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Aerospace Group  
Conveyance Systems Division  
Carter<sup>®</sup> Brand Ground Fueling Equipment

**SM40679**

August 2009

Applicable additional manuals:  
SM60427 Nozzle  
SM60129-1 Hose End Regulator

**Maintenance Manual**

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**Quick Disconnect To Mate 60427 Nozzle**

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**Model 40679**

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**Maintenance, Overhaul & Test Instructions  
Model 40679 Quick Disconnect**

**1.0 INTRODUCTION**

This manual furnishes detailed instructions covering the maintenance and overhaul of Eaton's Carter brand Model 40679, quick disconnect assembly.

The 40679 quick disconnect is available in many variations of inlet configurations. These are

obtained by procuring different "dash" numbers of the basic part number 40679. Each of these variations corresponds to a different "option" letter on the Carter Model 60427 nozzle when procured as a part of the nozzle. Refer to paragraph 3.0 for a detailed explanation of the various options.

**2.0 EQUIPMENT DESCRIPTION**

Model 40679 quick disconnect is designed to be used as a part of Model 60427 nozzle to provide connection to various sizes and types of hose fittings and to provide a quick means of

disconnecting the nozzle from the hose for inspection of the strainer utilized therein. The outlet adapter that mates the nozzle is also the male half of the swivel.

**3.0 TABLE OF OPTIONS**

The unit is available with various inlet thread sizes and types as shown below. The corresponding options to the 60427 nozzle are also shown.

Part Number	Description	Nozzle Option
40679-1	2-½" NPT inlet thread	6H
40679-2	2-½" BSPP inlet thread	6K
40679-3	3" NPT inlet thread	6L
40679-5	2" NPT inlet thread	6P
40679-6	3" BSPP inlet thread	6M
40679-7	2" BSPP inlet thread	6N
41767-60	60-mesh screen	B
41767-100	100-mesh screen	C

**4.0 SAFETY INSTRUCTIONS**

The swivel disconnect described herein has two separate safety systems built into it to assure that the unit can not be inadvertently disassembled from the hose. The unit is held together by a "ball and groove" system that is maintained in place by a locking sleeve. The locking sleeve is in turn locked in place by two set screws that protrude through the locking sleeve into a groove in the disconnect housing. The set screws are safety locked by the use of lockwire. In addition a "C" type ring is also

provided to prevent the sleeve from moving into the open position inadvertently.

**NOTE:**  
Do not operate the nozzle with this disconnect connected unless the locking Sleeve (12) is in place and the Screws (14) are fully installed and wire locked and the "C" Ring (17) is installed in its proper groove.

**5.0 SPECIAL TOOLS**

A go-no gauge has been developed for use in checking the wear limits of the Sleeve (12) in the area of the contact by the Balls (16). Years of use can cause wear that will eventually defeat

the locking feature of the unit. The result could be a serious spill. The gauge, available from the nearest Carter distributor, is part number IF220351.

**6.0 DISASSEMBLY**

6.1 Remove nozzle/quick disconnect from end of hose. Separate the swivel quick disconnect from the nozzle by removing the six Screws (6) and Washers (5).

6.2 Remove Lockwire (13) from Screws (14). Take note of the method of lockwiring for duplication upon reassembly.

6.3 Remove Screws (14) and set aside.

- 6.4 Using a small screw driver or similar pointed instrument, move the "C" Ring (17) from its locked position groove (one farthest from the inlet thread) to its unlocked position groove (one nearest to the inlet thread). On some older units only one groove may be present. If so, move the Ring (17) sufficiently away from its locked groove to allow the Sleeve (12) to release the Balls (16). Note that on all units, but the 3" ones, the Sleeve (12) can be moved unrestricted toward the inlet thread, except by the Ring (17). If the Sleeve is moved too far the Balls (16) will fall out of the Housing (15).
- 6.5 With the Sleeve (12) moved toward the inlet thread, grip both the Quick Disconnect (10) and Male Adapter (1) and apply a rotational separation force to disassemble. Due to the presence of an o-ring seal this force may be significant enough to warrant the use of a vise on one or the other of the parts. Take care not to damage the outer surfaces. Once the two halves have been separated, one may reinsert the two locking Screws (14) to temporarily keep the Balls (16) in place.

- 6.6 Older nozzles utilize a Screen (9) that is retained in position by an O-ring (8). Newer nozzles utilize a wire Retainer (8A) to retain the newer Screen (9A). If present, remove O-ring (8) and discard. To remove Screen (9A), compress Retainer (8A) and take it out of the unit. The Screen (9A) can then be removed.
- 6.7 Pre-disassembly of Quick Disconnect (10) Inspection - Prior to disassembling Quick Disconnect (10), perform the following inspection procedure:
  - Slide the Sleeve (12) to the locked position (away from the threaded end of the Housing (15) and lock it in place with one Screw (14).
  - Attempt to insert gauge IF220351 into the open end (opposite to the threaded end). If the gauge slides into the part, the Sleeve (12) is worn out and has to be replaced. If the gauge does not enter the part, the unit is acceptable for use and disassembly can continue as below.
  - If the complete Disconnect (10) is to be disassembled, remove the retaining Ring (11) (on the 3" units only), then the Sleeve (12). Remove the 16 Balls (9). On the 2" and 2½" units, remove the locking Ring (17) from the Housing (15) then the Sleeve (12) from the Housing (15). On these units the Ring (11) is replaced by an integral shoulder on the Housing (15). Remove Wear Ring (18) (newer units only).

7.0 INSPECTION

It is recommended that the O-rings (2), (4) and (8), if present, be replaced at each repair or overhaul. Inspect all metal parts for dings, gouges, abrasions, etc. Use 320 grit paper to smooth and remove sharp edges. Replace any part with damage exceeding 15% of local wall thickness. Use alodine 1200 to touch up bared aluminum. Carefully check the edges of the ball race in the Adapter (3) for excessive wear or burrs. Excessive burring may result in hanging

up of the part within the Housing (15) making it impossible to disassemble in the future. If a sharp edge or burr is present, remove it with 320 grid paper to a maximum corner break of .020 (.508 mm). Check Wear Ring (18) for wear or scratches. Replace if damaged. Check the Screen (9), if present, for cleanliness and possible damage. Replace if damaged. Flush the Screen (9) in solvent to remove any dirt or other foreign objects.

8.0 REASSEMBLY

- 8.1 Reassemble in reverse order of disassembly (Refer to Figure 1), observing the following:
  - 8.1.1 Make certain all components are clean and free from oil, grease, or any other corrosion resistant compound on all interior or exterior surfaces. Wash all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly with a clean, lint-free cloth or compressed air.

NOTE: A light coat of petrolatum, Federal Specification VV-P-236 or equivalent commercial quality, can be applied to all o-rings and screws for ease of installation.

- 8.1.2 Install O-ring (2) in groove in Adapter (3), O-ring (8), if present, in groove inside of Adapter (3) and O-ring (4) onto flanged end of Adapter (3).
- 8.1.3 When installing the Balls (16), it is suggested that petroleum jelly or other light grease be used in the holes to retain the balls in place prior to installing the Sleeve (12). After installation of the Sleeve (12) the grease should be completely washed out of the unit.
- 8.1.4 The Screen (9 or 9A) should be installed with the point of the cone facing into the Male Half (1). If

**WARNING:**  
**Use cleaning solvent in a well-ventilated area. Avoid breathing of fumes and excessive solvent contact with skin. Keep away from open flame.**

- the O-ring (8) retained Screen (9) is utilized, be sure that the Screen (9) is seated into the O-ring (8). If the newer Screen (9A) is utilized be sure that the Retainer (8A) is well seated in the groove within the Adapter (3).
- 8.1.5 Ascertain that the Lock Ring (17) is installed in the groove nearest the threaded end of the Housing (15) until the unit has been reconnected to the Male Half (1). The Ring should then be moved to the groove nearest the Sleeve (12).
- 8.1.6 Install Wear Ring (18), if present (newer units only).
- 8.1.7 Upon completion of assembly of the unit, the Screws should be tightened sufficiently to prevent the Sleeve (12) from being moved from the locked to the open position. They should then be lock wired to each other being sure to keep the Lockwire (13) tight against the Sleeve (12).

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## 9.0 TEST

9.1 The unit shall be tested as a part of a completed nozzle as instructed in SM60427.

### 9.2 Test conditions

9.2.1 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.

## 9.3 Functional Test

As mentioned above the unit should be tested in accordance with the appropriate instructions in SM60427.

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## 10.0 ILLUSTRATED PARTS CATALOG

Table 1.0 tabulates the parts and sub-assemblies comprising the 40679-\* quick disconnect assembly and 41767-60 or -100 screen assemblies. The item numbers of the table are keyed to the exploded view of the swivel assembly diagramed in Figure 1.

\* Add the appropriate dash number.

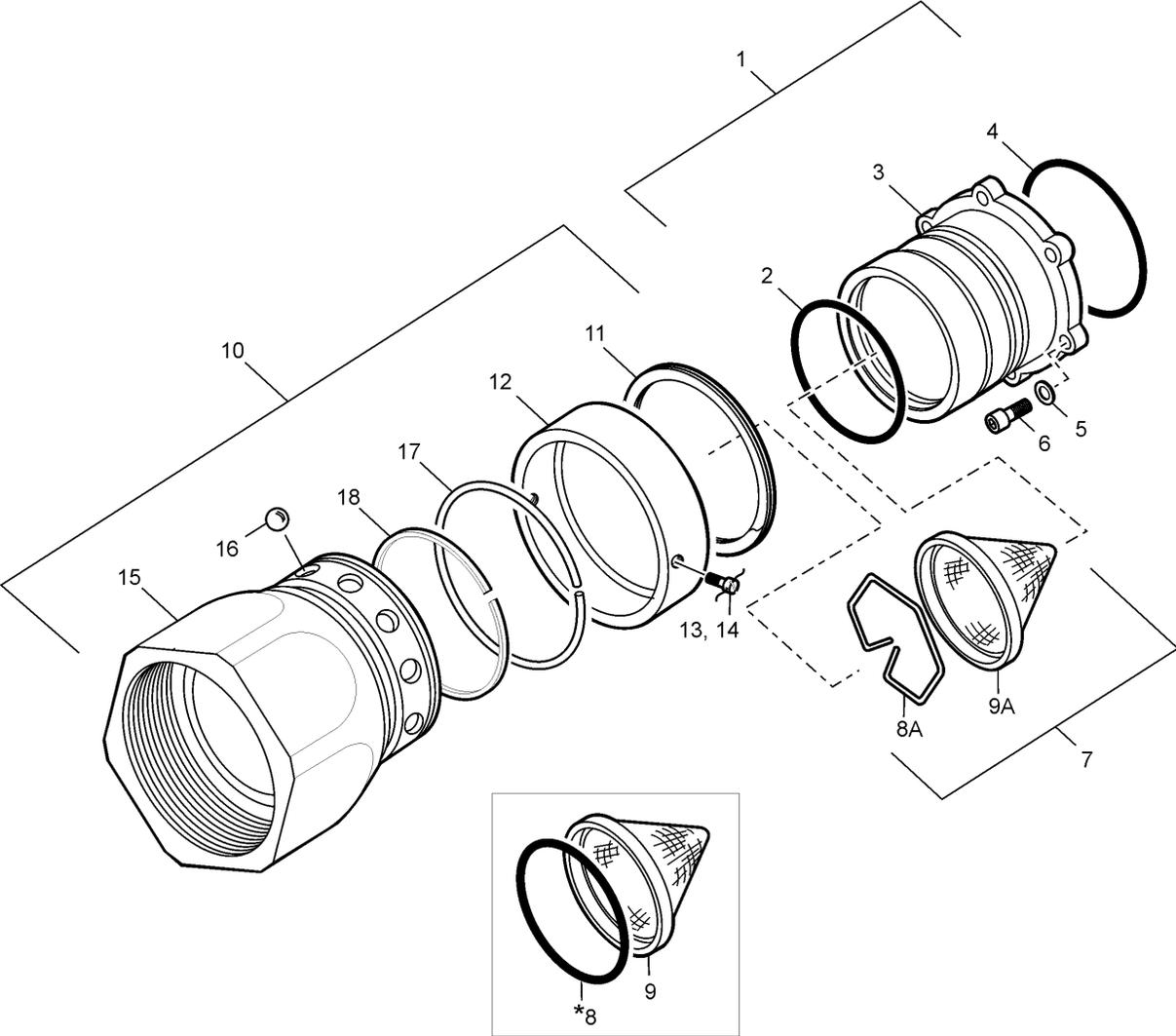
TABLE 1.0

Item	Part Number	Description	Units Per Assembly	Nozzle Option	Spares/10 Units/Yr
1	43046	Male Half Assembly	1	6	-
2	201201-231	O-ring	1	6	15
3	25079	Adapter	1	6	-
4	201201-151	O-ring	1	6	10
5	5710-63-30	Washer	6	6	-
6	GF16995-49	Screw	6	6	-
7	41767-60	Screen Assy - 60 Mesh			-
	41767-100	Screen Assy - 100 Mesh			-
8	201201-039	O-ring (Note 3)	1	B,C	10
8A	208091	Retainer (Note 3)	1	B,C	1
9	80207-60	Screen (Note 3)	1	B	-
9	80207-100	Screen (Note 3)	1	C	-
9A	210398-60	Screen (Note 3)	1	B	-
	210398-100	Screen (Note 3)	1	C	-
10	43108-1	Quick Disconnect 2½" NPT	1	H	-
	43108-2	Quick Disconnect 2½" BSPP	1	K	-
	43108-3	Quick Disconnect 3" NPT	1	L	-
	43108-5	Quick Disconnect 2" NPT	1	P	-
	43108-6	Quick Disconnect 3" BSPP	1	M	-
	43108-7	Quick Disconnect 2" BSPP	1	N	-
	43108-9	Quick Disconnect 3" JIS	1	Z	-
11	RS-354-S	Retaining Ring	1	L, M, Z	-
12	25081	Retainer	1	All	-
13	GF20995C32	Lockwire	A/R	All	-

Item	Part Number	Description	Units Per Assembly	Nozzle Option	Spares/10 Units/Yr
14	GF35275-260	Screw, Fillister Hd	2	All	-
15	25080	Housing 2½" NPT	1	H	-
	25807	Housing 2½" BSPP	1	K	-
	25827-1	Housing 3" NPT	1	L	-
	28691	Housing 2" NPT	1	P	-
	28776	Housing 3" BSPP	1	M	-
	200146	Housing 2" BSPP	1	N	-
	25827-3	Housing 3" JIS	1	Z	-
16	GF19060-4818	Ball	16	All	-
17	25083	Lock Ring	1	All	-
18	209976-3	Wear Ring	1	All	-

## 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 and "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 or each overhaul whichever is sooner. These quantities do not include replacement spares for intermediate replacement of parts required by abuse or misuse of the equipment. 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.
3. Older nozzles utilize Screen (9) and O-ring (8). Newer nozzles use Screen (9A) and Retainer (8A). The newer parts, when utilized together, are fully interchangeable with the older ones, hence the basic sub-assembly numbers (41767-60 & 41767-100) have not been changed.



\* See paragraph 8.1.4

Figure 1

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