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Aerospace Group
Conveyance Systems Division
Carter® Brand Ground Fueling Equipment

SM64001

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Applicable additional manuals:

SM60427 Nozzle

SM61445 Coupler

Maintenance & Repair Manual

Swivel Quick Disconnect

To Mate Carter Brand Nozzle Model 60427 and Coupler Model 61445

Model 64001

SUMMARY OF REVISIONS

DATE OF CHANGE	PARAGRAPH	REVISION
	5.8	"Remove & discard Seal or O-ring (7)" was "Remove & discard Seal (7)"
	7.6	Added ",if used" to "When installing Seal (7)"
	9.0 - Table 3	Added "220709-232 O-ring" as an alternate under item 7 (2 places)
	Figure 2	Revised to show new O-ring (7)

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**MAINTENANCE, OVERHAUL & TEST INSTRUCTIONS
CARTER PART NUMBER 64001 SWIVEL QUICK DISCONNECT**

1.0 INTRODUCTION

This manual furnishes detailed instructions covering the maintenance and overhaul of Carter Part Number 64001, Swivel Quick Disconnect Assembly.

The 64001 provides a Swivel Quick Disconnect that utilizes the thumb latch sleeve locking mechanism and the improved swivel disconnect features of the 61154 Dry Break Swivel

Disconnect. The 64001 Swivel Disconnect is made in many variations of inlet configurations. They are obtained by procuring different "options" to the basic part number 64001. When procured as a part of the nozzle, each of these variations corresponds to a different "option" letter or number on the 60427 Nozzle and 61445 Coupler. Refer to paragraph 3.0 for a detailed explanation of the various options.

2.0 EQUIPMENT DESCRIPTION

The Carter Part Number 64001 Swivel Disconnect is designed to be used as a part of Carter's 60427 Nozzle and 61445 Coupler 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 screen utilized therein. The outlet adapter that mates the nozzle or coupler is also the male half of the disconnect.

3.0 TABLE OF OPTIONS

The Unit is available with various inlet thread sizes and types as shown below. The corresponding options to the nozzles used to obtain it as a part of the nozzle are also shown. **The male half adapter connection to the**

female half of the 64001 series units is not interchangeable with the corresponding items of the 40679 Disconnects. It is interchangeable with the male adapter of the 61154 Dry Break.

Part Number	Description	60427/61445 Option	
		with Regulator or Elbow	without Regulator or Elbow
64001H	2-1/2" NPT Inlet Thd	4H	5H
64001K	2-1/2" BSPP Inlet Thd	4K	5K
64001L	3" NPT Inlet Thd	4L	5L
64001M	3" BSPP Inlet Thd	4M	5M
64001N	2" BSPP Inlet Thd	4N	5N
64001P	2" NPT Inlet Thd	4P	5P

The option letters shown below can be added to any of the above 64001 Units to provide the complete part number for ordering a Disconnect Assembly separate from a nozzle. The corresponding nozzle option letters are also shown.

Option	Description	Nozzle Option	Coupler Option
A	Adds 40 Mesh Screen (44373-40)	N/A	N/A
B	Adds 60 Mesh Screen (44373-60)	B	N/A
C	Adds 100 Mesh Screen (44373-100)	C	N/A
D	Adds Long Male Half Adapter to mate Nozzle or Coupler <u>without</u> Regulator or Elbow (44700)	5H-N	5H-N
J	Adds Short Male Half Adapter to mate Nozzle or Coupler <u>with</u> Regulator or Elbow (44185)	4H-N	4DH-DN
X	Adds Safety Clip to secondary sleeve lock	X	X

4.0 SPECIAL TOOLS

The following special tools or their equivalent should be utilized to accomplish the overhaul and repair of the subject units:

- 44752 -- For use in installing the ball race Wear Rings (6) onto the various male adapters to prevent damage to the Adapters.
- 210367 -- For use in removing worn ball race Wear Rings (6) from the various male adapters to prevent damage to the Adapters.
- IF220351 -- Go-no go gauge for checking wear on Sleeve (46).

5.0 DISASSEMBLY

- 5.1 Remove Nozzle/Swivel Quick Disconnect from end of hose. If the thumb Latches (47) of the Disconnect are locked by Clip (52), Option X, it will be necessary to move the Clip (52) from position A to position B as shown in Figure 1 or remove it completely during repair. Depress the Latches (47) and move the Sleeve Assy (45) toward the inlet of the unit. Grasp the Male Adapter Half and twist while applying pressure to separate the two halves of the Disconnect.
- 5.2 If a Screen (24A-C) is present it may be removed for replacement or cleaning by removing its Retainer (25) first. **Note: The tangs of the Retainer (25) should always be installed facing the screen.**
- 5.3 Pre-disassembly Inspection of Sleeve Assy (45) - Prior to disassembling Disconnect (26), perform the following inspection procedure:
- Slide the Sleeve (46) to the locked position (away from the threaded end of the Housing (27)) and allow it to lock in place.
 - Attempt to insert gauge IF220351 into the open end (opposite to the threaded end). If the gauge slides into the part, the Sleeve (46) 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.
- 5.4 While holding the Sleeve Assy (45) in the retracted position remove Retaining Ring (42). Use a small blade screw driver or a sharp pointed instrument to lift one end of the Retaining Ring (42) free from its groove and peel the ring off of the Housing (27). Remove the Sleeve Assy (45), Spring (50), and Balls (44).
- 5.5 If the Latches (47) and Springs (48) are not damaged do not disassemble the Sleeve Assy (45) further. If necessary to replace either the Latches (47) or the Springs (48), using a .093 (2.362 mm) drift pin drive the Roll Pin (49) out of the Sleeve Assembly (45).
- 5.6 Wear Band (43), located inside the Housing (27), should not be disassembled until the inside diameter has been inspected in accordance with paragraph 6.6 below. If replacement is necessary, it can be removed by use of a small blade screwdriver to pry one end out of the groove. Then carefully remove the entire band.
- 5.7 Remove and discard Seal or O-ring (7) from Male Half Adapter (1, or 13). Do not remove Wear Band (8) from Adapter (1, or 13) until the outside diameter has been inspected in accordance with paragraph 6.5. If necessary to replace, carefully, using a small blade screwdriver, pry the Wear Band (8) from its groove and peel it from the part and discard.
- 5.8 The Ball Race Rings (6) need not be disassembled from the Adapter (1, or 13) unless evidence of wear or brinelling is apparent. Removal requires the use of tool number 210367 to prevent damage to the Adapter (1, or 13). The tool is slipped onto the Adapter (1, or 13) and one end of the Race Ring (6) is carefully pried up onto the tool surface. The Race Ring (6) is then carefully unwound from the Adapter (1, or 13) onto the tool. The tool is then removed from the Adapter (1, or 13). Refer to Figure 5 for further information.

6.0 INSPECTION

It is recommended that O-Rings (2) and (37), if present, and Seal (7) be replaced upon each overhaul of the Unit.

- 6.1 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.
- 6.2 Inspect inside of Sleeve Assy (45) for indications of brinelling or ball indentations at intersection of tapered surface with constant inside diameter at ball lock area as well as for cracks, excessive abrasions, or other damage. Replace Sleeve Assy (45) or Sleeve (46) if damaged or worn as described above. Depress the Thumb Latches (47) to assure that they will return smartly from a fully depressed position. If not, replace the Spring (48).
- 6.3 Inspect Housing (27) for cracks around the end opposite the threaded inlet at the Retainer Ring (42) groove. Check the inside diameter of the Housing (27) adjacent to the Wear Band (43) for evidence of extreme galling. Measure this diameter, it shall be a minimum of 3.009 (76.302 mm). Excessive galling on this diameter means that the Wear Bands (8) and (43) should be

replaced. Replace if evidence of cracking is present or excessive wear is apparent.

- 6.4 Check the smallest diameter of the Male Half Adapter (1, or 13) for evidence of extreme galling. If this diameter is less than 2.989 (75.921 mm) at any point it should be replaced. Evidence of extreme galling, even though the diameter is greater than this dimension, means that the Wear Bands (8) and (43), need replacing.
- 6.5 Measure the outer diameter of the Wear Band (8) on the Male Adapter (1, or 13). The minimum diameter shall be 3.037 (77.140 mm). If less than this dimension, replace it.
- 6.6 Measure the inside diameter of the Wear Band (43) located within the Housing (27). The maximum diameter of this part shall not exceed 3.007 (76.378 mm). If more than this dimension, replace it.
- 6.7 If Clip (52) is present, check to see that it is not bent out of shape such that it will no longer fit snugly in place (position A in figure 1). Replace if it has become loose and will no longer stay in place.

7.0 REASSEMBLY

- 7.1 Reassemble in reverse order of disassembly (Refer to Figures 2 and 3), observing the following:
- 7.2 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.

WARNING:

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

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.

- 7.3 If the Latch (47) and Spring (48) were removed during disassembly, position the Latch (47) into the approximate location required. One of the holes, for the Pin (49), is larger than the other to allow easier installation. Push the Pin (49) into the larger hole and into one leg of the Latch (47).

Push the Spring (48) under the Latch (47), with the open ends of the Spring (48) against the Housing (27), until the Pin (49) can be inserted into the coil diameter and on into the other hole of the Latch (47). Locate the other hole in the Sleeve (46) and drive the Pin into it for approximately 0.25 (6.35 mm). Check to see that the Latch (47) is spring loaded and will return from the fully depressed position. When installing the Sleeve Assy (45), Spring (50) and Balls (44) it is recommended that the Balls be coated with petroleum jelly to retain them in the holes in the Housing (27).

- 7.4 Assemble Spring (50) onto Housing (27) and slide Sleeve Assy (45) over Spring (50) and push Sleeve Assy (45) down until the Retainer (42) can be installed into its groove in the Housing (27).
- 7.5 If the Ball Race Wear Rings (6) were removed and are to be replaced, use tool 44752 for the installation of new ones. See Figure 4 for further information.

7.6 When installing Seal (7), if used, be sure that open portion of the seal that contains the small diameter o-ring is pointed away from the Wear Band (8). This seal is pressure sensitive and will not function properly if installed backwards. If Clip (52) is present reinstall into position A as shown in Figure 1.

8.0 TEST

The Unit shall be tested as a part of a completed nozzle, as instructed in the appropriate nozzle service manual, with the addition of the tests shown below.

Test media shall be Stoddard Solvent (Federal Specification P-D-680), JP-4 per MIL-J-5624D at 75° ± 10° F, Jet A or equivalent.

8.1 Test conditions

8.2 Functional Test

As mentioned above the Unit should be tested in accordance with its mating nozzle.

9.0 ILLUSTRATED PARTS CATALOG

The 64001 Series of Swivel Disconnects consists of two sub-assemblies as shown in Figure 1, the appropriate Female Half and the Male Adapter Half with its assembled parts. The Female Half

can be procured as a separate subassembly as shown in Table 1.0. There is a variety of Male Half Adapters available as shown in Table 2.0 below.

TABLE 1.0

<u>Inlet Thread</u>	<u>Complete Female Half Dry Break Part No.</u>
2" NPT	64001P
2" BSPP	64001N
2-1/2" NPT	64001H
2-1/2" BSPP	64001K
3" NPT	64001L
3" BSPP	64001M

TABLE 2.0

<u>Male Half Description</u>	<u>Complete Male Half Part No.</u>	<u>Option Letter</u>
Long Male Half to mate 60427 Nozzle or 61445 Coupler when Regulator or Elbow is not used	44700	D
Short Male Half to mate 60427 Nozzle or 61445 when Regulator or Elbow is used	44185	J

Table 3.0 tabulates the parts and sub-assemblies comprising the 64001 Series Quick Disconnect Assembly and 44373 Screen Assemblies. The item

numbers of the table are keyed to the exploded view of the disconnect diagramed in Figure 1 through 3.

TABLE 3.0

<u>Item</u>	<u>Part Number</u>	<u>Description</u>	<u>Units Per Assembly</u>	<u>Nozzle Option</u>	<u>Spares/10 Units/Yr.</u>
1	44700	Long Adapter	1	5 & 8	-
2	201201-151	O-ring	1	5 & 8	10
3	5710-63-30	Washer	6	5 & 8	-
4	GF16995-49	Bolt	6	5 & 8	-
5	210121	Adapter	1	5 & 8	-
6	207364	Ball Race Ring	2	5 & 8	-
7	220709-232	O-Ring (on newer units)	1	5 & 8	10
	209988	Seal (on older units)	1	5 & 8	10
8	209976-1	Wear Band	1	5 & 8	2
9 - 12	Left Intentionally Blank				
13	44185	Short Adapter	1	4 & 7	-
2	201201-151	O-ring	1	4 & 7	10
3	5710-63-30	Washer	6	4 & 7	-
4	GF16995-49	Bolt	6	4 & 7	-
14	207363	Adapter	1	4 & 7	-
6	207364	Ball Race Ring	2	4 & 7	-
7	220709-232	O-Ring (on newer units)	1	4 & 7	10
	209988	Seal (on older units)	1	4 & 7	10
8	209976-1	Wear Band	1	4 & 7	2
15-22	Left Intentionally Blank				
23	44373-40	Screen Assy, 40-mesh	1	-	-
	44373-60	Screen Assy, 60-mesh	1	B	-
	44373-100	Screen Assy, 100-mesh	1	C	-
24A	208092-40	Screen, 40-mesh	1	-	-
24B	208092-60	Screen, 60-mesh	1	B	-
24C	208092-100	Screen, 100-mesh	1	C	-
25	208091	Ring, Retainer	1	B,C	-
26	64001*	Female Half (Note 5)	1	*	-
27	210086-1	Housing - 2" NPT	1	P	-
	210086-2	Housing - 2-1/2" NPT	1	H	-
	210086-3	Housing - 3" NPT	1	L	-
	210086-4	Housing - 2" BSPP	1	N	-
	210086-5	Housing - 2-1/2" BSPP	1	K	-
	210086-6	Housing - 3" BSPP	1	M	-
28-41	Left Intentionally Blank				
42	RS-354-S	Retaining Ring	1	Note 1	-
43	209976-2	Wear Band	1	Note 1	2
44	GF19060-26	Ball	16	Note 1	-
45	44659	Sleeve Assy	1	Note 1	-
46	209884	Sleeve	1	Note 1	-
47	209885	Latch	2	Note 1	-

<u>Item</u>	<u>Part Number</u>	<u>Description</u>	<u>Units Per Assembly</u>	<u>Nozzle Option</u>	<u>Spares/10 Units/Yr.</u>
48	209946	Spring	2	Note 1	-
49	210151-3	Pin	2	Note 1	-
50	203392	Spring	1	Note 1	-
51	Left Intentionally Blank				
52	210641	Clip	1	Note 2	-

- Notes:
1. Used on all 60427 Nozzles with options "4 or 5H-N".
 2. Clip (52) furnished only on X options of 60427 and 64001 Disconnect.
 3. 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.
 4. 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.
 5. Substitute the appropriate option letter for the "*" as noted in paragraph 3.0.

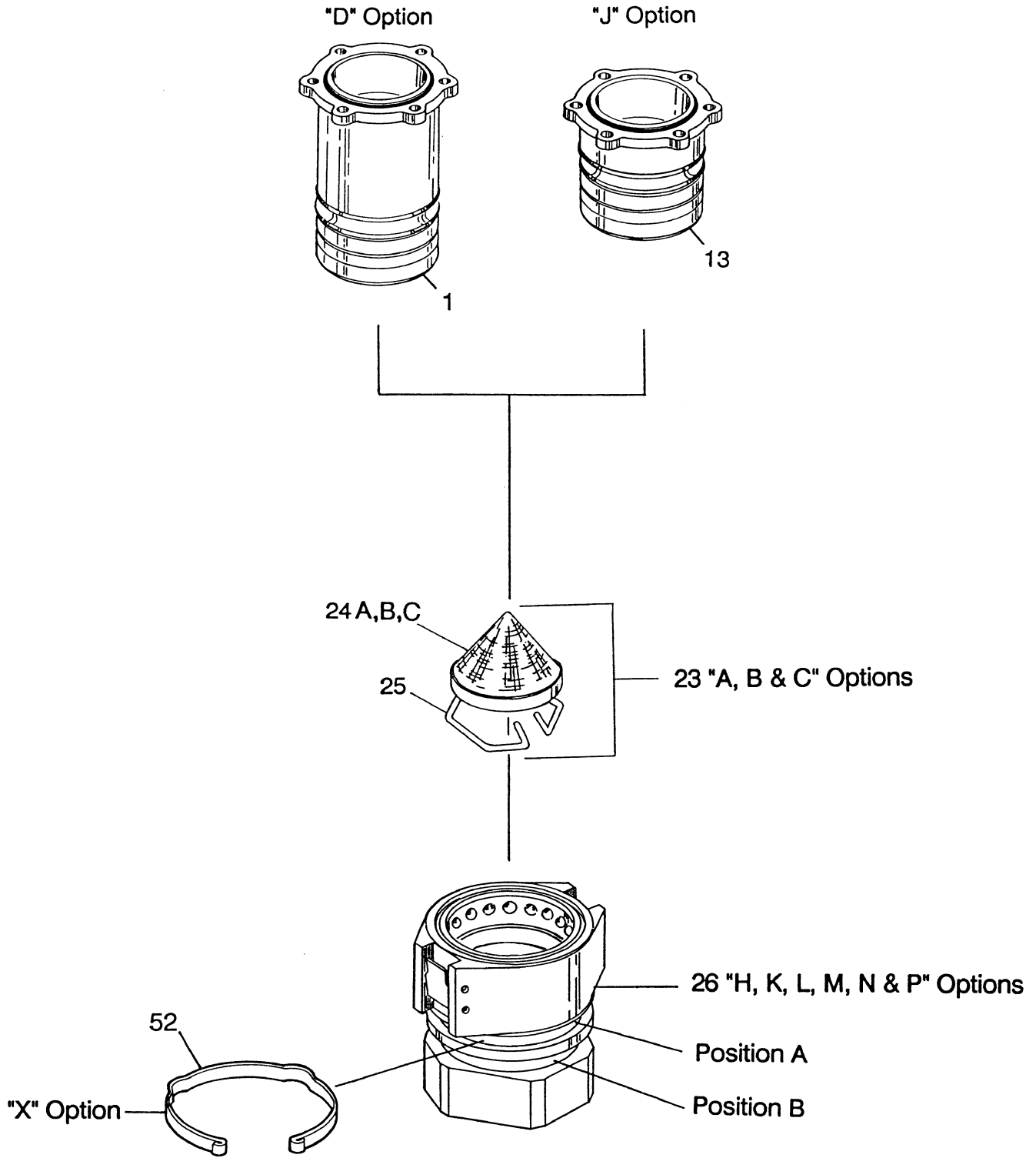


FIGURE 1

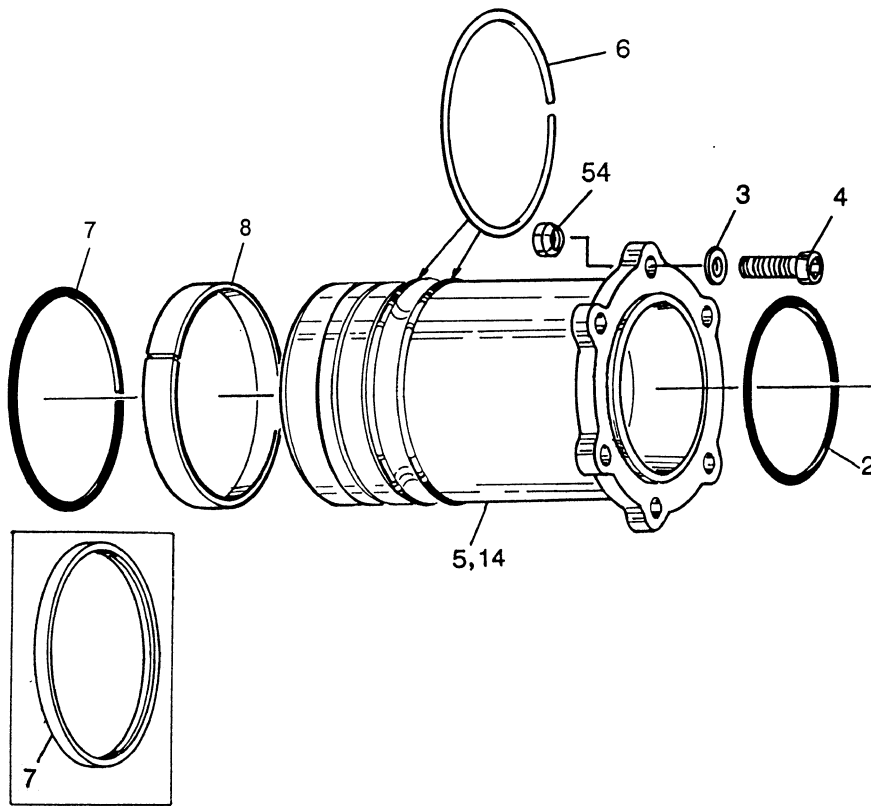


FIGURE 2

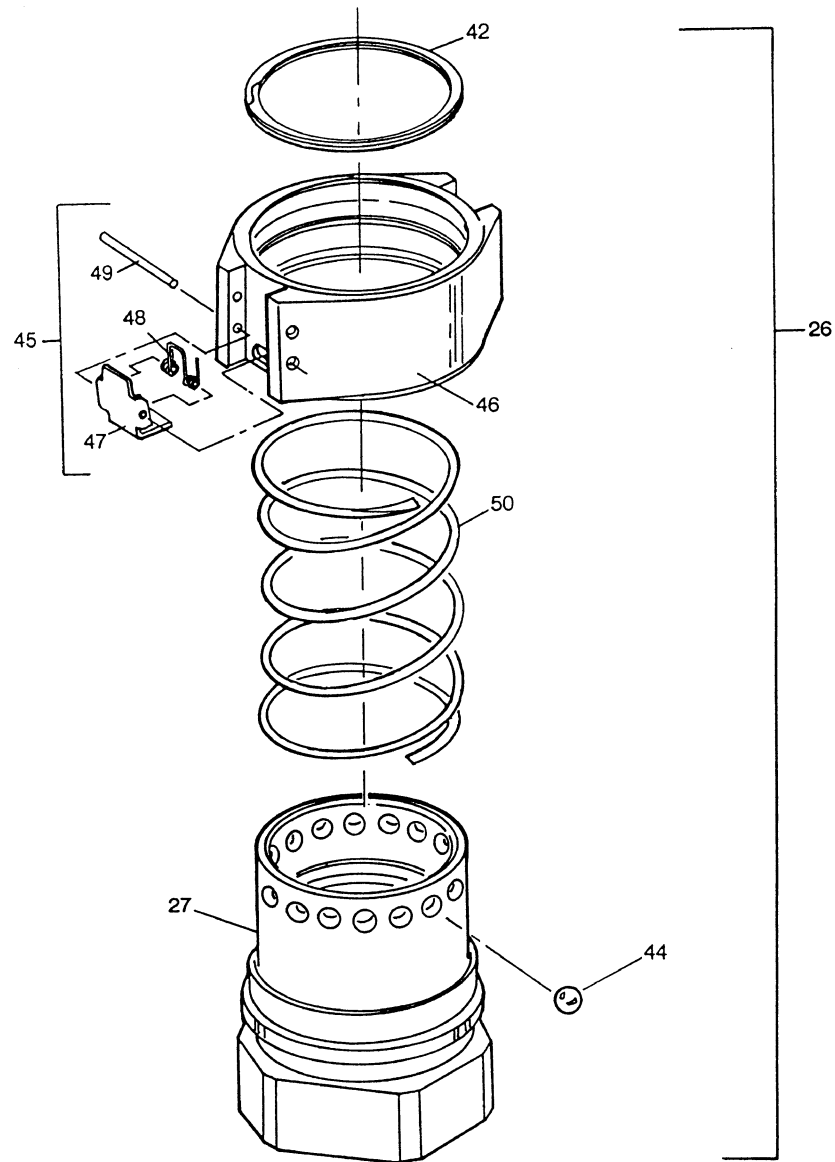
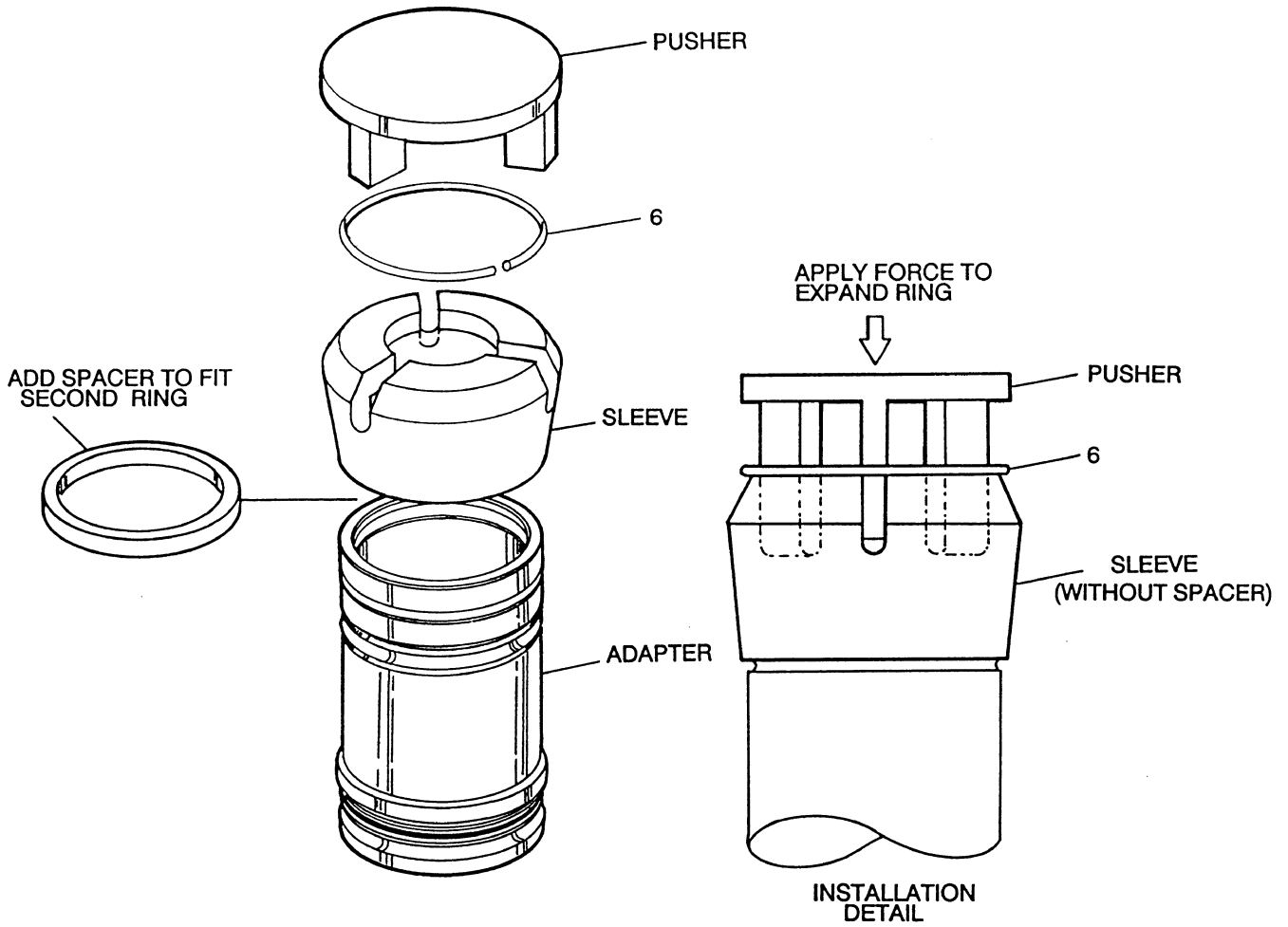
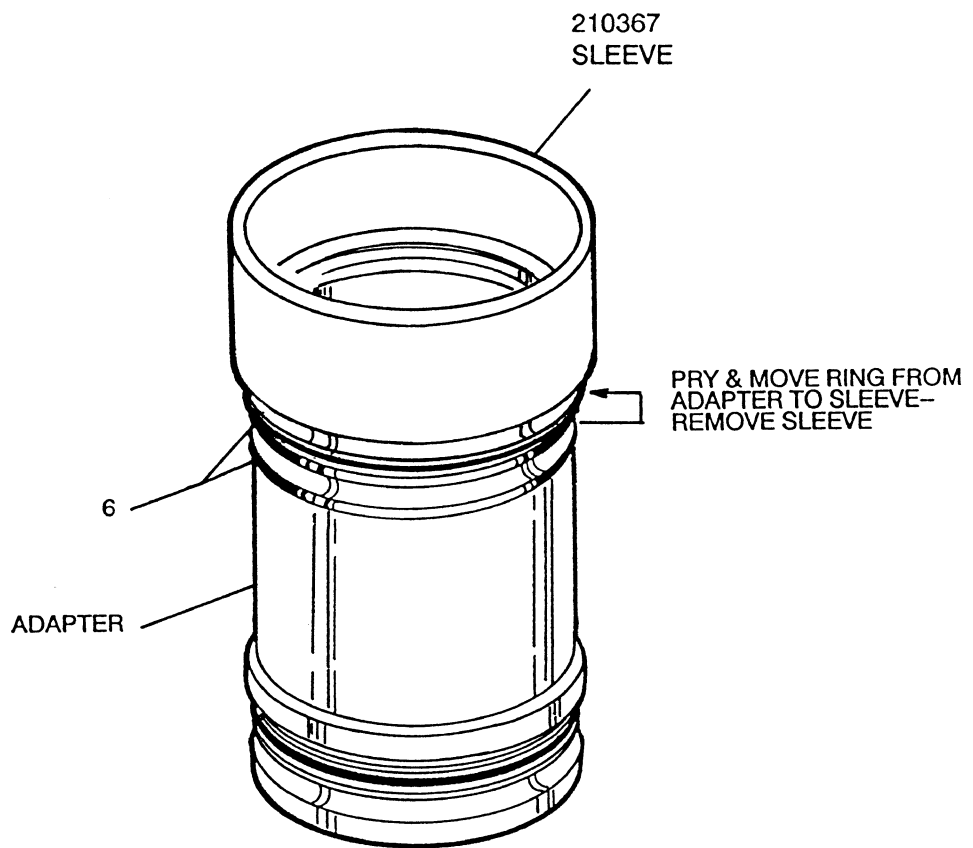


FIGURE 3



44752
RING INSTALLATION TOOL

FIGURE 4



210367
RING REMOVAL TOOL

FIGURE 5

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