TM 55-4920-320-13

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, AND DS MAINTENANCE MANUAL

WITH ILLUSTRATED PARTS BREAKDOWN

TESTER, PITOT AND STATIC SYSTEMS TESTER

MODEL PST, TYPE 2

P/N 7365

FSN 4920-988-0206

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

7 December 1970

NOTE

This manual has not been prepared according to military specifications, but despite this limitation of its contents, the publication does provide the essential data needed to operate and to maintain the equipment.

This copy is a reprint which includes current pages from Changes 1 through 7.

CHANGE

No. 7

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON D. C., 18 January 1994

OPERATOR'S, ORGANIZATIONAL, AND DS MAINTENANCE MANUAL WITH ILLUSTRATED PARTS BREAKDOWN TESTER, PITOT AND STATIC SYSTEMS TESTER MODEL PST, TYPE 2 P/N 7365 NSN 4920-00-988-0206

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited

TM 55-4920-320-13, 7 December 1970, is changed as follows:

Page 1-1, para 1-1c, change as follows:

> 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 direct to Commander, U.S. Army Aviation and Troop Command, ATTN. AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you.

Page 1-1, para 1-2. change last line to. . . DA PAM 738-751, Functional Users Manual for the Army Maintenance Management System-Aviation (TAMMS-A).

Page 1-4, Table 1-1, item 6 - Change Part No. to AN6270-4D0600.

Page 1-4, Table 1-1, item 7 - Change Part No. to AN6270-4D0720.

Page 5-1, Fig. 5-1, item 8 - Change Part No. to AN6270-4D0600.

Page 5-1, Fig. 5-1, item 9 - Change Part No. to AN6270-4D0720.

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the Secretary of the Army
06304

DISTRIBUTION:

To be distributed in accordance with DA Form 12-31-E, block no. 2095, requirements for TM 55-4920-320-13.

CHANGE

No. 6

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 31 DECEMBER 1992

OPERATOR'S, ORGANIZATIONAL, AND DS MAINTENANCE MANUAL WITH ILLUSTRATED PARTS BREAKDOWN

TESTER, PITOT AND STATIC SYSTEMS TESTER
MODEL PST, TYPE 2
P/N 7365
NSN 4920-00-988-0206

TM 55-4920-320-13, 7 December 1970, is changed as follows:

Page 1-1. Change para 1-7, first sentence and add two sentences as follows: The instrument panel contains three aircraft instruments: rate of climb indicator (1, figure 1-1), altimeter (2) and airspeed indicator (4). The fuel pressure indicator (6) and manifold pressure indicator (5) gauges are no longer required in testing aircraft components. Remove those two indicators, cap off air-lines, stow electrical connectors and install cover plates over existing holes.

Page 1-2, Figure 1-1. Delete callout numbers 5 and 6 from the figure and delete nomenclature in legend for items 5 and 6.

Page 2-4, Table 2-1. Delete 2nd and 4th items manifold (pressure) and fuel pressure, from the table.

Page 3-5, Figure 3-2. Delete callout numbers 15 and 17 from the figure and delete nomenclature in legend for items 15 and 17.

Page 3-6, para 3-15. Change "five" to "three" in the first sentence.

Page 3-8, para 3-17. Change "five" to "three" in the first sentence. After the first sentence in para 3-17, delete the remaining data in the paragraph.

Page 5-6. Delete index numbers 28 and 32.

Page 5-7, Figure 5-5. Delete callout numbers 28 and 32 from the figure.

Page 6-1, Numerical Index. Delete entire line for items 5-5-28 and 5-5-32.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
03574

DISTRIBUTION:
To be distributed in accordance with DA Form 12-31-E, block no. 2095, requirements for TM 55-4920-320-13.

CHANGE
No. 5

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 26 April 1990

OPERATOR'S ORGANIZATIONAL, AND DS MAINTENANCE MANUAL WITH ILLUSTRATED PARTS BREAKDOWN TESTER, PITOT AND STATIC SYSTEM TESTER MODEL PST, TYPE 2

P/N 7365
NSN 4920-00-988-0206

TM 55-4920-320-13, 7 December 1970, is changed as follows:

Page 1-1. Change para 1-1.c. last line, ATTN: AMSAV-R-M, P.O. Box 209, St. Louis, Missouri 63166, to read ATTN: AMSAV-MMD, 4300 Goodfellow Blvd., St. Louis, Missouri 63120-1798. A reply will be furnished directly to you.

Page 1-1. Change para 1-2. last line, TM 38-750, Army Equipment Record Procedures, to read DA PAM 738-751, Functional Users Manual for the Army Maintenance Management System - Aviation (TAMMS-A).

Page 1-4. Table 1-1, Item 9, change P/N 191235 to P/N AN 737TW48.

Page 2-1. Add this CAUTION under "OPERATION"

CAUTION

Do not operate the tester unless all access panels are in place. Injury could result from the shattering of the glass reservoir or other malfunction of the tester.

Page 5-1. Fig. 5-1, Item 7, change P/N 38619 to P/N SKED0017.

Page 5-1. Fig. 5-1, Item 8, change P/N 38630 to P/N AN6270-4D0620.

Page 5-1. Fig. 5-1, Item 9, change P/N 38631 to P/N AN6270-4D0720.

Page 5-1. Fig. 5-1, Item 11, change P/N AN 815-4D to P/N MS24392D3.

Page 5-1. Fig. 5-1, Item 13, change P/N AN 919-1D to P/N MS24392D2.

Page 5-1. Fig. 5-1, Item 14, change P/N AN 815-3D to P/N MS24392D3.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

WILLIAM J. MEEHAN II
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:
To be distributed in accordance with DA Form 12-31, -10 & CL, AVUM and AVIM Maintenance requirements for All Fixed and Rotary Wing Aircraft.

CHANGE
No. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 1 June 1988

OPERATOR'S ORGANIZATIONAL, AND DS MAINTENANCE MANUAL WITH ILLUSTRATED PARTS BREAKDOWN TESTER, PITOT AND STATIC SYSTEM TESTER MODEL PST, TYPE 2

P/N 7365
NSN 4920-00-988-0206

TM 55-4920-320-13, 7 December 1970, is changed as follows:

Page 1-1, paragraph 1-1a. Line 5 is changed to read "Tester Pilot and Static System. Also included is the applicable repair parts."

Page 1-1, paragraph 1-1c. Lines 4 and 5 are changed to read "ed direct to: Commander, U.S. Army Aviation Systems Command, ATTN: AMSAV-MMD, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798."

Page 1-1, paragraph 1-2. Line 4 is changed to read "pleted in accordance with DA PAM 738-751, Functional Users for the Army Maintenance Management System-Aviation (TAMMS-A)."

Page A-3, paragraph 4b. Line 3 is changed to read "sibility of the level to which the function is assigned. The higher level of maintenance has the authority to determine:

(1) If the lower level is capable of performing the work.

(2) If the lower level will require assistance or technical supervision and on-site inspection.

(3) If the authorization will be granted."

CHANGE
No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 18 January 1984

OPERATOR'S ORGANIZATIONAL, AND DS MAINTENANCE MANUAL WITH ILLUSTRATED PARTS BREAKDOWN TESTER, PITOT AND STATIC SYSTEMS TESTER MODEL PST, TYPE 2 P/N 7365 NSN 4920-00-988-0206

TM 55-4920-320-13, 7 December 1970, is changed as follows:

Page 1-1, paragraph 1-1c. Line 4 and 5 are changed to read "ed direct to: Commander, U.S. Army Troop Support & Aviation Materiel Readiness Command, ATTN: DRSTS-MPSD, 4300 Goodfellow Boulevard, St. Louis, MO 63120."

Page 1-4, Table 1-1, item 3. Change description to read "Adapter cable, 3-phase ac, 11 inches.

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

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

DISTRIBUTION:
To be distributed in accordance with DA Form 12-31, Operator Maintenance requirements for all Fixed and Rotor Wing aircraft.

c/(d blank)

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 25 June 1981

Operator's, Organizational, and DS Maintenance Manual

WITH ILLUSTRATED PARTS BREAKDOWN
TESTER, PITOT AND STATIC SYSTEMS TESTER
MODEL PST, TYPE 2 P/N 7365 NSN 4920-00-988-0206

TM 55-4920-320-13, 7 December 1970, is changed as follows:

Title is changed as shown above.

Page 1-1, paragraph 1-1c. Lines 4 and 5 are changed to read "ed direct to: Commander, US Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MTT, 4300 Goodfellow Blvd., St. Louis, MO 63120."

Page 1-1, paragraph 1-2. Line 4 is changed to read "pleted in accordance with TM 38-750, The Army Maintenance Management System (TAMMS)."

Page 3-2, paragraph 3-6. Line 7 is changed to read "3. Clean bowl and filter with P-D-680, TYPE II."

Page 3-8, paragraph 3-16 is changed to read "3-16. CALIBRATION."

Page 3-8, paragraph 3-17 is changed to read "3-17. For calibration intervals and procedures see TB 43-180, Calibration Requirements for the Maintenance of Army Materiel."

By Order of the Secretary of the Army:

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

Official:

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

DISTRIBUTION:
To be distributed in accordance with DA Form 12-31, Operator Maintenance requirements for all Fixed and Rotor Wing aircraft.

e/(f blank)

CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *21 May 1974*

Operator's, Organizational, and DS Maintenance Manual

WITH ILLUSTRATED PARTS BREAKDOWN
TESTER, PITOT AND STATIC SYSTEMS TESTER
MODEL PST, TYPE 2 P/N 7365 FSN 4920-988-0206

TM 55-4920-320-13, 7 December 1970, is changed as follows:

Page 1-1, paragraph 1-1*c*. Lines 4 and 5 are changed to read "ed direct to: Commander, U. S. Army Aviation Systems Command, ATTN: AMSAV-FC, P. O. Box 209, St. Louis, Missouri 63166."

Page 2-2, paragraph 2-6. Caution note is superseded as follows:

CAUTION

Vacuum valves must be open when operating pressure side; pressure valves must be open when operating vacuum side.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:

VERNE L. BOWERS
Major General, United States Army
The Adjutant General

DISTRIBUTION:
To be distributed in accordance with DA Form 12-31 (qty rqr block no. 95) Direct and General Support Maintenance requirements for all Fixed and Rotor Wing aircraft.

LIST OF ILLUSTRATIONS

LIST OF TABLES

SECTION I

INTRODUCTION

1-1. Scope

a. These instructions are published for use of personnel who operate the Pitot Static Systems Tester, Model PST Type 2, end for personnel responsible for maintenance of the tester. The Instructions provide information on description, operation, maintenance, shipment, storage, and demolition of the generator set, gasoline engine. Also Included is the applicable repair parts end special tools list.

b. Appendix A contains the maintenance allocation chart. The chart assigns the maintenance functions and repair operations to be performed by the lowest appropriate maintenance level.

c. Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to: Commanding General,U. S. Army Aviation Systems Command, ATTN: AMSAV-R-M, P. O. Box 209, St. Louis, Missouri 63166.

1-2. Equipment Records

DD Form 314 (Preventive Maintenance Schedule and Record), DA Form 2409 (Equipment Maintenance LOG (Consolidated), and DA Form 2404 (Equipment Inspection an Maintenance Worksheet) apply to this equipment. These fores are completed in accordance with TM 38-750, Army Equipment Record Procedures.

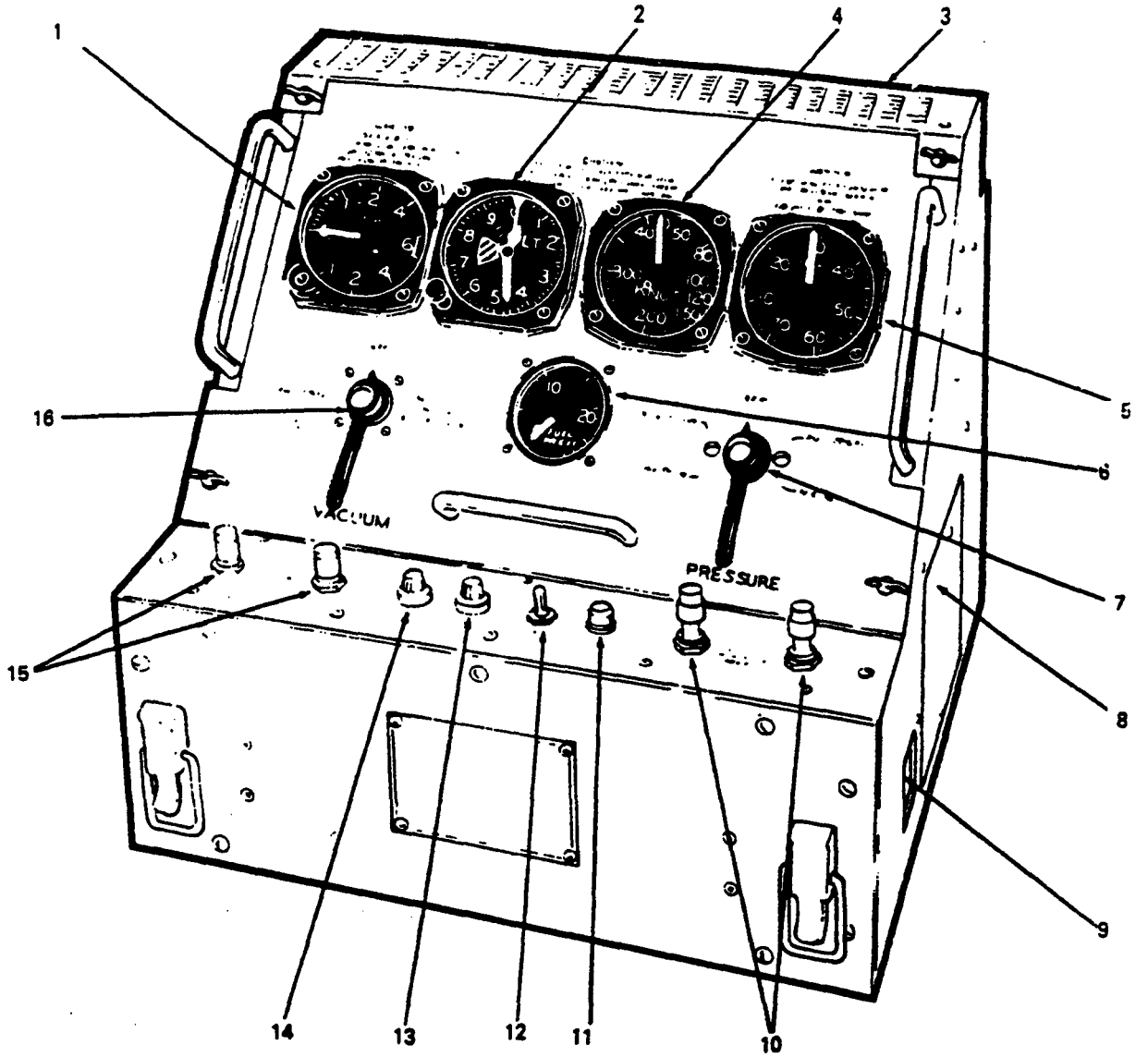
1-3. PURPOSE OF EQUIPMENT.

1-4. The test set is a portable, self-contained field instrument which is used for checking the performance characteristics of vacuum and pressure aircraft instruments, pitot and static systems, and as a primary vacuum end pressure source for operation of aircraft computer systems. The test set accurately simulates the engine vacuums and pressures and atmospheric pressures which are present during normal operation of an aircraft. A small high-speed pump in the test set produces a vacuum 29 inches of mercury and pressures in the range of 0 to 25 psig.

1-5. DESCRIPTION OF EQUIPMENT.

1-6. The test set is 17-5/8 inches long, 15-½ inches deep, and 19 inches high when contained within its removable cover for transit. The cover contains all accessories and tools necessary for proper operation of the test set. When the cover is removed, all operating controls and indicators and accessories are accessible for immediate use.

1-7. The instrument panel cotains five aircraft instruments; rate-of-climb indicator (1, figure 1-1), altimeter (2), airspeed indicator (4), manifold pressure gauge (5), and



1. RATE OF CLIMB INDICATOR
2. ALTIMETER
3. CALIBRATION CORRECTION CARD
4. AIRSPEED INDICATOR
5. MANIFOLD PRESSURE GAUGE
6. FUEL PRESSURE GAUGE
7. PRESSURE SELECTOR VALVE
8. COVER PLATE
9. WINDOW
10. PRESSURE NEEDLE VALVES
11. POWER ON INDICATOR
12 ON-OFF SWITCH
13. 4 AMP FUSE
14. SPARE FUSE
15. VACUUM NEEDLE VALVES
16. VACUUM SELECTOR VALVE

Figure 1-1. Pitot and Static Systems Tester

fuel pressure gauge (6). Two function selector valves are used to set up the equipment for its five test functions; the VACUUM selector valve (16) for vacuum tests and the PRESSURE selector valve (7) for pressure tests. The control panel contains two VACUUM needle valves (15) and two PRESSURE needle valves (10) which are used for fine or vernier control of vacuum and pressure. Also contained on the control panel are the power ON-OFF switch (12) and power on indicator (11), the 4 AMP fuseholder (13) containing the power fuse, and the SPARE fuseholder (14).

1-8. The rear panel contains four fittings; FUEL PRESS., MANF. PRESS., AIRSPEED, and RATE OF CLIMB ALTIMETER. During operation, the instrument under test is connected to the applicable fitting. The rear panel also contains the POWER connector to which a-c or d-c operating power is applied through an appropriate cable assembly,

1-9. At the top of the test set is a hinged panel (3) which contains a table which lists the most current calibration corrections for the five master instruments on the test set instrument panel. When its captive fasteners are released and the panel is raised, five small OPEN-CLOSED selector valves become accessible. These valves, designated RATE OF CLIMB, ALTIMETER, AIR SPEED, MANF. PRESS., and FUEL PRESS., control application of vacuum or pressure to the appropriate instruments on the instrument panel and for the external instruments to be tested.

1-10. For access to interior components of test set, captive fasteners on the instrument panel are released and the panel is swung upward. With the panel open, the motor-pump assembly, reservoir and electrical power supply components are easily visible. in addition, lower front panel and rear panel can be removed for access to the" motor-pump assembly, reservoir, filter sumps in the vacuum and pressure lines., and bellows

block assembly. The right side panel contains a window (9) to permit observation of fluid level in the reservoir and a removable cover plate (8) which permits access to the reservoir drain-refill valve and hose.

1-11. OPERATING POWER.

1-12. The test set contains two power cables and two cable adapers to permit operation from the following power sources:

1. 28 +4, -6 volts dc.
2. 115 volts ac ±10 percent, 50 to 500 cycles, single phase.
3. 115 volts ac ±10 percent, 50 to 500 cycles, three phase.

1-13. ACCESSORIES SUPPLIED.

1-14. Accessories supplied with the test set are listed in table 1-1 and are manufactured by 22680 or are Federal Standard parts.

TABLE 1-1. ACCESSORIES SUPPLIED

Item	Part No.	Description	Quantity
1	38613	Power cable, ac, 9 feet 3 inches	1
2	38614	Power cable, dc, 9 feet	1
3	38615	Adapter cable, single phase ac, 11 inches	1
4	38616	Adapter cable, 3-phase ac, 8 inches	1
5	38619	Flush static port adapter	1
6	38630	Hose assembly, 5 feet	1
7	38631	Hose assembly, 6 feet	2
8	38632	Pitot head adapter	1
9	191235	Hose clamp, ½ to 29/32 inch	1

TABLE 1-1. ACCESSORIES SUPPLIED (Continued)

Item	Part No.	Description	Quantity
10	581433	Fitting, AN815-4D	2
11	581434	Fitting, AN919-2D	2
12	581435	FittimG AN919-1D	1
13	581436	Fitting. AN815-3D	1

SECTION II

OPERATION

2-1. GENERAL.

2-2. This chapter contains procedures for utilizing the test set to test aircraft instuments which operate within the equivalent pressure and vacuum ranges which are simulated by the test set. A safety relief protection system is incorporated in the test set to protect both the instruments of the test set and the instrument under test. If excessive pressure or vacuum is applied to the instruments, the overload protection system automatically operates solenoid valves which close the pressure and vacuum lines to prevent damage to the instruments.

2-3. PREPARATION FOR USE.

2-4. To prepare the test set for use. proceed as follows:

1. Set test set on level bench or platform within 9 feet of a source of d-c or a-c power.

2. Look through window (9, figure 1-1) on right side panel of test set and observe oil level in reservoir. Oil level must be within points indicated for test set to operate properly. If oil level is low, fill reservoir in accordance with procedure given in paragraph 3-3.

CAUTION

Do not force-tighten needle valves.

3. Set power ON-OFF switch (12, figure 1-1) to OFF, close four VACUUM and PRESSURE needle valves (10 and 15), and set VACUUM and PRESSURE selector valves (7 and 16) to OFF.

CAUTION

Power source voltage must be within the limits specified in in paragraph 1-12.

4. If a-c power is used, connect a-c power cable (item 1, table 1-1) to POWER connector on rear panel. Connect either single-phase adapter cable (item 3) or 3-phase adapter cable (item 4) to free end of a-c power cable, then connect free end of adapter cable to appropriate a-c power source.

5. If d-c power is used, connect d-c power cable (item 2) to POWER connector on rear panel and, observing polarity, connect clips of d-c power cable to d-c power source.

2-5. OPERATING PROCEDURE.

2-6. To operate the test set, proceed as follows:

1. Raise hinged panel at top of test set and set all selector valves on recessed valve panel to CLOSED.

2. Determine which aircraft instrument is to be tested, then perform either step a or a below.

CAUTION

Vacuum valves must be open when operating pressure side: pressure valves must be closed when operating vacuum side.

a. If pressure is to be used, open VACUUM UP and DOWN needle valves (15, figure 1-1).

b. If vacuum is to be used, open PRESSURE UP and DOWN needle valves (10).

3. Set VACUUM or PRESSURE selector valve (7 or 16), as applicable, to setting corresponding to that of instrument to be tested. Make sure that UP and DOWN needle valves associated with the chosen selector valve are closed.

4. Using appropiate accessories (see table 1-1),. connect instrument to be tested to FUEL PRESS., MANF. PRESS., AIRSPEED, or RATE OF CLIMB ALTIMETER fitting on rear panel, as applicable. The RATE OF CLIMB ALTIMETER fitting is used for testing both rate-of-climb indicator or altimeter.

5. On recessed valve panel beneath calibration chart (3) at top of test set, set selector valve which corresponds to the instrument connected in step 4 to OPEN.

6. Set power ON-OFF switch (12) to ON; power on indicator (11) will light and pump will start.

CAUTION

When testing rate-of-climb indicators, do not exceed 5000 feet-per-minute rate-of-climb ascending or decending.

7. Open UP needle valve associated with selector valve choosen in step 3. Use very slight turn to prevent too rapid deflection of instrument. Continue opening UP needle valve to obtain maximum deflection of both instrument ontest set panel and instrument under test.

8. To return to zero deflection, close UP needle valve and slowly open DOWN needle valve. Continuing opening DOWN needle valve until zero deflection is obtained.

9. To obtain true indications, operate UP and DOWN needle valves until indication of applicable instrument on test set instrument panel corresponds to the corrected reading shown on correction card at top of test set. Refer to table 2-1 for test data pertaining to aircraft instruments which can be checked using the test set.

10. At conclusion of test, open applicable DOWN needle valve until all instruments indicate 0.

2-7. SHUTDOWN PROCEDURE.

2-8. To disconnect instrument under test and shut down test set, proceed as follows:

WARNING

Do not turn selector valves or disconnect hoses from test set unless all instruments indicate zero.

TABLE 2-1. INSTRUMENT TEST CHART

Instrument	Overpressure		System Leak		Operational Rate
	Check Point	Safety Release Point	Check Point	Max. Allowable Leak Rate	
Manifold (vacuum)	10 in. mercury	+0, -1 in. mercury	11 in. mercury	1/4 in. mercury per minute	10 in. every 15 seconds, maximum; 10 inches every 20 seconds, minimum (30-20 range)
Manifold (pressure)	75 in. mercury	+0, -1 in. mercury	65 in. mercury	1 in. mercury per minute	30 in. every 15 seconds, maximum; 30 in. every 20 seconds, minimum; 2 inches per 1 second (30-60 range)
Airspeed	400 knots	+20, -0 knots	200 knots	6 knots per minute	35 seconds, maximum; 25 seconds, minimum (for full scale indication)
Fuel pressure	25 psig	+1, -1 psig	20 psig	1 psig per minute	1 psig per 1 second, maximum; 1 psig per 1 second, minimum
Altitude	50,000 ft.	+5000, -0 ft.	40,000 ft.	25 ft. per minute	Rate-of-climb (ascending or descending) not to exceed 5000 ft. per minute
Negative altitude	None	None	-1000 ft.	50 ft. per minute	Rate-of-climb (ascending or descending) not to exceed 5000 ft. per minute

1. Check that all instruments indicate zero, if not, open DOWN needle valve until zero indication is obtained.

2. Set power ON-OFF (12, figure 1-1) switch to OFF.

3. Raise hinged, panel (3) at top of test set and set all selector valves on recessed valve panel to CLOSED.

4. Disconnect instrument under test from fitting on rear panel of test set.

5. Set VACUUM and PRESSURE selector valves (7 and 16) to OFF and close four VACUUM and PRESSURE needle valves (10 and 15).

6. Disconnect test set from power source.

SECTION III

MAINTENANCE AND OVERHAUL

3-1. GENERAL.

3-2. This section contains information and procedures which must be followed to insure that the test set remains in good Operating condition. Maintenance consists of filling the oil reservoir where necessary, emptying the fuel filter sumps, adjusting the safety relief system, and periodic calibration of gauges in accordance with applicable military specifications. Overhaul consists of troubleshooting the test set, correcting detected faults, sad replacing parts and components when necessary.

3-3. FILLING OIL RESERVOIR.

3-4. Whenever the oil level of the reservoir falls below the minimum level indicated on the reservoir, oil conforming to specification MIL-H-5606 must be added until the oil level is again at proper level. To fill the reservoir, proceed as follows:

1. Prepare test set for use in accordance with procedure given in paragraph 2-3.

2. Remove cover plate on right side panel of test set to gain access to reservoir and filler port.

3. Unscrew cap nut from filler valve port and set FILL-RUN-DRAIN valve handle to FILL.

4. Attach filler hose to port from which cap nut was removed, and tighten securely. Place other end of filler hose in container of oil conforming to specification MIL-H-5606.

5. Set power ON-OFF switch (12, figure 1-1) to ON. Observe reservoir through window on right side panel; when oil level is within points indicated, set ON-OFF switch to OFF.

6. Disconnect filler hose from port, securely replace cap nut on filler valve port, and set FILL-RUN-DRAIN valve handle to RUN.

7. Replace cover plate on right side of test set.

3-5. EMPTYING SUMPS.

3-6. The two test set fuel filters are equipped with sumps which permit only air to enter the vacuum and pressure lines to the instruments. If the oil occupies more than 50 percent of the total glass area of the sumps, the sumps must be emptied. To empty the sumps, proceed es follows:

1. Open test set panels to gain access to interior.
2. Loosen bottom screw of sump bracket, remove sump, and empty oil from sump.
3. Clean bowl and filter with Varsol in accordancewith Federal Specification TT-T-291.
4. Replace Sump and secure bottom screw tightly to prevent leakage through sump gasket.
5. Operate test set for maximum vacuum using altimeter and for maximum pressure using fuel pressure gauge. Refer to paragraph 2-5 for operating procedures.
6. If maximum vacuum or pressure is not obtained in step 4, leakage probably exists at sump gasket. Tighten bottom screw of sump to produce a complete seal.
7. Turn off test set. Replace panels which were removed in step 1.

3-7. ADJUSTMENT OF SAFETY RELIEF SYSTEM.

3-8. All instruments are protected by a safety relief system which operates if excessive pressure or vacuum is applied to any instrument. Five bellows assemblies are used, two for vacuum and three for pressure. (See figure 3-1.) If excessive pressure or vacuum occurs, the applicable bellows actuate an associated microswitch which in turn applies operating power to two solenoid valves. One valve is located in the pump pressure line and one is located in the vacuum line. When the valve operates, the pressure and return lines

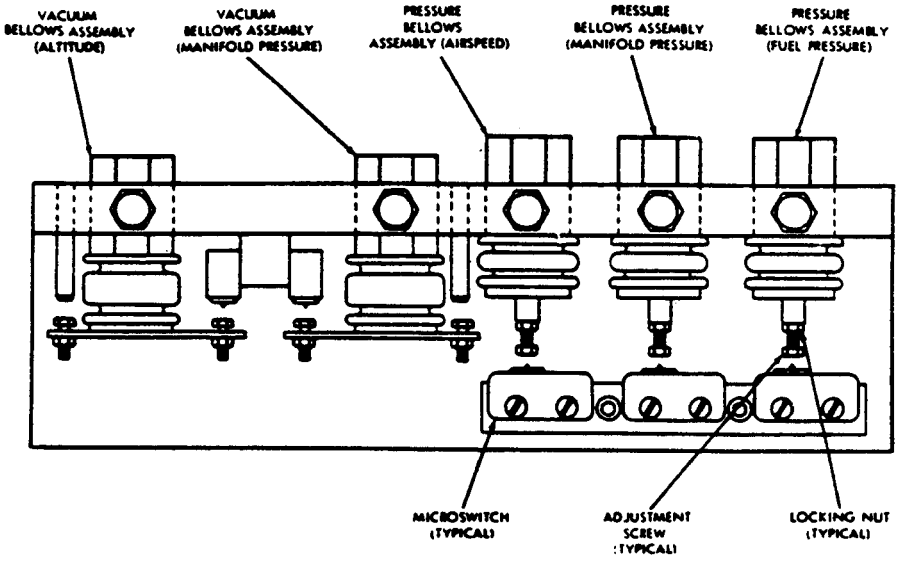


Figure 3-1. Bellows Block Assembly, Top View

close to isolate the instruments from the pump. This safety relief system has been properly set at the factory. In the event minor adjustment of the safety relief system is required, proceed as follows:

1. Prepare test set for use in accordance with procedure given in paragraph 2-3.

2. Release 10 captive fasteners and remove bottom front panel of test-set to gain access to bellows block assembly.

3. Place appropriate instrument under vacuum or pressure, depending upon which bellows is to be adjusted. Refer to paragraph 2-5 for operating procedure. Adjust test set until instrument shows maximum indication.

4. Refer to figure 3-1 to identify bellows to be adjusted; markings on front of bellows block assembly identify each bellows assembly and the instrument system which it protects. Refer to table 2-1 for safety relief point settings.

5. Loosen locking nut (figure 3-1) and turn adjustment screw until associated micro-switch is actuated and solenoid valves. are heard to operate at required safety relief point. Turn vacuum bellows adjustment screw clockwise to decrease and counterclockwise to increase the vacuum at which microswitch is actuated. Turn pressure bellows adjustment screw counterclockwise to decrease and clockwise to increase the pressure at which micro-switch is actuated.

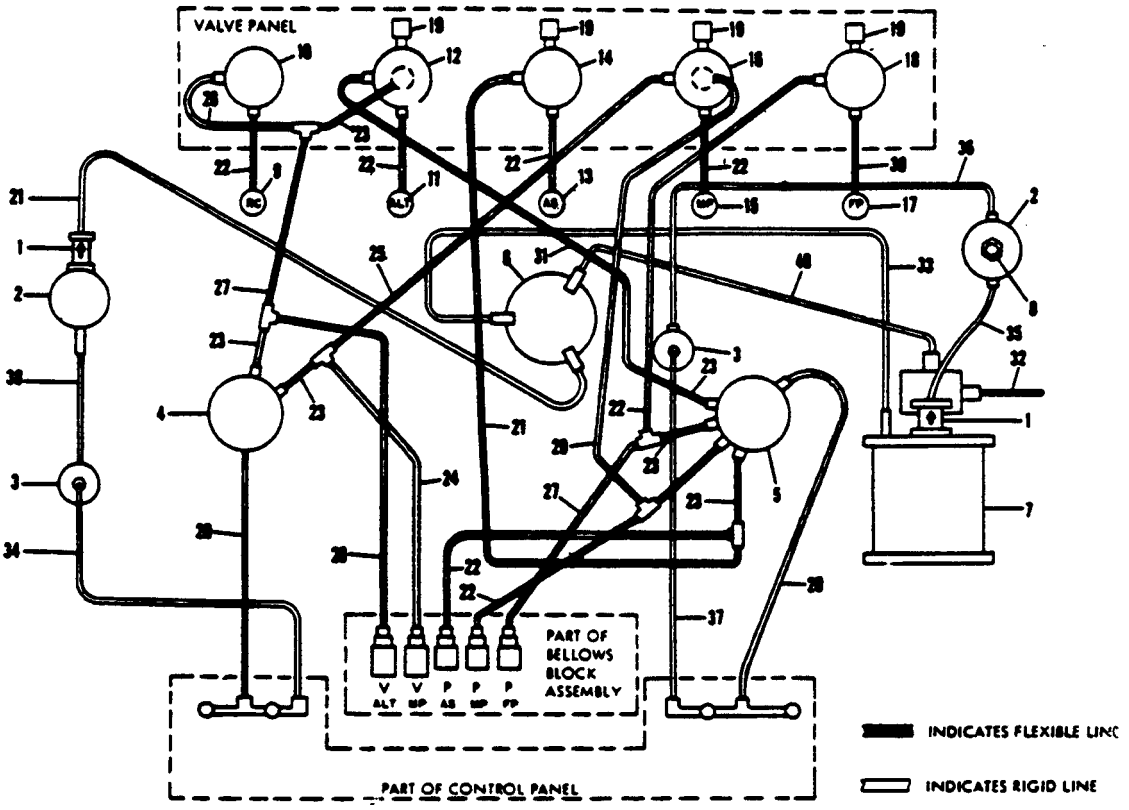
6. Tighten locking nut on adjustment screw or screws which was reset, being careful not to disturb setting of adjustment screw.

7. Turn off test set in accordance with procedure given in paragraph 3-7.

8. Replace bottom front panel of test set and secure 10 captive fasteners.

3-9. TROUBLESHOOTING.

3-10. If there is insufficient vacuum or pressure for maximum indications on the test set instruments, it is necessary to determine whether the pump is at fault or a leak exists in the



1. Check valve (2 required)
2. Fuel filter
3. Solenoid valve (2 required)
4. Vacuum selector valve
5. Pressure selector valve
6. Pump
7. Reservoir
8. Overpressure valve
9. Rate-of-climb indicator
10. Rate-of-climb valve
11. Altimeter
12. Altimeter valve
13. Airspeed indicator
14. Airspeed indicator valve
15. Manifold-pressure gauge
16. Manifold pressure valve
17. Fuel pressure gauge
18. Fuel pressure gauge valve
19. Connector fitting (4 required)
20. Hose assembly 38719-1 (2 required)
21. Hose assembly 38719-2
22. Hose assembly 38719-3 (7 required)
23. Hose assembly 38719-4 (6 required)
24. Hose assembly 38719-5
25. Hose assembly 38719-6
26. Hose assembly 38719-7
27. Hose assembly 38719-8 (2 required)
28. Hose assembly 38719-9
29. Hose assembly 38719-10
30. Hose assembly 38719-11
31. Hose assembly 38719-12
32. Hose assembly 38719-13
33. Tubing 69911-1
34. Tubing 69911-2
35. Tubing 69911-3
36. Tubing 69911-4
37. Tubing 69911-5
38. Tubing 69911-6
39. Tubing 69911-7
40. Tubing 69911-8

Figure 3-2. Test Set Vacuum and Pressure Lines, Schematic Diagram

lines. To check the pump, disconnect the pump lines from the vacuum and pressure fuel filter sumps and connect these lines to the altimeter and fuel pressure instruments respectively. Refer to figure 3-2 for the vacuum and pressure lines schematic diagram. Turn on the motor and check that 29 inches of vacuum is produced on the vacuum side of the pump and that a minimum of 25 pounds of pressure is produced on the pressure side. If the pump produces insufficient vacuum or pressure, the pump is defective and should be replaced. If the pump is capable of proper operation then a leak exists elsewhere in the test set. All fittings, gaskets, lines, and components should be checked for leaks and defective components replaced. If replacing a check valve, be sure to orient replacement valve with arrow pointing in same direction as arrow on original valve.

3-11. Faults in the electrical system can be found by performing a point-to-point wiring check. Refer to figure 3-3 for the schematic and wiring diagram of the test set.

3-12. PARTS REPLACEMENT.

3-13. Mechanical and electrical components of the test set are replaced using standard shop techniques. Figure 3-2 identifies the components, flexible hoses and rigid tubing used in the test set. When replacing check valves, it is essential that the replacement valve be oriented with its arrow pointing in the same direction as the arrow on the original valve. When replacing diode rectifiers, it is also essential that the replacement diode be installed with the same orientation as the diode which it replaces. Failure to observe these check valve and diode replacement instructions will result in an inoperative test set.

3-14. INSTRUMENT REPLACEMENT.

3-15. The five indicating instruments of the test set are AN or MIL standard parts which can be obtained through normal supply channels. They are readily replaced by disconnecting the rear fitting hose, removing the instrument from the test set panel, installing the new instrument, and reconnecting the hose fitting. Care should be exercised in reconnecting

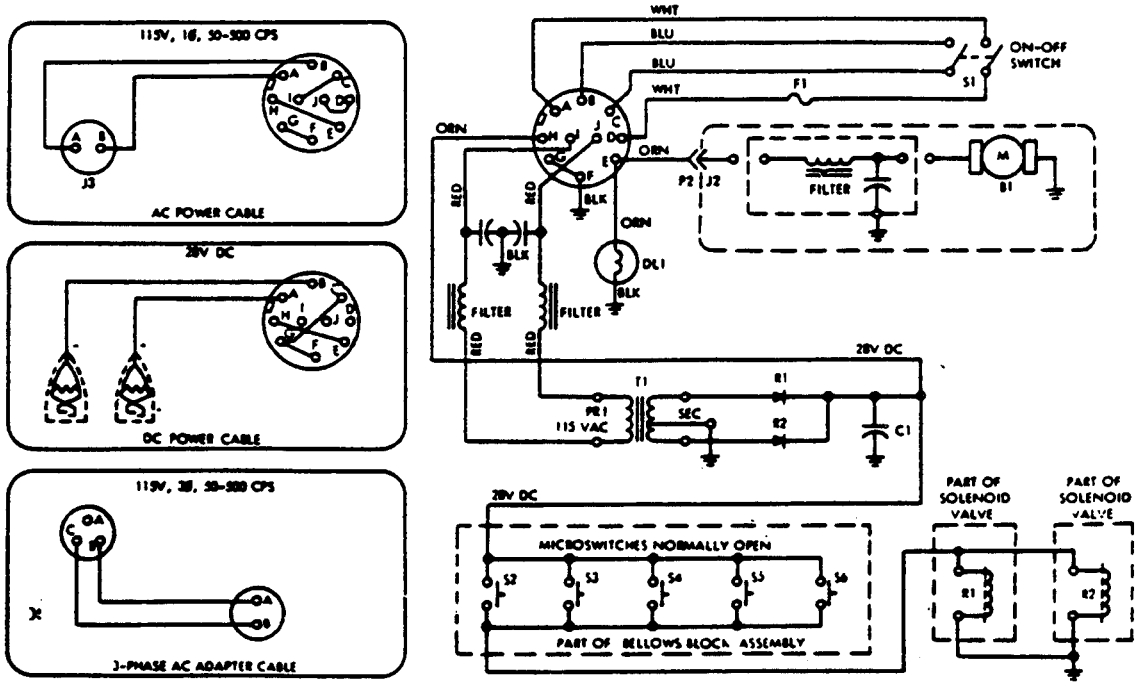


Figure 3-3. Test Set Electrical Schematic and Wiring Diagram

the fitting hose so that no leakage exists. When a new instrument is installed, the calibration correction card at the top of the test set should be annotated with the data pertaining to the new instrument.

3-16. CALIBRATION PROCEDURE.

3-17. The five instruments of the test set can be calibrated in accordance with standard overhaul procedures for these instruments. To calibrate, remove the instruments from the test set and send them to a qualified instrument shop. Calibration points for these instruments may be fared in the specifications for each one as follows:

Instrument	Specification
Rate of Climb, MS28049-1	MIL-I-7721
Altimeter, Pressure, AAU8/A	MIL-A-27229
Airspeed Indicator, MS28046-1	MIL-I-5417
Manifold Pressure, MS28077T5	MIL-G-5678
Fuel Pressure, MS28061-1	MIL-G-7734

SECTION IV

INTRODUCTION TO ILLUSTRATED PARTS BREAKDOWN

4-1. GENERAL

4-2. This Illustrated Parts Breakdown lists and describes the parts for the Pitot and Static Systems Tester Assembly part number 7365 manufactured by United Maufacturing Division, North Haven, Connecticut, and is divided into three sections consisting of an "INTRODUCTION" (Section IV), a "GROUP ASSEMBLY PARTS LIST" (Section V), and a "NUMERICAL INDEX" (Section VI).

4-3. This Illustrated Parts Breakdown is prepared for the identification and ordering of parts.

4-4. The Group Assembly Parts List (Section V) consists of the complete Tester Assembly divided into six groups, consisting of major assemblies and subassemblies. Each assembly listed is followed immediately by its component parts properly indented thereunder, to show their relationship to the assembly.

4-5. Parts are listed in the "Part No." column by their manufacturer's or government part numbers.

4-6. The quantities listed in the "Units per Assy" column of the Group Assembly Parts List are, in the case of assemblies, the total quantity used per assembly at the location indicated, while the component parts indented under the assemblies are the quantity used per assembly. The quantities specified, therefore, are not necessarily the total used per Tester Assembly. Refer to the Numerical Index (Section VI) for the total quantities used per Tester.

4-7. TERMS, ABBREVIATIONS AND SYMBOLS.

4-8. Attaching parts are listed immediately following the part(s) they attach and have the same indention. They are preceded by the words "ATTACHING PARTS)" and are separated from the followilig parts by the symbol "---*---"

4-9. When a part or assembly is listed for reference purposes only and/or is called out elsewhere in the Group Assembly Parts List, the abbreviation "Ref" appears in the "Units per Assy" column.

4-10. The following list contains the abbreviations used in the GAPL. Corresponding words and word phrases are listed in the right-hand column.

ABBREVIATION	WORD OR WORD PHRASE
Ac	Alternating current
Al	Aluminum
Amp	Ampere
Ar	As required
Assy	Assembly
Brs	Brass
Dc	Direct current
Dia	Diameter
Fig.	Figure
Ft	Foot
GAPL	Group assembly parts list
Hd	Head
Hex	Hexagon
In.	Inch
Lg	Long
Mtg	Mounting
No.	Number
NHA	Next higher assembly
Npt	National taper pipe (thread)
P/N	Part number
Qty	Quantity
Ref	Reference
Rh	Round head, Right hand
SPDT	Single pole double throw
Sst	Stainless steel
Std	Standard
Stl	Steel
Thd	Thread
Thk	Thick
UF	Microfarad
Vac	Alternating current volts
Vdc	Direct current volts

4-11. The Numerical Index (Section VI) contains all part numbers that appear in the Group Assembly Parts List and is compiled in accordance with the numerical part number filing system described below.

4-12. Part number arrangement starts in the left-hand (first) position and continues from left to right, one position at a time, until the part number numerical arrangement is determined. The order of precedence in beginning the part number arrangement in the extreme left-hand (first position) of the part number is as follows:

(a) Letters A through Z
(b) Numerals 0 through 9

NOTE

Alphabetical O's are considered numerical zeros.

The order of precedence in continuing the part number arrangement in the second and succeeding positions of the part number from left to right is as follows:

(a) Space (blank position)
(b) Diagonal (slant)
(c) Point (period)

(d) Dash (-)
(e) Letters A through Z
(f) Numerals 0 through 9

NOTE

Alphabetical O's are considered as numeric zeros.

4-13. The "Fig. & Index No." column of the Numerical Index contains the figure and index numbers of each part and serves to key part numbers to their locations in the Group Assembly Parts List.

4-14. The "Qty per Art." column or the Numerical Index reflects the total quantity of each part number required per Tester Assembly.

4-15. VENDOR'S CODES

4-16. The following list contains the names and addresses of all contractors supplying items or articles to United Manufacturing. The left-hand column contains such contractor's code symbols. The code symbols used have been assigned in accordance with the Federal Supply Code for Manufacturers Cataloging Handbook H4-1 and H4-2.

VENDOR CODES

Federal Mfr's Code No.	Manufacturer
00758	Nielsen Products Co. Elmo, Minn.
08779	Signal Transformer Co., Inc. Brooklyn, N.Y.
08806	General Electric Co., Miniature Lamp Dept. Nela Park, Cleveland, Ohio
15605	Cutler Hammer Inc. Milwaukee, Wis.
18034	Nuclear Products Co. Cleveland, Ohio

VENDOR CODES (Cont)

Federal Mfr's Code No.	Manufacturer
45681	Parker- Hannifin Corp. Cleveland, Ohio
55130	Skinner Precision Industries, Inc. New Britain, Conn.
61349	US Gauge Division of Ametek, Inc. Sellersville, Pa.
61959	United Shoe Machinery Corp. Boston, Mass.
71218	Bud Radio Inc. Willoughby, Ohio
72619	Dialight Corp. Brooklyn, N.Y.
75255	Kem Mfg. Co., Inc. Fairlawn, N.J.
75915	Littelfuse Inc. Des Plaines, Ill.
80207	Unimax Switch Div of Maxson Electronics Corp. Wallingford, Conn.
86768	Republic Mfg. Co. Cleveland, Ohio
89307	Teledyne Inc., Sprague Engineering Division Gardena, Calif.
90201	Mallory Capacitor Co. Indianapolis, Ind.
94222	South Chester Corp. Chester, Pa.
98810	Aerosonic, Corp. ClearWater, Fla.

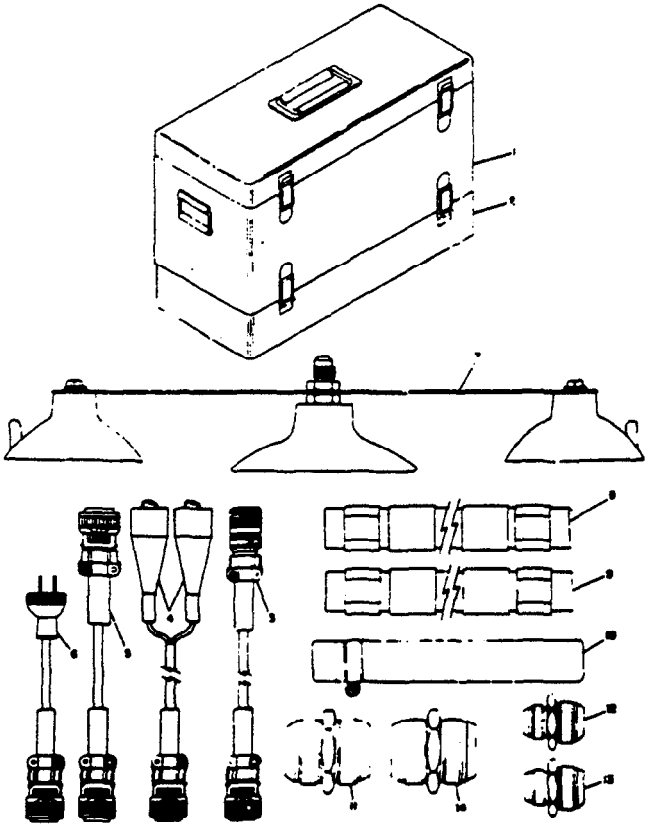


Figure 5-1. Pitot and Static Systems Tester.

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
5-1	7365	TESTER, Pitot and static systems	1
-1	38626	. COVER ASSY. Tester (See fig. 5-2 for breakdown)	1
-2	38625	. TESTER, PITOT AND STATIC ASSY (See fig. 5-3 for breakdown)	1
-3	38613	. ADAPTER, AC Power assy	1
-4	38614	. ADAPTER, DC Power assy	1
-5	38615	. ADAPTER, 3 Phase power	1
-6	38616	. ADAPTER, AC Power cable	1
-7	38619	. ADAPTER, Static port, flush	1
-8	38630	. HOSE ASSY	1
-9	38631	. HOSE ASSY	2
-10	38632	. CONNECTOR, Pitot	1
-11	AN815-4D	. FITTING, Union (UMC P/N 581433)	2
-12	AN919-2D	. FITTING, Union (UMC P/N 581434)	2
-13	AN919-1D	. FITTING, Union (UMC P/N 581435)	1
-14	AN815-3D	. FITTING, Union (UMC P/N 581436)	1

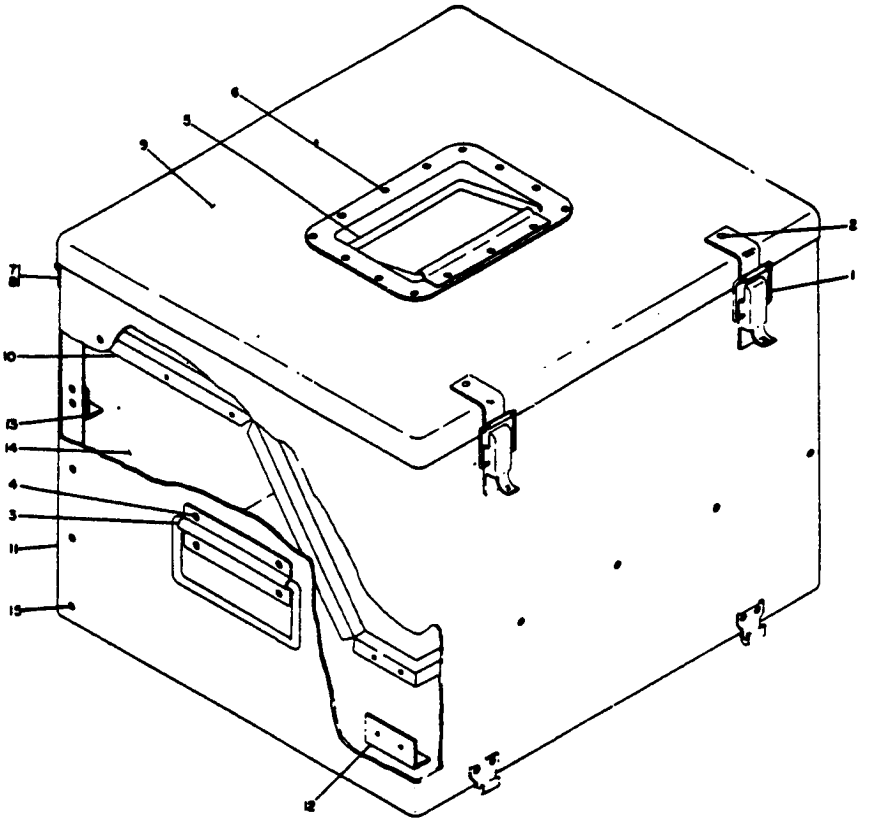


Figure 5-2. Tester Cover Assembly

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
5-2-	38626	COVER ASSY, Tester (see fig. 5-1 for NHA)	REF
-1	191257	. CATCH, Pull down	2
		(ATTACHING PARTS)	
-2	AD(64)ABS	RIVET, Pop, 3/16 in. dia, al (61957) (UMC P/N 10287)	4
		---*---	
-3	H595LS2RG	HANDLE, Rubbergrip (98003) (UMC P/N 51553)	2
		(ATTACHING PARTS)	
-4	AD(64)ABS	. RIVET, Pop, 3/16 in. dia, al (61957) (UMC P/N 10287)	8
		---*---	
-5	H561LS2RG	. HANDLE, Carrying (98003) (UMC P/N 51554)	1
		(ATTACHING PARTS)	
-6	AD(43)ABS	. RIVET, Pop, 1/8 in. dia, al (61957) (UMC P/N 10286)	14
		---*---	
-7	69588	. HINGE, Continuous	1
		(ATTACHING PARTS)	
-8	AD(43)ABS	. RIVET, Pop, 1/8 in. dia, al (61957) (UMC P/N 10286)	10
		---*---	
-9	69587	. COVER	1
-10	69584	. PLATE, Separator	1
-11	69590	. CONTAINER, Front and sides	1
-12	69586	. STOP, Front	2
-13	69585	. STOP, Rear	2
-14	69589	. CONTAINER, Rear panel	1
		(ATTACHING PARTS)	
-15	AD(43)ABS	RIVET, POP, 1/8 in. dia, al (61957) UMC P/N 10286)	38
		---*---	

FIG. & INDEX NO.	PART NO.	1 2 3 4 5 6 7 DESCRIPTION	UNITS PER ASSY
5-3-	38625	TESTER, Pitot and static assy (See fig. 5-1 for NHA)	REF
-1	HC205CE	CATCH, Pull down (98003) (UMC P/N 191256)	4
		(ATTACHING PARTS)	
-2	AD(43)ABS	RIVET, Pop, 1/8 in. dia, al (61957) (UMC P/N 20272)	8
		---*---	
-3	282012	NAMEPLATE, Unit identification	1
		(ATTACHING PARTS)	
-4	AD42S	RIVET, Pop, 1/8 in. dia x 0.063-0.125 grip range, closed end (61959) (UMC P/N 20272)	4
		---*---	
-5	69576	COVER, Front	1
-6	2-0-180	. FASTENER, 1/4 turn, oval hd (94222) (UMC P/N 581432)	10
-7	82-32-101-10R17	WASHER, Retaining (94222) (UMC P/N 30607)	10
-8	82-47-104-15	RECEPTACLE, Clip-on no. 2 (94222) (UMC P/N 152220)	10
-9	38624	PANEL ASSY, Control (See fig. 5-4 for breakdown)	1
		(ATTACHING PARTS)	
-10	20378	SCREW, Machine, rh, no. 10-32 x 3/8 in. lg, stl	8
		---*---	
-11	191236	. COVER	1
		(ATTACHING PARTS)	
-12	20362	SCREW, Machine, rh, no. 4-40 x 3/16 in. lg, stl	8
-13	Not Used		
		---*---	
-14	69572	COVER, Top	1
		(ATTACHING PARTS)	
-15	20378	SCREW, Machine, rh, no. 10-32 x 3/8 in. lg, stl	4
-16	10220	WASHER, Lock, no. 10, stl	4
-17	10085	NUT, Hex, no. 10-32, stl	4
		---*---	
-18	2W240	FASTENER, 1/4 turn, wing hd (94222) (UMC P/N 581431)	2
-19	82-32-101-10R17	WASHER, Retaining (94222) (UMC P/N 30607)	2
-20	82-47-104-15	RECEPTACLE, Clip-on, no. 2 (94222) (UMC P/N 152220)	2
-21	69578	. HINGE, Panel	1
		(ATTACHING PARTS)	
-22	AD42S	RIVET, Pop, 1/8 in. dia x 0.063-0.125 grip range, closed end (61959) (UMC P/N 20272)	16
		---*---	
-23	AN929A4D	CAP ASSY (UMC P/N 591403)	4
-24	4GTX-D	CONNECTOR, Fitting, 1/4 in (male), 1/8 npt (female) (45681) (UMC P/N 591402)	4
-25	AN911-1D	NIPPLE (UMC P/N 591401)	4
-26	MS3102A18-1P	CONNECTOR, Receptacle, electrical (UMC P/N 91295)	1
		(ATTACHING PARTS)	
-27	20362	. SCREW, Machine, rh, no. 4-40 x 3/8 in. lg, stl	4
-28	10213	WASHER, Lock, no. 4, stl	4
-29	10030	NUT, Hex, no. 4-40, stl	4
		---*---	
-30	69582	BRACKET, Valve	
-31	38620	PANEL ASSY, Instrument (See fig. 5-5 for breakdown)	1
-32	38621	PLATE ASSY, Bottom (See fig. 5-6 for breakdown)	1
-33	69577	COVER, Back	1
-34	2-0-180	FASTENER, 1/4 turn, oval hd (94222) (UMC P/N 581432)	12
-35	82-32-101-10R17	WASHER, Retaining (94222) (UMC P/N 30607)	12
-36	82-47-104-15	. RECEPTACLE, Clip-on no. 2 (94222) (UMC P/N 152220)	12
-37	H9161	HANDLE (71218) (UMC P/N 51555)	2
		(ATTACHING PARTS)	
-38	10079	. NUT, Hex, no. 1/4-28, stl, semi-finish	4
		---*---	
-39	69581	PLATE, Cover	1
-40	2-0-180	. FASTENER, 1/4 turn, oval hd, (94222) (UMC P/N 581432)	2
-41	82-32-101-10R17	WASHER, Retaining (94222) (UMC P/N 30607)	2
	B2-47-104-15	. RECEPTACLE, Clip-on no. 2 (94222) (UMC P/N 152220)	2
-42	32878	WINDOW, Right side	1
-43	69569	. FRAME, Cabinet	1

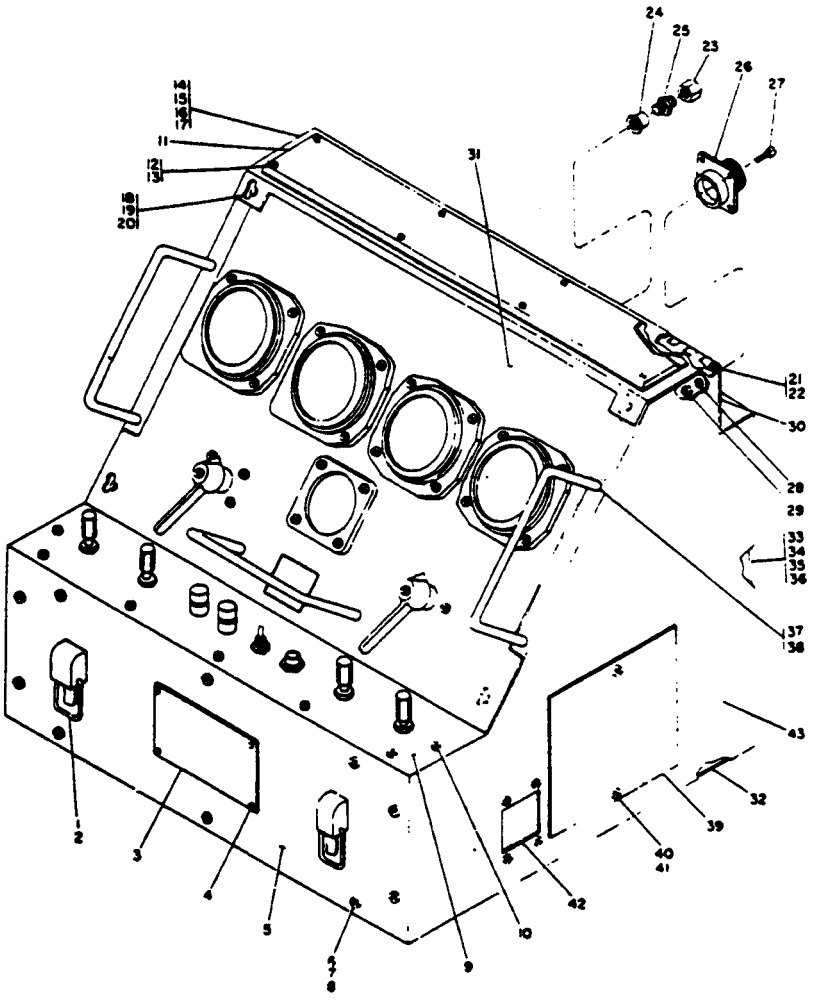


Figure 5-3. Pilot and Static Assembly Tester

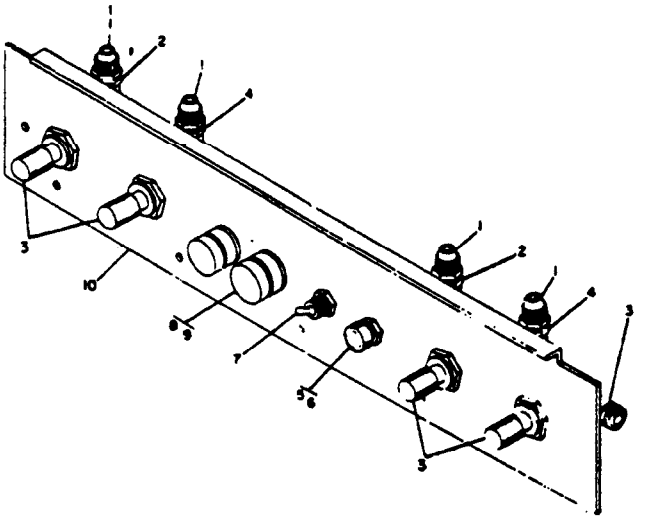


Figure 5-4. Control Panel Assembly

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
5-4-	38624	PANEL ASSY, Control (See fig. 5-3 for NHA)	REF
-1	AN816-3D	. NIPPLE, Flared tube (UMC P/N 581422)	4
-2	AN916-1D	. ELBOW, Internal pipe thread (UMC P/N 581415)	2
-3	B2M2	. VALVE, Metering (18034) (UMC P/N 102796)	4
-4	AN917-1D	. TEE, Internal pipe thd (UMC P/N 581414)	2
-5	327	. LAMP, Incandescent (08806) (UMC P/N 51816)	1
-6	111-3830-112	. INDICATOR, Light (72619) (UMC P/N 31631)	1
-7	8823K6	. SWITCH, Toggle (15605) (UMC P/N 12558)	1
-8	313004	. FUSE, Cartridge, 4 amp, 125 vac (75915) (UMC P/N 571468L)	2
-9	342001	. FUSEHOLDER (75915) (UMC P/N 191400)	2
-10	69583	. PANEL, Control	1

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
5-5-	38620	PANEL ASSY, Instrument (See fig. 5-3 for NHA)	REF
-1	2W180	. FASTENER, 1/4 turn, wing hd (94222) (UMC P/N 581430)	2
-2	82-32 -101 -10R17	. WASHER, Retaining (94222) (UMC P/N 30607)	2
-3	38719-1	HOSE ASSY	2
-4	38719-2	. HOSE ASSY	1
-5	38719-3	. HOSE ASSY	7
-6	38719-4	. HOSE ASSY	6
-7	38719-5	. HOSE ASSY	1
-8	38719-6	. HOSE ASSY	1
-9	38719-7	. HOSE ASSY	1
-10	38719-8	. HOSE ASSY	2
-11	38719-9	. HOSE ASSY	1
-12	38719-10	. HOSE ASSY	1
-13	38719-11	. HOSE ASSY	1
-14	38719-12	. HOSE ASSY	1
-15	38719-13	. HOSE ASSY	1
-16	AN814-4D	. PLUG (UMC P/N 591400)	2
-17	AN919-0D	. REDUCER (UMC P/N 581447)	2
-18	AN822-3D	. ELBOW, 90 Degree (UMC P/N 581419)	16
-19	AN932-2D	. PLUG, Pipe (UMC P/N 581449)	3
-20	AN816-3D	. NIPPLE (UMC P/N 581422)	4
-21	AN919-2D	. REDUCER (UMC P/N 581434)	4
-22	AN6227-6	. O RING (UMC P/N 152225)	4
-23	AN6227-5	. O RING (UMC P/N 152224)	3
-24	AN824-3D	. TEE, Connector (UMC P/N 581437)	6
-25	MS28049-1	. INDICATOR, Rate of climb (UMC P/N 31632)	1
-26	AAU8/A	. INDICATOR, Altimeter (98810) (UMC P/N 31633)	1
-27	MS28046-1	. INDICATOR, Knots (98810) (UMC P/N 31630)	1
-28	MS28077T5	. GAUGE, Manifold pressure (61349) (UMC P/N 61601)	1
-29	S576-11	. VALVE, 5 way selector (89307) (UMC P/N 112715)	1
		(ATTACHING PARTS)	
-30	10352	. SCREW, Machine, rh, no. 6-32 x 3/8 in. lg, stl	4
-31	10202	. WASHER, Lock, no. 6, stl	4
		---*---	
-32	MS28061-1	. GAUGE, Fuel pressure (61349) (UMC P/N 61602)	1
-33	112716	. VALVE, 7 way selector	1
		(ATTACHING PARTS)	
-34	10350	. SCREW, Machine, rh, no. 10-32 x 5/16 in. lg, stl	2
-35	10220	. WASHER, Lock, no. 10, stl	2
		---*---	
-36	51534	. HANDLE	1
		(ATTACHING PARTS)	
-37	10350	. SCREW, Machine, rh, no. 10-32 x 5/16 in. lg, stl	2
-38	10220	. WASHER, Lock, no. 10, stl	2
		---*---	
-39	107740	. VALVE, 3 way flanged	3
		(ATTACHING PARTS)	
-40	10352	. SCREW, Machine, rh, no. 6-32 x 3/8 in. lg, stl	12
-41	10202	. WASHER, LOCK, no. 10, stl	12
		---*---	
-42	102792	. VALVE, 2 way flanged	2
		(ATTACHING PARTS)	
-43	10352	. SCREW, Machine, rh, no. 6-32 x 3/8 in. lg	8
-44	10202	. WASHER, Lock, no. 10, stl	8
		---*---	
-45	69578	. HINGE, Panel	1
		(ATTACHING PARTS)	
-46	AD42S	. RIVET, Pop, 1/8 in dia, closed e nd (61957) (UMC P/N 20272)	16
		---*---	
-47	69571	. PANEL MTG, Valves	1
-48	69570	. PANEL, Instrument	1
-49	312082	. NAME PLATE, Knot/Mile	1

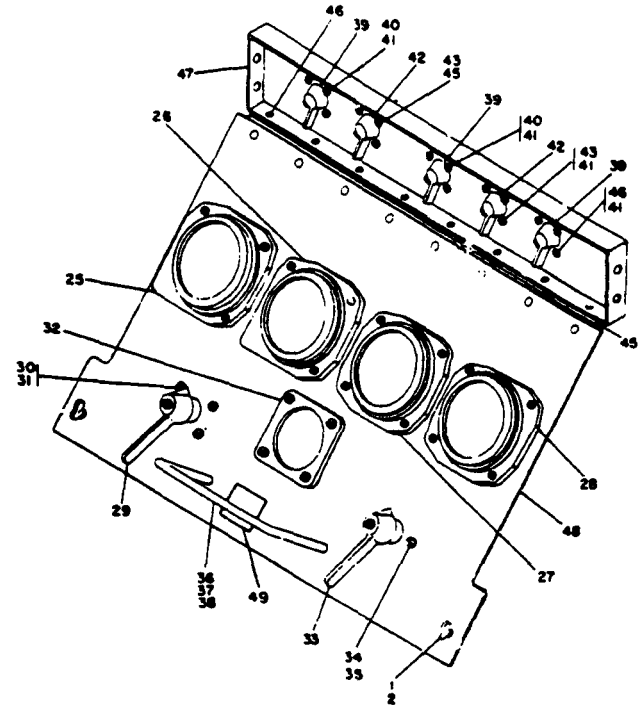


Figure 5-5. Instrument Panel Assembly (Sheet 1)

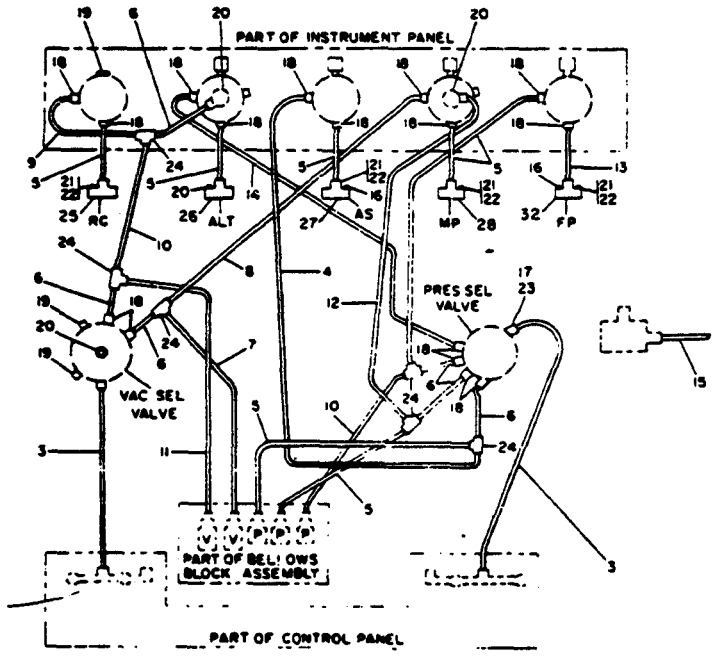


Figure 5-5. Instrument Panel Assembly (Sheet 2)

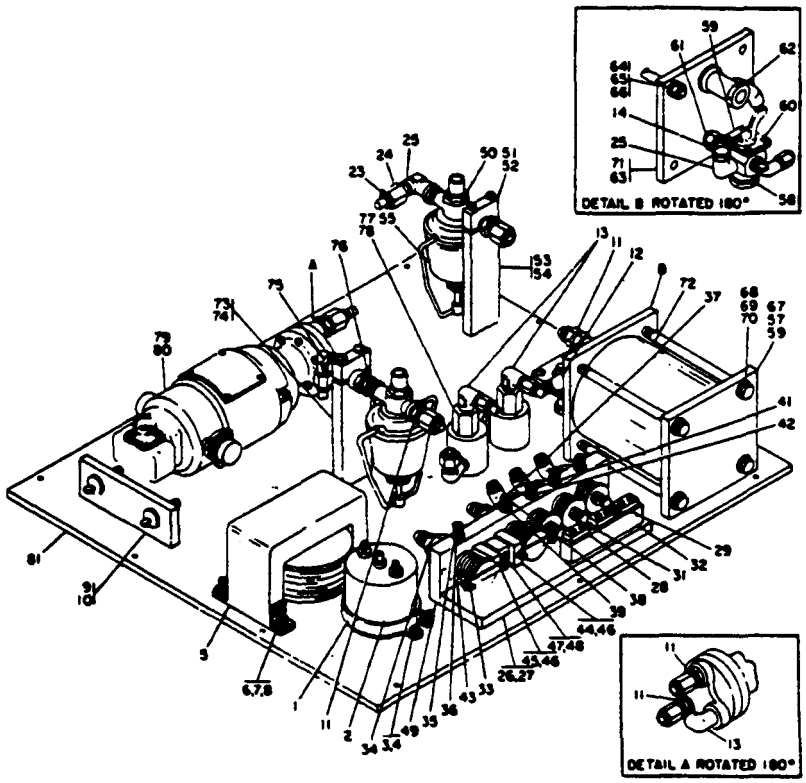


Figure 5-6. Bottom Plate Assembly (Sheet 1)

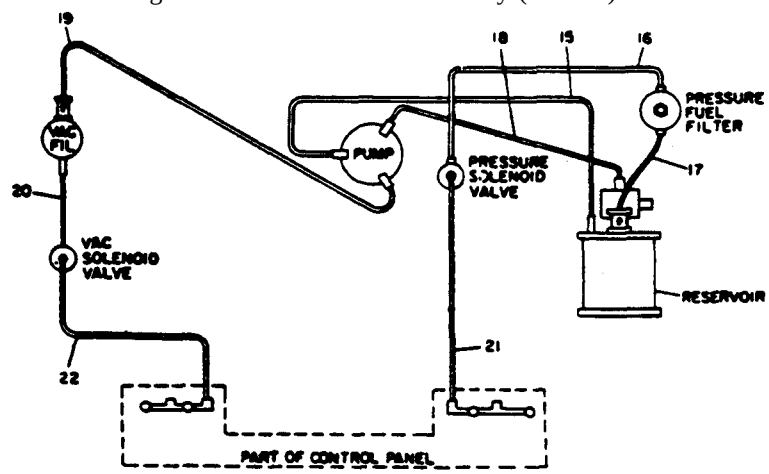


Figure 5-6. Bottom Plate Assembly (Sheet 2)

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
5-6-	38621	PLATE ASSY, Bottom (See fig. 5-3 for NHA)	REF
-1	VR3	. RING, Mounting, capacitor (90201) (UMC P/N 15 5210)	1
-2	CG82U50A1	. CAPACITOR, Fixed, electrolytic, 800 uf, 50 vdc (90201) (UMC P/N 191237)	1
		(ATTACHING PARTS)	
-3	10353	. SCREW, Machine, rh, no. 6-32 x 1/4 in. lg, stl	2
-4	10083	. NUT, Hex, no. 6-32, stl	2
		---*---	
-5	80-2	. TRANSFORMER, Control, 120 vac primary, 42 vac secondary (08779) (UMC P/N 112618)	1
		(ATTACHING PARTS)	
-6	20379	. SCREW, Machine, rh, no. 10-32 x 1/2 in. lg, stl	4
-7	10612	. WASHER, Flat, no. 10, stl	4
-8	10085	. NUT, Hex, no. 10-32, stl	4
		---*---	
-9	38622	. PLATE ASSY, Diode	1
		(ATTACHING PARTS)	
-10	10353	. SCREW, Machine, rh, no. 6-32 x 1/4 in. lg, stl	2
		---*---	
-11	AN816-3D	. NIPPLE, 3/16 to 1/8, (UMC P/N 581422)	8
-12	AN823-3D	. ELBOW, 45 Degree, (UMC P/N 581418)	4
-13	AN822-3D	. ELBOW, 90 Degree, (UMC P/N 581419)	8
-14	AN820-3	. FITTING, Cap, (UMC P/N 581420)	1
-15	69911-1	. TUBING	1
-16	69911-2	. TUBING	1
-17	69911-3	. TUBING	1
-18	69911-4	. TUBING	1
-19	69911-5	. TUBING	1
-20	69911-6	. TUBING	1
-21	69911-7	. TUBING	1
-22	69911-8	. TUBING	1
-23	AN819-3D	. SLEEVE, Coupling (UMC P/N 581416)	12
-24	AN818-3D	. NUT, Coupling	6
		(UMC P/N 581417)	3
-25	AN773-3	. FITTING	
-26	38617	. BELLOW BLOCK ASSY	1
		(ATTACHING PARTS)	
-27	10369	. SCREW, Machine, rh, no. 8-32 x 1/2 in. lg	2
		---*---	
-28	USM334	. . SWITCH, SPDT (80207) (UMC P/N 72580)	3
		(ATTACHING PARTS)	
-29	40595	. . SCREW, Machine, flat hd, no. 2-56 x 3/8 in. lg, stl	6
		---*---	
-30	69567	. . BLOCK, Switch mounting	1
		(ATTACHING PARTS)	
-31	40594	. . SCREW, Allen hd, no. 8-32 x 3/4 in. lg, stl	2
		---*---	
-32	40508	. . SCREW, Machine, hex hd, no. 2-56 x 1/4 in. lg, brs	7
-33	30008	. . NUT, Hex, no. 2-56, brs	4
-34	111167	. . BELLOW ASSY, Vacuum	1
		(ATTACHING PARTS)	
-35	50566	. . SCREW, Machine, flat hd, no. 8-32 x 5/8 in. lg, stl	1
-36	10084	. . NUT, Hex, no. 8-32, stl	1
		---*---	
-37	111145	. . BELLOW ASSY, Vacuum altimeter	1
		(ATTACHING PARTS)	
-38	50566	. . SCREW, Machine, flat hd, no. 8-32 x 5/8 in. lg, stl	1
-39	10084	. . NUT, Hex, no. 8-32, stl	1
		---*---	
-40	111144	. BELLOW ASSY, Pressure	3
		(ATTACHING PARTS)	
-41	50566	. . SCREW, Machine, flat hd, no. 8-32 x 5/8 in. lg, stl	3

FIG. & INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY
5-6-42	10384	. . NUT, Hex, no. 8-32, stl	
		---*---	
-43	40253	. . DOWEL, Pin. 0.1250 + 0.0002 x 3/4 in. lg, stl	2
-44	USM334	. . SWITCH, SPDT (80207) (UMC P/N 72580)	2
		(ATTACHING PARTS)	
-45	30374	. . SCREW, Machine, rh, no. 2-56 x 1 in. lg, stl	2
-46	30008	. . NUT, Hex, no. 2-56, brs	2
		---*---	
-47	69568	. . BAR, Switch mounting	1
		(ATTACHING PARTS)	
-48	50566	. . SCREW, Machine, flat hd, no. 8-32 x 5/8 in. lg, stl	2
		---*---	
-49	69566	. . BELLOWS BLOCK	1
-50	684-2-1/8D25	. VALVE, Overpressure tester (86768) (UMC P/N 112717)	1
-51	69594	. CLAMP, Bracket, sump	1
		(ATTACHING PARTS)	
-52	30527	. SCREW, Machine, rh, no. 10-32 x 1-1/4 in. lg, stl	2
		---*---	
-53	69593	. BRACKET, Sump, vacuum	1
		(ATTACHING PARTS)	
-54	10353	. SCREW, Machine, rh, no. 6-32 x 1/4 in. lg, stl	2
		---*---	
-55	KF2005P	. FILTER, Fuel (75255) (UMC P/N 601402)	1
-56	38623	. RESERVOIR ASSY	1
		(ATTACHING PARTS)	
-57	10353	. SCREW, Machine, rh, no. 6-32 x 1/4 in. lg, stl	2
	30376	. SCREW, Machine, rh, no. 6-32 x 1/2 modified	2
		---*---	
-58	710- 13-1/8D	. . VALVE, Selector (86768) (UMC P/N 112723)	1
-59	282001	. . IDENTIFICATION PLATE. Valve	1
		(ATTACHING PARTS)	
-60	10353	. . SCREW, Machine, rh, no. 6-32 x 1/4 in. lg.	2
		---*---	
-61	282017	. . NIPPLE, 1/8 in. pipe	1
-62	481- 1/8D	. . VALVE, Check (86768) (UMC P/N 102093)	1
-63	69596	. . PLATE, Front, reservoir	1
		(ATTACHING PARTS)	
-64	62350	. . SPRING	4
-65	10604	. . WASHER, Plain, 1/4, stl	8
-66	10086	. . NUT, Hex, 1/4 - 20 x 3/16 in. thk x 7/16 in. wide	4
		---*---	
-67	69597	. . PLATE, Back, reservoir	1
		(ATTACHING PARTS)	
-68	20519	. . SCREW, Machine, hex hd, 1/4 -20 x 4-1/4 in lg	4
-69	62350	. . SPRING	4
-70	10604	. . WASHER, Plain, 1/4, stl	8
		---*---	
-71	81460	. . GASKET, Reservoir	2
-72	112645	. . GLASS RESERVOIR	1
-73	69593	. BRACKET, Sump, vacuum	1
		(ATTACHING PARTS)	
-74	10353	. SCREW, Machine, rh, no. 6-32 x 1/4 in. lg, stl	2
		---*---	
-75	481-1/8D1	. VALVE, Check (86768) (UMC P/N 112739)	1
-76	KF2005P	. FILTER, Fuel (75255) (UMC P/N 571467)	1
-77	V51DA1125	. VALVE, Solenoid (55130) (UMC P/N 102794)	2
		(ATTACHING PARTS)	
-78	20377	. SCREW, Machine, rh, no. 10-32 x 1/4 in. lg, stl	4
		---*---	
5-6-79	302134	. PUMP ASSY	1
		(ATTACHING PARTS)	
-80	30354	. SCREW, Machine, rh, 1/4 - 28 x 3/8 in. lg, stl	4
		---*---	
-81	69591	. PLATE, Bottom	1

SECTION VI

NUMERICAL INDEX

PART NO.	FSN	FIG. & INDEX NO.	QTY PER ART
AAU8/A		5-5-26	1
		5-3-22	
		5-5-46	
AD(43)ABS		5-2-6	70
		5-2-8	
		5-2-15	
AD(64)ABS		5-3-2	
		5-2-2	10
		5-2-4	
AD42S		5-3-4	36
AN6227-5		5-5-23	3
AN6227-6		5-5-22	4
AN773-3		5-6-25	3
AN814-4D		5-5-16	2
AN815-3D		5-1-14	1
AN815-4D		5-1-11	2
AN816-3D		5-4-1	16
AN818-3D		5-6-24	6
AN819-3D		5-6-23	12
AN820-3		5-6-14	1
AN822-3D		5-6-18	24
AN823-3D		5-6-12	4
AN824-3D		5-5-24	6
AN911-1D		5-3-25	4
AN916-1D		5-4-2	2
AN917-1D		5-4-4	2
AN919-0D		5-5-17	2
AN919-1D		5-1-13	1
AN919-2D		5-1-12	6
AN929A4D		5-3-23	4
AN932-20		5-5-19	3
B2M2		5-4-3	4
CG82U50A1		5-6-2	1
HC205CE		5-3-1	4
H561LS2RG		5-2-5	1
H595LS2RG		5-2-3	2
H9161		5-2-5	1
KF2005P		5-6-55	1
MS28046-1		5-5-27	1
MS28049-1		5-5-25	1
MS28061 -1		5-5-32	1
MS28077T5		5-5-28	1
MS3102A18-1P		5-3-26	1
S576-11		5-5-29	1
USM334		5-6-28	5
		5-6-44	
VR3		5-6-1	1
V51DA1125		5-6-77	2
10030		5-3-29	4
10079		5-3-38	4
10083		5-6-4	2
10084		5-6-36	5

PART NO.	FSN	FIG. & INDEX NO.	QTY PER ART
10084		5-6-39	
		5-6-42	
10085		5-3-17	8
		5-6-8	
10086		5-6-66	4
10202		5-5-31	24
		5-5-41	
		5-5-44	
102093		5-6-62	1
10213		5-3-28	4
10220		5-3-16	8
		5-5-35	
		5-5-38	
102792		5-5-42	2
102794		See V51DA1125	
102796		See B2M2	
10286		See AD(43)ABS	
10287		See AD(64)ABS	
10350		5-5-34	4
		5-5-37	
10352		5-5-30	24
		5-5-40	
		5-5-43	
10353		5-6-3	12
		5-6-10	
		5-6-54	
		5-6-57	
		5-6-60	
		5-6-73	
10369		5-6-27	2
10604		5-6-65	16
		5-6-70	
10612		5-6-7	4
107739		See 481-1/8D1	
107740		5-5-39	3
111-3830-112		5-4-6	1
111144		5-6-40	3
111145		5-6-37	1
111167		5-6-34	1
112618		See 80-2	
112645		5-6-72	1
112715		See S576-11	
112716		5-5-33	1
112717		See 684-2-1/8D25	
112723		5-6-58	1
12558		See 8823K6	
155210		See VR3	
152220		See 82-47-104-15	
191236		5-3-11	
191237		See CG82U50A1	
191256		See HC205CE	
191257		5-2-1	
191400		See 342001	

PART NO.	FSN	FIG. & INDEX NO.	QTY PER ART
2-0-180		5-3-6	24
		5-3-34	
		5-3-40	
2W180		5-5-1	2
2W240		5-3-18	2
20272		See AD42S	
20362		5-3-12	16
		5-3-27	
20377		5-6-78	4
20378		5-3-15	12
		5-3-10	
20379		5-6-6	4
20519		5-6-68	4
282001		5-6-59	4
282012		5-3-3	1
282017		5-6-61	1
30008		5-6-33	6
		5-6-46	
302134		5-6-79	1
30354		5-6-80	4
30374		5-6-45	2
30376		5-6-57	2
30527		5-6-52	2
30607		See 82-32- 101-10R17	
312082		5-5-49	1
313004		5-4-8	2
31630		See MS28046-1	
31631		See 111-3830-112	
31632		See MS28049-1	
31633		See AAU8/A	
327		5-4-5	1
32878		5-3-42	1
342001		5-4-9	2
38613		5-1-3	1
38614		5-1-4	1
38615		5-1-5	1
38616		5-1-6	1
38617		5-6-26	1
38619		5-1-7	1
38620		5-3-31	1
		5-5	
38621		5-3-32	1
		5-6	
38622		5-6-9	1
38623		5-6-56	1
38624		5-3-9	1
		5-4	
38625		5-1-2	1
38626		5-1-1	1
38630		5-1-8	1
38631		5-1-9	2
38632		5-1-10	1
38719-1		5-5-3	2
38719-2		5-5-4	1
38719-3		5-5-5	7
38719-4		5-5-6	6
38719-5		5-5-7	1
38719-6		5-5-8	1
38719-7		5-5-9	1
38719-8		5-5-10	2
38719-9		5-5-11	1
38719-10		5-5-12	1
38719-11		5-5-13	1

PART NO.	FSN	FIG. & INDEX NO.	QTY PER ART
38719-12		5-5-14	1
38719-13		5-5-15	1
4GTX-D		5-3-24	8
		5-5-17	
40253		5-6-43	2
40508		5-6-32	7
40594		5-6-31	2
40595		5-6-29	6
684-1/8D1		5-6-75	1
50566		5-6-35	7
		5-6-38	
		5-6-41	
		5-6-48	
51534		5-5-36	1
51553		See H595LS2RG	
51554		See H561LS2RG	
51555		See H9161	
51586		See 327	
571468		See 313004	
581414		See AN917-1D	
581415		See AN916-1D	
581416		See AN819-3D	
581417		See AN818-3D	
581418		See AN823-3D	
581419		See AN822-3D	
581420		See AN820-3	
581421		See AN914-3D	
581422		See AN816-3D	
581430		See 2W180	
581431		See 2W240	
581432		See 2-0-180	
581433		See AN815-4D	
581434		See AN919-2D	
581435		See AN919- 1D	
581436		See AN815-3D	
581437		See AN824-3D	
581447		See AN919-0D	
581449		See AN932-2D	
591401		See AN911-1D	
591402		See 4GTX-D	
591403		See AN929A4D	
601402		See KF2005P	
61601		See MS28077T5	
61602		See MS28061-1	
62350		5-6-64	8
		5-6-69	
684-2 -1/8D25		5-6-50	1
69566		5-6-49	2
69567		5-6-30	1
69568		5-6-47	1
69569		5-3-43	1
69570		5-5-48	1
69571		5-5-47	1
69572		5-3-14	1
69576		5-3-5	1
69577		5-3-33	1
69578		5-3-21	2
		5-5-45	
69581		5-3-39	1
69582		5-3-30	1
69583		5-4-10	1

PART NO.	FSN	FIG. & INDEX NO.	QTY PER ART
69588		5-2-7	1
69584		5-2-10	1
69585		5-2-13	2
69586		5-2-12	2
69587		5-2-9	1
69589		5-2-14	1
69590		5-2-11	1
69591		5-6-81	1
69593		5-6-74	2
		5-6-53	
69594		5-6-51	1
69596		5-6-63	1
69597		5-6-67	1
69911-1		5-6-15	1
69911-2		5-6-16	1
69911-3		5-6-17	1
69911-4		5-6-18	1
69911-5		5-6-19	1
69911-6		5-6-20	1
69911-7		5-6-21	1
69911-8		5-6-22	1
72580		See USM33	
7365		5-1	1
80-2		5-6-5	1
81460		5-6-71	2
82-32 -101 -10R17		5-3-7	28
		5-3-19	
		5-3-35	
		5-3-41	
		5-5-2	
82-47-104-15		5-3-8	26
		5-3-20	
		5-3-36	
		5-3-41	
8823K6		5-4-7	1
91295		See MS3102	18-1P

APPENDIX A

MAINTENANCE ALLOCATION CHART

1. Purpose

The purpose of the maintenance allocation chartis to provide all activities with maintenance function to be performed at each level of maintenance.

2. Definitions

a. Column 1, Group number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Functional group. Column 2 lists the noun names of components, assemblies, subassemblies, and modules on which maintenance is authorized.

c. Column 3, Maintenance functions. Maintenance functions will be limited to and defined as follows:

(1) Inspect. To determine serviceability of an item by comparing its physiccal, mechanical, and electrical characteristics with established standards.

(2) Test To verify serviceability and to detect electrical or mechanical failure by use of test equipment.

(3) Service. To clean, to preserve, to charge, and to add fuel, lubricant, cooling agents, and air. If it is desired that elements, such as painting and lubricating, be defined separately, they may be so listed.

(4) Adjust. To rectify to the extent necessary to bring into proper operating range.

(5) Align. To adjust specified variable elements of an item to bring to optimum performance.

(6) Calibrate. To determine the corrections to be made in the readings of instruments or test equipment used in precise measurement. Consists of the comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared with the certified standard.

(7) Install. To set up for use in an operational environment such as an emplacememt, site, or vehicle.

(8) Replace. To replace unserviceable items with serviceable assembles, subassemblies, or parts.

(9) Repair. To restore an item to serviceable condition. This includes, but is not limited to, inspection cleaning, preserving, adjusting, replacing, welding, riveting, and strengthening.

(10) Overhaul. To restore an item to a completely serviceable condition as prescribed by maintenance serviceability standards prepared and published for the specific item to be overhauled.

(11) Rebuild. To restore an item to a standard as nearly as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements (items) using original manufacturing tolerances and specification, and subsequent reassembly of the item.

(12) Symbols. The symbol O, F, H, or D placed in the appropriate column indicates the level responsible for performing that particular maintenance function. The symbol "%%" which applies to organizational maintenance indicates that the particular maintenance function may be performed provided it is specifically authorised by the direct support maintenance

officer. Use of the symbol will apply only to replacement of major assemblies and time-consuming operations which are within the capabilities of organization but over which control by the commodity commands is considered essential. In no case will the direct support maintenance officer require the accomplishment of a "%%" maintenance function by an organization or unit, and in no case will a "%%" function authorize stockage of parts at organizational level.

d. Column 4, Tools and equipment. This column will be used to specify, by code those tools and test equipment required to perform the designated function.

e. Column 5, Remarks. Self-explanatory.

3. General

a. A maintenance function assigned to a maintenance level, which for any reason is beyond its capability, becomes the responsibility of the next higher maintenance level.

b. The authority to perform a maintenance function does not constitute authority to requisition or otherwise secure necessary repair parts as specified in current supply directives.

4. Deviations

a. Normally, there will be no deviations from the assigned maintenance level. In cases of operational necessity, a maintenance function assigned to a maintenance level may, on a one-time basis and at the request of the lower maintenance level, be authorized to the lower maintenance level by the maintenance officer of the level to which the function is assigned.

b. The furnisning of special tools, equipments, and the like, required by the lower maintenance level to perform this function, will be the responsibility of the level to which the function is assigned.

5. Additional Information

a. Changes in the maintenance allocation chart will be based on continuing evaluation and analysis by responsible technical personnel and on Maintenance Request Forms DA 2407 received from field activities.

b. All maintenance prescribed herein will be performed in accordance with applicable publications.

c. In any instance of conflict with current tool and equipment list or current supply manuals, this maintenance allocation chart will be the final authority. Each such instance should be promptly reported by Maintenance Request Form DA 2407.

MAINTENANCE ALLOCATION CHART
FOR
Tester, Pitot and Static System

(AR 310-3)

(1) GROUP NO	(2) FUNCTIONAL GROUP	(3) MAINTENANCE FUNCTION											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
01	Accessories	F	F	F					F	F				
02	Cover Assembly	F		F					F	F				
03	Case Assembly & Control Panel	F		F					F	F				
04	Instrument Panel	F	F	F	F				F	F				
05	Bottom Plate	F	F	F	F				F	F				
06	Bulk Material	F		F					F	F				

By Order of the Secretary of the Army:

CARL E. VUONO
***General, United States* Army**
Chief of Staff

Official:

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:
To be distributed in accordance with DA Form 12-31, AVUM and AVIM requirements for All Fixed and Rotary Wing Aircraft.

U.S. GOVERNMENT PRINTING OFFICE : 1994 0 - 160-842