SM64014
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Applicable additional manuals:
None

Aerospace Group
Conveyance Systems Division
Carter® Brand Ground Fueling Equipment

Maintenance Manual

Gravity Fill Adapter Nozzles (GFA)

Model 64014
Model 64033
Tube Alloy Model 050-10000

NSN Numbers:
64014 - Unassigned
64014G- Unassigned
64033 - 4930-01-376-7725

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Maintenance, Overhaul & Test Instructions
Model 64014 & 64033 & Tube Alloy 050-100000 GFA Nozzles

1.0 INTRODUCTION

This manual furnishes detailed instructions covering the maintenance and overhaul of Eaton's Carter brand Models 64014, 64033 and Tube Alloy Company part number 050-10000 and the various options listed in Section 3.0.

2.0 EQUIPMENT DESCRIPTION

Eaton's Carter brand GFA is available in three different models, 64014 (tan) and 64014G (green) for the standard applications in accordance with MIL-N-52748D(ME). Model 64033 is the Arctic version in accordance with MIL-N-53093(ME).

Tube Alloy Company built and furnished a quantity of GFA nozzles in accordance with MIL-N-52748D(ME) under part number 050-10000. Carter purchased the design rights to this nozzle for all future production. Some manufacturing changes were made to the Tube Alloy nozzle, however, Carter parts or a kit of parts are usable in the Tube Alloy units as noted herein.

3.0 TABLE OF OPTIONS AND ORDERING INFORMATION

Model 64014 GFA is available in either a tan or green configuration. The basic 64014 part number covers the tan unit while the 64014G is the green unit. The Tube Alloy unit has been replaced for new purchase by the 64014G, since they only furnished the green unit in the past.

The green and tan units are physically and functionally interchangeable, only the outer color of the units is the difference between the two units.

The 64033 Arctic GFA is available only in green.

4.0 SPECIAL TOOLS

The following special tools, available from Carter or Carter distributor, are recommended for use in maintaining the units:

- AT220217 - Adapter Assembly Tool
- AF220221 - Stem Guide Installation Tool
- AF64014 - Packing Assembly Tool

5.0 DISASSEMBLY

The following instructions cover the disassembly of both the 64014 and 64033 GFA nozzles. Where item numbers differ for the two nozzles, multiple item numbers are listed, the first one applies to the 64014 and the last one applies to the 64033.

5.1 Remove Dust Cap Assembly (1-23) or (2-30). Unless replacement of any part of the assembly is needed do not attempt to disassemble further.

5.2 Place the Body (1) into a vise and using Adapter Tool, AT220217, remove Adapter (2).

5.3 Remove Poppet (5), Poppet Spring (11) and Poppet Guide (18).

5.5 Remove and discard O-ring (21).

5.5 Remove Cap (3) and O-ring (20). Discard O-ring (20).

5.6 Remove Spring (12) and Lift Cap (17).

5.7 Pull out Valve Stem (9) with Poppet (7) and E Rings (6) attached. Remove E Rings (6) to allow for removal of Poppet (7). Note it is not necessary to disassemble these parts unless one of the parts needs replacing.

5.8 Using Stem Guide Tool, AF220221, remove Guide (8).

5.9 Spring (13), Cap (14) and Packing (15) can then be removed. Discard Packing (15).

5.10 On 64033 only, if replacement of a part is needed, remove the three Nuts (2-28), Screws (2-27), Screws (2-23), Washers (2-Washers (2-24), Right Lever (2-25), Left Lever (2-26) and Handle (2-19).

5.11 Remove Ring (16) and Pin (10) only if necessary for replacement of either or of Lever (4). Discard Ring (16).

5.12 If necessary for replacement of any part in the Dust Cap Assembly (1-23) or (2-30), cut the Cable (1-27) or (2-34) as appropriate. Remove and discard the part to be replaced.

6.0 INSPECTION

It is recommended that all O-rings (20), (21) and (26); Ring (16) and Packing (15) be replaced each time they are disassembled from the unit.

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.

Inspect molded seals on Poppet (7) and Inlet Poppet (5). If damaged replace during assembly.

7.0 REASSEMBLY

Reassemble the parts in the reverse order of disassembly noting the following:

7.1 Place Body (1) in a vise.

Lightly lubricate the bore in the Body (1) in which Packing (15) is to be installed with Dow Corning DC-55 grease.

Lightly lubricate the Packing (15) with DC-55 grease. Insert Valve Stem (9) into Guide Tube (AF64014-1) of Packing Assembly Tool AF64014 to a depth of approximately one inch. Refer to Figure 3.

Holding the parts in this position wrap Packing (15) around Valve Stem (9), forcing the Packing (15) into the Guide Tube. Continue wrapping the Packing (15) around the Valve Stem (9) and pushing it into the Guide Tube, making certain **not** to twist the Packing (15), until entire length has been inserted into Guide Tube.

Thread, by hand, the Guide Tube into the Body (1), again refer to Figure 3. Install Packing Cap (14), noting that the tapered side must be installed toward the Packing (15), onto the Valve Stem (9).

Place Push Rod (AF64014-2 of Packing Assembly Tool AF64014) over Valve Stem (9) and push Packing (15) and Packing Cap (14) into place by hand. With a mallet and **medium** impact force, strike the Push Rod 2-3 times to **seat** the Packing (15). Remove the two parts of the Packing Tool.

Install Spring (13) and Stem Guide (8) using Stem guide Assembly Tool, AF220221. Torque Stem Guide (8) to 28-30 in.-lb.

7.2 Install one Ring (6) onto Valve Stem (9) in the bottom most groove with long nosed pliers.

7.3 Place the Poppet (7) onto the Valve Stem (9) noting that the side with the largest rubber seal is placed toward the opening in the Body (1).

7.4 Install the other Ring (6) onto the Valve Stem (9).

7.5 Install the Lift Cap (17) onto the Valve Stem (9).

7.6 Place the Spring (12) onto the Lift Cap (17) and install the Cap (3) with O-ring (20) properly installed, torquing the Cap (3) to 90-100 in.-lb.

7.7 Install O-ring (21) into groove in Body (1).

7.8 Place Poppet Guide (18) into Body (1) with smaller raised diameter facing toward threaded opening in the Body (1).

7.9 Install Spring (11) and Poppet (5).

7.10 Hand tighten Adapter (2) in place. Using Adapter Assembly Tool, AT220217, tighten Adapter firmly in place.

7.11 If Dust Cap Assembly (1-23) or (2-30) was disassembled reassemble and using a large pair of pliers crimp Sleeves (1-28) or (2-35) to secure Cable (1-27) or (2-34).

8.0 TEST

8.1 The following test procedures will be accomplished after overhaul:

8.2 Test conditions

Test media shall be Test Fluid in accordance with MIL-C-8024, type II, JP-4 per MIL-J-5624D at 85° ± 15° F, Jet A or equivalent.

8.3 Functional Test

8.3.1 Using the test unit and a CCR Nozzle connected to the inlet, open the CCR Nozzle and apply a minimum of 15 psi inlet pressure.

8.3.2 Open the GFA nozzle and establish flow through the combined units under test. There shall be no leakage from the connected units at the point of connection. If leakage occurs, either the seals in the CCR Nozzle are faulty or the Adapter (2) on the GFA is at fault (scratched or dirty).

8.3.3 Close the GFA Nozzle and check for leakage at the Cap (3) joint with the Body (1), and from the Valve Stem (9) protruding from the Body (1) and after a minimum drainage period of one minute check for leakage from the spout portion of the Body (1).

8.3.4 Increase the inlet pressure to the CCR Nozzle to 100 psi and repeat the above testing.

9.0 ILLUSTRATED PARTS CATALOG

Table 1.0 tabulates the parts and sub-assemblies comprising the 64014, 64014G, 64033 or Tube Alloy 050-10000 GFA nozzles.

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

Table 1.0

Fig.	Item	Carter Part Number	Tube Alloy Part Number	Description	Units/ Assy	spares/10 Units/Yr
1		64014	-	GFA Nozzle, Tan	-	-
	1	47051-1	-	Body, Tan	1	-
	2	220217	-	Adapter	1	-
	3	220213-1	-	Cap, Tan	1	-
	4	220214-1	-	Lever, Tan	1	-
	5	47048	-	Poppet, Inlet	1	1
	6	5133-25-H	-	E Ring	2	-
	7	47068	-	Poppet, Molded	1	1
	8	220221	-	Guide, Stem	1	-
	9	220222	-	Stem, Valve	1	-
	10	220228	-	Pin, Lever	1	-
	11	220208	-	Spring, Poppet	1	-
	12	220230	-	Spring, Valve	1	-
	13	220231	-	Spring, Packing	1	-
	14	220232	-	Cap, Packing	1	-
	15	220233	-	Packing	1	10
	16	5115-18H	-	Ring, Retaining	1	3
	17	220223	-	Cap, Lift	1	-
	18	220209	-	Guide, Poppet	1	-
	19	Left intentionally blank				
	20	MS29513-030	-	O-ring	1	10
	21	MS29513-135	-	O-ring	1	10
	22	Left intentionally blank				
	23	47066-1	-	Dust Cap Assembly, Tan	1	-
	24	220225-1	-	Plug, Outlet, Tan	1	-
	25	220224-1	-	Cap, Inlet, Tan	1	-
	26	MS29513-138	-	O-ring	1	10
	27	82499-1625	-	Wire Rope	1	-
	28	GF51844-63	-	Sleeve	5	-
	29	220235	-	Spring	1	-
		64014G	050-10000	GFA Nozzle, Green	-	-
	1	47051-2	050-12001	Body, Green	1	-
	2	220217	050-13002	Adapter	1	-
	3	220213-2	050-17014	Cap, Green	1	-
	4	220214-2	050-10004	Lever, Green	1	-
	5	47048	050-14005	Poppet, Inlet (Note 2)	1	1
	6	5133-25-H	-	E Ring	2	-
	6A	-	MS16629-4050	Ring, Retaining (Note 2)	1	-
	7	47068		Poppet, Molded	1	1
	7A	-	050-13007	Seal (Note 2)	1	-
	7B	-	050-14006	Seat (Note 2)	1	-
	7C	-	050-14009	Stem (Note 2)	1	-
	8	220221	050-14025	Guide, Stem	1	-
	9	220222	-	Stem, Valve	1	-
	9A	-	050-14022	Pin, Valve (Note 2)	1	-
	10	220228	050-15010	Pin, Lever	1	-
	11	220208	050-17011	Spring, Poppet	1	-
	12	220230	050-17012	Spring, Valve	1	-
	13	220231	050-17013	Spring, Packing	1	-
	14	220232	050-17014	Cap, Packing	1	-
	15	220233	050-17015	Packing	1	10

Fig.	Item	Carter Part Number	Tube Alloy Part Number	Description	Units/ Assy	Spares/10 Units/Yr
1	16	5115-18H	050-17016	Ring, Retaining	1	3
	17	220223	-	Cap, Lift	1	-
	7A	-	050-14017	Cap, Lift (Note 2)	1	-
	18	220209	050-14025	Guide, Poppet	1	-
	19	Left intentionally blank				
	20	MS29513-030	MS29513-030	O-ring	1	10
	21	MS29513-135	MS29513–135	O-ring	1	10
	22	Left intentionally blank				
	23	47066-2	050-20000	Dust Cap Assy, Green	1	-
	24	220225-2	050-14019	Plug, Outlet, Green	1	-
	25	220224-2	050-14018	Cap, Inlet, Green	1	-
	26	MS29513-138	MS29513-138	O-ring	1	10
	27	82499-1625	MIL-W-83420	Wire Rope	1	-
	28	GF51844-63	MS51844-63	Sleeve	5	-
	29	220235	050-17023	Spring	1	-
		KD64014-1	Up grade kit to utilize available Carter parts in Tube Alloy 050-10000 GFA nozzles – contains items 5, 6, 7, 9, 15, 17, 20, 21 & 26.			
		KD64014-2	Kit of seals and other soft goods to overhaul a 64014, 64014G or 64033 GFA nozzle – contains items 5, 7, 15, 20, 21 & 26.			

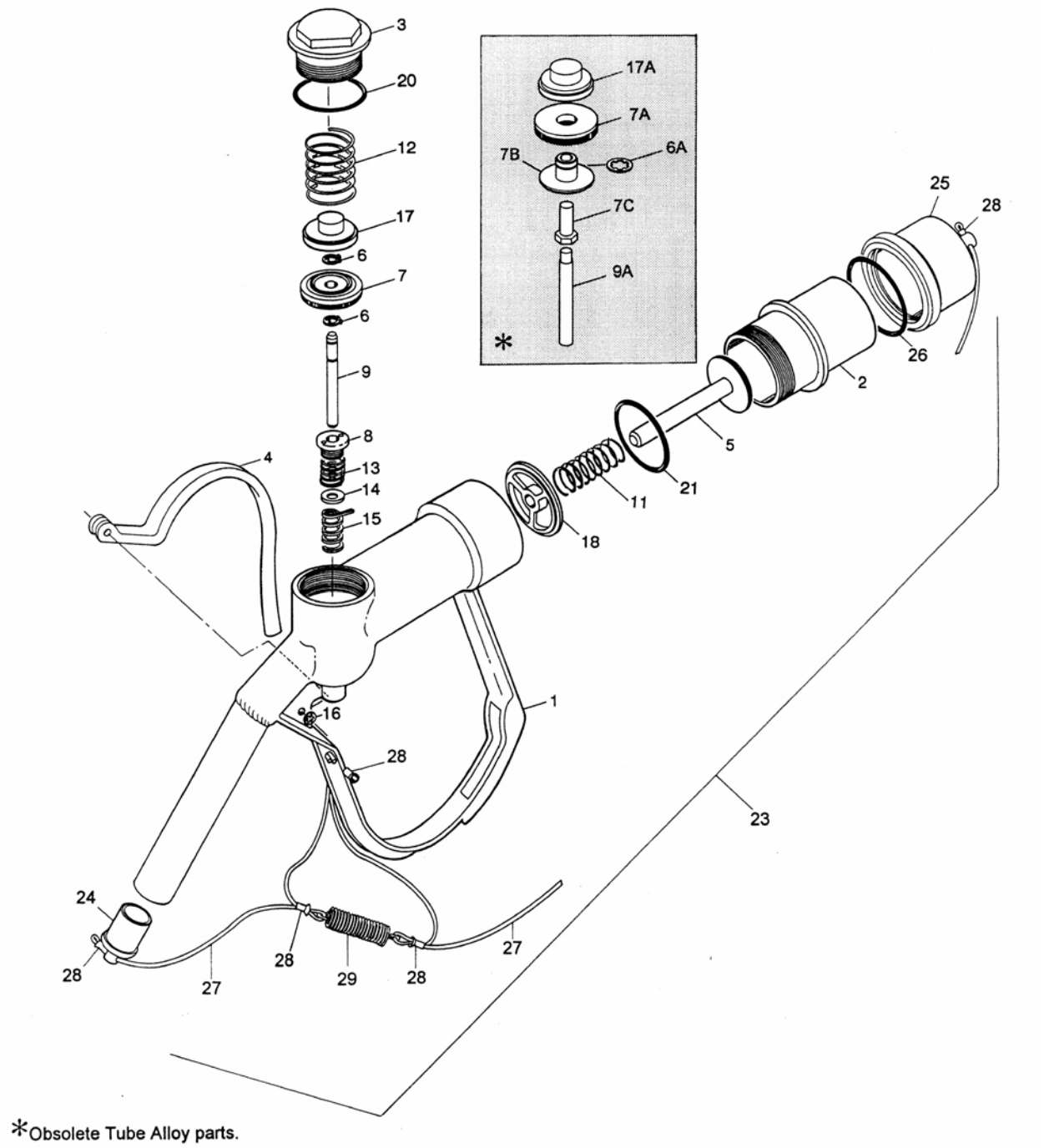
Table 2.0

Fig.	Item	Carter Part Number	Tube Alloy Part Number	Description	Units Per Assembly	Spares/10 Units/Yr
2	-	64033	-	GFA Nozzle, Arctic	-	-
	1	47051-2	-	Body, Green	1	-
	2	220217	-	Adapter	1	-
	3	220213-2	-	Cap, Green	1	-
	4	2200287	-	Lever, Green.....	1	-
	5	47048	-	Poppet, Inlet (Note 2).....	1	1
	6	5133-25-H	-	E Ring.....	2	-
	7	47068	-	Poppet, Molded.....	1	1
	8	220221	-	Guide, Stem.....	1	-
	9	220222	-	Stem, Valve	1	-
	10	220228	-	Pin, Lever	1	-
	11	220208	-	Spring, Poppet.....	1	-
	12	220230	-	Spring, Valve	1	-
	13	220231	-	Spring, Packing.....	1	-
	14	220232	-	Cap, Packing	1	-
	15	220233	-	Packing.....	1	10
	16	5115-18H	-	Ring, Retaining	1	3
	17	220223	-	Cap, Lift	1	-
	18	220209	-	Guide, Poppet.....	1	-
	19	220095-2	-	Handle	1	-
	20	MS29513-030	-	O-ring.....	1	10
	21	MS29513-135	-	O-ring.....	1	10
	22	Left intentionally blank				
	23	LP51958-64	-	Screw.....	4	-
	24	GF35338-43	-	Washer	4	-
	25	220289-1	-	Lever, Right	1	-
	26	220289-2	-	Lever, Left.....	1	-
	27	GF16997-37	-	Screw.....	3	-
	28	220325	-	Nut	3	-
	29	NAS620C8	-	Washer	3	-
	30	47066-2	-	Dust Cap Assy, Green	1	-
	31	220225-2	-	Plug, Outlet, Green...	1	-
	32	220224-2	-	Cap, Inlet, Green	1	-
	33	MS29513-138	-	O-ring	1	10
	34	82499-1625	-	Wire Rope	1	-
	35	GF51844-63	-	Sleeve	5	-
	36	220235	-	Spring	1	-
-	-	KD64033		Kit of seals and other soft goods to overhaul a 64033 GFA Nozzle contains items 5, 6, 7, 9, 15, 17, 20 & 21.		

Note: 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 Tube Alloy parts so noted are available only as a part of an upgrade kit, KD64014-1, to allow future replacement of all parts with Carter parts.

3. 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 actual quantity required will vary from location to location.



*Obsolete Tube Alloy parts.

Figure 2

64014, 64014G & 050-10000 GFA Nozzles

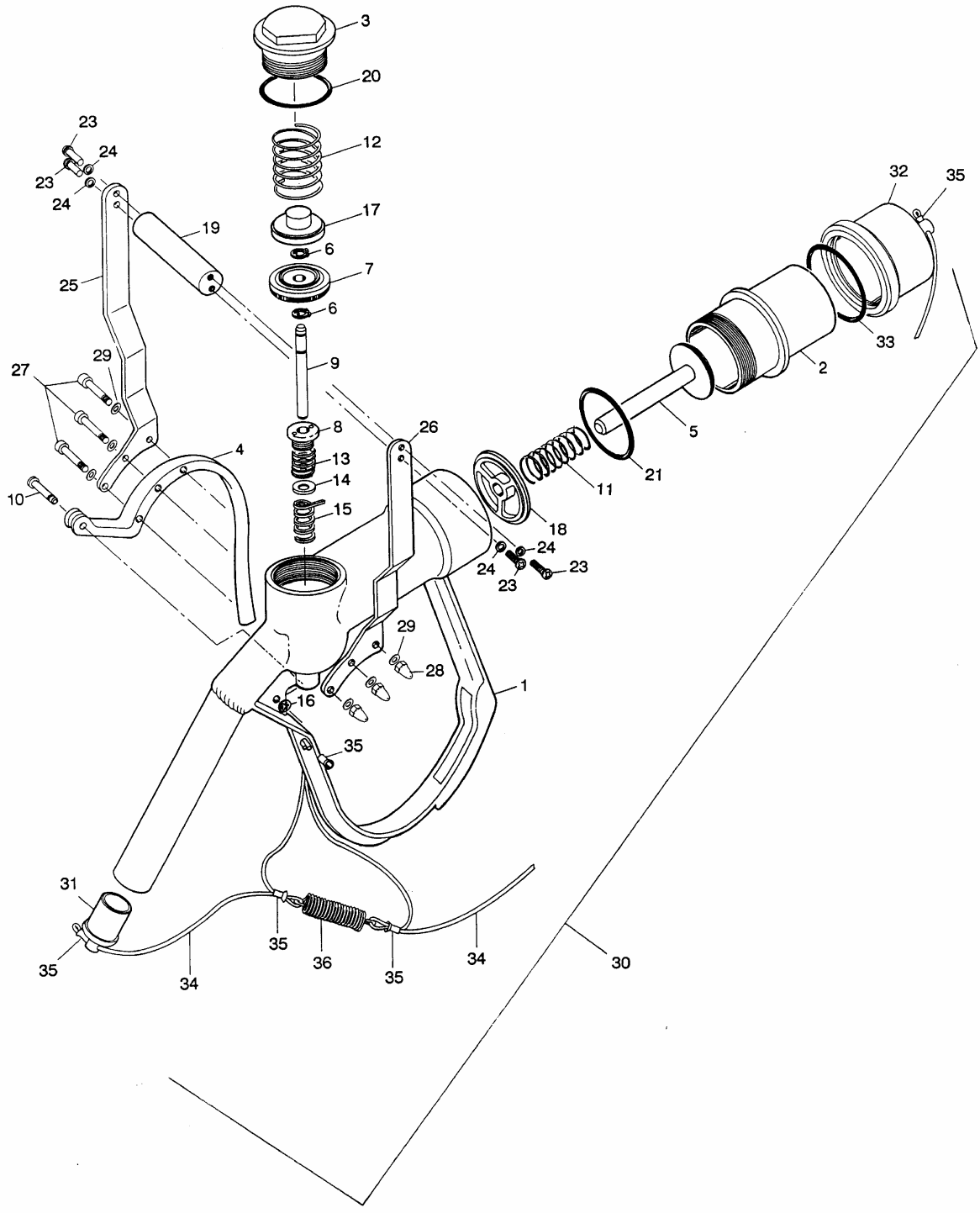


Figure 2

64033 Arctic GFA Nozzle

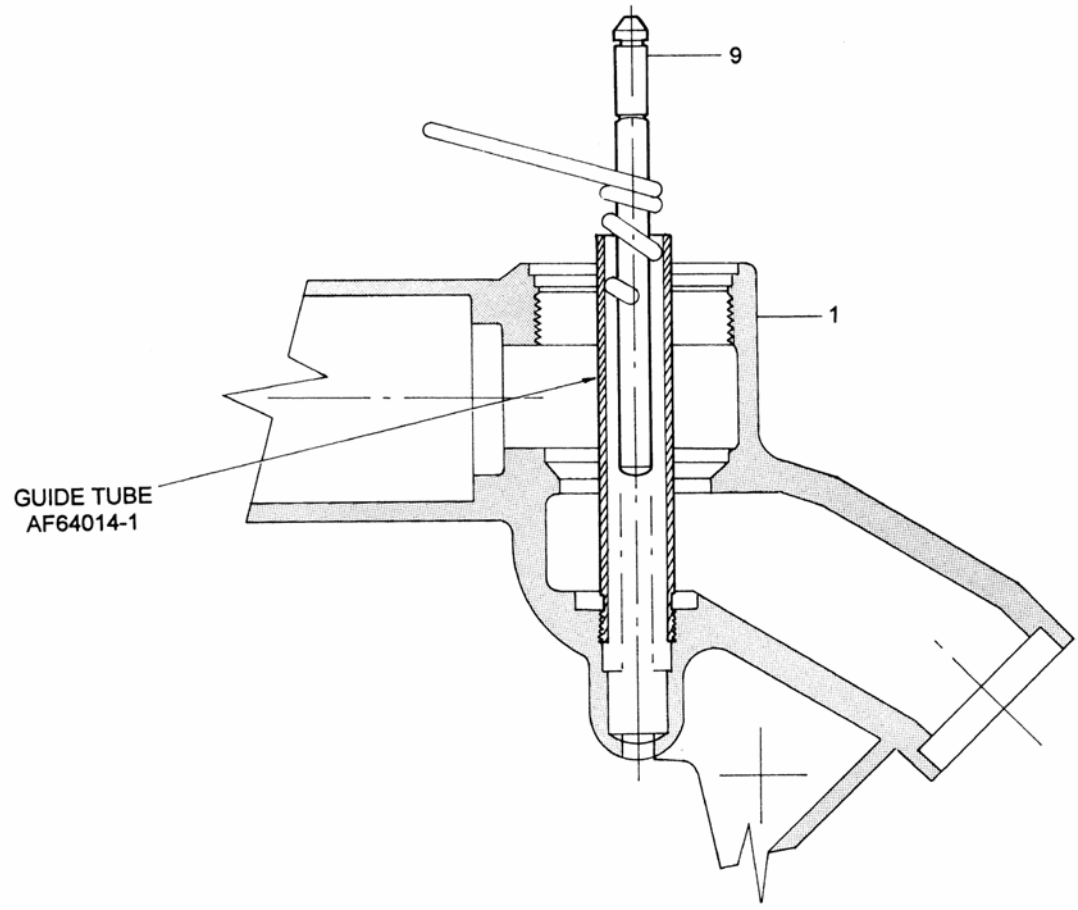


Figure 3

Packing Assembly Tool

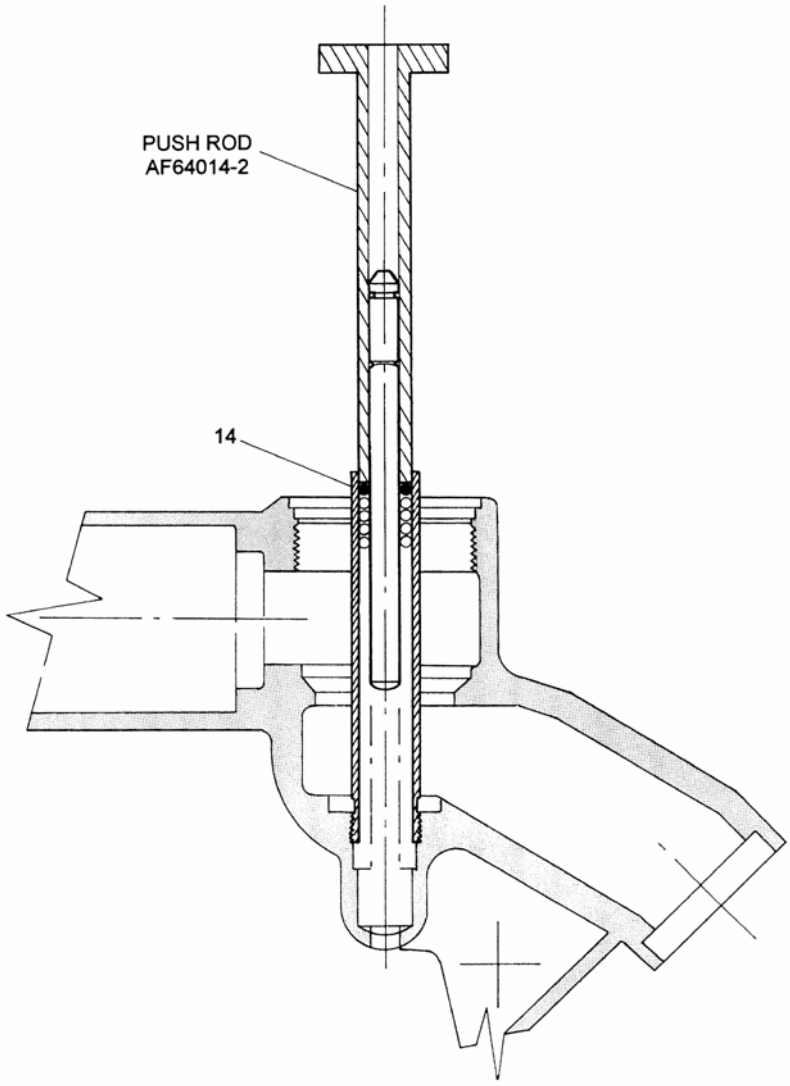


Figure 4

Packing Assembly Tool

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