



Powering Business Worldwide

IN47013

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Aerospace Agroup
Conveyance Systems Division
Carter® Brand Ground Fueling Equipment

**Kit Installation Instructions for Hose End Control Valve
Dual Seal**

Model 47013

Background:

Eaton's Carter® brand manufacturers three different styles of Hose End Control Valves (HECV) for use on various nozzle installations. The basic design has been in service for over 25 years with few changes. The unit consists of a dual ended piston, spring loaded to provide pressure limitation at either 35, 45 or 55 psig. The smaller end of the piston has a single o-ring loaded Teflon seal to prevent leakage of fuel out of the breather port in the side of the unit. A wetting of this point of potential leakage has been normal. As the seal wears or gets damaged, leakage will increase. In an effort to improve the life of this seal between overhauls and to better prevent leakage, a design improvement is proposed that can be easily incorporated in existing units. The kit of parts in which this document is included will allow for the installation of this improvement.

Effectivity:

A different kit part number is required to install the dual seal improvement into each of the various Hose End Control Valves made by Carter, as noted in the table below.

NOZZLE PART NO.	HECV PART NO.	KIT REQ'D
60427	60129-1-13, -14, -15 (40680) (flanged both ends)	KD60129-2
64348 (61428) 64349 (61429)	44646-35, -45, -55 (Swivel joint both ends)	KD44646-2
64348 (with Carter® brand Ball Valve).	47013-35, -45 ,55 (swivel on one end and flange on the other)	KD47013-2

All kits have material needed to install the dual seals plus replacement of other seals as required. (There may be material furnished that is not needed on some versions of the HECV depending upon age).

Installation Procedure:

- A. Disassemble the unit in accordance with instructions for disassembly in the appropriate service manual. Note: Do not disassemble the piston assembly (items 2-5) unless it is necessary to replace one of the parts or the assembly is loose. Discard the existing parts listed below (see Figure 1).

ITEM NO.	PART NO.	DESCRIPTION	QTY
4	LP526C1024R8	Screw (Note 1)	1
5	600-001-10	Stat-O-Seal (Note 1)	1
7	23893	Outer Seal	1
8	MS29513-147	O-ring	1
9	LP515-8R7	Screw	4
12	NAS1594-007	O-ring (Note 2)	1
15	210174-229 or 220723-229	Quad-ring or O-ring (Note 3)	1
16	24059	Spacer (Note 4)	2
17	24085	Seal	1
18	MS29513-126	O-ring	1

Notes:

- 1. Discard this part only if the two pistons were disassembled.
- 2. Older units will have an o-ring installed as this item (as noted). The kit offers a replacement Quad-ring, 220724-007, for this application. This is a recent design improvement providing more sealing capability to reduce "creep" pressure.
- 3. Older units will have a quad-ring or an off-white in color o-ring installed as this item (as noted). The kit offers a replacement O-ring, MS29513-229, for this application. This is a recent design improvement to offer more life from the seal.
- 4. The existing units will have two spacers, item 16, one item 17 and 18. Discard all of these existing parts. The kit provides a new plastic spacer (16) which has a thicker wall for better seal support. There are two sets of Seals (17) and O-rings (18) provided in the kit.

- B. Inspect the parts in accordance with instructions in the appropriate service manual. If the outer surfaces of either piston are damaged or scratched, replace them.

- C. Refer to Figure 1 of this document for re-assembly noting the following:

- The two Seals (17) and O-rings (18) are assembled into the Body and the single Spacer (16) is placed between the pair of seal sets.
- If the Inner (3) and Outer Piston (2) were disassembled, two drops of Loctite 222, 242 or 271 shall be applied the threads of the Screw (4) prior to its being inserted into the assembly. (Be sure that the Loctite has been thoroughly shaken before use). The Screw (4) shall be tightened to a torque limit of 18 to 20 in-lbs (0.207 to 0.230 kg-m).
- "Running-in" or lapping of the seals as described in the appropriate service manual may still be necessary as a remedy should the unit not respond properly to "creep" requirements (pressure at the outlet of the unit after closure or lock-up after one minute waiting period). Industry standards allow for the pressure to increase a maximum of 10 psi above the lock-up pressure. This creep is caused by either leakage past Seal (7), Quad-ring (12) or O-ring (15). The lapping of the seals will improve the sealing capability of Seal (7) and (17).

D. List of Material:

Refer to Figure 1 for item numbers.

Item	Part Number	Description	Units/ Assy	Nozzle Option	Spares/10 Units/Yr
1	RRT-268-S	Retaining Ring	1	-	
2	23889	Outer Piston	1	-	
3	24096	Inner Piston	1	-	
4	LP526C1024R8	Screw	1	-	
5	600-001-10	Stat-O-Seal	1	-	3
6	27014	Spring, 35 psi (White) – orange on older units	1	F3	
6A	23892	Spring, 45 psi (Red) - black or blue on older units	1	F4	
6B	28443	Spring, 55 psi (Yellow) – green on older units	1	F5	
7	23893	Seal, Outer Piston	1	-	10
8	MS29513-147	O-Ring	1	-	10
9	LP515-8R7	Screw	4	-	15
10	GF960-8	Washer	4	-	2
11	23890	Seal Retainer	1	-	2
12	220724-007	Quad-Ring (Note 3)	1	-	10
13	GF19060-1012	Ball	1	-	2
14	210189	Spring	1	-	2
15	220723-229	O-Ring (Note 3)	1	-	10
16	24059	Spacer	2	-	1
17	24085	Seal	1	-	20
18	MS29513-126	O-Ring	1	-	20
19	207807	Seal	1	-	5
20	M25988/1-040	O-Ring	1	-	5
21	40427	Breather Assy	1	-	

- 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 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. Both items (12) and (15) are current production parts that replaced NAS1594-007 O-ring and 210174-229 Quad-ring respectively. These change were made as design improvements. The older parts can continue to be used until the newer parts are available. When ordered, the older parts will automatically be replaced with the new parts.
 4. Older units without wear ring (29B) will use 22047 Housing (29A). Newer units with wear ring assembled in place will use 44253.

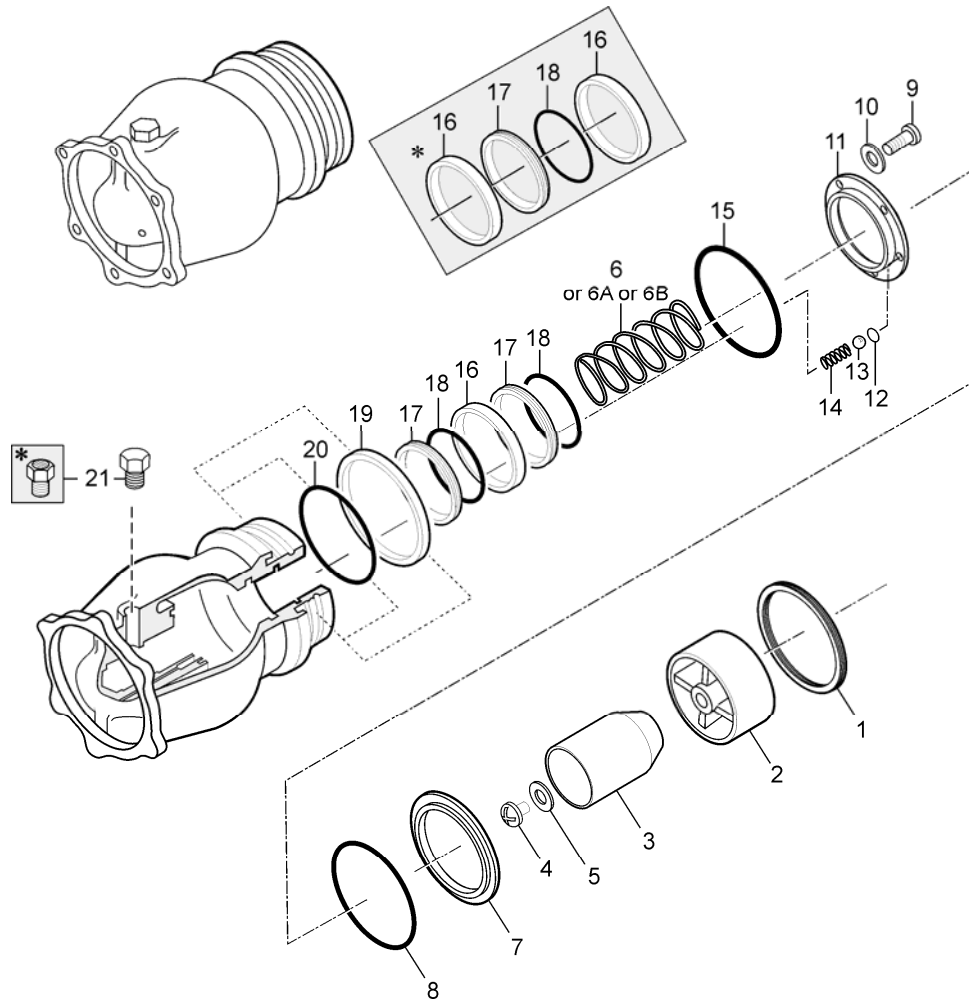


Figure 1

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