

TECHNICAL MANUAL

**OPERATION AND MAINTENANCE INSTRUCTIONS
WITH
ILLUSTRATED PARTS BREAKDOWN
FOR**

**BRAKE PRESSURE TEST SET
PART NUMBER 10012-10
NSN NUMBER 4920-01-145-0163**

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SECTION I

INTRODUCTION AND GENERAL INFORMATION

1-1. INTRODUCTION. This manual has been prepared to aid field personnel in the operation and maintenance of the Brake Pressure Test Set. The sections which follow provide the user with the required information to successfully operate this instrument. This manual provides Operating Instructions, Maintenance Instructions and an Illustrated Parts Breakdown for Brake Pressure Test Set, Part Number 10012-10.

1-2. SAFETY PRECAUTIONS. This unit should be operated only by personnel thoroughly instructed in the usual safety procedures associated with testing of hydraulic systems.

1-3. SCOPE OF MANUAL. This manual is divided into seven sections with contents as follows:

- a. Section I, Introduction and General Information, contains the information pertaining to the purpose, scope, and arrangement of the manual, and a simplified description of the equipment.
- b. Section II, Special Tools and Test Equipment, contains the list of special tools and test equipment required to operate and maintain the Brake Pressure Test Set. Illustrations are provided within this section to assist in the use of the special tools and test equipment.
- c. Section III, Preparation for Use and Shipment, contains the instructions to prepare the unit after receipt for shipment, or for removal from storage prior to use.
- d. Section IV, Operation Instructions, contains the theory of operation and detailed instructions for operating the Brake Pressure Test Set.
- e. Section V, Maintenance Instructions, contains operational checkout, periodic inspection and preventative maintenance, troubleshooting, repair, disassembly, cleaning, assembly, testing, and calibration instructions.
- f. Section VI, Diagrams, contains the hydraulic diagram required to operate and maintain the Brake Pressure Test Set.
- g. Section VII, Illustrated Parts Breakdown, contains the index of manufacturers, illustrated views and parts lists needed to maintain and repair the Brake Pressure Test Set.

1-4. PURPOSE OF EQUIPMENT. The Brake Pressure Test Set is used to assure the proper functioning of the F16() braking/anti-skid system.

1-5. GENERAL INFORMATION. (See Figure 1-1.) The Brake Pressure Test Set is used primarily for measuring proper operating pressures within the brake system of the F16() Aircraft. The test set may also be used to bleed any entrapped air within the F16() brake system.

- a. The test set case lid (1) opens to allow access to the tester. The lid is secured open by a ring grip pin (2).
- b. On the inside of the lid is a storage bracket (3) that holds four quick-disconnect (QD) couplings (4), which will be referred to as right forward, right aft, left forward and left aft. The QD couplings are held within the storage bracket by means of four toggle clamps (5).
- c. The panel assembly (6) houses eight pressure gages (7, 8), four differential pressure gages (9), and four bleed valves (10). Each bleed valve controls the gages to its left.
- d. Each set of gages (7, 8, and 9) and their respective bleed valves (10) are independent systems. The top two systems are for the RIGHT MAIN GEAR ports (FWD and AFT) and the bottom two systems are for the LEFT MAIN GEAR ports (FWD and AFT). The large gages are system pressure gages and the small gages are differential pressure gages. They are identified by appropriate labels. The LO pressure system gage (7) indicates pressures ranging from 0-450 psig. At pressures of 450-5000 psig, the pressure reading will be read on the HI pressure system gage (8), which ranges from 0-5000 psig.
- e. Also provided in the test set are a waste tank (11), relief valves and drain hoses (12) (one from each bleed valve and one from the relief valves) and adapter assemblies (13).

1-6. LEADING PARTICULARS. Refer to Table 1-1, Table of Leading Particulars, for test set specifications.

1-7. CONSUMABLE MATERIAL LIST. Refer to Table 1-2, Table of Consumable Materials.

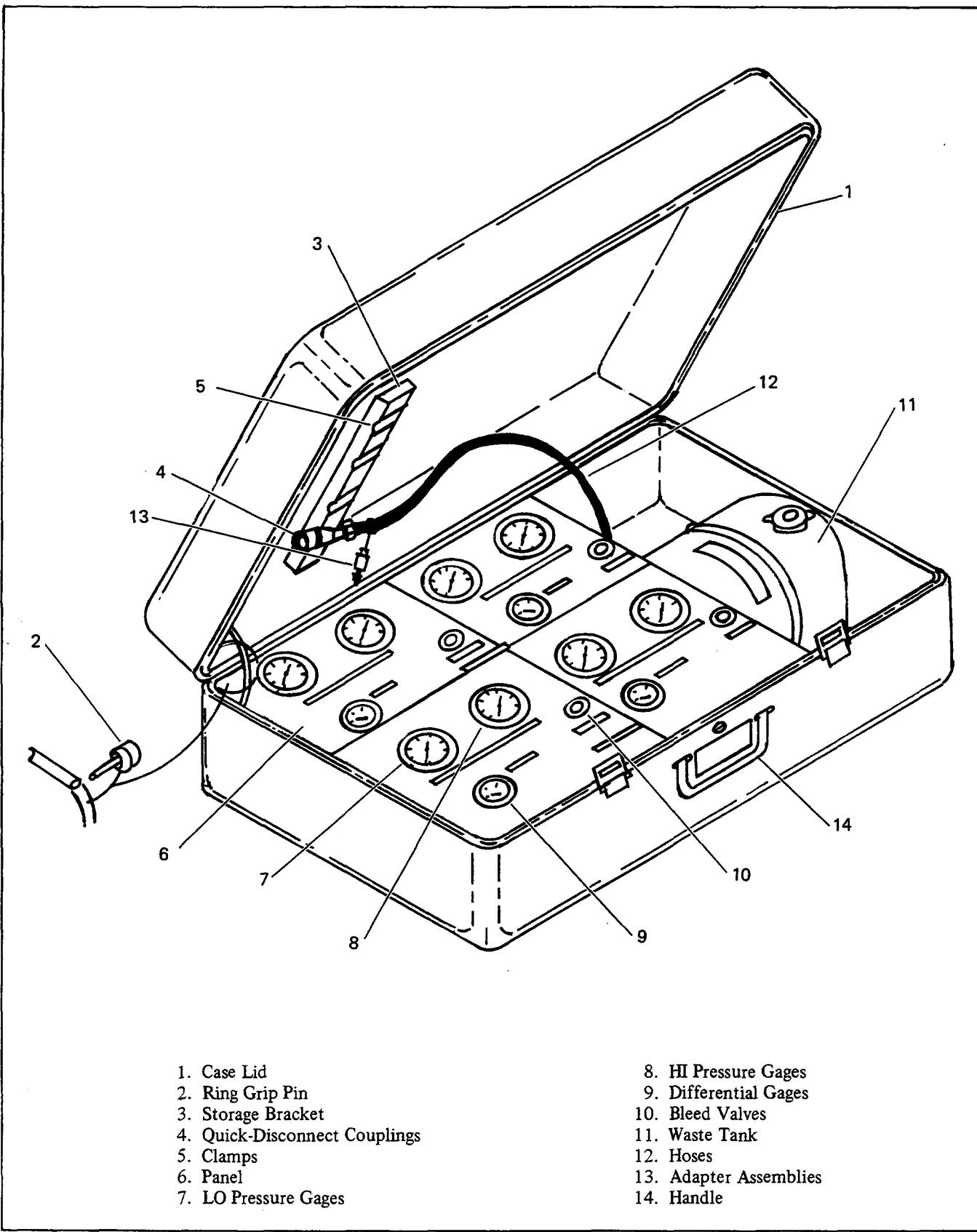


Figure 1-1. Brake Pressure Test Set

Table 1-1. Table of Leading Particulars

Description	Specification
LO Pressure Gages (4 each)	0-600 psig $\pm 1\%$
HI Pressure Gages (4 each)	0-5000 psig $\pm 1\%$
Differential Gages (4 each)	0-35 psid $\pm 2\%$
Relief Valves (4 each)	3450 ± 50 psid (setting)
Overall size	18" x 26" x 9"
Overall weight	56 pounds

Table 1-2. Consumable Materials

Description	Specification
Hydraulic Fluid	Compatible with F16() brake system
Cleaning Solvent	PD-680

SECTION II

SPECIAL TOOLS AND TEST EQUIPMENT

2-1. SPECIAL TOOLS AND TEST EQUIPMENT. There are no special tools required. Test equipment required is listed in Table 2-1. Special adapters required are listed in Table 2-2.

Table 2-1. Test Equipment

Tool/Equipment No.	Fig. No.	Nomenclature	Use and Application
10-10525 Mansfield and Green or equivalent	2-1	0-10,000 psi hydraulic pressure gage dead weight tester	To calibrate pressure and differential pressure gages (Refer to T.O. 33A6-4-7-1)

Table 2-2. Special Adapters

Tool/Equipment No.	Fig. No.	Nomenclature	Use and Application
Aeroquip P/N FD45-1002-02-02 male QD with Parker 1/4 x 1/8 FF-S fitting (locally procured) or equivalent	2-2	Calibration Adapter	To adapt test set hose connections to dead weight tester

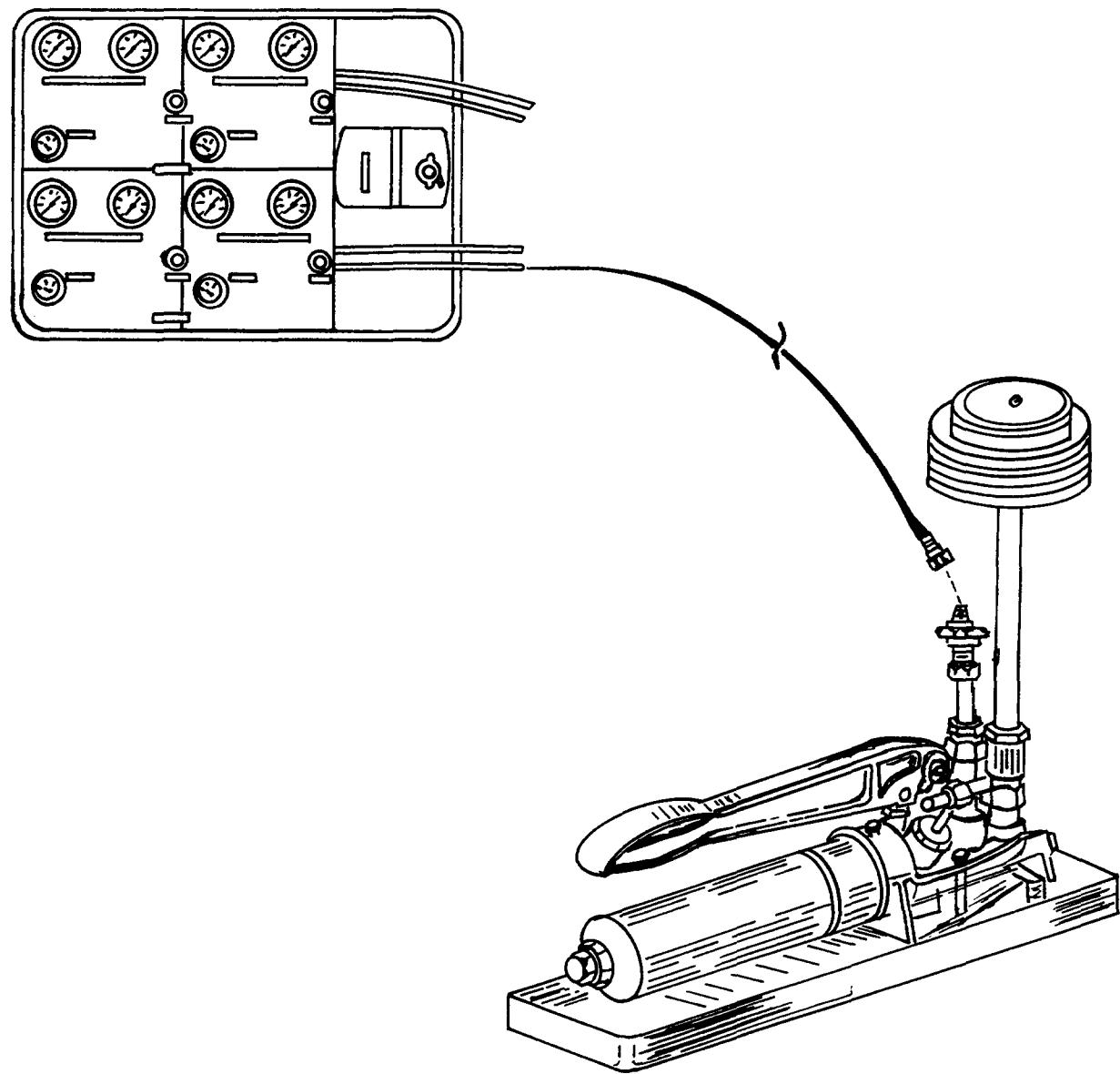


Figure 2-1. Calibration Setup

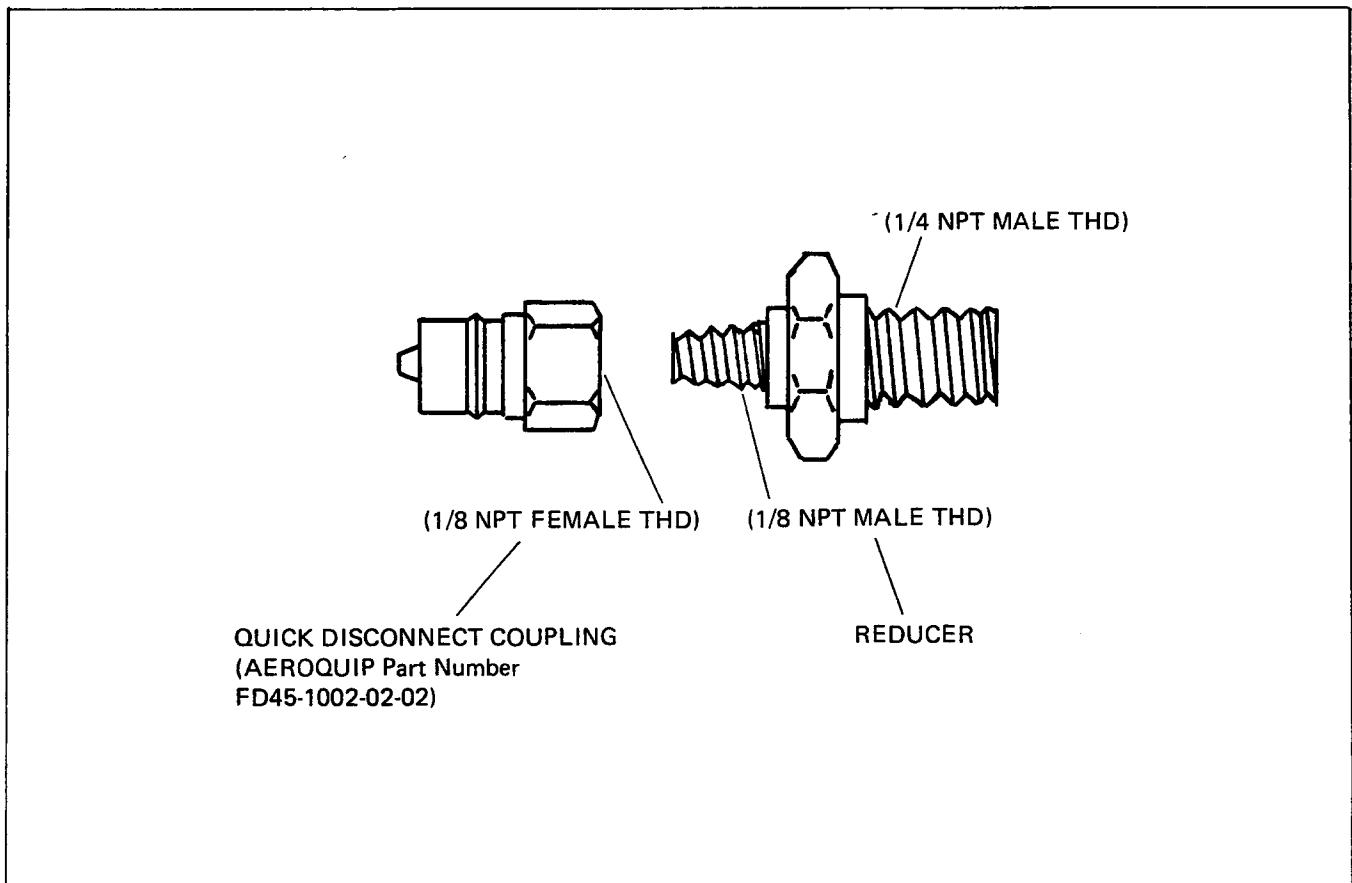


Figure 2-2. Calibration Adapter

SECTION III

PREPARATION FOR USE AND SHIPMENT

3-1. INTRODUCTION. The information contained in this section describes the preparation for use, functional testing, adjustments and other procedures to prepare the Brake Pressure Test Set for use. Also included are procedures for preparing the unit for storage and shipment.

3-2. UNPACKING. Remove Test Set from shipping container, open lid and install ring grip pin.

3-3. PRELIMINARY INSPECTION. Refer to unscheduled inspection and maintenance procedures described in paragraph 5-4a.

3-4. PREPARATION FOR USE. The Brake Pressure Test Set must be calibrated prior to initial use. Refer to paragraph 5-12 for calibration instructions. The Brake Pressure Test Set contains four completely independent pressure

gauging circuits which must be separately charged and bled. Refer to paragraph 5-4 for precharging the Test Set.

3-5. PREPARATION FOR STORAGE AND SHIPMENT. Prepare the Test Set for storage and shipment as follows:

a. To prepare the unit for storage, secure the dust plugs (40, Figure 3-1) and dust caps (37) to each coupling (41). Roll up hoses (2, 3), four each, and place in case. Place couplings in their respective brackets (15, Figure 3-2) and close toggle clamps (13). Remove strap (8) from hook (6) and remove and empty waste tank (4). Replace waste tank and secure with strap. Assure pressure cap (1) is installed onto waste tank (4). Assure that no pressure is indicated on gages (24, 27 and 32, Figure 3-1) and that the bleed valves (14) are closed.

b. To prepare the unit for shipment, apply masking tape to the face of each gage (24, 27 and 32, Figure 3-1), after completing the steps outlined in (a) above.

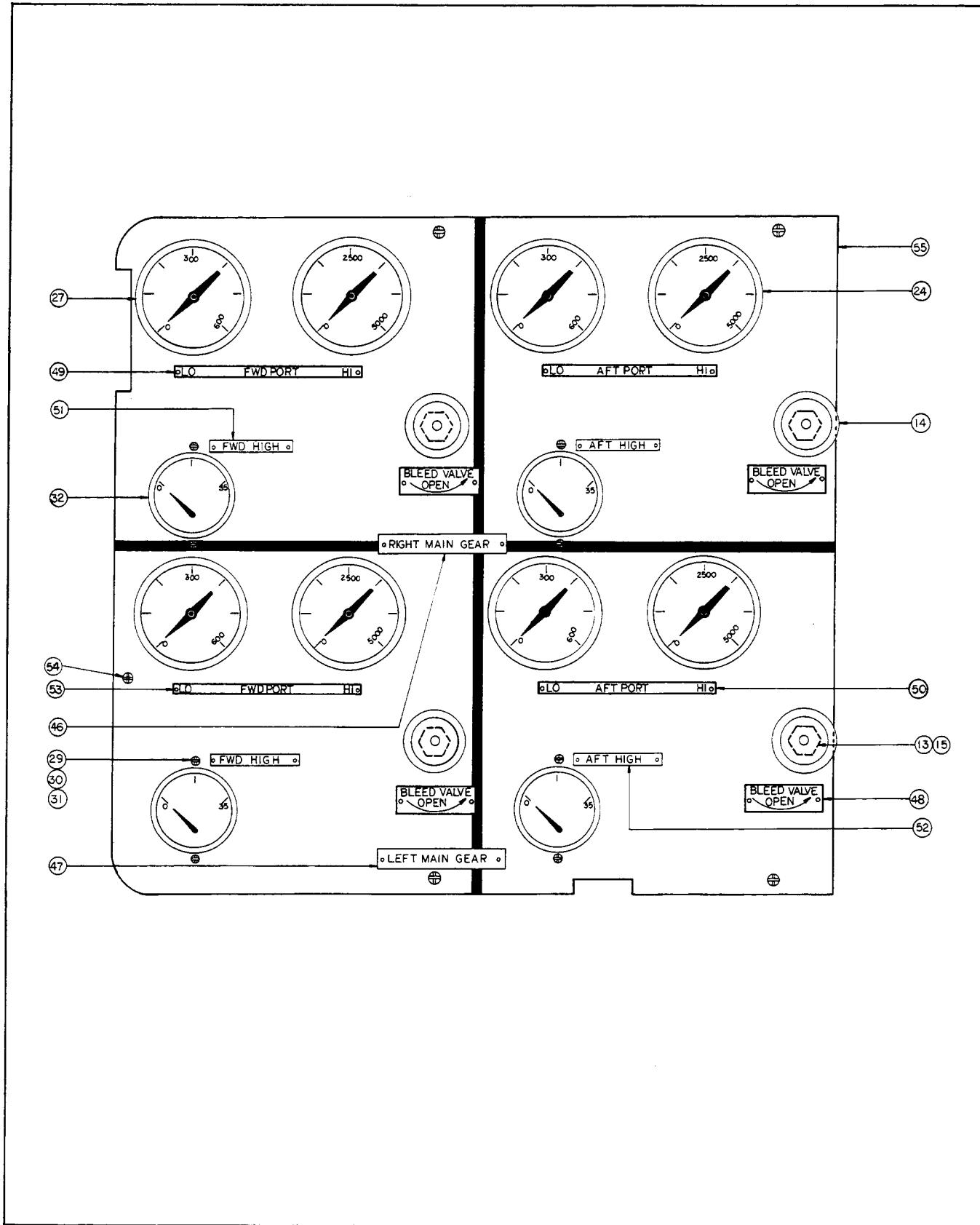


Figure 3-1. Panel Assembly (Sheet 1 of 3)

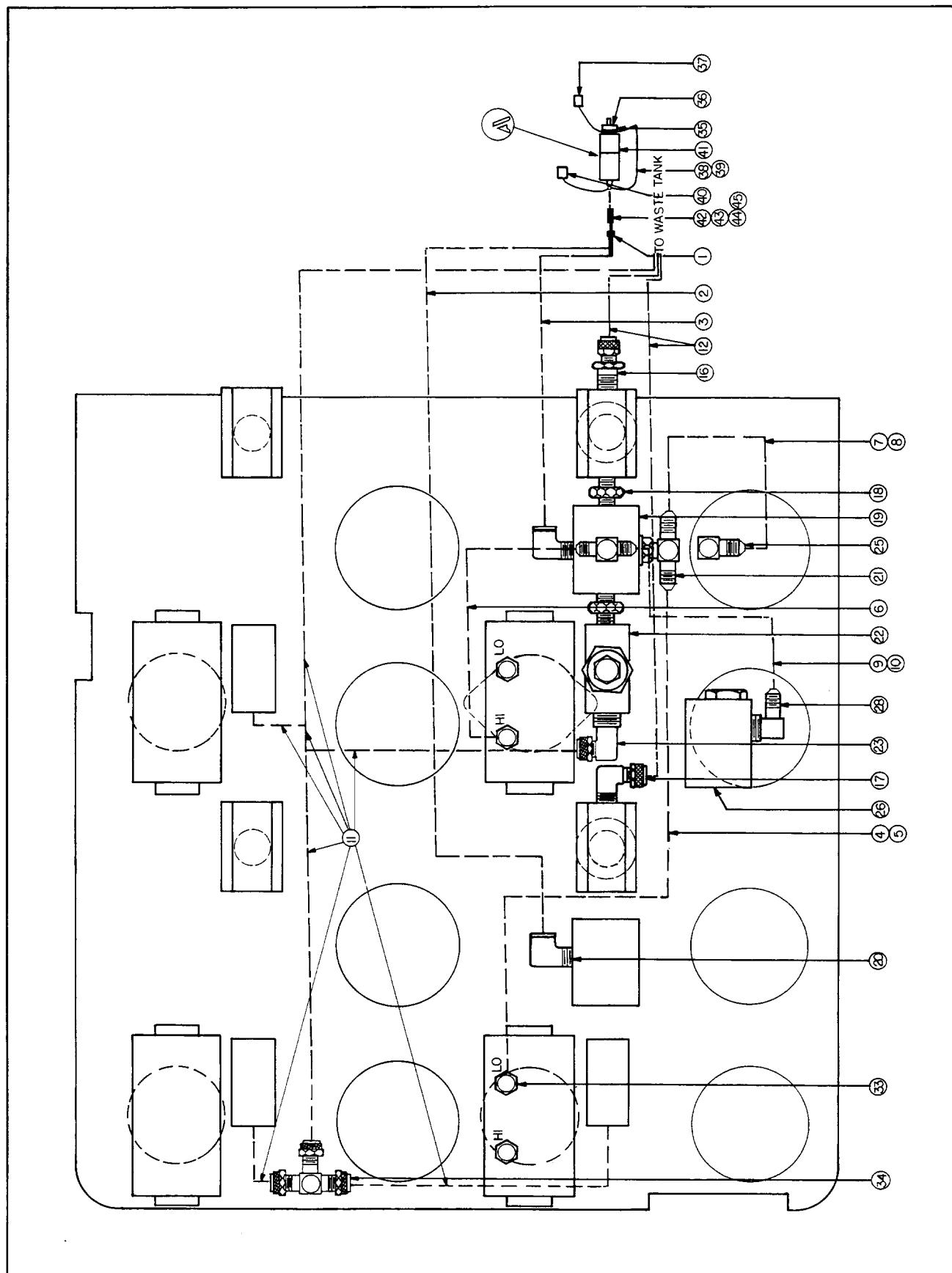


Figure 3-1. Panel Assembly (Sheet 2 of 3)

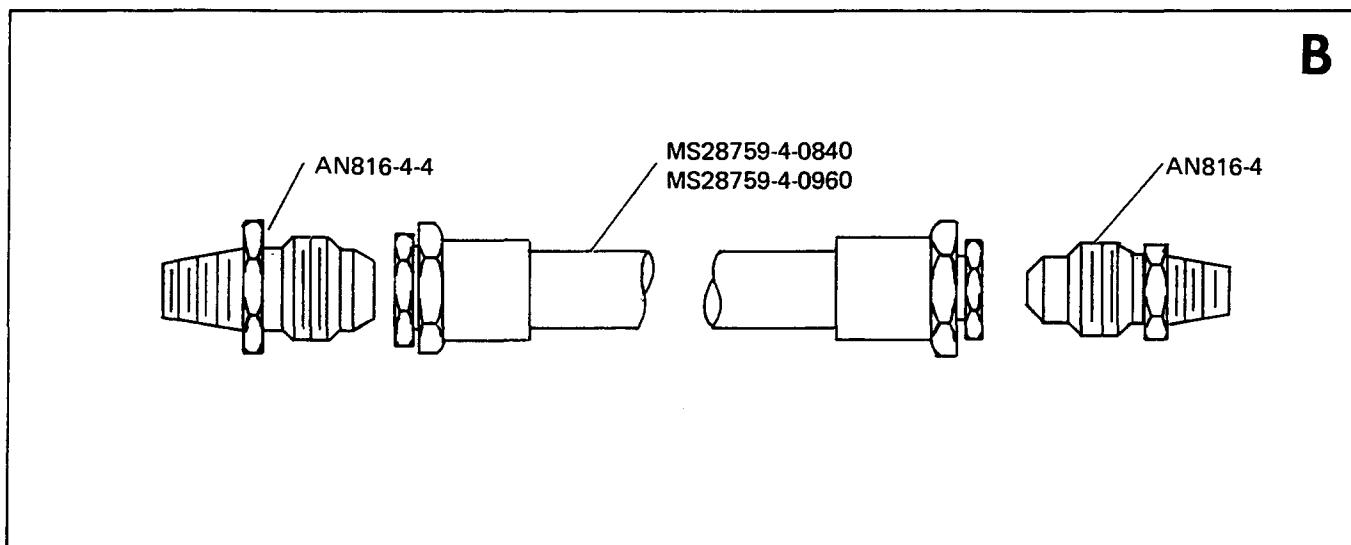
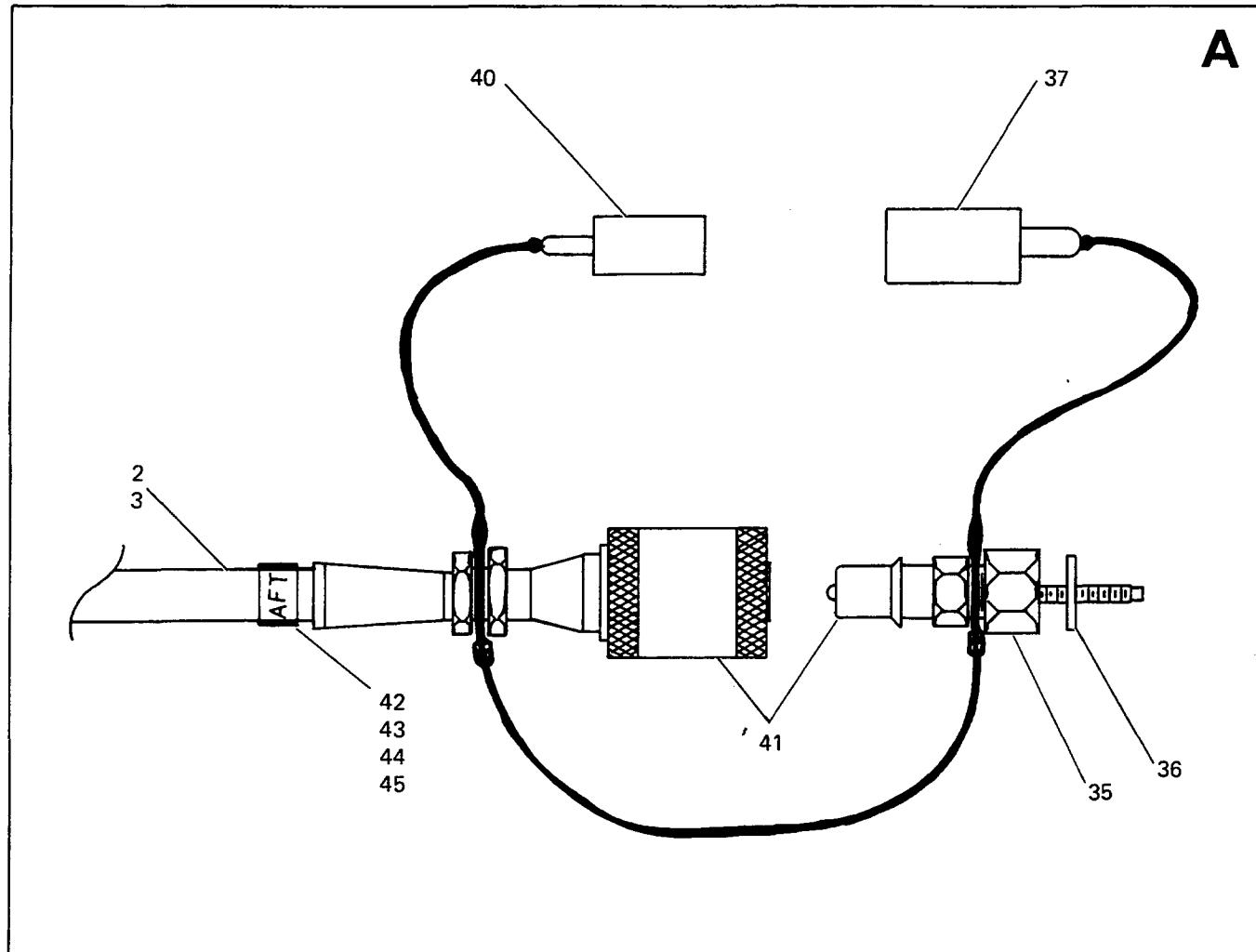


Figure 3-1. Panel Assembly (Sheet 3 of 3)

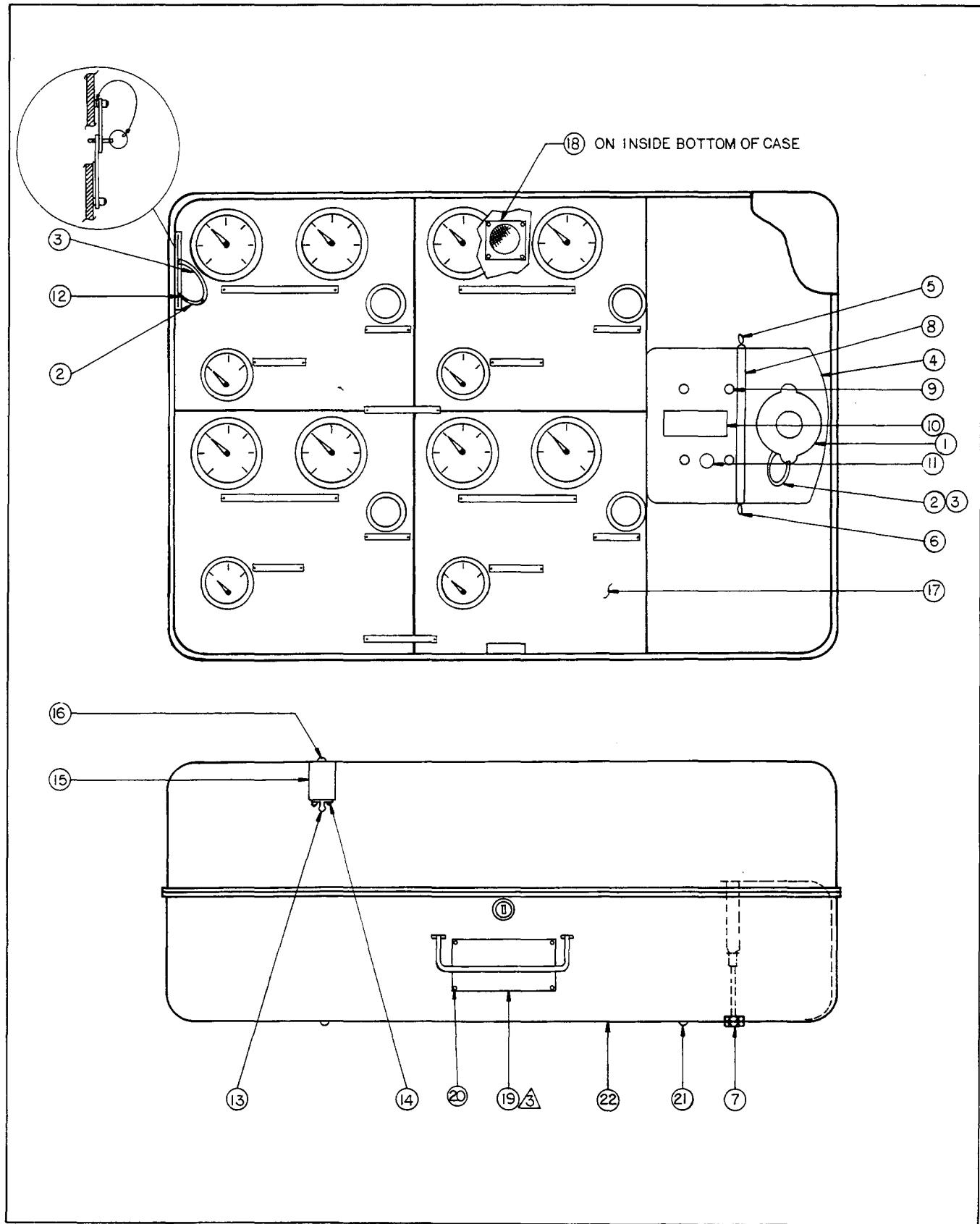


Figure 3-2. Brake Pressure Test Set

SECTION IV

OPERATION INSTRUCTIONS

4-1. THEORY OF OPERATION. The Brake Pressure Test Set consists of four identical hydraulic circuits with a common waste reservoir. These circuits are connected respectively to the FWD and AFT bleed ports on the RIGHT and LEFT MLG of the F16() aircraft.

a. *Adapter Fittings.* The adapter fittings connect the bleed ports on the aircraft brakes through the QD couplings and hoses to the Brake Pressure Test Set.

b. *Pressure Gages.* There are two pressure gages in each system. The LO gage has a full scale range of 0-600 psi with a gage cut-out that disables the gage above 485 ± 20 psi. All gage readings below 450 psi should read on this gage to obtain the desired accuracy of reading. The HI gage has a range of 0-5000 psi and should be used for all readings above 450 psi.

c. *Differential Pressure Gages.* There is one differential pressure gage with a range of 0-35 psi in each system. The differential pressure gages are connected across the two systems for the RIGHT GEAR and across the two systems for the LEFT GEAR. These gages indicate the difference between the FWD and AFT braking pressures. Only one gage

will indicate the pressure difference while the other gage reads zero. The gage which indicates is the system (FWD or AFT) that has the higher pressure.

d. *Bleed Valves.* There is a bleed valve in each system which is used to bleed air out of the test set or relieve pressure in the system.

e. *Relief Valves.* A relief valve set at 3450 ± 50 psi is located in each system in order to protect from overpressurization.

f. *Waste Tank.* The waste tank is used to collect all fluid bled from the test set or any relief valve overflow. This tank should be emptied after each use of the Test Set.

4-2. GENERAL. This section provides operational procedures for the Brake Pressure Test Set.

4-3. OPERATING CONTROLS. Operating controls and indicators are as specified in Table 4-1.

Table 4-1. Operating Controls

Figure 4-1 Index No.	Control or Instrument	Description	Function or Operation
27	LO Pressure Gage	0-600 psig	Indicate brake pressure in the range of 0-600 psig
24	HI Pressure Gage	0-5000 psig	Indicate brake pressure in the range of 450-5000 psig
32	Differential Pressure Gage	0-35 psid	Indicate pressure difference between FWD and AFT
14	Bleed Valve	Needle Valve	Bleed air from aircraft system and relieve system pressure

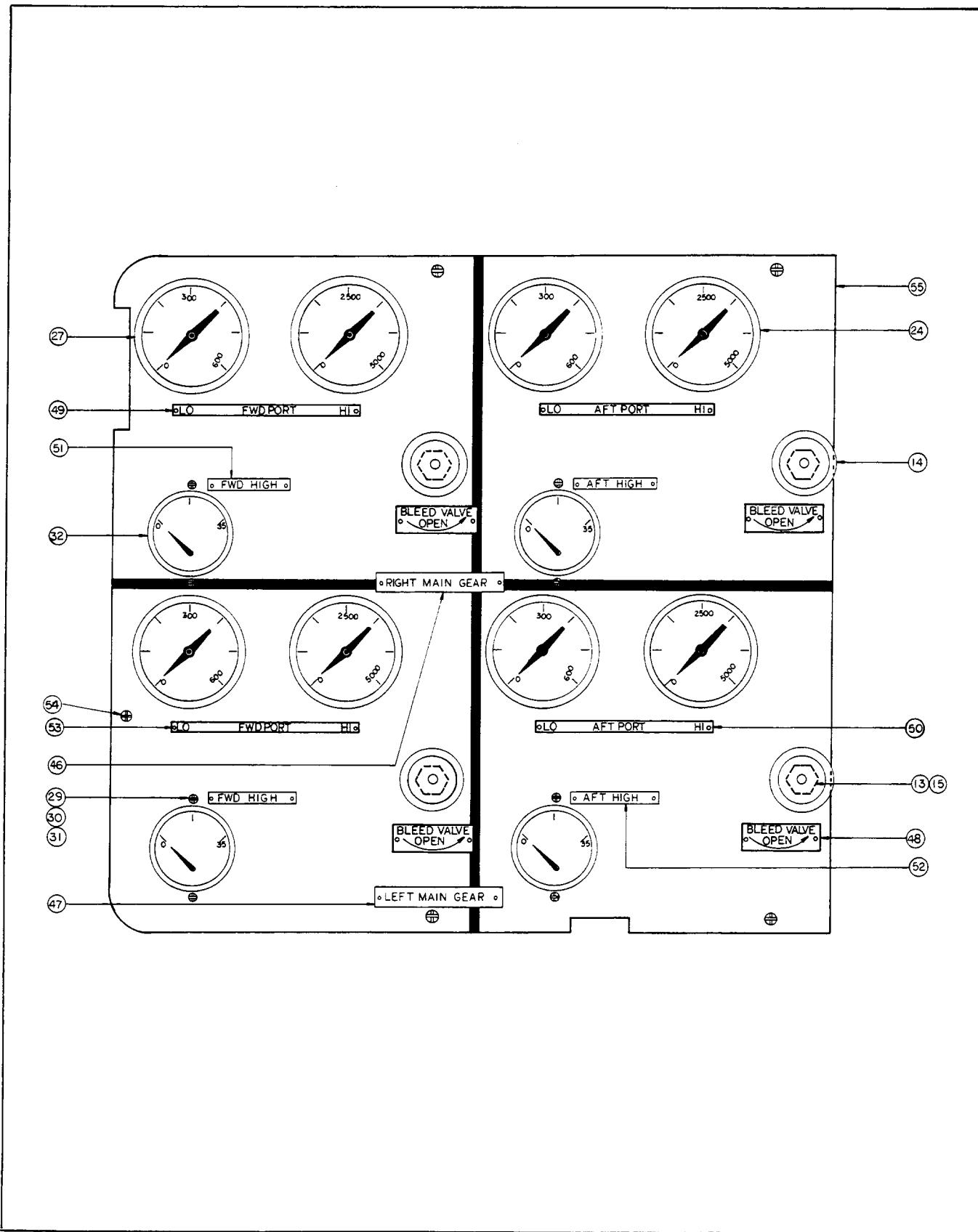


Figure 4-1. Panel Assembly (Sheet 1 of 3)

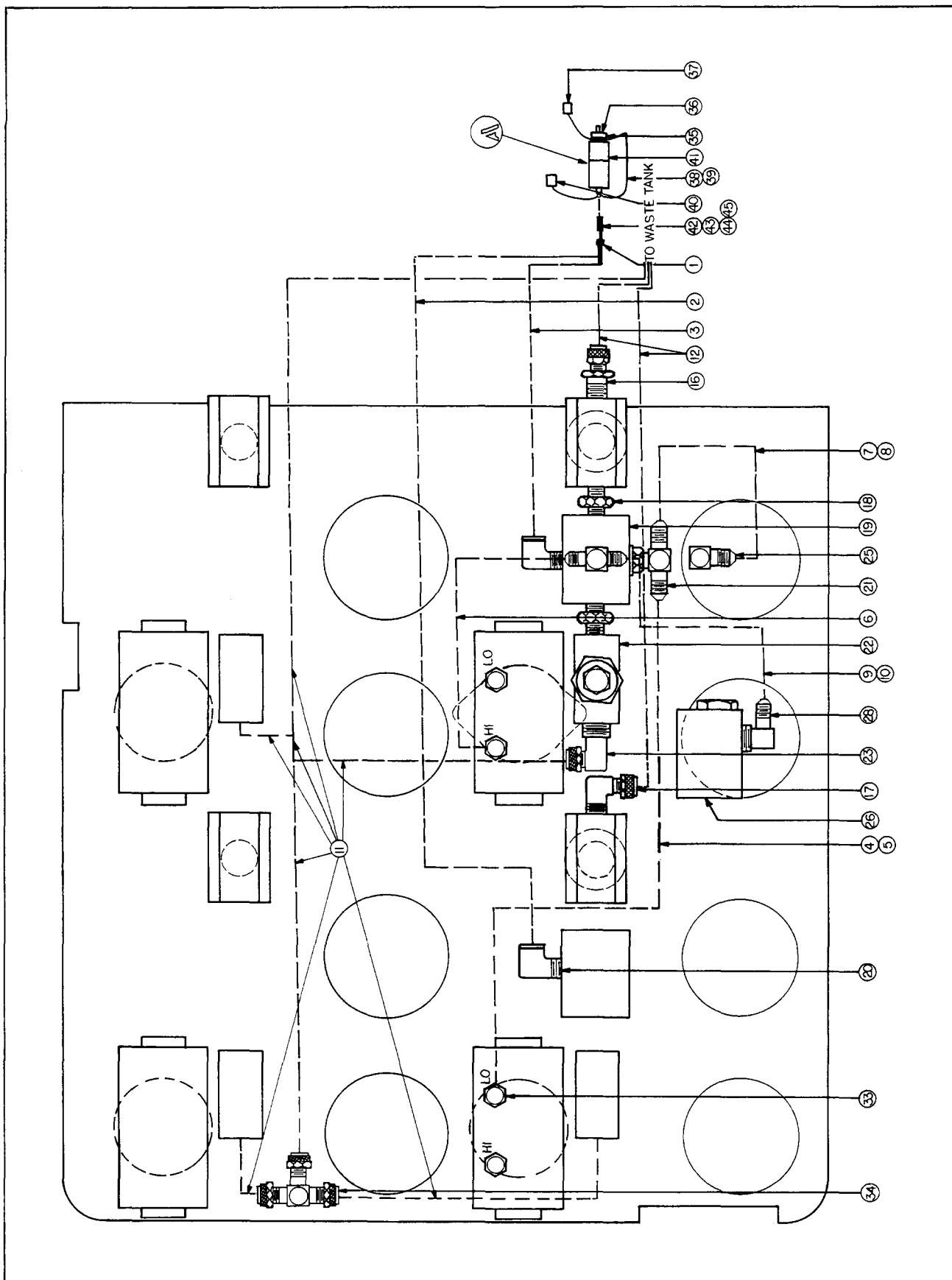


Figure 4-1. Panel Assembly (Sheet 2 of 3)

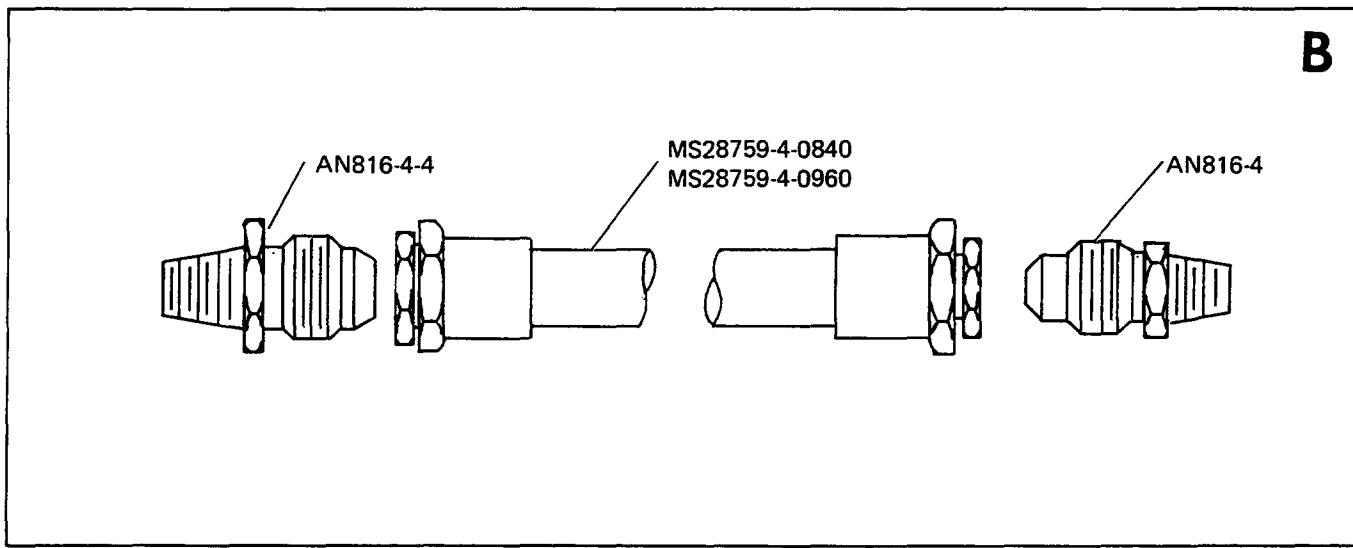
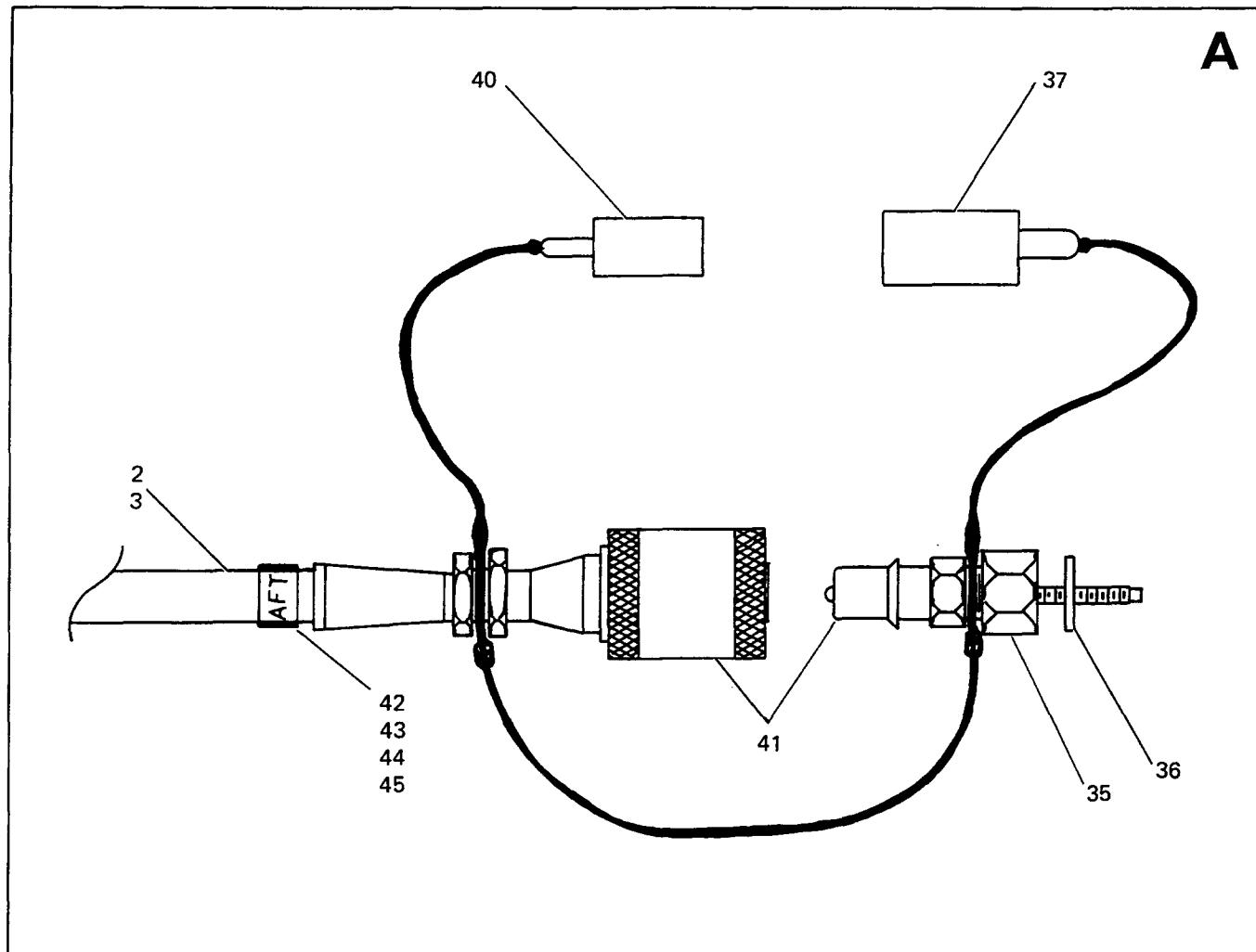


Figure 4-1. Panel Assembly (Sheet 3 of 3)

4-4. CONNECTING TEST SET TO AIRCRAFT. To connect the Test Set to the aircraft, proceed as follows:

- a. Open lid (1, Figure 4-2) and secure ring grip pin (2).
- b. Check all bleed valves in the Test Set to assure they are all in the closed position (full clockwise rotation).
- c. Release toggle clamps (13, Figure 4-3) on bracket (15) and remove hose ends and adapter assemblies.
- d. Check that the washer on adapter fitting (13, Figure 4-2) is in its groove and is not damaged.
- e. Screw the four adapter fittings into aircraft landing gear brake bleed valves. Torque to 40 ± 5 in-lbs.
- f. Remove all dust plugs and dust caps. Connect appropriate hoses to the aircraft brake system at the respective installed coupling.
- g. Refer to appropriate aircraft T.O. for landing gear brake testing.

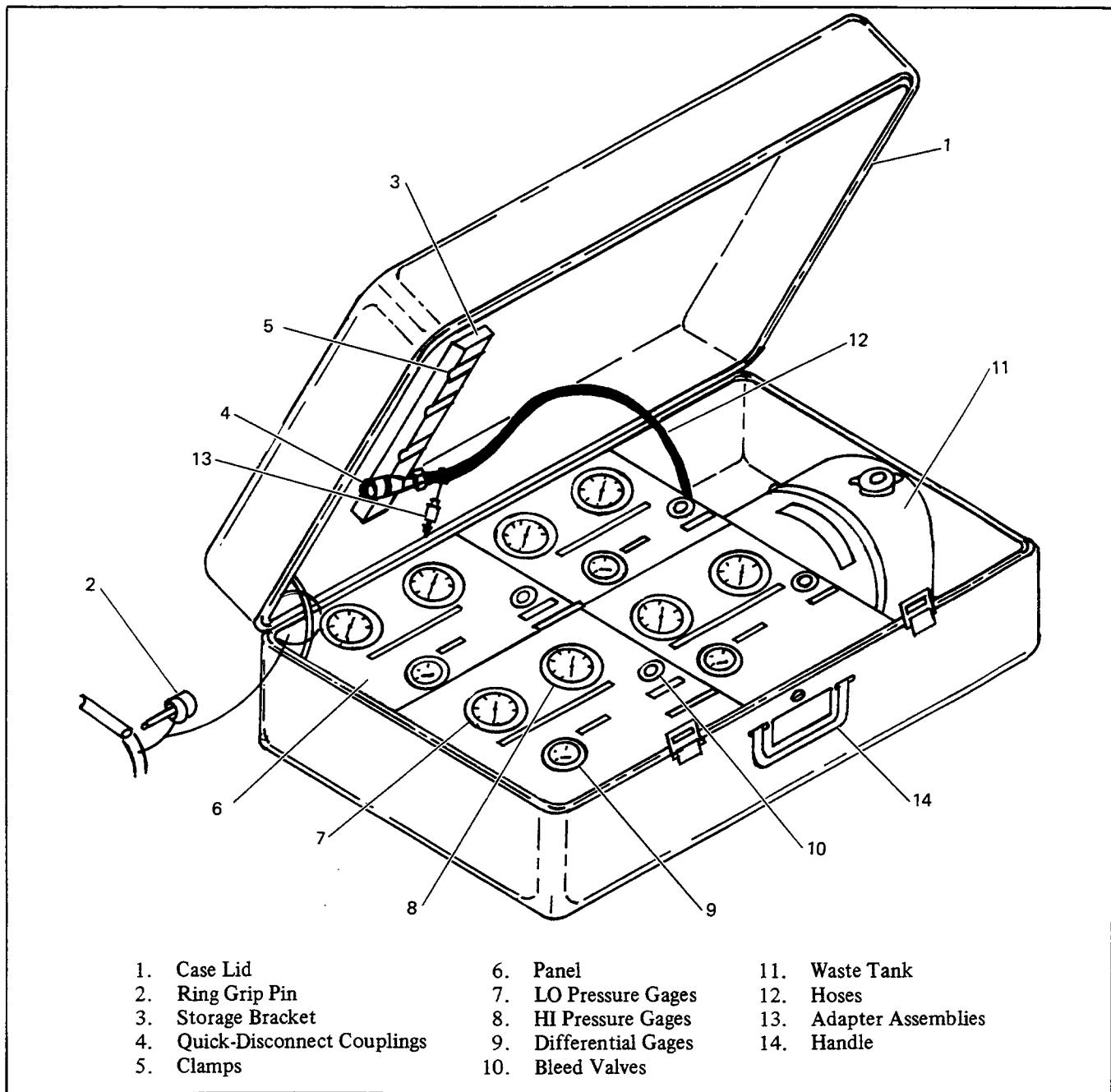


Figure 4-2. Brake Pressure Test Set

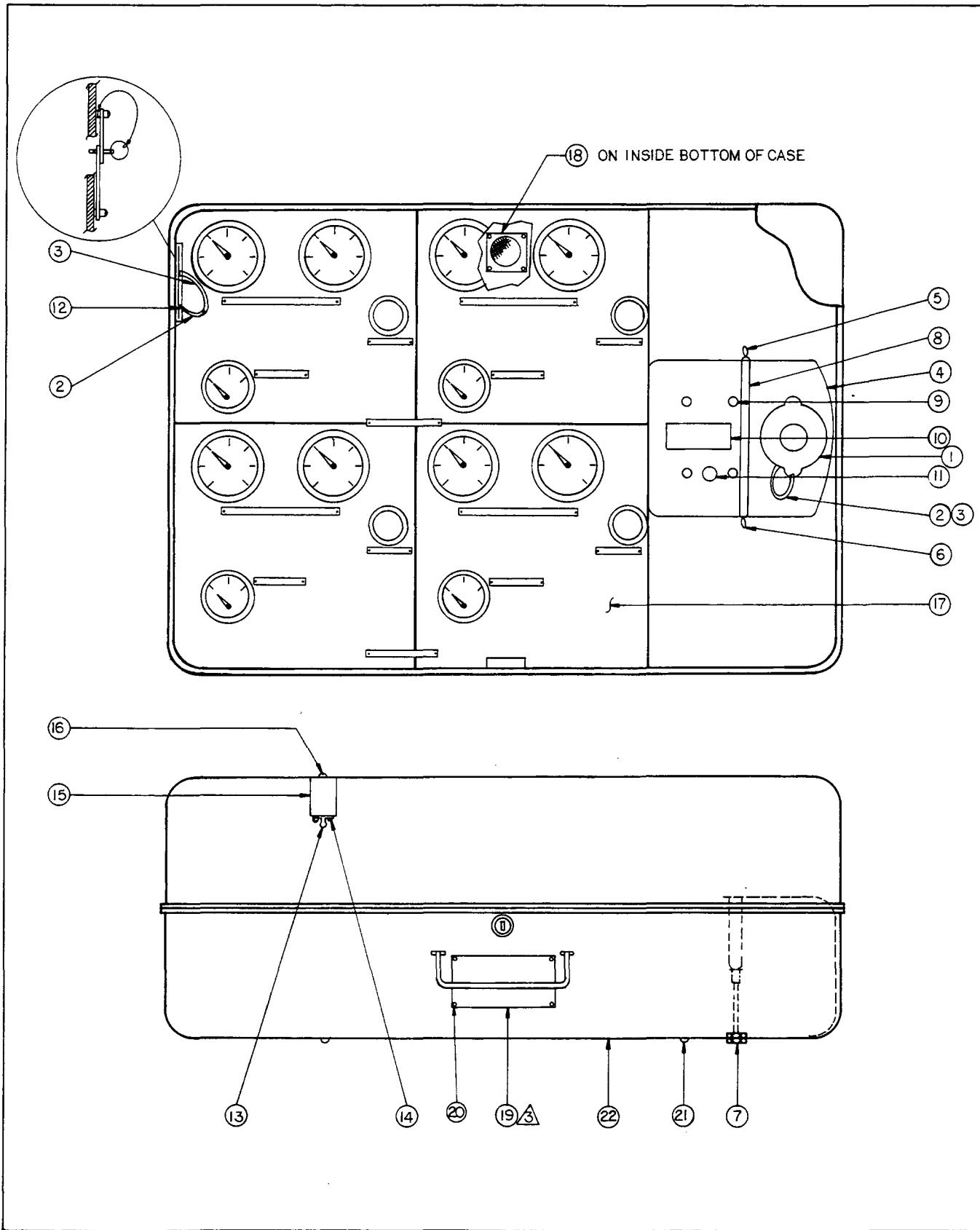


Figure 4-3. Brake Pressure Test Set

4-5. DISCONNECTING TEST SET FROM AIRCRAFT.
When testing is completed, disconnect and store each of the applicable hoses into the Test Set in accordance with the following procedure:

- a. Ensure that the aircraft landing gear bleed valve is closed.
- b. If pressure is indicated on any of the gages (24, 27, and 32, Figure 4-1), momentarily open the corresponding bleed valve (14, Figure 4-1) to release the pressure and return to the closed position firmly.
- c. Disconnect hose coupling halves of QDs and install dust plugs and dust caps.

d. While holding each aircraft landing gear bleed valve closed with a wrench, unscrew the adapter fitting and QD half from bleed valve.

e. Store the hoses in the case and secure QD couplings on bracket (15, Figure 4-3) with toggle clamps (13, Figure 4-3) in the case lid. Thread adapter fittings into storage bracket.

f. Recheck that all bleed valves are closed. Pull tube ends from waste tank ports, empty and reinstall waste tank (4, Figure 4-3). Replace cap (1, Figure 4-3) on tank and insert five drain hoses into holes provided on waste tank.

g. Release ring grip pin (12, Figure 4-3) and close lid while ensuring that the hoses do not interfere with closing.

SECTION V

MAINTENANCE INSTRUCTIONS

5-1. INTRODUCTION. This section contains general instructions essential for the maintenance of the Brake Pressure Test Set. After use, a general cleaning of connectors and the release of hydraulic pressure on the gages (by opening and reclosing the bleed valves) may be necessary. Any necessary special adapters and equipment are listed in Table 2-1 and Table 2-2.

5-2. OPERATIONAL CHECKOUT OF BRAKE PRESSURE TESTER.

NOTE

To check the satisfactory operation of the Test Set, a deadweight tester is required to provide pressurized fluid to the Test Set. During the operational checkout, the deadweight tester is utilized solely as a pump.

- a. Connect the Test Set to the deadweight tester in accordance with Figure 5-1.
- b. Close the bleed valve for the gage system being pressurized. Open all other bleed valves.
- c. Operate hand pump until pressure on HI gage reads 3450 ± 50 psi. This is the setting of the relief valve and should not be exceeded.
- d. Read LO pressure gage — it should indicate 485 ± 20 psi which indicates proper operation of the gage cutout.
- e. Check that there are no fluid leaks or any leakage past the bleed valve through the translucent drain tube.
- f. Check that differential pressure gage pegs out at over 35 psi.
- g. Repeat steps a through f for each remaining system.

This procedure will verify that all gages and components are functional.

5-3. PERIODIC INSPECTION AND MAINTENANCE. There is no periodic maintenance required for the Brake Pressure Test Set.

5-4. UNSCHEDULED MAINTENANCE.

- a. *Unscheduled Inspection.* Unscheduled Inspection procedures are as follows. Visually inspect the unit for the following, prior to use.

- (1) Damage to case.
- (2) Loose or missing parts.
- (3) Broken or damaged gages.
- (4) Deterioration of hoses.
- (5) Evidence of leakage.

b. *Unscheduled Precharging the Test Set.* If circuit precharge has been lost, or test set has not been charged with hydraulic fluid, or if air is in the circuits, the system shall be charged and bled as follows:

- (1) Using deadweight tester, apply hydraulic pressure to the gages (24, 27, 32, Figure 5-2) and turn valve (14) on test set panel for this circuit counterclockwise to open position, maintain hydraulic pressure.
- (2) When hydraulic fluid flowing through the translucent drain tubing (9, Figure 5-2) into the waste tank (4, Figure 5-3) contains no bubbles, close valve (14, Figure 5-2).
- (3) Repeat (1) and (2) with the next circuit of the test set until all required circuits have been charged.
- (4) Assure all bleed valves are closed.
- (5) Test set is ready to perform aircraft required testing.

5-5. TROUBLESHOOTING. Refer to Table 5-1, Troubleshooting, for causes and remedies.

5-6. REPAIR AND REPLACEMENT INSTRUCTIONS. Repair is limited to replacement of the damaged or malfunctioning component. To replace a component, follow the disassembly and assembly instructions in this section.

5-7. DISASSEMBLY. (Refer to Figure 5-3.) Disassemble the test set to allow access to hydraulic components, using the following steps.

NOTE

Disassemble the Brake Pressure Test Set only to that extent necessary to make repairs and/or replacements. On the differential pressure gages only replacement of seals (3, Figure 5-4) on end caps and broken gage glass (8, Figure 5-4) is authorized.

- a. Remove waste tank (4, Figure 5-3) by unhooking strap (8) and pulling drain hoses (12, Figure 5-5) from tank grommets (9, Figure 5-3).

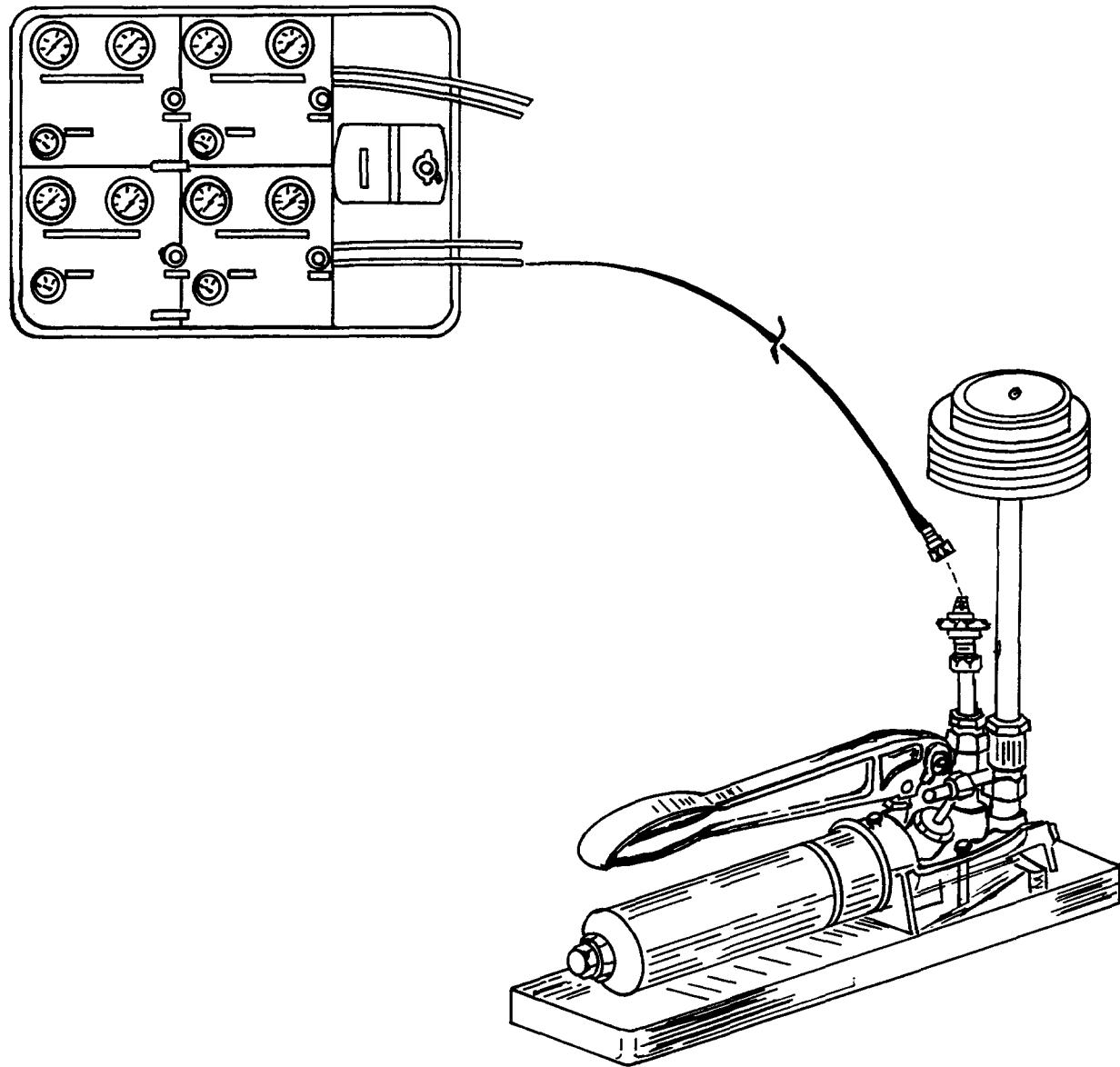


Figure 5-1. Calibration Test Set-Up

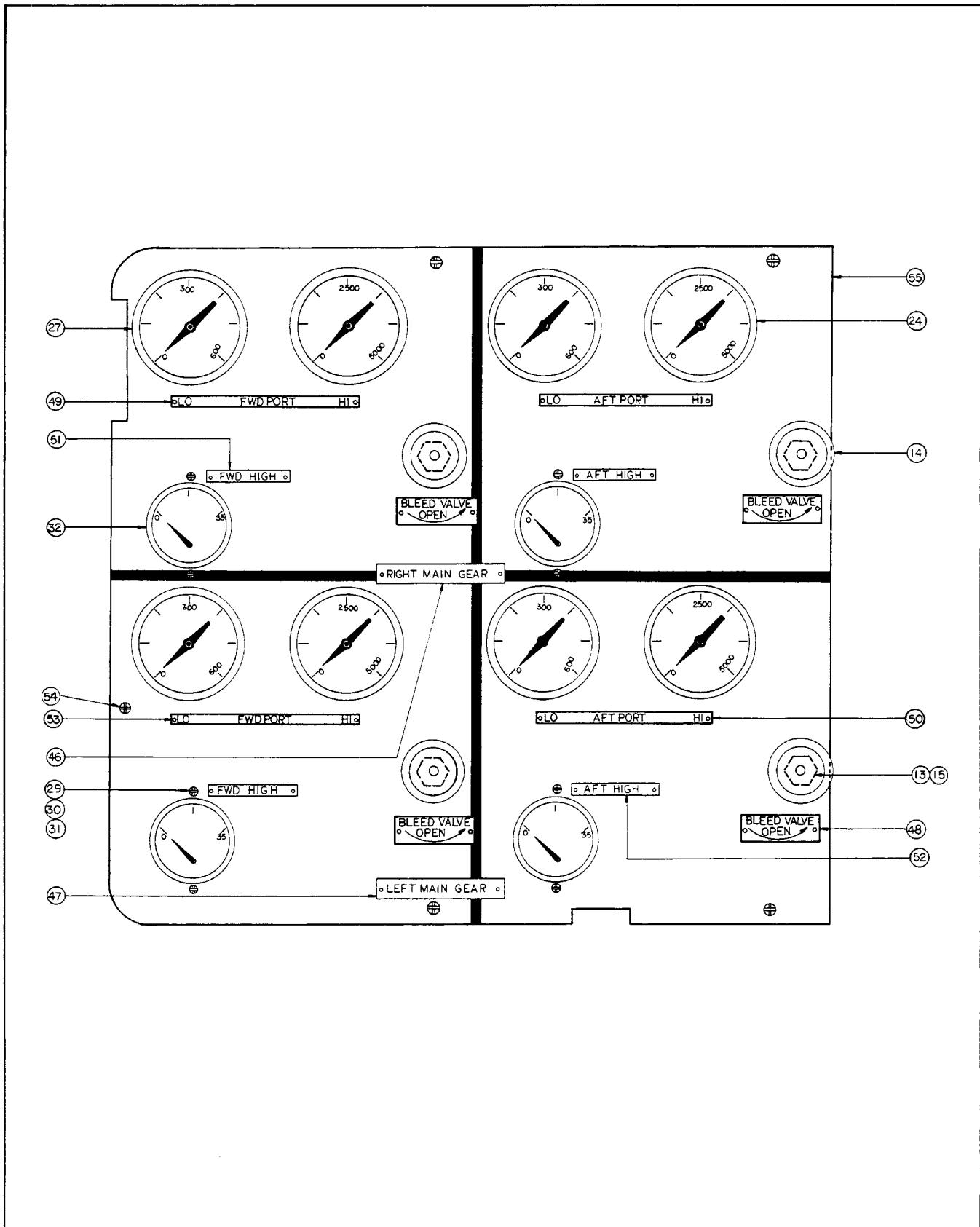


Figure 5-2. Panel Assembly (Sheet 1 of 3)

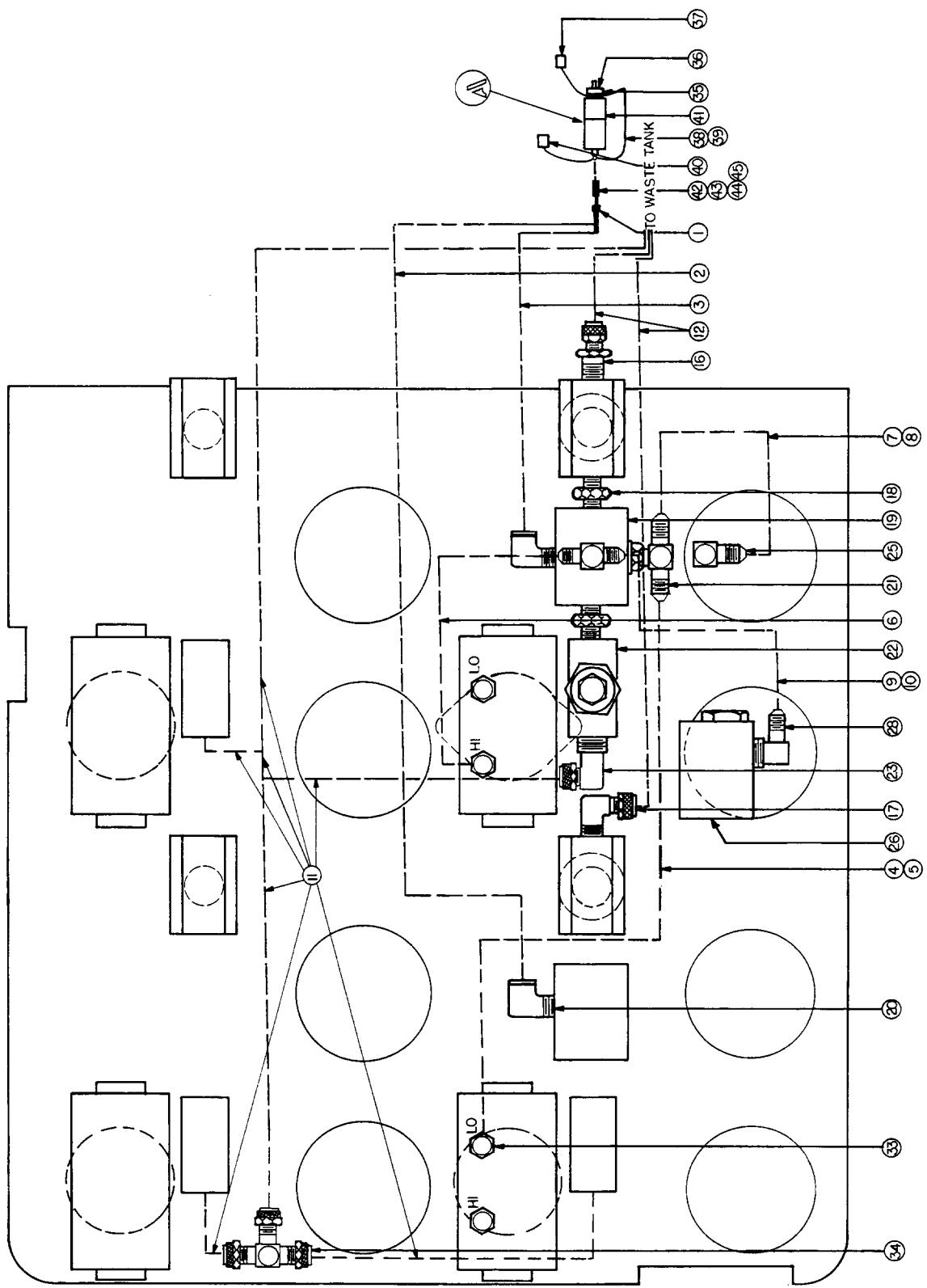


Figure 5-2. Panel Assembly (Sheet 2 of 3)

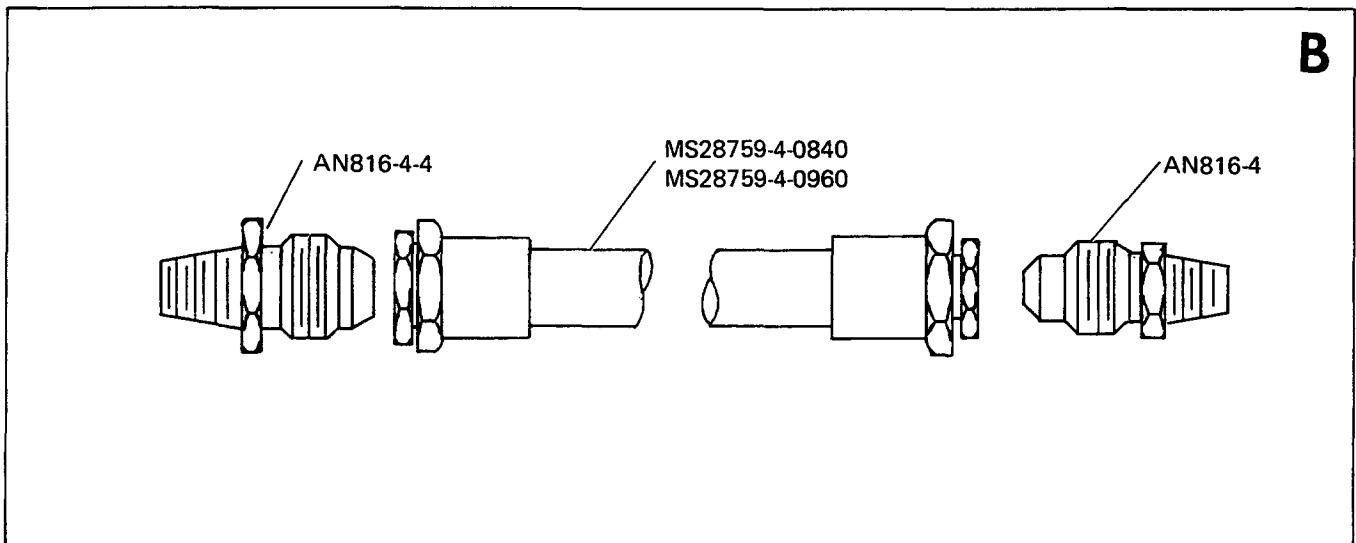
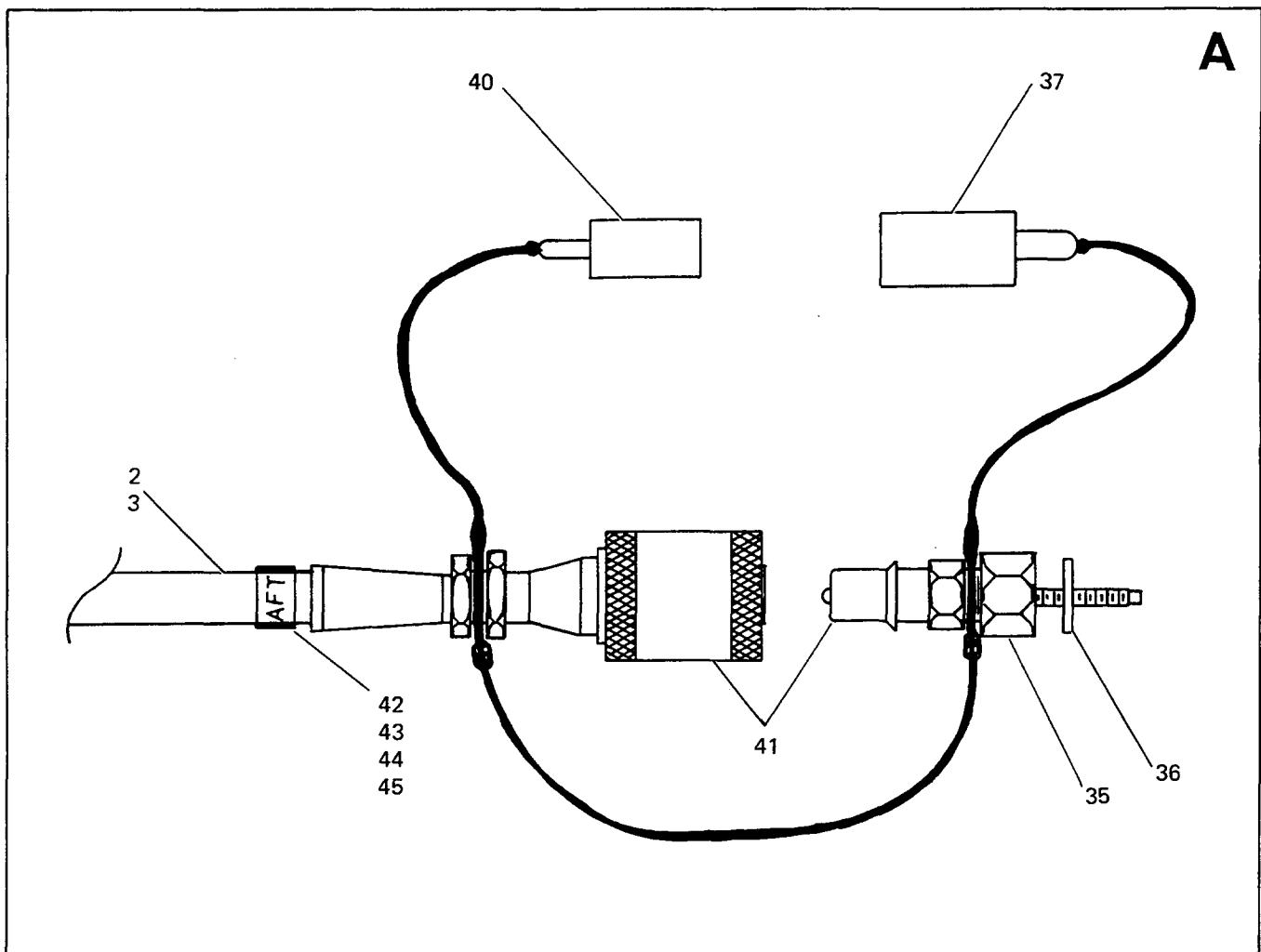


Figure 5-2. Panel Assembly (Sheet 3 of 3)

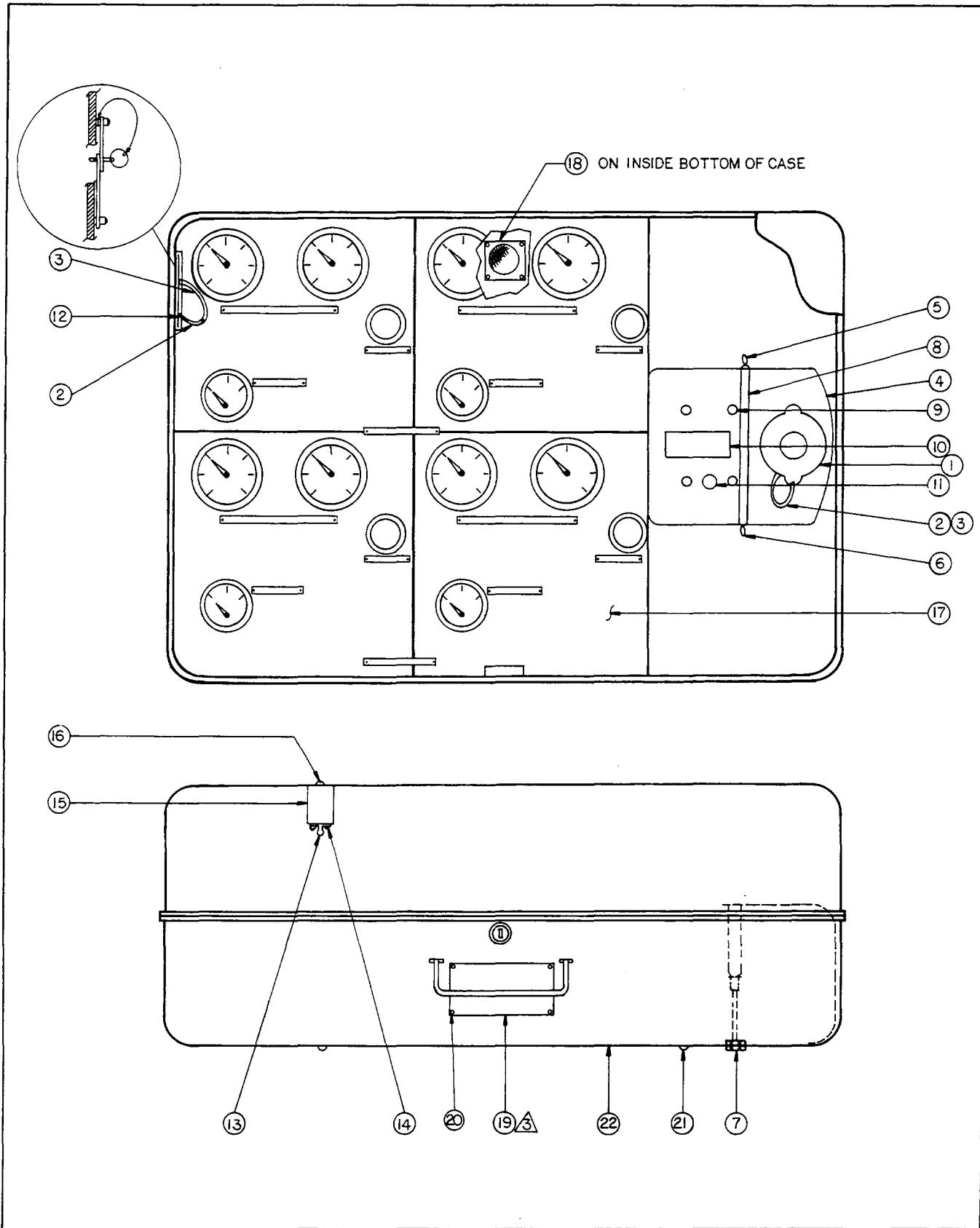


Figure 5-3. Brake Pressure Test Set

Table 5-1. Troubleshooting

Trouble	Probable Cause	Remedy
	Incorrect connection	Ensure proper unit connection. Refer to paragraph 4-4 for proper connection procedure.
	Not sufficiently precharged	Ensure proper charge. Refer to paragraph 5-4.
	Undetectable leaks	Check relief valve.
	Defective gage	Replace gage.
	Bleed valve open.	Close bleed valve.

b. Remove panel assembly (17), by removing five screws (54, Figure 5-2), and lifting the complete assembly out of the case. This will allow access to hydraulic components at rear of panel.

5-8. CLEANING INSTRUCTIONS. There are no periodic cleaning procedures required for the Brake Pressure Test Set. To clean the test set, proceed as follows.

WARNING

Solvent is flammable and toxic. Use in well ventilated area. Keep away from open flame. Avoid breathing vapors or prolonged contact with skin.

a. Clean affected parts in solvent P-D-680, Type II, paying particular attention to accumulation of foreign matter. Use a non-metallic, stiff bristle brush to remove stubborn accumulations.

WARNING

Use approved personal protective equipment (goggles/face shield) when using compressed air. Air pressure is restricted to less than 30 psi. Provide protection from flying particles. Do not direct airstream towards self or other personnel.

b. Dry parts with clean, lint-free cloth or filtered moisture-free compressed air.

5-9. INSPECTION INSTRUCTIONS. Visually inspect for defects such as physical distortion, wear, cracks, pitting, corrosion, broken, loose or missing pieces and foreign objects.

5-10. ASSEMBLY INSTRUCTIONS.

a. Install panel assembly (17, Figure 5-3). Secure with five screws (54, Figure 5-2).

b. Install waste tank (4, Figure 5-3) by inserting drain hoses (12, Figure 5-5) through tank grommets (9, Figure 5-3). Secure with strap (8).

5-11. TEST INSTRUCTIONS. Pressurize each system to approximately 3.100 psi and check for leaks.

5-12. CALIBRATION INSTRUCTIONS. The use of an AFTO Form is required. To calibrate a gage, proceed as follows.

NOTE

A calibration check is required every 180 days. Each independent pressure gaging circuit is to be calibrated separately. The complete calibration procedure for the test set is therefore accomplished in four segments, one for each circuit.

Zero does not need to be correct because of the usage and sizes of the gages. Accuracy is only needed at the stated check points in table 5-2.

During calibration of main gage, the differential gage will indicate full scale. Due to the construction of the differential gage, this will not result in any damage to the gage.

Hysteresis is present in the differential gage, therefore calibrate only on increasing reading. At low pressures (10 psi and below), there is likely to be some sticking of gage pointer on decreasing readings. 25 psi reading is where maximum accuracy is desired. Do not overshoot 25 psi. If overshoot occurs during calibration, open bleed valve to release pressure and repeat procedure.

a. Connect the Test Set to the deadweight test in accordance with Figure 5-1.

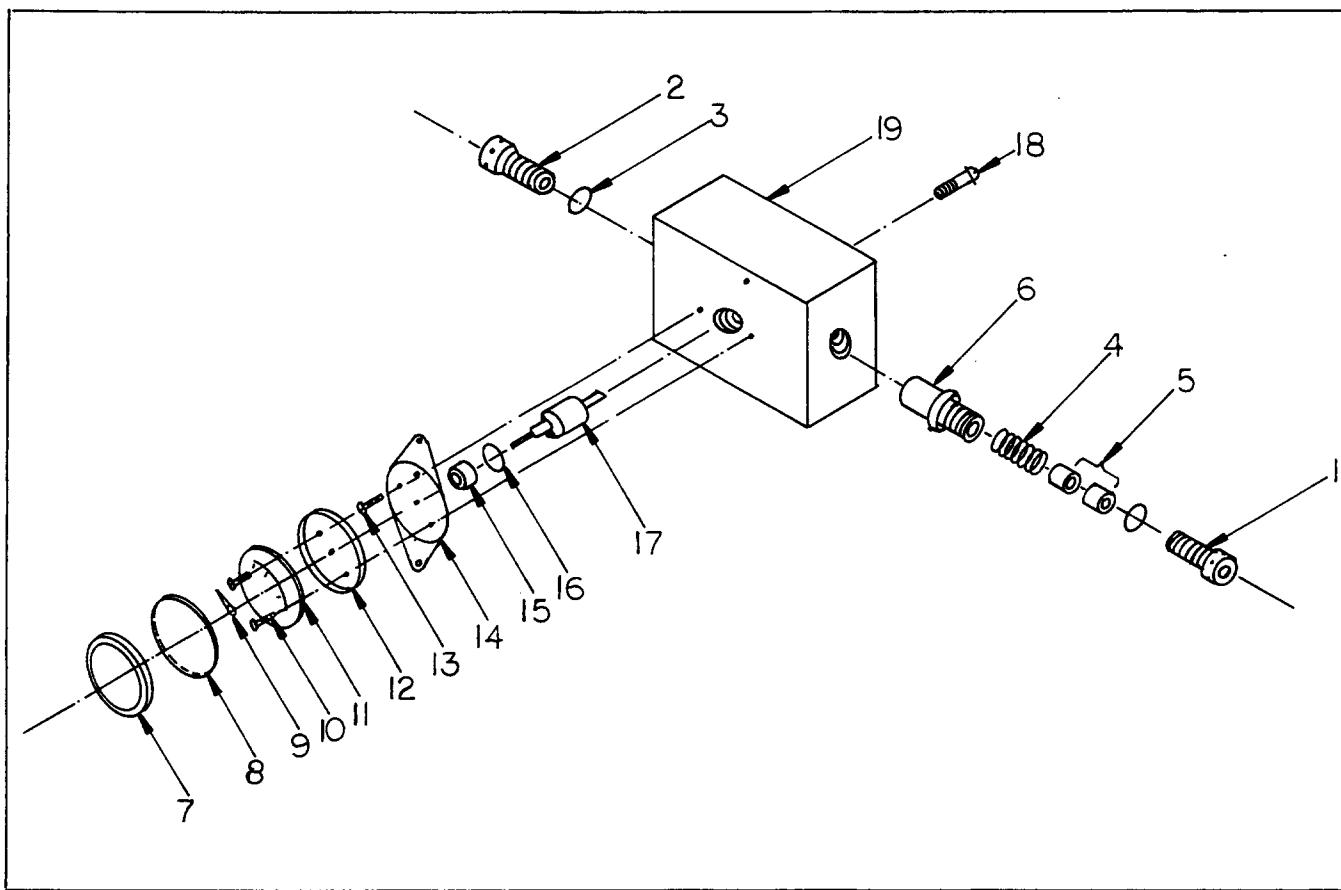


Figure 5-4. Differential Pressure Gage

b. Select the piston and weights required to provide the pressure indicated in Table 5-2.

c. Close the bleed valve (14, Figure 5-2) for the gage system being calibrated. Open all other bleed valves.

d. Watch LO pressure gages to insure that they are not pressured over approximately 95% of scale. If they are, LO gages shut-off valves require maintenance.

e. Using normal operating procedures, adjust the regulated pressure source until the calibration standard piston floats.

f. The test instrument must indicate the applied pressure within the limits indicated in Table 5-2.

g. Release the pressure.

h. Close all bleed valves.

i. Repeat steps b through h above for each gage system in the Test Set.

j. Disconnect all equipment.

Table 5-2. Calibration Settings

Gage Type	Calibration Pressure (psi)	Gage Reading (psi)
Main HI	3100	3100 ± 50
	500	500 ± 50
Main LO	400	400 ± 10
	100	100 ± 10
Differential	25	25 ± 2.5

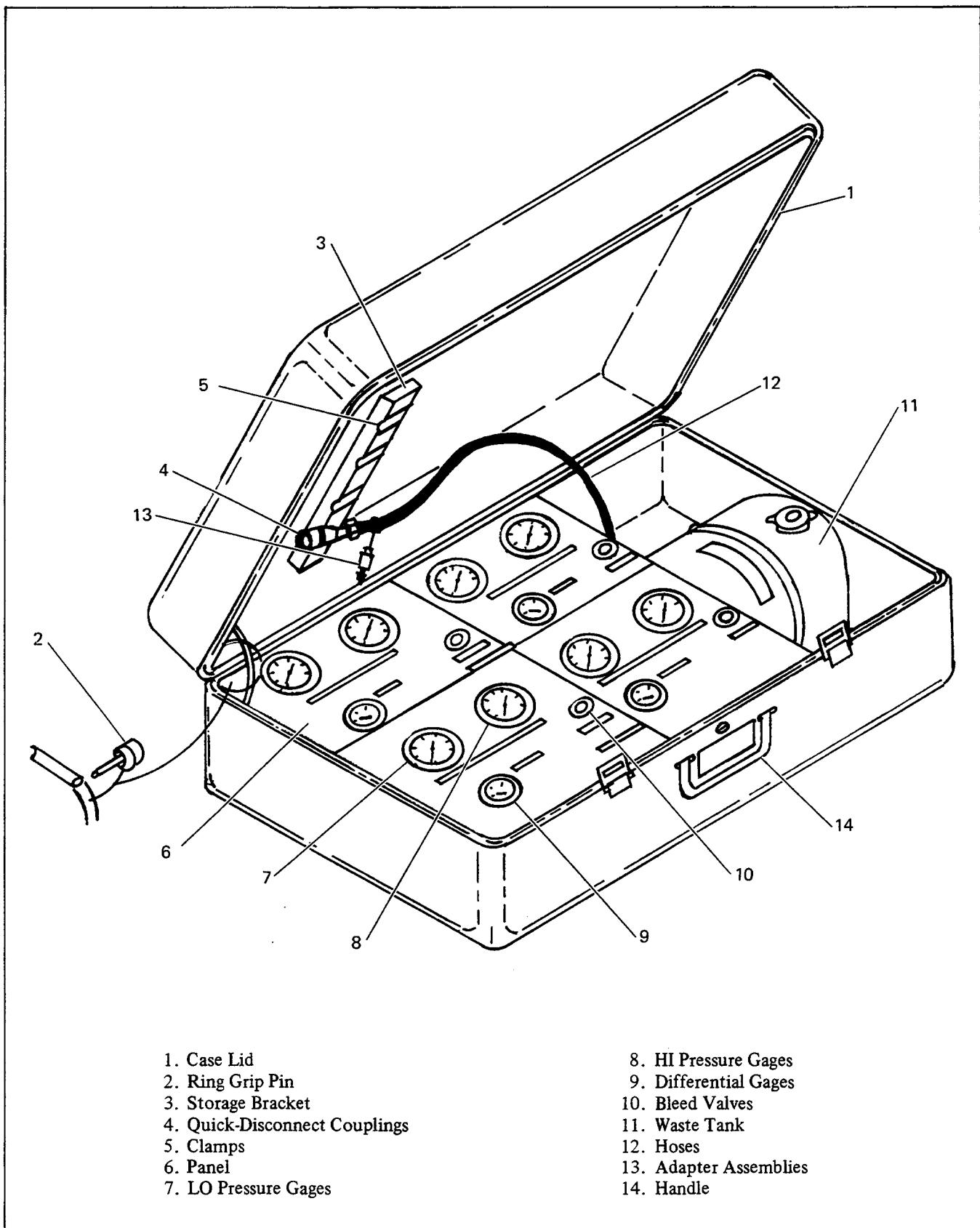


Figure 5-5. Brake Pressure Test Set

SECTION VI

DIAGRAMS

6-1. GENERAL. This section contains the hydraulic schematic of the Brake Pressure Test Set. This hydraulic schematic is the only schematic required for this Test Set. No additional diagrams are required. This hydraulic schematic depicts the arrangement of all functional components of the Brake Pressure Test Set.

6-2. HYDRAULIC SCHEMATIC. Refer to Figure 6-1 for the Hydraulic Schematic of the Brake Pressure Test Set.

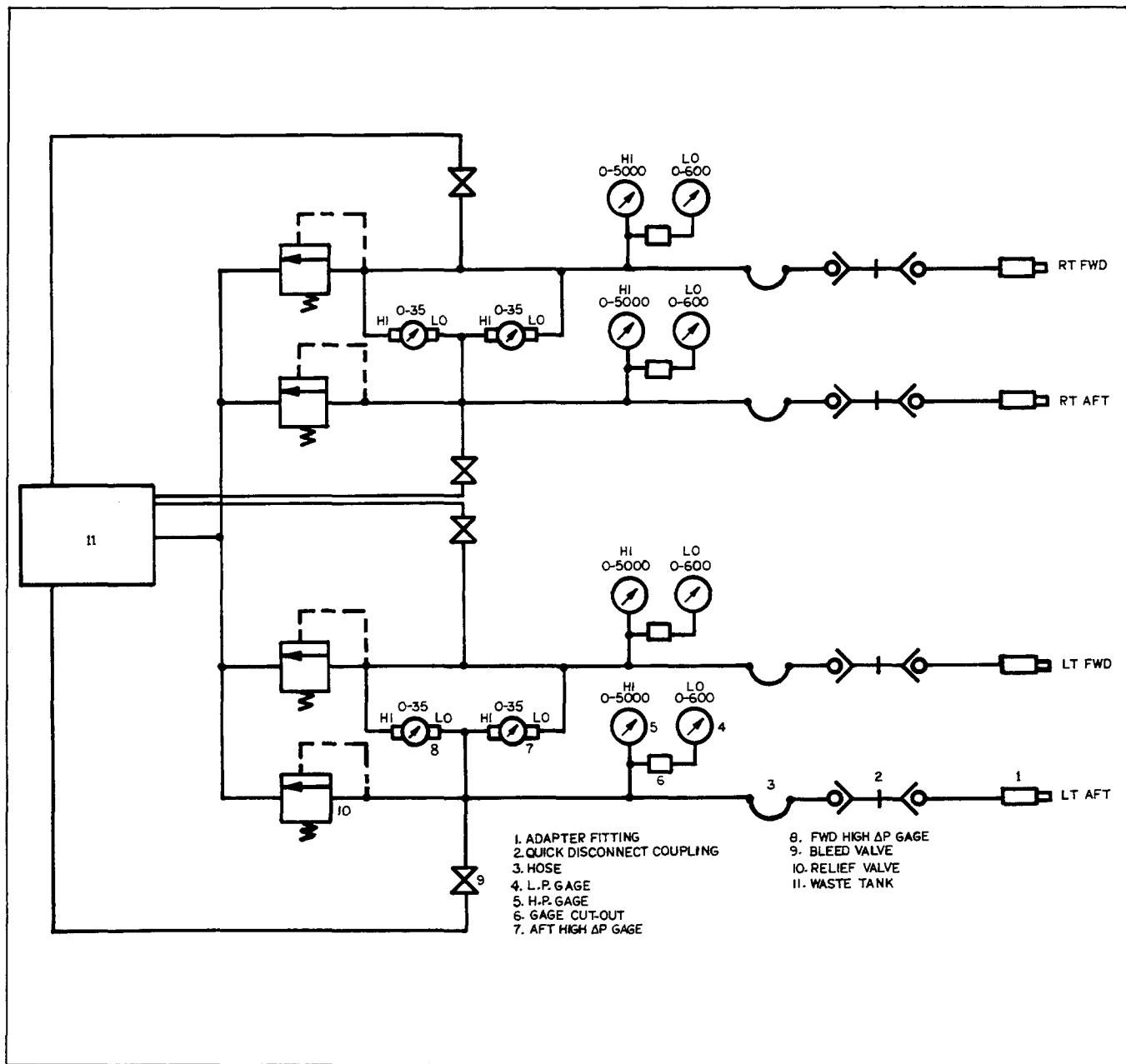


Figure 6-1. Hydraulic Schematic

SECTION VII

ILLUSTRATED PARTS BREAKDOWN

7-1. INTRODUCTION. The Illustrated Parts Breakdown lists and describes the parts of the Brake Pressure Test Set, Part Number 10012-10, manufactured by APS Systems, 130 W. Clara St., Port Hueneme, CA 93041 (FSCM 60984).

7-2. MAINTENANCE PARTS LIST. The parts list contains a breakdown of the equipment into its assemblies, subassemblies and detail parts. Each assembly listed is followed immediately by its component parts, properly indented to show their relationship to the assembly. An assembly beginning in column one has its detail parts beginning in column two. If a detail part is in turn an assembly, its detail parts begin in column three, etc. Attaching parts are listed immediately below and at the same indentation as the items which they attach. They are indicated by the symbol (AP) following the description. Part numbers are used to identify all parts.

a. The figure and index numbers key the parts breakdown list to the applicable illustration. The number following the dash is the index number of a part appearing in the illustration. The index numbers' main use is to facilitate the locating of a part in an illustration or in the parts listing.

b. The part number column contains the manufacturer's vendor part number, or a Government Standard (AN, MS, etc.) part number. Part numbers are used to identify all parts.

c. The FSCM column contains the Federal Supply Code for Manufacturers. A numerical and alphabetical listing of these manufacturers' codes appears in Paragraph 7-5. Manufacturers with no FSCM are listed by company name and address following the item they manufacture in the parts breakdown. For commercially available parts, "Comm." appears in the FSCM column.

d. The Description column identifies the parts being listed by noun name followed by modifiers. When appropriate, the column also includes descriptive data, such as dimensions and materials.

e. The Units Per Assembly column indicates the quantity of parts required for the assembly or subassembly in which that part appears. "REF" (reference) is used in this column when the part has been previously listed and illustrated with proper quantities, and is relisted for reference purposes only. The quantities listed in this column are, in the case of assemblies, the total quantities used at the location indicated. In cases of components of assemblies, the quantities listed indicate the number of parts used in one assembly. The quantities specified are not necessarily the total used in the equipment.

f. The Usable On Code column is not applicable to this Illustrated Parts Breakdown, as the assemblies are appli-

cable to all serial numbers of the Brake Pressure Test Set units (Part Number 10012-10).

g. SM&R Codes are assigned to establish uniform source, maintenance and recoverability, and to prescribe policy for the application of these codes.

7-3. NUMERICAL INDEX. A Numerical Index is not required for this Illustrated Parts Breakdown.

7-4. ABBREVIATIONS. All symbols and abbreviations used in this Illustrated Parts Breakdown are in accordance with MIL-STD-12, Abbreviations for Use on Drawings and in Technical Type Publications. Those used in this manual are as follows:

%	Percent
°	Degree
AFT	Rear
AP	Attaching Part
Ave	Avenue
CA	California
Comm.	Commercial
Comp	Composition
CT	Connecticut
Dia	Diameter
Div	Division
E	East
etc.	Etcetera
FSCM	Federal Supply Code for Manufacturers
FWD	Forward
IL	Illinois
MA	Massachusetts
MI	Michigan
NHA	Next Higher Assembly
NY	New York
OH	Ohio
psid	Pounds per square inch differential
psig	Pounds per square inch gage
QD	Quick disconnect
REF	Reference
S	South
St Stl	Stainless Steel
Str	Straight
SM&R	Source Maintenance and Recoverability
T.O.	Technical Order

7-5. LIST OF MANUFACTURERS' CODES. The following list is a compilation of the vendor codes with the name and address for each supplier of purchased and vendor parts listed in this Illustrated Parts Breakdown. The codes are in accordance with the Federal Supply Code for Manufacturers Cataloging Handbook H4-1 and H4-2, and are arranged in numerical order, followed by a listing in alphabetical sequence.

Code	Name and Address	Name and Address	Code
00624	Aeroquip Corp., Aircraft Div. Jackson Plant 300 S. East Ave. Jackson, MI 49203	Aerofast P.O. Box 324 Wheaton, IL 60187	09332
09332	Aerofast P.O. Box 324 Wheaton, IL 60187	Aeroquip Corp., Aircraft Div. Jackson Plant 300 S. East Ave. Jackson, MI 49203	00624
30327	Imperial Eastman Corp. Imperial Div. 6300 W. Howard St. Chicago, IL 60648	APS Systems 130 W. Clara St. Port Hueneme, CA 93041	60984
30839	Orange Research, Inc. 140 Cascade Blvd. Milford, CT 06460	De-Sta-Co Div. Dover Corp. 346 Midland Detroit, MI 48203	71913
38056	Dresser Industries, Inc. Dresser Industrial Valve and Instrument Div. 250 E. Main St. Stratford, CT 06497	Dresser Industries, Inc. Dresser Industrial Valve and Instrument Div. 250 E. Main St. Stratford, CT 06497	38056
45681	Parker-Hannifin Corp. 17325 Euclid Ave. Cleveland, OH 44112	Fluid Controls, Inc. 8431 Tyler Blvd. Mentor, OH 44060	96259
60984	APS Systems 130 W. Clara St. Port Hueneme, CA 93041	Imperial Eastman Corp. Imperial Div. 6300 W. Howard St. Chicago, IL 60648	30327
61957	USM Corp. 140 Federal St. Boston, MA 02107	Military Standard	81349
71913	De-Sta-Co Div. Dover Corp. 346 Midland Detroit, MI 48203	Military Standard	88044
81349	Military Standard	Military Standard	96906
88044	Military Standard	Orange Research, Inc. 140 Cascade Blvd. Milford, CT 06460	30839
96259	Fluid Controls, Inc. 8431 Tyler Blvd. Mentor, OH 44060	Parker-Hannifin Corp. 17325 Euclid Ave. Cleveland, OH 44112	45681
96906	Military Standard	USM Corp. 140 Federal St. Boston, MA 02107	61957
98376	Zero Manufacturing 777 Front St. Burbank, CA 91503	Zero Manufacturing 777 Front St. Burbank, CA 91503	98376

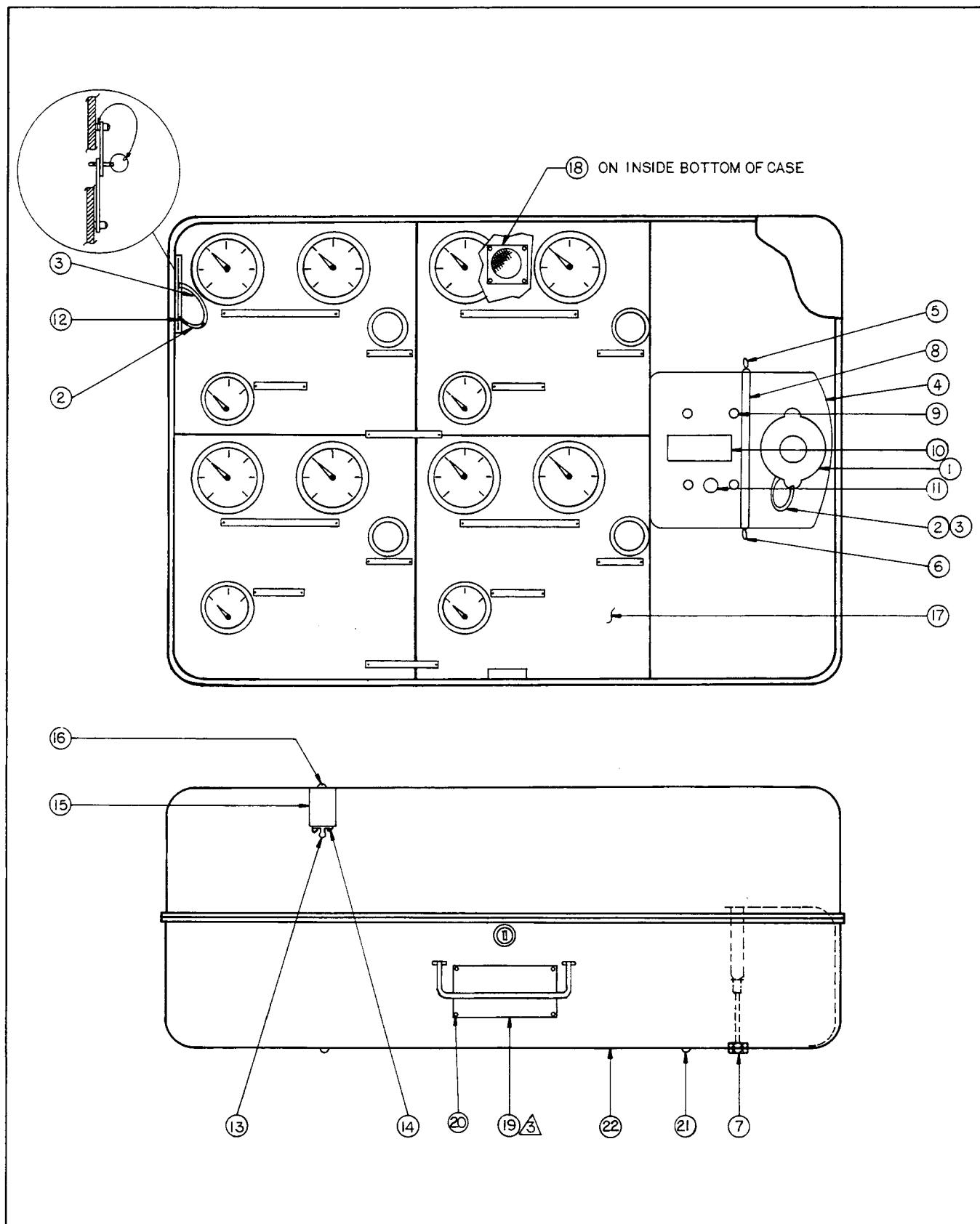


Figure 7-1. Brake Pressure Test Set

FIGURE & INDEX NUMBER	PART NUMBER	FSCM	1	2	3	4	5	6	7	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE	SMR CODE
			1	2	3	4	5	6	7				
7-1-	10012-10	60984								TEST SET, Brake pressure	REF		
-1	40085-1	60984	.							CAP, Pressure (modified)	1		
-2	MS51844-22	96906	.							FASTENER, Crimp	4		
-3	MIL-W-83420D	81349	.							ROPE, Wire, Type II, Comp B	A/R		
										1/16 dia., 7 x 7 str.			
-4	40075-1	60984	.							TANK, Waste	1		
-5	40053-1	60984	.							EYE (AP)	1		
-6	40052-1	60984	.							HOOK (AP)	1		
-7	MS35649-202	96906	.							NUT, Hex (AP)	4		
-8	MS28775-342	96906	.							STRAP, O-Ring.	1		
-9	AN931-4-7	88044	.							GROMMET	4		
-10	40171-1	60984	.							NAMEPLATE	1		
-11	AN931-6-9	88044	.							GROMMET	1		
-12	C3-2R	09332	.							PIN, Locking	1		
-13	205-S	71913	.							CLAMP, Toggle	4		
-14	MS35206-228	96906	.							SCREW, Round head (AP)	16		
-15	40051-1	60984	.							BRACKET, Hose and valve clamp.	1		
-16	MS35207-263	96906	.							SCREW, Machine, pan head.	6		
-17	20008-10	60984	.							PANEL ASSEMBLY (See Figure 7-2 for detailed breakdown)	1		
-18	40087-1	60984	.							DRAIN SCREEN	1		
-19	40054-1	60984	.							NAMEPLATE, I.D.	1		
-20	AD34ABS	61957	.							RIVET, Pop, 3/32 dia	8		
-21	ZSP-7-703	98376	.							FOOT	4		
-22	40050-1	60984	.							CASE, Carrying.	1		

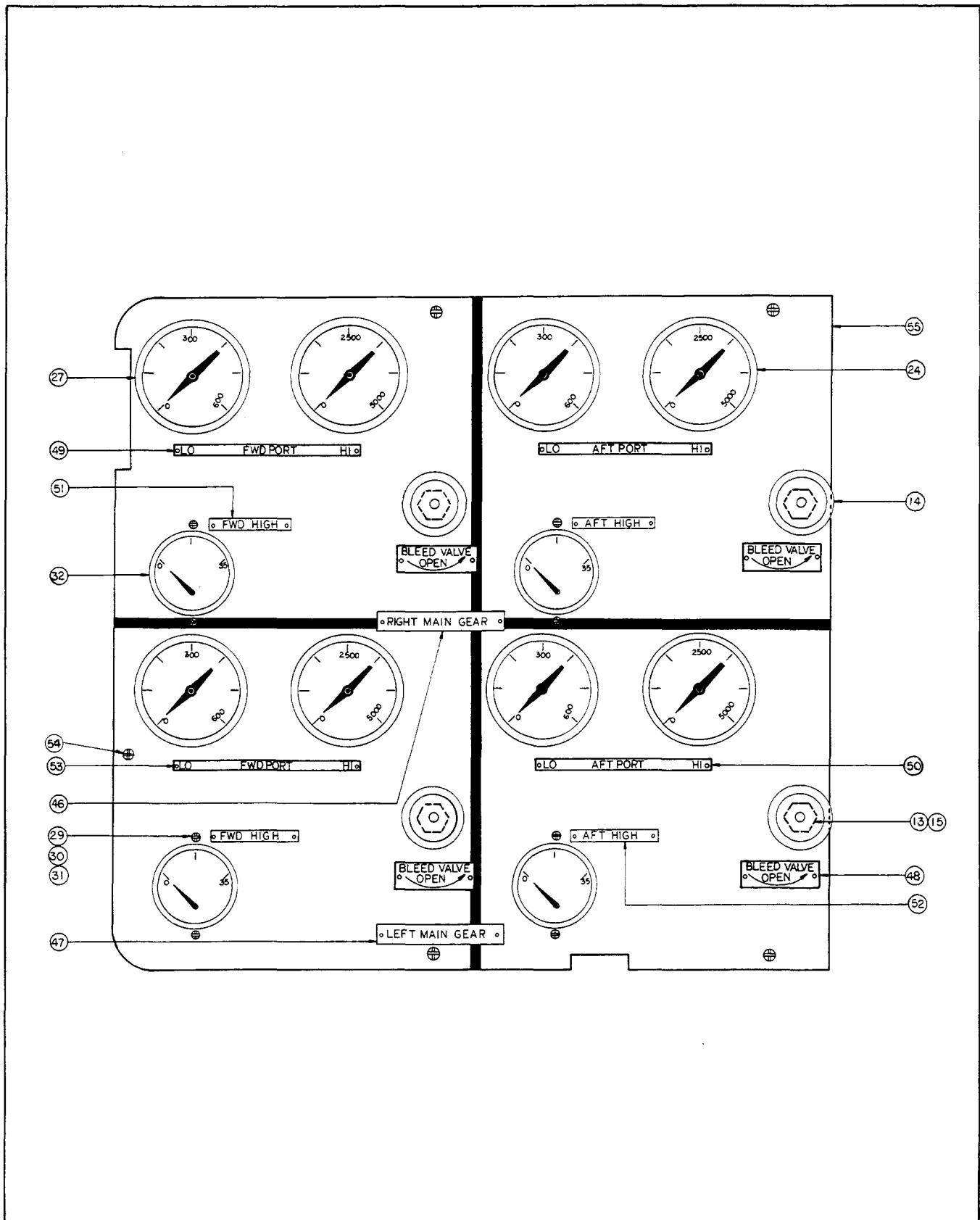


Figure 7-2. Panel Assembly (Sheet 1 of 3)

FIGURE & INDEX NUMBER	PART NUMBER	FSCM	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE	SMR CODE
			1	2	3	4	5	6	7			
7-2-	20008-10	60984	PANEL ASSEMBLY (See Figure 7-1-17. for NHA)							REF		
-1	MS3367-1-9	96906	TIE, Cable							11		
-2	J4HA04-04MBX02MB96	30327	HOSE, 8' long.							2		
	MS28759-4-0960	96906	HOSE							2		
-3	J4HA04-04MBX02MB84	30327	HOSE, 7' long.							2		
	MS28759-4-0840	96906	HOSE							2		
	AN816-4-4	99-44	UNION							2		
	AN816-4	88044	UNION							2		
-4	50046-1	60984	TUBING							2		
-5	50047-1	60984	TUBING							2		
-6	50048-1	60984	TUBING							4		
-7	50049-1	60984	TUBING							2		
-8	50050-1	60984	TUBING							2		
-9	50051-1	60984	TUBING							2		
-10	50052-1	60984	TUBING							2		
-11	66P (Black)	30327	TUBING							A/R		
-12	44P (White)	30327	TUBING							A/R		
-13	MS51967-23	96906	NUT, Hex							4		
-14	2N11-R-2-S	96259	VALVE, Bleed							4		
-15	MS27183-23	96906	WASHER, Flat							4		
-16	268P-04x04	30327	CONNECTOR, Male							2		
-17	269P-04x04	30327	ELBOW, Male.							2		
-18	1/4x1/4FF-S	45681	NIPPLE, Pipe							8		
-19	50001-1	60984	MANIFOLD.							4		
-20	1/4x1/4CD-S	45681	ELBOW, Street							4		
-21	4S5X-S	45681	TEE, Male Branch							8		
-22	1D15F2-60S	96259	VALVE, Relief, 3450 ± 50 psig							4		
-23	269P-06-06	30327	ELBOW, Male, 90°							4		
-24	25-1009SW-02B-XUC5000	38056	GAGE, 0-5000 psig							4		
-25	4-4DTX-S	45681	ELBOW, Female, 90°.							4		
-26	PG1-2APS	None	CUT-OUT, Gage							4		
			(Berry-Langill, Inc., 1315-C E. St. Andrews Place, Santa Ana, CA 92705)									
-27	25-1009A02B-600	38056	GAGE, 0-600 psig							4		
	PDUC600											
-28	849-FS-04x04	30327	ELBOW, Male, 90°							4		
-29	MS35650-382	96906	NUT, Hex							8		
-30	MS35338-42	96906	LOCKWASHER							8		
-31	MS35207-245	96906	SCREW, Machine, pan head.							8		
-32	1202PG-11A-2F	30839	GAGE, 0-35 psid (See Figure 7-3 for detailed breakdown)							4		
-33	848-FS-04x04	30327	CONNECTOR, Male							8		
-34	264P-06	30327	TEE, Union							3		
-35	50002-1	60984	ADAPTER.							4		
-36	50003-1	60984	GASKET, Teflon, 1/16 thk							4		
-37	FD45-1040-02	00624	CAP, Dust							4		
-38	MIL-W-83420D	81349	WIRE ROPE, Type II, Comp B							A/R		
			1/16" dia., 7 x 7 str.									
-39	MS51844-23	96906	FASTENER, Crimp.							8		
-40	FD45-1041-02	00624	PLUG, Dust							4		
-41	FD45-1000-02-02	00624	COUPLING, Quick disconnect.							4		
-42	40089-1	60984	DECAL, Rt fwd							1		
-43	40089-2	60984	DECAL, Lt fwd							1		
-44	40089-3	60984	DECAL, Rt aft							1		

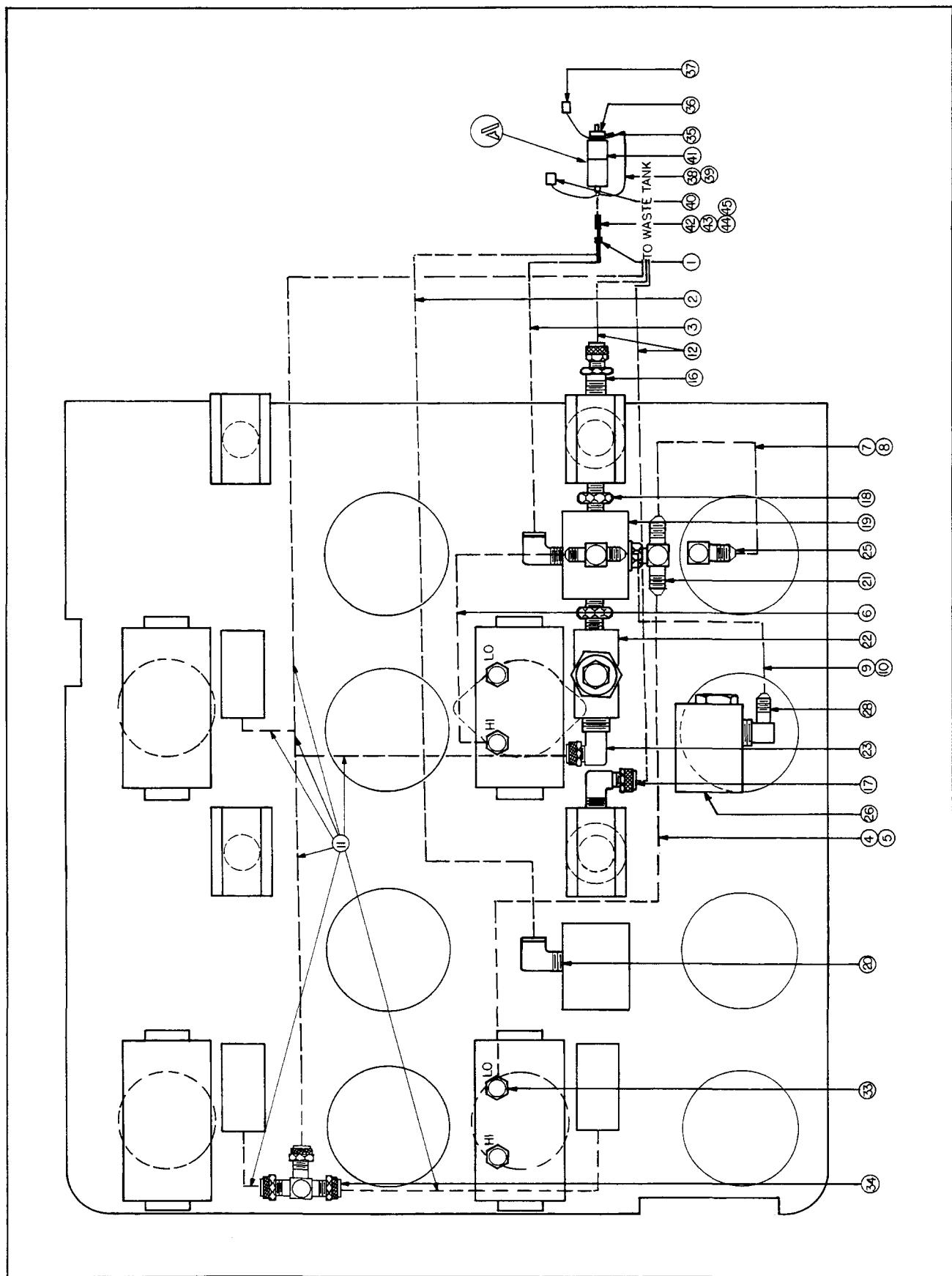


Figure 7-2. Panel Assembly (Sheet 2 of 3)

FIGURE & INDEX NUMBER	PART NUMBER	FSCM	1	2	3	4	5	6	7	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE	SMR CODE
			1	2	3	4	5	6	7				
7-1-45	40089-4	60984	.	DECAL, Lt aft						1			
-46	40090-1	60984	.	NAMEPLATE, Right main gear						1			
-47	40090-2	60984	.	NAMEPLATE, Left main gear						1			
-48	40090-3	60984	.	NAMEPLATE, Bleed valve open.						4			
-49	40090-4	60984	.	NAMEPLATE, Lo fwd port hi.						2			
-50	40090-5	60984	.	NAMEPLATE, Lo aft port hi.						2			
-51	40090-6	60984	.	NAMEPLATE, Fwd hi						2			
-52	40090-7	60984	.	NAMEPLATE, Aft hi.						2			
-53	AD34ABS	61957	.	RIVET, Pop, 3/32 dia (AP for nameplates, dash 48 thru dash 54 above)						36			
-54	MS35207-263	96906	.	SCREW, Machine, pan head.						5			
-55	40048-1	60984	.	PANEL						1			

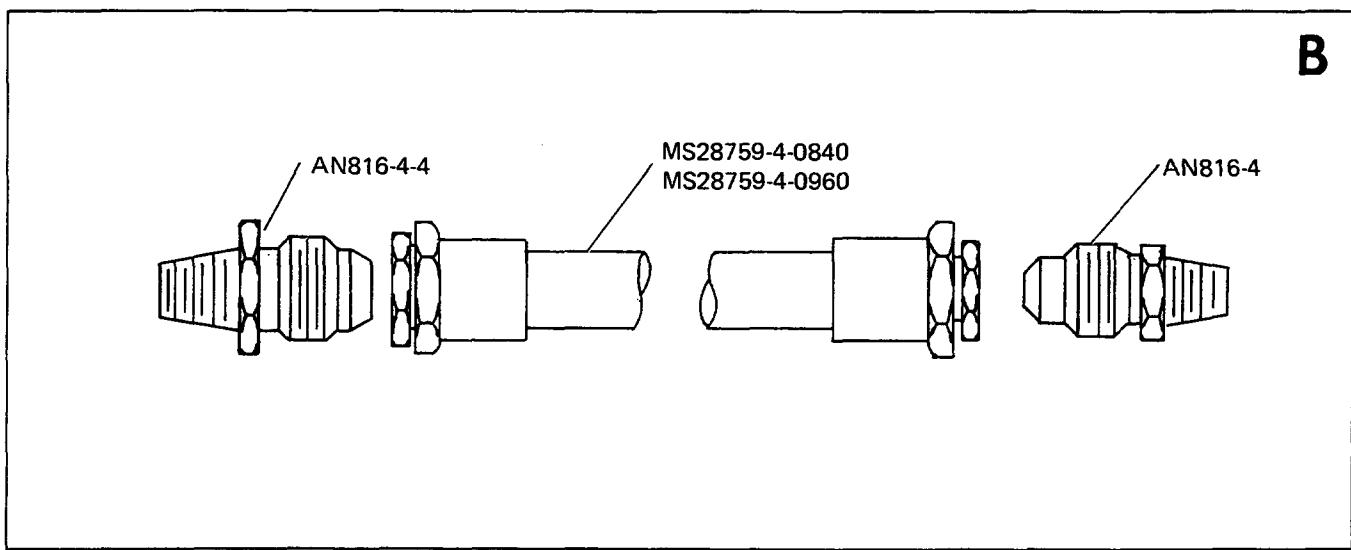
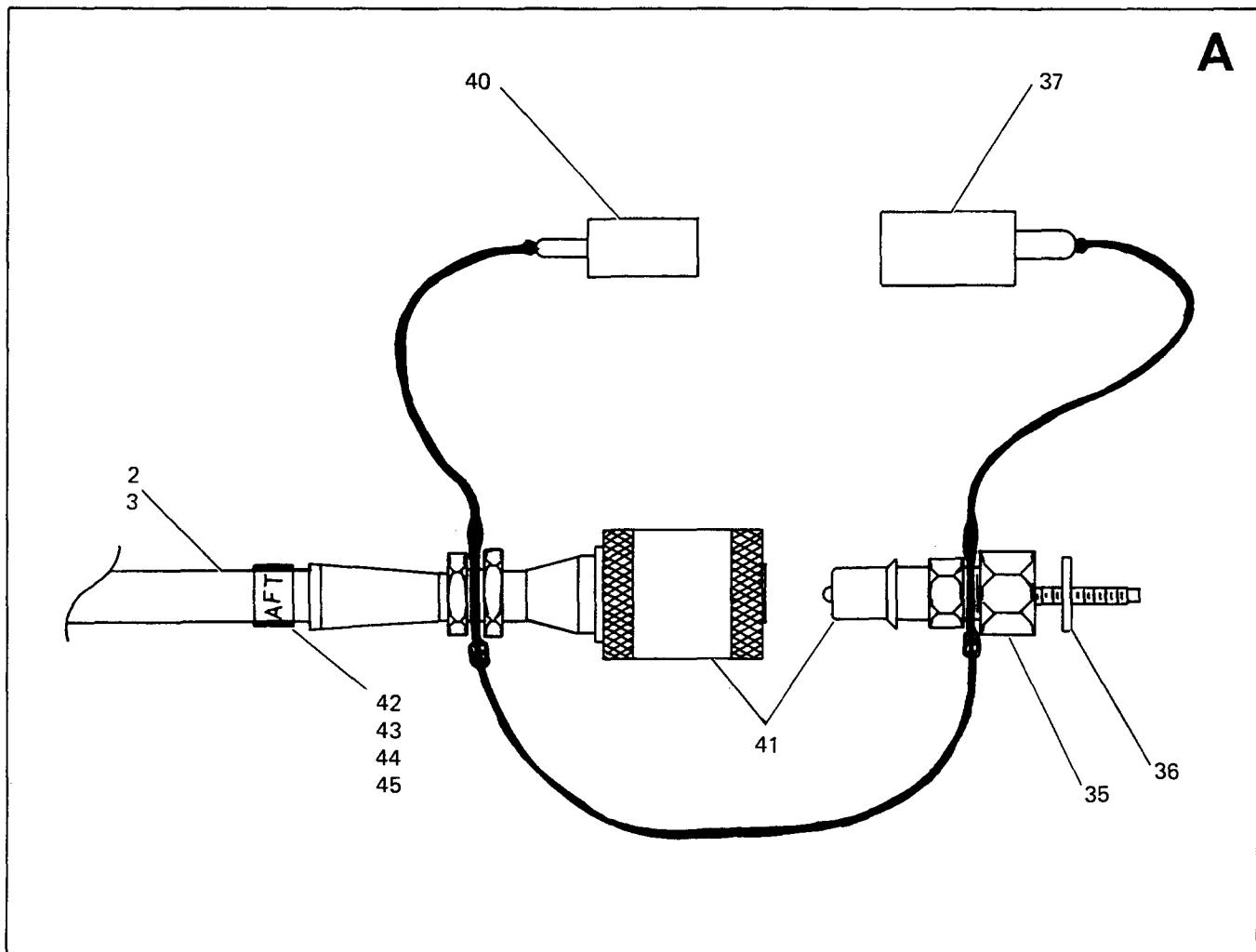


Figure 7-2. Panel Assembly (Sheet 3 of 3)

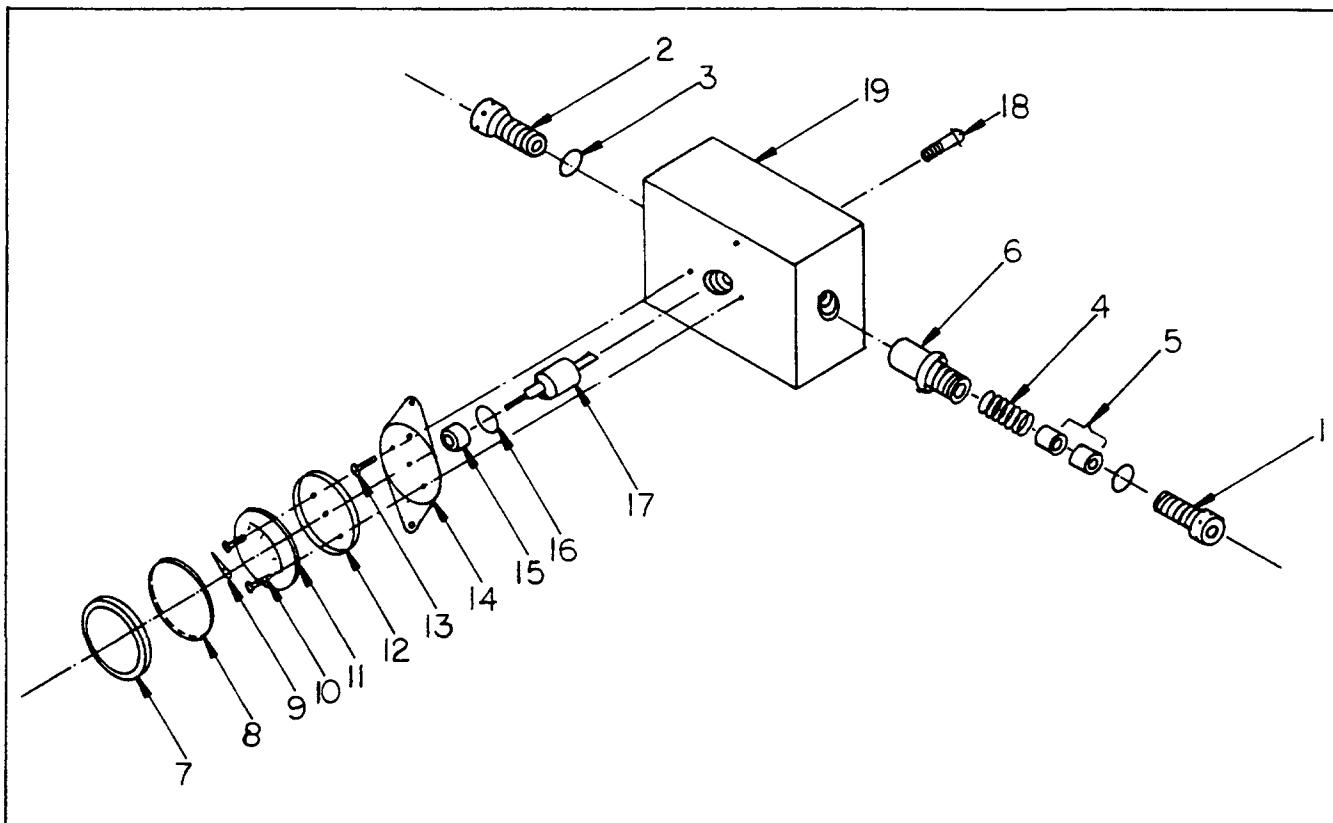


Figure 7-3. Differential Pressure Gage

FIGURE & INDEX NUMBER	PART NUMBER	FSCM	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE	SMR CODE
			1	2	3	4	5	6	7			
7-3-	1202PG-11A-2F	30839	GAGE, Differential pressure (See Figure 7-2 for NHA)							REF		
-1	A9C-1	30839	CAP, End.							1		
-2	A6-1	30839	CAP, End.							1		
-3	BB1-1C	30839	SEAL, End cap							2		
-4	AA1-32	30839	SPRING, Range							1		
-5	VV1-3,4	30839	SPACER, Spring							A/R		
-6	SD37-1	30839	PISTON ASSEMBLY							1		
-7	M1-2	30839	BEZEL							1		
-8	GG2-1	30839	LENS							1		
-9	AF15-1	30839	POINTER							1		
-10	XX2-5	30839	SCREW, 4-40x3/8 pan head							2		
-11	L2-A	30839	DIAL							1		
-12	J4-2	30839	CASE, Dial							1		
-13	XX21-5	30839	SCREW, 4-40x3/8 flat head							1		
-14	AS9	30839	PLATE, Adapter							1		
-15	AG11	30839	BUTTON, Pilot bearing							1		
-16	BB1-4A	30839	SEAL, Button							1		
-17	SB26B	30839	ROTARY MAGNET ASSEMBLY							1		
-18	AG1-1	30839	SCREW, Bearing trunnion							1		
-19	C38A-1	30839	BODY							1		

SECTION VIII

DIFFERENCE DATA SHEETS

8-1. DIFFERENCE DATA SHEETS. Difference Data Sheets are not required for this manual.

