

# **MOD MD9009500013**

## **Modification Instructions for High Puncture-Resistant Fuel Cell (JAR 27 Compliance)**

**Effective on  
Model MD900 Helicopters  
Serial Number: 900-00018 thru 900-00034**

## List of Effective Pages

Insert last change pages, discard superseded pages.

The highest revision number indicates pages changed, added or removed by the current change.

Date of original and change pages are:

Original ..... 09 May 1996

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## Modification Instructions For High Puncture-Resistant Fuel Cell (JAR 27 Compliance)

### 1. General Information

This kit contains all the components necessary to install new fuel vent float/rollover valves and strengthen the fuel booster pumps mounting flange to meet JAR 27 compliance. The instructions in this kit refer to maintenance practices contained in CSP-900RMM-2.

**NOTE:** References to CSP-900RMM-2 procedures appear as (Ref. Section 12-00-00) etc., Consumable Materials as (C702) etc., and Special Tools as (T999) etc.

### 2. Preparation

Ensure the helicopter battery is disconnected and any source of external power is removed.

### 3. Weight and Balance Information

MODIFICATION	WEIGHT (POUNDS)	LONGITUDINAL ARM (INCHES)	LATERAL ARM (INCHES)
FUEL CELL BUILD UP ASSEMBLY	1.10	182.1	+ 0.2

### 4. Part information

Replacement parts information has been scheduled to be included in the applicable Illustrated Parts List manual.

### 5. Kit Inventory

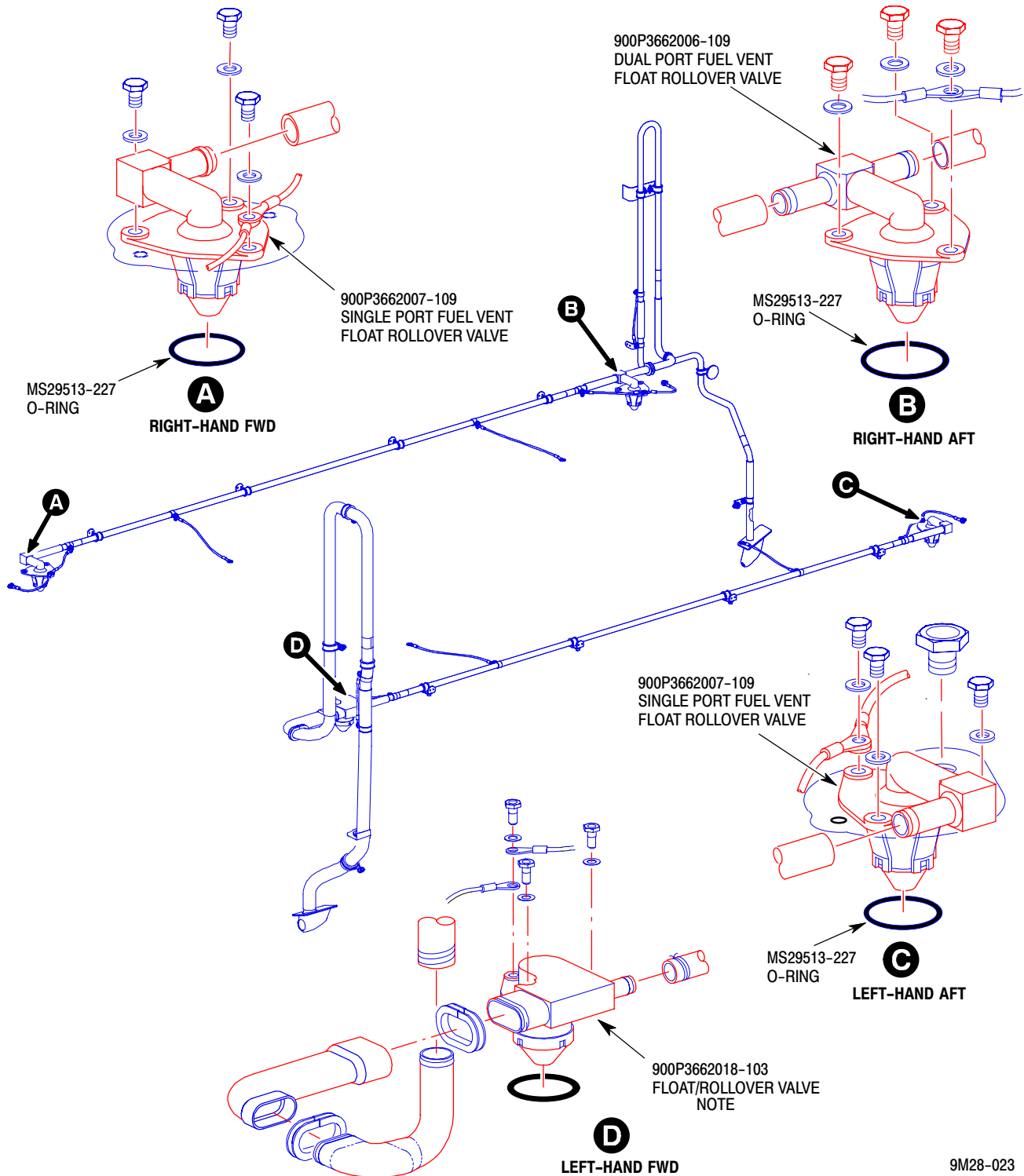
(Ref. Kit Number 900PG660102)

Inventory the kit upon receipt and report any discrepancies to McDonnell Douglas Helicopter System Customer Support. A parts list for inventory purposes is included below;

PART NUMBER	DESCRIPTION	QTY
900P3662006-109	DUAL PORT FUEL VENT FLOAT/ROLLOVER VALVE	2
900P3662007-109	SINGLE PORT FUEL VENT FLOAT/ROLLOVER VALVE	2
900P2661127-103	FUEL BOOSTER PUMP SUPPORT RING	2
900P2661128-101	FUEL BOOSTER PUMP LAMINATED SHIM	2
NAS6204-9	BOLT	6
NAS6204-9H	BOLT	2
MS29513-227	PACKING, PREFORMED, HYDROCARBON FUEL RES	4
MS29513-243(AS REQD)	PACKING, PREFORMED, HYDROCARBON FUEL RES	2

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Figure 1. Float / Rollover Valves Fuel Vent System

## 6. Installation Instructions

### A. Fuel Vent Float / Rollover Valves

(Ref. Figure 1)

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#### Consumable Materials (Ref. Section 91-00-00)

<u>Item</u>	<u>Nomenclature</u>
C206	Sealing Compound

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#### WARNING:

#### Aviation Turbine Fuel



- (1). Defuel helicopter (Ref. Section 12-00-00).
- (2). Remove cabin seats, if applicable (Ref. Section 25-20-00).
- (3). Remove cabin carpet, if applicable (Ref. Section 25-20-00).
- (4). Remove cabin floor forward and aft access covers; AR155, AL155, AL230, and AR230, (Ref. Section 53-20-00).
- (5). Remove right forward and left aft single port fuel vent float/rollover valves (900P3662007-107) and install single port float/rollover valves (900P3662007-109) with new O-rings (Ref Section 28-00-00).
  - (a). Perform Class R electrical bond test (Ref. Section 20-50-00).

#### WARNING:

#### Sealing Compound



- (b). Apply environmental sealant (C206) MIL-S-8802 T1 CLB to fasteners (Ref. Section 20-50-00).
- (6). Remove right aft dual port fuel vent float/rollover valve (900P3662006-107) and install dual port fuel vent float/rollover valve (900P3662006-109) with new O-ring (Ref. Section 28-00-00).
    - (a). Perform Class R electrical bond test (Ref. Section 20-50-00).
    - (b). Apply environmental sealant (C206) MIL-S-8802 T1 CLB to fasteners (Ref. Section 20-50-00).

**NOTE:** The left forward dual port fuel vent float/rollover valve may have a 900P3662018-103 installed. If this is the case, do not remove the left forward fuel vent float/rollover valve. Only the right aft 900P3662006-109 float/rollover valve is required for this modification (Ref. Figure 1).

- (7). If installed, remove left forward dual port fuel vent float/rollover valve (900P3662006-107) and install dual port fuel vent float/rollover valve (900P3662006-109) with new O-ring (Ref. Section 28-00-00).
  - (a). Perform Class R electrical bond test (Ref. Section 20-50-00).
  - (b). Apply environmental sealant (C206) MIL-S-8802 T1 CLB to fasteners (Ref. Section 20-50-00).

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## B. Left Fuel Booster Pump Wire Harness Relocation

(Ref. Figure 2)

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### Consumable Materials (Ref. Section 91-00-00)

Item	Nomenclature
C233	Iridite
C702	Lockwire

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- (1). Remove sump access panel B178 (Ref. Section 06-00-00).
- (2). Disconnect electrical power.
- (3). Detach wire harness from left and right fuel booster pumps:
  - (a). Remove straight (short) round head Allen screw and disconnect:  
**A111 (Q12D16)** wire from left booster pump positive (+) terminal.  
**A112 (Q13C16)** wire from right booster pump positive (+) terminal.
  - (b). While applying upward pressure to the shut-off lever arm to prevent binding of the Allen drive shoulder screw; remove (long) Allen drive shoulder screw:  
**A111 (Q35A16N)** and **(Q35B16)** wire from left booster pump negative (-) terminal.  
**A112 (Q36A16N)** and **(Q36B16)** wire from right booster pump negative (-) terminal.
  - (c). Remove bolt, washer and short ground wire jumper from fuel booster housing.

**NOTE:** Wire harness terminal lugs can not be pulled through grommet with grommet installed.

- (4). Carefully pull wire harness grommets from fuel booster pump mounting flange sump ring and then pull wire harness through grommet.
- (5). Drill new grommet hole in left fuel booster pump mounting flange sump ring (Ref. Figure 2).
  - (a). Relocate and install new grommet hole in fuel booster pump mounting flange sump ring.  
Drill **0.187 inch dia. (4.75 mm)** pilot hole (3/16 drill size) and then open hole to **0.450 inch dia. (11.43 mm)** hole (7/16 drill size).
  - (b). Deburr drilled hole.

### WARNING:

#### Chemical Coating



- (c). Apply surface touch up treatment-chemical coating, using Iridite 14-2, (C233) to drilled hole (Ref. Section 20-40-00).

## C. Fuel Booster Pump Support Plate and Shim

(Ref. Figure 2)

- (1). Remove and discard lockwire securing bleeder drain plug to bolt.
- (2). Peel shim thickness (900P2661128-101) to **0.056 - 0.057 inch (1.42-1.44 mm)** prior to installation.
- (3). Mark the shim cut area with black permanent ink on one side, face of shim. Cut shim equally in half as shown in Figure 2.

**WARNING:****Aviation Turbine Fuel**

**NOTE:** DO NOT remove fuel booster pump. Keep alignment orientation stripe on mounting flange relative to stripe on booster pump flange.

- (4). Remove and retain bolts and washers attaching fuel booster pumps to fuel cell (Ref. Section 28-00-00). Allow booster pump to move downward just enough to install shim.

**NOTE:** Keep marked ends together upon installation. DO NOT allow shim to overlap at ends.

- (5). With booster pump held in place, install shim halves (900P2661128-101), with bolts (NAS6204-3) and washers (AN960JD416L), as shown in Figure 2.
- (6). Install fuel booster pump support plate (900P26651127-103), with bolt (NAS6204-9H) and washer (AN960JD416L) in location shown.
- (7). Install bolts (NAS6204-9), washers (AN960JD416L) and short ground wire jumper to fuel booster housing as shown.
- (8). Install remaining bolts (NAS6204-3) and washers (AN960JD416L).
- (9). Torque bolts **70-90 in lbs (7.91-10.17 Nm)**.
- (10). Safety bleeder drain plug to bolt (NAS6204-9H) using lockwire (C702).
- (11). Re-route left hand booster pump wire harness through new grommet location and right hand booster pump wire harness through existing grommet location.
  - (a). Carefully insert wire harness terminal lugs through grommet and insert grommet and wire harness through mounting flange sump ring.
- (12). Attach wire harness to left and right fuel booster pumps:
  - (a). Attach (short) round head Allen screw and:  
**A111 (Q12D16)** wire to left booster pump positive (+) terminal.  
**A112 (Q13C16)** wire to right booster pump positive (+) terminal.
  - (b). While pressing upward on the stem of lever arm, secure negative wire and case ground wire by inserting (long) Allen drive shoulder screw into position and tighten. Be sure to have wires between shoulder on screw and lever arm. Attach:  
**A111 (Q35A16N)** and **(Q35B16)** wire to left booster pump negative (-) terminal.  
**A112 (Q36A16N)** and **(Q36B16)** wire to right booster pump negative (-) terminal.

**D. Parts Installation After Modification**

- (1). Install cabin floor panel AR155, AR155 and AR230 (Ref. Section 53-20-00).
- (2). Perform fuel cell leak check/pressure test (Ref. Section 28-00-00).
- (3). Install cabin floor panel AL230,
- (4). Install cabin carpet, if applicable (Ref. Section 25-20-00).
- (5). Install cabin seats, if applicable (Ref. Section 25-20-00).
- (6). Fuel helicopter (Ref. Section 12-00-00).
- (7). Connect electrical power.

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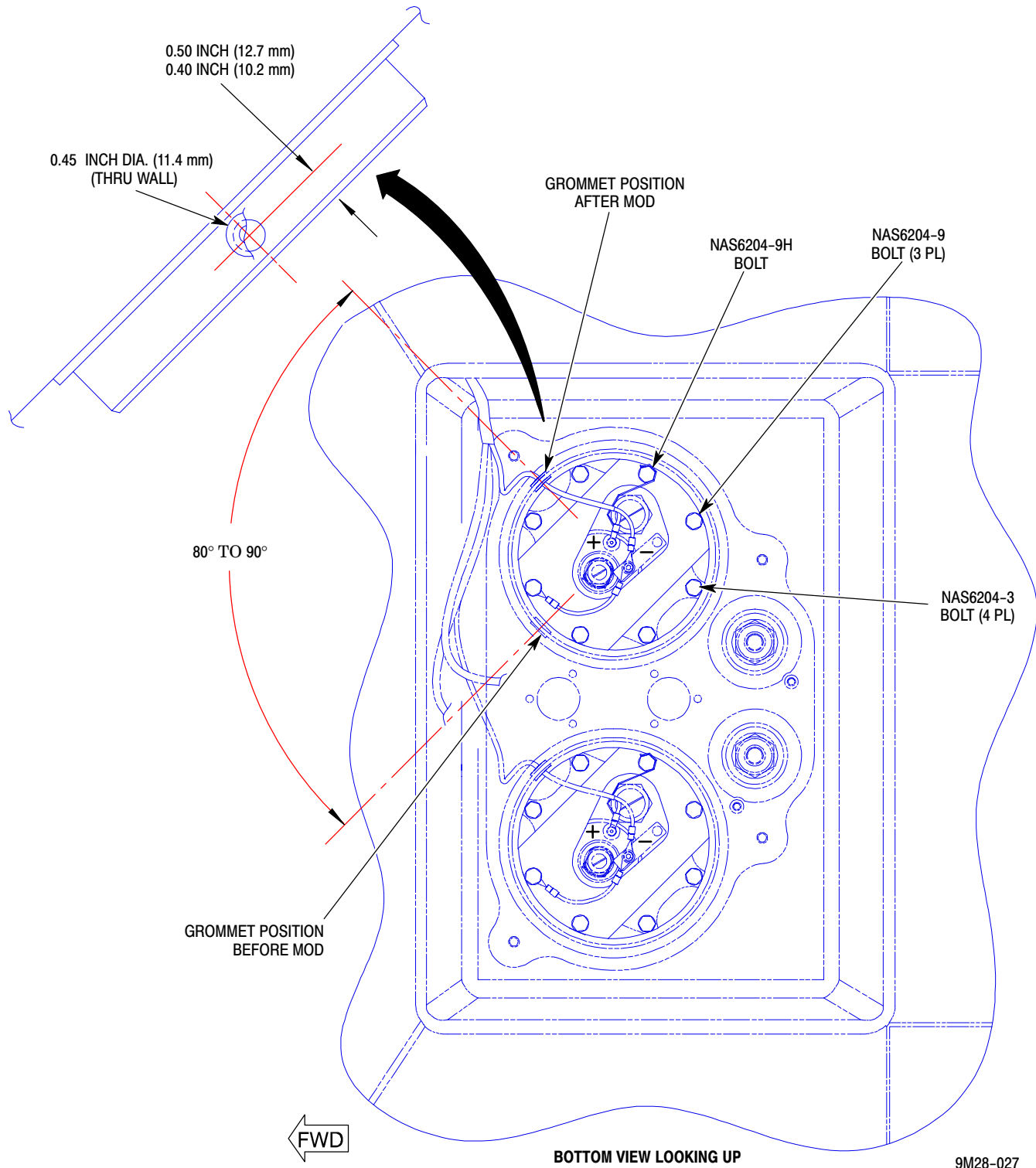
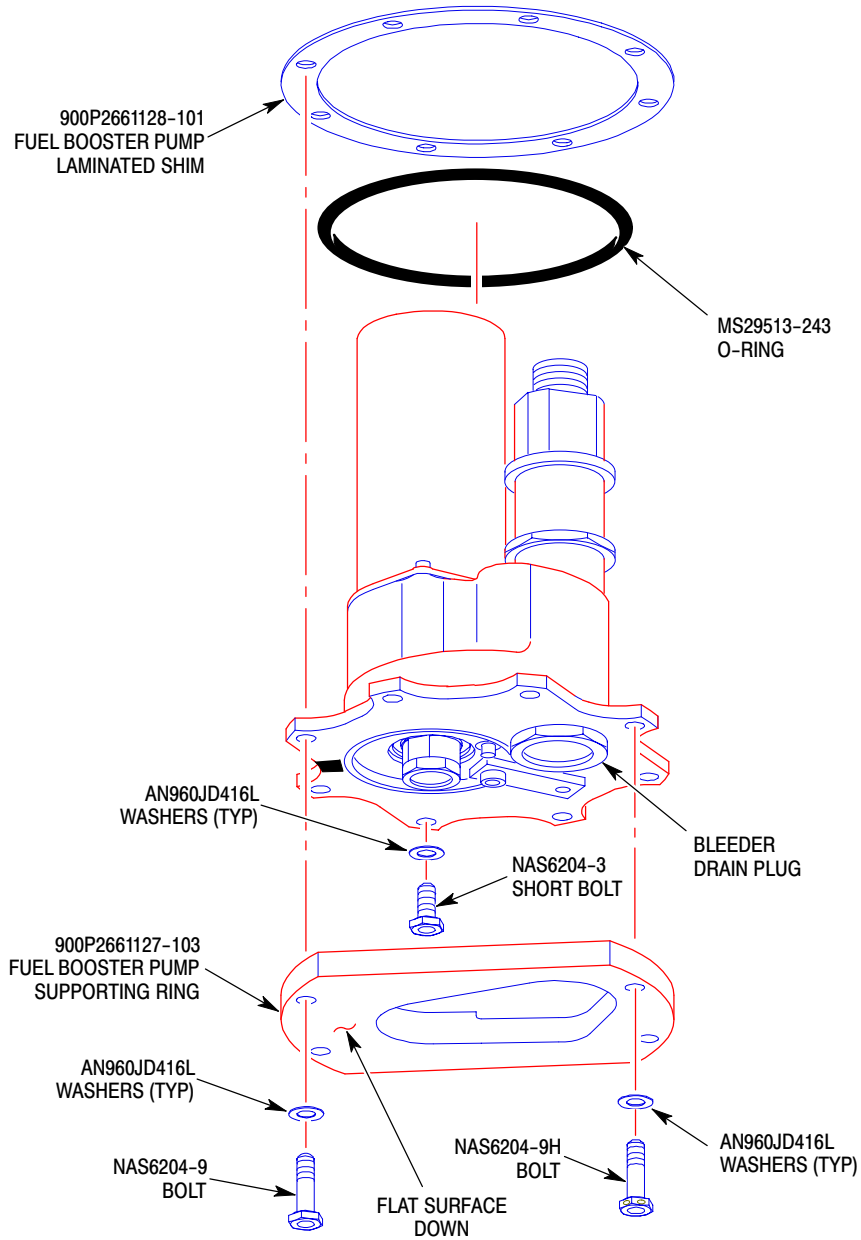


Figure 2. Reinforcing Fuel Booster Pumps Mounting Flange (Sheet 1 of 2)



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Figure 2. Reinforcing Fuel Booster Pumps Mounting Flange (Sheet 2 of 2)

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