INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

WELKER® AUTOMATIC INSERTION DIFFUSING PROBE

MODEL
AIP-3DP

DRAWING NUMBER
AD693BC
AD693BD
AD693BE
AD693BF
AD693BG

MANUAL NUMBER
IOM-079

REVISION
Rev. C, 04/15/2024

TABLE OF CONTENTS

IMPORTANT SAFETY INFORMATION
READ ALL INSTRUCTIONS

	Notes emphasize information and/or provide additional information to assist the user.
	Caution messages appear before procedures that could result in damage to equipment if not observed.
	Warning messages appear before procedures that could result in personal injury if not observed.

This manual is intended to be used as a basic installation and operation guide for the Welker® Automatic Insertion Diffusing Probe, AIP-3DP. For comprehensive instructions, please refer to the IOM Manuals for each individual component. A list of relevant component IOM Manuals is provided in the Appendix to this manual.

The information in this manual has been carefully checked for accuracy and is intended to be used as a guide for the installation, operation, and maintenance of the Welker® equipment described in this manual. Correct installation and operation, however, are the responsibility of the end user. Welker® reserves the right to make changes to this manual and all products in order to improve performance and reliability.

BEFORE YOU BEGIN

Read these instructions completely and carefully.

IMPORTANT – Save these instructions for local inspector's use.

IMPORTANT – Observe all governing codes and ordinances.

Note to Installer – Leave these instructions with the end user.

Note to End User – Keep these instructions for future reference.

Installation of this Automatic Insertion Diffusing Probe is of a mechanical nature.

Proper installation is the responsibility of the installer. Product failure due to improper installation is not covered under the warranty.

If you received a damaged Automatic Insertion Diffusing Probe, please contact a Welker® representative immediately.

Phone: 281.491.2331
Address: 13839 West Bellfort Street
Sugar Land, TX 77498

SECTION 1: PRODUCT INFORMATION

1.1 Introduction

We appreciate your business and your choice of Welker® products. The installation, operation, and maintenance liability for this equipment becomes that of the purchaser at the time of receipt. Reading the applicable *Installation, Operation, and Maintenance* (IOM) *Manuals* prior to installation and operation of this equipment is required for a full understanding of its application and performance prior to use.*

If you have any questions, please call Welker® at 1.281.491.2331.

**The following procedures have been written for use with standard Welker® parts and equipment. Assemblies that have been modified might have additional requirements and specifications that are not listed in this manual.*

1.2 Product Description

The Welker® *AIP-3DP* Automatic Insertion Diffusing Probe is designed for use in systems where it is desirable to evenly distribute product into a pipeline process line. The AIP-3DP is designed such that the operator can insert and retract the diffusing wick into the process line while the pipeline remains pressurized. Product injected into the AIP-3DP saturates the braided wick located in the bottom of the probe. A diffuser tube designed with multiple holes surrounds the wick, and as pipeline pressure flows through the tube and the wick, product is spread through the pipeline. The wicking process prevents spikes from occurring with each product injection, allowing for more even dispersal between pulses.

1.3 Important Information

1. The AIP-3DP Automatic Insertion Diffusing Probe should always be mounted to a full port (¾" or larger) valve.
2. **Oil Reservoir:** With the use of a hydraulic oil reservoir, process or auxiliary pressure is applied and released to ensure smooth insertion and retraction of the shaft. Welker® ships the oil reservoir (i.e., oil pot) with the necessary oil volume and standard vertical installation. For horizontally mounted probes, the oil reservoir must be positioned so it remains vertical while inserted. **The oil reservoir will not function properly if installed horizontally.** The oil reservoir can be positioned at the factory to suit the particular application and specifications of each customer if noted at the time of order. As necessary, see *Section 2.2, Preparing for Installation*, for instructions on rotating the oil reservoir.

Welker® might custom design the AIP-3DP to suit the particular application and specifications of each customer.

1.4 Specifications

The specifications listed in this section are generalized for this equipment. Welker® can modify the equipment according to your company's needs. **Please note that the specifications might vary depending on the customization of your equipment.**

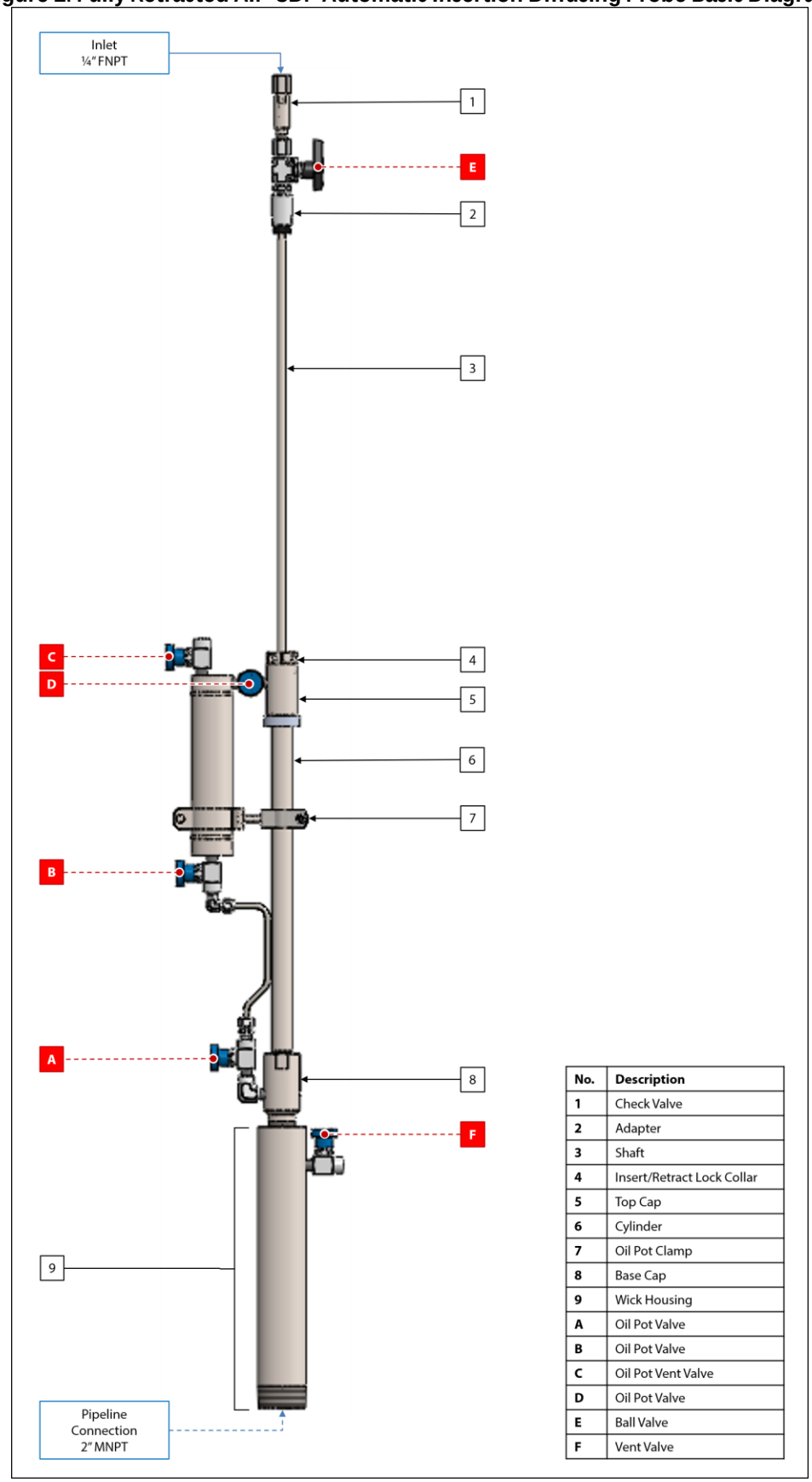
Table 1: Welker® Automatic Insertion Diffusing Probe AIP-3DP Specifications

Products	Gases or Liquids Compatible With the Materials of Construction
Materials of Construction	316/316L Stainless Steel Pipeline Connection and Probe Shaft
Maximum Allowable Operating Pressure	1440 psig @ -20 °F to 100 °F (*99 barg @ -28 °C to 37 °C*) 1440 psig @ -20 °F to 120 °F (*99 barg @ -28 °C to 48 °C*) for Some Models
Connections	1" MNPT Pipeline Connection for 6", 10", and 24" Pipeline 2" MNPT Pipeline Connection for 8" and 12" Pipeline Others Available
Insertion Length	0–18" Automatic Insertion and Retraction 0–24" Automatic Insertion and Retraction 0–30" Automatic Insertion and Retraction 0–36" Automatic Insertion and Retraction
Operation	Piston-Operated
Approximate Weight (Examples)	18" – 22 lb, 23 lb
Approximate Fully Retracted Length	18" = 47" + X [Choice of Approximate Wick Length (A–G)] 24" = 60" + X [Choice of Approximate Wick Length (A–G)] 30" = 72" + X [Choice of Approximate Wick Length (A–G)] 36" = 84" + X [Choice of Approximate Wick Length (A–G)]
Overall Wick Length	See nested table below
Features	¼" FNPT Inlet Check Valve Oil Reservoir (i.e., Oil Pot) Withdrawal Adapter (Extension Sleeve / Wick Housing) Designed for Vertical Installation (Horizontal Installation Available)
Industry Standards / Product Certifications	EN 10204 Type 3.1 Traceability on Welker® Manufactured Components Hydrostatic Test at 1.5 MAOP for 15 Minutes
Options	Flange Connection Auxiliary Gas

Options	Pipe Size	Overall Wick Length
G	24"	25¼"
F	3"	4¼"
E	2"	3¼"
D+	12"	13¼"
D	10"	11¼"
C	8"	9¼"
B	6"	7¼"
A	4"	5¼"

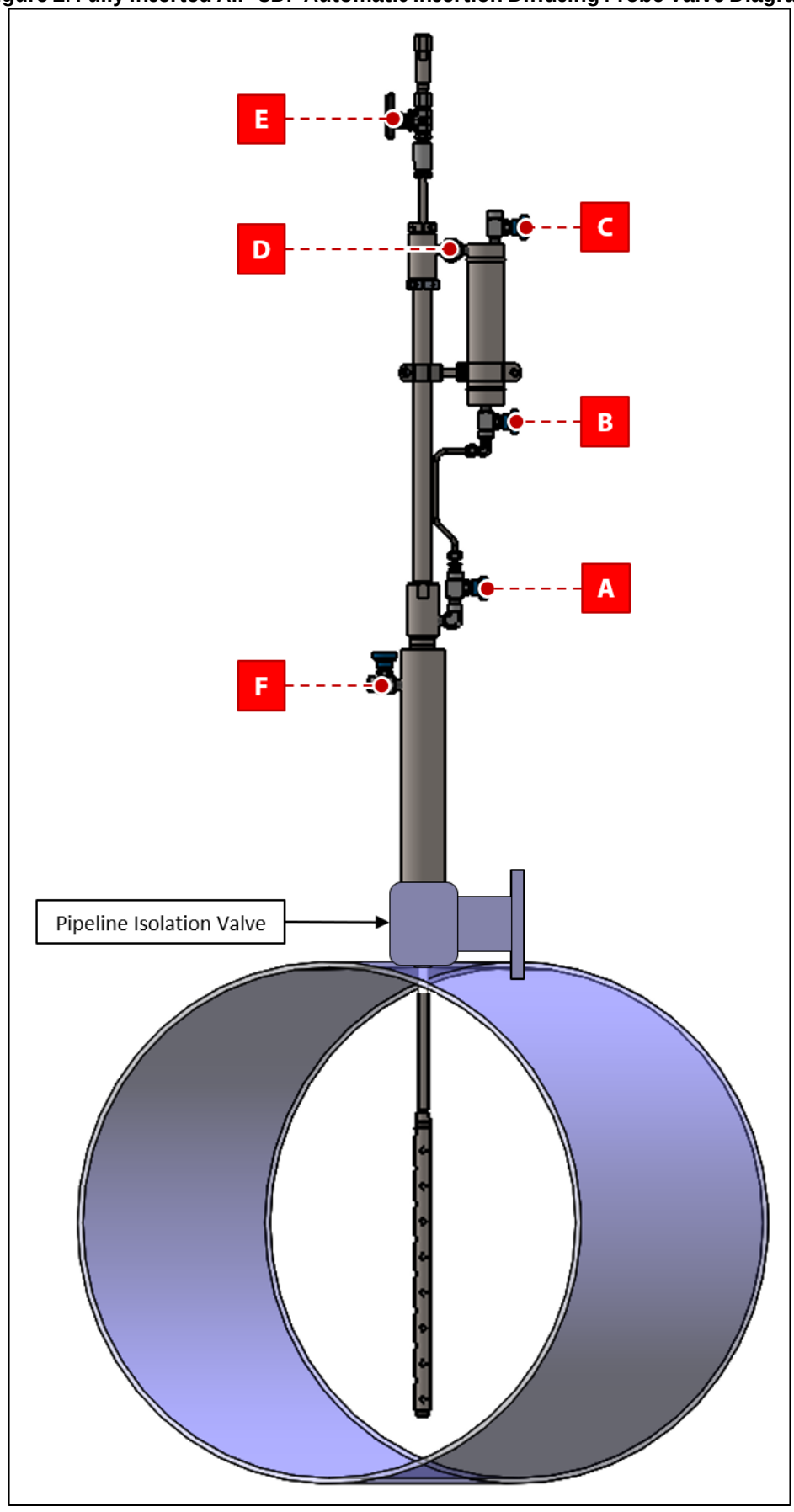
1.5 Equipment Diagrams

Figure 1: Fully Retracted AIP-3DP Automatic Insertion Diffusing Probe Basic Diagram



No.	Description
1	Check Valve
2	Adapter
3	Shaft
4	Insert/Retract Lock Collar
5	Top Cap
6	Cylinder
7	Oil Pot Clamp
8	Base Cap
9	Wick Housing
A	Oil Pot Valve
B	Oil Pot Valve
C	Oil Pot Vent Valve
D	Oil Pot Valve
E	Ball Valve
F	Vent Valve

Figure 2: Fully Inserted AIP-3DP Automatic Insertion Diffusing Probe Valve Diagram



SECTION 2: INSTALLATION & OPERATION

2.1 Before You Begin

After unpacking the unit, check the equipment for compliance and any damage that might have occurred during shipment. Immediately contact a Welker® representative if you received damaged equipment.

When sealing fittings with PTFE tape, refer to the proper sealing instructions for the brand used.

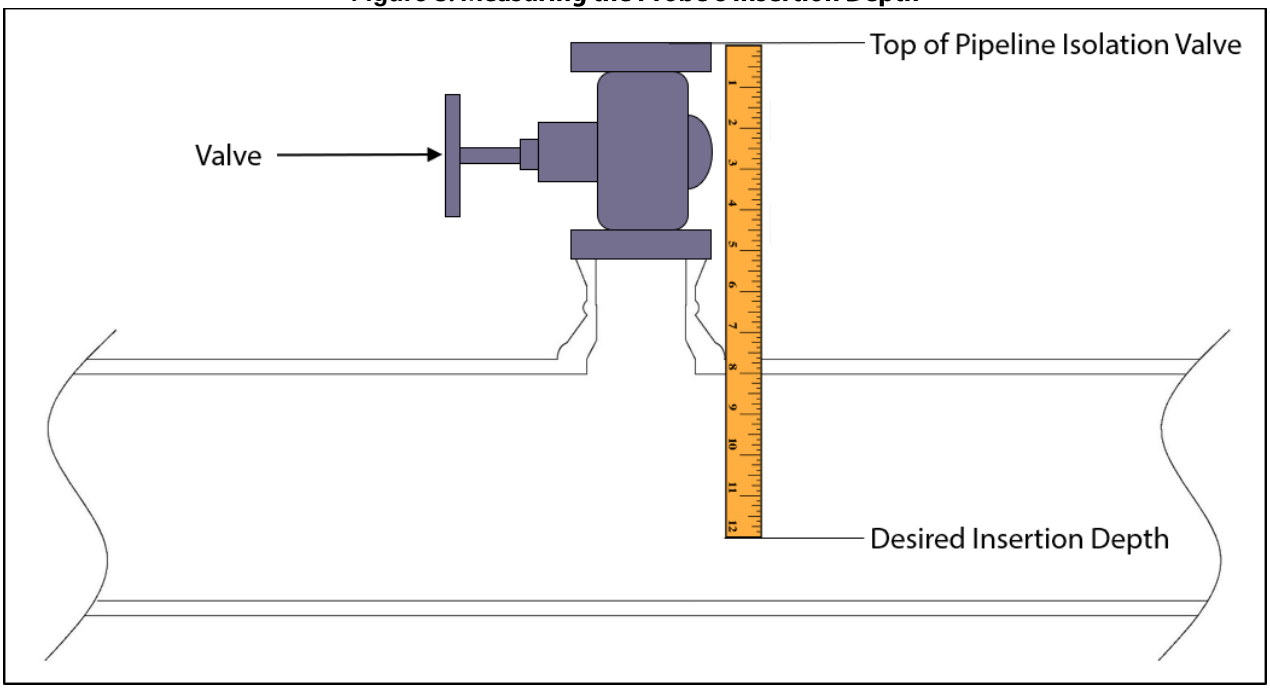
It would be advisable to have the following tools available during unit installation. However, the tools used will vary according to the probe model.

a. Measuring Tape
b. Small Hex Key Set
c. 10" Adjustable Wrench
d. Felt Tip Marker

2.2 Preparing for Installation

1. **Before installing the probe into the pipeline, the operator must determine the length the insertion shaft will have to be inserted inside the pipeline.**
2. Measure from the top of the pipeline's isolation valve to the desired insertion depth in the pipeline (*Figure 3*).

Figure 3: Measuring the Probe's Insertion Depth



3. Measure the pipeline insertion length on the shaft itself using the following steps:
   a. **Gently** pull up on the shaft to ensure it is fully retracted (*Figure 1* and *Figure 4*).
   b. Hold the top of the measuring tape at the top cap and measure the shaft to the desired length.
   c. Mark this point on the shaft with a felt tip marker to avoid scratching the shaft: This is where the lock collar will be positioned.

Figure 4: Insert/Retract Lock Collar Repositioning

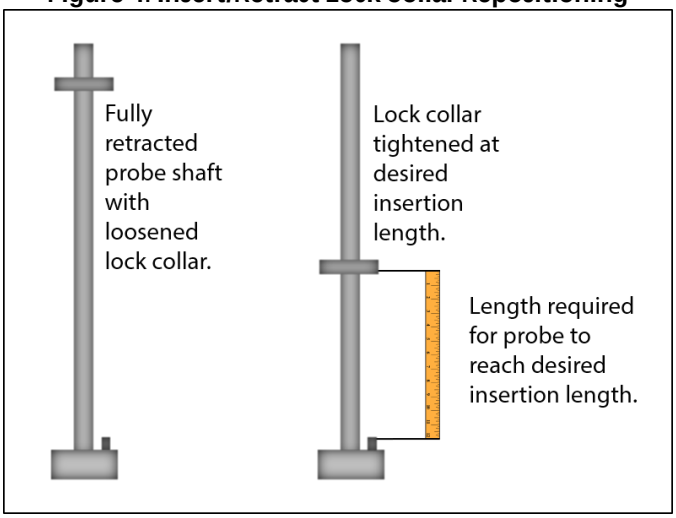
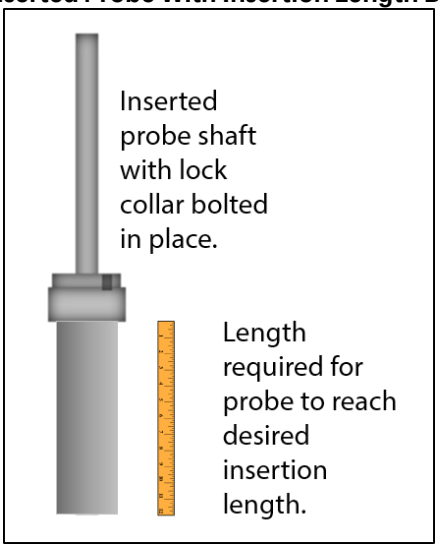


Figure 5: Inserted Probe With Insertion Length Determined



4. Position the lock collar by following these steps:
    a. Loosen the set screw(s) in the insert/retract lock collar and slide it to the point on the shaft that was marked (*Figure 4*).
    b. Tighten the set screw(s).

5. If the unit is to be installed horizontally, the orientation of the oil pot is best accomplished at the factory before the customer receives the unit. However, if for some reason the unit needs to be installed horizontally in the field, the following steps describe how to reposition the oil reservoir:

For horizontally mounted probes, the oil reservoir **must** be positioned so it remains vertical while inserted. **The oil reservoir will not function properly if installed horizontally.**

a. Loosen and detach the tubing between Valve A and Valve B (*Figure 1*).
b. Loosen the screws in the clamp and remove the clamp from the reservoir.
c. Rotate the reservoir such that it is vertical (at a 90° angle), making sure Valve B is aimed downward.
d. Measure a new piece of tubing to be connected from Valve A to Valve B.
e. Using new nuts and ferrules, connect the tubing from Valve A to Valve B.

2.3 Installation

Ensure all the unit's valves are closed prior to either installation or removal.

1. Make sure all the valves on the unit are closed.
2. Connect the unit to the pipeline via the customer-supplied pipeline isolation valve (*Figure 2*).
3. **Slowly** open the pipeline isolation valve and check for leaks.
4. Open Valves A and B (*Figure 1* and *Figure 2*) on the unit to allow pipeline pressure to enter the oil reservoir (i.e., oil pot).

When pipeline pressure is flowing through Valves A and B, Valve D should **always** be closed. Opening Valve D while pipeline pressure is flowing might cause the oil in the reservoir to erupt from the valve.

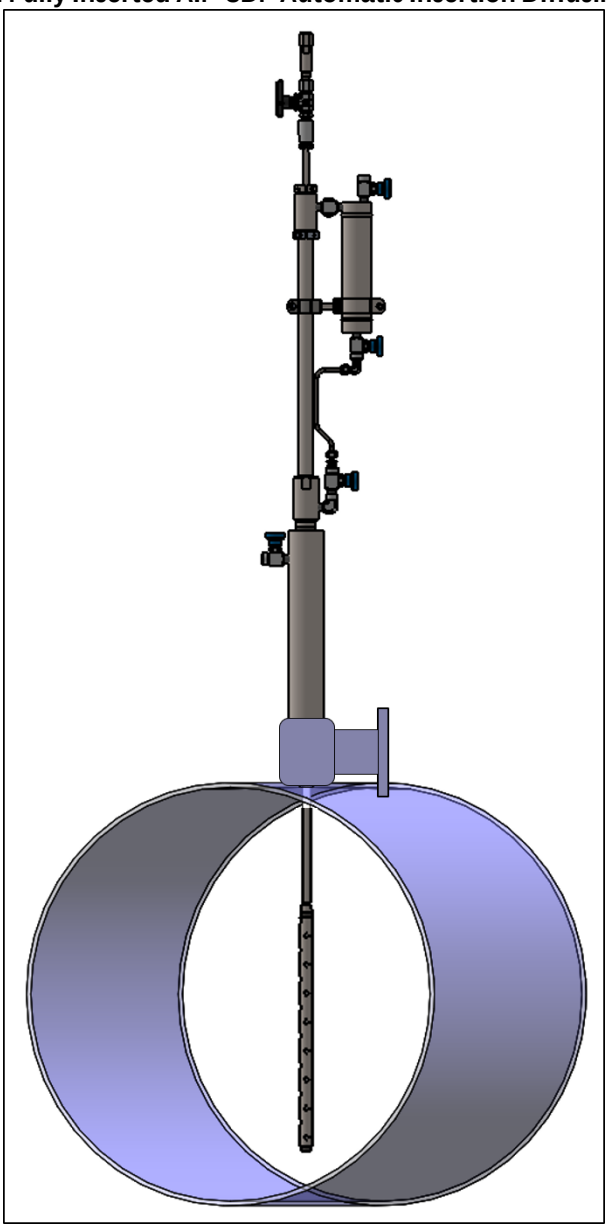
5. **Slowly** open Valve D—located between the oil reservoir and the top cap (*Figure 1*). The shaft will now begin to insert into the pipeline. While allowing the shaft to move **slowly, DO NOT** open Valve D any further.

Opening Valve D too quickly or too much might cause the shaft to insert harshly into the pipeline, resulting in possible damage to the unit.

When the shaft begins to move, **DO NOT** open Valve D any further. This ensures a slow and smooth insertion of the shaft into the pipeline.

6. **Carefully** rotate the shaft to align the insert/retract lock collar and top cap such that the lock collar's screw can be inserted into the top cap (*Figure 1* and *Figure 9*).
7. When the insert/retract lock collar reaches the top cap, tighten the insert/retract lock collar screw into the top cap.
8. Close Valves A, B, and D (*Figure 1* and *Figure 2*). Check for leaks and repair as necessary.
9. Connect the appropriate instrumentation to the unit's check valve (above Valve E, *Figure 1*).
10. Open Valve E (*Figure 1* and *Figure 2*) to start product injection.
11. Check the entire system for leaks and repair as necessary.
12. The unit is now in service (*Figure 6*).

Figure 6: Fully Inserted AIP-3DP Automatic Insertion Diffusing Probe



Do not handle the unit roughly or bend the shaft. The shaft has a polished surface that travels through seals.

To prevent slamming of the insert/retract lock collar and/or the shaft piston (located inside the unit), operate the unit slowly and smoothly while inserting and retracting.

Do not close the pipeline isolation valve on the shaft while it is inserted into the pipeline. Such shaft damage is the number one cause for unit repairs.

Treat the entire unit with care at all times.

2.4 Retracting the Probe

Prior to retracting, Instrumentation attached to the unit must be shut down or disconnected.

Before retracting the unit, note the pipeline pressure required for insertion.

It would be advisable to have the following tools available during unit retraction. However, the tools used will vary according to the probe model.

a. Small Hex Key Set
b. 6" Adjustable Wrench
c. 10" Adjustable Wrench
d. Flat Blade Screwdriver

1. Ensure all valves on the probe are closed.

Do **not** close the pipeline isolation valve.

2. **Carefully** disconnect the tubing and instrumentation connected to the check valve (*Figure 1*). Allow any trapped pressure within the tubing to be released.
3. Open Valves A and B.
4. Open Valve D to apply pressure to the insertion cylinder. Then close Valve D.

Be sure to close Valve D after applying pressure to the insertion cylinder. Failing to close Valve D will cause the insert/retract lock collar screw to shoot off the lock collar, resulting in possible damage to personnel and equipment.

5. Loosen the insert/retract lock collar screw in order to remove the lock collar from the top cap (*Figure 3* and *Figure 4*). At this point, the shaft is still inside the pipeline.
6. Close Valves A and B. Then open Valve C (*Figure 1*). This vents the air inside the oil reservoir into the atmosphere.

Valves A and B must **always** be closed when opening Valve C. Opening Valve C while pipeline pressure is flowing might cause the oil in the reservoir to erupt from the valve.

7. **Slowly** open Valve D to allow pressure to be relieved from the insertion shaft. The probe will now begin to retract from the pipeline. While allowing the shaft to move **slowly, DO NOT** open Valve D any further.

Opening Valve D too quickly or too much might cause the shaft to retract harshly from the pipeline, resulting in possible damage to the unit.

When the shaft begins to move, **DO NOT** open Valve D any further. This ensures a slow and smooth retraction of the shaft.

8. When the probe has completely retracted from the pipeline, close the pipeline isolation valve.

9. With Valves A and B still closed, open Valve F to relieve pressure inside the probe's extension sleeve (i.e., wick housing) (*Figure 1*).
10. Close Valve F.

If pressure continues venting from one or more of the unit's valves, check the pipeline isolation valve for leaks.

11. Remove the unit from the pipeline isolation valve.
12. The unit is now ready for maintenance or to be moved to another location.

SECTION 3: MAINTENANCE

3.1 Before You Begin

1. **Welker® recommends that the unit have standard yearly maintenance under normal operating conditions.** In cases of severe service, dirty conditions, excessive usage, or other unique applications that might lead to excess wear on the unit, a more frequent maintenance schedule might be appropriate.

Maintenance on the extension assembly—located at the bottom of the probe—can be performed without disassembling the entire unit.

2. Prior to maintenance or disassembly of the unit, it is advisable to have a repair kit available for repairs of the system in case of unexpected wear or faulty seals.

New seals supplied in spare parts kits should be very lightly lubricated before being installed to ease the installation of the seals and reduce the risk of damage when positioning them on parts. Wipe excess lubricant from the seals, as it might adversely affect analytical instrument results.

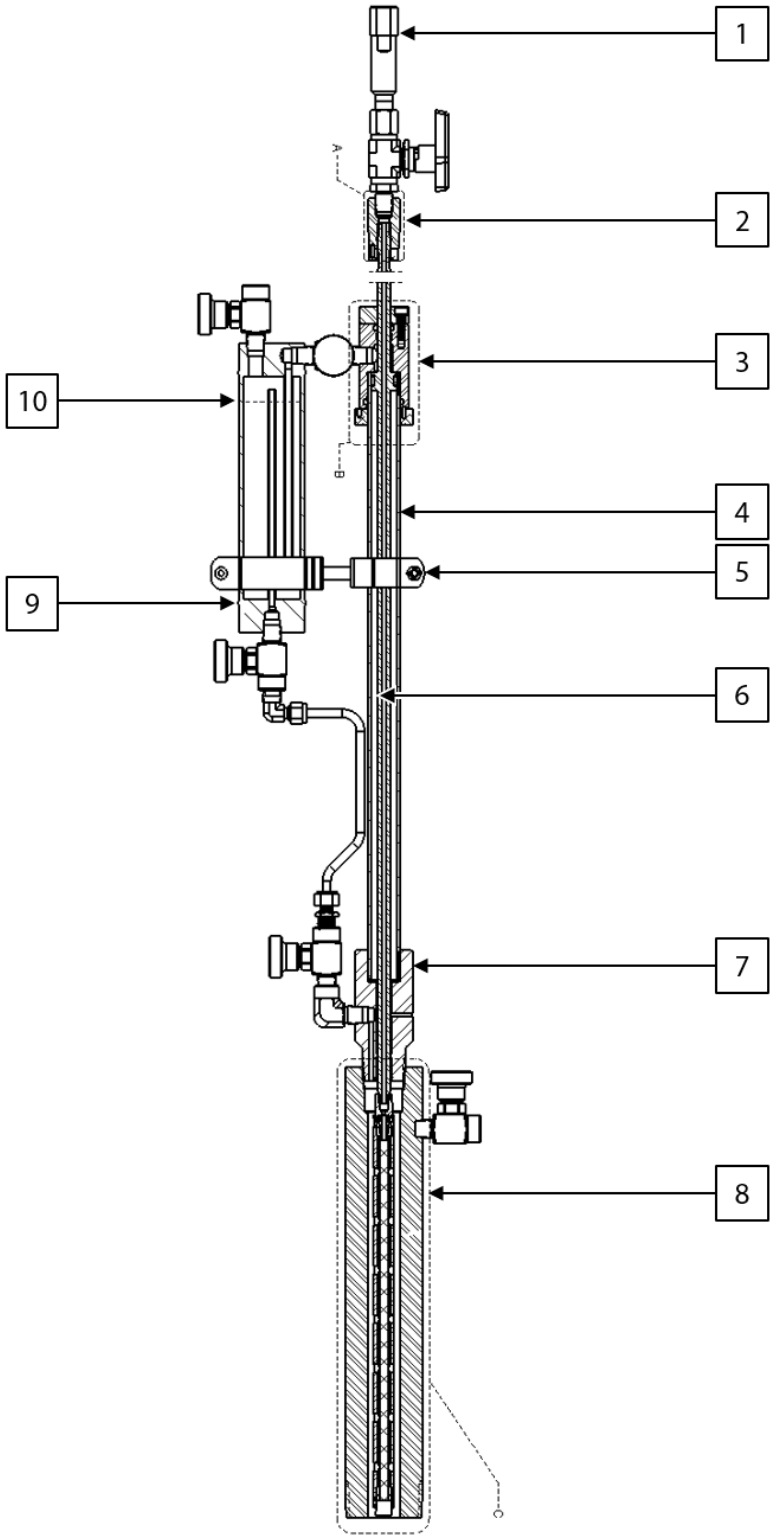
Welker® recommends silicone-based lubricants, such as Molykote® 111.

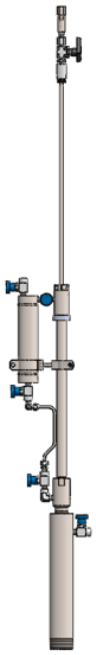
After the seals are installed, the outer diameter of shafts and inner diameter of cylinders may be very lightly lubricated to allow smooth transition of parts.

3. All maintenance and cleaning of the unit should be performed on a smooth, clean surface.
4. Welker® recommends having the following tools available for maintenance. Please note that the exact tools required might vary by model.
    a. Small Hex Key Set
    b. 6" Adjustable Wrench
    c. 10" Adjustable Wrench
    d. 10" Channel Lock Pliers
    e. Fine Grit Sandpaper
    f. Seal Pick
    g. Flat Blade Screwdriver

3.2 Maintenance Diagrams

Figure 7: AIP-3DP Automatic Insertion Diffusing Probe Maintenance Diagram

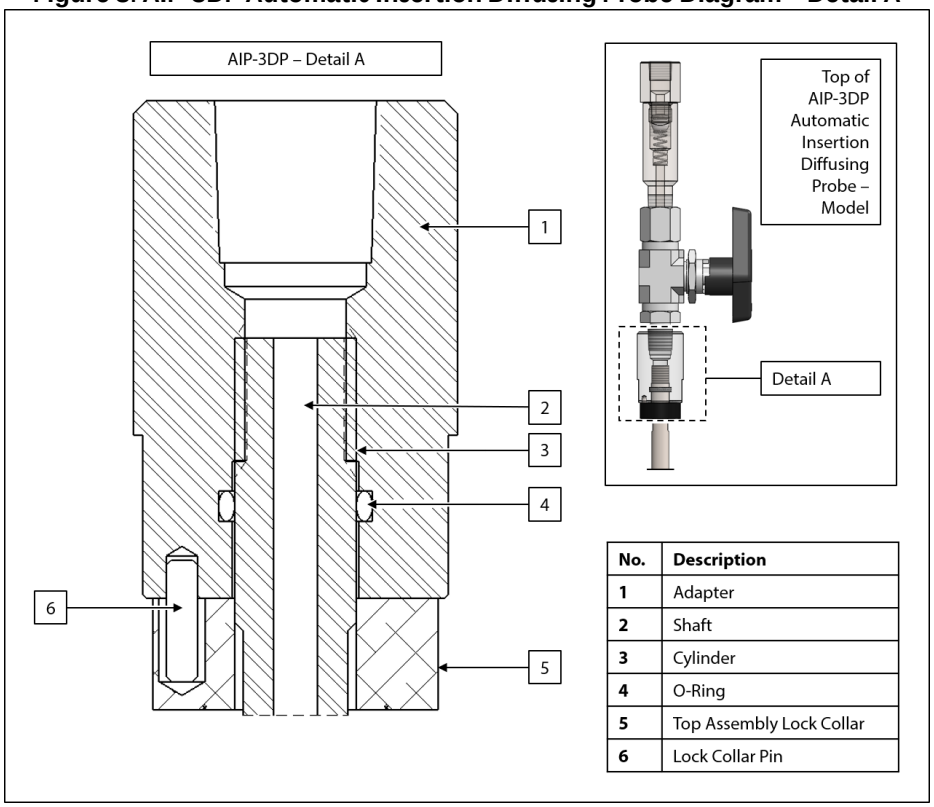




AIP-3DP Automatic Insertion Diffusing Probe – Exterior

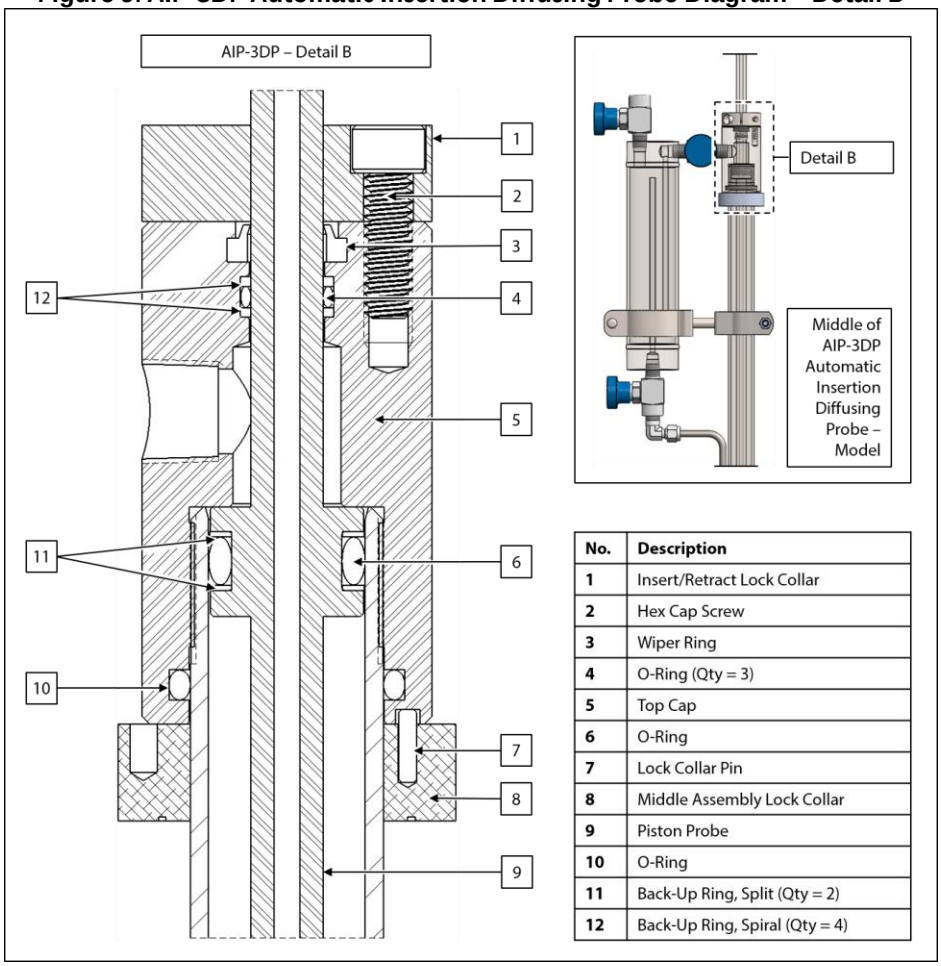
No.	Description
1	Check Valve
2	Adapter Assembly (*Detail A* – See *Figure 8*)
3	Insert/Retract Lock Collar Assembly (*Detail B* – See *Figure 9*)
4	Cylinder
5	Conduit Hanger
6	Piston Probe
7	Base Cap
8	Extension Sleeve / Wick Housing (*Detail C* – See *Figure 10*)
9	Hydraulic Reservoir (Oil Pot)
10	Oil Level – Note: Do Not Overfill

Figure 8: AIP-3DP Automatic Insertion Diffusing Probe Diagram – Detail A



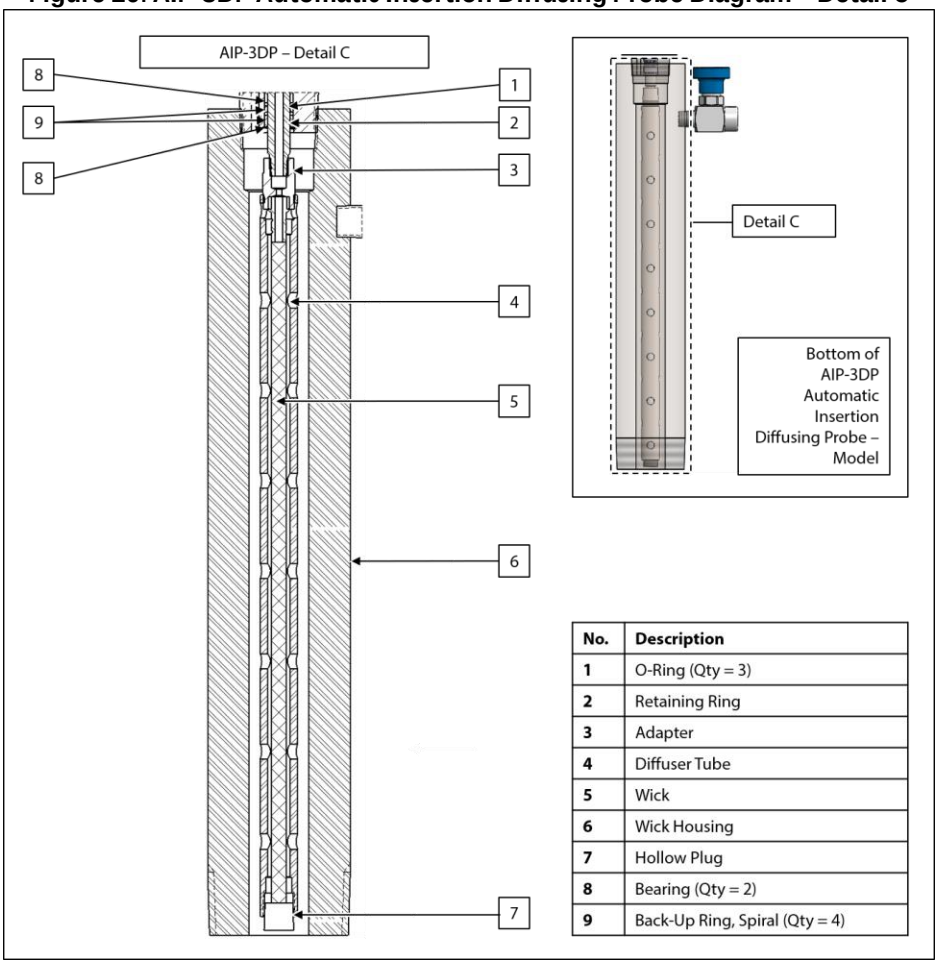
No.	Description
1	Adapter
2	Shaft
3	Cylinder
4	O-Ring
5	Top Assembly Lock Collar
6	Lock Collar Pin

Figure 9: AIP-3DP Automatic Insertion Diffusing Probe Diagram – Detail B



No.	Description
1	Insert/Retract Lock Collar
2	Hex Cap Screw
3	Wiper Ring
4	O-Ring (Qty = 3)
5	Top Cap
6	O-Ring
7	Lock Collar Pin
8	Middle Assembly Lock Collar
9	Piston Probe
10	O-Ring
11	Back-Up Ring, Split (Qty = 2)
12	Back-Up Ring, Spiral (Qty = 4)

Figure 10: AIP-3DP Automatic Insertion Diffusing Probe Diagram – Detail C



No.	Description
1	O-Ring (Qty = 3)
2	Retaining Ring
3	Adapter
4	Diffuser Tube
5	Wick
6	Wick Housing
7	Hollow Plug
8	Bearing (Qty = 2)
9	Back-Up Ring, Spiral (Qty = 4)

3.3 Disassembly

1. Close Valve E (*Figure 1*).

Check valves for leaks and repair as necessary during reinstallation.

2. Shut down and remove any instrumentation attached to the unit.
3. Close Valves B, C, and D on the oil reservoir and Valve A on the base (*Figure 1* and *Figure 2*).
4. Disconnect the tubing between Valves A and B (*Figure 1*).
5. Loosen the screws in the oil reservoir's clamp and remove the clamp from the reservoir (*Figure 1*).
6. Use an adjustable wrench on the body of Valve D to remove the oil reservoir from the top cap (*Figure 1*).
7. Remove the check valve from Valve E (*Figure 1*). Refer to the *Installation, Operation, and Maintenance* (IOM) *Manual* for the check valve for instructions on maintenance (see *Appendix: Referenced or Attached Documents* for a listing of relevant IOMs).
8. Loosen and remove Valve E from the adapter.
9. Loosen the screw in the adapter's collar and slide the collar off the adapter (*Figure 1*). Remove the pin (*Figure 8*).
10. Unscrew the adapter from the shaft.
11. Loosen the screw(s) in the insert/retract lock collar and slide the collar off the shaft.
12. Loosen the screw in the top cap's collar and **carefully** slide the collar down, off the top cap. Remove the pin (*Figure 9*).
13. Unscrew the top cap from the cylinder (*Figure 8* and *Figure 9*). **Carefully** slide the cap and then the collar off the shaft.

Sliding the top cap off the shaft too quickly can damage the shaft.

14. Mark the bottom end of the assembly to assure correct reassembly.
15. Unscrew the wick housing assembly (i.e., extension sleeve) from the lower shaft (*Figure 10*) and set aside for wick decontamination.
16. **Carefully** pull the shaft out of the cylinder.
17. Unscrew the base cap and slide it off the cylinder (*Figure 5*).

3.4 Maintenance

1. Examine the inner surface of the cylinder to ensure it still has a smooth finish. If there are any pits or major scratches, the seals will leak. Call Welker® for service options.
2. Examine the outer surface of the shaft to ensure it still has a smooth finish.
3. Remove and replace the seal in the adapter (*Figure 8*).
4. Using a seal pick, remove and replace the backups and seals in the base and top caps (*Figure 7*, *Figure 9*, and *Figure 10*).
5. Remove and replace the backup and seal on the shaft piston (i.e., piston probe) (*Figure 9*).

Be careful when removing O-rings from the O-ring grooves. Scratching the sealing surface can result in a leak. If necessary, carefully extract the O-ring and replace it during reassembly. Should the sealing surface become damaged, use a 600-grit wet sandpaper strip to carefully smooth the surface, after which the surface should be cleaned.

To ease the installation of the seals and reduce the risk of damage when positioning them on parts, Welker® recommends placing a **small** amount of a silicone-based lubricant, such as Molykote III®, on the seals—just enough to make them shiny but not enough to contaminate product. After the new seals are installed, the outer diameter of the shaft and inner diameter of the cylinder may likewise be lubricated with a **small** amount of the lubrication to allow smooth transition of parts.

6. The oil pot (i.e., hydraulic reservoir) is shipped from the factory with the necessary volume of oil. However, if oil is needed, remove Valve C and add oil until the reservoir is three-quarters (¾) full. Replace Valve C (*Figure 1* and *Figure 2*).

Oil can be added while the unit is still assembled and attached to a pipeline. To do so, depressurize the assembly and make sure all valves **except** the pipeline isolation valve are closed before removing Valve C.

If oil needs to be added, this might be because of a leak in the unit.

3.5 Extension Assembly (Wick Housing) Maintenance

1. If not already accomplished, remove the extension assembly (i.e., wick housing) from the base cap (*Figure 1* and *Figure 10*).
2. Unscrew the hollow plug from the diffuser tube (*Figure 10*).
3. Unscrew the diffuser tube from the base cap (*Figure 1* and *Figure 10*).
4. Remove the adapter from the base cap and replace the O-rings in the adapter (*Figure 10*). The wick is attached to the adapter.
5. Inspect the wick for excessive wear or deterioration.
6. Decontaminate the wick using some type of nontoxic, nonhazardous odor neutralizer, such as Welker® OdorEyes® OdorXice™ Mercaptan and Sulfur Odorant Removal, to rid the wick of the previous chemical odor.
7. Reattach the wick housing with the wick to the base cap (*Figure 1* and *Figure 10*).
8. Reattach the diffuser tube.
9. Reattach the hollow plug to the diffuser tube.
10. Reattach the extension sleeve to the base cap (*Figure 1* and *Figure 10*).

3.6 Final Reassembly Instructions

1. Apply a thin coat of a silicone-based lubricant such as Molykote III® to the inside-top end of the cylinder and reinsert the shaft approximately halfway into the cylinder (*Figure 1*).

The threaded end of the shaft and the top end of the cylinder should be on the same side.

2. Securely thread the base cap onto the cylinder (*Figure 1*).

The cylinder has a tapered end and a flat end. The base cap should be threaded onto the flat end.

3. Slide the top cap collar onto the cylinder and securely thread the top cap onto the cylinder.
4. Replace the pin in the top cap's collar and attach the collar to the cap (*Figure 1* and *Figure 7*).
5. Reattach the oil reservoir to Valve D.
6. Replace the reservoir's clamp onto the reservoir and cylinder. Tighten the screws on the clamp (*Figure 1*).
7. Connect the tubing on Valve A to Valve B (*Figure 1*).
8. Slide the insert/retract lock collar onto the shaft and tighten the set screw to hold the collar in place (*Figure 9*).
9. Reattach the check valve to the shaft.
10. Thread Valve E onto the adapter (*Figure 1*).
11. Reattach the check valve to Valve E.
12. Maintenance is now complete. Refer to *Sections 2.2* and *2.3* for reinstallation instructions.

3.7 Troubleshooting Guidelines

Table 2: Welker® Automatic Insertion Diffusing Probe AIP-3DP Troubleshooting Guidelines		
Issues	**Possible Causes**	**Solutions**
The shaft does not insert or retract smoothly.	Air could be trapped in the oil reservoir. The reservoir might need oil.	Vent any air trapped in the reservoir. See *Section 2.5*. Check to ensure the oil reservoir is three-quarters (¾) full. See *Section 3.3*.
The oil reservoir needs refilling often.	Oil might be leaking past the piston seal.	Replace the piston seal. Then reassemble the probe. See *Section 3.3*. See *Section 3.2* and *Section 3.5*.
Pipeline or process pressure is leaking from the base cap's vent hole.	Seals in the base cap or across the piston in the shaft are leaking.	Replace the seals. See *Section 3.3*.
The probe will not retract from the pipeline.	There might be inadequate pressure in the pipeline to eject the probe. The probe is bent inside the pipeline. One possible cause is pipeline product velocity. Another possible cause is that the pipeline isolation valve closed on the shaft while it was still inserted into the pipeline.	**Gently** pull up on the shaft until it begins to retract. The unit will need to be repaired or replaced. Call Welker® for service options.

APPENDIX: REFERENCED OR ATTACHED DOCUMENTS

Welker® *Installation, Operation, and Maintenance* (IOM) *Manuals* suggested for reference or use with this unit:

- IOM-073: Welker® Check Valve, Model CV-1
- IOM-105: Welker® Instrument Valves, Models NV-1 and NV-2

Other *Installation, Operation, and Maintenance* (IOM) *Manuals* suggested for reference or for use with this unit:

- None

Welker® drawings and schematics suggested for reference or for use with this unit:

- Assembly Drawing: AD693BC (AIP-3DP Automatic Insertion Diffusing Probe, 18" Insertion, 6" Pipeline)
- Assembly Drawing: AD693BD (AIP-3DP Automatic Insertion Diffusing Probe, 24" Insertion, 8" Pipeline)
- Assembly Drawing: AD693BE (AIP-3DP Automatic Insertion Diffusing Probe, 36" Insertion, 24" Pipeline)
- Assembly Drawing: AD693BF (AIP-3DP Automatic Insertion Diffusing Probe, 18" Insertion, 10" Pipeline)
- Assembly Drawing: AD693BG (AIP-3DP Automatic Insertion Diffusing Probe, 18" Insertion, 12" Pipeline)

NOTES

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