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Aerospace Group  
Conveyance Systems Division  
Carter® Brand Ground Fuelin Equipment

**SM60373**  
January 2002

Applicable additional manuals:  
None

## **Maintenance Manual**

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# **Bottom Loading & Recirculation Adapters**

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**Models 60195, 60373, 64373 & 64573**

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**Maintenance, Overhaul & Test Instructions**  
**Carter® brand Models 60195, 60373, 64373 & 64573**  
**Bottom Loading & Recirculation Adapters**

1.0 INTRODUCTION

This manual furnishes detailed instructions covering the maintenance and overhaul of Carter brand Models 60195, 60373, 64373, & 64573

bottom loading and recirculation adapters. These units all utilize the MS29514 type refueling 9-bolt flange adapter.

2.0 EQUIPMENT DESCRIPTION

These Carter units are all of similar design in that they all utilize the 2-½" MS29514 type refueling 9-bolt flange adapter. This type of adapter is suitable for use in bottom loading, recirculation or hydrant pressure applications where a 2-½" type adapter is required. These adapters consist of a cast

aluminum housing which contains an internal support bearing for the adapter poppet. A 9-bolt flange joins the housing and adapter flange.

All of the models discussed are similar, varying mainly in the outlet mounting configuration.

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 tables below.

**Model 60195**

2-½" threaded inlet by 2-½" bayonet

**Option**

Option Letter	Description	Comments
A	Deletes product selection feature	In lieu of standard positions 4, 5 & 6 selection
B*	Adds relief valve to poppet	In lieu of option F without valve.
E	Adds pressure dust cap	In lieu of option J
F*	Adds standard poppet valve	In lieu of option B with relief valve.
G**	Adds 2½"-8 NPT threaded inlet	In lieu of option H.
H**	Adds 2½"-11 BSPP threaded inlet	In lieu of option G.
J	Adds plastic dust cap	In lieu of option E.

\* Either option B or F must be included in the part number to achieve a completed part number.

\*\* Either option G or H must be included in the part number to achieve a completed part number.

**Models 60373, 64373 & 64573**

4" flange by 2-½" bayonet

**Option**

Option Letter	Description	Comments
*A	Adds product selection feature, positions 4, 5 & 6.	In lieu of option F.
**B	Adds relief valve to poppet	In lieu of option E.
C	Adds pressure dust cap	
D	Adds plastic dust cap	
**E	Adds poppet without relief valve	In lieu of option B.
*F	Deletes product selection feature	In lieu of option A.

\* Either option A or F must be added to the part number to achieve a completed part number

\*\* Either option B or E must be added to the part number to achieve a completed part number

4.0 DISASSEMBLY

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

Ring (13), if present. Pull Adapter Flange (3) from Housing (4). Remove and discard O-ring (5).

4.1 Remove Cap (1 or 1A) from unit if present.  
Remove nine Screws (2) and Product Selection

Remove Poppet (6 or 6A) and Spring (7). Note on

- older 60195 Adapters, O-ring (5) is replaced with Gasket (5A). Discard if present.
- 4.2 Spare parts for the Cap (1) are not available. If it is faulty replace as a complete unit.
- 4.3 On option B units, it is possible to disassemble the Poppet (6A) to replace the relief valve Seal (8). Remove Nut (9) and then the Seal (8). Discard Seal (8).

#### 5.0 INSPECTION

- 5.1 Special Tools - Use Adapter Wear Gauge, 61657-2 to check the Flange (3) 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 (3) are worn beyond safe use.
- 5.2 Check the seal on Cap (1) for deterioration, cuts or nicks. Replace the Cap (1) if such aberrations are apparent.
- 5.3 Check Cap (1A) for aging cracks or other damage. Replace as needed.
- 5.4 Inspect Poppet (6 or 6A) for damage to the seal. The seal is bonded into the metal poppet and is not removable. Replace Poppet (6 or 6A) as needed.

#### 6.0 REASSEMBLY

- 6.1 Reassembly is accomplished in essentially the reverse order of disassembly noting the following:
- 6.2 Light lubrication of all O-rings and seals, using petroleum jelly is recommended to facilitate installation.
- 6.3 Place Spring (7) inside Housing (4) and insert Poppet. On option B units, apply two drops of Loctite Compound 242, one each on opposite sides of the threaded portion of the Nut (9). Insert
- 6.4 Spring (10) into Poppet (12). Install Stem (11) and secure with Nut (9). Torque Nut (9) to  $10 \pm 5$  in-lb ( $.12 \pm .06$  kg-m) to retain and align one slot with the slot in the Poppet (6A).
- 6.4 Place the O-ring (5) in the groove in Adapter Flange (3) before installing in the Housing (4). Torque Screws (2) to  $20 \pm 2$  in-lbs (.23 m-kg).
- 6.5 Reattach Cap (1) or (1A) to tab on Adapter Flange (3) if utilized.

#### 7.0 TEST

- 7.1 The following test procedures will be accomplished after overhaul:
- 7.2 Test conditions
- 7.2.1 Test media shall be Stoddard Solvent (Federal Specification P-D-680), JP-4 per MIL-J-5624D at  $75^\circ \pm 15^\circ\text{F}$ , Jet A or equivalent.
- 7.3 Functional Test
- 7.3.1 Attach adapter to a 120 psi fluid pressure source through the outlet (flanged or threaded end). Attach a Carter 60427 or 64348 type nozzle to the inlet. The nozzle shall be plugged at the inlet end with a plug and a 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.
- 7.3.2 Bleed the pressure from the test unit and remove the nozzle.
- 7.3.3 Slowly increase the system pressure again to 120 psi and check for leakage from the unit.

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	61531	Cap, pressure	1	-	60195E & C option for others
1A	41607	Cap, plastic	1	5	60195J & D option for others
2	GF51957-64	Screw	9	-	60195A & F option for others
	GF51957-66	Screw	9	-	Option A
3	25668	Flange	1	-	All
4	20252	Body	1	-	60195G
	27933	Body	1	-	60195H
	28722	Body	1	-	60373
	220040	Body	1	-	64373
	220390	Body	1	-	64573
5	201201-042	O-ring	1	10	All but early 60195
5A	2772	Gasket	1	10	Early 60195
6	4150	Poppet	1	-	60195F & E option for others
6A	47011	Poppet Assy	1	-	Option B
8	222044	Seal	1	10	
9	220045	Nut	1	-	
10	LC022D-5	Spring	1	-	
11	220043	Stem	1	-	
12	220052	Poppet	1	-	
7	2753	Spring	1	-	All
13	81068	Product Selection Ring	1	-	Option A

- 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.

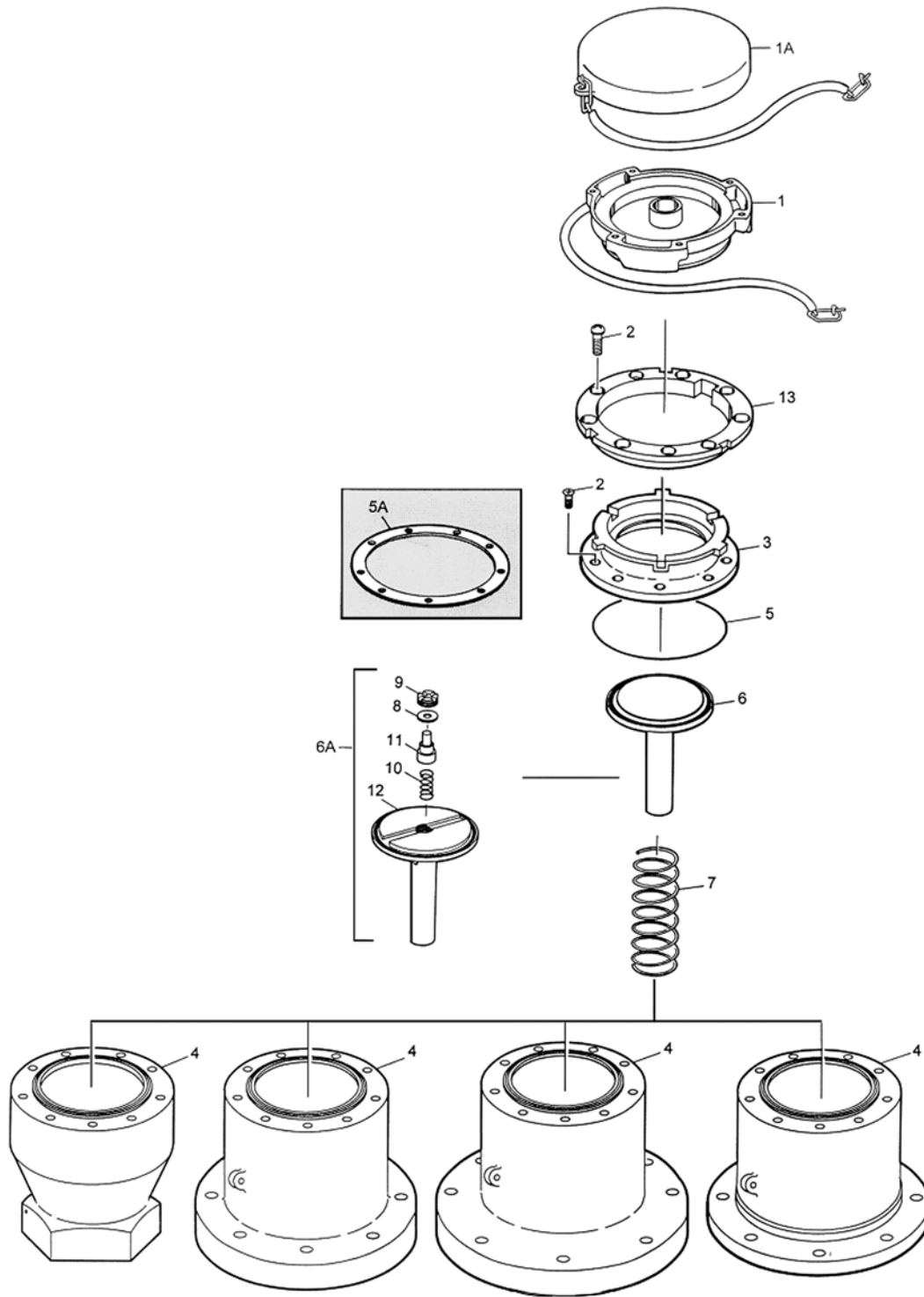


Figure 1

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