEX	11

SECTION I

INTRODUCTION

1-1. GENERAL.

1-2. This catalog lists and describes the parts for the Type MD-1 Fuel Quantity Gage Tester manufactured by General Radio Company, Cambridge, Massachusetts. This catalog shall be used for requisitioning parts and/or assemblies which may need replacement, as outlined in the applicable manual of Operation and Service Instructions.

1-3. GROUP ASSEMBLY PARTS LIST.

1-4. The Group Assembly Parts List (Section II) consists of the complete equipment broken down into assemblies, subassemblies and details.

1-5. Attaching parts are listed immediately after the item to be attached. They are listed directly beneath the item to be attached unless they are part of the assembly, in which case they will be indented to show the assembly relationship. Detail parts of an assembly are listed immediately after the attaching parts of said assembly and are indented to indicate that they are part of the assembly.

1-6. Part numbers are used exclusively to identify parts. The usable code column has been left blank since the parts listed are applicable to all articles.

1-7. Vendor part numbers can be identified by the Vendors' code symbol located in the description column after the description of the part (see paragraph 1-8 for an explanation of the Vendors' code). Commercial hardware that cannot be completely identified by a part number will be referenced "COMM" in the part number column with identifying information in the description column. Items are referenced "NO NUMBER" when a part number to completely identify the item is not available. In such cases identifying information will appear in the description column. When items are listed for reference purposes, "REF" will appear in the

units per assy column. For bulk items, and items for which quantities may vary, the symbol "AR" will appear in the units per assy column to indicate "As Required"

1-8. Vendors' codes are used to designate manufacturers of all items not carried under the prime contractor's part numbers. The code symbols used in this catalog are as follows:

CH	Chandler-Evans Division Niles-Bement-Pond Co. West Hartford, Conn.
EN	Elastic Stop Nut Corporation of America Union, N. J.
EXL	Excelsior Hardware Co. Stamford, Conn.
GAVM	Gavitt Manufacturing Co. Brookfield, Mass.
LI	Liquidometer Corp. Long Island City, N. Y.
LO	Lord Manufacturing Co. Erie, Pa.
MH	Minneapolis-Honeywell Regulator Co. Minneapolis, Minn.
PRU	Plastic and Rubber Products Co. Los Angeles, California

1-9. NUMERICAL INDEX.

1-10. The Numerical Index (Section III) is a composite listing in alphabetical, numerical order of all parts in the Group Assembly Parts List. Only the first figure and index number that appears for Government Standard parts is listed. All the applicable figure and in-

Section I Introduction

dex numbers will appear for the remaining parts. The quantities listed are the total per equipment.

1-11. Part numbers numerical arrangement starts on the left-hand column and continues from left to right, one column at a time, until part number numerical arrangement is determined. The order of precedence in part number numerical arrangement is as follows:

- (1) Space (blank column).
- (2) Dash (-).
- (3) Letters A through Z.
- (4) Numerals 0 through 9.

1-12. SOURCE CODE DEFINITIONS

a. CODE "P" - PARTS UNDER INVENTORY STOCK CONTROL.

1. CODE "P" is applied to parts which are procured in view of relatively high usage. Code "P" parts may be requisitioned and installed by any maintenance level, unless followed by the letter - "O", which restricts requisition and replacement to Depot (O&R) level only. Restricted service manufacture is considered practicable but only after an attempt has been made to procure from Supply Sources. In lieu of Procurement of "P" Coded parts, the Department may designate a Depot (O&R) level activity to manufacture supply requirements for the Program.

2. CODE "P1" is applied to parts which are very difficult or uneconomical to manufacture. Service manufacture is considered impracticable. Code P1 parts may be requisitioned and installed by any maintenance level, unless followed by the letter - "O" which restricts requisition and replacement to Depot (O&R) level only.

b. CODE "M" MANUFACTURE - PARTS NOT PROCURED.

1. CODE "M" is applied to parts which are within the facilities of any activity to manufacture. Procurement and stocking are not justified in view of the relatively low usage, or storage and installation factors, of these parts. Needs are to be met by local manufacture as required.

2. CODE "M1" is applied to parts which can be manufactured only by utilizing the facilities of the Depot (O&R) activity. Procurement and stocking of these parts are not justified in view of their relatively low usage and installation factors. The needs of all activities are to be met through salvage, or by Depot (O&R) level manufacture.

c. CODE "A" ASSEMBLY - ASSEMBLY NOT PROCURED.

1. CODE "A" is applied to assemblies made up of two or more units each of which carry individual part numbers and description, and which may be assembled by any Maintenance level.

2. CODE "A1" is applied to assemblies made up of two or more parts each of which carry individual part numbers and description, and which may be assembled only by activities having Depot (O&R) facilities.

d. CODE "X" PARTS CONSIDERED IMPRACTICABLE FOR MANUFACTURE OR PROCUREMENT

1. CODE "X" is applied to Main Structural Members or similar parts which, if required, would suggest extensive aircraft or equipment reconditioning. The need of a part, or parts, coded "X" (wing spar caps, center section structure) should normally result in a recommendation to retire the aircraft or equipment from Service.

2. CODE "X1" is applied to parts for which procurement of the next larger assembly is justified; e.g., an integral detail part, such as welded segments, inseparable from its assembly; a part machined in a matched set; or a part of an assembly which, if required, would suggest extensive reconditioning of each assembly.

3. CODE "X2" is applied to parts which are neither procured nor stocked. Activities requiring such parts shall attempt to obtain from salvage; if not obtainable from salvage, such parts shall be requisitioned through normal supply channels with supporting justification.

e. CODE * PARTS NOT PROCURED, MANUFACTURED OR STOCKED.

1. CODE * applies to installation drawings, diagrams, instructions or field service drawings, basic drawing numbers which cannot be procured or manufactured and obsolete parts.

1-13. HOW TO FIND THE PART NUMBER OF AN ITEM.

a. Turn to the Table of Contents and find the page number for the major assembly in which the part is used.

b. Turn to the page determined in step "a". Locate the part and its index number on the illustration.

c. Find the index number in the Group Assembly Parts List to determine the complete description.

1-14. HOW TO FIND THE ILLUSTRATION FOR AN ITEM (PART NUMBER UNKNOWN).

a. Refer to Section III, Numerical Index and find the figure and index number associated with the part number.

b. Turn to the figure number determined in step "a" and search the illustration for the index number.

SECTION II
GROUP ASSEMBLY PARTS LIST

FIG. & INDEX NO.	PART NO.	DESCRIPTION	QTY PER ASBY
2- -1	P-579 P-579-35	TESTER, FUEL QUANTITY GAGE - TYPE MD-1 PANEL AND CABINET ASSEMBLY (See figure 3 for breakdown)	Ref 1
-2	COMM	ATTACHING PARTS . SCREW, Rd hd, 1/4-28 thread, 1-1/8 in. lg, brs, dull nickel pl	4
-3	COMM	. WASHER, Split, 0.275 ID x 0.489 OD x 0.047 in. thk, stainless steel	4
2- -4	P-579-32 P-579-90	. TRANSIT CASE ASSEMBLY PLATE, Name	1 1
-5	COMM	ATTACHING PARTS . SCREW, Rd hd, 4-40 thread, 1/4 in. lg, brs, dull nickel pl	2
-6	COMM	. WASHER, Internal tooth, .120 ID x 7/32 OD x 1/32 in. . . thk o/a, phosphor bronze, dull nickel pl	2
-7	COMM	. NUT, Hex, 4-40 thread, brs, dull nickel pl	2
-8	P-579-93	. PLATE, Warning	1
-9	COMM	ATTACHING PARTS . SCREW, Rd hd, 4-40 thread, 1/4 in. lg, brs, dull nickel pl	2
-10	COMM	. WASHER, Internal tooth, .120 ID x 7/32 OD x 1/32 in thk . o/a, phosphor bronze, dull nickel pl	2
-11	COMM	. NUT, Hex, 4-40 thread, brs, dull nickel pl	2
-12	P-579-77	. CHART, Correction	1
-13	FES-156A	. FOOT	8
-14	COMM	ATTACHING PARTS . SCREW, Binding hd, 10-32 thread, 5/8 in. lg, brs, dull nickel pl	8
-15	96M-02	. NUT, Hex (EN)	8
-18	150PHL-6	. INSULATOR, Vibration (LO)	4
-17	COMM	ATTACHING PARTS . SCREW, Rd hd, 10-32 thread, 5/16 in. lg, brs, dull . . . nickel pl	16
-18	COMM	. WASHER, Split, .213 ID x .323 OD x .040 in. thk, stainless steel	16
-19	COMM	. NUT, Hex, 10-32 thread, brs, dull nickel pl	16
-20	P-579-92	. WASHER, Flat	4
-21	P-579-29	. LINE, Ground	1
-22	044454	. FASTENER (EXL)	2
-23	COMM	ATTACHING PARTS . SCREW, Flat hd, 6-32 thread, 5/16 in. lg, brs, dull . . . nickel pl	10
-24	COMM	. WASHER, Split, .159 ID x .253 OD x .081 in. thk, stainless steel	10

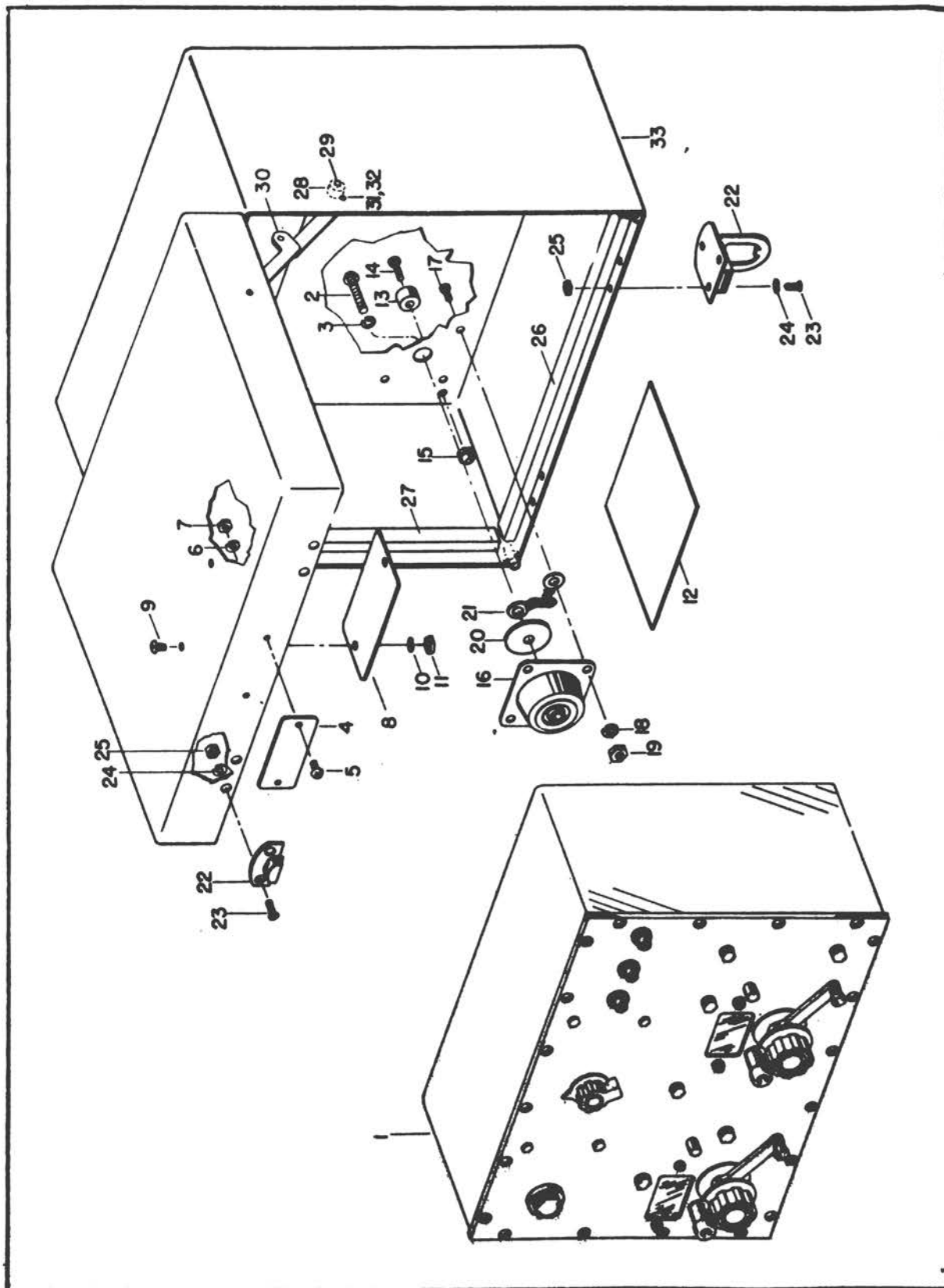


Figure 2. Exploded View - Tester, Fuel Quantity Gauge, Type MD-1

Section II
Group Assembly Parts List

FIG. & INDEX NO.	PART NO.	DESCRIPTION	QTY PER ASSY
		1 2 3 4 5 6 7	
-25	COMM	.. NUT, Hex, 6-32 thread, brs, dull nickel pl	10
-26	P-579-75	.. RUBBER, Sponge	2
-27	P-579-76	.. RUBBER, Sponge	2
-28	FES-998	.. FOOT, Bumper	2
		ATTACHING PARTS	
-29	RIT-1351	.. RIVET, Tubular, 7/16 in lg	2
-30	SU-4-R	.. SUPPORT, Lid	1
	SU-4-L	.. SUPPORT, Lid	1
		ATTACHING PARTS	
-31	RIT-669	.. RIVET, Tubular, 5/16 in. lg	4
-32	COMM	.. WASHER, Flat, .150 ID x .375 OD x .032 in. thk, brs, dull nickel pl	4
-33	P-579-86	.. TRANSIT CASE AND COVER ASSEMBLY	1
3-	P-579-35	PANEL AND CABINET ASSEMBLY	Ref
3-	P-579-30	.. PANEL ASSEMBLY	1
		ATTACHING PARTS	
-1	COMM	.. SCREW, Rd hd, 10-32 thread, 5/8 in. lg. brs, dull nickel pl	20
-2	COMM	.. WASHER, Split, .213 ID x .323 OD x .040 in. thk, stainless steel	20
-3	23274	.. PLUG, Protect (CH)	1
-4	P-579-74	.. PACKING, "O" ring	1
3-	P-579-36	.. KNOB ASSEMBLY	1
		ATTACHING PARTS	
-5	COMM	.. SCREW, Set	2
-6	KNB-2D	.. KNOB	1
-7	SPDM-4, .130	.. SPACER	1
-8	COMM	.. SCREW, Binding hd, 4-40 thread, 1/2 in. lg, thread cutting, stainless steel	1
-9	BUMC-13, 5/8	.. BUSHING	1
-10	3CO-19	.. COLLAR	1
		ATTACHING PARTS	
-11	COMM	.. SCREW, Set	2
-12	COMM	.. WASHER, Flat, .257 ID x .500 ID x .010 in. thk, . . . phosphor bronze	1
-13	PRP-6227-5	.. PACKING, "O" ring (PRU).	1
-14	COMM	.. SCREW, Binding hd, 6-32 thread, 3/8 in. lg, brs, . . . dull nickel pl	2
-15	SPDM-6, 1/16	.. SPACER	2
-16	COMM	.. WASHER, Flat, .150 ID x .312 OD x .032 in. thk, brs, dull nickel pl	2
-17	PRP-6227-1	.. PACKING, "O" ring (PRU)	2
-18	ZKNU-3	.. KNOB	2
		ATTACHING PARTS	
-19	COMM	.. SCREW, Set	4
-20	415607A	.. CONNECTOR (MH)	1
-21	415607B	.. CONNECTOR (MH)	1

Section II
Group Assembly Parts List

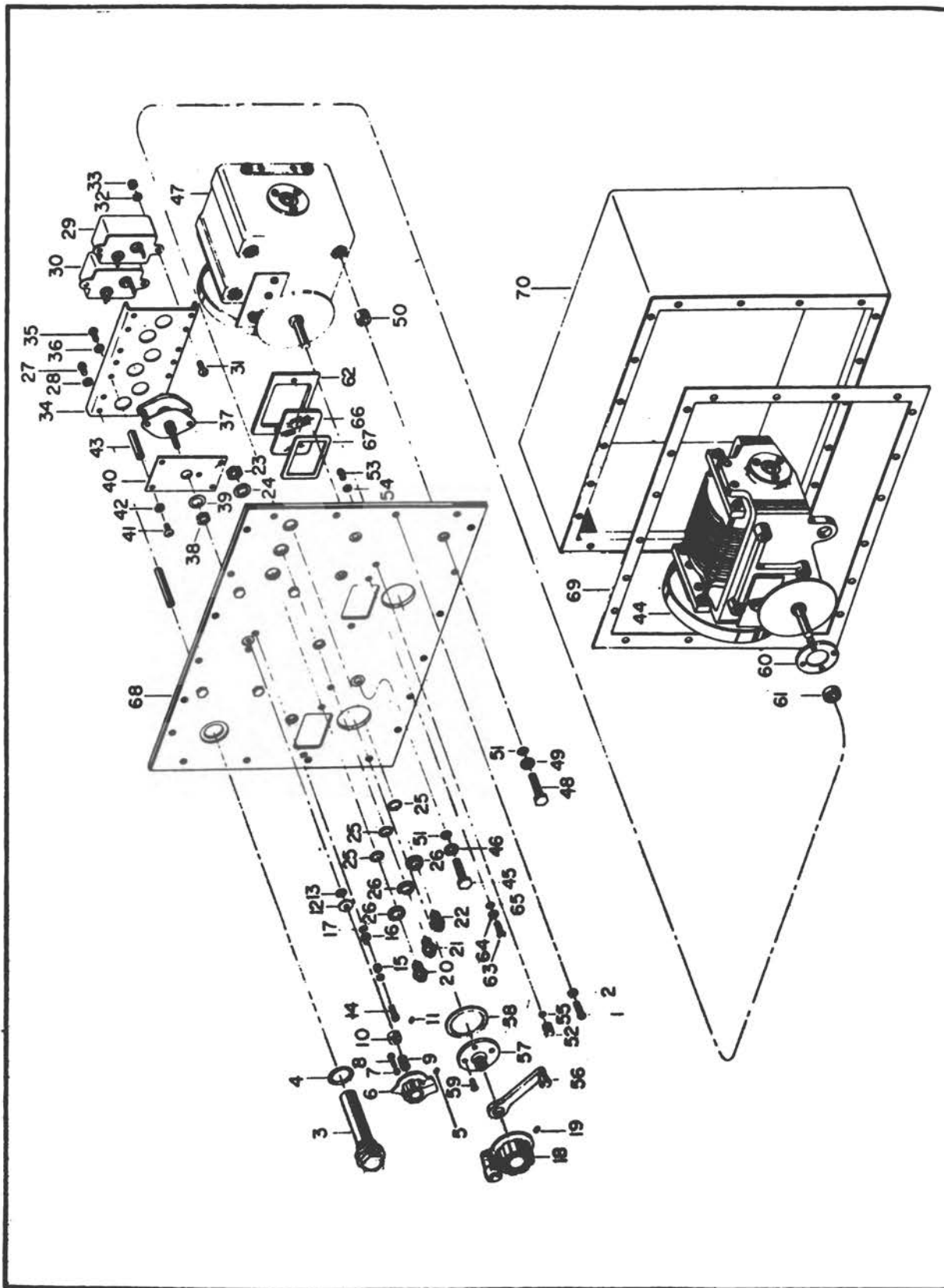


Figure 3. Exploded View - Panel and Cabinet Assembly.

FIG. & INDEX NO.	PART NO.	DESCRIPTION	QTY PER ASSY
		1 2 3 4 5 6 7	
-22	415607C	.. CONNECTOR (MH)	1
		ATTACHING PARTS FOR ITEMS 20, 21 AND 22	
-23	P-579-60	.. NUT, Hex	3
-24	COMM	.. WASHER, Internal tooth, 7/16 ID x 35/64 OD x 1/32 in. thk o/a, brs, dull nickel pl	3
		---*---	
-25	PRP-6227-9	.. PACKING, "O" ring (PRU).	3
-26	P-579-89	.. WASHER	3
3-	P-579-31	.. CAPACITOR AND RANGE SWITCH ASSEMBLY	1
		ATTACHING PARTS	
-27	COMM	.. SCREW, Rd hd, 6-32 thread, 3/8 in. lg, brs, dull nickel pl	4
-28	COMM	.. WASHER, Split, .159 ID x .253 OD x .031 in. thk, stainless steel	4
		---*---	
-29	505-811	.. CAPACITOR	1
-30	505-812	.. CAPACITOR	2
		ATTACHING PARTS FOR ITEMS 28 AND 29	
-31	COMM	.. SCREW, Rd hd, 6-32 thread, 1/4 in. lg, brs, dull nickel pl	6
-32	COMM	.. WASHER, Split, .159 ID x .253 OD x .031 in. thk, stainless steel	6
-33	COMM	.. NUT, Hex 6-32 thread, brs, dull nickel pl	6
		---*---	
-34	P-579-81	.. SHELF, Capacitor	1
		ATTACHING PARTS	
-35	COMM	.. SCREW, Rd hd, 6-32 thread, 1/4 in. lg, brs, dull nickel pl	4
-36	COMM	.. WASHER, Split, .159 ID x .253 OD x .031 in. thk, stainless steel	4
		---*---	
-37	SWRW-105	.. SWITCH, Rotary	1
		ATTACHING PARTS	
-38	COMM	.. NUT, Hex 3/8-32 thread, brs, dull nickel pl	1
-39	COMM	.. WASHER, Internal tooth, 3/8 ID x 1/2 OD x 1/32 in thk o/a phosphor bronze, dull nickel pl	1
		---*---	
-40	P-579-82	.. PLATE, Switch	1
		ATTACHING PARTS	
-41	COMM	.. SCREW, Rd hd, 6-32 thread, 1/4 in. lg, brs, dull nickel pl	4
-42	COMM	.. WASHER, Split, .159 ID x .253 OD x .031 in. thk, stainless steel	4
		---*---	
-43	SPFF-6-32	.. SPACER, 1-3/8 in. lg.	4
-44	722-DS12-5	.. CAPACITOR	1
		ATTACHING PARTS	
-45	SCC-979C	.. SCREW, Hex hd, 3/4 in. lg	3
-46	COMM	.. WASHER, Flat, .257 ID x .500 OD x .010 in. thk, phosphor bronze, dull nickel pl	9
		---*---	
-47	722-81	.. CAPACITOR	1
		ATTACHING PARTS	
-48	SCC-979C	.. SCREW, Hex hd, 3/4 in. lg	3

Section II
Group Assembly Parts List

FIG. & INDEX NO.	PART NO.	DESCRIPTION	QTY PER ASSY
-49	COMM	.. WASHER, Flat, .257 ID x .500 OD x .010 in. thk, . . . phosphor bronze dull nickel pl	3
-50	SPC-27	.. SPACER, 5/16 in. lg	3
-51	PRP-6227-5	.. PACKING, "O" ring (PRU)	6
-52	722-606	.. STOP	2
ATTACHING PARTS			
-53	COMM	.. SCREW, Rd hd, 6/32 thread, 1/2 in. lg, brs, dull . . . nickel pl	2
-54	COMM	.. WASHER, Split, .159 ID x .253 OD x .031 in. thk, . . . stainless steel	2
-55	PRP-6227-1	.. PACKING, "O" ring (PRU)	2
-56	722-38	.. HANDLE, Locking	2
-57	722-824	.. HUB, Brake	2
-58	722-77	.. GASKET	2
ATTACHING PARTS			
-59	COMM	.. SCREW, Flat hd, 6-32 thread, 7/16 in. lg, brs, dull . . nickel pl	8
-60	722-822	.. RING	2
-61	722-710	.. SEAL, Shaft	2
-62	P-579-84	.. FRAME, Window	2
ATTACHING PARTS			
-63	COMM	.. SCREW, Binding head, 6-32 thread, 3/8 in. lg. brs, dull nickel pl	4
-64	COMM	.. WASHER, Flat, .150 ID x .312 OD x .032 in. thk, brs, dull nickel pl	4
-65	PRP-6227-1	.. PACKING, "O" ring (PRU)	4
-66	P-579-91	.. WINDOW	2
-67	P-579-73	.. GASKET, Window	2
-68	P-579-100	.. PANEL ASSEMBLY	1
-69	P-579-70	.. GASKET	1
-70	P-579-103	.. CABINET ASSEMBLY	1
4-	P-579-20	CABLE ASSEMBLY "A"	1
-1	412266H	.. CONNECTOR, Angle (MH)	1
-2	412267T	.. CONNECTOR, Tee (MH)	1
-3	COMM	.. WIRE, Type No. 31, #18 stranded, 41/34 black, . . . 74-7/16 ± 1/2 in. lg (GAVM)	1
4-	P-579-21	CABLE ASSEMBLY "B"	1
-4	412266R	.. CONNECTOR, Angle (MH)	1
-5	412267L	.. CONNECTOR, Tee (MH)	1
-6	ESMW-26-Z	.. CABLE, 76-7/16 ± 1/2 in. lg	1
4-	P-579-22	CABLE ASSEMBLY "C"	1
-7	412266M	.. CONNECTOR, Angel (MH)	1
-8	412267EK	.. CONNECTOR, Tee (MH)	1
-9	COMM	.. WIRE, Type no. 31, #18 stranded, 41/34 black, . . . 74-7/16 ± 1/2 in. lg (GAVM)	1
4-	P-579-23	CABLE ASSEMBLY "D"	1
-10	412266F	.. CONNECTOR, Jack (MH)	1
-11	P-579-402R-12	.. CLIP, Alligator	1
-12	P-579-402B-13	.. CLIP, Alligator	1
-13	ESMW-26-2	.. CABLE, 14-3/16 ± 1/4 in. lg	1
	COMM	.. WIRE, Type no. 31, #18 stranded, 41/34 black, 4-3/16 ± 1/4 in. lg (GAVM)	1
	FEC-1	.. FERRULE	1

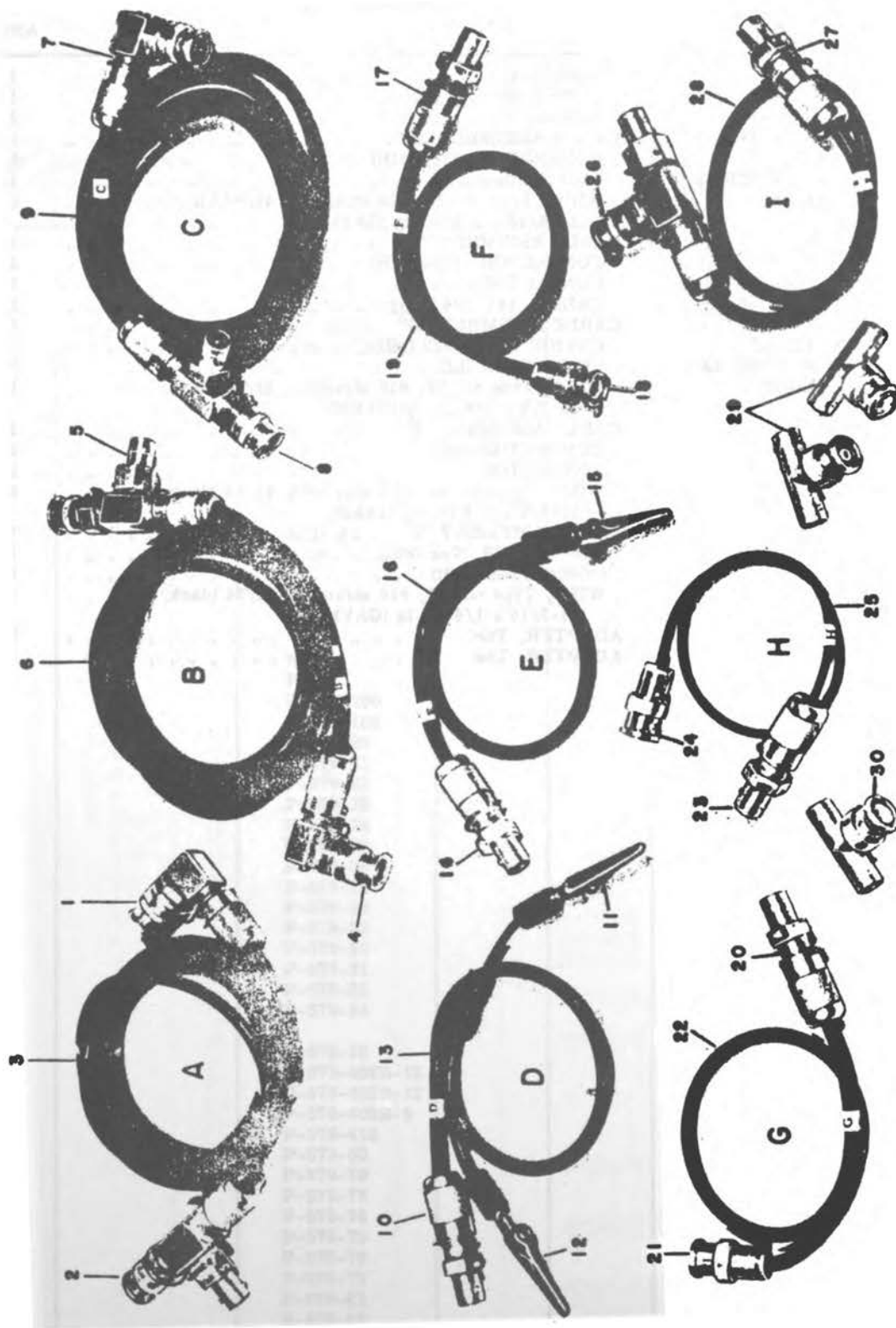


Figure 4. Connector Cables and Tee Adapters.

Section II
Group Assembly Parts List

FIG. & INDEX NO.	PART NO.	DESCRIPTION	QTY PER ASSY
		1 2 3 4 5 6 7	
-13	FEC-4	. FERRULE	1
	FEC-6	. FERRULE	1
	FEC-10	. FERRULE	2
4-	P-579-24	CABLE ASSEMBLY "E"	1
-14	412269B	. CONNECTOR, Jack (MH)	1
-15	P-579-402R-5	. CLIP, Alligator	1
-16	COMM	. WIRE, Type no. 31, #18 stranded, 41/34 black, 14-3/16 ± 1/4 in. lg (GAVM)	1
4-	P-579-25	CABLE ASSEMBLY "F"	1
-17	412269F	. CONNECTOR, Jack (MH)	1
-18	CDMP-20	. CONNECTOR	1
-19	ESMW-26-2	. CABLE, 14 ± 1/4 in. lg.	1
4-	P-579-26	CABLE ASSEMBLY "G"	1
-20	412269B	. CONNECTOR, Jack (MH)	1
-21	EA-5202R-2A	. CONNECTOR (LJ)	1
-22	COMM	. WIRE, Type no. 31, #18 stranded, 41/34 black, 13-7/8 ± 1/4 in. lg (GAVM)	1
4-	P-579-27	CABLE ASSEMBLY "H"	1
-23	412269J	. CONNECTOR (MH)	1
-24	P-579-410	. CONNECTOR	1
-25	COMM	. WIRE, Type no. 31, #18 stranded, 41/34 black, 13-7/8 ± 1/4 in. lg (GAVM)	1
4-	P-579-28	CABLE ASSEMBLY "I"	1
-26	412267BM	. CONNECTOR, Tee (MH)	1
-27	412269J	. CONNECTOR (MH)	1
-28	COMM	. WIRE, Type no. 31, #18 stranded, 41/34 black, 14-7/16 ± 1/4 in. lg (GAVM)	1
-29	UG-274A/U	ADAPTER, Tee	2
-30	EA-5203R	ADAPTER, Tee	1

SECTION III
NUMERICAL INDEX

CLASS CODE OR STOCK NO.		PART NUMBER	SOURCE CODE		FIG. & INDEX NO.	QTY PER ARTICLE	MICRO FILM INDEX
AF	NAVY		AF	NAVY			
		BUMC-13, 5/8			3-9	1	
		CABLE			4-13	1	
		CDMP-20			4-18	1	
		EA-5202R-2A			4-21	1	
		EA-5203R			4-30	1	
		ESMW-26-2			4-6	3	
					4-13		
					4-19		
		FEC-1			4-13	1	
		FEC-10			4-13	2	
		FEC-4			4-13	1	
		FEC-6			4-13	1	
		FES-185A			2-13	8	
		FES-998			2-28	2	
		KNB-2D			3-6	1	
		NUT			2-7	4	
					2-11		
		NUT			2-19	16	
		NUT			2-25	16	
					3-33		
		NUT			3-38	1	
		P-579			2-	Ref	
		P-579-100			3-68	1	
		P-579-103			3-70	1	
		P-579-20			4-	1	
		P-579-21			4-	1	
		P-579-22			4-	1	
		P-579-23			4-	1	
		P-579-24			4-	1	
		P-579-25			4-	1	
		P-579-26			4-	1	
		P-579-27			4-	1	
		P-579-28			4-	1	
		P-579-29			2-21	1	
		P-579-30			3-	1	
		P-579-31			3-	1	
		P-579-32			2-	1	
		P-579-35			2-1	1	
					3-		
		P-579-36			3-	1	
		P-579-402B-12			4-12	1	
		P-579-402R-12			4-11	1	
		P-579-402R-5			4-15	1	
		P-579-410			4-24	1	
		P-579-60			3-23	3	
		P-579-70			3-69	1	
		P-579-73			3-67	2	
		P-579-74			3-4	1	
		P-579-75			2-26	2	
		P-579-76			2-27	2	
		P-579-77			2-12	1	
		P-579-81			3-34	1	
		P-579-82			3-40	1	
		P-579-84			3-62	2	
		P-579-86			2-33	1	

Section III
Numerical Index

CLASS CODE OR STOCK NO.		PART NUMBER	SOURCE CODE		FIG. & INDEX NO.	QTY PER ARTICLE	MICRO FILM INDEX
AF	NAVY		AF	NAVY			
		P-579-89			3-26	3	
		P-579-90			2-4	1	
		P-579-91			3-66	2	
		P-579-92			2-20	4	
		P-579-93			2-8	1	
		PRP-6227-1			3-17	8	
					3-55		
					3-65		
		PRP-6227-5			3-13	7	
					3-51		
		PRP-6227-9			3-25	3	
		RIT-1351			2-29	2	
		RIT-669			2-31	4	
		SCC-979C			3-45	6	
					3-48		
		SCREW			2-2	4	
		SCREW			2-5	4	
					2-9		
		SCREW			2-14	28	
					3-1		
		SCREW			2-17	16	
		SCREW			2-23	10	
		SCREW			3-5	8	
					3-11		
					3-19		
		SCREW			3-8	1	
		SCREW			3-14	6	
					3-27		
		SCREW			3-31	14	
					3-35		
					3-41		
		SCREW			3-53	2	
		SCREW			3-59	8	
		SCREW			3-63	4	
		SPD-27			3-50	3	
		SPDM-4, .130			3-7	1	
		SPDM-6, 1/16			3-15	2	
		SPFF-4-32			3-43	4	
		SU-4-L			2-30	1	
		SU-4-R			2-30	1	
		SWRW-100			3-37	1	
		UG-274A/U			4-29	2	
		WASHER			2-3	4	
		WASHER			2-6	4	
					2-10		
		WASHER			2-18	36	
					3-3		
		WASHER			2-24	36	
					2-28		
					2-32		
					2-36		
					2-42		
					2-44		
		WASHER			2-52	10	
					2-16		
					2-44		
		WASHER			2-12	15	
					2-46		
					2-49		
		WASHER			2-24	3	
		WASHER			2-30	1	
		WIRE			4-3	2	
					4-9		

CLASS CODE OR STOCK NO.		PART NUMBER	SOURCE CODE		FIG. & INDEX NO.	QTY PER ARTICLE	MICRO FILM INDEX
AF	NAVY		AF	NAVY			
		WIRE			4-16	1	
		WIRE			4-22	2	
					4-25		
		WIRE			4-28	1	
		044454			2-22	2	
		150PHL-6			2-16	4	
		2KNU			3-18	2	
		23274			3-3	1	
		3C0-19			3-10	1	
		412266H			4-1	1	
		412266M			4-7	1	
		412266R			4-4	1	
		412267BM			4-26	1	
		412267EK			4-8	1	
		412267L			4-5	1	
		412267T			4-2	1	
		412269B			4-14	2	
					4-20		
		412269F			4-17	1	
		412269J			4-23	2	
					4-27		
		412296F			4-10	1	
		415607A			3-20	1	
		415607B			3-21	1	
		415607C			3-22	1	
		505-S11			3-29	1	
		505-S12			3-30	2	
		722-DS12-5			3-44	1	
		722-S1			3-47	1	
		722-S8			3-56	2	
		722-606			3-52	2	
		722-710			3-61	2	
		722-77			3-58	2	
		722-822			3-60	2	
		722-824			3-57	2	
		96M-02			2-15	8	

