TM 55-1560-218-40

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

GS MAINTENANCE MANUAL

OVERHAUL INSTRUCTIONS

PYLON ASSEMBLY

PART NO. 206K68550-1

(FSN 1560-994-5898)

HEADQUARTERS, DEPARTMENT OF THE ARMY

JULY 1965

TECHNICAL MANUAL
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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *8 July, 1965*

GS Maintenance Manual
OVERHAUL INSTRUCTIONS: PYLON ASSEMBLY
PART NO. 206K68550-1 (FSN 1560-994-5898)

CHAPTER 1

INTRODUCTION

Section 1. GENERAL INFORMATION

1. General

This manual comprises overhaul instructions for Pylon Assembly No. 206K68550-1 (fig. 1), Kellett Aircraft Corporation, Federal Code 97619, Willow Grove, Pa. Chapters 1 through 3 contain overhaul instructions for this part.

2. Purpose

The pylon assembly is designed for attaching jettisonable external stores on any Army aircraft. It will accommodate pressurized type tanks up to 165–gallon capacity and a maximum diameter of 26 inches. Tanks must have 14-inch lug spacing per Specification MIL-A–8591, and be equipped with proper fuel, air, and electrical jettison couplings.

3. Equipment Records

The Army equipment records procedures established in TM 38–750 apply to this equipment. The applicable forms as required by TM 38–750 will be used.

4. Reporting of Improvements

The direct reporting of errors, omissions, and recommendations for improving this manual by the indiviual user, is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Publications) will be used for reporting these improvements. This form will be completed using pencil, pen, or typewriter, and forwarded direct to Commanding General, U. S. Army Aviation Materiel Command, P. **O.** Box 209, Main Office, St. Louis, Mo. 63166.

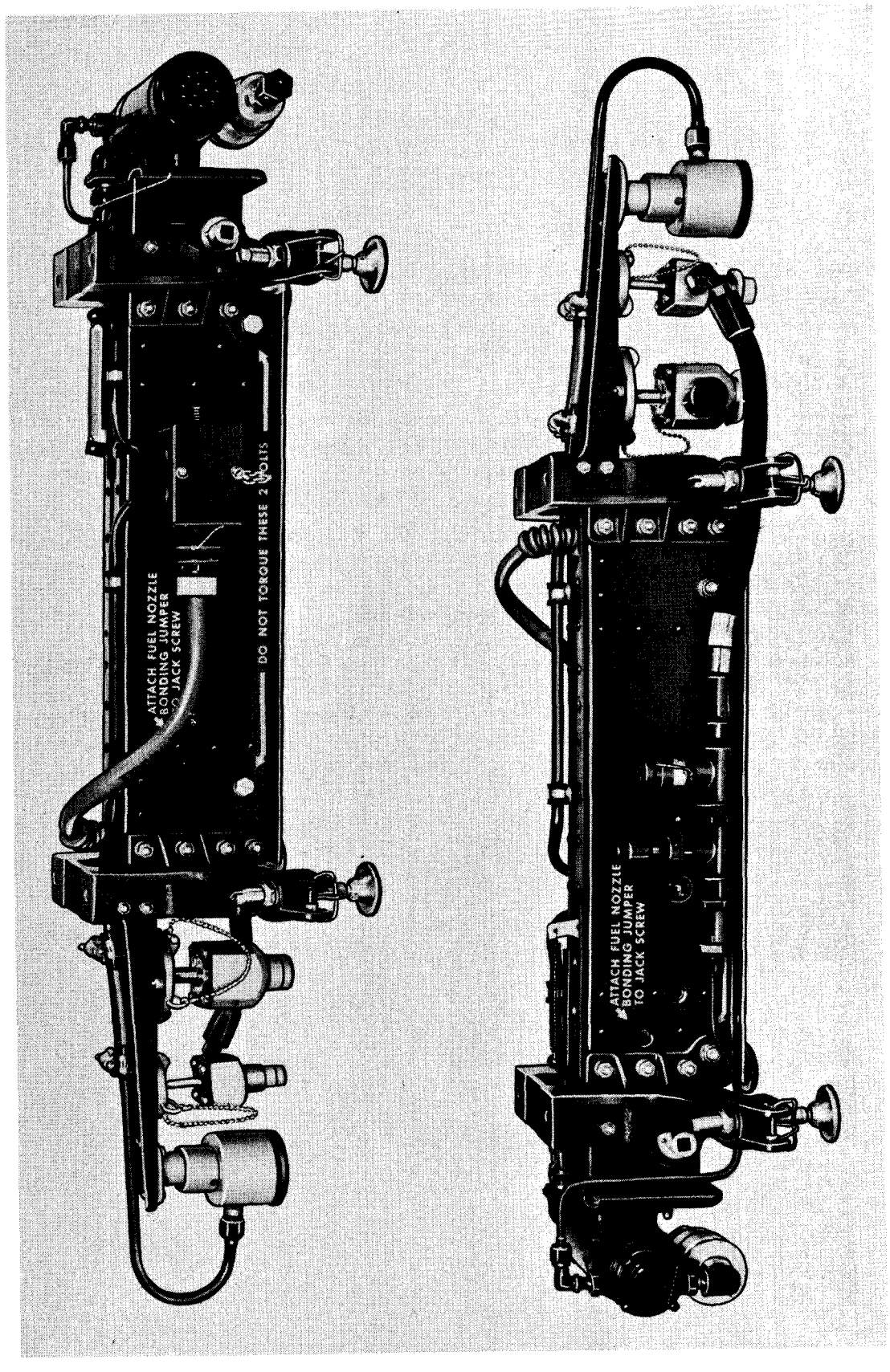

Figure 1. Pylon assembly part No. 206K68550-1.

Section II. DESCRIPTION AND LEADING PARTICULARS

5. Description

The pylon assembly consists of a bomb rack, type MA-4A, air pressurizing system, electrical system, fuel connections, sway braces, and structural housing. All pylon connections are jettison type couplings; the fuel and air connections are designed to close automatically when the external store is released from the aircraft. The MA–4A bomb rack is equipped with both electrical release and mechanical emergency release mechanisms. Refer to TM–11B29–3–8–3 for maintenance instructions of MA4A bomb rack.

6. Leading Particulars

Leading particulars are enumerated in table 1.

Table 1. Table of Leading Particulars

Load capacty	1200 pounds
Tank mounting	Two suspension lugs 14 inches center-to-center
Weight	29 pounds
Capacity (maximum)	165 gallons
Tank diameter (maximum)	26 inches
Fuel coupling diameter	1.060 inch
Air coupling diameter	0.688 inch
Bomb rack	Type MA-4A

Section III. TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS

7. Test Equipment

No special test equipment is required.

8. Special Tools

No special tools are required.

9. Consumable Materials

Consumable materials used during overhaul and testing of the pylon assembly are shown in table 2.

Table 2. Consumable Materials Required

Item No.	Material	Type or grade	Government specification
1	Antiseize compound		JAN–A-669
2	Drycleaning solvent		P-S-661
3	Kerosene		VV–K-211c
4	Grease		MIL–G-3278
5	Carbon Tetrachloride		O-C–141a
6	Zinc chromate		MIL-P-8585
7	Lacquer		MIL-L-7178
8	Iridite		MIL-C-5541
9	Potting compound	PR-1201Q or equivalent.	MIL–S-8516, class 3.
10	Electrical varnish		MIL-V-173
11	Methyl ethyl ketone		

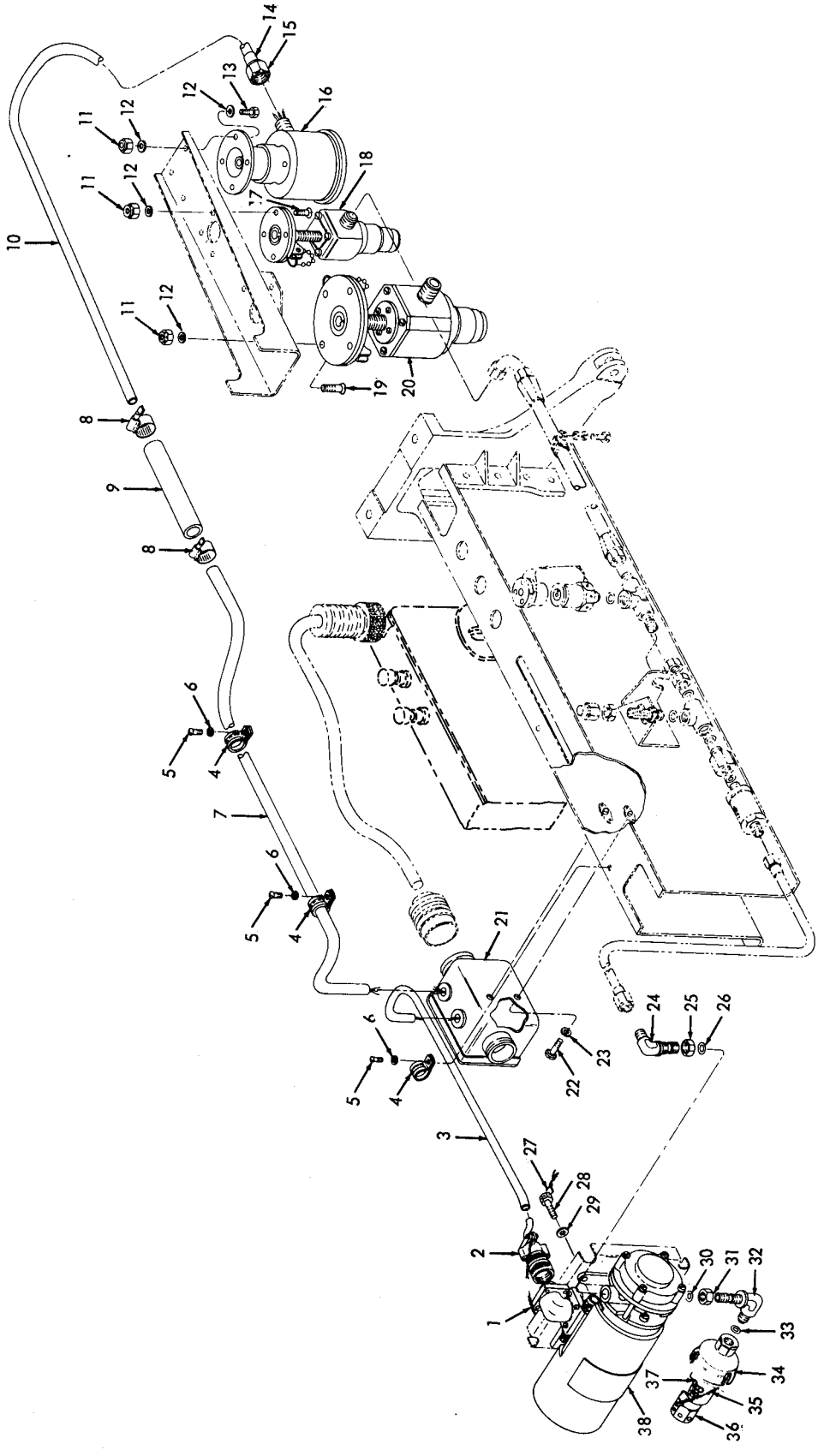

Figure 2. Dismantling.

AGO 5222A

No. Index	Nomenclature	Part No.
1	Lock wire	MS20995C32
2	Receptacle	MS3106E-10S-2S
3	Tube	206K68556-7
4	Clamp	MS21919DG6
5	Screw	AN525-832-9
6	Washer	AN960D-8L
7	Tube	206K68556-3
8	Clamp	AN737TW-22
9	Sleeve	206K68550-21
10	Tube	206K68556-13
11	Nut	MS20364-1032
12	Washer	AN960D10L
13	Bolt	AN3-4A
14	Sleeve	MS20819-6C
15	Nut	AN818-6D
16	Electrical coupling assembly	200-73001-101
	Electrical coupling assembly (alternate part)	200-73001-1
17	Screw	AN507-1032R10
18	Valve, air coupling	38QD1800-2
19	Screw	AN507-1032R10
20	Valve, fuel coupling	3QD1800-1
21	Junction box assembly	AA4920-2635-5
22	Screw	AN525-832-6
23	Washer	AN960D8
24	Elbow fitting	AN833-4D
25	Nut	AN924-4D
26	Gasket	AN6290-4
27	Lock wire	MS20995C32
28	Bolt	AN74A-4
29	Washer	AN960D416L
30	Gasket	AN6290-4
31	Nut	AN924-4D
32	Elbow fitting	206K68551-1
33	Gasket	AN6290-6
34	Air filter	AN6240-1
35	Lock wire	MS20995C32
36	Guard	AA4920-2608-1
37	Filter element	AN6237-1
38	Air compressor	RG9590C

Figure 2.—Continued.

CHAPTER 2
OVERHAUL INSTRUCTIONS

Section I. DISMANTLING

10. Removal of Air Filter

To remove air filter (34), apply wrench to flats nearest mounted end of filter and unscrew filter from pylon assembly.

11. Removal of Air Compressor

To remove motor driven air compressor (38), remove lock wire (1) and disconnect electrical receptacle fitting (2). Disconnect output airline from elbow fitting (24) at top of compressor head. Remove lock wire (27) from bolts (28) and remove bolts (28) and washers (29). Lift compressor unit from bracket mounting plate. Remove elbow fitting (24) from compressor (38) by loosening nut (25) and unscrewing elbow fitting (24). Remove elbow fitting (32) from compressor (38) by loosening nut (31) and unscrewing elbow fitting (32).

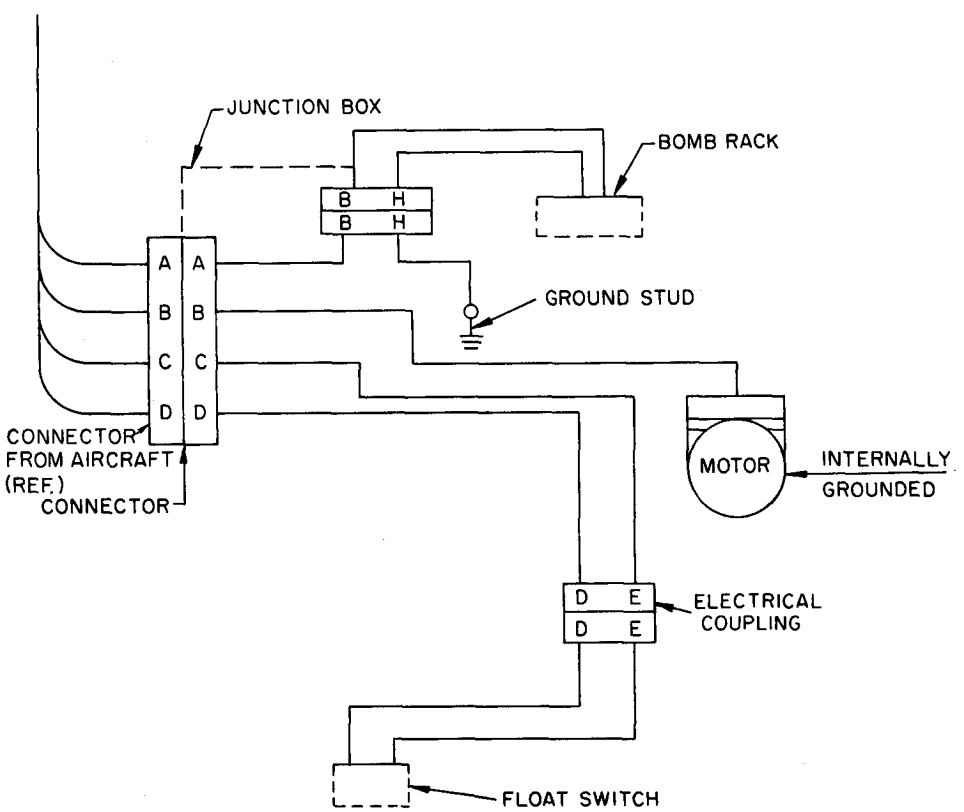

Figure 3. Wiring diagram.

12. Removal of Junction Box
(fig. 2)

Remove junction box by removing machine screws which fasten junction box cover. Unsolder wire connections in junction box (fig. 3). Tag disconnected wire to insure proper reassembly. Disconnect bomb rack connector. Remove screws (22) and washers (23) which fasten box to beam assembly, and carefully slide box free of conduit tubes (3) and (7).

13. Removal of Electrical Coupling Assembly
(fig. 2)

To remove electrical coupling assembly (16), loosen coupling nut (15) on electrical conduit tubing (10). Remove bolts (13); washers (12), and nuts (11), and lift electrical coupling off bracket assembly, carefully pulling wires through electrical conduit tubing (10).

14. Removal of Fuel Coupling Valve
(fig. 2)

To remove fuel coupling valve (20), remove screws (19), washers (12), and nuts (11) that fasten fuel coupling valve to the supporting bracket.

15. Removal of Air Coupling Valve
(fig. 2)

To remove air coupling valve (18), disconnect compressor air line tubing at elbow fitting. Remove screws (17), washers (12), and nuts (11) that fasten air coupling valve to supporting bracket.

Section II. DISASSEMBLY

16. Disassembly of Air Filter
(fig. 2)

Note. The filter element (37) in air filter (34) should be redated after every 100 hours of operation and at each pylon assembly overhaul.

To disassemble air filter (34), remove lock wire (35) from guard (36) and unscrew guard (36) from air filter. Unscrew lower half of air filter (34) and remove filter element (37).

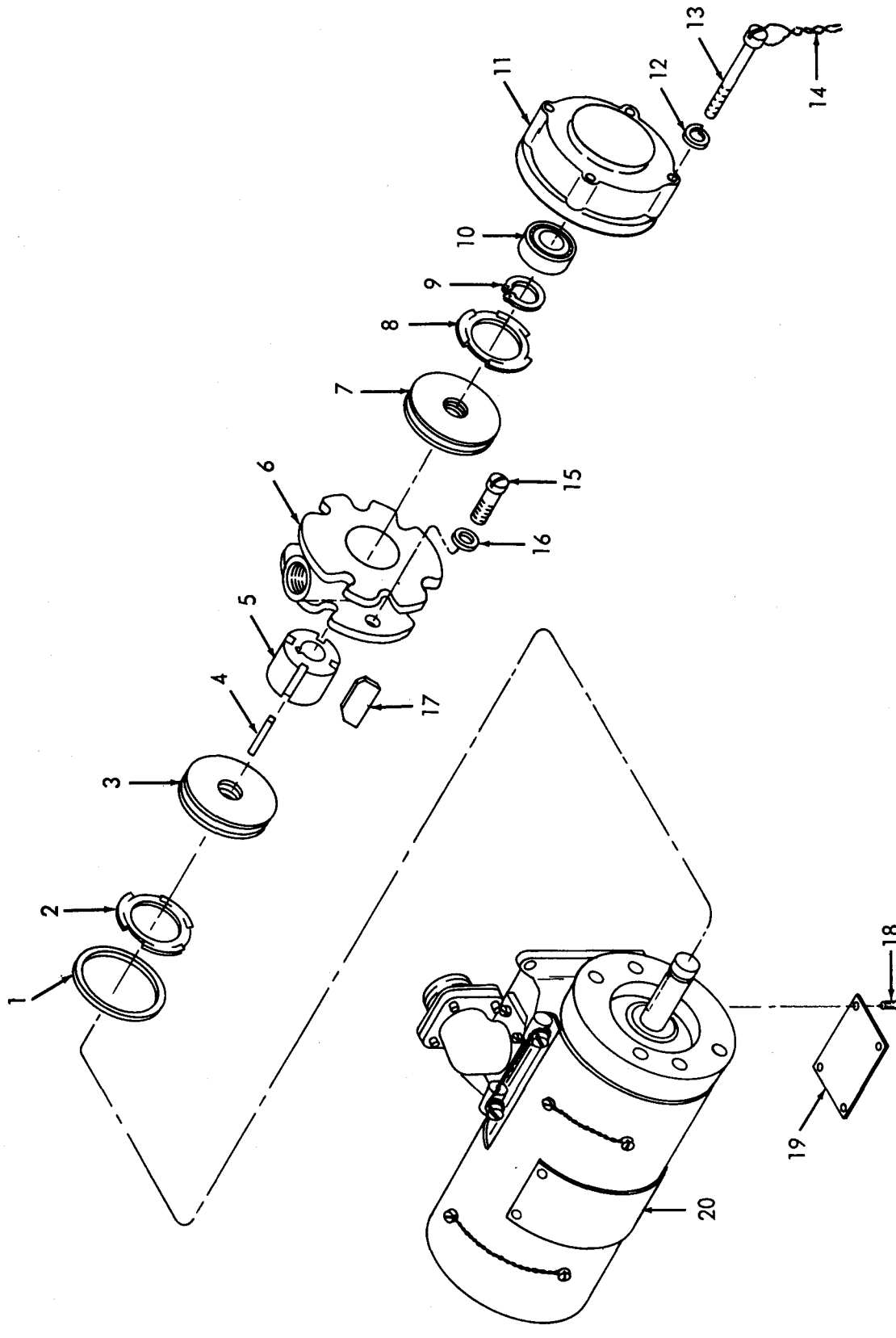

Figure 4. Air compressor (exploded view).

Index No.	Nomenclature	Part No.
1	Ring	RA8178
2	Washer	RA8348
	O-ring (alternate part)	AN6227B–25
3	Plate	RA8167
4	Key	RA8171
5	Rotor	2A8163-2
6	Liner	RB10794
7	Plate	RA8167
8	Washer	RA8348
	O-ring (alternate part)	AN6227B-25
9	Ring	MS16624-23
10	Bearing	77036xRIE-P3
11	Cover	RB8170-l
12	Washer	AN935–8
13	Screw	AN500A8-24
14	Lock wire	MS20995C20
15	Screw	AN500A8-7
16	Washer	AN935-8
17	Blade	RA8164
18	Screw	AN535–00–2
19	Plate	A8183
20	Motor assembly	RD8161-8

Figure 4. –-Continued.

17. Disassembly of Air Compressor

(fig. 4)

Note. The air compressor has a 1000-hour life expectancy and should be overhauled after 1000 hours of logged operation.

To disassemble air compressor, remove cover (11), by removing lock wire (14), screws (13), and washers (12). Remove ball bearing (10) together with ring (9), washer (8), and thrust plate (7). Remove screws (15) and washers (16), and remove liner (6) from shaft of motor assembly (20).

Caution: **Exercise care when removing rotor blades to avoid damaging surface edges.**

Remove rotor (5) and blades (17) from housing. Remove thrust plate (3), washer (2), and ring (1). For replacement, if necessary, remove key (4) from motor assembly shaft.

18. Disassembly of Junction Box

(fig. 5)

To disassemble junction box, remove screws (11), washers (9) and (10) and lift cover (8) from junction box (2). Remove screw (12), safety chain (13), washers (14), and nut (15). Remove screws (4), washers (3), and nuts (5), and remove electrical receptacles (6) and (7) from junction box (2). Remove grommets (1) from box frame.

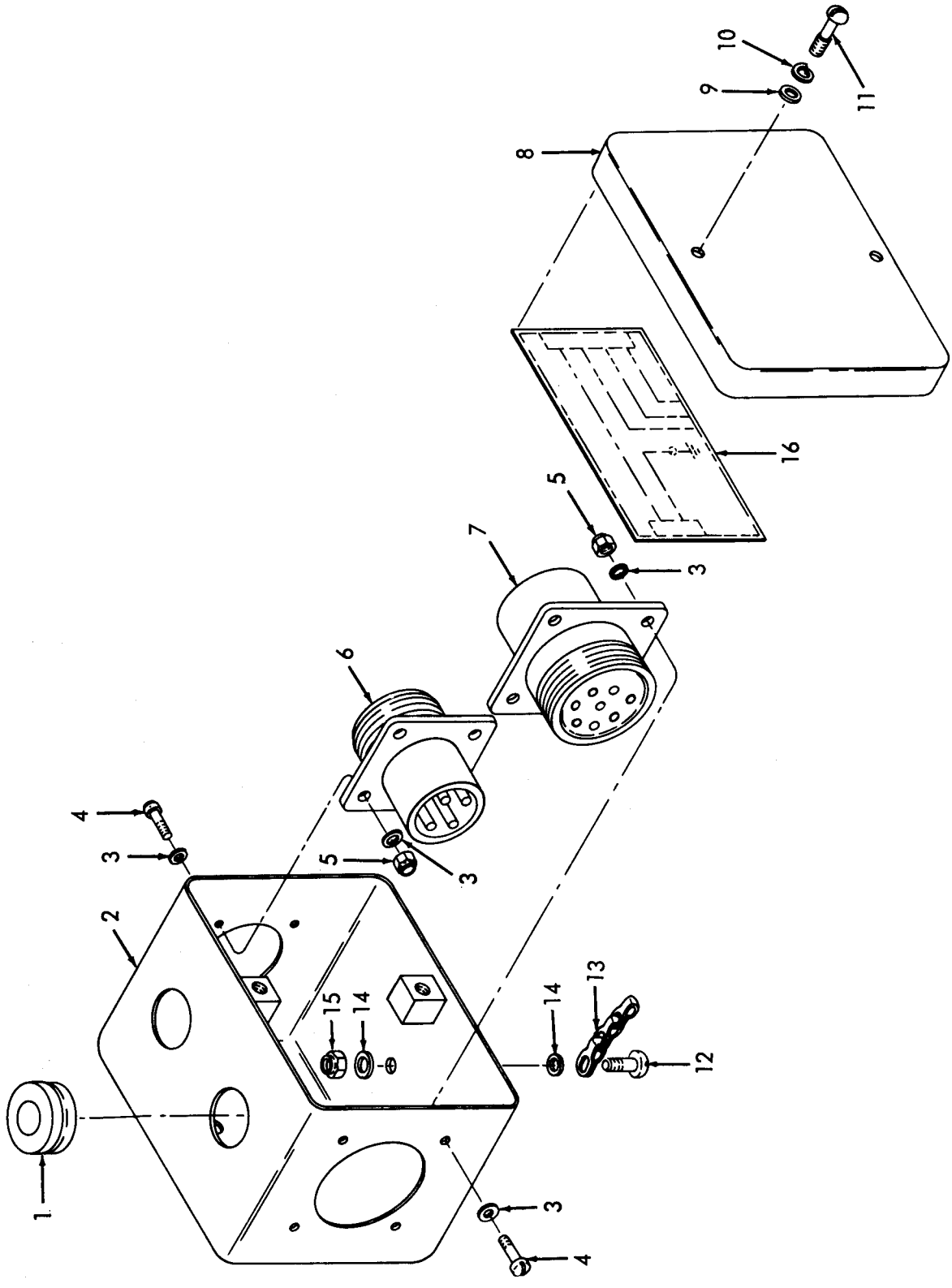

Figure 5. Junction box (exploded view).

0.Index No.	Nomenclature	Part No.
1	Grommet	MS35489-11
2	Box	AA4920–2635-ll
3	Washer	AN960–D4L
4	Screw	8N500A4–8
5	Nut	MS20365–440
6	Receptacle	MS3102E14S–2S
7	Receptacle	MS3102E18-1S
8	Cover	AA4920-2635-13

Index No.	Nomenclature	Part No.
9	Washer	No number
10	Washer	No number
11	Screw	1-170
12	Screw	AN515–6–7
13	Chain	NAF1088–1A–3
14	Washer	AN960–D6
15	Nut	MS20365-632
16	Wiring diagram	AA4920-2635-21

Figure 5. —Continued.

19. Disassembly of Electrical Coupling

(fig. 6)

To disassemble electrical coupling, remove nut (l), washer (2), and top (3). Remove large nut (4), washer (5), stat-o-seal (6), and spring (7). Then, from swivel assembly (10), remove can (8) and O-ring (9). Carefully cut potting compound from swivel assembly (10) and pins (12). Any potting compound remaining after cutting can be removed with methyl Ethyl ketone (MEK).

Note. Earlier models were assembled without potting compound. These models have an additional O-ring (9) fitted into a groove unfitting (13).

Carefully draw wires through the conduit fitting on swivel assembly (10) and remove swivel assembly (10) from fitting (13). Unsolder wires from contact pins (12) at positions D and E and tag wires. Remove sleeves (15) from fitting (13). Remove nuts (14) and remove contact pins (12) from fitting (13). Remove bolt (18).

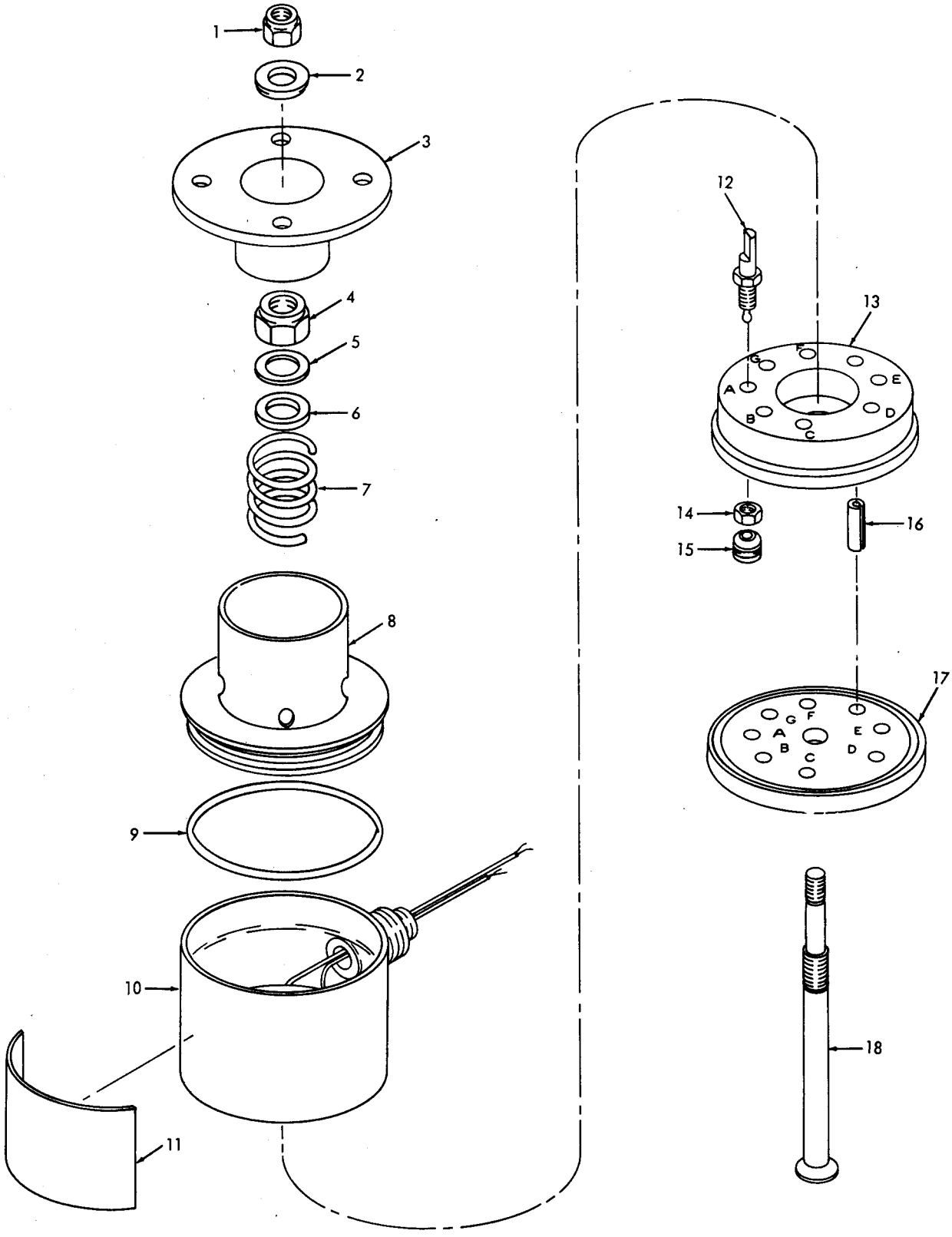

Figure 6. Electrical coupling (exploded view).

Index No.	Nomenclature	Part No.
1	Self-locking nut	MS29365-1032
2	Flat washer	200-73001-43
3	Top	200-73001–31
4	Self-locking nut	MS20365-428
5	Flat washer	AN960D416
6	Stat-o-seal	614-001-¼ OS
7	Spring	C720-072-1250
8	Can	200-73001-39
9	O-Ring	MS29513-135
10	Swivel assemblv	200-73001-5
11	Nameplate	200-73002-l
12	Contact pin	100711-l
13	Fitting	200-73001–115
14	Nut	100097-l
15	Sleeve assembly	100094-1
16	Spring pin	MS16562-32
17	Base assembly	200–73001–3
18	Bolt	200-73001-33

Figure 6. —Continued.

20. Disassembly of Fuel Coupling Valve (fig.7)

To disassemble fuel coupling valve, remove retaining ring (1) and unscrew support plate (2). Remove retaining ring (6) and separate wrench (4), chain (5), and clip (3) from support plate (2). Remove lock wire (7) and screws (8), and lift stud (9.) from cap (12).

Caution: **Cap** (12) **is spring loaded. Back screws off evenly to avoid damage.** Remove lock wire (10) and carefully remove screws which fasten cap to valve body (20). Lift out O-ring (13) and spring (14). Lift out piston (16). Remove O-rings (15) and (17) and seal (21) from piston (16).

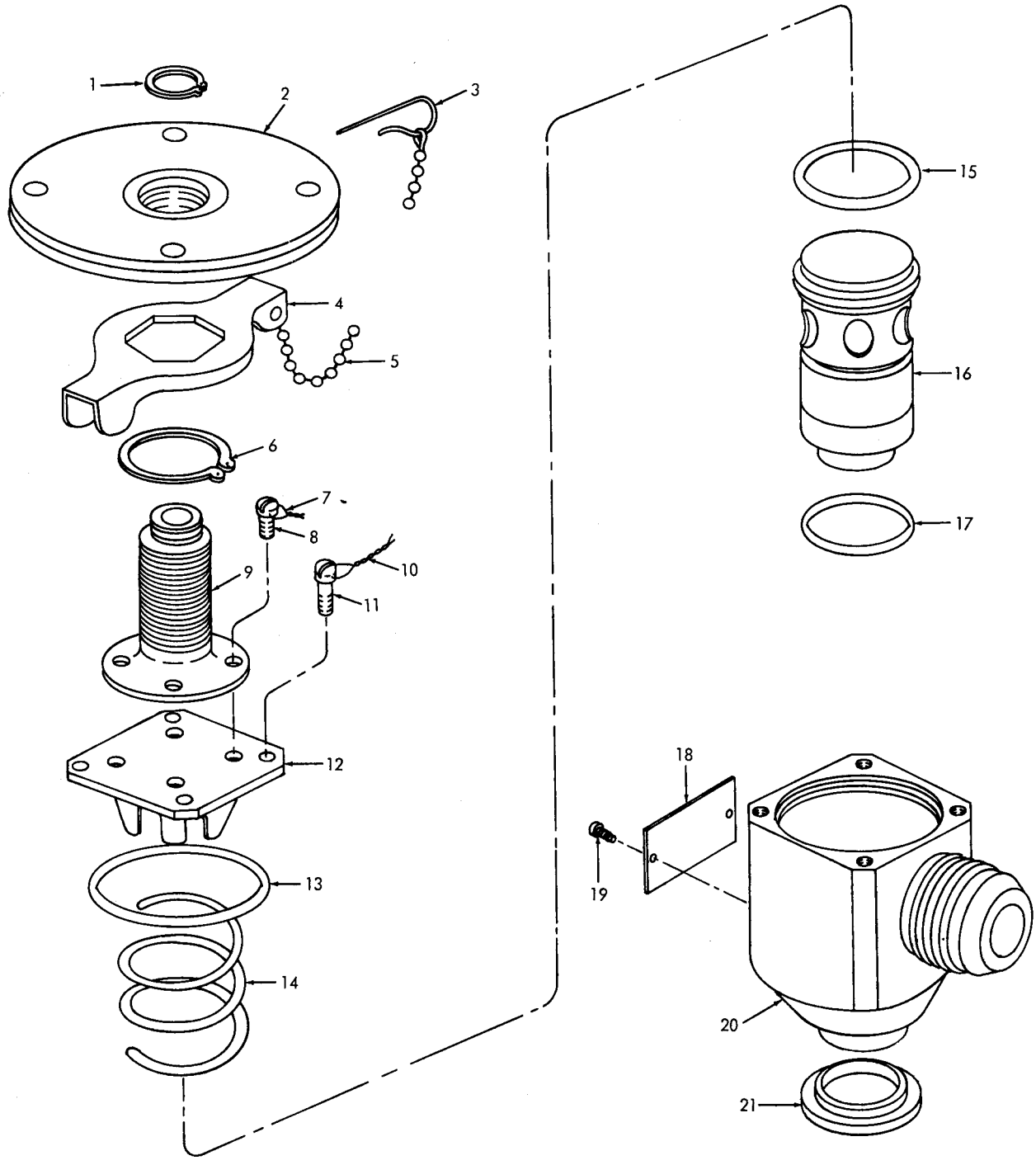

Figure 7. Fuel coupling valve (exploded view).

Index No.	Nomenclature	Part No.
1	Ring	5100-43MD
2	Plate assembly	3QD1800B11
3	Clip	SK108
4	Wrench	3QD1800B9
5	Chain	NAS1201C6B12B
6	Ring	5100-87MD
7	Lock wire	MS20995NC32
8	Screw	AN500A8–5
9	Stud	3QD1800B7
10	Lock wire	MS20995NC32
11	Screw	AN500A8-8
12	Cap	3QD1800B6
13	Packing O-ring	A-29
14	Spring	3QD1800B8
15	Packing O-ring	MS29513-213
16	Piston	3QD1800B4
17	Packing O-ring	100A-211
18	Nameplate	3QD1800B12
19	Screw	AN535-0-2
20	Body assembly	3QD1800B1
21	Seal	SK179

Figure 7.—Continued.

21. Disassembly of Air Coupling Valve

(fig, 8)

To disassemble air coupling valve, remove retaining ring (1) and unscrew mounting plate assembly (2). Remove retaining ring (6), and separate adjusting wrench (5), chain (4), and clip (3) from adjusting plate (2).

Caution: **Cap (10) is spring loaded. Back screws (8) off evenly to avoid damage.** Remove lock wire (9), screws (8) and carefully remove cap (10), gasket (11), and adjusting stud (7). Lift spring (12) and piston (13) from valve body (8). Remove O-rings (14) and (15), and seal (19) from piston (13).

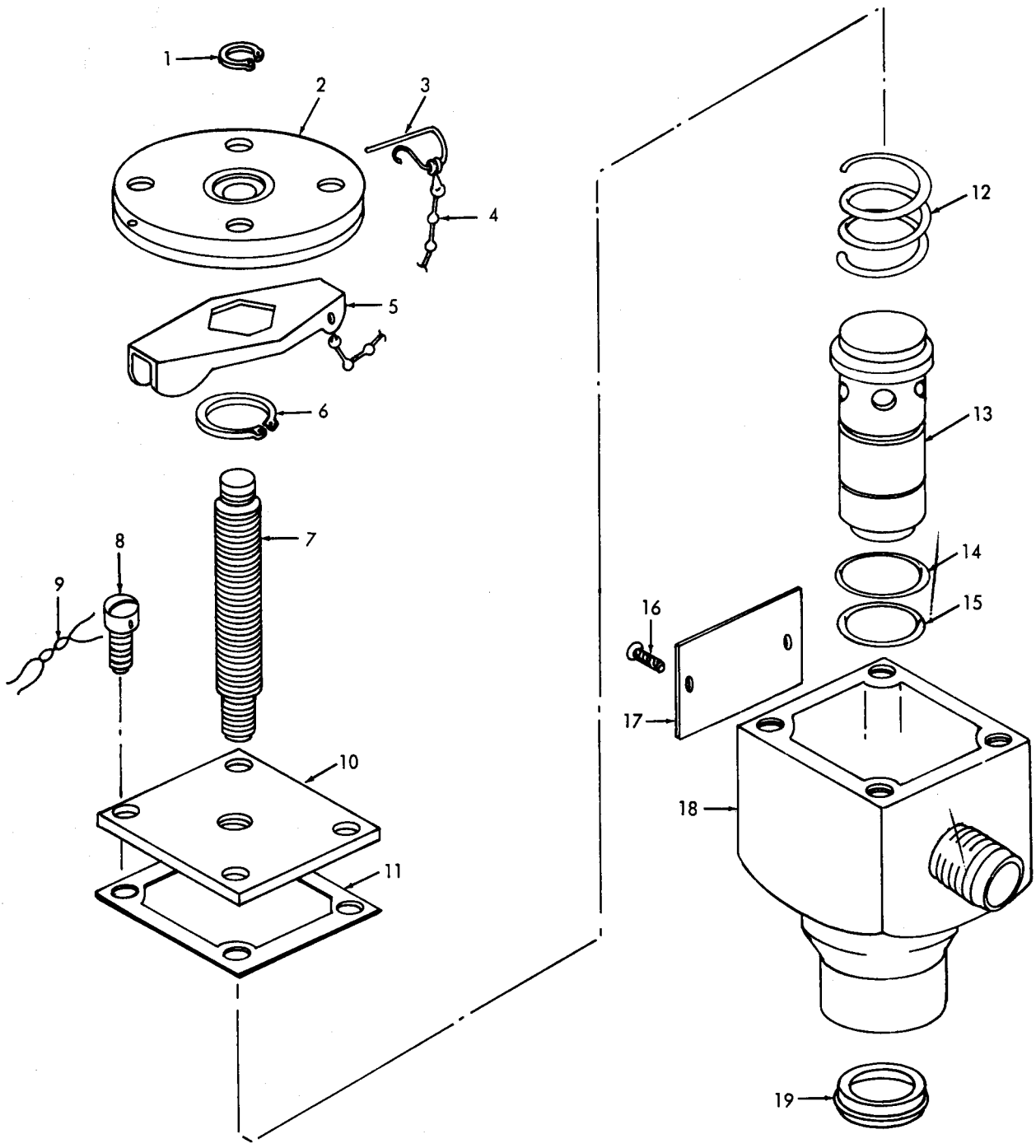

Figure 8. Air coupling valve (exploded view).

No. Index	Nomenclature	Part No.
1	Retaining ring	5100-25MD
2	Mtg. plate assembly	38QD1810-2
3	Spring clip	SK108
4	Bead chain assembly	NAS1201C6B12B
5	Adjusting Wrench	38QD1800B1
6	Retaining Ring	5100-43MD
7	Adjusting Stud	38QD1800B9
8	Machine Screw	AN500A8-8
9	Lock wire	MS20995NC32
10	Cap	38QD1804

No. Index	Nomenclature	Part No.
11	Gasket	2QD1406
12	Spring	38QD1809
13	Piston	38QD1800B6
14	O-ring	MS9513-113
15	O-ring	MS29513–112
16	Screw	AN535-0-2
17	Nameplate	38QD1800B5
18	Valve body	38QD1800B4
19	Seal	SK444

Figure 8.—Continued.

22. Disassembly of Air Line (fig. 9)

To disassemble air line, remove bolt (22), washers (21), and clamp (20). Unscrew end fittings on hose assembly (19) from tee (14) and remove hose assembly. Unscrew couplings (1) from valve (4) and remove tube (3). Unscrew valve (4). Unscrew bushing (6). Unscrew valve (16) with guard (17). Remove lock wire (18) from guard (17) and remove guard (17) from valve (16). Unscrew cap assembly (11) from union (9). Remove nut (10) from union (9), then unscrew nut (13) on tee (14) and lower union (9), tee (8), and tee (14) out of supporting bracket. Unscrew union (9) from tee (8). Unscrew tee (8) from tee (14).

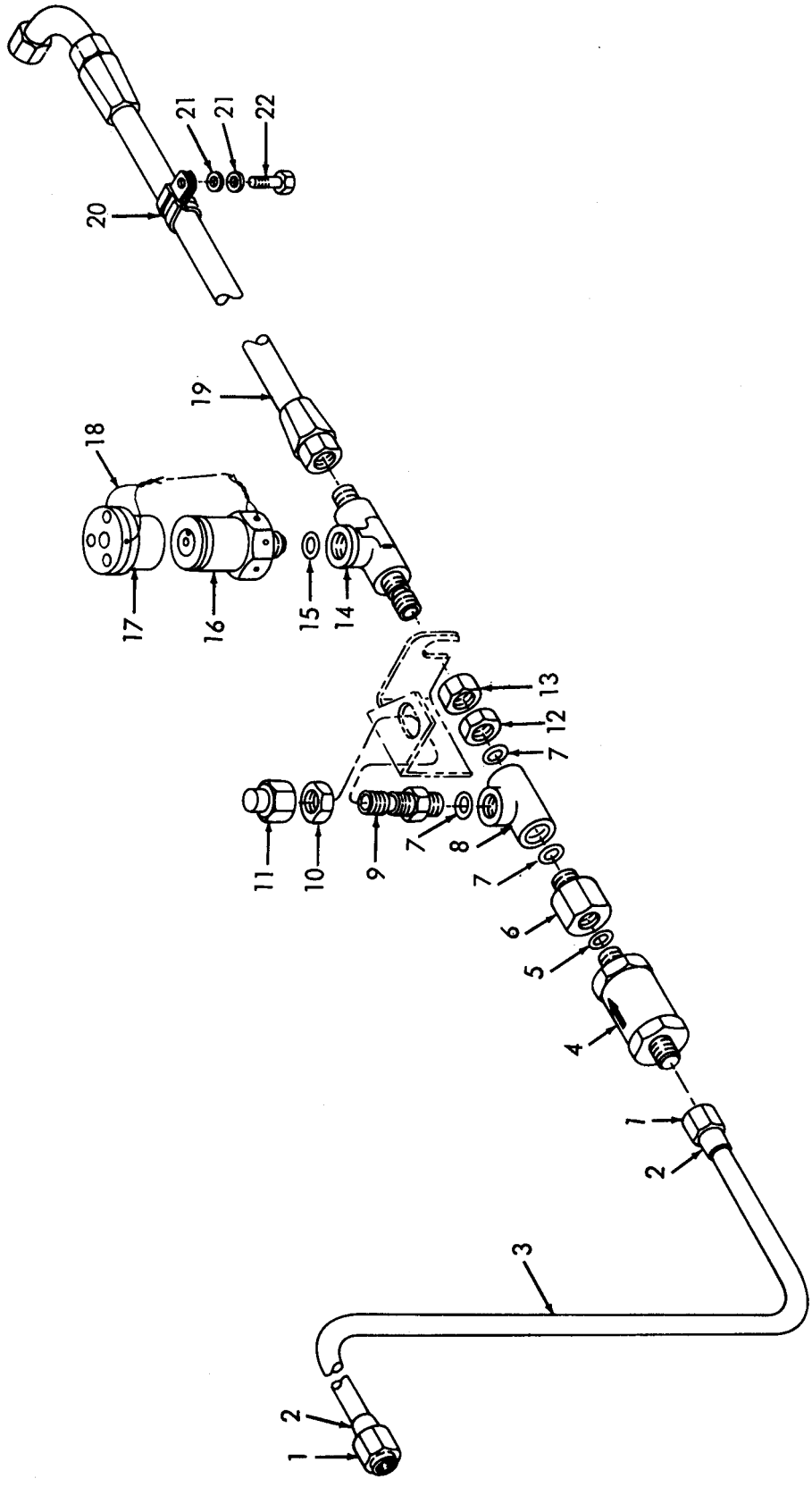

Figure 9. Air line ***(exploded view).***

No. Index	Nomenclature	Part No.
1	Nut	AN818-4D
2	Sleeve	MS20819–4C
3	Tube	206K68556-ll
4	Valve	MS28885-4
5	Gasket	AN6290-4
6	Bushing	AN893-2D
7	Gasket	AN6290-6
8	Tee	AN938D6
9	Union	AN832-6D
10	Nut	AN924-6D
11	Cap assembly	AN929-6
12	Nut	AN924-6D
13	Nut	AN924–6D
14	Tee	AN783D6
15	Gasket	AN6290–6
16	Valve	6P119
17	Guard	206K68555–1
18	Lock wire	MS20995C32
19	Hose assembly	A950004-6-0140
20	Clamp	MS21919DG11
21	Washer	AN960D10L
22	Bolt	AN3-4A

Figure 9.—Continued.

23. Disassembly of Pressure Relief Valve (fig. 10)

To disassemble pressure relief valve, remove retaining ring (8) and slide all internal parts out. Hold slot in poppet (9) with screwdriver and remove nut (3). Remove spring seat (4), spring (5), and guide (7) from stem of poppet (9). Remove O-ring (6) from guide (7).

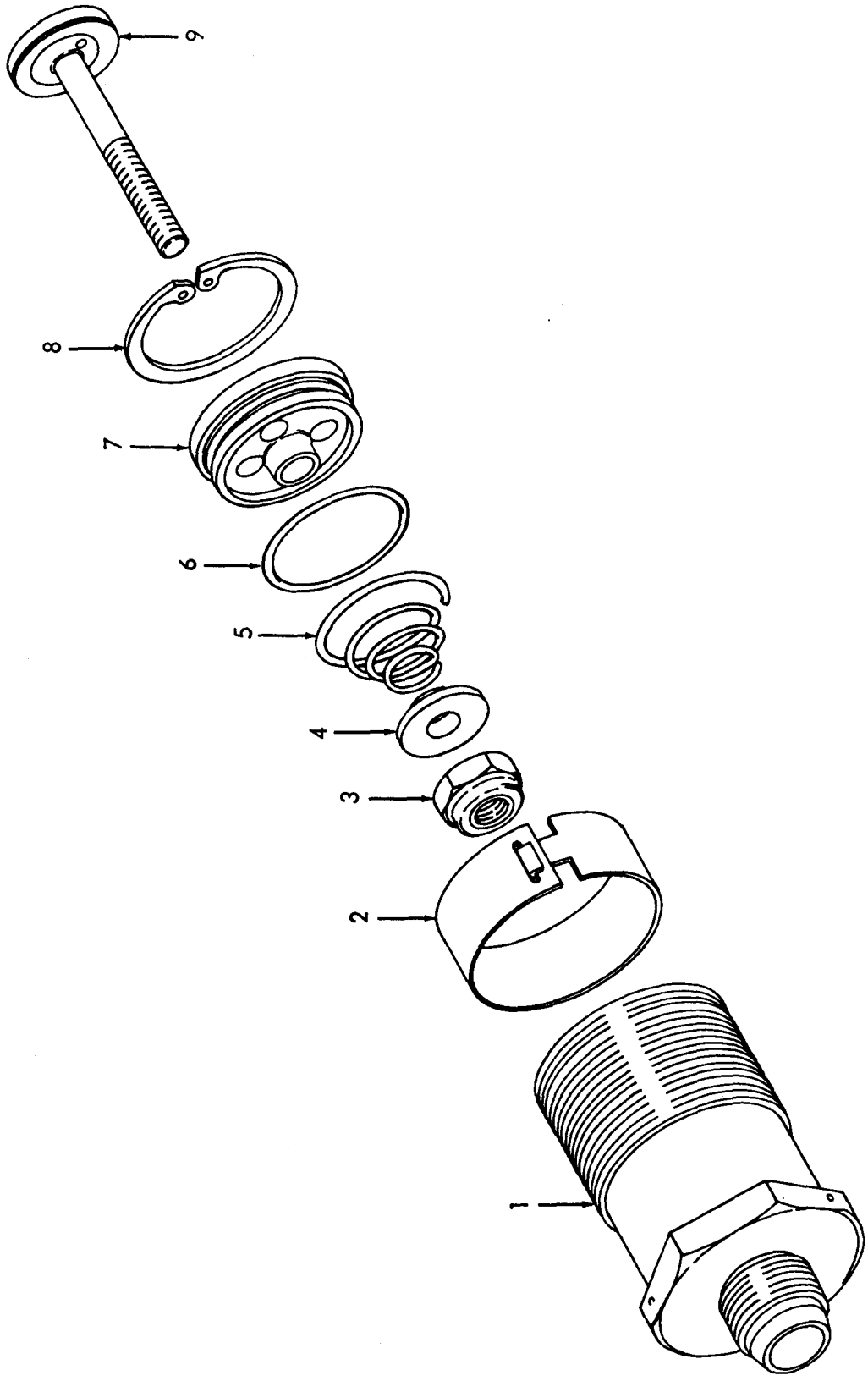

Figure 10. Pressure relief valve (exploded view).

No. Index	Nomenclature	Part No.
1	Body	6P119C11
2	Nameplate	6P119B16
3	Nut	MS20364D832A
4	Spring seat	6P119B13
5	Spring	6P119B14
6	Packing O-ring	MS29513-16
7	Guide	6P119B17
8	Ring	5000–77MD
9	Poppet	6Pll9Bl2

Figure 10.—Continued.

24. Disassembly of Supporting Structure (fig. 11)

Disassemble supporting structure as follows:

a. Remove spring (10), screw (16), washers ers (14), and nut (13).

b. Remove bomb rack (40) by removing bolts (6) and (17); washers (7), (18), and (50); and nuts (38 and (46). Remove compresser support brackets (61), (62, and (63) as an asembly by removing bolts (60), washers (59) and (51), and nuts (49). Disassemble brackets (61) and (62) from plate (63) by removing screws (1), washers (2), and nuts (3).

c. Remove jettison coupling bracket (24) by removing bolts (22), washers (23) and (25), and nuts (26).

d. Remove nuts (28) and washers (29) and unscrew jack screw assemblies (36) from hanger brackets (5) and (27).

e. Remove latch assembly by removing cotter pins (54) and (57), pin (53), and washers (56). Tap spindle assembly (58) out of hook (55) and bracket (5).

Caution: **Support bomb rack (40) so that it will not drop out.**

f. Remove front hanger bracket (5) from beam (19) by removing bolts (8), washers (9) and (43), and nuts (44). Remove helicoil inserts (48) from hanger bracket (5) if damaged. Press out bushings (4), (47), and (52).

g. Remove gear hanger bracket (27) from beam (19) by removing bolts (20), washers (21) and (35), and nuts (34). Remove helicoil inserts (30) and (33) from bracket (27) if damaged. Press out bushings (31) and (32).

h. Remove bracket (11) from beam (19) by removing screws (12), washers (41), and nuts (42).

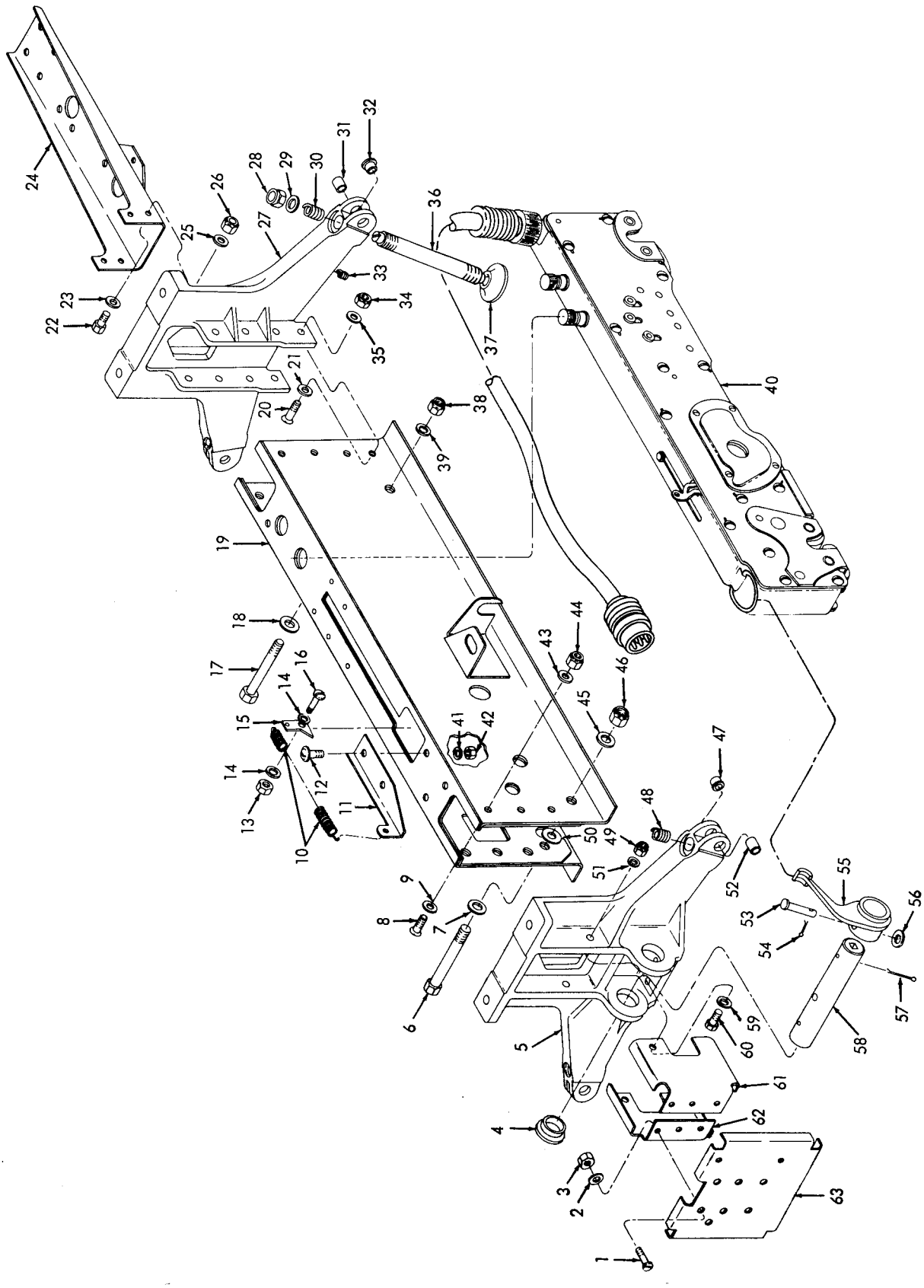

Figure 11. Supporting structure (exploded view).

Index No.	Nomenclature	Part No.
1	Screw	AN509–10–8
2	Washer	AN960D10L
3	Nut	MS20365–1032
4	Bushing	NAS77–12–24
5	Bracket	AA4920–2601–5
6	Bolt	NAS464–6–45
7	Washer	AN960D616L
8	Bolt	NAS334A11
9	Washer	AN960D416
10	Spring	E360–037–250
11	Bracket	AA4920–2606–19
12	Screw	AN525–832–10
13	Nut	MS20364–1032
14	Washer	AN960–10L
15	Clip	AA4920–2607–1
16	Bolt	AN23–10A
17	Bolt	NAS464–6–34
18	Washer	AN960D616L
19	Beam assembly	AA4920–2606–1
20	Bolt	NAS334A11
21	Washer	AN960D416
22	Bolt	AN3–6A
23	Washer	AN960D10L
24	Bracket assembly	AA4920–2602–5
25	Washer	2935–0
26	Nut	52LH2935–02
27	Bracket	AA4920–2601–7
28	Nut	MS20364–820
29	Washer	AN960D816
30	Helicoil insert	1191–8CNX1
31	Bushing	NAS75–4–011
32	Bushing	NAS77–4–20
33	Helicoil insert	3591–3CN0380
34	Nut	52LH2935–048
35	Washer	2935–04
36	Screw jack assembly	AA4920–2603–11
37	Pad	AA4920–2603–35
38	Nut	MS20364–624
39	Washer	AN960D616L
40	Bomb rack	55J4312
41	Washer	AN960D8L
42	Nut	MS20365–832
43	Washer	2935–04
44	Nut	52LH2935–048
45	Washer	AN960D616L
46	Nut	MS20364–624
47	Bushing	NAS77–4–20
48	Helicoil insert	1191–8CNX1
49	Nut	52LH2935–02
50	Washer	AN960–616L
51	Washer	2935–0
52	Bushing	NAS75–4–011
53	Pin	MS20392–2–29
54	Cotter pin	AN381–2–8
55	Hook assembly	AA4920–2603–7
56	Washer	AN960D10L
57	Cotter pin	AN381–2–16
58	Spindle assembly	AA4920–2603–5
59	Washer	AN960D10L
60	Bolt	AN3–6A
61	Bracket	AA4920–2602–13
62	Bracket	AA4920–2602–14
63	Plate	AA4920–2602–15

Figure 11.—Continued.

Section III. CLEANING

25. Cleaning

Cleaning of all disassembled metal parts will be performed by flushing or rinsing with a drycleaning solvent, Federal Specification P-S–661. Wiping will be done with a clean, lint free cloth. Special care must be taken to insure that all valve body pores, recesses, small orifices, and tubing are free from foreign matter and obstructions.

Section IV. INSPECTION

26. Inspection

Conduct a careful visual inspection of all disassembled parts. All threaded parts will be inspected for stripped or damaged threads, distortion, or evidence of fatigue. Inspect all parts for cracks, splitting, deterioration, or other damage. Table 3 lists those parts which should be given particular attention during inspection.

Table 3. Inspection (Nondestructive)

Part and figure reference	Damage	Disposition
AIR COMPRESSOR AND FILTER (refer to fig. 4)		
Cover (11)	Cracks or other damage	Replace
	Scratches	Remove by burnishing
Rotor (5)	Cracks, corrosion, or other damage	Replace
Rotor blades (17)	Rough surface, or damaged edges	Replace
Thrust plate (3) and (7)	Wear, cuts, or scratches	Replace

Part and figure reference	Damage	Dispotion
Ball bearing (10)	Worn ball or damaged raceway	Replace
Tension washer (2) and (8)	Bent or damaged	Replace
ELECTRICAL COUPLING (refer to fig.6)		
Spring (7)	Cracks, breaks, or evidence of fatigue	Replace
Contact pin (12)	Corroded, cracked or pitted	Replace
Base assembly (17)	Cracked or damaged	Replace
FUEL COUPLING VALVE (refer to fig. 7)		
Retaining ring (1) and (6)	Bent or split	Replace
Spring (14)	Cracks, breaks, corrosion, or evidence of fatigue.	Replace
Clip (3)	Bent or broken	Replace
Piston (16)	Excessive surface wear (diametric clearance greater than .020).	Replace
	Minor scoring	Remove by honing.
AIR COUPLING VALVE (refer to fig .8)		
Retaining ring (1) and (6)	Bent or split	Replace
Clip (3)	Bent or broken	Replace
Spring (12)	Cracks, breaks, corrosion, or evidence of fatigue.	Replace
Piston (13)	Excessive surface wear (diametric clearance greater than .020).	Replace
	Minor scoring	Remove by honing.
AIR PRESSURE RELIEF VALVE (refer to fig. 10)		
Body (1)	Nicks or scratches on bore	Replace
Spring (5)	Cracks, breaks, corrosion, or evidence of fatigue.	Replace
Guide (7)	Cracks, breaks, or damage to poppet seat area.	Replace
Retaining ring (8)	Bent or split	Replace
Poppet (9)	Worn or cut seal	Replace
STRUCTURAL ASSEMBLY (refer to fig. 11)		
Bushing (4), (31), (32), (47) and (52).	Nicks or scratches on bore	Replace
Spring (10)	Cracks, breaks, corrosion, or evidence of fatigue.	Replace
Clip (15)	Bent or broken	Replace
Helicoil insert (30), (33), and (48)	Cracks, breaks, corrosion, or evidence of fatigue.	Replace
Spindle assembly (58)	Excessive surface wear (diametric clearance greater than .020).	Replace
Hook assembly (55)	Cracks or evidence of fatigue	Replace
Bolts (6) and (17)	Cracks, breaks, corrosion, damaged threads, or evidence of fatigue.	Replace

Section V. REPAIR AND REPLACEMENT

27. Repair

Minor scratches or roughness on parts may be burnished out. Deep scores and scratches require replacement. For repainting or touch-UP, apply wash primer, Specification MIL-C–8514; then zinc chromate primer, Specification MIL-P-8585, color "Y"; and gloss lacquer, Specification MIL-L-7178, color No. 504. All markings will be masked for protection. For restoration of marking, refer to figure 12 for layout. All markings except electrical coupl-ping will have red background, color No. 11105, Federal Standard 595. Nameplate of electrical coupling will have white background, color No. 17875, Federal Standard 595, and black letters, color No. 17038.

28. Replacement

Replace all defective parts as indicated by inspection. Replace all gaskets, packings, seals, self-locking screws, elastic stop nuts, cotter pins, and lock wire,

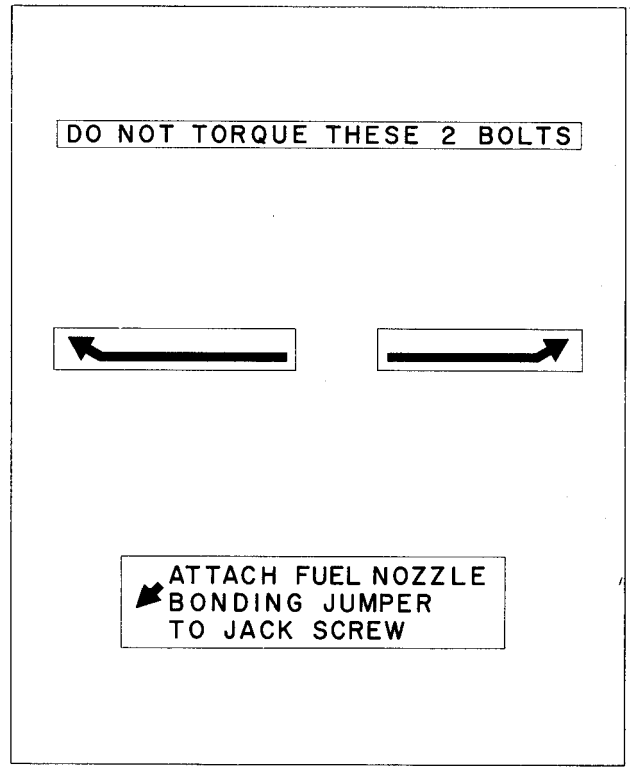

Figure 12. Painting and marking layout.

Section VI. REASSEMBLY AND TESTING OF ASSEMBLIES

29. Reassembly of Air Filter
(fig. 2)

To reassemble air filter, install elbow (32), new gasket (30), and nut (31) in inlet boss of air compressor (38). Position elbow (32) and tighten nut (31). Install new filter element (37) in filter (34) and screw filter halves together. Screw guard (36) into filter (34). Apply torque of 75 to 125 inch-pounds. Install new gasket (33) and screw air filter (34) to elbow (32). Safety wire guard to air filter with lock wire (35) using double twist method.

30. Reassembly of Air Compressor
(fig. 4)

To reassemble air compressor, install ring (1), washer (2), and plate (3) on motor assembly (20). Fit key (4) into keyway on motor assembly shaft and slide rotor (5) on shaft. Attach liner (6) to motor assembly (20) with washers (16) and screws (15). Do not tighten screws until liner (6) is adjusted to rotor for clearance.

Note. Wash blades (17) in carbon tetrachloride prior to reassembly.

Fit blades (17) in their respective rotor slots. Place plate (7) over motor assembly shaft against liner (6). Turn shaft with fiingers to check for freedom of rotation. If blades (17) stick or bind when screws (15) are tightened, correct this condition before further reassembly. Clearance between blades (17), rotor (5) and liner (6) must be held to .001–0015 inch. Place washer (8) over shaft. Fit ring (9) over shaft, then press bearing (10) on shaft to bottom on ring (9). Apply grease lubricant MIL–G–3278 to bearing (10), and place cover (11) over bearing (10) and plate (7). Insert screws (13) with washers (12) in cover (11)

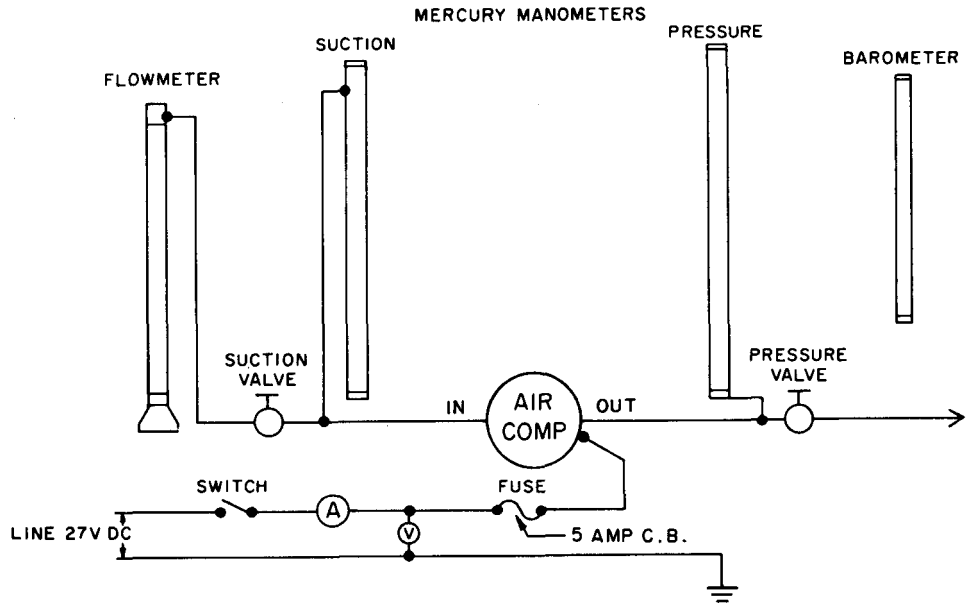

Figure 13. Air compressor test setup.

and screw in loosely. Adjust cover (11) evenly around bearing (10) then tighten screws (13). Safety wire screws (13) with lock wire (14) using double twist method.

31. Air Compressor Tests

a. Test Setup (fig. 13). After reassembly of air compressor and prior to installation on pylon asembly, conduct the tests in ***b, c,*** and ***d*** below. Plug all compressor ports except during test to prevent entrance of dirt or foreign material.

Note. Positive and negative pressure values shown are based on sea level atmospheric conditions.

b. Run-In Test. Operate air compressor continuously for 1 hour with suction and pressure control valves open. There must be no stoppage, malfunction, or overheating, of compressor unit during test.

c. Suction Test. Close suction control valve, and open pressure control valve. Energize air compresor motor. Observe and record readings on suction manometer and barometer. Pressure on suction side will be 3 inches absolute or less (barometer-suction).

d. Capacity Test. Open suction control and pressure control valves. Energize air compressor motor. Adjust pressure control valves to attain 6 inches hg outlet pressure. Observe the flowmeter and record test reading. The air compressor must deliver not less than 1100 cubic inches per minute of airflow. Observe the ammeter and record power input. Power input must not exceed 3.5 amperes.

Table 4. Air Compressor Troubleshooting Chart

Trouble	Probable cause	Remedy
Fails to operate	No power	Provide power required.
	Motor failure	Replace motor
Low capacity	Low power input to drive motor (20, fig.).	Maintain proper voltage
	Clogged inlet or outlet	Disassemble and clean
	Misalignment of or damaged compressor parts.	Inspect, replace, and reassemble.
	Excessive leakage	Inspect and replace
Poor suction	See low capacity above	See low capacity above

32. Reassembly of Junction Box

(fig. 5)

Replace grommets (1), then fasten electrical receptacles (6) and (7) in place using attaching hardware. Fasten cover (8) to front of box using hardware removed in disassembly.

33. Reassembly of Electrical Coupling (fig. 6)

Clean all parts thoroughly with methyl ethyl ketone (MEK). Assemble bolt (18), base assembly (17), and fitting (13). Insert spring pin (16), nuts (14), sleeves (15), and contact pins (12) in fitting (13). Install assembled parts in swivel assembly (10) and draw electrical wires through outlet fitting in swivel (10). Mix potting compound MIL-S-8516, class 3, and fill swivel assembly (10) to top of outlet fitting on inner surface. Allow potting compound to cure for 72 hours. After potting compound has cured, lubricate O-ring lightly with kerosene and install in groove on can (8). Insert can (8) into swivel assembly (10) using a slight twisting motion to avoid damaging O-ring (9). Assemble stat-o-seal (6), flat washer (5), and nut (4) on bolt (18) and tighten. Place spring (7) over bolt (19). Place top (3 over bolt (19) and install washer (2) with chamfered edge against face of top (3). Install nut (1) and tighten.

34. Adjustment and Testing of Electrical Coupling

a. Adjustment. No adjustment is required or provided for the electrical connector. All tolerances are provided for automatically, by compression of spring (7) at installation of the fuel tank.

b. Testing. A point-to-point test on the internal connections of the electrical coupling should be made to determine whether or not there are any loose or broken connections. Use a standard voltohmmeter for this test. Check between each pin and the swivel assembly for possible ground.

Table 5. Electrical Coupling Troubleshooting Chart

Trouble	Probable cause	Remedy
Continuity broken	Broken wire	Replace wire
	Poor solder joint	Resolder
Pin-to-case ground	Damaged wire insulation	Replace wire

35. Reassembly of Fuel Coupling Valve

(fig. 7)

Reassembly of this coupling valve is the reverse order or disassembly except as noted. Place a new seal (21) at end of the piston (16). Place new O-rings (15) and (17) in grooves provided in piston (16). Wipe the body assembly (20) with a lint free cloth and install piston (16) in body assembly (20). Insert piston (16) with a slight turning motion as the O-ring enters the piston liner. Place spring (14) in seat provided in piston (16). Place new O-ring (13) on cap (12). Attach cap (12) with screws (11) after first compressing spring (14). Assemble plate assembly (2), clip (3), adjusting wrench (4), safety chain (5), and retaining ring (6) on stud (9) and fasten to cap (12) with screws (8). Install ring (1). Secure screws (8) with lock wire (7), and screws (11) with lockwire (10) using double twist method. Flex piston several times to insure that there is no binding.

Table_6. Fuel Coupling Valve Troubleshooting Chart

Refer to figure 7 to identify index numbers

Trouble	Probable cause	Remedy
Coupling valve leaks	Damaged seal (22)	Replace
	Weak or stock spring (14)	Replace
	Damaged O-rings (15) and (17)	Replace

Trouble	Probable cause	Remedy
Coupling valves sticks	Piston (16) worn	Replace piston
	Piston (16) gummed	Clean
	Piston (16) scored	Hone or replace
Excessive time to take fuel from tank.	Obstruction in coupling valve or fuel line.	Inspect and clear
	Valve not properly adjusted to red line	Adjust valve

36. Adjustment and Testing of Fuel Coupling Valve

a. Adjustment (fig. 7). Remove locking pin (3) from between the plates, Turn wrench (4) under plate assembly (2) in the desired direction to raise or lower the unit. The red groove in the lower portion of piston (16) is to be flush with the lower edge of body assembly (20) when it is seated. Upon completion of desired adjustment, reinstall locking pin (3).

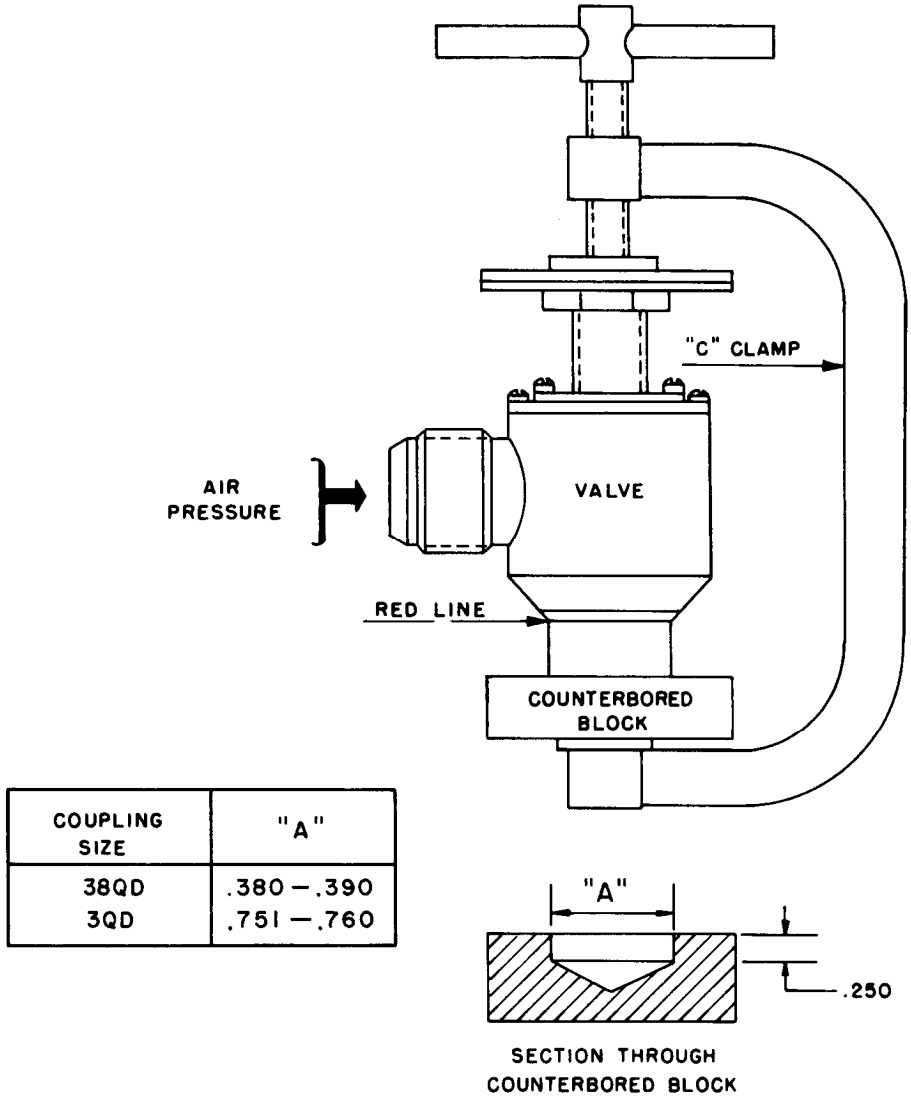

Figure 14. Fuel and air coupling valve test setup.

b. Testing (fig. 14).

(1) Cap tank fitting end of valve by placing a counterbored block, drilled .760 to .770-inch diameter to a depth of ¼ inch, over the end of the valve. Install valve and counterbored block in "C" type clamp and compress until red line on piston is even with end of the valve body.

(2) Connect supply of air to valve through the threaded port. The air supply must be capable of delivering 120 pounds of air per square inch, or greater.

(3) Apply air pressure to valve unit, submerge in any suitable liquid such as water, kerosene, or fuel oil, and check for leakage. Any leakage of air in the form of bubbles at any pressure up to 120 psi will be cause for rejection and replacement.

37. Reassembly of Air Coupling Valve

(fig. 8)

In general, reassembly is the reverse order of disassembly, except as noted. Place new seal (19) on end of piston (13). Place new O-rings (14) and (15) in groves provided on piston (13).

Caution: **Exercise care when reassembling piston to avoid scoring or other damage.** Wipe valve body (18) with a lint free cloth and install piston (13) in valve body (18). Insert piston (13) with a slight turning motion as the O-ring enters. Place spring (12) in the seat provided in piston (13). Position cap (10), adjusting stud (7), and new gasket (11) on body valve (18). Attach cap (10) with screws (8), and secure screws (8) in place with lock wire (9). Compress spring (12 cap (10) is affixed to valve body. Install retaining ring (6). Assemble mounting plate assembly (2), spring clip (3), adjusting wrench (5), bead chain assembly (4), and secure on adjusting stud with retaining ring (1). Flex the piston (13) several times to insure that there is no binding.

38. Adjustment and Testing of Air Coupling Valve

a. Adjustment. Adjust air coupling valve in the same manner as fuel coupling valve. (Refer to para 36a).

b. Testing (fig. 14).

(1) Cap tank fitting end of the valve by placing a counterbored block, drilled .380-to .390 -inch diameter to a depth of ¼ inch, over the end of valve. Install valve and counterbored block in "G" type clamp and compress until red line on piston barrel is even with end of valve body.

(2) Connect a supply of air to valve through threaded port. The air supply must be capable of delivering 120 pounds of air per square inch or greater.

(3) Apply air pressure to valve unit; submerge in any suitable liquid such as water, kerosene, or fuel oil; and check for leakage. Any leakage of air in the form of bubbles at any pressure up to 120 psi will be cause for rejection and replacement.

Table 7. Air Coupling Valve Troubleshooting Chart
Refer to figure 8 to identify numbers.

Trouble	Probable cause	Remedy
Coupling valve leaks	Damaged seal (19)	Replace
	Weak or struck spring (12)	Replace
	Damaged rings (14) and (15)	Replace
Valve sticks in operation	Piston (13) worn	Replace
	Piston gummed	Clean
	Piston cut or scored	Hone or replace
Excessive time to operate	Obstruction in valve or air line (fig. 9)	Check and clean
	Failure of air at source	Provide proper air pressure.
	Valve not properly adjusted to red line	Adjust

39. Reassembly of Pressure Relief Valve (fig. 10)

Install guide (7), packing O-ring (6), spring (5), and spring seat (4) onto poppet (9) and secure with nut (3).

Caution: **Exercise care to avoid damage to packing O-ring (6) when installing poppet into body (l). Lubricate packing O-ring with clean kerosene.**

Slide poppet subassembly, nut (3) first, into body (1) with slight twisting motion. Secure assembly with ring (8).

40. Adjustment and Testing of Pressure Relief Valve

a. Adjustment (fig. 10). To adjust pressure relief valve, remove ring (8) and lift poppet subassembly from body (1). Unscrew nut (3) to reduce cracking pressure, tighten nut (3) to increase cracking pressure. Reassemble and test. Repeat adjustment until desired cracking pressure of 2.75 ± .5 psi is obtained.

b. Testing (fig. 15). Connect valve in air supply line together with pressure gage (0–15 psi). Apply air pressure slowly and check valve for correct cracking pressure of 2.75 ± .5 psi.

Table 8. Pressure Relief Valve Troubleshooting Chart

Refer to figure 10 to identify index numbers.

Trouble	Probable cause	Remedy
Rated cracking pressure not maintained.	Spring pressure not properly adjusted .	Adjust
	Worn or scored guide (7) or poppet (9) .	Hone or replace
	Valve damaged or excessively worn ___	Replave valve
Erratic pressure control _____	Defective spring (5) ----------	Replace
	Stuck in open position ----------	Clean or replace
	Worn or scored guide (7) or poppet (9) ---	Hone or replace

41. Reassembly of Air Line (fig. 9)

Reassembly of air line is the reverse of disassembly. Use all new O-rings, gaskets, and seals when reassembling.

42. Reassembly of Supporting Structure (fig. 11)

Reassembly of supporting structure is the reverse of disassembly except as noted herein. When installing bomb rack (40), exercise care to install washers (50), as required, between the inner face of beam (19) and bomb rack (40). Use the same quantity of washers on both sides if possible. Install bolt (6) with one washer (7) under head and bolt (17) with one washer (18) under head. Additional washers (39) and (45) will be installed under nuts (38) and (46) if required. Thread nuts (46) and (38) on bolts (6) and (17) respectively, but do not tighten. Maintain a measured end play at both bolts between .002-inch minimum and .010-inch maximum.

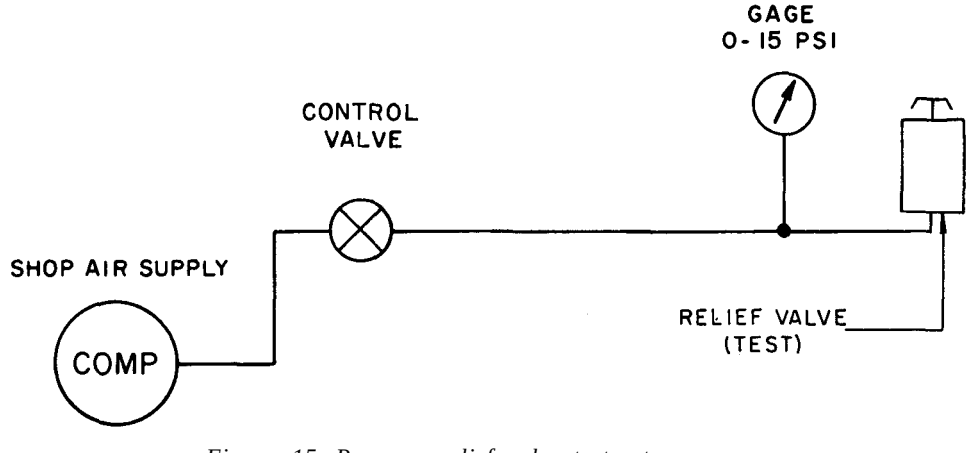

Figure 15. Pressure relief valve test setup.

Section VII. FINAL REASSEMBLY

43. Final Reassembly (fig. 2)

Mount junction box (21) to beam assembly using screws (22) and washers (23). Insert tubes (3) and (7) through top of junction box (21) and secure using clamps (4), screws (5), and washers (6). Install air coupling valve (18) on support bracket using screws (17), washers (12), and nuts (11). Install fuel coupling valve (20) on support bracket using screws (19), washers (12), and nuts (11). Install electrical coupling (16) on support bracket using screws (13), washers (12), and nuts (11). Feed electrical leads from electrical coupling (16) through tube (10) and tighten nut (15) and sleeve (14). Slide sleeve (9) and clamps (8) onto tube (10). Feed wires from tube (10) through tube (7) into junction box (21). Position sleeve (9) over tubes (7) and (10) and tighten clamps (8). Insert motor wire with connector (2) into junction box (21) through the tube (3). Solder and connect all leads in junction box (21) in accordance with wiring diagram (fig. 3). Spray interior of junction box (21), and all interior wires with varnish, MIL-V–173, and replace junction box cover (8, fig. 5). Install air compressor (38), with previously assembled elbow (32) and filter (34), using washers (29) and bolts (28). Align and connect electrical connector (2) to motor before tightening bolts (28). Safety wire bolts (28) with lock wire (27) using double twist method. Check latching hook (55, fig. 11) for free movement through its full travel, then safety wire connector (2) with lock wire (1) using double twist method. Install air line (fig. 9) in the reverse order of disassembly. Install valve (4, fig. 9) with arrow on valve pointing away from air compressor (38). Install bomb rack electrical connector to mating connector on junction box (21) and safety wire with lock wire.

CHAPTER 3

FINAL TEST PROCEDURES

44. Final Assembly Test Set-Up

(figs. 16 and 17)

a. Suspend pylon assembly above ground level as shown in figure 16.

b. Install test tank (Any fuel tanks designed for use with this pylon assembly may be used as test tank.)

c. Visually inspect fuel, air, and electrical connections. They must be seated and in a vertical position.

d. Position tank horizontally and adjust sway braces on pylon assembly.

e. Ground pylon assembly to suspension bar or other suitable location.

f. Connect test fuel circuit as shown in figure 17.

g. Remove cover from junction box assembly to provide access to electrical test points.

45. Final Assembly Functional Test

a. Check continuity of test tank float switch circuit by applying positive (+) lead of 24 VDC batery to point C of junction box and negative (-) lead of battery to pylon suspension bar. Connect test lamp to point D of junction box and pylon suspension bar. Test lamp should light.

b. Lower tank to 50 nosedown position. Open filler cap of test tank vent. Turn test fuel valve to fuel position and pump 15 gallons of fuel into tank. Test lamp in tank low level switch circuit should go out indicating open circuit.

c. Close test tank filler cap and energize air compressor on the pylon by applying the positive (+) lead of a 24 VDC battery to point B on the junction box connector. Ground the negative (-) terminal of the battery to pylon suspension bar.

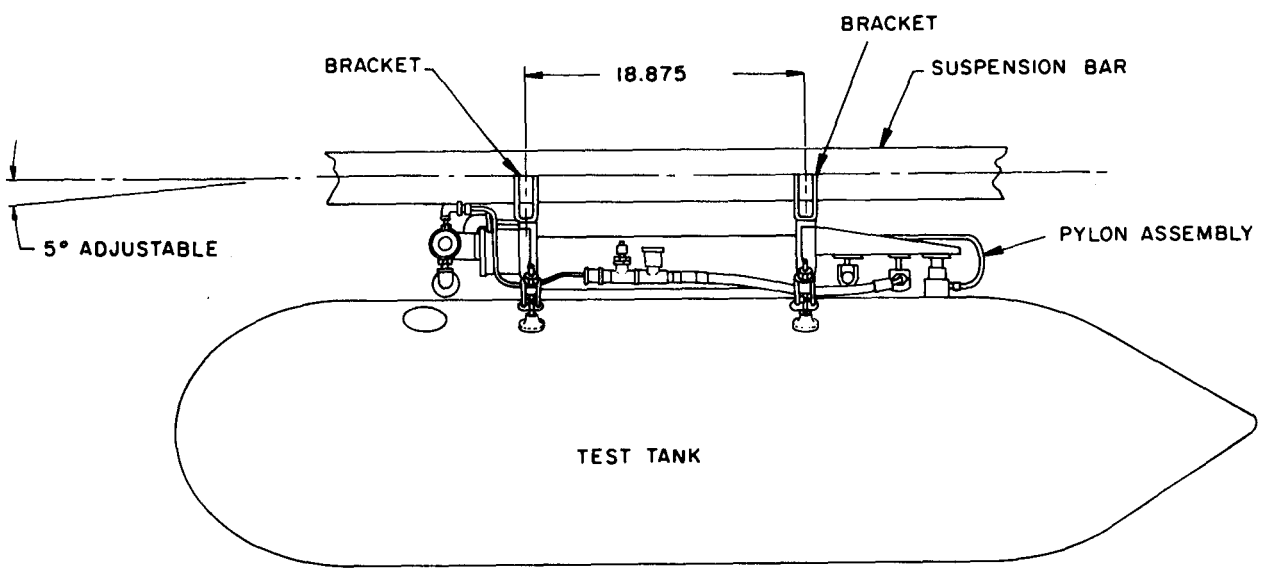

Figure 16. Final assembly functional test—mechanical setup.

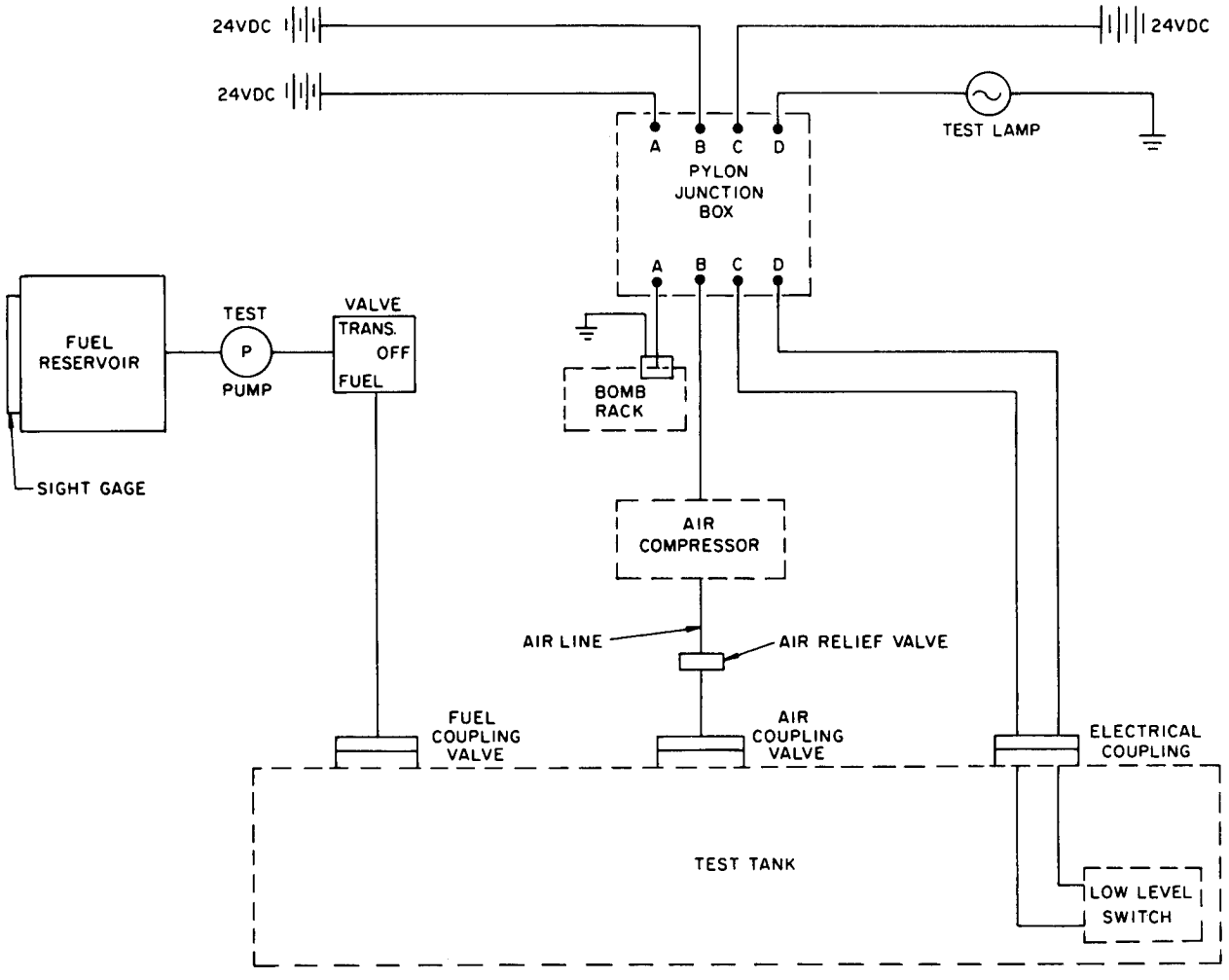

Figure 17. Final assembly functional test—electrical, fuel, and air connections.

d. Allow air pressure to build up in test tank until pressure relief valve opens. Then turn test fuel valve to transfer position. Continue transfer of fuel until complete. Tank float switch should close when tank is empty (test lamp should light). Disconnect battery leads from point B on junction box and ground.

e. Raise tank to horizontal position.

f. Position two men under fuel tank to catch the tank. Ground the negative (-) lead from 24 VDC battery to pylon suspension bar, then connect the positive (+) terminal to point A on junction box receptacle. The bomb rack should release and tank should fall.

g. Disconnect all battery leads and test lamp.

h. Retract sway braces, reinstall tank on pylon assembly, and readadjust sway braces.

i. Position men under the test tank to catch the tank and release the bomb rack by means of the mechanical release mechanism. The tank should fall free.

j. Disconnect test fuel line, replace cover on junction box, and remove pylon assembly from suspended position.

Table 9. Final Assembly Troubleshooting Chart

Trouble	Probable cause	Remedy
No continuity in float switch circuit.	Wiring defective	Repair or replace
	Electrical coupling defective	Repair or replace
	Defective test tank	Replace
Air compressor does not operate	No power	Provide power required
	Defective motor	Replace
Air compressor has low capacity	Defective motor	Replace
	Low input power	Maintain proper voltage
	Input air line clogged	Replace air filter element
Air pressure drops	Air coupling valve not adjusted	Adjust to red line
	Obstruction in air coupling valve	Clean, repair, or replace
Air leak	Air coupling valve not properly seated	Reseat air coupling valve
Fuel fails to flow	Fuel coupling valve not adjusted	Adjust to red line
Reduced fuel flow	Obstruction in fuel coupling valve	Clean, repair, or replace
Fuel leak	Fuel coupling valve not properly seated	Reseat, fuel coupling valve
Tank air pressure too high	Improper] y adjusted pressure relief valve.	Adjust pressure relief valve.
Relief valve does not operate	Defective pressure relief valve	Replace

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