



**OCS-KIT-155**  
**155mm CLEANING SYSTEM**  
**For Field and Depot Use**

**OPERATING and MAINTENANCE MANUAL**

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## 1. INTRODUCTION

Carefully read the following instructions and procedures before engaging in any activity with this system. The following maintenance and instruction manual is an integral part of the system and should be kept with it at all times. Use proper personal protection equipment during operation with the machine. OCS recommends the use of gloves, long sleeves, and eye protection.

### 1.1. Basic description of the system

The equipment described in this manual is a device that can be used for cleaning, oiling, and foaming the barrel and chamber of a 155mm weapon system.

### 1.2 General Specifications

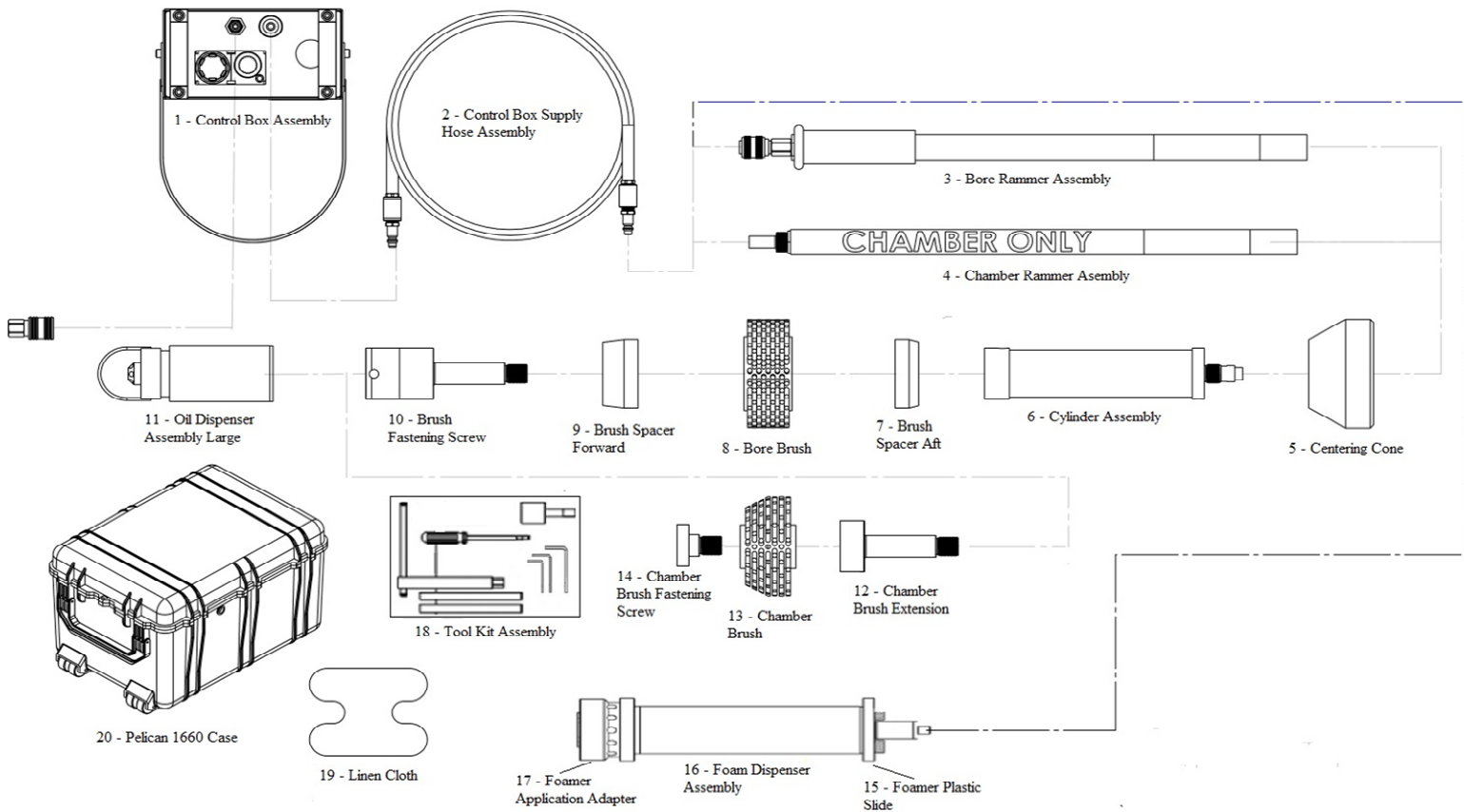
Weight	Depot Kit - 73 lbs	Field Kit - 52 lbs.
Max. Air supply pressure	145 psi	
Air consumption	approximately 6-7 CFM at 90psi	
Air inlet coupling	¼"	
Vibrations	1500 – 2500 vibs/min (depends on air pressure & brush stiffness)	

### 1.3 System Overview

The system consists of 24 major components.

1. OCS-CBA-001 - Control Box Assembly
2. OCS-CBSH-001 - Control Box Supply Hose
3. OCS-BRA-076 - Bore Rammer Assembly
4. OCS-CRA-076 - Chamber Rammer Extension
5. OCS-CCK-155 - Centering Cone
6. OCS-CYL-155 - Cylinder Assembly
7. OCS-BSA-001 – Aft Bore Brush Spacer
8. OCS-BBRS-155 - Bore Brush - Stainless Steel
9. OCS-BSF-001 – Fwd Bore Brush Spacer
10. OCS-BFS-001 – Brush Fastening Screw
11. OCS-OIL-076 – Oil Dispenser Assembly
12. OCS-CBE-001 – Chamber Brush Extension
13. OCS-CBRS-155 -Chamber Brush Stainless Steel
14. OCS-CBFS-001 – Chamber Brush Fastening Screw
15. OCS-FPS-155 – Foamer Plastic Slide
16. OCS-FDA-076 – Foam Dispenser Assembly
17. OCS-FAA-155 – Foam Application Adapter
18. OCS-TKA-002 – Tool Kit Assembly
19. OCS-LIN-155 – Cleaning Sleeve (25 count)
20. OCS-CAS-002 - Pelican 1660 Case
21. OCS-BBRA-155 -Bore Brush – Abrasive Nylon (gray bristles)
22. OCS-BBRN-155 - Bore Brush – Non-Abrasive Nylon (black bristles)
23. OCS-CBRA-155 - Chamber Brush - Abrasive Nylon (gray bristles)
24. OCS-CBRN-155 - Chamber Brush - Non-Abrasive Nylon (black bristles)

**Components that do not contain a “155mm” part number suffix can also be used on weapon systems from 76mm to 203mm. The Field Kit does not contain neither the Chamber Brushes and related parts nor the Foam Dispenser and related parts**

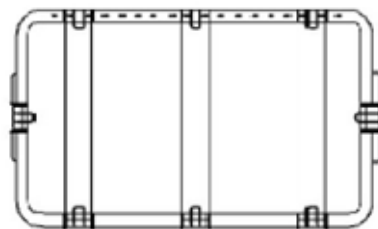


## 2. OPERATION

Unless stated otherwise, the following instructions refer to the parts or subassemblies described above.

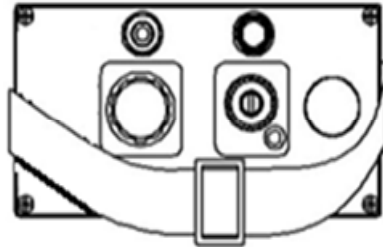
### 2.1 Assembling the System

1. Open the Pelican 1660 Case.

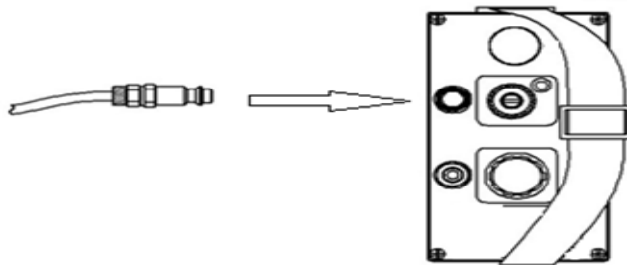


Pelican 1660

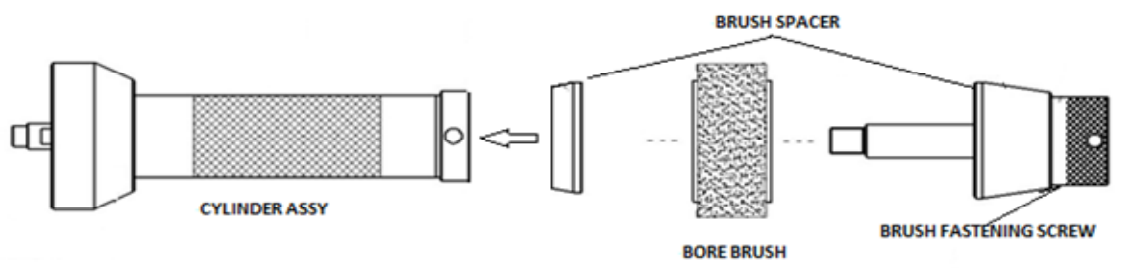
2. Ensure that the barrel of the weapon is parallel to the ground, +/- 5 degrees. Remove the Control Box Assembly from the Case and either set it next to the weapon or hang it over the barrel of the weapon. OCS recommends hanging the Control Box Assembly on the barrel of the weapon near the muzzle for easy access to the ON/OFF knob. Make sure the Control Box is not turned on at this time – the ON/OFF knob should be in the DOWN or OFF position.



- c. Remove the Control Box Supply Hose from the Case. Connect the male quick disconnect hose end to the female quick disconnect coupler on the Control Box. Place the remaining hose on the ground.



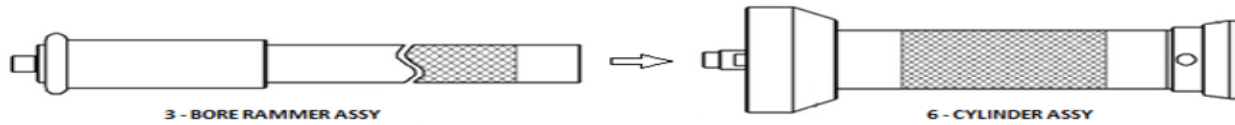
- d. Remove the Cylinder Assembly from the Case. The Stainless-Steel Bore Brush should already be attached to the Cylinder Assembly upon removal from the Case. If not, see the assembly instructions immediately below.



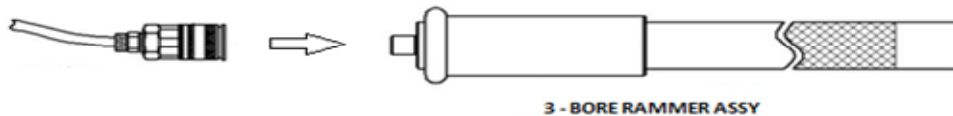
- e. To attach and change brushes follow the sequence below:
1. Detach the Brush Fastening Screw
  2. Detach the Fwd Bore Brush Spacer
  3. Attach the selected brush (Stainless Steel, Abrasive Nylon, or Non-Abrasive Nylon) Note: Bore Brushes are non-directional.
  4. Re-attach the Fwd Bore Brush Spacer
  5. Re-attach the Brush Fastening Screw

f. Remove the Bore Rammer Assembly from the Case and attach it to the end of the Cylinder Assembly.

**NOTE:** This should be done with the Bore Rammer Assembly standing **vertically** to avoid damaging the threads when attaching the pieces.



g. Attach the other end of the Control Box Assembly Supply Hose to the quick disconnect fitting at the end of the Bore Rammer Assembly.



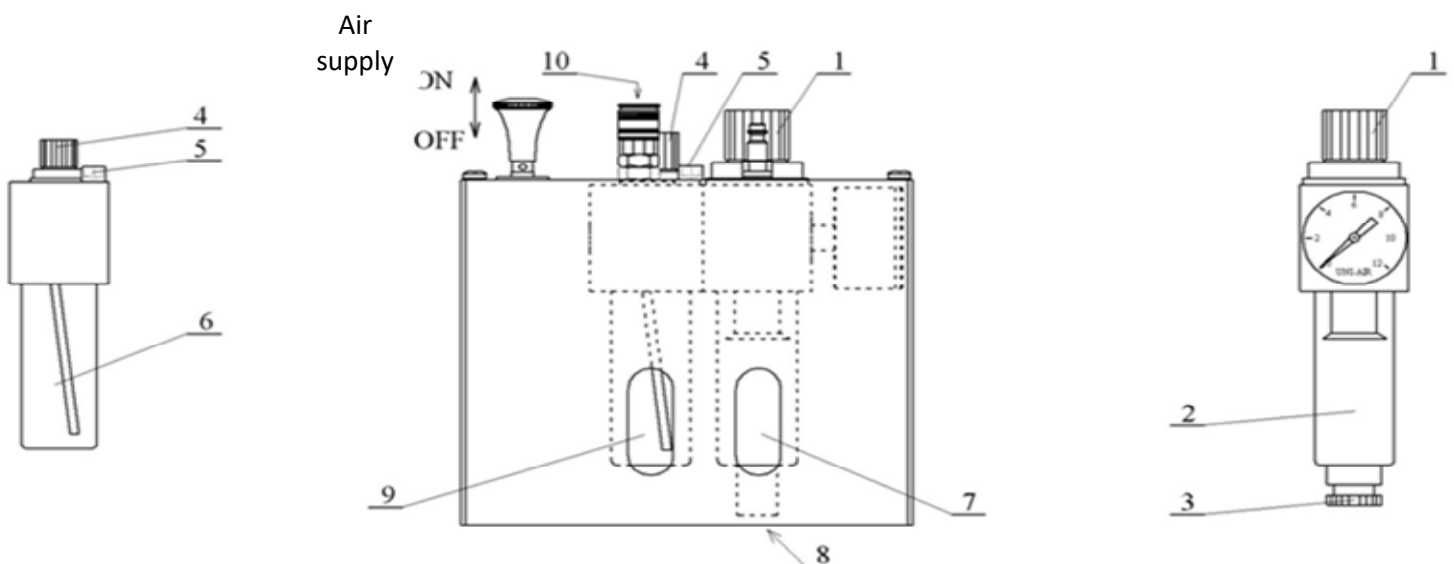
h. Make sure all parts are tightly fastened.

i. Connect the external air supply hose (not supplied) to the quick disconnect fitting on the Control Box Assembly.

*Note: The system can be operated from a trailer brake air supply with the use of a gladhand adapter.*

## 2.2 Operating the System

### a. Control Box Assembly



**NOTE:** The Control Box Assembly should always be operated in an upright position

CONTROL BOX ASSEMBLY PARTS LIST:

1. Air Pressure Regulator
2. Condensate Cup
3. Condensate Cup Cap
4. Oil Regulator Knob
5. Oil Regulator Cap
6. Oil Reservoir
7. Air Condensate Window
8. Condensate Cup (internal view)
9. Oil Reservoir Window
10. External Air Outlet

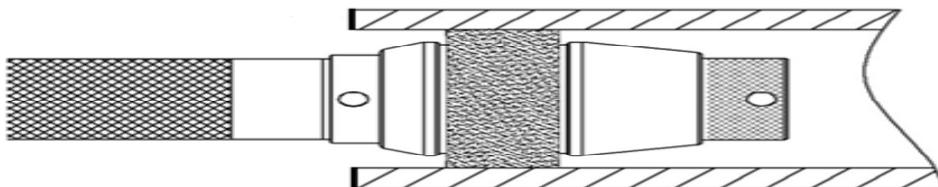
1. For optimum brush performance ensure that the air pressure is between 100-120 psi. Adjust the knob (#1) at the top of Air Pressure Regulator to increase or decrease air pressure. Always check the condensate level in the Condensate Cup (#2). If necessary to empty, using the supplied 3/16" Hex Key remove the 4 screws securing the top of the Control Box Assembly and remove the Condensate Cap (#3) on the bottom of the Condensate Cup to drain.
2. Check that the oil levels in the Control Box Assembly Oil Reservoir (#6) are between the minimum and the maximum level lines on the glass of the Oil Regulator. If oil is low, unscrew the Oil Regulator Cap (#5) on the top of the Oil Reservoir and add oil. **NOTE: We recommend LUBRIPLATE Air Tool Lubricant (NSN 9150-01-565-4784).** There is a funnel in the Tool Kit to assist with this. A 4 mm Hex Key to loosen and tighten the cap is also included in the Tool Kit.

*Note: System will contain no oil when new*

3. The amount of lubrication oil atomized is regulated with the Oil Regulator Knob (#4). Rotating the knob clockwise decreases the amount of lubrication oil, and rotating the knob counter-clockwise increases the amount of lubrication oil. The recommended amount of oil is approximately 1¼ turns counter clockwise from the closed position. When the Control Box is turned on and air is blowing through the Control Box Supply Hose, a drop of oil should be observed entering the chamber of the Filter, Regulator and Lubricator (FRL) every 8 to 10 seconds.

**b. Operating the Assembled System**

1. Insert the Cylinder Assembly into the muzzle end of the barrel so that the brush is fully inserted in the barrel.



2. Pull up on the ON/OFF knob on the Control Box Assembly to turn the system on and activate the vibrating action.

**NOTE: Do not turn on the system unless the brush is fully inserted into the barrel.**

3. Allow the system to travel down the barrel of the weapon, guiding the hose as it travels automatically. The rate of vibration and speed of travel can be increased or decreased by increasing or decreasing air pressure.
4. Once the brush reaches the chamber you will feel the system hesitate or stop. Pull or tug slightly on the hose, maintaining light pressure until the unit reverses direction. Guide the hose out as it automatically returns to the muzzle end of the barrel.
5. When the brush returns to the end of the barrel, turn the system off by pushing down on the ON/OFF knob.

**Note: Do not remove the brush from the barrel unless and until the air supply has been turned off.**

6. Repeat steps 3 and 4 above as many times as necessary to clean the barrel.

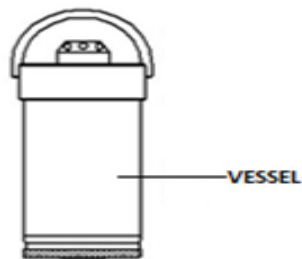
### 2.3 Oiling the Barrel

Follow these steps to oil the barrel:

- a. Replace the Stainless-Steel Brush with the Abrasive Nylon Brush (gray bristles). To do this:
  1. Detach the Brush Fastening Screw.
  2. Detach the Fwd Bore Brush Spacer
  3. Replace the Stainless-Steel Brush with the Abrasive Nylon Brush (gray)
  4. Re-attach the Fwd Bore Brush Spacer.
  5. Re-attach the Brush Fastening Screw

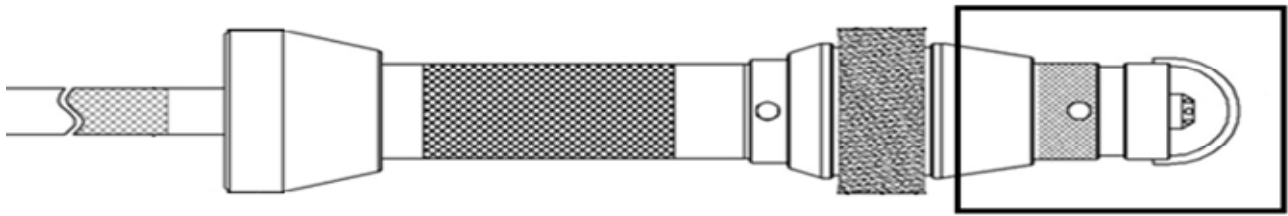
*Note: The Oil Dispenser Assembly is designed to only spray oils. Use of any other liquids could damage the Dispenser.*

- b. Remove the Oil Dispenser Assembly from the Pelican Case by unscrewing it from the storage vessel. (It is stored in a vessel to prevent damage and oil leakage after use.)



- c. Thread the Oil Dispenser Assembly into the Brush Fastening Screw at the end of the Cylinder Assembly.





- d. To oil the barrel, repeat the steps described in **2.2 b 3 and 4**. The Oil Dispenser Assembly will spray oil in a conical pattern while vibrating through the barrel, leaving a protective layer of oil on the internal surface of the barrel.
- e. Repeat as many times as desired. Several passes should be sufficient depending on the condition of the barrel.
- f. When finished, remove the Oil Dispenser Assembly, screw it back into the storage vessel, and return it to the case.

**Note: Do not remove the brush from the barrel unless and until the air supply has been turned off.**

- g. See instructions in Section 5 for adjusting oil output.

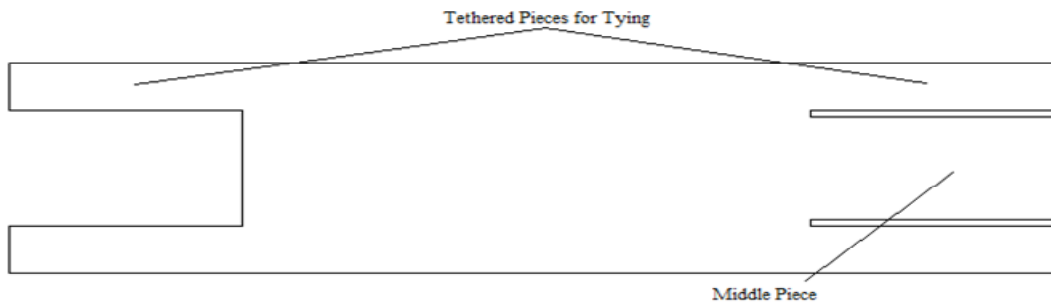
*Note: If using an oil containing cleaning solvents such as Break-Free CLP, leave the muzzle and breech open and exposed to the air for several hours to allow any residual solvent to evaporate. Failure to do so may result in corrosion caused by trapped solvents.*

*Note: If the weapon is to be placed in long-term storage use an oil, such as Break-Free SMX, that does not contain cleaning solvents to avoid corrosion that may occur as a result of the presence of residual cleaning solvents.*

#### **2.4 Finish Cleaning with the Cleaning Sleeve.**

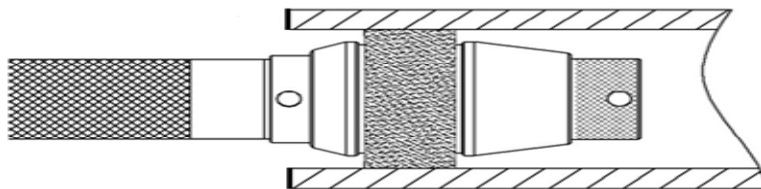
- a. For this procedure, replace the gray bristled Abrasive Nylon Brush with the black bristled Non-Abrasive Nylon Brush. To do this, follow the procedures described in **2.1 e**.
- b. Attach the Cleaning Sleeve to the brush by wrapping the middle piece of the Cleaning Sleeve around the Non- Abrasive Nylon Brush and tying the tethered ends together in a knot to hold the Cleaning Sleeve firmly in place.





*NOTE: To ensure proper performance, use OCS Cleaning Sleeves.*

- c. Insert the Cylinder Assembly into the muzzle end of the barrel so that the brush is fully inserted in the barrel.



- d. Pull the ON/OFF knob on the Control Box upwards to turn the system on and activate the vibrating action

***NOTE: Do not turn on the system unless the brush is fully inserted into the barrel.***

- e. Allow the system to travel down the barrel of the weapon, guiding the hose as it moves automatically. The rate of vibration and speed of travel can be increased or decreased by increasing or decreasing air pressure.
- f. Once the brush reaches the chamber you will feel the system hesitate or stop. Pull or tug slightly on the hose, maintaining pressure until it reverses direction. Guide the hose out as it automatically returns to the muzzle end of the barrel.
- g. Repeat as many times as needed, changing Cleaning Sleeves as necessary.
- h. When the brush returns to the muzzle end of the barrel, turn the system off by pushing down on the ON/OFF knob.

***Note: Do not remove the brush from the barrel unless and until the air supply has been turned off.***

### **Bore Assembly and Cleaning Procedure Recap:**

1. Detach the Brush Fastening Screw.
2. Detach the Fwd Bore Brush Spacer.
3. Attach the Stainless-Steel Bore Brush.
4. Re-attach the Fwd Bore Brush Spacer
5. Re-attach the Brush Fastening Screw
6. Clean the barrel with the Stainless-Steel Bore Brush
7. Repeat steps 1-2 and replace the Stainless-Steel Bore Brush with the gray Abrasive Nylon Bore Brush
8. Fill the Oil Dispenser Assembly and attach it to the Brush Fastening Screw
9. Oil the chamber
10. Remove the Oil Dispenser Assembly and, repeating steps 1 and 2 above, replace the Abrasive Nylon Brush with the black Non-Abrasive Nylon Bore Brush.
11. Re-attach the Fwd Bore Brush Spacer
12. Re-attach the Brush Fastening Screw.
13. Using a Cleaning Sleeve, finish cleaning the barrel and removing any residual oil. Repeat using as many Cleaning Sleeves as necessary.

### **2.5 Disassembly**

#### a. To disassemble:

1. Disconnect the external source air supply hose from the Control Box Assembly.
2. Disconnect the Control Box Supply Hose from the Bore Rammer Assembly.
3. Return the Control Box Supply Hose to the Case.
4. Detach the Bore Rammer Assembly from the Cylinder Assembly and return them to the Case.

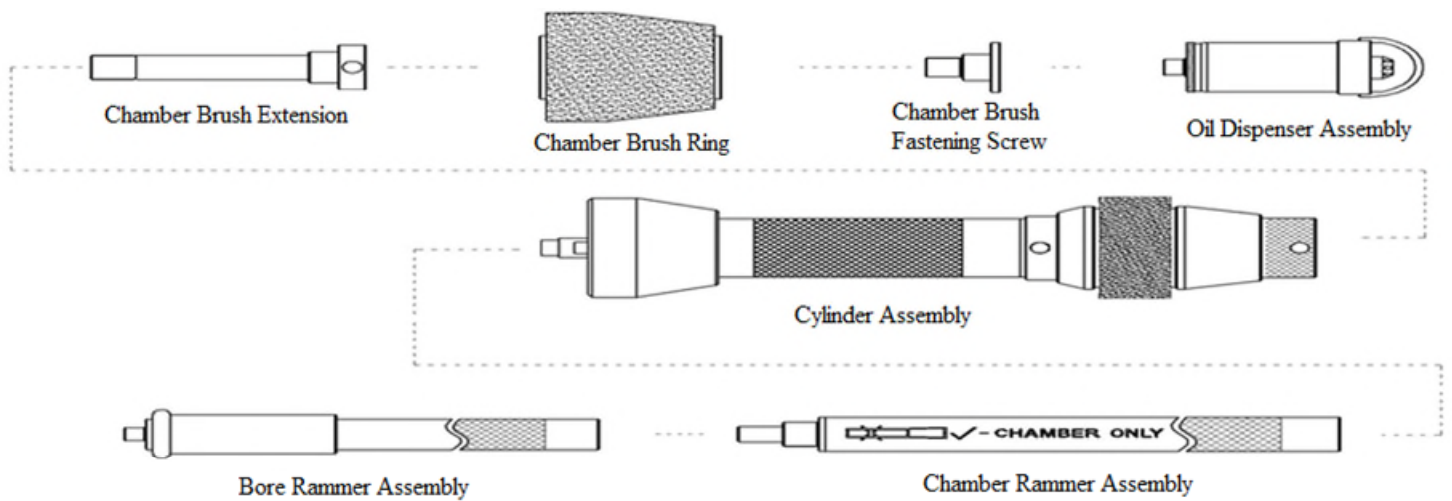
**NOTE:** *This should be done with the Bore Rammer Assembly placed vertically to avoid damaging the threads when detaching the pieces.*

- b. The Cylinder Assembly will fit in the Case with a brush attached. If you are disassembling it, remove the Brush Fastening Screw, Fwd Bore Brush Spacer, and brush. Return the Fwd Bore Brush Spacer and brush to the Case. Reattach the Brush Fastening Screw to the Cylinder Assembly and return it to the Case.
- c. Return the Control Box Assembly to the Case.

### 3. CHAMBER CLEANING ( Available only in the Full Depot Kit )

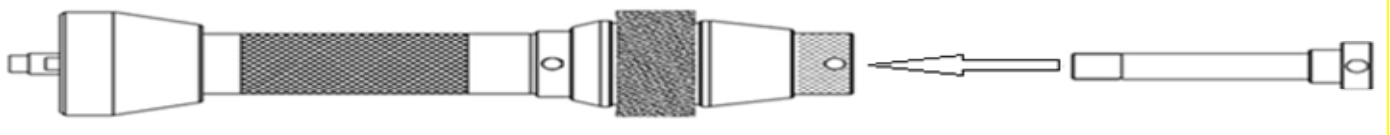
The following items are required to clean the chamber.

- OCS-CBE-001 – Chamber Brush Extension
- OCS-CBRA-155 – Abrasive Nylon Brush
- OCS-CBRN-155 – Non-Abrasive Nylon Brush
- OCS- CBRS-155 - Stainless Steel Brush
- OCS-CBFS-001 – Chamber Brush Fastening Screw
- OCS-OIL-076 – Oil Dispenser Assembly
- OCS-CYL-076 - Cylinder Assembly
- OCS-BRA-076 – Bore Rammer Assembly
- OCS-CRA-076 – Chamber Rammer Extension



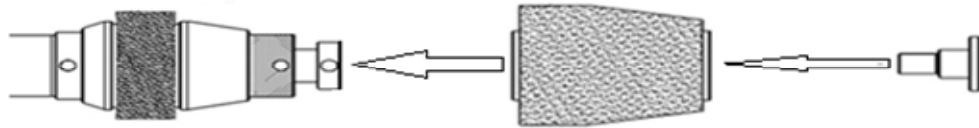
#### 3.1 Assembly of the Chamber Brush

- Attach the Fwd Bore Brush Spacer and Brush Fastening Screw to the Cylinder Assembly
- Thread the Chamber Brush Extension into the female end of the Brush Fastening Screw



- Attach the Chamber Brush to the Chamber Brush Extension with the Chamber Brush Fastening Screw. Use the 3/8" Hex Key provided in the Tool Kit to fasten the Chamber Brush Fastening Screw (see illustration top of next page).

*Note: The tapered end of the Chamber Brush should be facing the chamber end of the weapon.*

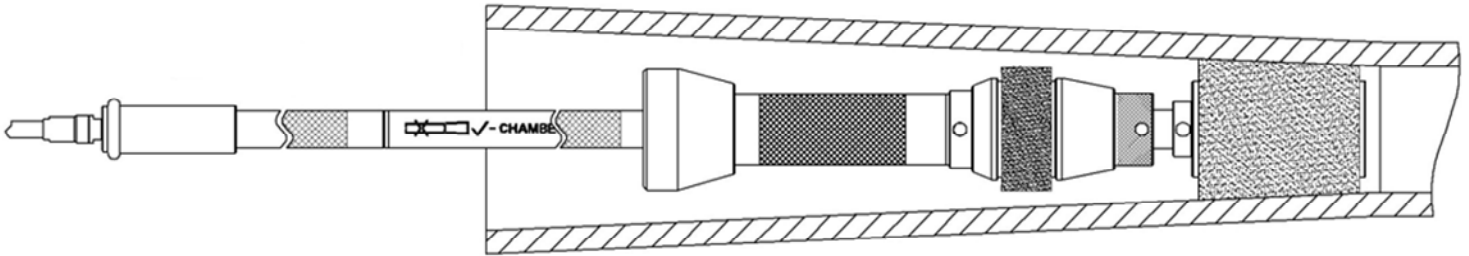


d. Attach the Bore Rammer Assembly to the Cylinder Assembly.

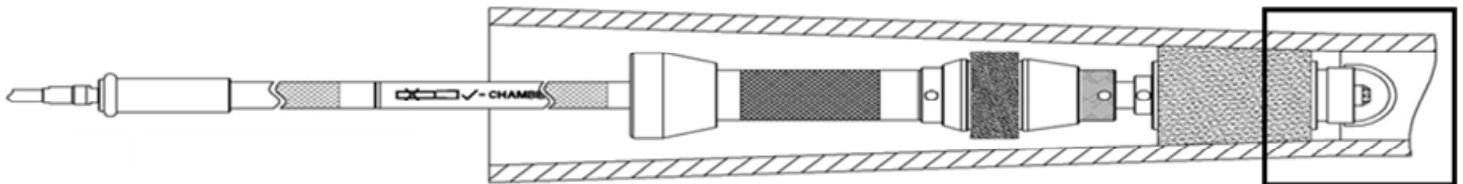
e. The System is now ready to clean the chamber. If the unit is not long enough to reach the entire depth of the chamber, attach the Chamber Rammer Extension to the Bore Rammer Assembly to extend its reach.



Below is a diagram of the final assembly with the Chamber Brush attached (shown with Chamber Rammer Extension attached).



**NOTE:** To oil the chamber, thread the Oil Dispenser Assembly into the threaded end of the Brush Fastener Screw. See illustration below.



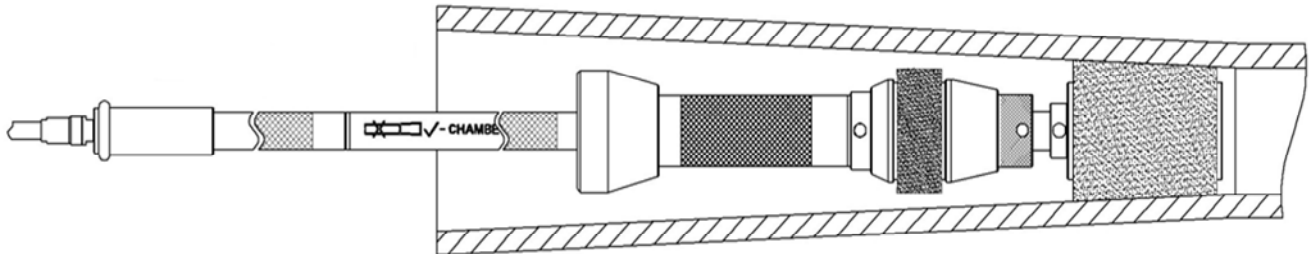
### 3.2 Chamber Brush Operation

a. Connect the Control Box Supply Hose to the Bore Rammer Assembly.



- b. Place the complete assembly into the chamber as shown below and activate the system to start vibrations.

**NOTE: Do not activate or turn on the system unless the brush is fully inserted into the chamber.**



- c. Guide the vibrating assembly into the chamber and allow it to slowly travel up and down the chamber. Pull or tug slightly on the hose, maintaining pressure until it reverses direction. Guide the hose out as it automatically returns to the muzzle end of the barrel.
- d. When the brush returns to the end of the barrel, turn the system off by pushing down on the ON/OFF knob.

**Note: Do not remove the brush from the barrel unless and until the air supply has been turned off.**

**Chamber Assembly and Cleaning Procedure Recap: (with Bore Rammer Assembly attached)**

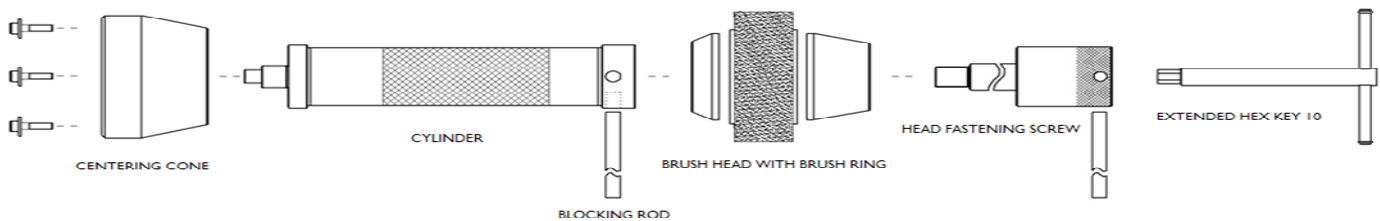
1. Attach the Chamber Brush extension to the Brush Fastening Screw
2. Attach the Stainless-Steel Chamber Brush to the Chamber Brush Extension with the Chamber Brush Fastening Screw.
3. Clean the chamber with the Stainless-Steel Chamber Brush
4. Remove the Stainless-Steel Chamber Brush and replace it with the gray Abrasive Nylon Chamber Brush
5. Fill the Oil Dispenser Assembly and attach it to the Chamber Brush Fastening Screw.
6. Oil the chamber
7. Remove the Oil Dispenser Assembly and replace the gray Abrasive Nylon Chamber Brush with the black Non-Abrasive Chamber Brush
8. Using a Cleaning Sleeve, finish cleaning the chamber and removing any residual oil. Repeat using as many Cleaning Sleeves as necessary.

*Note: If using an oil containing cleaning solvent such as Break-Free CLP leave the muzzle and breech exposed for several hours to allow any residual cleaning solvents to evaporate. Failure to do so may result in corrosion caused by unevaporated trapped solvents.*

### 3.3 Disassembly of the Chamber Brush Assembly

1. Detach the Bore Rammer Assembly
2. Detach the Chamber Rammer Extension (if used)
3. Remove the Chamber Brush Fastening Screw
4. Remove the Chamber Brush
5. Remove the Chamber Brush Extension

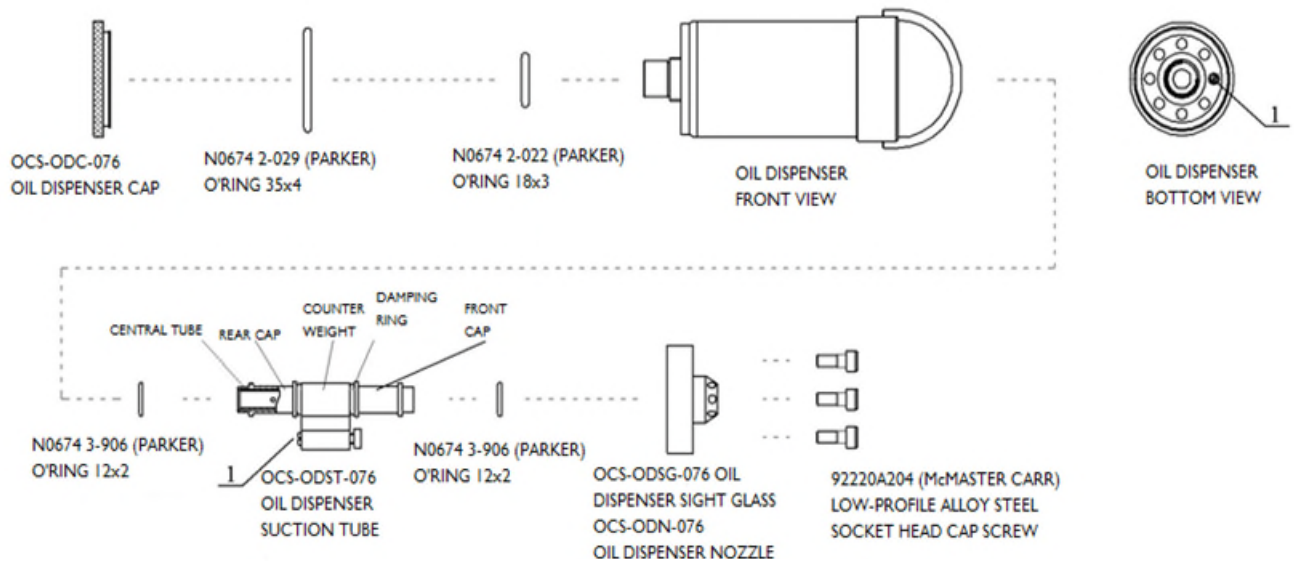
### 4. CENTERING CONE REPLACEMENT



The Centering Cone can be replaced by removing the 3 socket head screws securing the Centering Cone to the Cylinder Assembly using the 5mm Hex Key provided and re-attaching another Centering Cone.

### 5. OIL DISPENSER ASSEMBLY

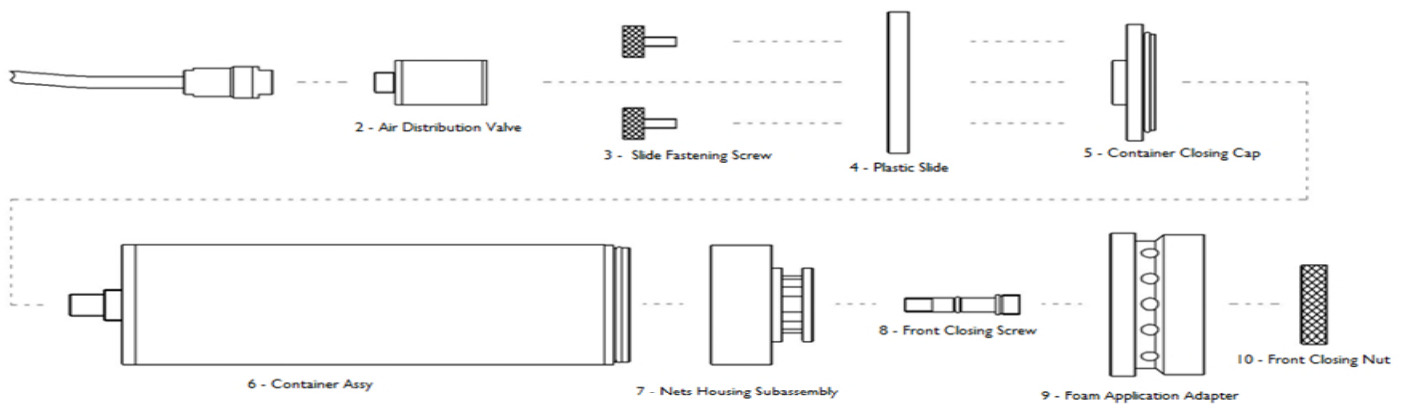
- a. The amount of oil that is sprayed by the Oil Dispenser Assembly is controlled by an adjusting screw located inside the assembly. Rotating the screw clockwise reduces the amount of oil dispensed, and rotating the screw counter-clockwise increases the amount of oil dispensed. The adjustment screw can be accessed by removing the Oil Dispenser Closing Cap and inserting a small screwdriver through a hole located in the bottom of the Oil Dispenser Assembly. The adjusting screw may at first be difficult to locate (see #1 in illustration on the next page).
- b. If the Oil Dispenser Assembly fails to dispense oil the Oil Dispenser Assembly should be disassembled and cleaned. To disassemble the Oil Dispenser Assembly, refer to the illustration below. Remove the transparent container cover (Dispenser Sight Glass) by removing three socket head screws with a 3 mm Hex Key. Remove the Oil Dispenser Oil Suction Tube Subassembly. Clean the parts of this subassembly with compressed air, making sure that all air and oil paths are unclogged.



## 6. FOAMING THE BARREL – DECOPPERING ( Available only in the Full Depot Kit )

**WARNING:** Make sure that proper personal protection equipment is worn during operation of the Foam Dispenser. Never use the decoppering dispenser without proper eye protection.

The Foam Dispenser comes pre-assembled with the parts illustrated below.



### 6.1 Filling the Foam Dispenser

- a. To fill the Foam Dispenser, remove the Air Distribution Valve and the Plastic Slide by removing the Plastic Slide Fastening Screws. Once removed, the Plastic Slide will come off.
- b. Remove the Container Closing Cap (should only be hand tightened).



- c. Fill the Container Subassembly with the decoppering liquid and replace the Container Closing Cap. The system is now ready for use.

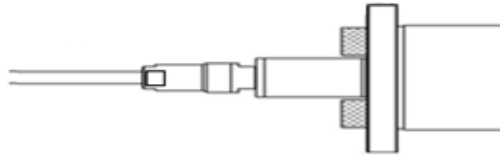
## 6.2 Operating the Foam Dispenser

- a. The Foam Dispenser will come preassembled as shown below. Different size Plastic Slides and Foam Application Adapters can be used depending on the size of the barrel of the weapon being cleaned.



**Note: The Foam Dispenser is inserted into the barrel backward through the chamber end of the barrel.**

- b. Thread the Control Box Supply Hose through the muzzle end of the barrel and out the chamber end of the barrel. Attach one end of the Control Box Supply Hose to the Foam Dispenser. The other end of the Control Box Supply Hose should still be connected to the Control Box Assembly.



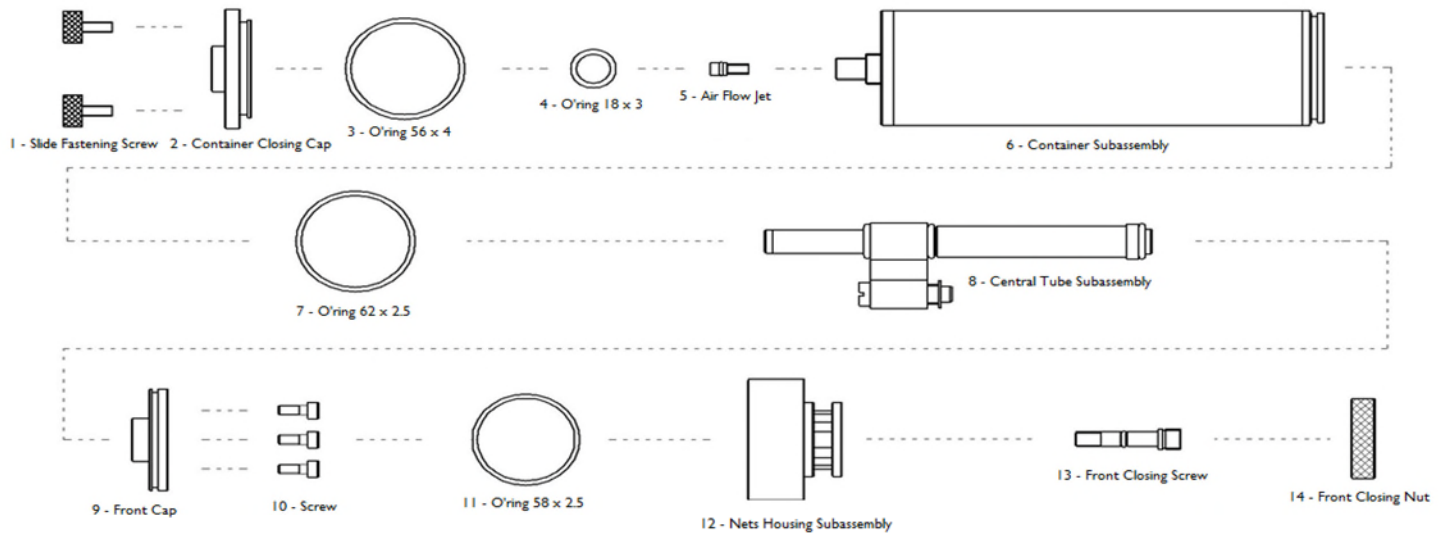
- c. Once the Control Box Supply Hose is attached to the Foam Dispenser, insert the unit into the barrel of the weapon until it reaches the end of the chamber and sits evenly in the barrel.
- d. The system is now ready to use. Once operating pressure of between 73-101 PSI is attained turn on the air supply by pulling up on the ON/OFF switch on the Control Box Assembly. With the air supply on, slowly pull on the Control Box Supply Hose and allow the system to travel slowly through the barrel, towards the muzzle end of the barrel. A layer of foam will be dispensed on the inside of the barrel.
- e. After foaming, clean and oil the barrel per the procedure described in Section 2.

*NOTE: The extent of the foam layer dispensed on the barrel walls is dependent upon how fast the assembly travels through the barrel. The slower the rate of travel, the thicker the foam layer and vice versa.*

*NOTE: Since a small amount of pressurized air remains in the Container Subassembly, foam generation does not instantly stop when the system is turned off. To immediately stop foam generation, disconnect the Control Box Supply Hose and release the remaining air pressure by slowly loosening the Container Closing Cap. To do so, remove the two Slide Fastening Screws and loosen the Container Closing Cap to release any trapped air.*

*Note: If using MILFOAM decoppering agent the foam will turn blue after several minutes indicating the presence of copper residue. Let the foam continue to react with the copper residue for approximately 30 minutes to an hour. The foam can then be removed by using the Ordnance Cleaning System as described in Section 2.4 – Finish Cleaning with the cleaning sleeve.*

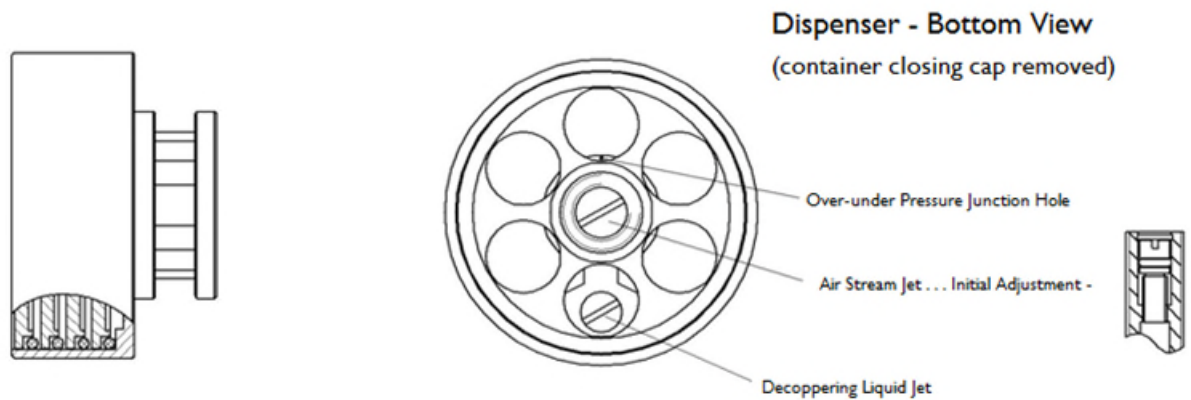
### 6.3 Maintaining the Foam Dispenser



- a. The Foam Dispenser can be cleaned by filling the Container Subassembly with water and operating the system in the same manner as when dispensing foam, to wit; (1) Fill the Container Subassembly with water. (2) Close the Container Subassembly by installing the Container Closing Cap. (3) Connect the Control Box Supply Hose to the quick disconnect fitting on the Air Distribution Valve. (4) Place the switch on the Control Box Assembly to the ON position. Water will then circulate through the system cleaning all air and liquid orifices and paths.
- b. IF the Foam Dispenser fails to dispense foam and does not otherwise operate properly, disassemble the unit and clean the unit as described in the steps in **6.3 a** immediately above. In addition, (1) ensure that no holes on the Net Housing Subassembly and Foam Application Adapter are clogged, and (2) ensure that the tiny 4mm Over/Under Pressure Junction Hole is not clogged. If clogged, unclog it using a needle-like device.
- c. The quantity and quality of the foam can be adjusted by making adjustments to the Air Pressure Regulator — less foam is obtained by decreasing the pressure while more foam is obtained by increasing the pressure. If the quantity or quality of the foam being dispensed is deemed inadequate follow the steps outlined below.

The Foam Dispenser comes preset from the factory and no further adjustments are generally necessary. However, should it be desired to alter the quantity or density of the foam dispensed, the instructions for doing so are provided below.

The quantity and density of foam can be adjusted by making adjustments to the Pressure Regulator contained in the Net Housing Subassembly (see #12 above). The Pressure Regulator contains two jets: the Air Stream Jet which controls air flow, and the Decoppering Liquid Jet that controls the amount of decoppering fluid dispensed. See illustration on the next page.



Turning the Air Stream Jet counterclockwise increases air flow, while turning the Air Stream Jet clockwise decreases air flow.

Turning the Decoppering Liquid Jet counterclockwise increases the amount of fluid dispensed, while turning the Decoppering Liquid Jet Clockwise decreases the amount of fluid dispensed.

To increase the amount of foam being dispensed, turn the Decoppering Liquid Jet counter clockwise

To decrease the amount of foam being dispensed, turn the Decoppering Liquid Jet clockwise

To increase the density of the foam being dispensed, turn the Decoppering Liquid Jet counterclockwise and/or turn the Air Stream Jet clockwise. Note: While turning the Air Stream Jet clockwise will increase the density of the foam, it will also decrease the quantity of foam produced.

To decrease the density of the foam being dispensed, turn the Decoppering Liquid Jet clockwise and/or turn the Air Stream Jet counterclockwise. Note: While turning the Air Stream Jet counter clockwise will decrease the density of the foam, it will also increase the quantity of foam produced

To decrease the amount of foam dispensed and maintain existing density, turn both the Air Stream Jet and Decoppering Liquid Jet clockwise.

To increase the amount of foam dispensed and maintain existing density, turn both the Air Stream Jet and Decoppering Liquid Jet counterclockwise.

## 7. TOOL KIT

Integral part of the OCS is also The Tool Kit. Tools in the kit are used for small repairs and OCS everyday use.

- OCS-TKB-001 - Tool kit bag
- 5374A21 - T Handle Hex key 3/8" - Tightening of bore Brush Fastening Screw.
- OCS-ROD-001 - Spanner Rod, Cylinder and Brush Fastening Screw rod (for tightening or untightening) x 2
- 7122A47 - 3/16" Hex Key – Centering Cone replacement, control box screws.
- 6985A15 - Hex key 5 - Oil dispenser repairment, Foam Dispenser repairment.
- 6985A14 - Hex key 4 - Lubrication unit oil refilling.
- 5682A75 - Screwdriver - Oil dispenser adjustments, air lubrication unit adjustments.
- 4384T1 - Funnel - Air lubrication unit oil refill
- 3 mm Hex Key – Removal of Oil Dispenser Container Cover

## 8. TROUBLESHOOTING

While most equipment malfunctions must be referred to an authorized repair facility, provided below is a troubleshooting guide to several commonly encountered failure conditions. If the recommendations described below do not remedy the failure condition refer the unit to an authorized repair facility.

CYLINDER ASSEMBLY FAILS TO VIBRATE OR PRODUCES INSUFFICIENT VIBRATIONS:

- Check the Air Pressure Regulator on the Control Box Assembly to ensure that pressure is between 100-120 psi.
- With the Control Box Assembly switch in the ON position, check to see that the Bore Rammer Assembly is emitting a strong blast of air.
- Check to ensure that the Counter Weight in the Cylinder Assembly moves freely. To do so, either shake or vertically invert the Cylinder Assembly and listen for the sound of the Counter weight sliding up and down.

OIL DISPENSER FAILS TO DISPENSE OIL OR DISPENSES TOO MUCH OR TOO LITTLE OIL:

- Disassemble the Oil Dispenser and clean it following the instructions in Section 5.

CYLINDER ASSEMBLY DOES NOT TRAVEL PROPERLY THROUGH THE BORE OR DOES NOT CLEAN PROPERLY

- Check to ensure the unit is vibrating properly. If not, refer to the above.
- If the unit is vibrating properly, replace the brush

## 9. BRUSH MAINTENANCE AND REPLACEMENT

After use, wash the dirt and oil from the brush bristles using a parts washer, if available, or a high-pressure hose. After hosing, shake the brushes well to remove all remaining water and leave to air dry. By cleaning the brushes after each use the spreading of old oil and dirt throughout the barrel and chamber will be avoided and the life of the brush will be extended.

Brushes should be replaced when the bristle ends become frayed, when they can no longer be cleaned, or when they no longer drive the system down the barrel and back.

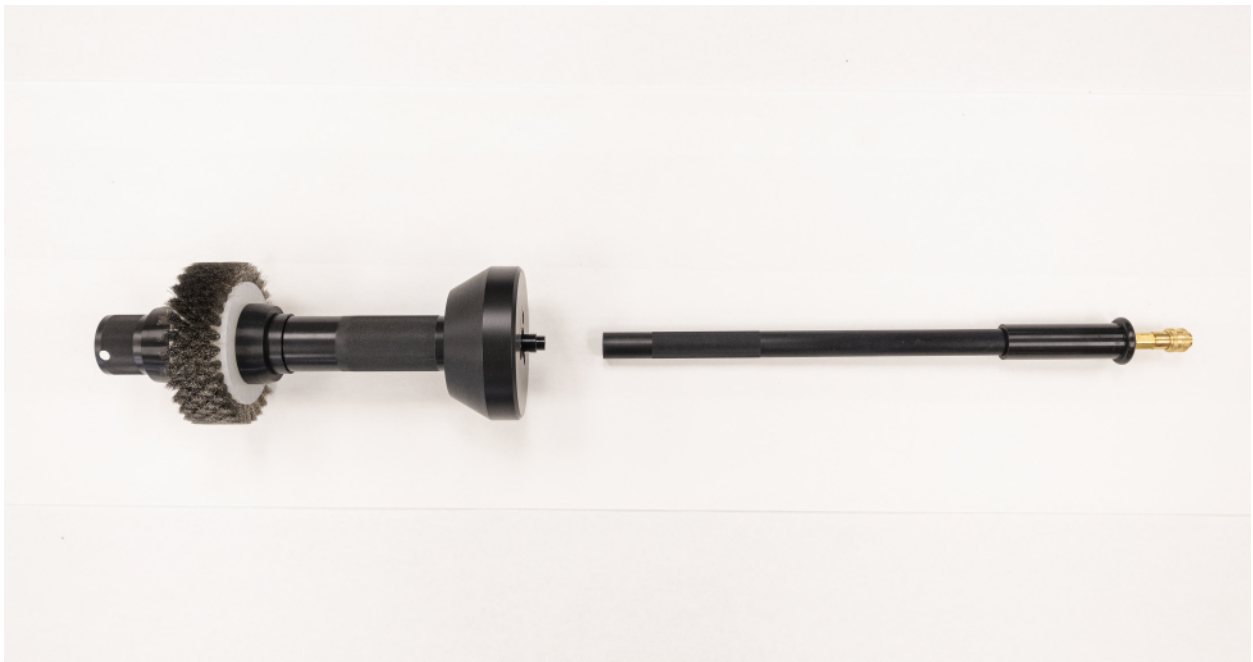
## 10. ACRONYMS

<b>ASHC</b>	Air Supply Hose w/Connectors (not included with kit)
<b>BBRA</b>	Bore Brush Abrasive
<b>BBRN</b>	Bore Brush Nylon
<b>BBRS</b>	Bore Brush Stainless Steel
<b>BFS</b>	Brush Fastening Screw
<b>BRA</b>	Bore Rammer Assembly
<b>BRS</b>	Brush Ring Spacer
<b>CBA</b>	Control Box Assembly
<b>CBRA</b>	Chamber Brush Abrasive
<b>CBRN</b>	Chamber Brush Nylon
<b>CBRS</b>	Chamber Brush Stainless Steel
<b>CBS</b>	Chamber Brush Screw Assembly
<b>CBSH</b>	Control Box Supply Hose
<b>CCK</b>	Centering Cone
<b>CRA</b>	Chamber Rammer Extension
<b>FDA</b>	Foam Dispenser Assembly
<b>FRL</b>	Filter Regulator Lubricator
<b>OCS</b>	Ordnance Cleaning System
<b>OIL</b>	Oil Dispenser Assembly
<b>TKA</b>	Tool Kit Assembly
<b>CYL</b>	Cylinder Assembly
<b>SRA</b>	Short Rammer Assembly
<b>CAS</b>	Pelican Case
<b>CBFS</b>	Chamber Brush Fastening Screw
<b>CBE</b>	Chamber Brush Extension

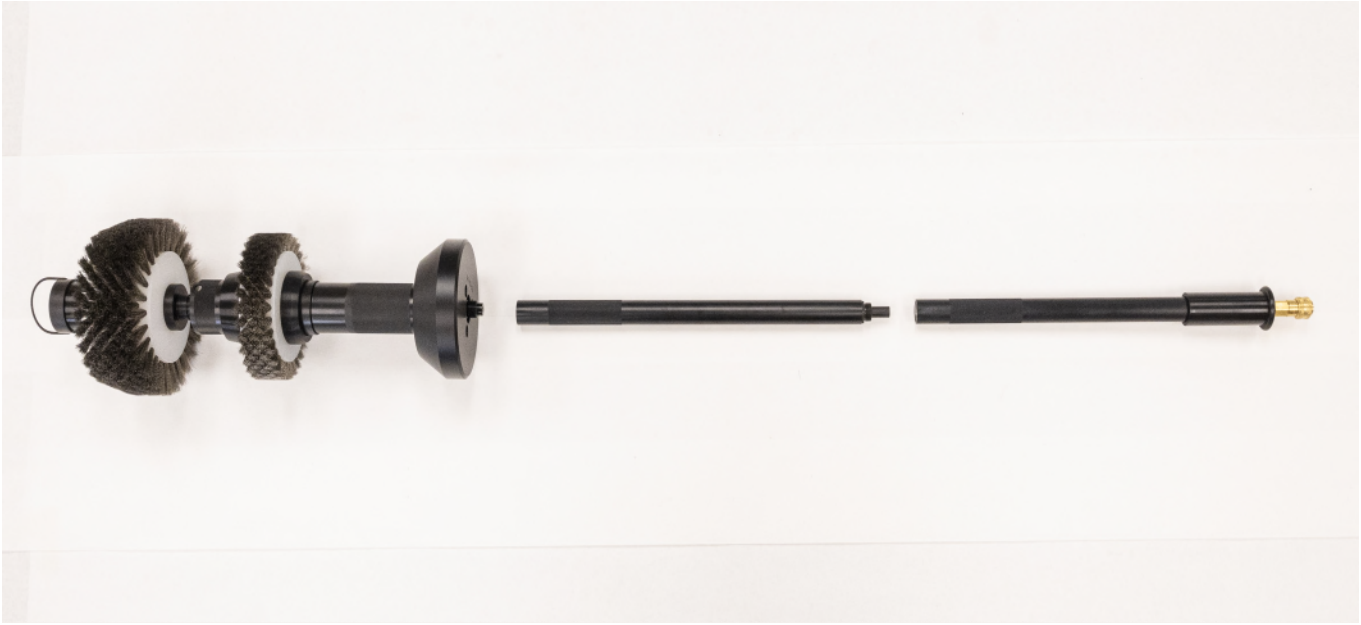
## 11. PARTS PHOTO GALLERY



**CONTROL BOX ASSEMBLY & CONTROL BOX SUPPLY HOSE**



**BORE BRUSH -CYLINDER ASSEMBLY-BORE RAMMER ASSEMBLY**



**COMPLETE ASSEMBLY WITH ALL COMPONENTS**



**ATTACHING OIL DISPENSER ASSEMBLY TO BRUSH FASTENING SCREW**

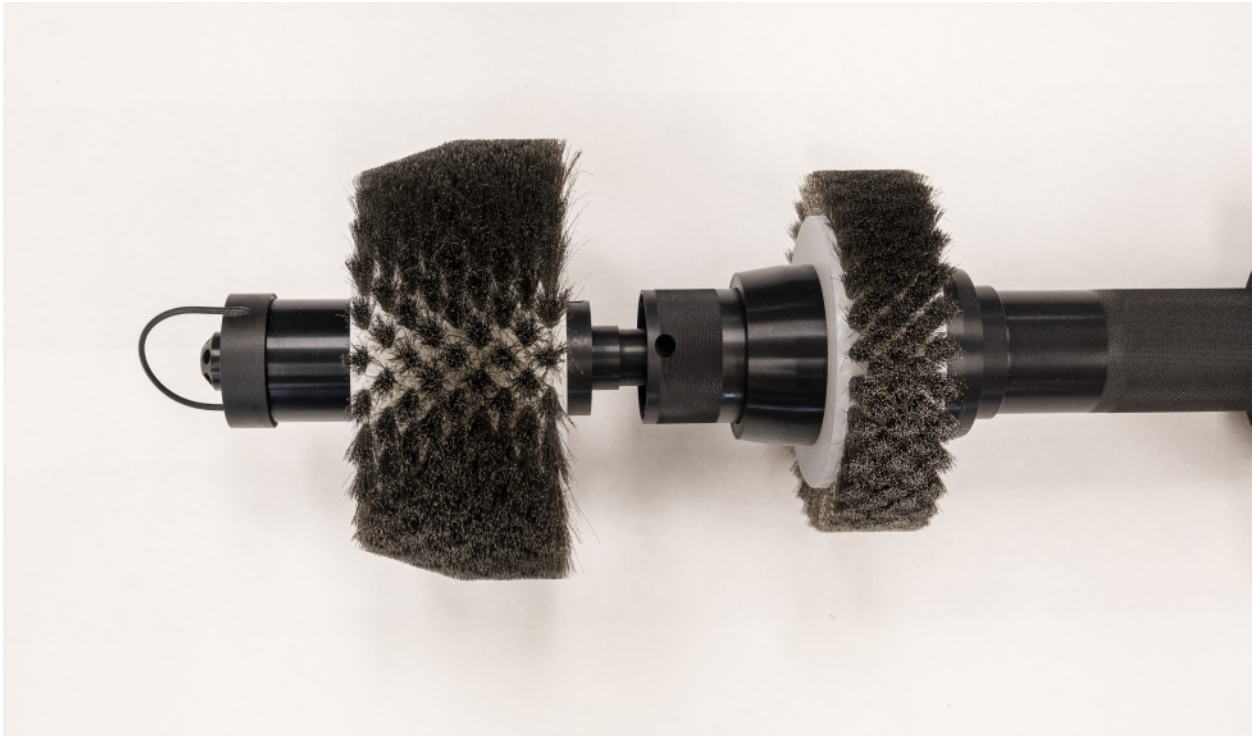


**ATTACHING OIL DISPENSER TO CHAMBER BRUSH FASTENING SCREW**

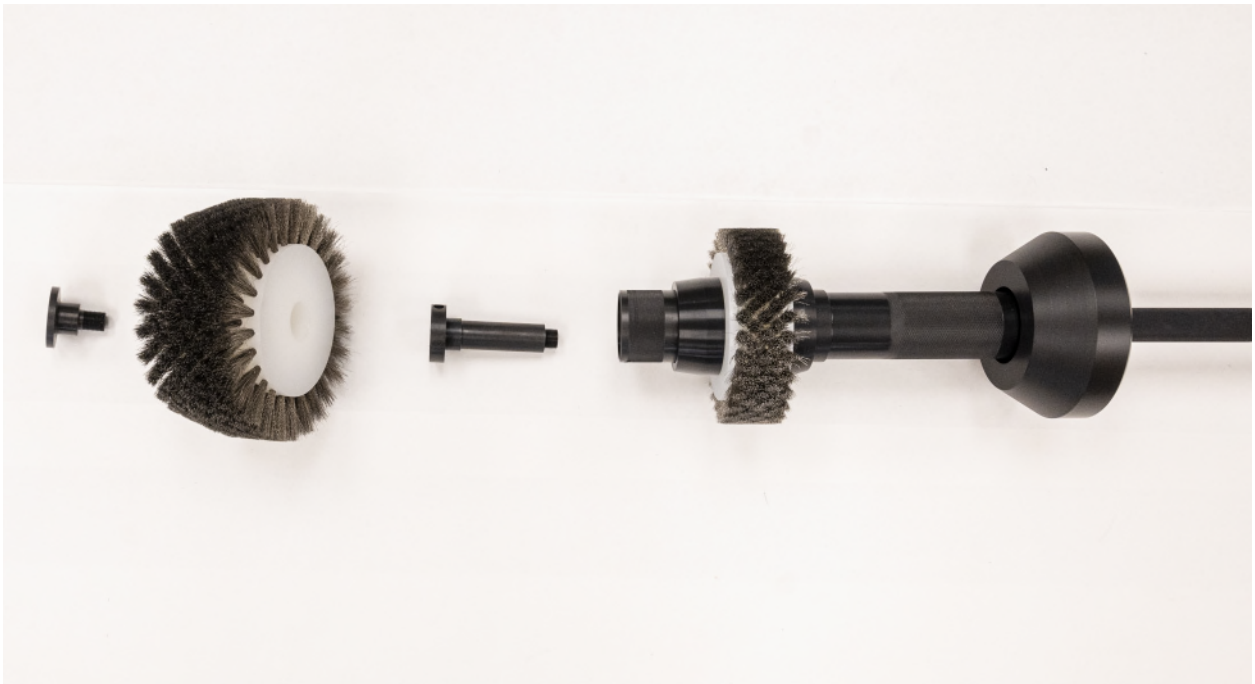


**CHAMBER BRUSH EXTENSION ATTACHED TO BRUSH FASTENING SCREW**

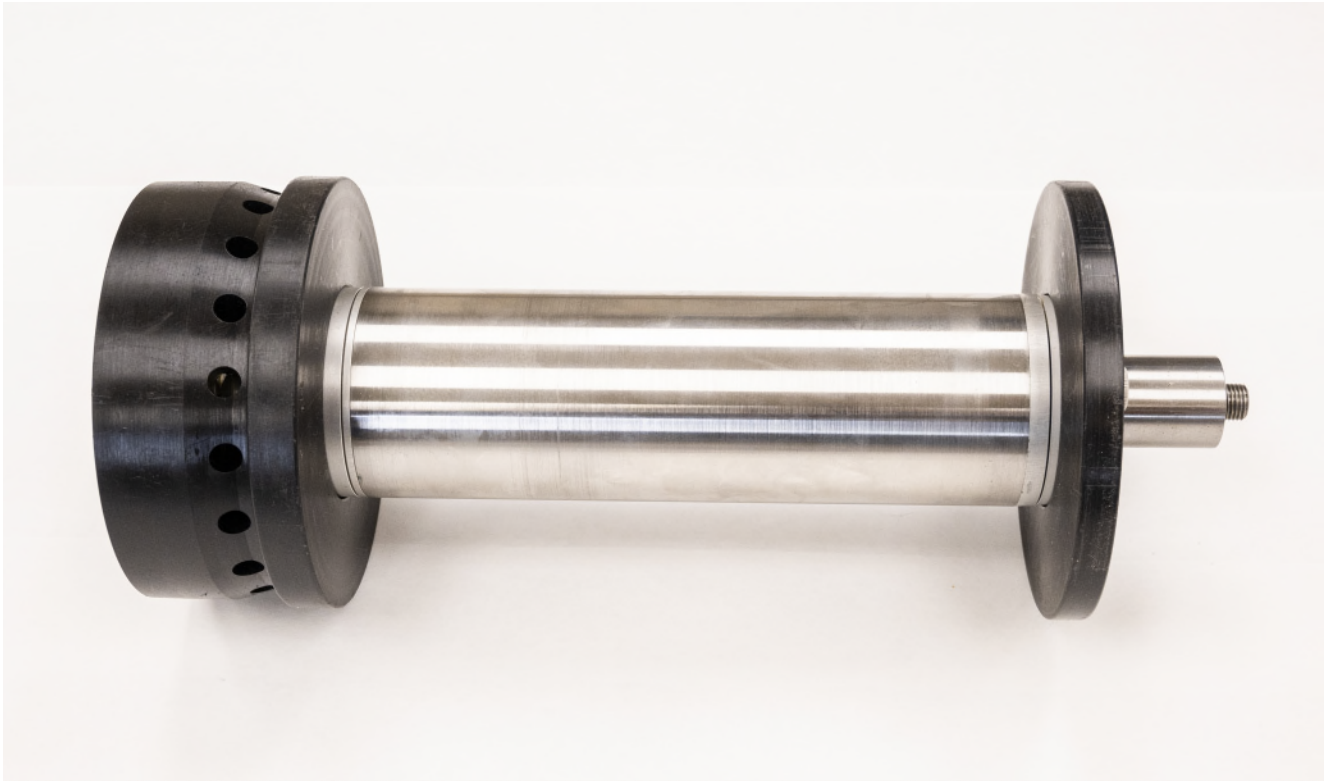




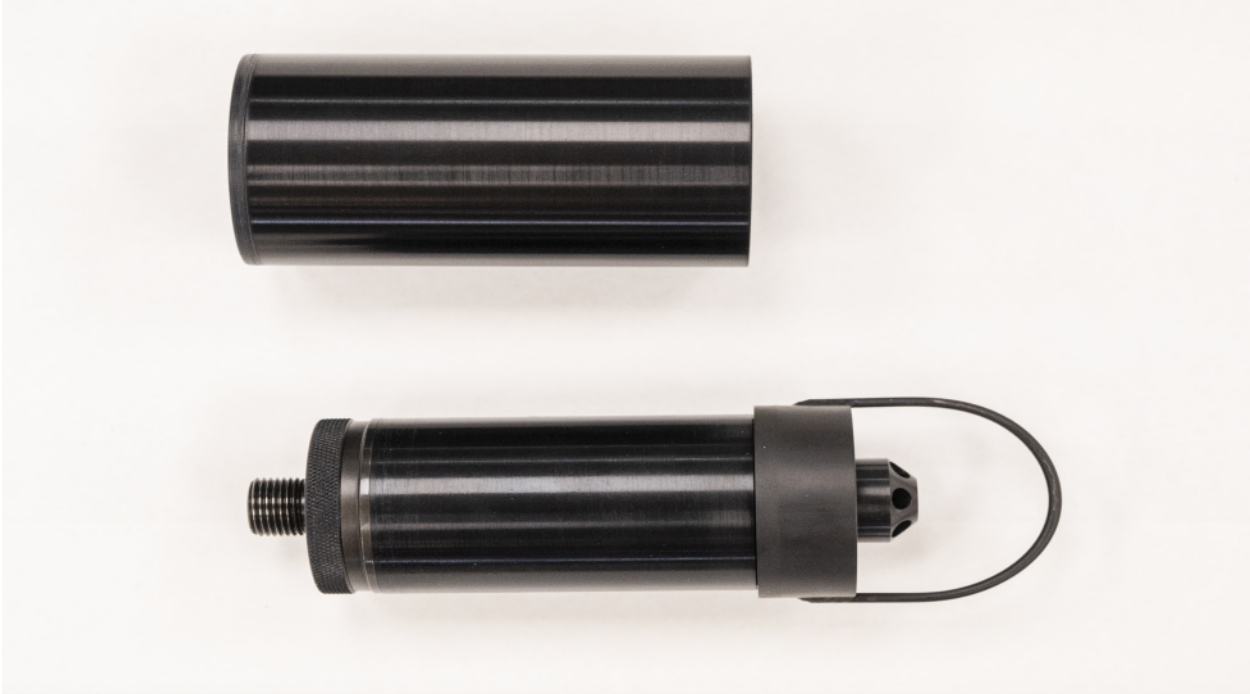
**OIL DISPENSER ATTACHED TO CHAMBER BRUSH SCREW**



**CHAMBER BRUSH EXTENSION, BRUSH, AND BRUSH FASTENING SCREW**



**FOAM DISPENSER ASSEMBLY**



**OIL DISPENSER ASSEMBLY AND STORAGE VESSEL**