



*Powering Business Worldwide*

Aerospace Group  
Conveyance Systems Division  
Carter® Brand Ground Fueling Equipment

**SM6958**  
March 2010

Applicable additional  
manuals:  
None

## **Maintenance & Repair Manual**

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### **Bottom Loading & Recirculation Adapters**

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**Models 6958, 61272, 61409, 61528, 64040 & 61529**

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**Maintenance, Overhaul & Test Instructions**  
**Carter® brand Models 6958, 61272, 61409, 61528, 64040 & 61529**  
**Bottom Loading & Recirculation Adapters**

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1.0 INTRODUCTION

This manual furnishes detailed instructions covering the maintenance and overhaul of Carter Models 6958, 61272, 61409, 61528, 64040 & 61529 bottom loading and

recirculation adapters. These units all utilize the MS24484 type refueling modular adapter.

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2.0 EQUIPMENT DESCRIPTION

These Carter models are all of similar design in that they all utilize the 2-½" MS24484 type refueling modular adapter. This type of adapter is only suited for bottom loading and recirculation or other relatively low pressure type applications. For hydrant system applications use Model 60195 or Model 60373 for 2-½" installations. Use Model 60505 or Model 61526 adapters for 4" API type applications. These adapters consist of a cast aluminum housing in which is mounted either the commercial version, MS24484-2, or the current QPL version, MS24484-5, refueling modular adapter. Both of these MS24484 units are dimensionally identical. The only differences lie in two areas, both related to high temperature applications normally seen in fighter aircraft applications:

- Poppet seal on the MS24484-5 is of a high temperature elastomer for use in

temperatures up to 350°F. The seal on the MS24484-2 is suitable for temperatures up to 160°F.

- The bayonet flange to which the nozzle connects on the MS24484-5, has a greater tensile strength requirement required by the 350°F requirement. Again, the MS24484-2 was designed for service at temperatures up to 160°F.

The MS24484-5 is only manufactured by specifically qualified suppliers, among which is Argo-Tech Corporation, Airframe Division. The MS24484-2, a previously listed qualified product is made by Argo-Tech's Carter Ground Fueling.

All of the models discussed herein, except for the basic module, 61529, are similar, varying mainly in the outlet mounting configuration.

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3.0 TABLE OF OPTIONS

Each of the basic units may be obtained in various configurations by adding one or more of the options listed in the table below.

Option Letter	Description	Comments
A	Adds pressure dust cap (61531)	In lieu of option B on all models.
B	Adds plastic dust cap (41607)	In lieu of option A on all models.
C	Adds commercial MS24484-2 adapter	In lieu of option D on all models except 61529. (Either C or D must be specified to obtain a complete unit).
D	Adds military MS24484-5 adapter	In lieu of option C on all models except 61529. (Either C or D must be specified to obtain a complete unit).
G	Adds 2-½" - 8 NPT female outlet	In lieu of option H on 6958 only. (Either G or H must be specified to obtain a complete unit).
H	Adds 2-½" - BSPP female outlet	In lieu of option G on 6958 only (Either G or H must be specified to obtain a complete unit).

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4.0 DISASSEMBLY

Refer to Figure 1 for an exploded view of the unit.

from the Housing (3) unless replacement is required.

- 4.1 Remove six Screws (1). Pull Adapter Module (2 or 2A) from Housing (3) and remove and discard O-ring (4). Remove Cap (11 or 11A) from Adapter Module (2 or 2A). If present (available only on some units), do not remove the two pipe Plugs (5)

- 4.2 Spare parts for the Cap (11 or 11A) are not available. If it is faulty replace as a complete unit.

4.3 Noting the following warning, carefully remove the six Screws (6) from the Adapter Module (2 or 2A).

**WARNING**

The Spider (7 or 7A) is spring loaded and care should be exercised in removing the attaching Screws (6).

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5.0 INSPECTION

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| <p>5.1 Special Tools - Use Adapter Wear Gauge, 61657-2 to check the Flange (9 or 9A) of Adapter Module (2 or 2A) for suitability for continued use. Refer to manual SM61657 for instructions on its use. This gauge will indicate whether the slots and lugs of the Flange (9 or 9A) of Adapter Module (2 or 2A) are worn beyond safe use.</p> | <p>5.2 Check the seal on Cap (11A) for deterioration, cuts or nicks. Replace the Cap (11A) if such aberrations are apparent.</p> <p>5.3 Check Cap (11) for aging cracks or other damage. Replace as needed.</p> <p>5.4 Inspect Poppet (8 or 8A) for damage to the seal. The seal is bonded into the metal poppet and is not removable. Replace Poppet (8 or 8A) as needed.</p> |
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6.0 REASSEMBLY

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| <p>6.1 Reassembly is accomplished in essentially the reverse order of disassembly noting the following:</p> <p>6.2 Light lubrication of all O-rings and seals, using petroleum jelly is recommended to facilitate installation.</p> <p>6.3 Reassemble Adapter Module (2 or 2A).</p> | <p>6.4 Place the O-ring (4) in the groove in Adapter Module (2 or 2A) before installing in the Housing (3). Torque Screws (1) to 20 ± 2 in-lbs (.23 m-kg).</p> <p>6.5 Reattach Cap (11 or 11A) to tab on Adapter Module (2 or 2A) if utilized.</p> |
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7.0 TEST

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| <p>7.1 The following test procedures will be accomplished after overhaul:</p> <p>7.2 <u>Test conditions</u></p> <p>7.2.1 Test media shall be Stoddard Solvent (Federal Specification P-D-680), JP-4 per MIL-J-5624D at 75° ± 15°F, Jet A or equivalent.</p> <p>7.3 <u>Functional Test</u></p> <p>7.3.1 Attach adapter to a 120 psi fluid pressure source through the outlet (flanged or threaded end). Attach a Carter brand Model 60427 or 61428 type nozzle to the inlet Adapter Module (2 or 2A). The nozzle shall be plugged at the inlet end with a plug and a</p> | <p>small petcock or hand valve. With the nozzle and petcock open, slowly increase the pressure into the adapter outlet to fully bleed the air from the test unit. Close the petcock and increase the test pressure to 120 psi. Check for external leakage from the joint between the nozzle and adapter and from the adapter housing and joints.</p> <p>7.3.2 Bleed the pressure from the test unit and remove the nozzle.</p> <p>7.3.3 Slowly increase the system pressure again to 120 psi and check for leakage from the Adapter Module (2 or 2A) Poppet (10 or 10A).</p> |
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8.0 ILLUSTRATED PARTS CATALOG

Table 1.0 tabulates the parts and sub-assemblies comprising the various adapters covered by this manual.

The item numbers of the table are keyed to the exploded views of the units diagrammed in Figure 1.

TABLE 1.0

Item	Part Number	Description	Qty/ Assy	Spares/10 Units/Yr.	Used on
1	GF24693C73	Screw	6	6	All
2	61529	Adapter Module (MS24484-2)	1	-	All except Option D
6	LP500-6-5	Screw	6	6	All
7	20876	Spider	1	-	All
8	2753	Spring	1	-	All
9	20748-2	Flange	1	1	All except Option D
10	20780	Valve-Adapter	1	2	All except Option D
2A	61247	Adapter Module (MS24484-5)	1	-	Option D only
6	LP500-6-5	Screw	6	6	All
7	20876	Spider	1	-	All
8	2753	Spring	1	-	All
9A	20748-1	Flange	1	1	Option D only
10A	208197	Valve-Adapter	1	2	Option D only
3A	24176	Body, 2-½" NPT	1	-	6958 Option G only
3B	204563	Body, 2-½" BSPP	1	-	6958 Option H only
3C	210201	Body, 4" TTMA	1	-	61272 only
3D	210136	Body, 4" ANSI	1	-	61409 only
3E	210216	Body, 3" TTMA	1	-	61528 only
3F	220288	Body, 3" ANSI	1	-	64040 only
4	MS29513-153	O-ring	1	10	All (not furnished with 61529)
5	210462	Plug	2	-	Some 6958, 61272 and 61528 only
11	41607	Cap, Plastic	1	3	Option B only
11A	61531	Cap, Metal Sealing	1	1	Option A only

- Notes:
1. All part numbers beginning with "GF" are interchangeable with those beginning with either "AN" or "MS". If the "GF" is followed by three numbers it is interchangeable with an "AN" part, otherwise it is interchangeable with an "MS" part of the same number.
  2. The recommended spare parts shown above are the number required to support 10 units for one year. The recommended quantities are based on the ratio of spare parts sold for each unit during a one year period of time. The actual quantity required will vary from location to location.

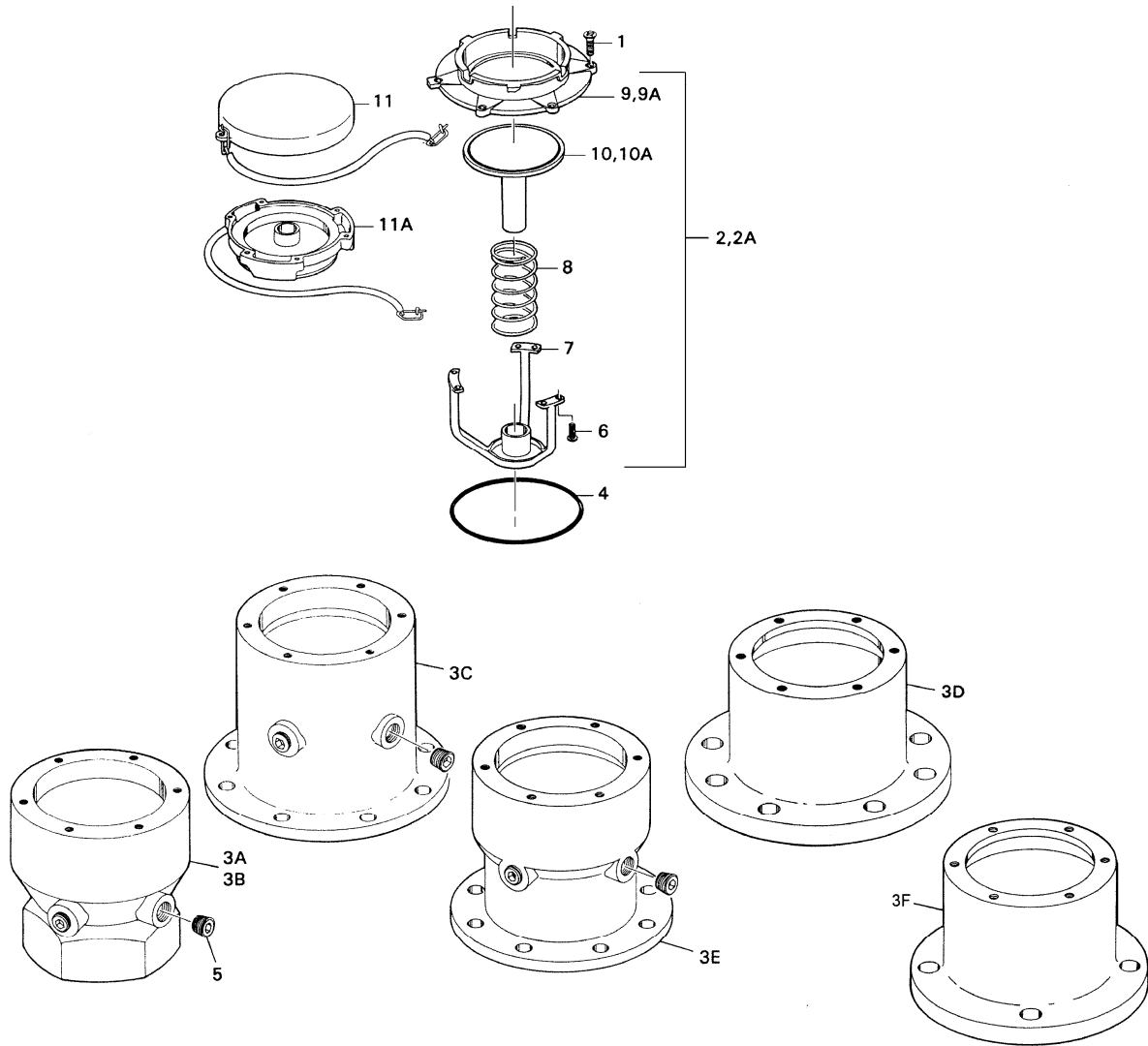


Figure 1



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