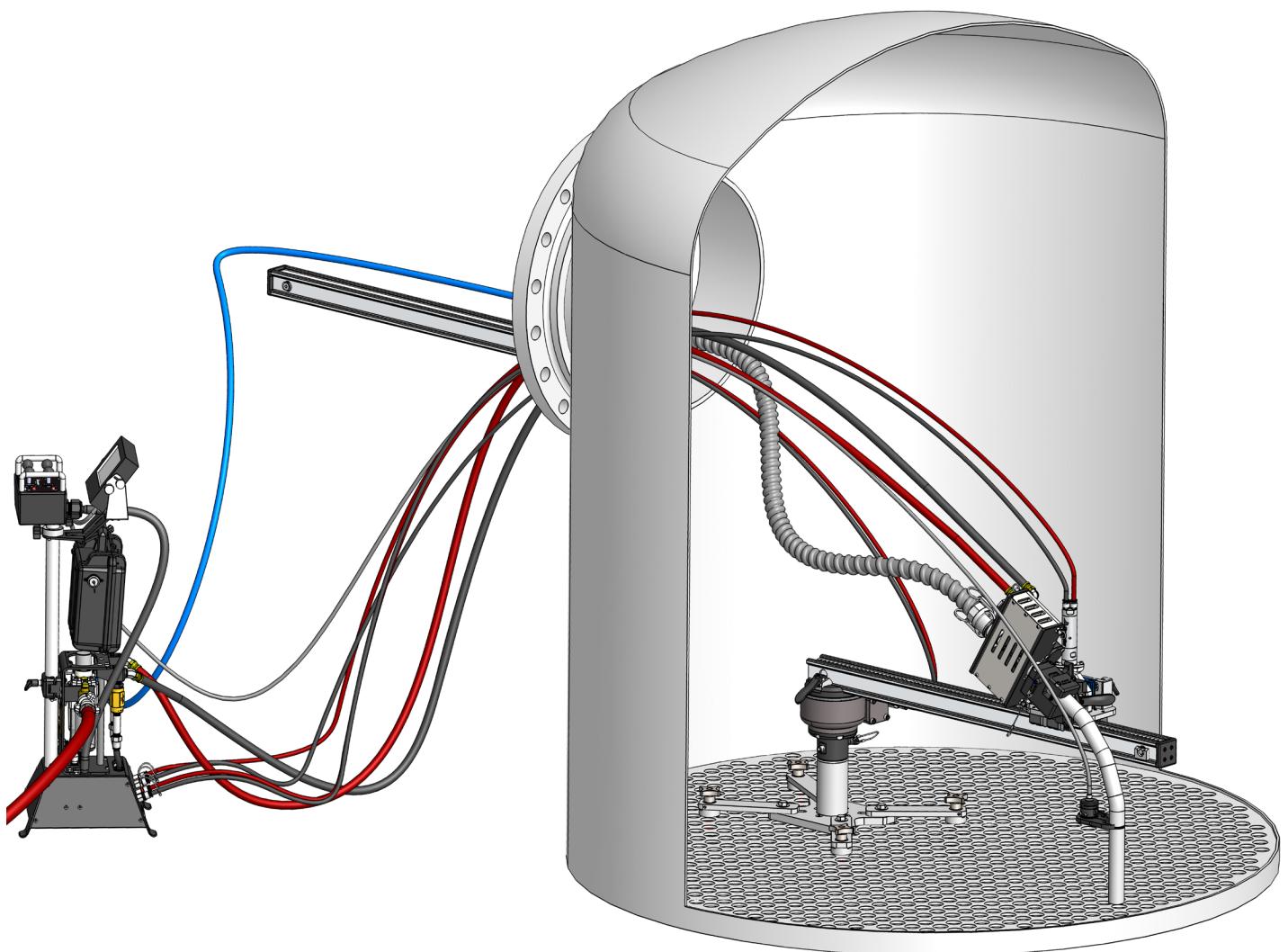




# PROPOSITIONER™ (PROP-DBP) ACCESSORY USER MANUAL



PL 688 REV D  
(08/2020)

## TABLE OF CONTENTS

SUB-ASSEMBLY COLOR CODE DIAGRAM.....	4
--------------------------------------	---

MANUFACTURER'S INFORMATION .....	5
----------------------------------	---

SPECIFICATIONS .....	5
DESCRIPTION OF EQUIPMENT AND INTENDED USE .....	5
KEY FEATURES.....	5
EC DECLARATION OF CONFORMITY.....	6

WARNING AND SAFETY INSTRUCTIONS .....	8
---------------------------------------	---

OPERATOR TRAINING.....	8
PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS.....	8
SAFETY LABEL DEFINITIONS.....	8
PRE-RUN SAFETY CHECK .....	9

PACKAGE CONTENTS - OVERVIEW .....	10
-----------------------------------	----

PROP-DBP-XXX PACKAGE CONTENTS .....	10
OPTIONAL EQUIPMENT .....	11

<b>SUB-ASSEMBLY 1 (ABX-PRO, ROLLERS, COLLET BLOCK, GUIDE TUBE) ...</b>	<b>12</b>
--	-----------

CHANGE ROLLERS IN THE ABX-PRO TRACTOR.....	12
INSTALL COLLET BLOCK.....	13
INSTALL ANGLED GUIDE TUBE.....	14
INSTALL CAMERA AND CAMERA MOUNT ON GUIDE TUBE .....	15



<b>SUB-ASSEMBLY 2 (LINEAR DRIVE HANDLE).....</b>	<b>15</b>
--	-----------

REPLACE THE ADJUSTABLE HANDLE ON THE LINEAR DRIVE .....	15
---	----



ASSEMBLE THESE BEFORE  
"POSITIONER SET-UP INSIDE  
DOMED BUNDLE"

<b>SUB-ASSEMBLY 3 (RAIL MOUNT, SNOUT, AND HIGH PRESSURE HOSE)....</b>	<b>16</b>
---	-----------

INSTALL BANSHEE TOOL .....	16
INSTALL SNOUT ONTO RAIL MOUNT .....	16
LOADING LANCE AND TOOL THROUGH SNOUT .....	16



<b>SUB-ASSEMBLY 4 (CONTROL BOX AND CAMERA).....</b>	<b>17</b>
---	-----------

CONNECT THE PNEUMATIC LINES TO THE CONTROL BOX.....	17
CONNECT THE MONITOR MOUNT, MONITOR, AND POWER PACK .....	18



<b>SUB-ASSEMBLY 5 (OPTIONAL DUMP SYSTEM SET-UP) .....</b>	<b>19</b>
---	-----------

CONNECT FOOT CONTROLLED DUMP .....	19
CONNECT HAND CONTROLLED DUMP.....	19

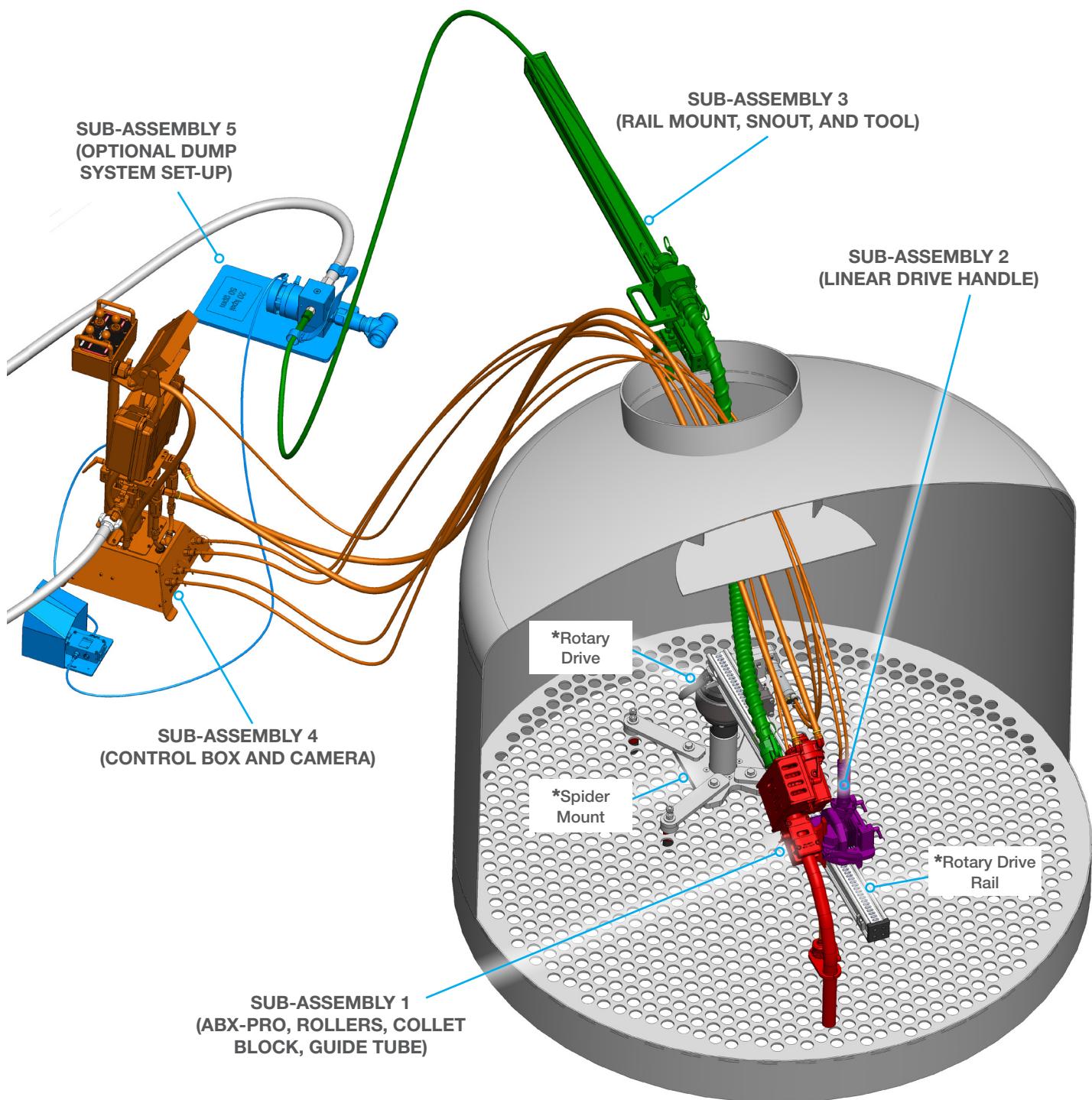
## TABLE OF CONTENTS

<b>POSITIONER SET-UP INSIDE DOMED BUNDLE .....</b>	<b>20</b>
INSTALL SPIDER PLATE ONTO TUBE FACE .....	20
INSTALL ROTARY DRIVE AND DRIVE RAIL ONTO SPIDER PLATE .....	22
INSTALL LINEAR DRIVE AND RAIL PLUG ON DRIVE RAIL.....	23
INSTALL SUB-ASSEMBLY 1 ON THE LINEAR DRIVE.....	24
SET THE DRIVE RAIL AND LINEAR DRIVE IN PLACE.....	25
SET-UP DIMENSIONS FOR A 69" (1753 mm) TUBE FACE.....	26
<b>CONTROL BOX CONNECTIONS TO POSITIONER.....</b>	<b>28</b>
AIR LINE CONNECTIONS FROM CONTROL BOX TO POSITIONER.....	28
CAMERA CONNECTION FROM POWER PACK TO POSITIONER.....	28
<b>RAIL MOUNT INSTALLATION .....</b>	<b>29</b>
ICM (TOP MOUNT) RAIL MOUNT TO MAN WAY FLANGE.....	29
DELTA T (SIDE MOUNT) RAIL MOUNT TO MAN WAY FLANGE.....	30
<b>HIGH PRESSURE HOSE AND SNOUT INSTALLATION .....</b>	<b>31</b>
LOADING THE H.P. HOSE INTO THE ABX-PRO HOSE TRACTOR.....	31
INSTALL THE SNOUT ONTO THE ABX-PRO HOSE TRACTOR .....	31
<b>OPERATION.....</b>	<b>32</b>
CONTROL BOX SETTINGS.....	32
CONTROL PANEL OPERATION.....	32
TEST RUN AND RUN PROCEDURES .....	33
<b>MAINTENANCE AND TROUBLESHOOTING.....</b>	<b>34</b>
<b>STORAGE, TRANSPORTATION, AND HANDLING .....</b>	<b>34</b>
<b>PART DIAGRAMS .....</b>	<b>35</b>
PART DIAGRAMS TABLE OF CONTENTS .....	35
<b>TERMS AND CONDITIONS AND WARRANTY INFORMATION .....</b>	<b>52</b>

## SUB-ASSEMBLY COLOR CODE DIAGRAM

### REVIEW THIS BEFORE STARTING ASSEMBLY:

THE FIVE COLOR CODED SUB-ASSEMBLIES NEED TO BE ASSEMBLED BEFORE CONNECTING EVERYTHING TO THE DOMED BUNDLE. THE COLORS ARE ASSOCIATED TO THEIR RESPECTIVE SECTIONS IN THIS MANUAL. THE HOSE CONNECTIONS WILL BE MADE IN A LATER SECTIONS OF THIS MANUAL



\*INDIVIDUAL COMPONENTS  
TO BE INSTALLED LATER IN  
THE MAIN INSTALLATION

StoneAge Inc.  
466 S. Skylan Drive  
Durango, CO 81303, USA  
Phone: 970-259-2869  
Toll Free: 866-795-1586  
[www.stoneagetools.com](http://www.stoneagetools.com)

StoneAge NL  
Reedijk 7Q  
3274 KE Heinenoord  
Netherlands  
(+31) (0) 85 902 73 70  
[sales-NL@stoneagetools.com](mailto:sales-NL@stoneagetools.com)

This manual must be used in accordance with all applicable national laws. The manual shall be regarded as a part of the machine and shall be kept for reference until the final dismantling of the machine, as defined by applicable national law(s). Please see separate User Manuals for the ABX-PRO Hose Tractor and PROP-300 Positioner.

For detailed up to date information on these components.

<https://www.stoneagetools.com/manuals>

<b>SPECIFICATIONS</b>			
<b>PROP-DBP POSITIONER</b>		<b>Imperial</b>	<b>Metric</b>
Weights	ABX-PRO Tractor, Guide Tube/Collet Block, and 12in Guide Tube	27 lbs	12.2 kg
	Spider Plate Mount	6 lbs	2.7 kg
	Linear Drive	11.5 lbs	5.2 kg
	Rotary Drive	32 lbs	14.5 kg
Dimensions	Standard Slotted Rail	2.5 x 2.5 x 45 in.	64 x 64 x 1219 mm
	Slotted Rail with extension	2.5 x 2.5 x 61 in.	64 x 64 x 1549 mm
	Spider Plate Mount	11 x 7 x 4 in.	279 x 178 x 102 mm
	Linear Drive	13 x 8 x 6 in.	330 x 203 x 152 mm
	Rotary Drive	8 x 11 x 9 in.	203 x 279 x 229 mm
	Usable Exchanger Diameter Range Options	60 , 69 , 84 in. or 96 in. with rail extension	1524 , 1753, 2134 mm or 2438 mm with rail extension
Power	Camera System	Input power requirements 100-240V AC 1.8A	
<b>ABX-PRO TRACTOR</b>		For detailed up to date information on these components. <a href="https://www.stoneagetools.com/assets/pdf/manuals/ABX-PRO_manual.pdf">https://www.stoneagetools.com/assets/pdf/manuals/ABX-PRO_manual.pdf</a>	
<b>CB-PROP-X (-P or -S)</b>		For detailed up to date information on these components. <a href="https://www.stoneagetools.com/assets/pdf/manuals/PROP-300_manual.pdf">https://www.stoneagetools.com/assets/pdf/manuals/PROP-300_manual.pdf</a>	

#### DESCRIPTION OF EQUIPMENT AND INTENDED USE

The Domed Bundle Accessory for the ProPositioner can be vertically mounted to a variety of heat exchanger tube bundles and has pneumatic powered linear and rotary drives. It is intended to be used with AUTOBOX®(ABX-PRO) TRACTOR, Control Box (CB-PROP-P), and ProPositioner (PROP-300).

The ProPositioner has been designed to provide a lightweight, low cost, entry level, option for contractors just starting out with hands free waterblasting equipment.

#### KEY FEATURES:

- Modular system designed for portability and easy assembly
- Quick install with minimal tools
- Utilizes 2.5 in. (64 mm) aluminum slotted box rail
- Adjustable handles and Push-to-Connect air connections allow for quick adjustments.



## EC DECLARATION OF CONFORMITY

Manufacturer:

StoneAge Incorporated  
466 South Skylan Drive  
Durango, CO 81303  
USA

Authorized Representative:

StoneAge Netherlands BV  
Reedijk 7Q  
3274 KE Heinenoord  
Netherlands  
Bob Van Wordragen, Operations Manager StoneAge NL

Declare that:

ProPositioner for Domed Bundle (PROP-DBP) and Control Box (CB-PROP-P)  
for high pressure water cleaning of system parts.

### Is compliant with the following Directives and Standards:

Directive 2006/42/EC (Machinery Directive)

EN ISO 12100:2010 (E) Safety of machinery – General principles for design – Risk assessment and risk reduction

The Technical File for ProPositioner for Domed Bundle (PROP-DBP) and Control Box (CB-PROP-P) is maintained at:  
StoneAge Incorporated, 466 South Skylan Drive, Durango, CO 81303, USA and was compiled by the Engineering Manager.  
The Technical File is available through the Authorized Representative.

This Declaration of Conformity is issued under the exclusive responsibility of StoneAge Incorporated.

StoneAge Incorporated, Durango, CO, USA  
Adam Markham, Engineering Manager, Robotics

Date

11/01/2019



PAGE LEFT BLANK INTENTIONALLY

## WARNING AND SAFETY INSTRUCTIONS

### OPERATOR TRAINING

Managers, Supervisors, and Operators MUST be trained in Health and Safety Awareness of High-pressure Water Jetting and hold a copy the Water Jetting Association (WJA) Code of Practice, or equivalent (see [www.waterjetting.org.uk](http://www.waterjetting.org.uk)).

Operators MUST be trained to identify and understand all applicable standards for the equipment supplied. Operators should be trained in manual handling techniques to prevent bodily injury.

StoneAge has designed and manufactured this equipment considering all hazards associated with its operation. StoneAge assessed these risks and incorporated safety features in the design. StoneAge **WILL NOT** accept responsibility for the results of misuse.

**IT IS THE RESPONSIBILITY OF THE INSTALLER/OPERATOR** to conduct a job specific risk assessment prior to use. Job specific risk assessment MUST be repeated for each different set up, material, and location.

The risk assessment MUST conform to the Health and Safety at Work Act 1974 and other relevant Health and Safety legislation.

### PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Use of Personal Protective Equipment (PPE) is dependent on the working pressure of water and the cleaning application. Managers, Supervisors, and Operators MUST carry out a job specific risk assessment to define the exact requirements for PPE. See Protective Equipment for Personnel (Section 6) of WJTA-IMCA's Recommended Practices For The Use Of High-pressure Waterjetting Equipment for additional information.

Hygiene - Operators are advised to wash thoroughly after all waterjetting operations to remove any waterblast residue which may contain traces of harmful substances.

First aid provision - users MUST be provided with suitable first aid facilities at the operation site.

Operators MUST read, understand, and follow the Operational and Training Requirements (Section 7.0) of WJTA-IMCA's Recommended Practices For The Use Of High-pressure Waterjetting Equipment, or equivalent.

Operators MUST read, understand and follow the Warnings, Safety Information, Assembly, Installation, Connection, Operation, Transport, Handling, Storage, and Maintenance Instructions detailed in this manual.

The risk assessment MUST consider potential material or substance hazards including:

- Aerosols
- Biological and microbiological (viral or bacterial) agents
- Combustible materials
- Dusts
- Explosion
- Fibers
- Flammable substances
- Fluids
- Fumes
- Gases
- Mists
- Oxidizing Agents

### PPE may include:

- **Eye protection:** Full face visor
- **Foot protection:** Kevlar® brand or steel toe capped, waterproof, non-slip safety boots
- **Hand protection:** Waterproof gloves
- **Ear protection:** Ear protection for a minimum of 85 dBA
- **Head protection:** Hard hat that accepts a full face visor and ear protection
- **Body protection:** Multi-layer waterproof clothing approved for waterjetting
- **Hose protection:** Hose shroud
- **Respiratory protection:** May be required; refer to job specific risk assessment

## WARNING AND SAFETY INSTRUCTIONS

### ⚠ WARNING

Operations with this equipment can be potentially hazardous. Caution MUST be exercised prior to and during machine and water jet tool use. Please read and follow all of these instructions, in addition to the guidelines in the WJTA Recommended Practices handbook, available online at [www.wjta.org](http://www.wjta.org). Deviating from safety instructions and recommended practices can lead to severe injury and/or death.

- Do not exceed the maximum operating pressure specified for any component in a system.
- The immediate work area MUST be marked off to keep out untrained persons.
- Inspect the equipment for visible signs of deterioration, damage, and improper assembly. Do not operate if damaged, until repaired.
- Make sure all threaded connections are tight and free of leaks.
- Users of the ProPositioner PROP-DBP and accessories MUST be trained and/or experienced in the use and application of high-pressure technology and cleaning, as well as all associated safety measures, according to the WJTA Recommended Practices for the use of High-pressure Waterjetting Equipment.
- An anti-withdrawal device (back-out preventer) MUST be used at all times. The back-out prevention device is the Hose Stop Collet located within the Hose Guide Assembly. StoneAge offers several different size Hose Stop Collets. The Collet Size Reference guide is located on the top of the ABX-PRO Hose Tractor.
- The Control Box should be located in a safe location where the Operator has good visibility of the operation. The ProPositioner PROP-DBP and Control Box MUST be supervised at all times and should never be left unattended.
- Always de-energize the system before servicing or replacing any parts. Failure to do so can result in severe injury and/or death.
- When moving the ProPositioner PROP-DBP and accessories, lift with care to prevent bodily injury.

#### HIGH-PRESSURE HOSE

- The ABX-PRO Hose Tractor is designed to be used with Parker Pro-Lance® and/or Spir Star Blast-Pro® hose ends. Standard hose ends may not fit into Hose Tractor and/or Guide Tubes.

#### NOTE: MAXIMUM hose end diameter must NOT exceed .74 in. (19 mm)

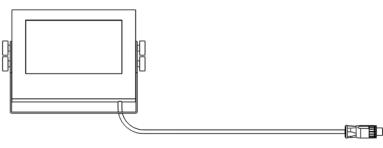
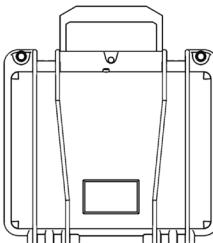
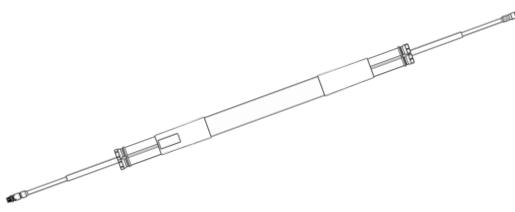
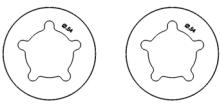
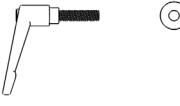
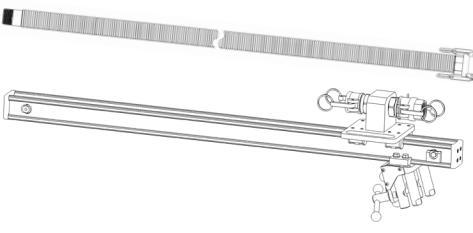
- Only high quality hoses intended for waterblast applications should be used as high-pressure hoses. Pressure rating of high-pressure hoses **MUST NEVER** be exceeded.
- Do not use a shrouded hose or hose with a steel protective cover. This will cause severe damage to the Drive Rollers.
- Verify that the high-pressure hose is properly installed in the back-out preventer. Operate the high-pressure hose and waterjet tool at full pressure to test the clamp force. Proper clamp force will provide good control of the hose in forward and reverse directions, and keep the hoses synchronized at full retract and full extend positions.
- Always flush out hoses before attaching tools to keep particle debris from damaging the tool.

#### PRE-RUN SAFETY CHECK

Refer to WJTA-IMCA's, Recommended Practices For The Use Of High-pressure Waterjetting Equipment and/or The Water Jetting Association's, WJA Code of Practice for additional safety information.

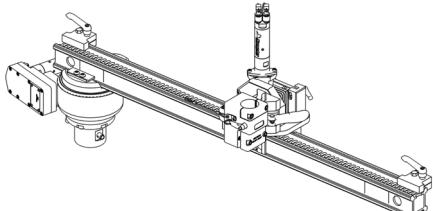
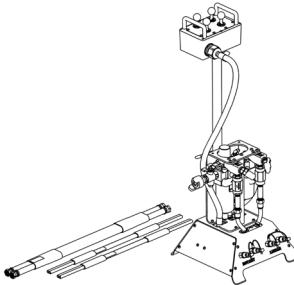
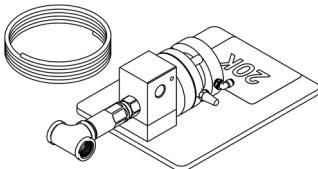
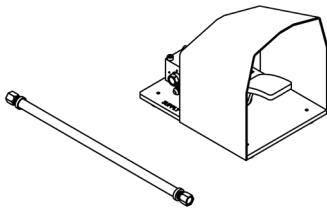
- Complete a job specific risk assessment and act on the resulting actions.
- Adhere to all site specific safety procedures.
- Ensure the waterblasting zone is properly barricaded and that warning signs are posted.
- Ensure the work place is free of unnecessary objects (e.g. loose parts, hoses, tools).
- Ensure all Operators are using the correct Personal Protective Equipment (PPE).
- Check that the air hoses are properly connected and tight.
- Check all hoses and accessories for damage prior to use. Do not use damaged items. Only high quality hoses intended for waterblast applications should be used as high-pressure hoses. See the "Hose" section in this manual for more detail.
- Check all high-pressure threaded connections for tightness.
- **• \*\*Ensure that any anti-withdrawal devices (back-out preventers), whip checks (hose whips), and all other applicable safety devices are installed and set-up properly.\*\***
- Ensure the doors of the ABX-PRO Hose Tractor are closed and securely latched.
- Test the Control Box before operating the system with high-pressure water to verify the control valves move the hose in the intended direction, and that the dump valve and hose clamp are working properly.
- Ensure that Operators never connect, disconnect, or tighten hoses, adapters, or accessories with the high-pressure water pump unit running.
- Ensure no personnel are inside the dome and/or hydroblasting zone.

## PROP-DBP-XXX-PKG CONTENTS

PART ID	PART ID
	CAM 102-V2 MONITOR CB 488 MONITOR MOUNT
	CAM 200-AC-US AC POWER PACK CAM 220 CAMERA HOUSING CAM 210 CIRCULAR CONNECTOR CAM 245 CAMERA CABLE
	CB 755-15-C PRODRIVE SUPPLY HOSE WITH CAMERA CABLE PROP 430-001 SPIDER PLATE ASSEMBLY & PROP 187-XXX-K EXPANSION PLUG KIT
	PRO 174-54 ROLLERS FOR 8/4 HOSE PROP 460-BN24 GUIDE WELDMENT BN24
	PROP 337 ADJUSTABLE HANDLE PROP 339 WASHER PROP 440-24 CAM MOUNT FOR DBP
	DBP 305 RAIL PLUG PROP 580-1.33-001 2.5" BOX RAIL EXTENSION KIT
	*PROP 420-ICM RAIL FLANGE MOUNT ASSEMBLY FOR TOP MOUNT DOMED BUNDLES *PROP 420-DT RAIL FLANGE MOUNT ASSEMBLY FOR SIDE MOUNT DOMED BUNDLES

\*ONE RAIL MOUNT ASSEMBLY FOR EITHER ICM (TOP MOUNT) OR DT (SIDE MOUNT) INSTALLATIONS

SEE "PART DIAGRAMS" SECTION AT THE BACK OF THIS MANUAL FOR MORE DETAILED PART BREAK DOWNS.

PART ID	PART ID
	<p>▲ PROP-300 PROPOSITIONER <i>(SEE PROP-300 USER MANUAL FOR MORE INFORMATION)</i></p>
	<p>▲ CB-PROP-P CONTROL BOX- PEDESTAL STYLE WITH UMBILICAL HOSE CONNECTIONS</p>
	<p>● ACDA 61020019-K AIR ACTUATED DUMP VALVE WITH FITTINGS AND 1/4" TUBING</p>
	<p>● FPA-SKR FOOT PEDAL DUMP WITH PRESSLOCK FITTINGS AND 1/4" TUBING</p>

**▲ THE PROP-DBP ACCESSORY IS DESIGNED TO BE USED WITH THESE ITEMS.  
THEY ARE NECESSARY TO THE FUNCTION OF THE ENTIRE PROP-DBP SYSTEM.**  
**● THESE ARE OPTIONAL ACCESSORIES PROP-DBP SYSTEM.**

## SUB-ASSEMBLY 1 (ABX-PRO, ROLLERS, COLLET BLOCK, AND GUIDE TUBE)

### REMOVE ROLLERS IN ABX-PRO TRACTOR

The standard roller size on the ABX-PRO Tractor is Ø.46 IN. The PROP-DBP accessory comes with a set of Ø.54 IN. replacement rollers to accommodate 8/4 hose.

The replacement rollers must be installed on the ABX-PRO Tractor before inserting it into the man way. This process will be typical for Poly Roller replacements on the ABX-PRO Tractor Assembly.

#### ⚠ WARNING

Always de-energize the system before servicing or replacing any parts. Failure to do so can result in severe injury and/or death.

Keep hands, hair, and clothing clear of rotating parts.

1. Open the back cover of the ABX-PRO Tractor by pulling the top two Quick Release Pins in the outward direction. **(Figure 1)**
2. Push the Adjustable Handle in the counterclockwise direction to loosen the CAM Lever. Push the CAM Lever in the counterclockwise direction, moving the indicator pin to “Disengaged”. **(Figure 2)**
3. Loosening the Cam Lever opens up the space between the Roller Assemblies. **(Figure 3)**
4. Using a 1/4" Hex Key, remove the Screws, Roller Washers, Outer Hub Plates, and Rollers from the Idler and Drive Hubs. **(Figure 4)**

FIGURE 1

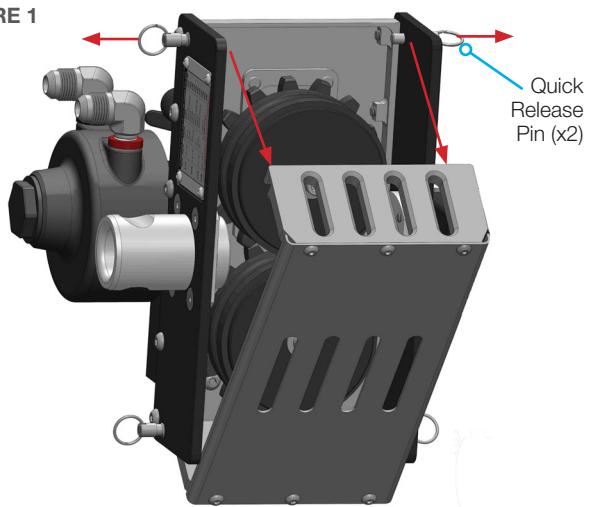


FIGURE 2

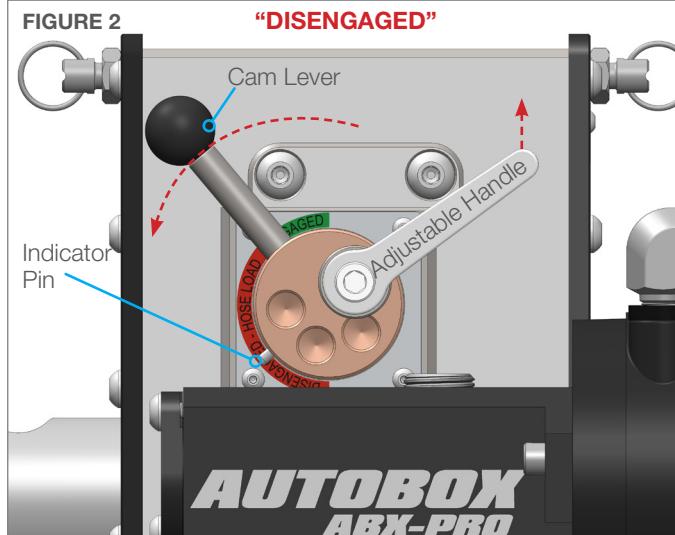


FIGURE 3

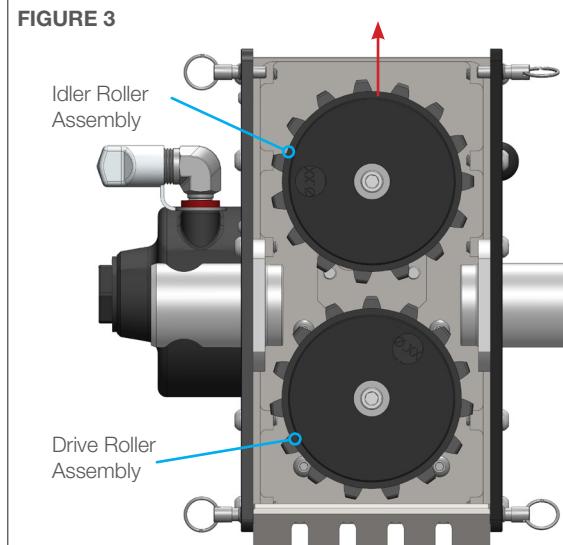
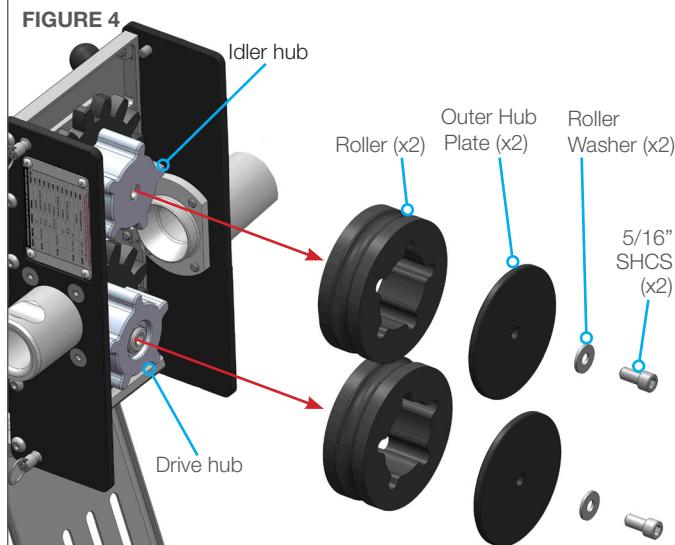


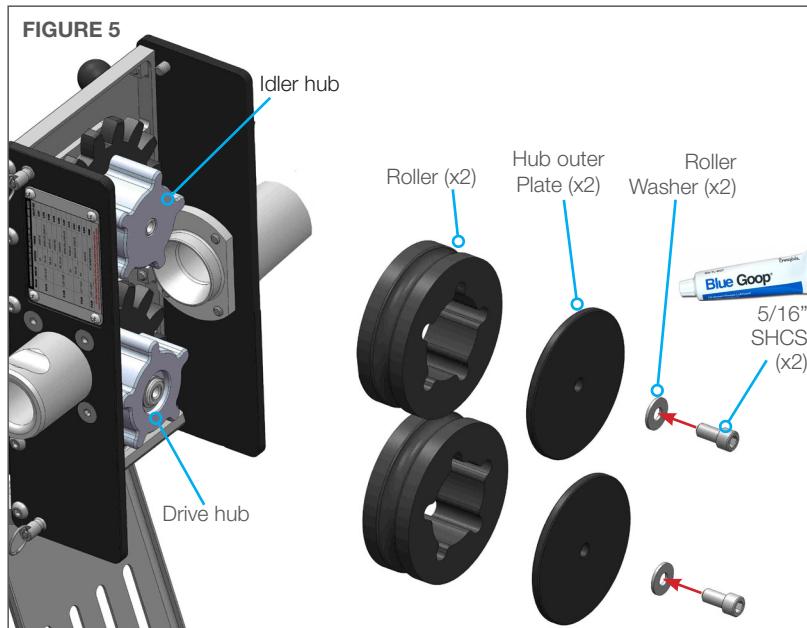
FIGURE 4



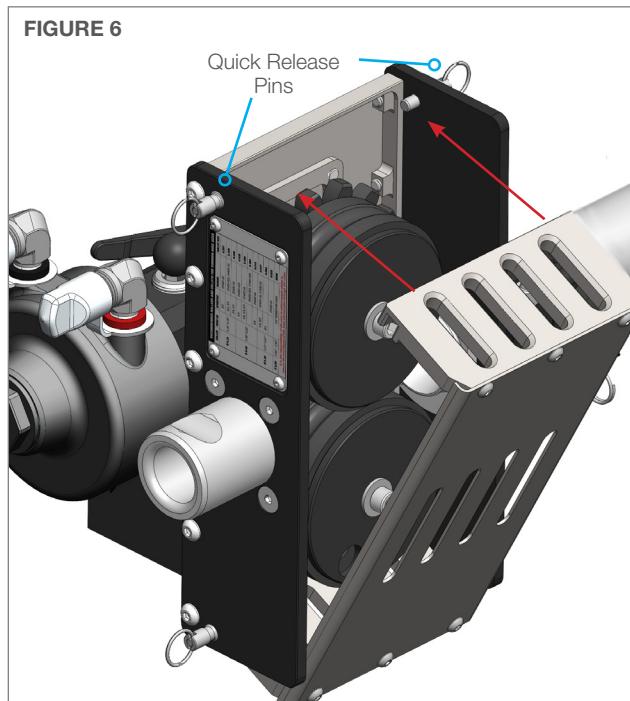
## SUB-ASSEMBLY 1 (ABX-PRO, ROLLERS, COLLET BLOCK, AND GUIDE TUBE)

### INSTALL ROLLERS IN ABX-PRO TRACTOR

1. Slide the PRO 174-54 Poly Rollers onto the Drive and Idler Hubs. Using a 1/4" Hex Key, fasten the Outer Hub Plates and Roller Washers onto the Rollers with two 5/16" socket head cap screws. Use anti-seize on the threads of the screws. (**Figure 5**)



2. Push the back cover up into the closed position and secure the two Quick Release Pins on the top of the ABX-PRO Tractor. (**Figure 6**)



## SUB-ASSEMBLY 1 (ABX-PRO, ROLLERS, COLLET BLOCK, AND GUIDE TUBE)

### INSTALL THE COLLET BLOCK ASSEMBLY

1. Remove the Slide Block with a 6mm hex key. Rotate it so that the end with the most distance from the screws is pointing down. Align the holes in the Slide Block with the holes in the Collet Block as shown in **(Figure 7)**. Fasten with the two screws that were removed.
2. Loosen the Collet Block Cap with a 1/4" hex key and slide the Collet Block onto ABX-PRO Tractor Guide into the until it comes to a stop. The Air Fittings on the ABX-PRO Tractor should be opposite the Collet Block and the Slide Block should be on the same side ABX-PRO label. **(Figure 8)**

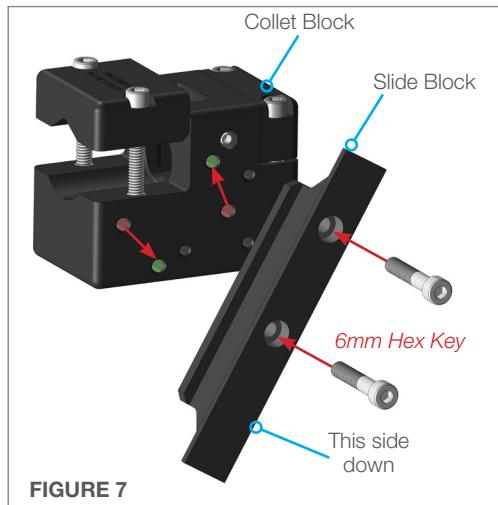


FIGURE 7

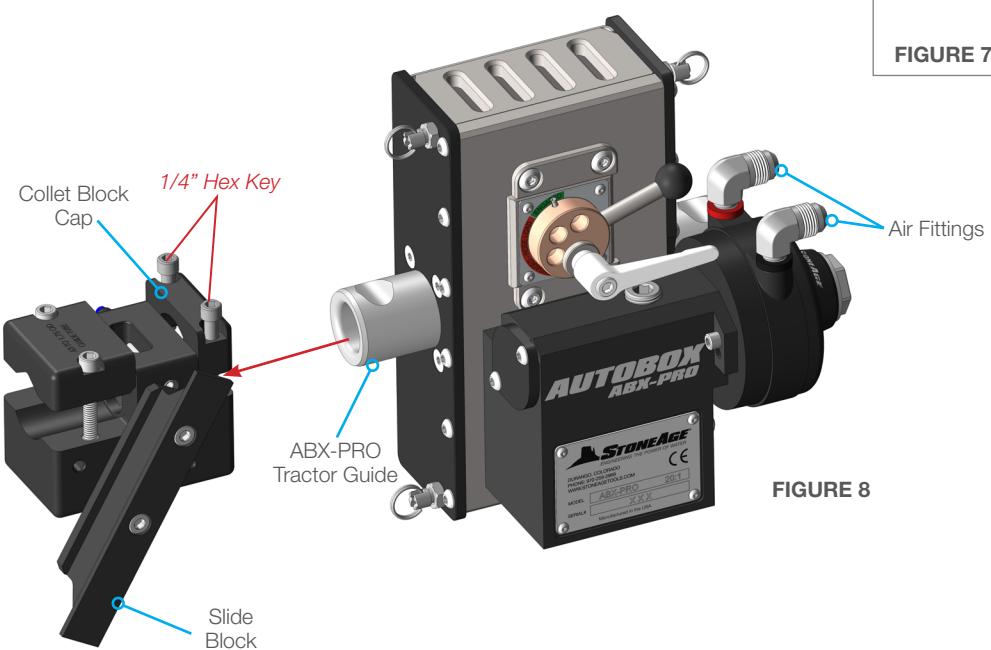


FIGURE 8

### INSTALL THE ANGLED GUIDE TUBE

3. Loosen the Collet Block Cap with a 1/4" hex key and slide the Guide Tube into the Collet Block until it comes to a stop. Orient the Guide Tube as shown in **(Figure 9)** and tighten the screws on the Collet Block Cap when the Guide Tube is in place.

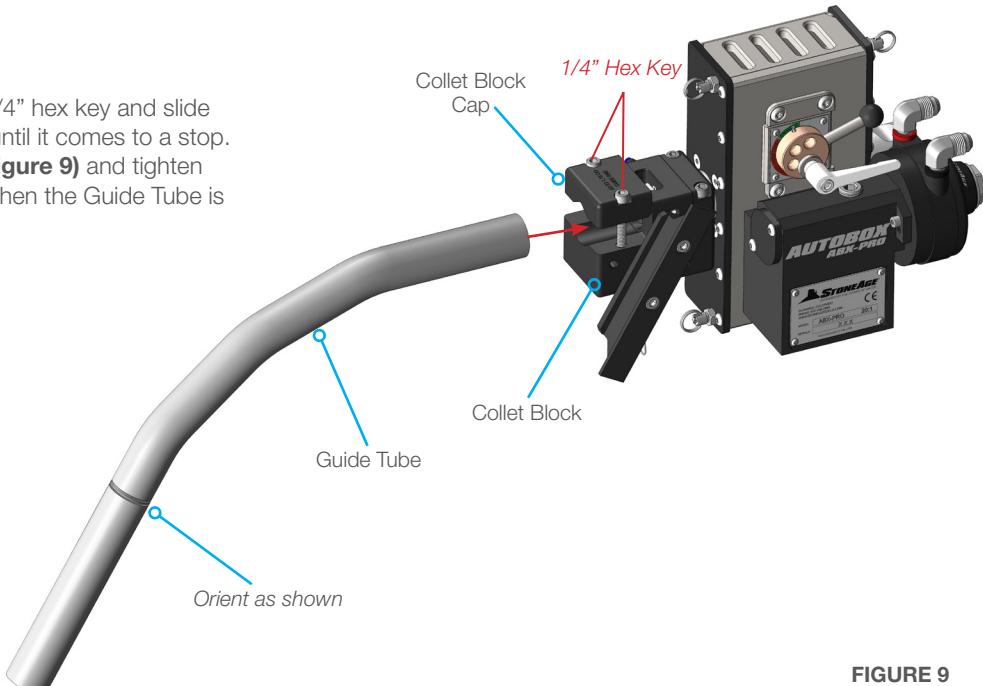


FIGURE 9

## SUB-ASSEMBLY 1 (ABX-PRO, ROLLERS, COLLET BLOCK, AND GUIDE TUBE)

### INSTALL THE CAMERA MOUNT ANGLED GUIDE TUBE

4. Loosen the adjustable handle on the Camera Mount and slide it up the guide tube.
5. Orient the Camera as shown and tighten the adjustable handle when in place. *The Camera has a wide viewing area, but may need to be repositioned on the Guide Tube after the whole assembly is complete. (Figure 10)*

**Set This Assembly aside when complete.**

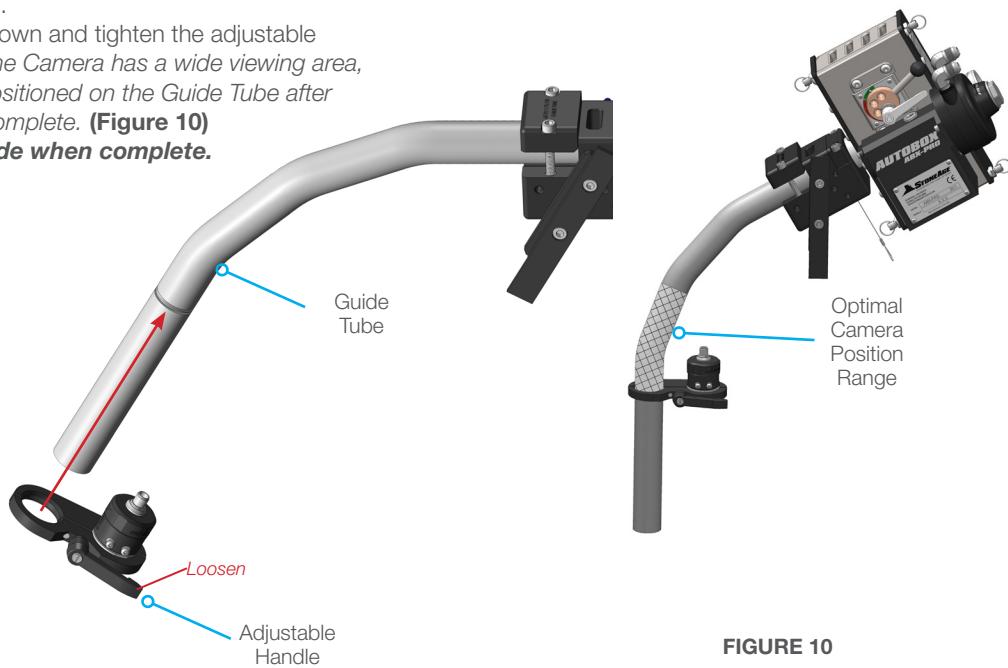


FIGURE 10

## SUB-ASSEMBLY 2 (LINEAR DRIVE HANDLE)

### REPLACE THE ADJUSTABLE HANDLE ON THE LINEAR DRIVE

1. Remove the PROP 336 Handle Assembly with a 5mm Hex Wrench. (Figure 11)
2. Lightly coat the threads of the PROP 337 Handle with Blue Goop® or other equivalent anti-seize.
3. Install the PROP 339 Washer with PROP 337 Handle by hand screwing it into the clamp block until it is tight. (Figure 12)

**Set This Assembly aside when complete.**

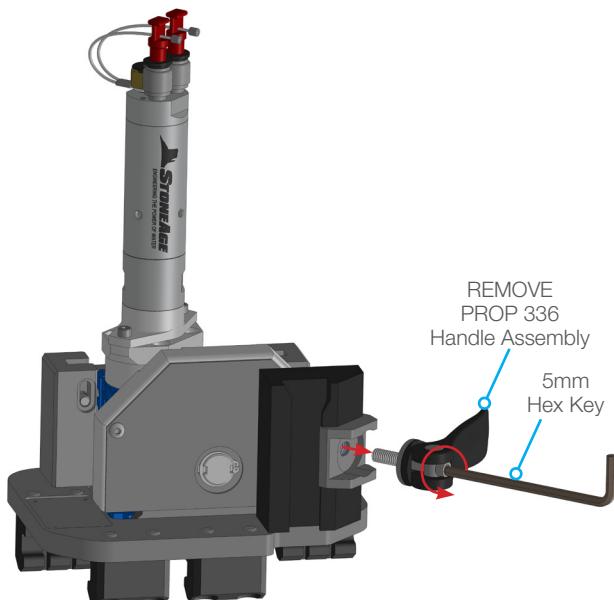


FIGURE 11

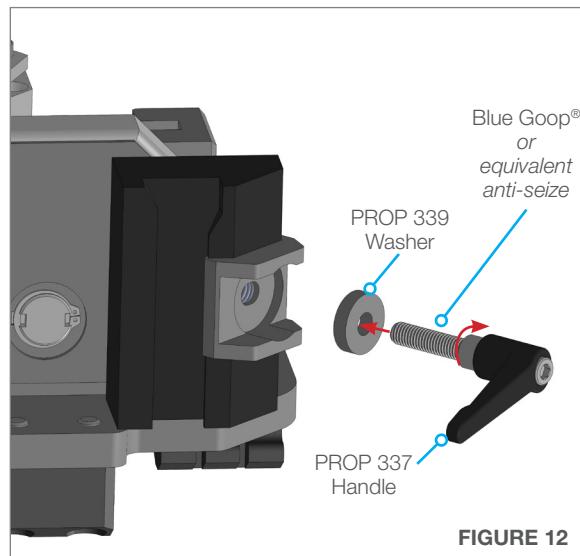


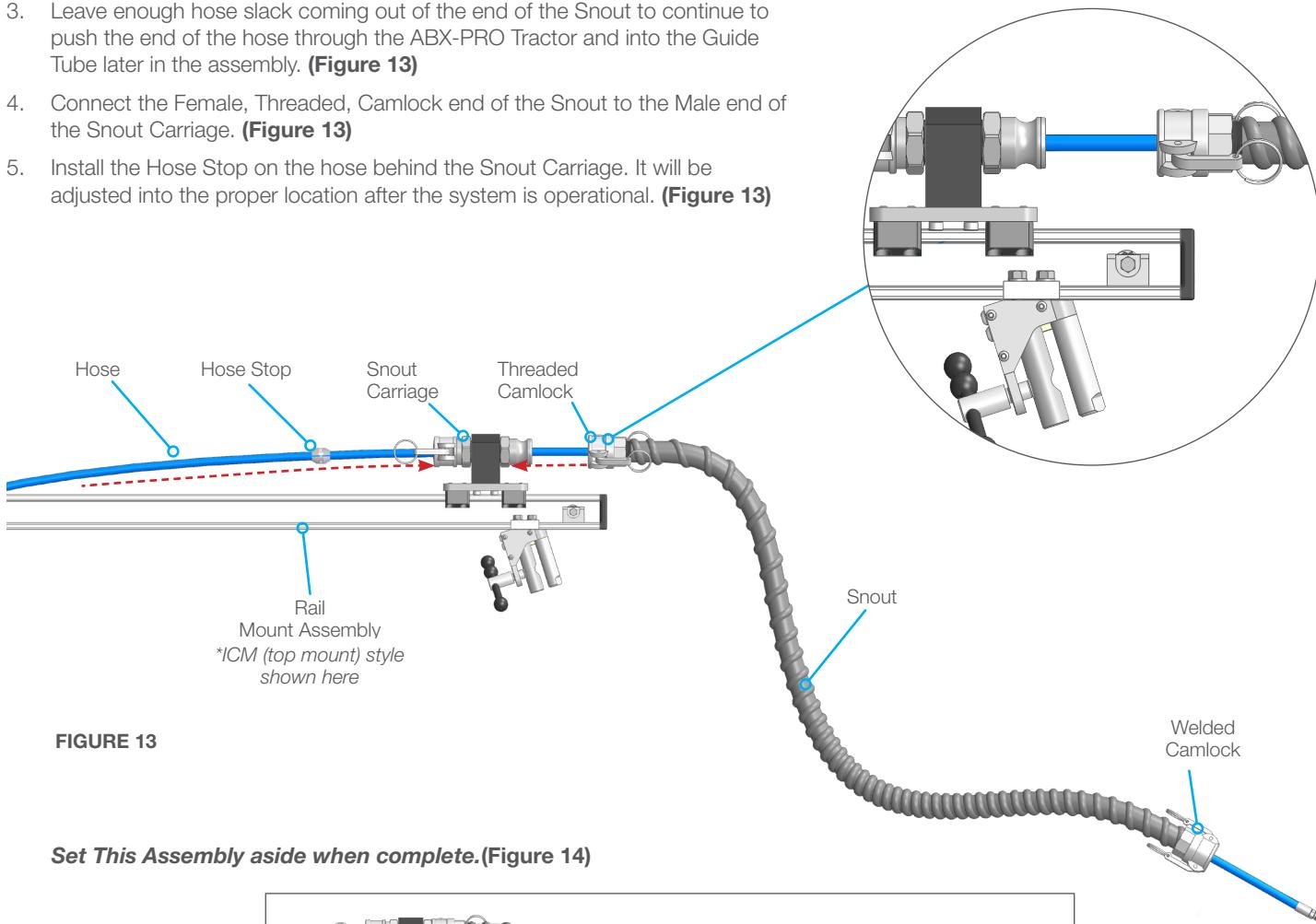
FIGURE 12

## SUB-ASSEMBLY 3 (RAIL MOUNT, SNOUT, AND HIGH PRESSURE HOSE)

### LOAD THE HIGH-PRESSURE HOSE INTO THE SNOUT ON THE RAIL MOUNT

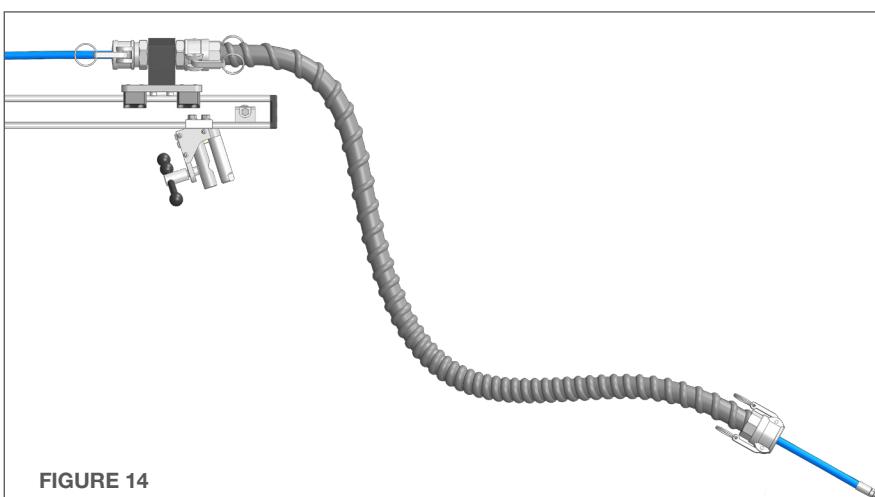
Before installing High-Pressure hose, please be sure to review the "HIGH-PRESSURE HOSE" information in the "WARNING AND SAFETY INSTRUCTIONS" section of this manual. Always flush out hoses before attaching tools to keep particle debris from damaging the tool.

1. Lay the Rail Mount, Snout, and High Pressure Hose on the floor.
2. Insert the High Pressure Hose into the Camlock on the Snout Carriage and through the entire Snout. (**Figure 13**)
3. Leave enough hose slack coming out of the end of the Snout to continue to push the end of the hose through the ABX-PRO Tractor and into the Guide Tube later in the assembly. (**Figure 13**)
4. Connect the Female, Threaded, Camlock end of the Snout to the Male end of the Snout Carriage. (**Figure 13**)
5. Install the Hose Stop on the hose behind the Snout Carriage. It will be adjusted into the proper location after the system is operational. (**Figure 13**)



**FIGURE 13**

*Set This Assembly aside when complete. (Figure 14)*



**FIGURE 14**

## SUB-ASSEMBLY 4 (CONTROL BOX AND CAMERA)

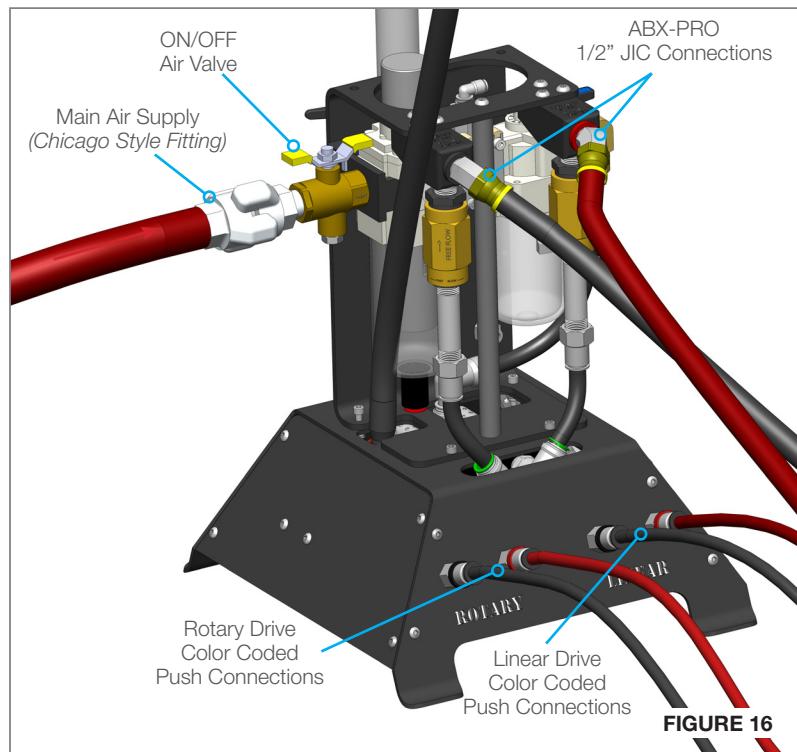
### CONNECT THE PNEUMATIC LINES TO THE CONTROL BOX

- Organize the supplied Air Line Umbilicals. (**Figure 15**)



**FIGURE 15**

- Connect the customer supplied, Main Air Supply line (Chicago Style Fitting) to the Control box. (**Figure 16**)
- Connect the color coded 3/8" Tubing to their respective push connect fittings, located above the "ROTARY" and "LINEAR" labels on the base of the Control Box. (**Figure 16**)
- Turn the Air Valve **ON** and operate the "Linear" and "Rotary" levers on the control box to blow out the 3/8" Tubing lines. (**Figures 16 & 17**)
- Hand fasten the color coded 1/2" Pneumatic Hoses to the Color Coded JIC Fittings on the Control Box. Then tighten with a 7/8" wrench. (**Figure 17**)
- Operate the "Feed" lever on the control box to blow out the 1/2" Pneumatic Hoses. (**Figure 17**)



**FIGURE 16**

CONTROLLER TOP VIEW



**FIGURE 17**

## SUB-ASSEMBLY 4 (CONTROL BOX AND CAMERA)

### CONNECT THE MONITOR MOUNT, MONITOR AND POWER PACK TO THE CONTROL BOX

1. Attach the Monitor to the Monitor Mount Assembly with the supplied screws, washers, and wing nuts as shown in **(Figure 18)**. Tighten by hand.
2. Loosen the thumb screws on the Controller box and Monitor Mount. Remove the Controller Box from the stand and slide the Monitor Mount on. **(Figure 19)** Return the Controller Box to the Stand and tighten the Thumb Screw. The Monitor Mount collar should sit just under the Controller Box Collar.
3. Hang the Power Pack by the handle from the Monitor Mount **(Figure 20)**
4. Plug the cable coming from the Monitor into the "OUTPUT" port and the Camera Cable into the "INPUT 1" port on the side of the Power Pack **(Figure 21)** INPUT 2 would be for an additional camera.

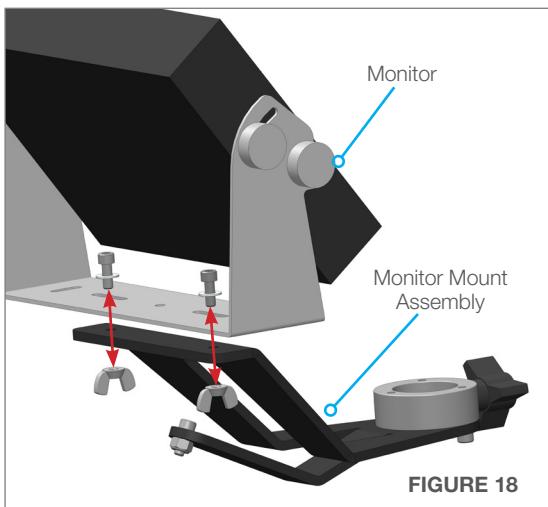


FIGURE 18

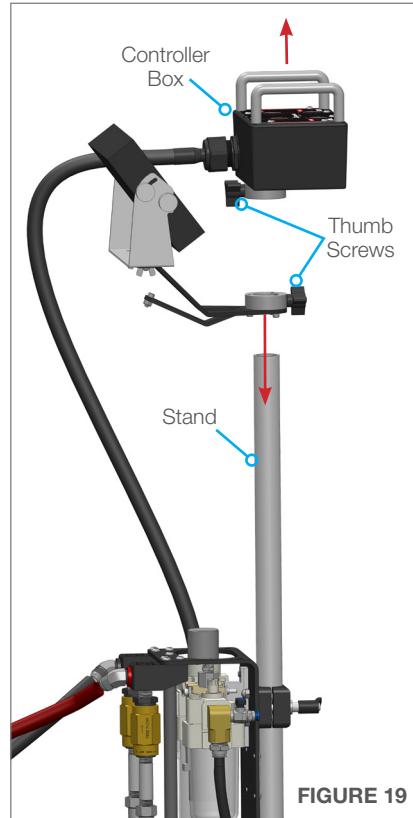


FIGURE 19

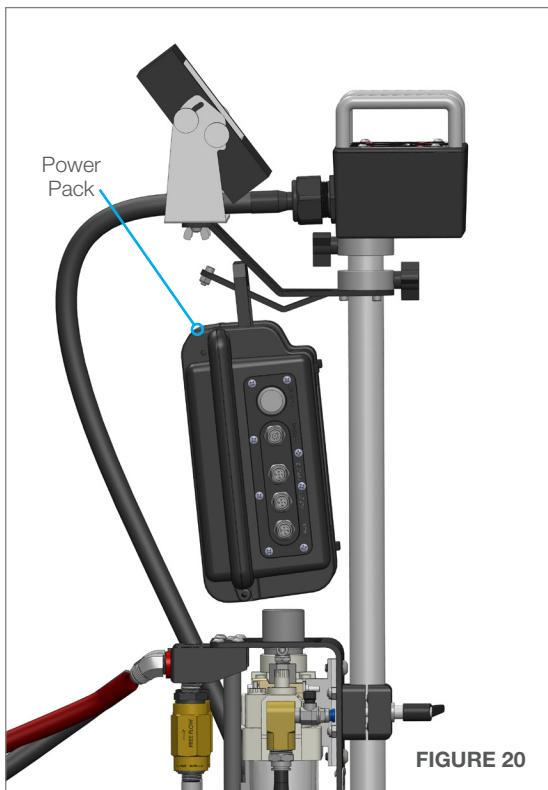


FIGURE 20



FIGURE 21

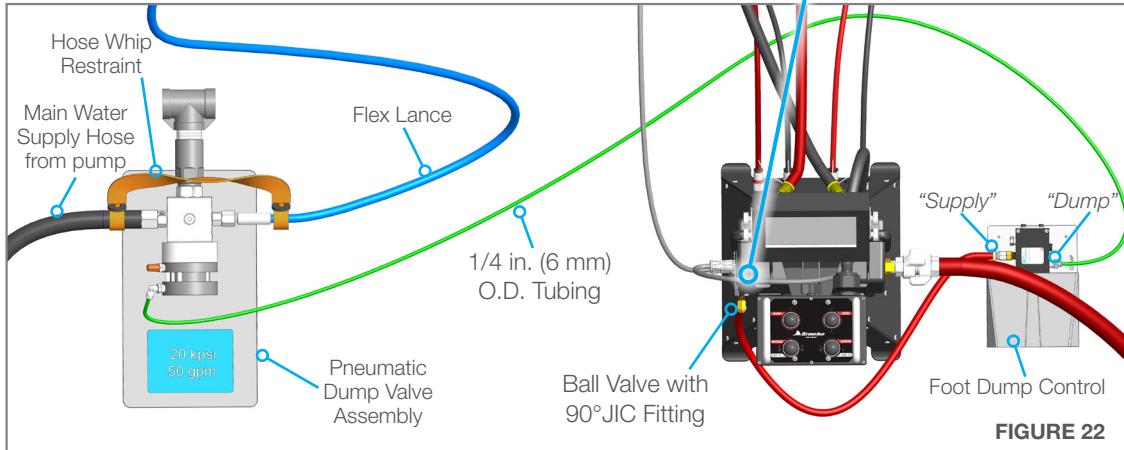
## SUB-ASSEMBLY 5 (OPTIONAL DUMP SYSTEM SET-UP)

### **OPTIONAL PNEUMATIC DUMP CONTROL CONNECTIONS**

StoneAge recommends the use of some kind of dump valve for all waterblasting operations. We offer a variety of dump valve options. The included Control Box has a Hand Controlled Dump Lever on the Control Panel. A Foot Dump can be used instead of the Hand Control. See the respective connection diagrams below for either option.

#### **FOOT CONTROLLED DUMP CONNECTION (Figure 28)**

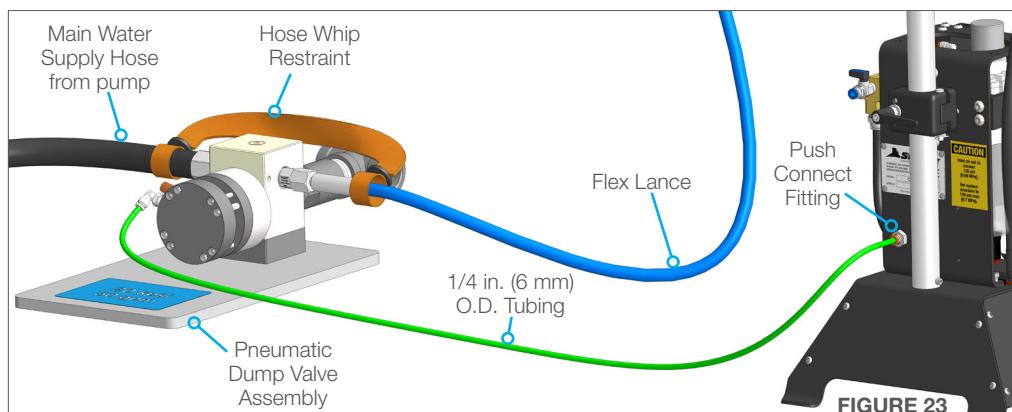
1. Install the hose with the female JIC ends between the Ball Valve with the male 90°JIC Fitting located on the side of the Control Box and the fitting marked "SUPPLY" on the Foot Dump Valve Control.
2. Install the 1/4 in. (6 mm) O.D. Poly Tubing between the fitting on the Pneumatic Dump Valve Assembly and the fitting marked "DUMP" on the Foot Dump Valve Control.
3. Install the Main Water Supply and Flex Lance Hose onto the Pneumatic Dump Valve Assembly. Be sure to use the appropriate anti-seize, thread lubricant, and/or pipe tape as recommended in the StoneAge Tool Fittings and Accessories Catalog at the link below.



#### **HAND CONTROLLED DUMP CONNECTION (Figure 29)**

1. Install the 1/4 in. (6 mm) O.D. Tubing between the Push Connect Fitting located on the back of the Control Box and the Push Connect Fitting on the Pneumatic Dump Valve Assembly.
2. Install the Main Water Supply and Flex Lance Hose onto the Pneumatic Dump Valve Assembly. Be sure to use the appropriate anti-seize, thread lubricant, and/or pipe tape as recommended in the StoneAge Waterblast Catalog.

[https://stoneagetools.com/assets/pdf/catalogs/waterblast\\_2020/2020\\_Waterblast\\_Catalog\\_web\\_spreads.pdf](https://stoneagetools.com/assets/pdf/catalogs/waterblast_2020/2020_Waterblast_Catalog_web_spreads.pdf)



### **⚠️ WARNING**

Always use Hose Whip Restraints. Failure to do so can result in severe injury and/or death. It is the responsibility of the user to properly install the Hose Whip Restraints. Never exceed safe working load. Follow manufacturer's recommendations and ratings.



FIGURE 22

### **⚠️ DANGER**

Keep dump connections neat and out of the foot path. Pinching the dump connections will cause the dump valve to function incorrectly, possibly leading operator injury or death.

# PROPOSITIONER ATTACHMENT TO DOMED BUNDLE

## POSITIONER STEP BY STEP SET-UP INSIDE THE DOMED BUNDLE



### TECH TIP:

It is highly recommended to put five necessary tools in a tote for the installer to take inside the dome.

- Tape Measure
- 1/2" Ratcheting Socket Wrench
- 3/4" Ratcheting Open-End Box Wrench (QTY. 2)
- Wrenches specific to the Banshee for installation of the tool on lance.

## INSTALL SPIDER PLATE ONTO TUBE FACE

1. Loosen the four bolts on the legs of the Spider Plate Assembly with a 3/4" Ratcheting Open-End Box Wrench, so the legs are free to slide in the slots of the Hub Plate but do not come off. (**Figure 24**)
2. Loosen the Expansion Plugs (x4) on each leg with the adjustable knobs. (**Figure 24**)

### WARNING

The first four exchanger tubes the Expansion Plugs will be inserted into must be free of debris. Follow all workplace safety procedures and utilize appropriate PPE when cleaning out the exchanger tubes prior to plug installation to avoid injury.

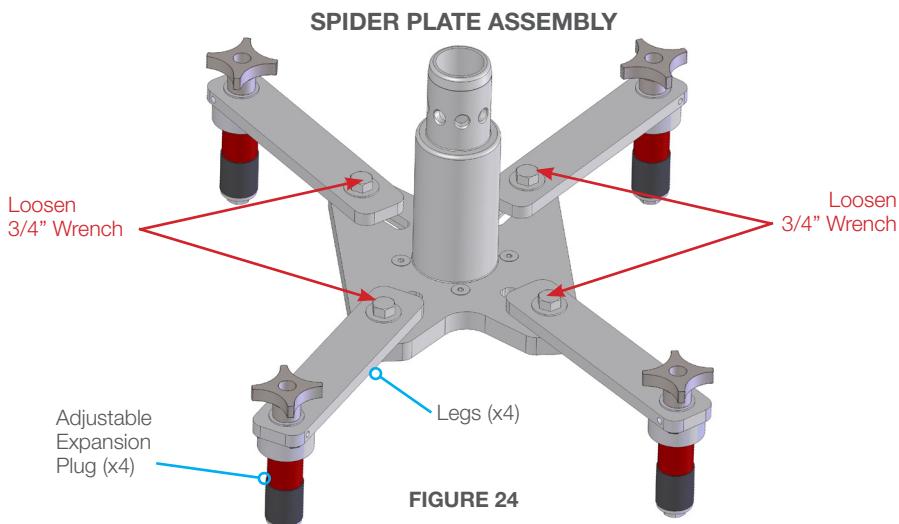


FIGURE 24

3. Hand the Spider Plate Assembly through the Man Way to someone positioned inside the Domed Bundle. (**Figures 25 & 26**)

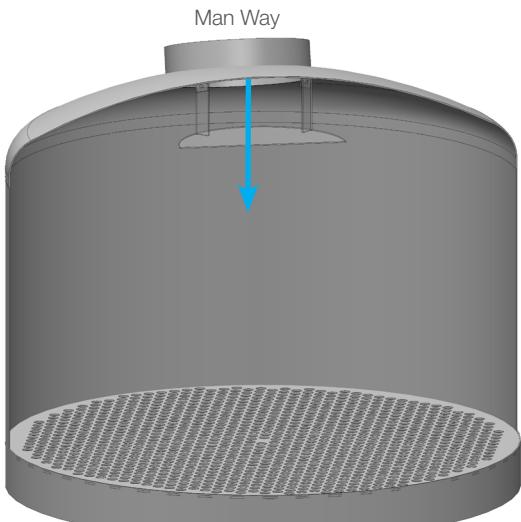


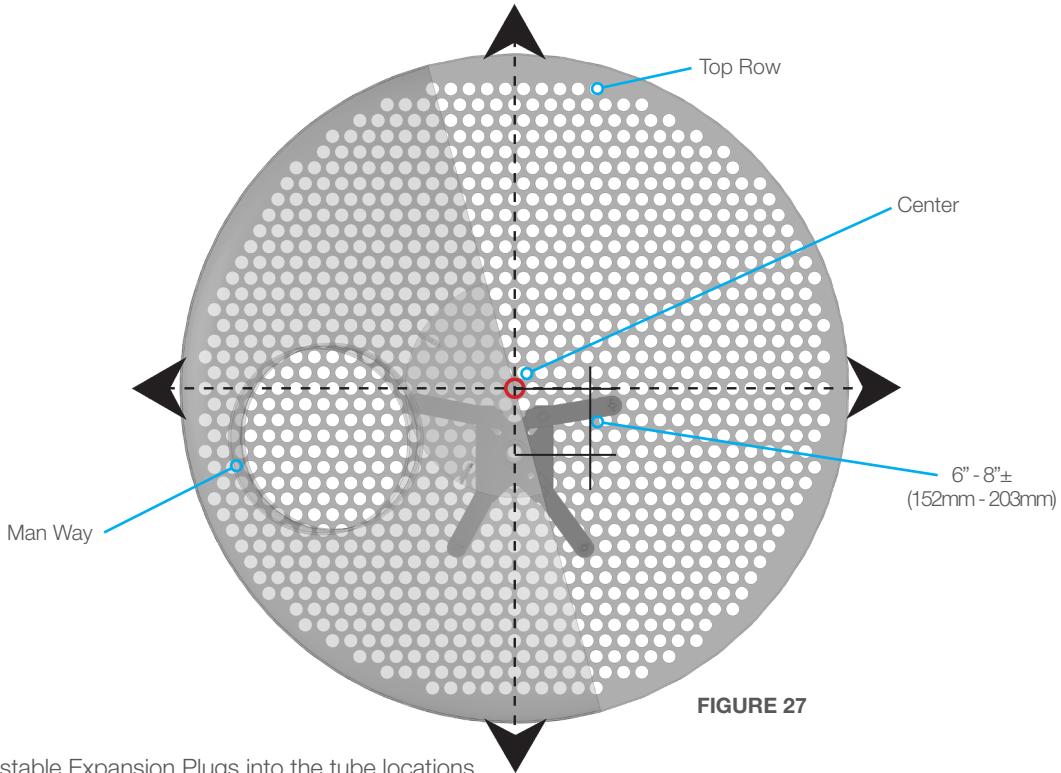
FIGURE 25  
ICM (TOP MOUNT) DOMED BUNDLE



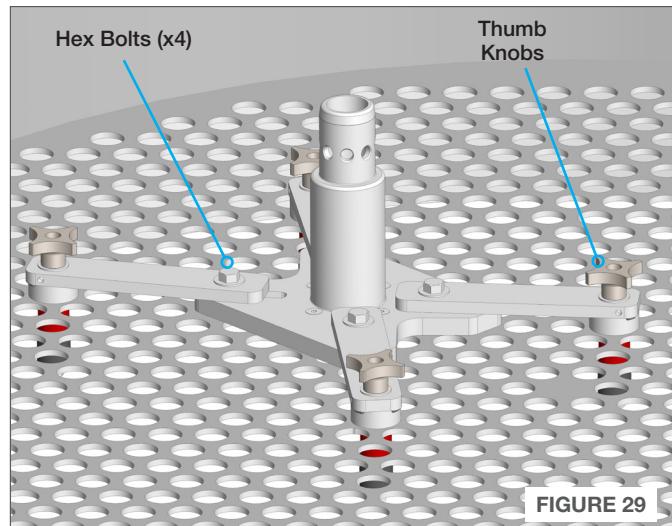
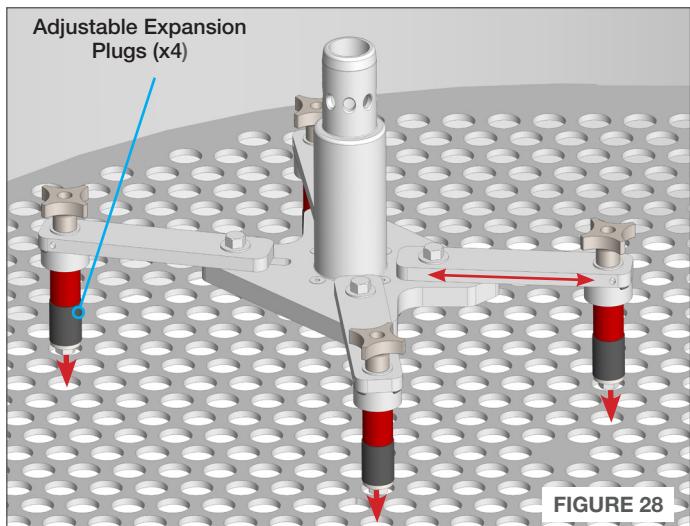
FIGURE 26  
DELTA-T (SIDE MOUNT) DOMED BUNDLE

## PROPOSITIONER ATTACHMENT TO TUBE BUNDLE

4. Locate the center of the tube face. If there is no center identifier, use a tape measure to locate and mark center. (**Figure 27**)



5. Insert the Adjustable Expansion Plugs into the tube locations that will allow the Spider Plate to be positioned on the tube face as shown. (**Figures 27 & 28**)
6. When the Spider Plate is located as shown, tighten the 4 Hex Bolts on the legs with a 3/4" Wrench. Then tighten the Thumb Knobs until the plate feels secured in place and does not lift up. (**Figure 29**)
7. There are set-up reference dimensions in the "Set-Up Dimensions for 69" (1753mm) Tube Face" section in this manual. (**Figures 40-43**)



## PROPOSITIONER ATTACHMENT TO TUBE BUNDLE

### INSTALL ROTARY DRIVE AND DRIVE RAIL ONTO SPIDER PLATE

8. Hand the Rotary Drive and Drive Rail through the man way to the person positioned inside the Domed Bundle.
9. Unlock the Rail Clamp Handle on the Rotary Drive and slide the Drive rail into the Rail Clamp. Push the Handle down to lock the Rail in place. **(Figure 30)**



#### TECH TIP:

Be sure to face the slotted side of the rail up toward the top of the dome to allow the Linear Drive to line up properly in the steps to follow.

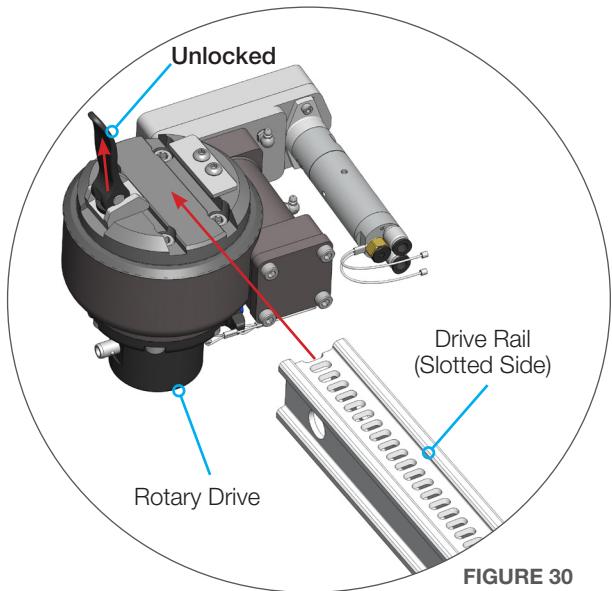


FIGURE 30

10. Remove the Quick Release Pin from the Rotary Drive and slide the Rotary Coupling over the Spider Plate Mounting Shaft. **(Figure 31)**
11. DO NOT replace the Quick Release Pin until the Positioner is located in the desired position.

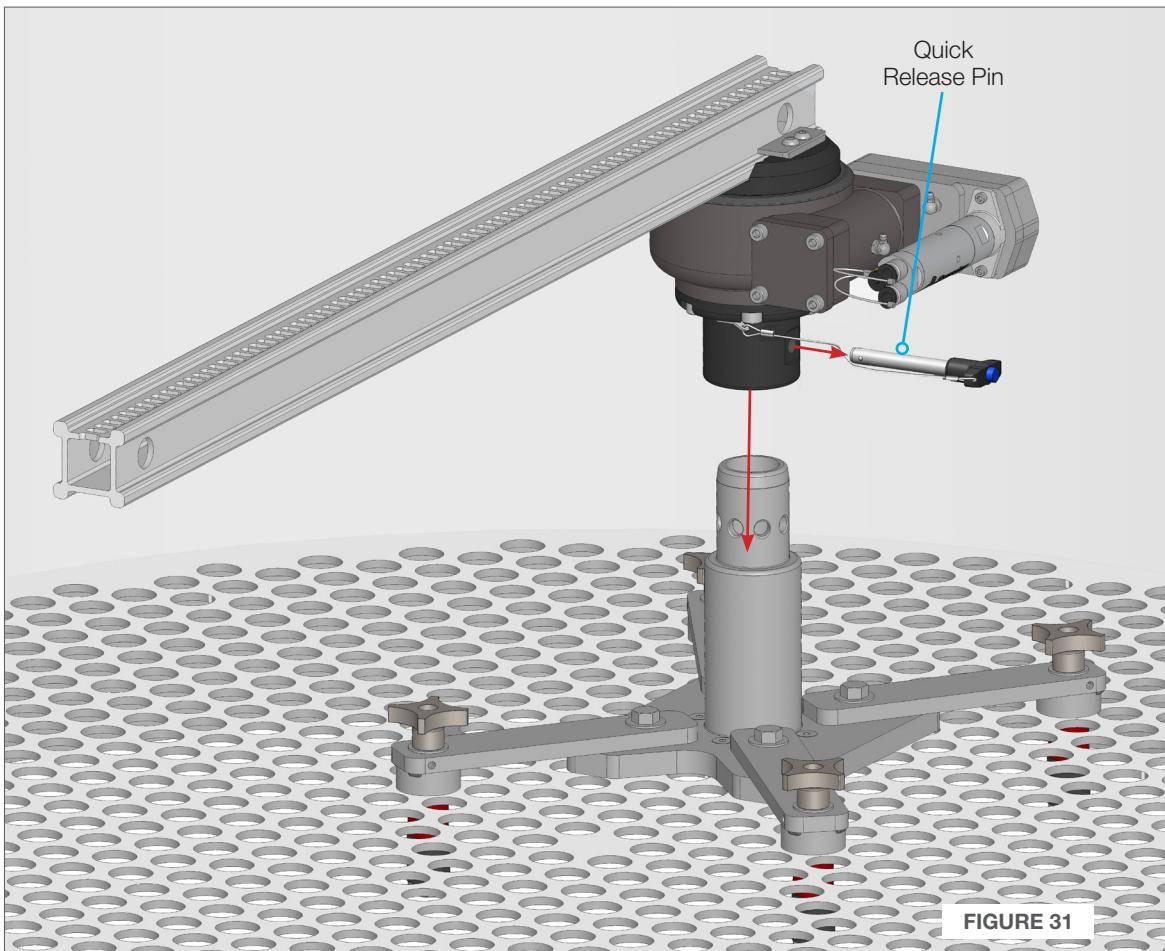
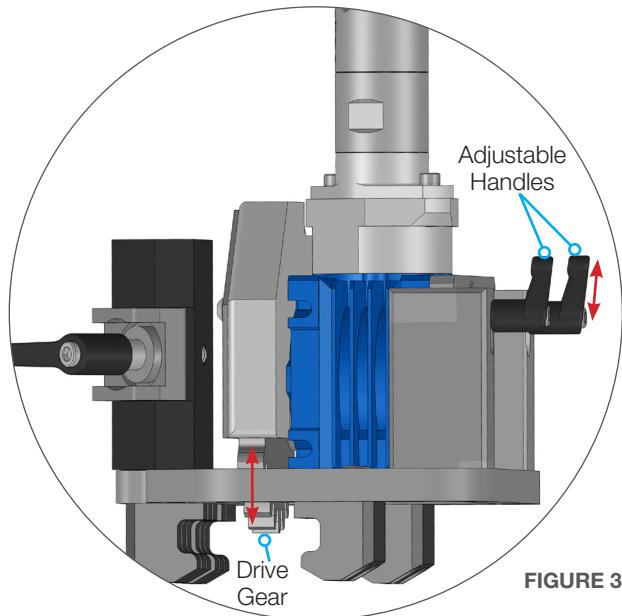


FIGURE 31

## PROPOSITIONER ATTACHMENT TO TUBE BUNDLE

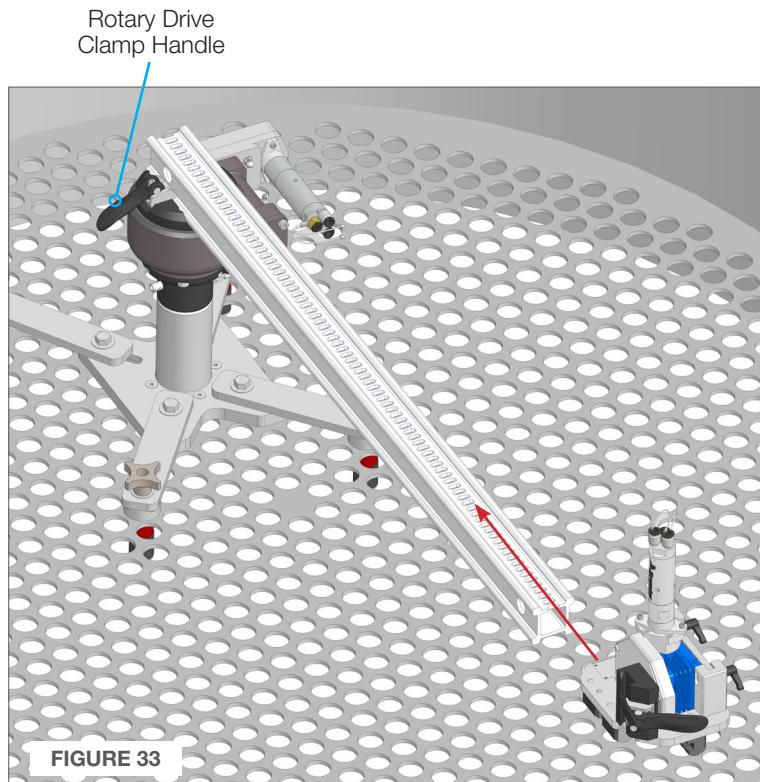
### INSTALL LINEAR DRIVE AND RAIL PLUG ON DRIVE RAIL

12. Hand the Linear Drive through the man way to the person positioned inside the dome.
13. Rotate both Adjustable Handles on the Linear Drive up to retract the Drive Gear and allow the Linear Drive to slide along the Drive Rail. (**Figure 32**)



**FIGURE 32**

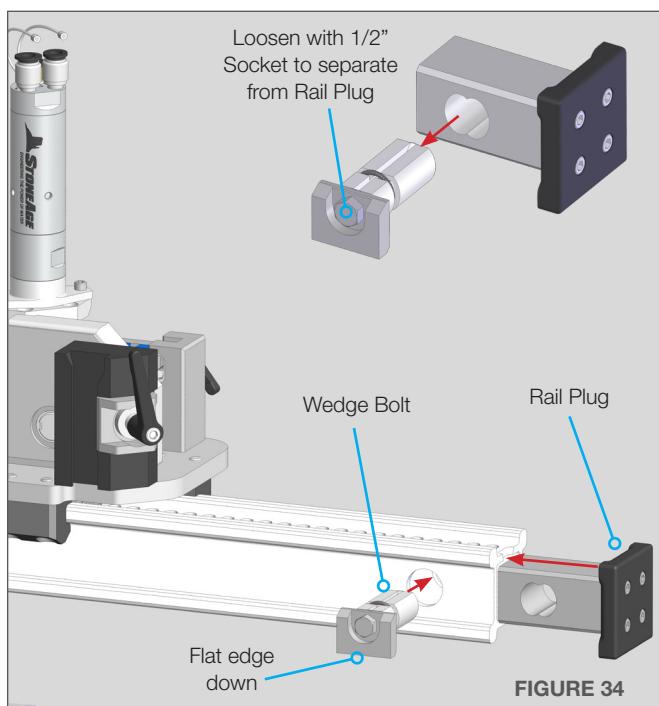
14. Orient the Adjustable Handles of the Linear Drive to the opposite side of the Rail Clamp Handle on the Rotary Drive. (**Figure 33**)
15. Slide the Linear Drive onto the rail and rotate both Adjustable Handles down to engage the gear. Sliding it back and forth on the rail can help drop it into the slots. (**Figure 33**)
16. Separate the Wedge Bolt from the Rail Plug with a 1/2" Ratcheting Socket Wrench. (**Figure 34**)
17. Insert the Rail Plug into the end of the Drive Rail opposite the Rotary Drive. Insert the Wedge Bolt through the Rail and Rail Plug then tighten the Wedge Bolt with a 1/2" Ratcheting Socket Wrench (**Figure 34**)



**FIGURE 33**



Make sure the Wedge Bolt is oriented as shown in (**Figure 34**). If it is installed upside down it will obstruct the path of the Linear Drive.



**FIGURE 34**

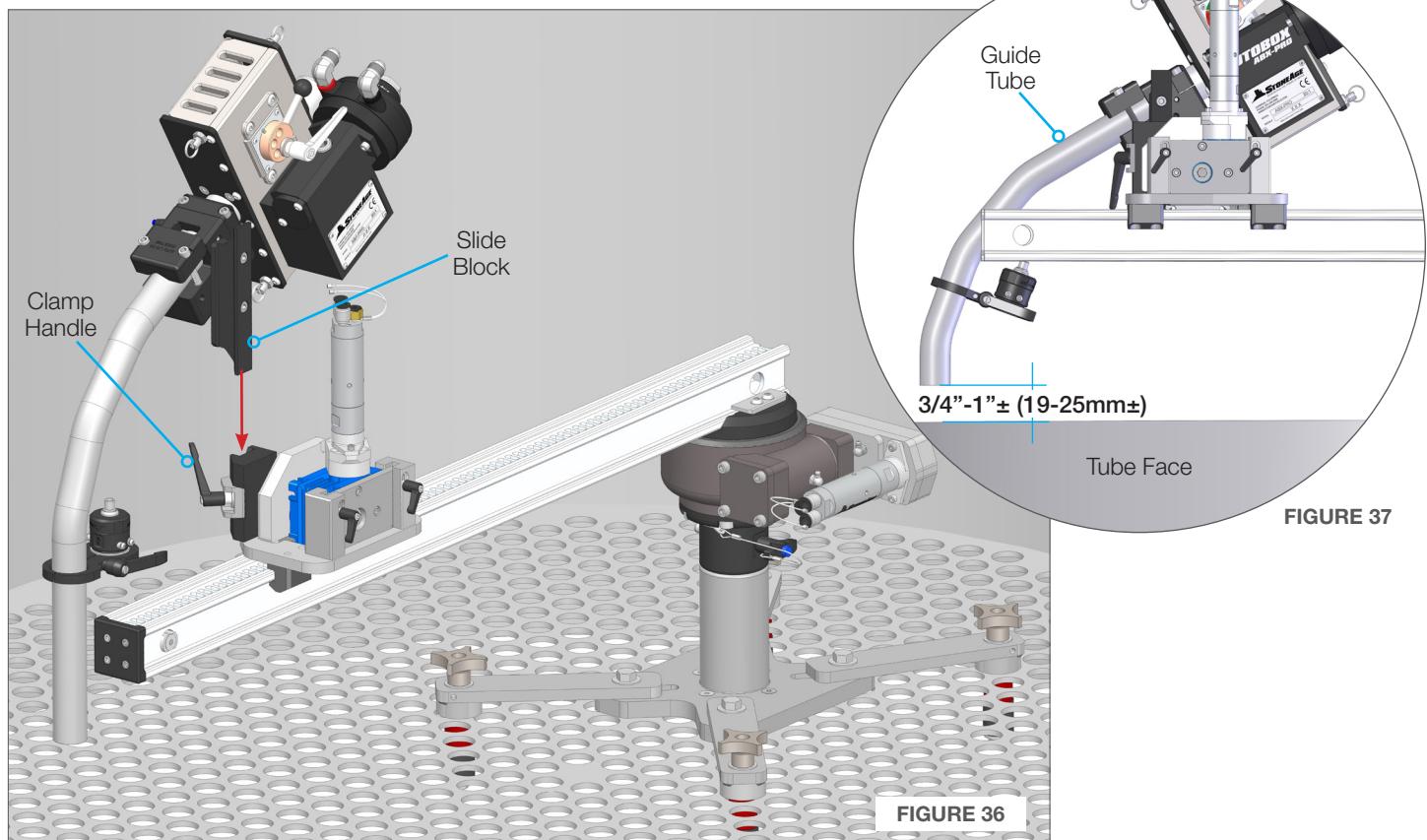
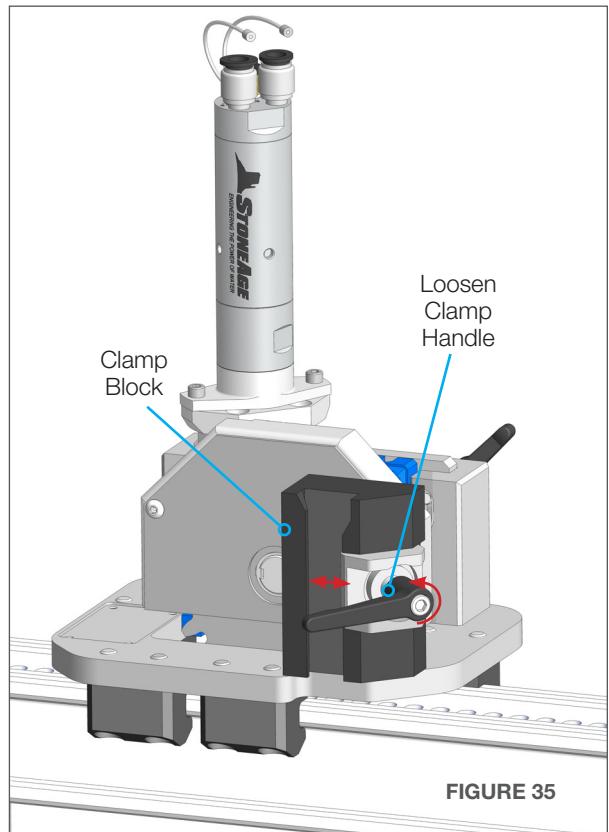
## PROPOSITIONER ATTACHMENT TO DOMED BUNDLE

### INSTALL SUB-ASSEMBLY 1 ON THE LINEAR DRIVE

#### CAUTION

The ABX-PRO, Guide Tube, Collet Block, sub-assembly is heavy.  
Use caution when handing it through the man way.

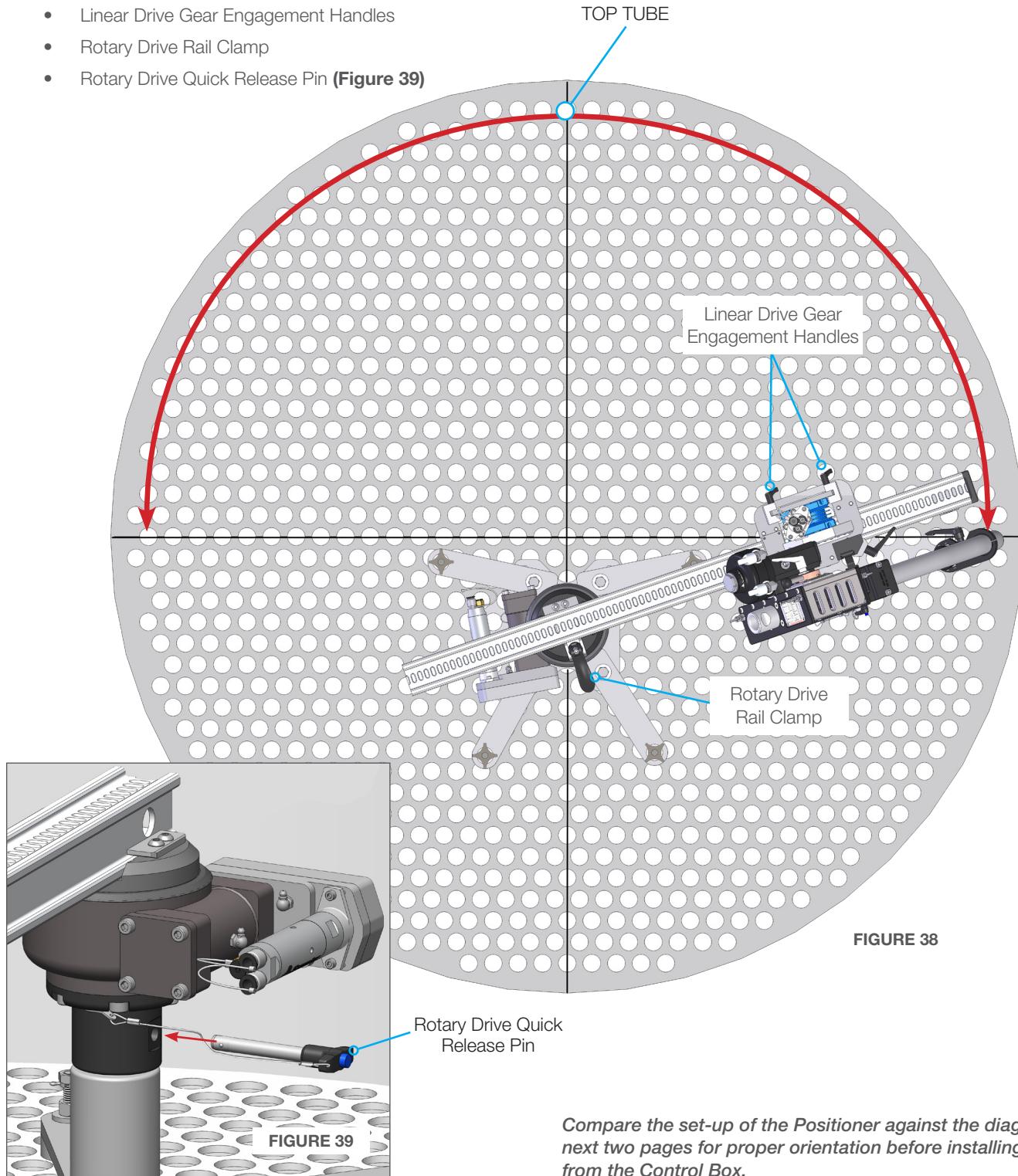
18. Hand Sub-Assembly 1 through the man way to the person positioned inside the Domed Bundle.
19. Loosen the Clamp Block on the Linear Drive by pulling the Clamp Handle out and rotating it counterclockwise. (**Figure 35**)
20. Insert the Slide Block on the ABX-PRO sub-assembly into the clamp on the Linear Drive. (**Figure 36**)
21. The end of the Guide tube should be at least  $3/4"$ - $1"$  (19-25mm) from the Tube Face. This is to avoid dragging on the surface of the Tube Face. (**Figure 37**)
22. Tighten the Clamp Handle on the Linear Drive when the Guide Tube is set the proper distance off the tube face. (**Figure 36**)



## PROPOSITIONER ATTACHMENT TO DOMED BUNDLE

### SET THE DRIVE RAIL AND LINEAR DRIVE IN PLACE

23. Before locking the Positioner in place, be sure that the Guide Tube can swing in the direction shown below without hitting the walls and the Linear Drive has enough stroke to reach the Top Tube. (**Figure 38**)
24. Once it has been determined that the Linear Drive has enough stroke and the Guide Tube will not hit the wall during operation, lock down the following:
  - Linear Drive Gear Engagement Handles
  - Rotary Drive Rail Clamp
  - Rotary Drive Quick Release Pin (**Figure 39**)



Compare the set-up of the Positioner against the diagrams in the next two pages for proper orientation before installing air hoses from the Control Box.

## SET-UP DIMENSIONS FOR 69 INCH (1753mm) TUBE FACE

### TOP AND CENTER INSTALLATION DIMENSIONS

These four images are set-up dimensions to allow the Positioner system to clean the TOP, CENTER, LEFT, and RIGHT areas of the tube face without hitting the walls. These dimensional diagrams are for a 69in. (1753mm) tube face.

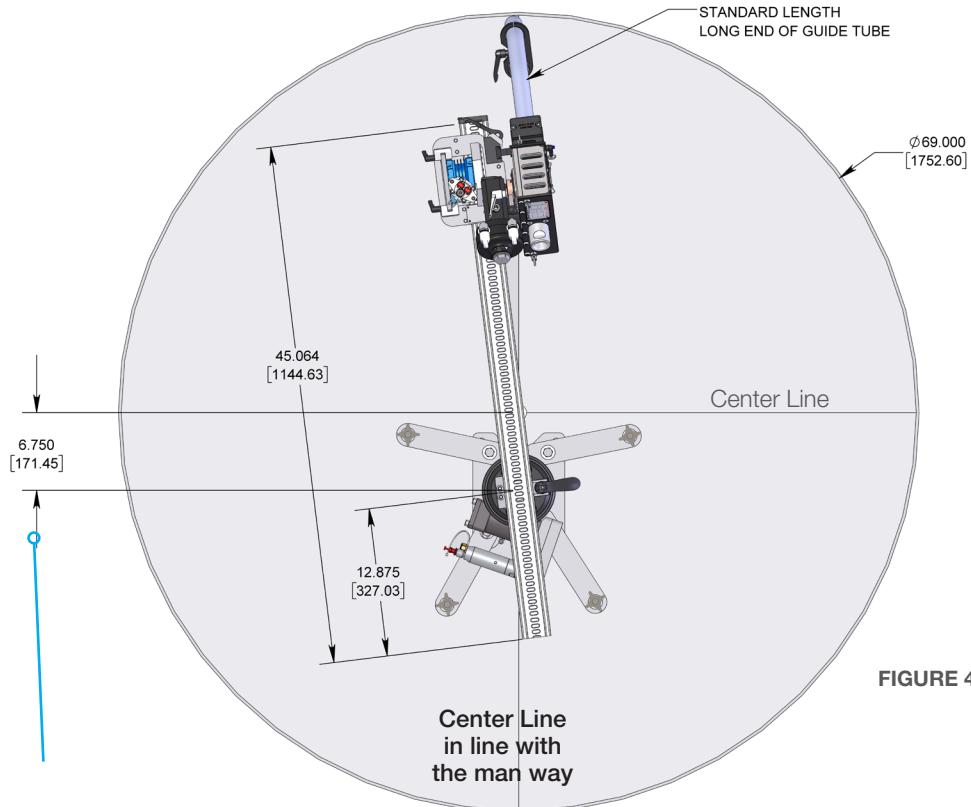


FIGURE 40

This is an approximate measurement and can be anywhere between 6-8 inches

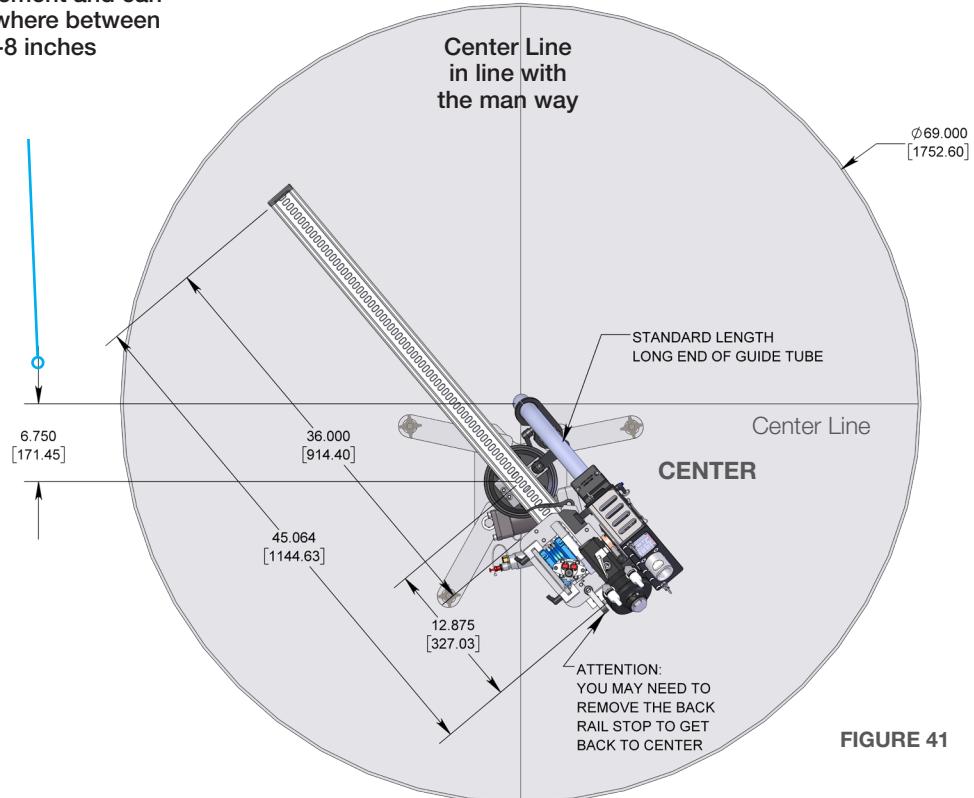
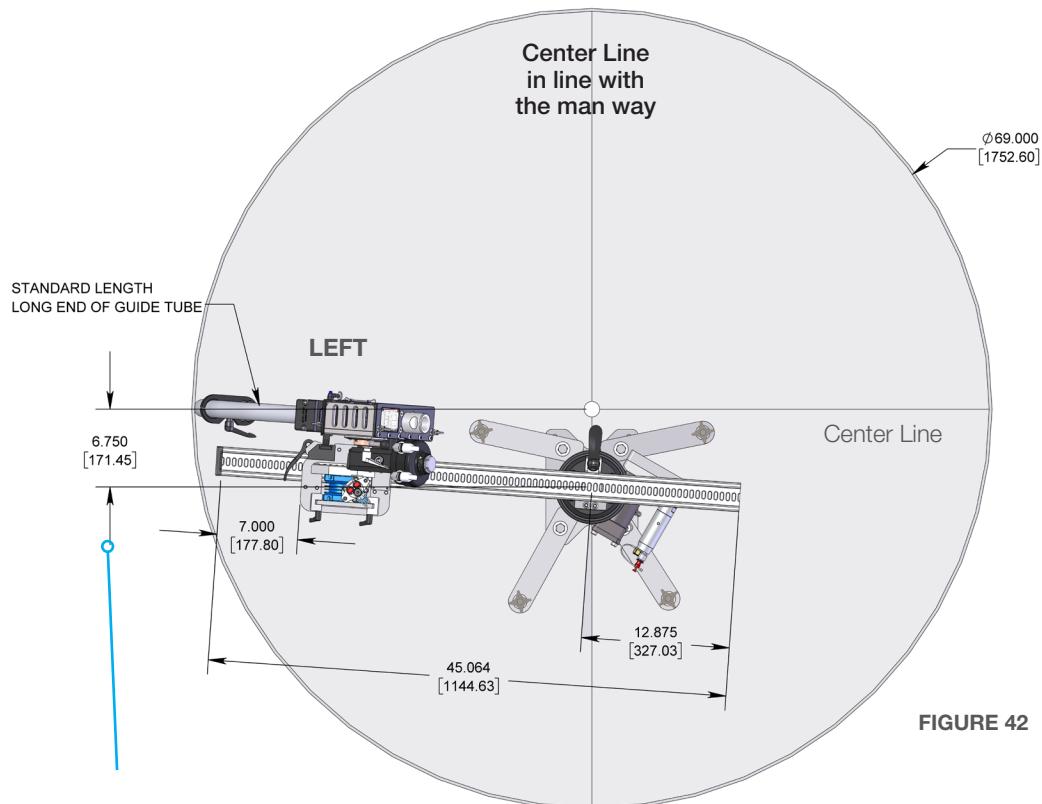


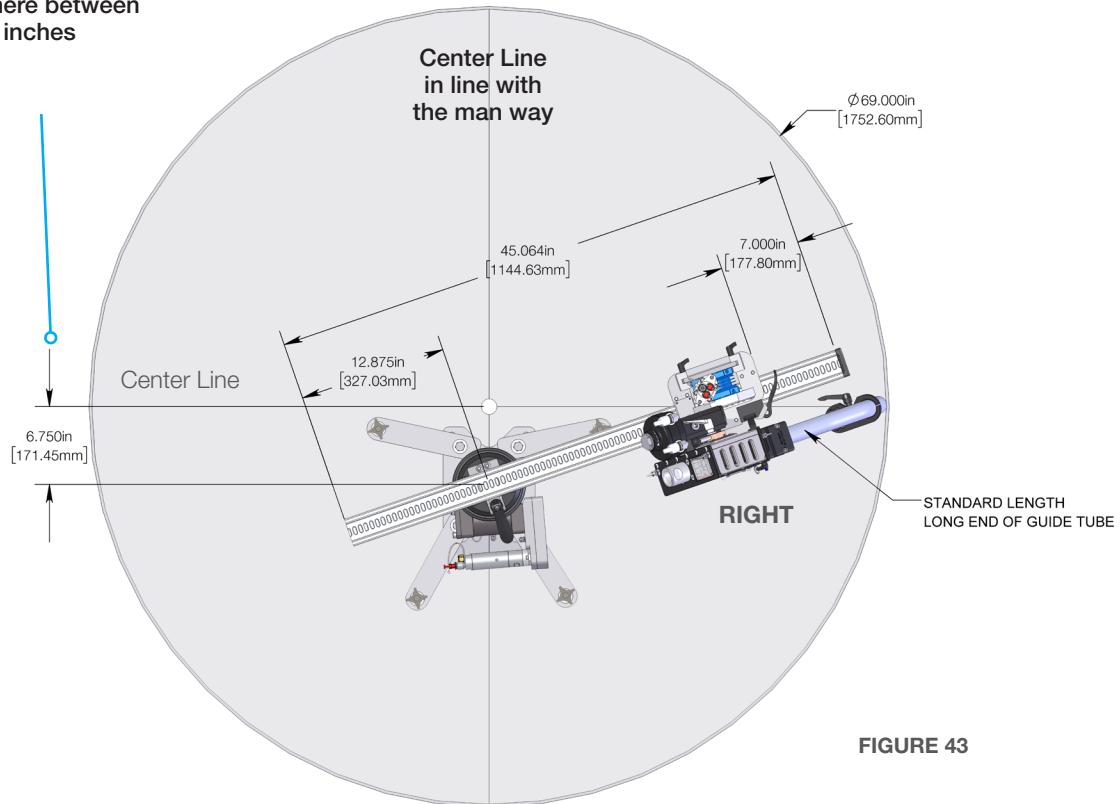
FIGURE 41

## SET-UP DIMENSIONS FOR 69 INCH (1753mm) TUBE FACE

### LEFT AND RIGHT INSTALLATION DIMENSIONS



This is an approximate measurement and can be anywhere between 6-8 inches



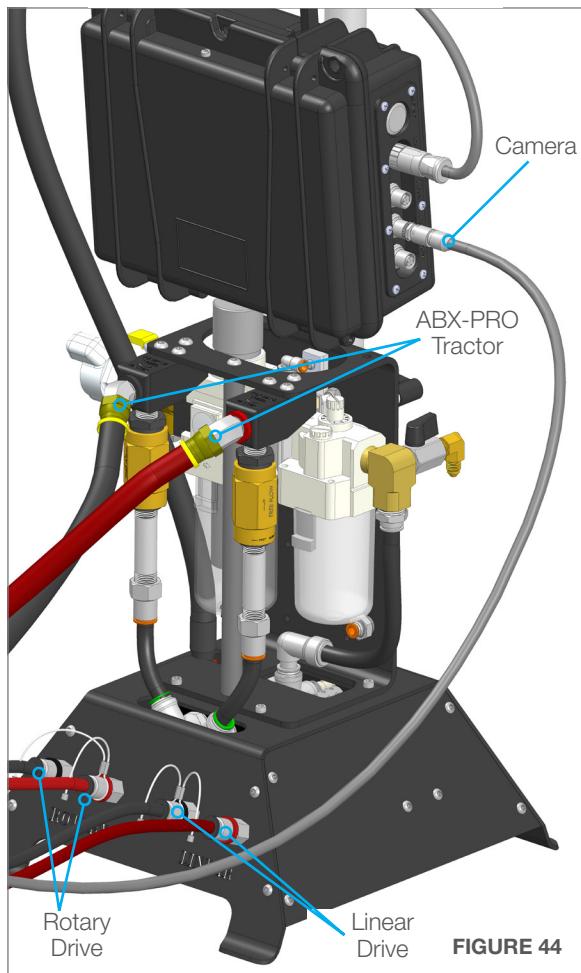
## CONTROL BOX CONNECTIONS TO POSITIONER

### PNEUMATIC SUPPLY LINE CONNECTION FROM CONTROL BOX TO POSITIONER

All the pneumatic supply lines should have been connected to the Control Box. If not please go back to the "Sub-Assembly 4 (Control Box and Camera)" section of this manual.

1. Turn ON the main air supply line to the Control Box and blow out all lines to clear debris before connecting the ProPositioner. Turn the Air Supply OFF when air lines are blown out.

#### Control Box Connections



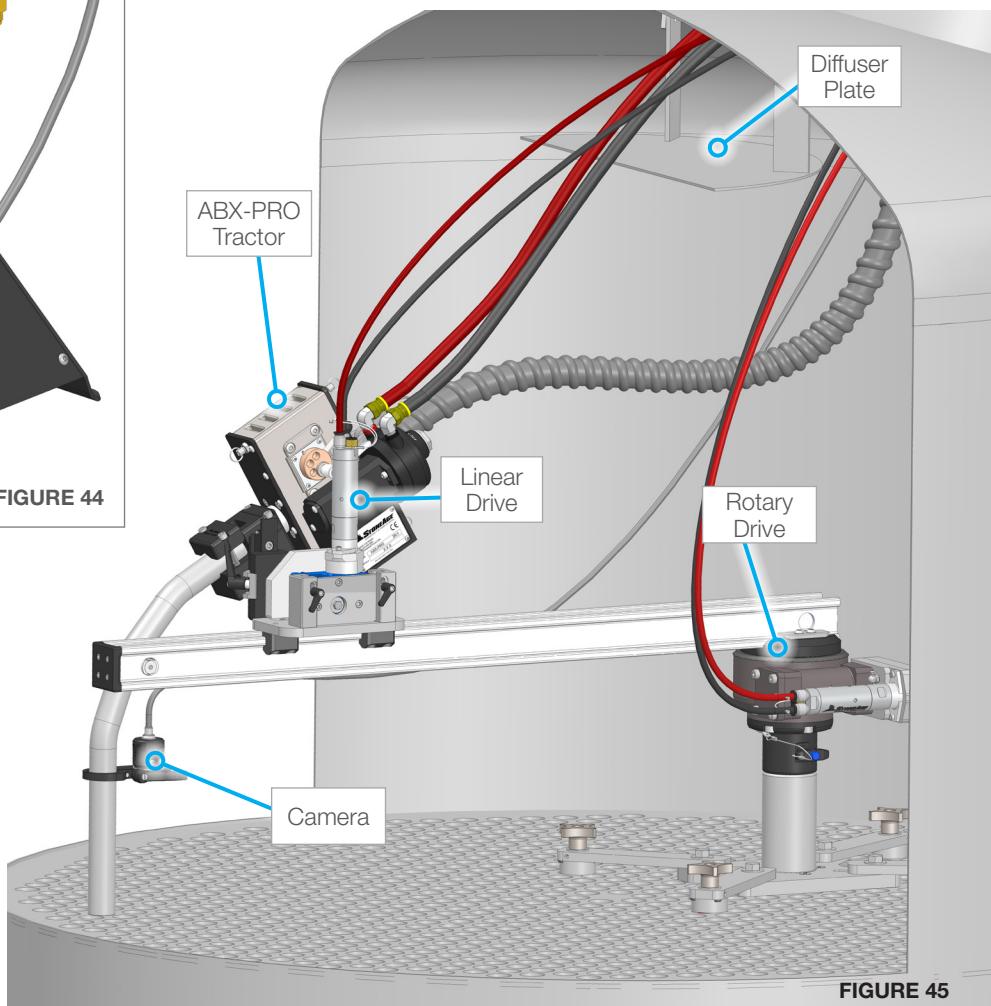
2. Feed one pair of supply lines at a time through the man way to avoid confusion. If there is a diffuser plate in the dome, feed the hoses above it and it will keep them out of the way of the positioner. **See the connection diagrams below. (Figures 44 & 45)**
3. The Camera connection is in the hose bundle with the 1/2" JIC connections for the ABX-PRO Tractor.



#### TECH TIP:

Don't worry about the positions of the red and black tubing on the air motors. This can be switched at the control box if the drive directions do not feel correct.

#### Positioner Connections



### ICM (TOP MOUNT) AND DELTA T (SIDE MOUNT) RAIL MOUNTS AND SNOUT INSTALLATIONS

The ICM (top mount) and Delta T (side mount) Rail Mounts are similar except for the man way Trolley Clamp Assemblies. The ICM (top mount) Rail Mount is designed to mount at an angle. The Delta T (side mount) Mount is designed to be bolted directly to the flange.

#### **CAUTION**

The Rail Mount Assembly is designed to support the Snout Carriage and Snout only.

**DO NOT** lean on the Rail Mount as this could result in minor or moderate injury.

#### To Mount to the ICM (top mount) man way:

1. Correct placement of the Rail Mount in relation to the Linear Drive Rail should be more or less Perpendicular. This position helps relieve stress on the Snout and allows the hose to travel more freely. (**Figure 46**)
2. Center the man way flange between the Fingers of the Trolley Clamp and loosely tighten with the Twist Knobs. (**Figure 47**)  
*Do not insert the Snout into the dome until the Trolley Clamp is secured in place.*
3. Make sure the Rail Mount is close to level to the floor, then securely tighten the Twist Knobs on the Trolley Clamp. If the Rail Mount comes loose it could cause damage to other components. (**Figure 48**)
4. Insert the Snout Assembly into the dome.

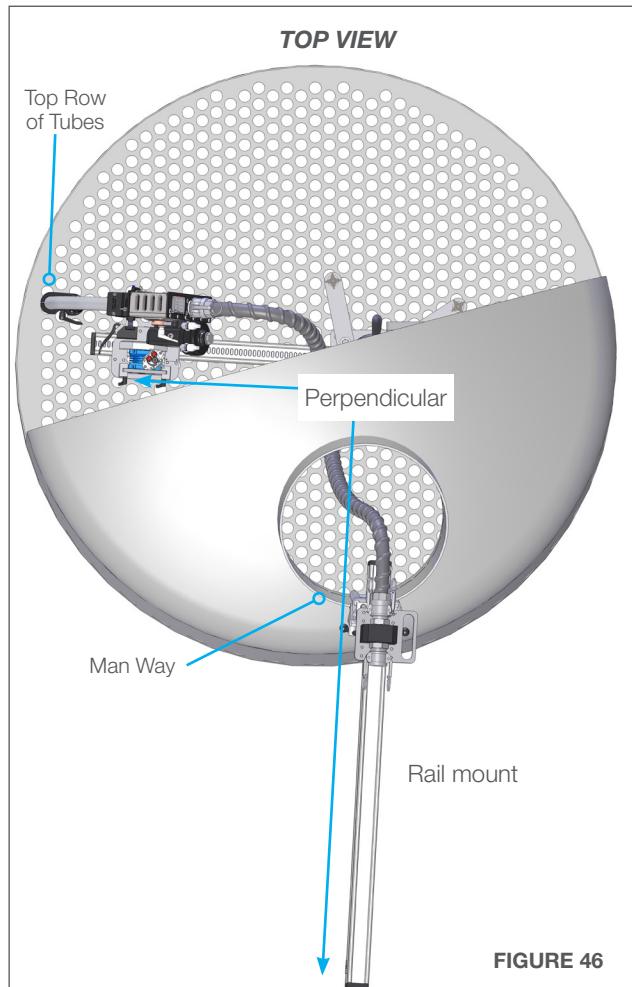


FIGURE 46

*The next page contains instructions on how to install the Delta T (side mount) Rail Mount. Skip this page and go to the "High Pressure Hose and Snout Installation" section.*

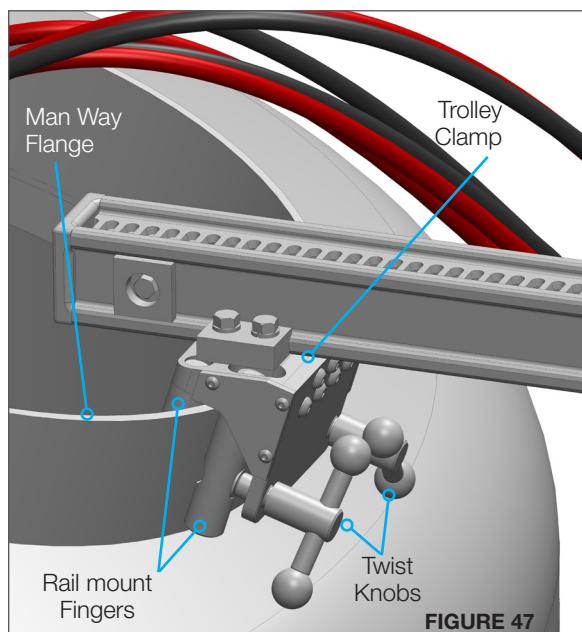


FIGURE 47



#### TECH TIP:

The Rail Mount may need to be adjusted so that it puts the least amount of lateral bend or stress on the Snout.

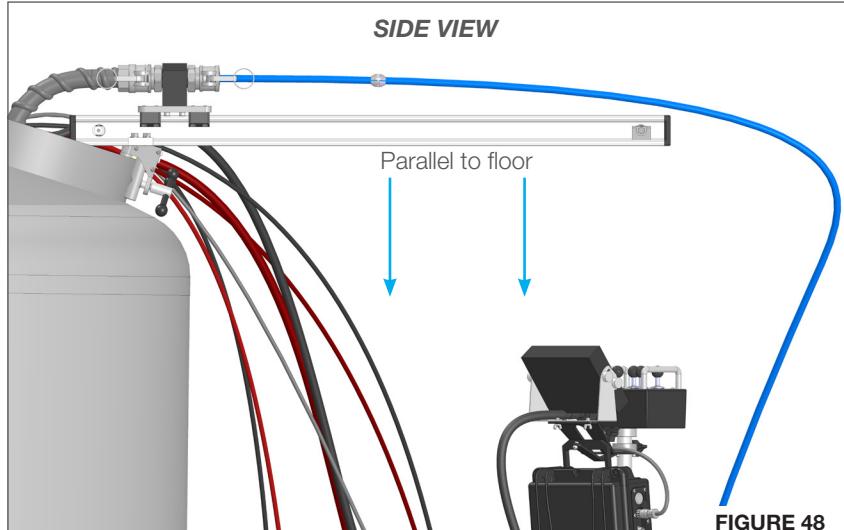
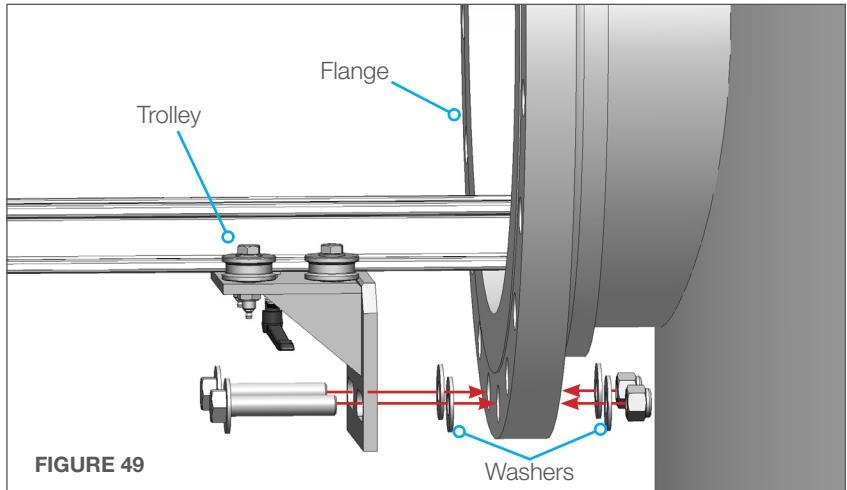


FIGURE 48

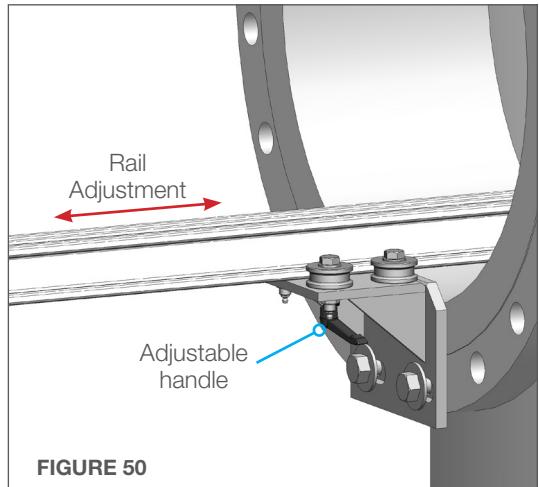
## DELTA T (SIDE MOUNT) RAIL MOUNT INSTALLATION

To Mount to the Delta T (side mount) man way:

1. Fasten the Trolley at the six O'Clock position on the flange of the Man Way. Use two 3/4" x 4" Hex Bolts, four 3/4" flat washers and two 3/4" Lock Nuts. Install one set of washers on either side of the flange as shown in **(Figure 49)**.

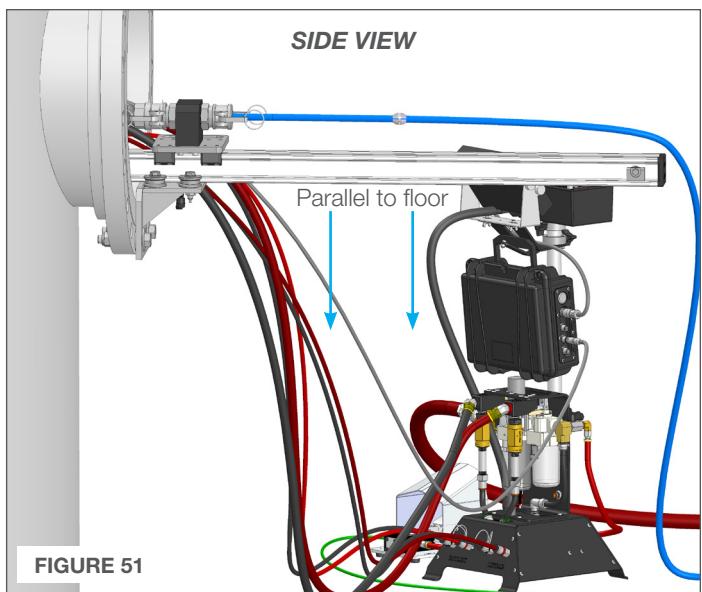


2. Loosening the Adjustable Handle on the Trolley will allow for adjustment of the Rail in and out of the dome. **(Figure 50)**



3. Make sure the Trolley Clamp is securely fastened . If the Rail Mount comes loose it could cause damage to other components. **(Figure 51)**
4. Insert the Snout Assembly with Hose and Tool into the dome.

The next page contains instructions on how to install the Snout and Hose on the ABX-PRO into the Guide Tube.



# HIGH-PRESSURE HOSE AND SNOOT INSTALLATION

## LOAD THE HOSE INTO THE ABX-PRO TRACTOR AND GUIDE TUBE/COLLET BLOCK

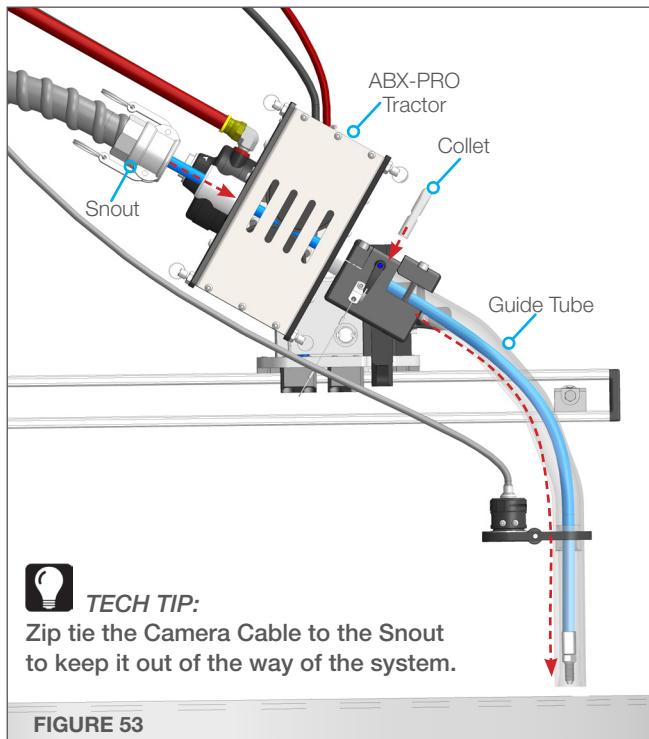
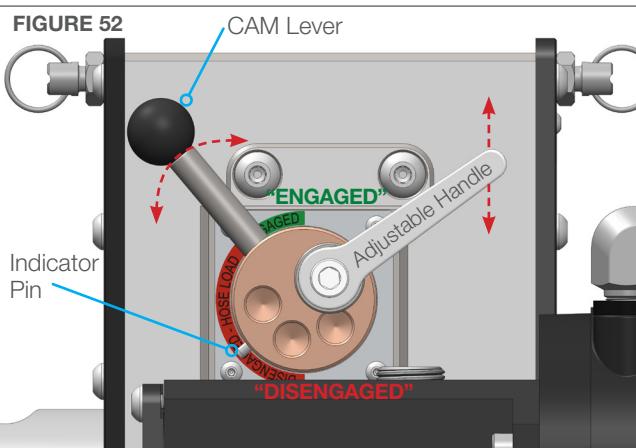
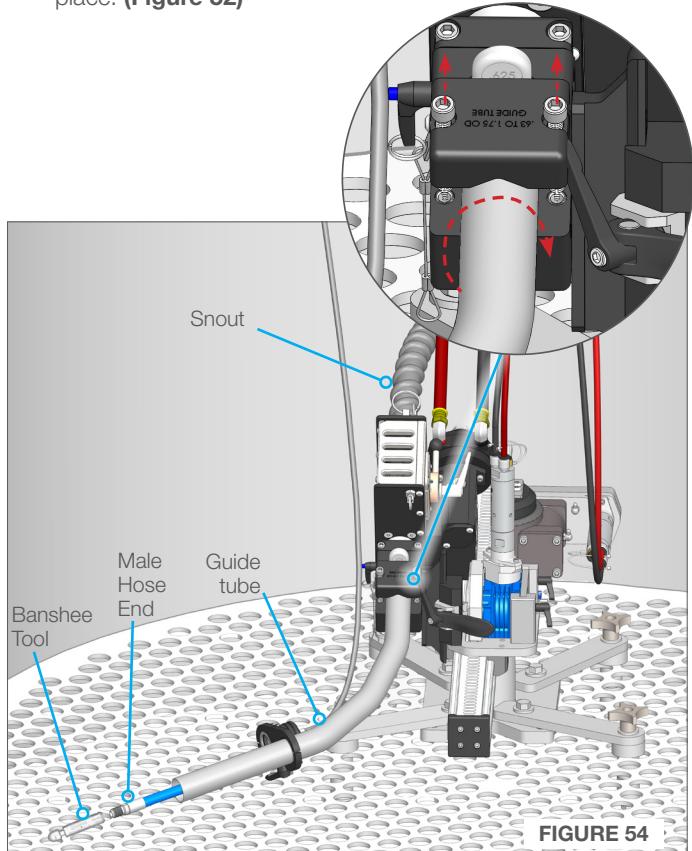
- To load the hose, push up to release the Adjustable Handle and rotate the Cam Lever counterclockwise until the Indicator Pin is in the “**Disengaged**” position. This opens up the space between the rollers in the ABX-PRO Tractor. (**Figure 52**)

DO NOT CONNECT THE SNOOT TO THE ABX-PRO TRACTOR UNTIL THE HOSE END COMES OUT THE END OF THE GUIDE TUBE.

- Remove the Collet from the Block and feed the end of the hose into and through the rollers of the ABX-PRO Tractor until it comes out the end of the Guide Tube. (**Figure 53**)
- After the hose end is through the Guide Tube, insert the Collet back into the Block. Pull open the ring tabs on the Camlock end of the Snout, slide it over the ABX-PRO guide, and push the ring tabs back down on the Camlock to secure in place. (**Figure 53**)

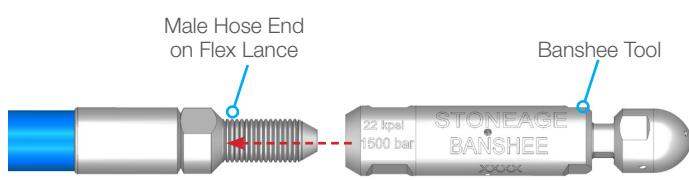
## INSTALL THE BANSHEE ON THE END OF THE HOSE

- Loosen the Collet Block Cap and rotate the Guide tube 90° to Install Banshee Tool onto the High-Pressure Hose. Rotate the Guide Tube back so that the Tool is facing the tube face. (**Figures 54 & 54.1**)
- Rotate the Cam Lever clockwise to the “**Engaged**” position to tighten the Idler Roller down onto the hose. There should be a slow slip on the hose. If the slip is too tight or loose, move the CAM Lever off until a slow slip is obtained. Once the slip level is achieved, push down on the Adjustable Handle to secure in place. (**Figure 52**)



## NOTICE

- DO NOT USE A PIPE WRENCH OR PLIERS WITH TEETH**  
This can crush and crack the hardened steel body, leading to tool breakage during operation.



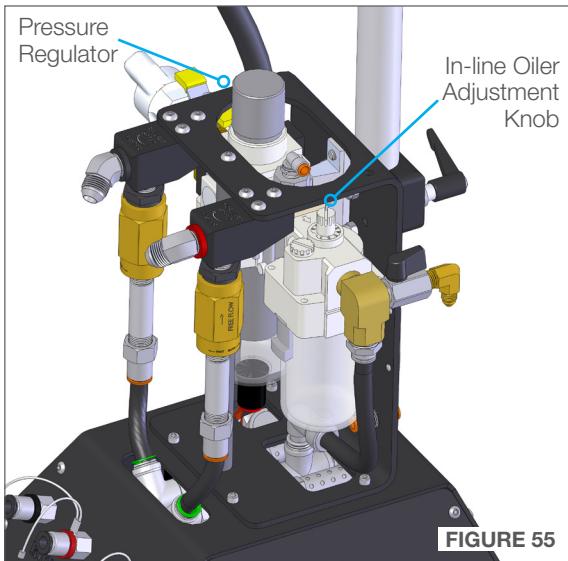
## OPERATION

### CONTROL BOX SETTINGS

1. Using the Pressure Regulator on the FRL, adjust the operating pressure to 100 psi (0.7 MPa) for the application. (**Figure 55**)
2. Adjust in-line oiler to feed 1 drop of oil every 30-60 seconds for high speed or continuous duty usage. (**Figure 55**)

#### ⚠ WARNING

Maximum operating pressure is 100 psi (0.7 MPa). Never exceed 125 psi (0.86 MPa) supply pressure. Exceeding 125 psi (0.86 MPa) supply pressure may result in injury to the Operator and/or damage to the equipment.



### CONTROL PANEL OPERATION

The Control Box consists of a base unit with a tethered Remote Box to allow the operator to easily move around if desired. There are four levers on the Remote Box: **DUMP**, **FEED**, **LINEAR**, and **ROTARY**. The levers are spring loaded to return to the center, **OFF** position.

The **DUMP** lever, when pushed forward, provides air to the 1/4" push-connect fitting that is intended to supply air to a pneumatic dump valve to divert high-pressure water to the tool.

When the **FEED** lever is pushed forward, it drives the flex lance and tool forward into the pipe. When the **FEED** lever is pulled backward, it retracts the flex lance and tool from the pipe.

Forward and Reverse **FEED SPEED** can be adjusted independently using the brass colored flow control valves on the base of the control box. The Forward and Reverse directions are labeled. Rotate the flow controls in the clockwise direction to increase the speed and counterclockwise to slow the speed. Slow speeds are required to go forward through bends. Faster speeds are acceptable during retraction.

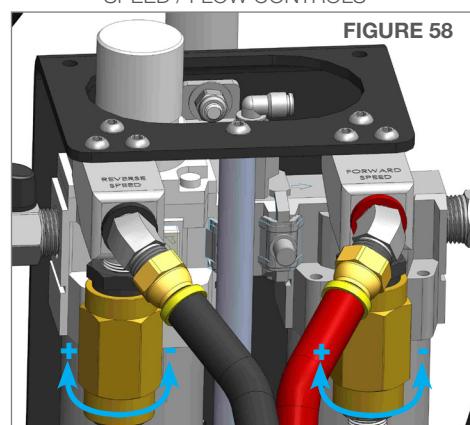
The **LINEAR** lever moves the Linear Drive along the Slotted Rail.

The **ROTARY** lever allows the ProPositioner Assembly to pivot clockwise and counterclockwise from the Spider Plate mount.

CONTROL PANEL



SPEED / FLOW CONTROLS



**DANGER**

Do NOT run the positioner until all operators are outside of the dome and the system is ready to run.

**TEST RUN PROCEDURE****• Perform the PRE-RUN SAFETY CHECK**

Follow "THE WARNING AND SAFETY INSTRUCTIONS" section in this manual.

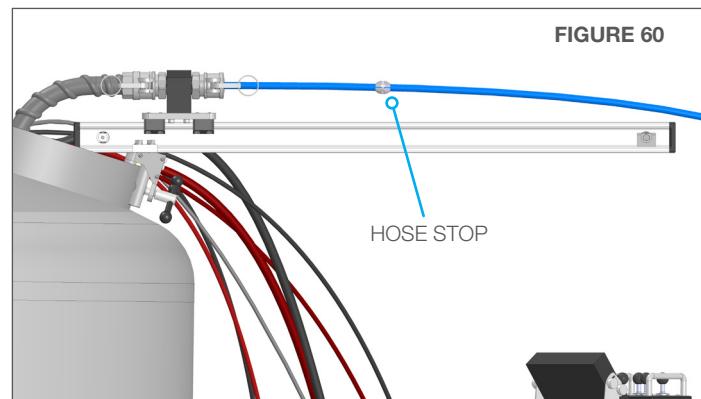
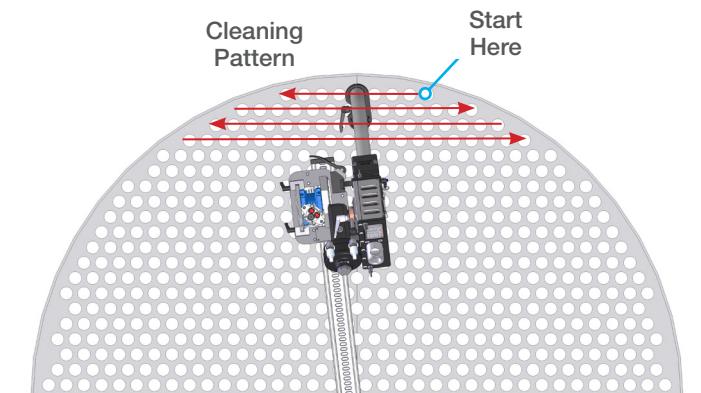
- Plug the Power Pack into a standard power outlet.
- Push the Power Button ON the Power Pack. This will activate the Monitor Screen on the Control Box and allow sight into the Dome. (**Figure 59**)
- Ensure the appropriate Hose Stop installed securely on the Hose.
- Align the Guide Tube as closely as possible to the exchanger tubes before advancing the Banshee into each tube.
- Adjust the hose feed speed controls on the Control Box. Proper forward and reverse speeds will vary, depending on the type of material being removed and the tube size. Adjustment of the hose feed speed controls may be necessary during operation in order to optimize cleaning and overall productivity.
- Operate the high-pressure water at full pressure and use the **DUMP CONTROL** to verify that the dump valve is working properly.

**TECH TIP:**

If the Linear and Rotary Directions don't feel intuitive, switch the connections that are labeled "Rotary" and "Linear" on the Base.

**FIGURE 59****RUN PROCEDURE**

1. Loosely install the Hose Stop on the hose. (**Figure 60**)
2. Feed forward and advance the Banshee Tool into the tube bundle at low pressure and listen for the high pitched whistle of the Banshee Tool exiting the tubes at the far side of the heat exchanger. There is no visibility to the end of the tubes, so listening for the high pitched whistle of the Banshee Tool exiting the tubes is critical to proper Hose Stop set up.
3. When the Banshee Tools have exited the tubes, stop the forward movement of the lance and dump the high pressure water.
4. Move the Hose Stop into the approximate position shown in (**Figure 60**), and tighten it onto the Hose.
5. Retract the Tool back into the Guide Tubes.
6. Using the Linear and Rotary Drive Controls, locate the first tube to be cleaned on the Camera Monitor. (**Figure 61**)
7. Close the dump and gradually increase the pump to the desired operating pressure.
8. Feed forward and advance the tool into the tube bundle and follow the cleaning pattern as shown in (**Figure 61**) until the first half is complete.
9. Make sure all tubes have been cleaned in the reachable area before moving the Spider Mount. A key indicator of a dirty tube could be scale or other materials on the outer rim. Cleaned tubes should appear shiny on the outer rim.
10. Before moving the Spider Mount to clean the tubes underneath it; dump the high pressure water to de-energize the system, turn off the pump, temporarily disconnect Sub-Assembly 1 from the Linear Drive. *It will be helpful to mark the center of the tube face.*

**FIGURE 60****FIGURE 61**

## MAINTENANCE AND TROUBLESHOOTING

MAINTENANCE		
Maintenance Item	Frequency	Maintenance Required
Air Motors	<b>After</b> each use	Apply a small amount of air tool oil directly into the forward and reverse fittings. Then, briefly operate the controls at slow speed for a short duration in each direction to coat the interior parts of the motor.
All Air Fittings	<b>After</b> each use	Always use the supplied plugs and caps to seal the air motor ports when not in use. Make sure the plugs are clean and/or wipe them off before inserting them into the air motor fittings.
All components the hoses pass through	<b>After</b> each use	As wear occurs the rounded edges could become sharp and damage hoses. Any components showing excessive wear should be replaced.
Roller grooves	<b>Before</b> each use	Replace roller if cuts or roughness is present. (See the Roller Removal and Installation pages in this manual )
Hose	<b>After</b> each use	Install cap on threads to protect threads and prevent contamination.
Lubricator of control box	<b>Before</b> each use	Add oil when fluid drops below minimum level marking.
Guide Tube/Collet Block	<b>After</b> each use	Wash out any material build up to prevent components from being clogged.
Waterblast Tool	<b>After</b> each use	Remove tool, lubricate and store in clean container.
Rotary Drive	<b>Every 8 hours of use</b>	Lubricate the two Zerks on the Rotary Drive with 1 to 2 pumps of any multipurpose NLGI 2 grease.

TROUBLESHOOTING	
Problem	Solution
No air is delivered to tool	<ul style="list-style-type: none"> <li>-Check that shut-off valve near regulator is open</li> <li>-Check that regulator is set to 100 psi</li> <li>-Open flow control valves by rotating the brass colored speed controls in the counterclockwise direction.</li> </ul>
Hose is being damaged by Rollers	<ul style="list-style-type: none"> <li>-Check that the proper Rollers are installed (see roller and collet reference plate)</li> <li>-Loosen CAM lever on ABX-PRO Tractor to reduce clamp force on hose.</li> <li>-Check Rollers for excessive wear in groove</li> </ul>
Hose slippage on Rollers	<ul style="list-style-type: none"> <li>-Check that the proper Rollers are installed (see roller and collet reference plate)</li> <li>-Tighten CAM lever on ABX-PRO Tractor to retain clamp force on hose.</li> </ul>

Contact StoneAge for Safety Data Sheets for material usage, a complete list of spare part numbers, and service instructions for the ProPositioner (PROP-DBP), and CONTROL BOX (CB-PROP-P).

## STORAGE, TRANSPORTATION, AND HANDLING

Use mild soapy water to clean the equipment in order to remove corrosive materials. Before storing the unit, use compressed air to blow off debris and moisture. Apply a small amount of air tool oil directly into the Linear and Rotary Drive fittings. Then, briefly operate the controls at slow speed for a short duration in each direction to coat the interior parts of the motor. Always use the supplied plugs and caps to seal the air motor ports when not in use. Make sure the plugs are clean and/or wipe them off before inserting them into the air motor fittings.

The ProPositioner (PROP-DBP), can be broken down into smaller components that should be stored in a clean and dry area.

## TABLE OF CONTENTS

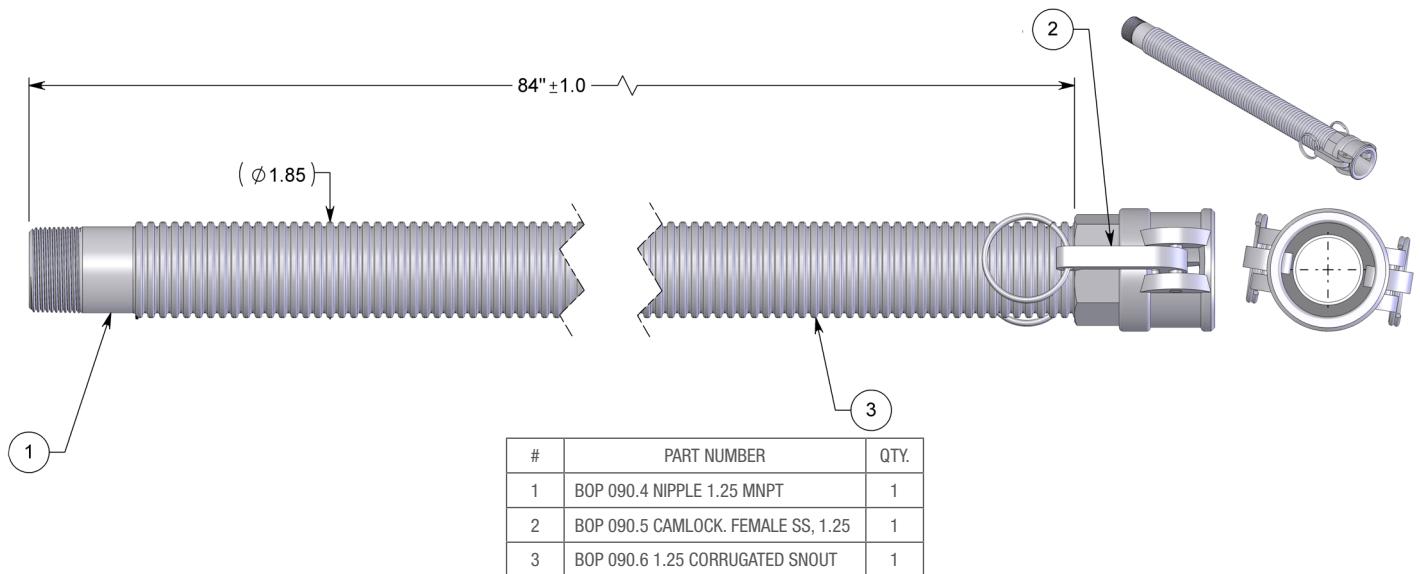
<b>△ ABX-PRO HOSE TRACTOR</b>	See separate manual for this assembly	
BOP 090-7-001	7'X 1.25" CORRUGATED SNOUT WITH CAMLOCK .....	36
CAM 102-V2	MONITOR ASSEMBLY.....	36
CAM 200-AC	CAMERA SYSTEM.....	37
CAM 210	CIRCULAR CONNECTOR 4POS SCREW MALE .....	37
CAM 220	CAMERA HOUSING ASSEMBLY.....	37
CAM 245	CAMERA CABLE.....	37
<b>△ CB-PROP-P</b>	CONTROL BOX PEDESTAL ASSEMBLY.....	38
<b>△ CB-PROP.1-P</b>	CONTROL BOX PEDESTAL SUB- ASSEMBLY .....	39
<b>△ CB 470</b>	BASE ASSEMBLY .....	40
<b>△ CB 480-XX</b>	FTG ASSY, PL6 (BK OR RD).....	40
<b>△ CB 486</b>	PILOT REGULATOR ASSEMBLY .....	40
CB 488	MONITOR MOUNT ASSEMBLY.....	40
<b>△ CB 496</b>	SPOOL VALVE ASSEMBLY .....	41
<b>△ CB 497</b>	SPOOL VALVE ASSEMBLY .....	41
CB 755-15-C	PRODRIVE SUPPLY HOSE WITH CAMERA CABLE .....	41
DBP 305	RAIL PLUG ASSEMBLY.....	42
DBP 320	ICM (TOP MOUNT) TROLLEY CLAMP ASSEMBLY.....	42
DBP 330	DELTA T (SIDE MOUNT) TROLLEY CLAMP ASSEMBLY.....	43
<b>△ HS 121-XX</b>	HOSE STOP CLAMPS .....	43
PROP 174-54	ROLLERS FOR 8/4 HOSE .....	43
PROP 187-XX-K	EXPANSION PLUG KIT.....	44
<b>△ PROP 320</b>	ROTARY DRIVE ASSEMBLY .....	45
<b>△ PROP 330</b>	LINEAR DRIVE ASSEMBLY .....	45
PROP 337	ADJUSTABLE M8 HANDLE .....	46
PROP 339	FLAT OVERSIZED M8 WASHER.....	46
<b>△ PROP 340</b>	GUIDE TUBE COLLET BLOCK ASSEMBLY .....	46
PROP 420-XX	RAIL FLANGE MOUNT ASSEMBLY .....	47
PROP 425	SNOUT CARRIAGE ASSEMBLY .....	47
PROP 430-001	SPIDER PLATE ASSEMBLY.....	48
PROP 440-24	CAMERA MOUNT ASSEMBLY .....	48
PROP 460-BN24	GUIDE WELDMENT BN24.....	49
PROP 580-1.33-001	2.5" BOX RAIL EXTENSION KIT, SLOTTED, 1.33 FT....	49
<b>○ ACDA 61020019-K</b>	20K DUMP VALVE ASSEMBLY WITH AIR FITTINGS .	50
<b>○ FPA-SKR</b>	FOOT PEDAL ASSEMBLY.....	50
<b>△ THE PROP-DBP ACCESSORY IS DESIGNED TO BE USED WITH THESE ITEMS. THEY ARE NECESSARY TO THE FUNCTION OF THE ENTIRE PROP-DBP SYSTEM BUT NOT INCLUDED IN THE PROP-DBP PACKAGE.</b>		
<b>○</b> These are optional accessories PROP-DBP System.		

Please see the User Manuals for the ABX-PRO Hose Tractor and the ProPositioner PROP-300 for more detailed information on those components. <https://www.stoneagetools.com/manuals>

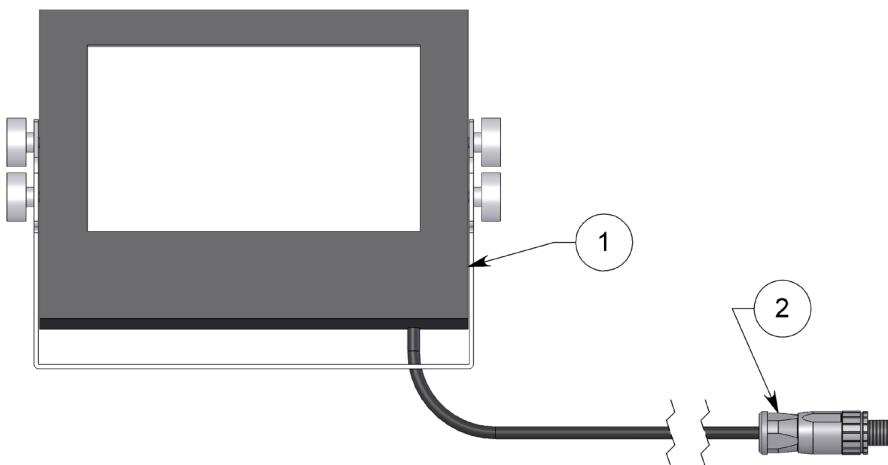
Contact StoneAge for Safety Data Sheets for material usage, a complete list of spare part numbers, and service instructions for the Positioner and all accessories.

## PART DIAGRAMS

**BOP 090-7-001**  
7'X 1.25" CORRUGATED SNOUT WITH CAMLOCK



**CAM 102-V2**  
MONITOR ASSEMBLY



#	PART NUMBER	QTY.
1	CAM 102.1 MONITOR	1
2	CAM 199 CONEC M12 SCREW TERMINAL MALE 8POS	1

**CAM 200-AC**  
AC POWER PACK (US PLUG)

\*Input power requirements  
100-240V AC 1.8A



**CAM 210**  
CIRCULAR CONNECTOR 4POS SCREW MALE



**CAM 220**  
CAMERA HOUSING ASSEMBLY

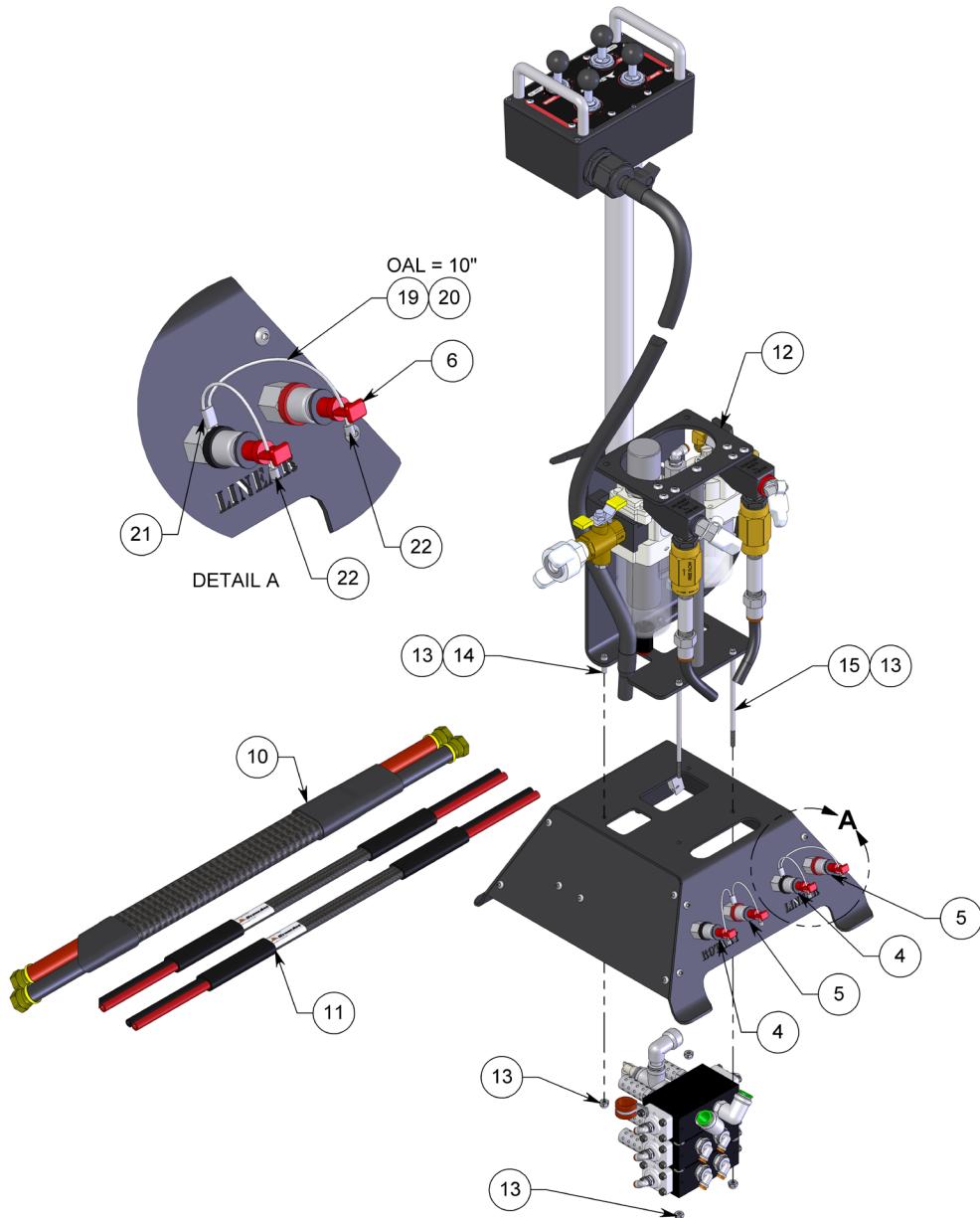


**CAM 245**  
CAMERA CABLE



## PART DIAGRAMS

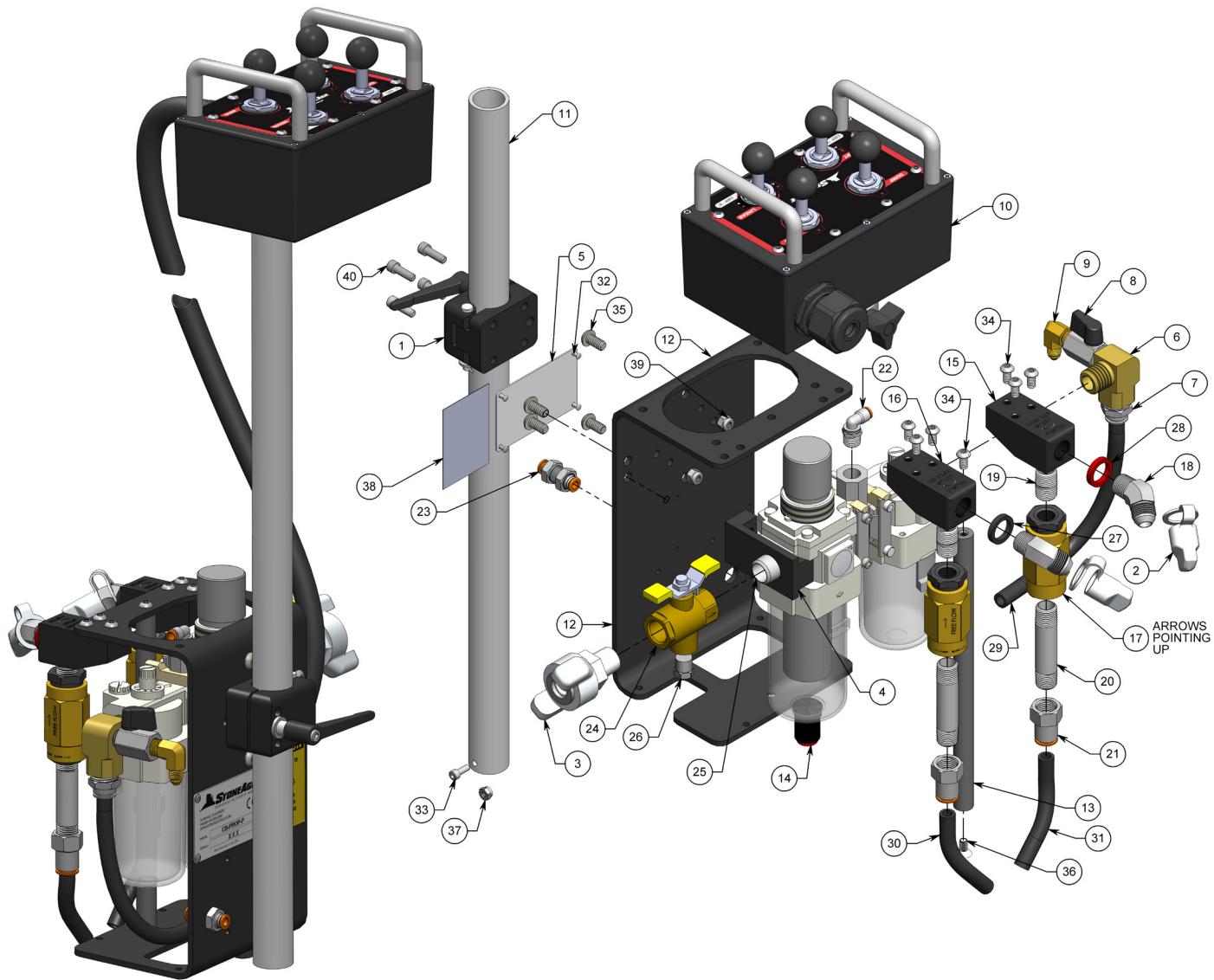
## **PROPOSITIONER (CB-PROP-P) CONTROL BOX PEDESTAL ASSEMBLY**



#	PART NUMBER	QTY.
1	CB 471 BASE	1
2	CB 472 BASE SIDE PLATE	2
3	CB 473 BASE BRACE	4
4	CB 480-BK FTG ASSY, PL6 BLACK	2
5	CB 480-RD FTG ASSY, PL6 RED	2
6	CB 481 FTG, STEM PLUG PL6 MODIFIED	4
7	CB 486 REGULATOR ASSY, SUPPLY	1
8	CB 496 SPOOL VALVE ASSY, CB-PROP (PROP)	2
9	CB 497 SPOOL VALVE ASSY, CB-PROP (PRO)	1
10	CB 745-15 PRODRIVE SUPPLY HOSE BUNDLE	1
11	CB 749-15 PRO POSITIONER UMBILICAL ASSEMBLY	2

12	CB-PROP.1-P CONTROL BOX UPPER ASSY, PEDESTAL	1
13	HC 025.1 NUT, NYLOK 10-24 SS	8
14	GS 319-03 SHCS 10-24 X .75 SS	2
15	GS 319-20 SHCS 10-24 X 5.00 SS	2
16	GSB 319-02 BHCS 10-24 X .50 SS	4
17	GSB 319-02-32 BHCS 10-32 X .50 SS	16
18	GW 325-L WASHER, LOCK .25 SS	4
19	SRT 209.1.1 WIRE ROPE FOR CB-PROP LEFT (CUT TO LENGTH)	1
20	SRT 209.1.1 WIRE ROPE FOR CB-PROP RIGHT (CUT TO LENGTH)	1
21	SRT 209.1.3 ALUMINUM SLEEVE	2
22	SRT 209.1.4 ALUMINUM STOP SLEEVE	4

**PROPOSITIONER (CB-PROP.1-P)**  
CONTROL BOX PEDESTAL SUB- ASSEMBLY



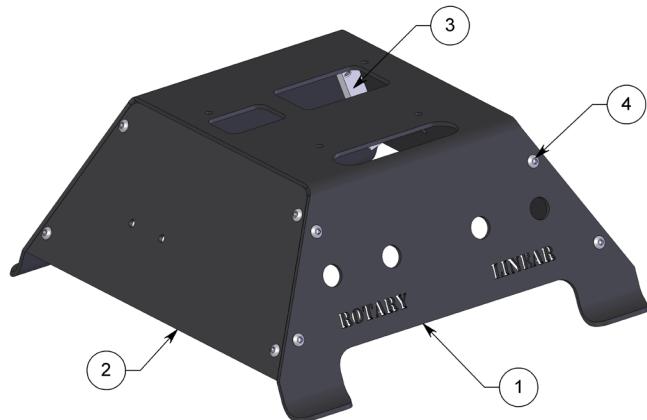
#	PART NUMBER	QTY.
1	BOP 070 HINGE CLAMP ASSEMBLY	1
2	BR 167 DUST CAP, J8	2
3	CB 114 INLET FITTING W/ PIN	1
4	CB 395 FRL BRACKET	1
5	CB 469-P CE SERIAL PLATE, PEDESTAL	1
6	CB 475 FTG, ELBOW 90 P8M P8F P4F	1
7	CB 477 FTG, ADAPTER P8M PL8	1
8	CB 478 FTG, BALL VALVE P4M P4F	1
9	CB 479 FTG, ELBOW 90 P4M J4M BRASS	1
10	CB 490-P CB-PROP REMOTE BOX ASSY, PEDESTAL	1
11	CB 727 REMOTE BOX POLE, 1.250D	1
12	CB 760 FRL FRAME, ABX-PRO	1
13	CB 762 FRL SUPPORT ROD, ABX-PRO	1

14	CB 763 RL ASSY, ABX PRO	1
15	CB 765-FWD 90 DEG FLOW CONTROL BLOCK, FORWARD	1
16	CB 765-REV 90 DEG FLOW CONTROL BLOCK, REVERSE	1
17	CB 780-P6 IN-LINE FLOW CONTROL, P6	2
18	CB 781 FTG, ELBOW 45 P6M J8M	2
19	CB 782 PIPE NIPPLE P6P6 X 1.00 SS	2
20	CB 783 PIPE NIPPLE P6P6 X 3.00 SS	2
21	CB 784 FTG, ADAPTER P6F PL8	2
22	CB 786 FTG, ELBOW SWIVEL 90 P4M PL4	1
23	CB 790 FTG, BULKHEAD UNION PL4 PL4	1
24	CB 792 VALVE, AUTODRAIN, P8	1
25	CB 794 FTG, NIPPLE CLOSE P8M P8M SS	1
26	DB 026 BREATHER, SINTERED BRONZE, P4	1

27	GP 011-BK ID WASHER, RUBBER, MED, BLACK	1
28	GP 011-R ID WASHER, RUBBER, MED, RED	1
29	GPTB 0500-PUR95A-BK MAIN TUBE, FRL, 9IN	1
30	GPTB 0500-PUR95A-BK MAIN TUBE, FC1, 4IN	1
31	GPTB 0500-PUR95A-BK MAIN TUBE, FC2, 4IN	1
32	GR 125-SS-188-250 RIVET, BLIND, DOMED, SS, Ø.125, .188-.250 L	4
33	GS 319-02 SHCS 10-24 X .50 SS	1
34	GSB 325-02 BHCS .25-20 X .50 SS	7
35	GSB 331-035 BHCS .31-18 X .62 SS	4
36	GSF 325-02 FHCS .25-20 X .50 SS	1
37	HC 025.1 NUT, NYLOK 10-24 SS	1
38	PL 156-125 CAUTION INLET AIR, 125 MAX	1
39	TB 044.1 NUT, NYLOK .25-20 SS	4
40	TB 050 SHCS .25-20 X .75 SS	4

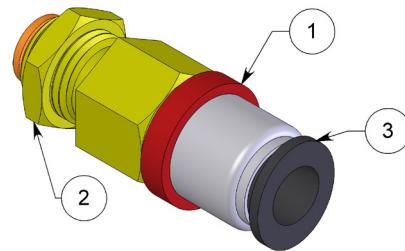
## PART DIAGRAMS

**CB 470**  
BASE ASSEMBLY



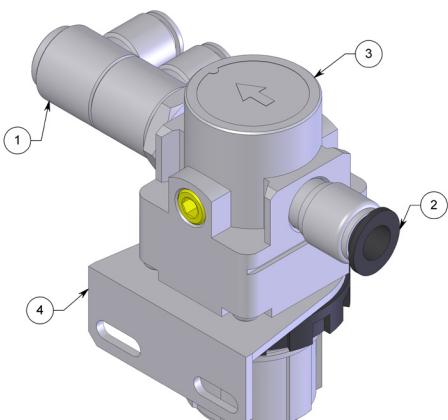
#	PART NUMBER	QTY.
1	CB 471 BASE	1
2	CB 472 BASE SIDE PLATE	2
3	CB 473 BASE BRACE	4
4	GSB 319-02-32 BHCS 10-32 X .50 SS	16

**CB 480-XX**  
FTG ASSY, PL6 (BK OR RD)



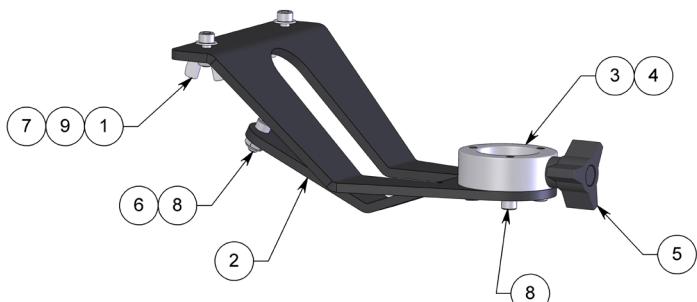
#	PART NUMBER	-BK PL6/QTY.	-RD PL6/QTY.
1	GP 013-BK ID WASHER, RUBBER, SMALL, BLACK	1	-
1	GP 013-R ID WASHER, RUBBER, SMALL, RED	-	1
2	CB 482 FTG, BULKHEAD ADAPTER P4F PL4	1	1
3	CB 483 FTG, ADAPTER P4M PL6	1	1

**CB 486**  
PILOT REGULATOR ASSEMBLY



#	PART NUMBER	QTY
1	CB 339 FTG, MANIFOLD 90 P4M 2XPL6	1
2	CB 483 FTG., ADAPTER P4M PL6	1
3	CB 704 PRESSURE REGULATOR, 60 PSI	1
4	CB 704.1 BRACKET ASSY	1

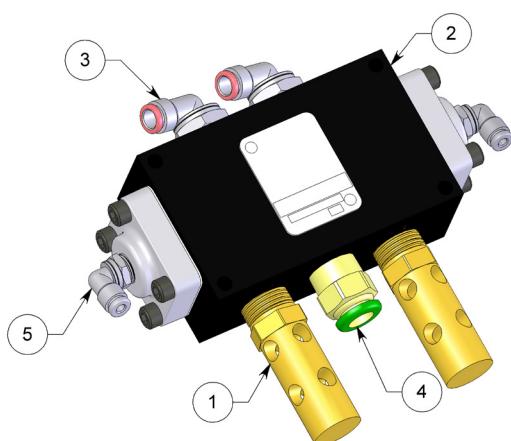
**CB 488**  
MONITOR MOUNT ASSEMBLY



#	PART NUMBER	QTY
1	CAM 149 10-24 WING NUT	2
2	CB 489 MONITOR BRACKET	1
3	CB 724 MODIFIED COLLAR	1
4	CB 725 THREAD LOCKING SLOTTED INSERT, 1/4-20 X 3/8-16	1
5	CB 726 THREE LOBE KNOB, .25-20	1
6	GN 319-L-32 NUT, NYLOK 10-32 SS	1
7	GS 319-02 SHCS 10-24 X .50 SS	2
8	GS 319-02-32 SHCS 10-32 X .50 SS	4
9	GW 319-F WASHER, FLAT #10 SS	2

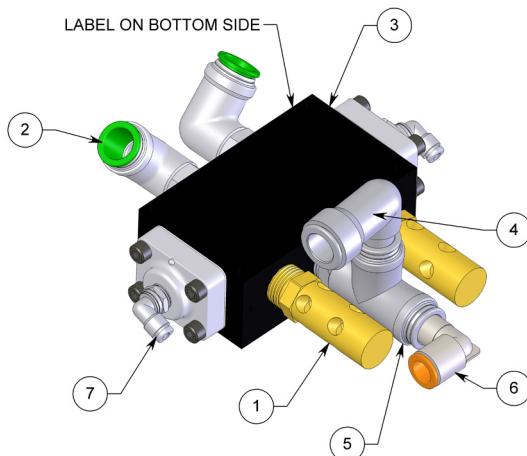
## PART DIAGRAMS

**CB 496**  
SPOOL VALVE ASSEMBLY



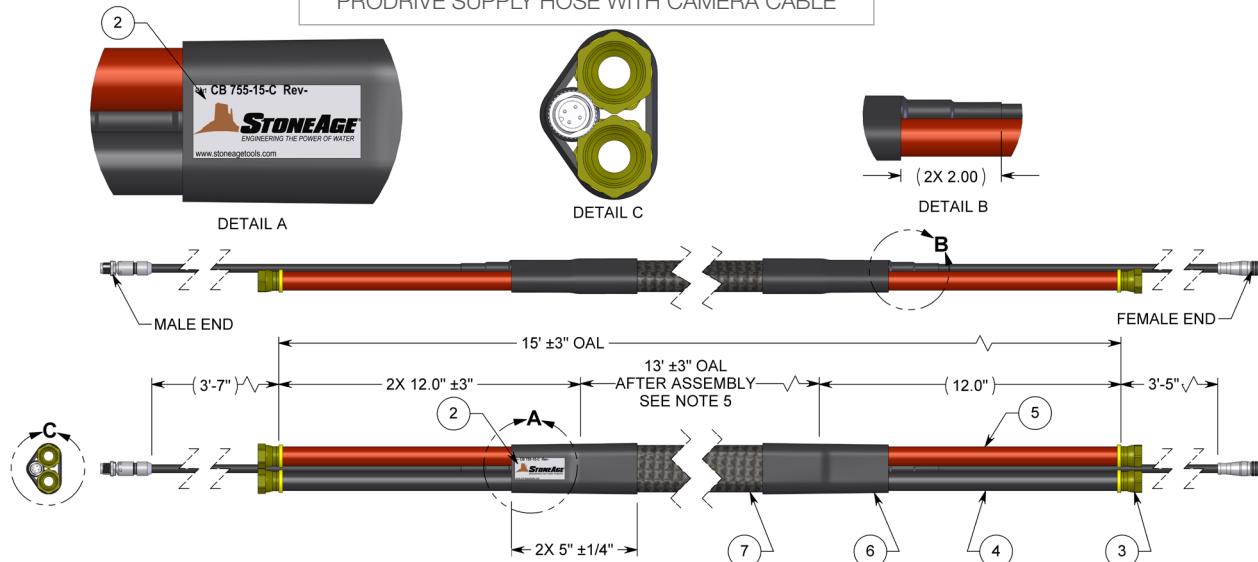
#	PART NUMBER	QTY.
1	BR 154 MUFFLER P6	2
2	CB 329-OPEN PILOT SPOOL VALVE, OPEN CENTER	1
3	CB 375 FTG, ELBOW SWIVEL 90 P6M PL4	2
4	CB 559 FTG, ADAPTER P6M PL6	1
5	CB 785 FTG, ELBOW SWIVEL 90 P2M PL2	2

**CB 497**  
SPOOL VALVE ASSEMBLY



#	PART NUMBER	QTY.
1	BR 154 MUFFLER P6	2
2	BUD 141 FTG, ELBOW SWIVEL 90 P6M PL8	2
3	CB 329-OPEN PILOT SPOOL VALVE, OPEN CENTER	1
4	CB 494 FTG, STEM ELBOW 90 PL8M PL8F	1
5	CB 495 FTG, TEE MALE RUN P6M PL8F PL8F	1
6	CB 756 FTG, STEM ELBOW 90 PL8M PL6F	1
7	CB 785 FTG, ELBOW SWIVEL 90 P2M PL2	2

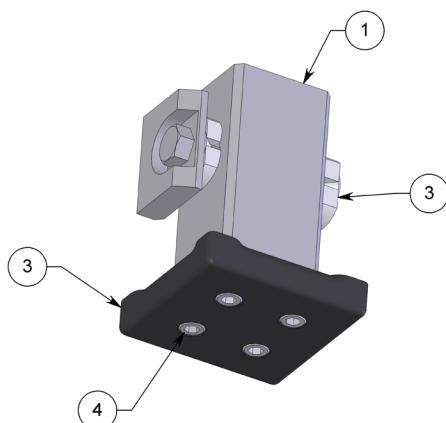
**CB 755-15-C**  
PRODRIVE SUPPLY HOSE WITH CAMERA CABLE



PART NUMBER	#	MATERIAL	QTY	OAL
CAM 247-22	1	SEE BOM & NOTE 1	1	
CB 755.6-15-C	2	LABEL PROVIDED BY VENDOR	1	
GP 053	3	1/2" PUSH-ON BRASS HOSE FITTING 1/2" JIC (REFERENCE ONLY DIXON 287-0812)	4	
GPHO 0500-RUB-BK	4	1/2" ID X 3/4" OD PUSH-ON AIR HOSE, BUNA-N/PVC, 250 PSI, BLACK (REF ONLY MC 5288K13)	1	15'
GPHO 0500-RUB-RD	5	1/2" ID X 3/4" OD PUSH-ON AIR HOSE, BUNA-N/PVC, 250 PSI, RED (REF ONLY MC 5288K13)	1	15'
GPHS 1500-OLE-A-BK	6	1.50 DIA HEAVY DUTY MOISTURE SEAL HEAT-SHRINK (REF ONLY MC 7270K84)	2	5"
GPSL 1250-NYL-G-BK	7	1.25 DIA BRAIDED EXPANDABLE HEAVY DUTY NYLON (TECHFLEX GORILLA SLEEVE NHN 1.25 BK)	1	15'

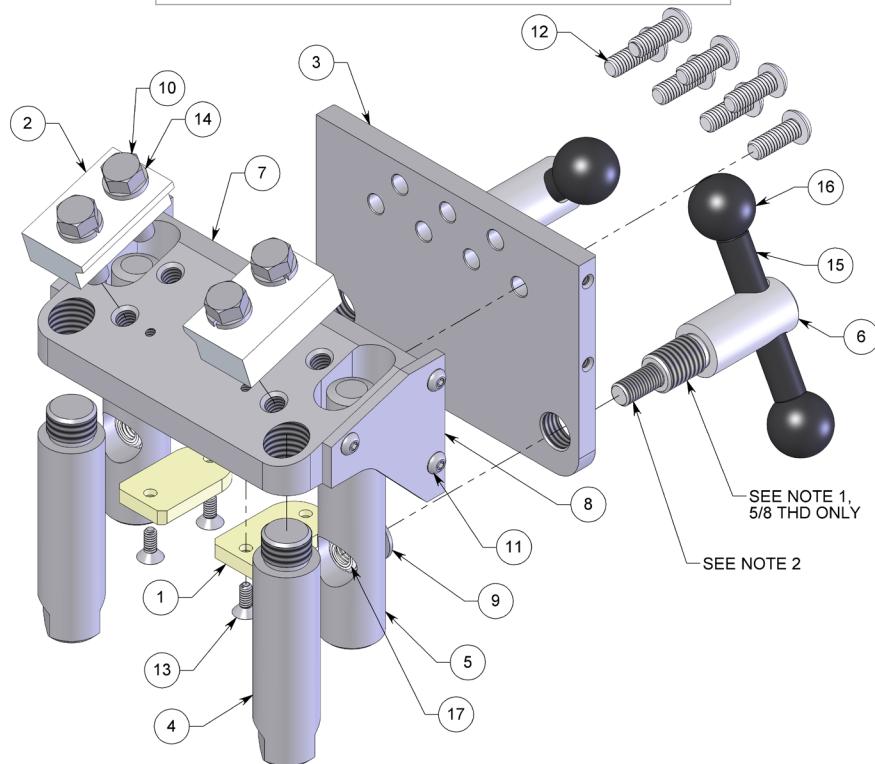
## PART DIAGRAMS

**DBP 305**  
RAIL PLUG ASSEMBLY



#	PART NUMBER	QTY.
1	DBP 182 RAIL BLOCK	1
2	DBP 305.1 RAIL PLUG	1
3	PROP 008-2.5-001 2.5" WEDGE BOLT ASSEMBLY	1
4	TB 050 SHCS .25-20 X .75 SS	4

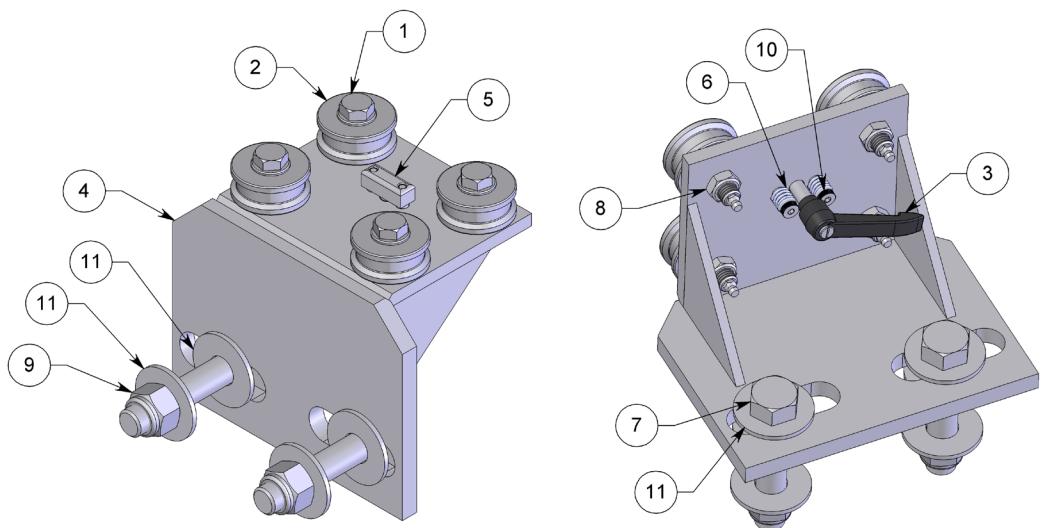
**DBP 320**  
ICM (TOP MOUNT) TROLLEY CLAMP ASSEMBLY



#	PART NUMBER	QTY.
1	ABX 573 CLEVIS BEARING PAD	2
2	BR 060-D RAIL CLAMP, DRILLED	2
3	DBP 321 PUSH PLATE	1
4	DBP 322 THREADED ROD	2
5	DBP 323 THREADED ROD PLUNGER	2
6	DBP 324 RAIL CLAMP SHAFT	2
7	DBP 325 TOP PLATE	1
8	DBP 326 GUSSET	2

9	DBP 327 HIGH LOAD THRUST BEARING	2
10	GB 337-05 BOLT, HEX .37-16 X 1.25 SS	4
11	GSB 319-02 BHCS 10-24 X .50 SS (TR130 235)	6
12	GSB 331-03 BHCS .31-18 X .75 SS	7
13	GSF 319-02 FHCS .19-24 X .50 SS (CB 555)	4
14	GW 337-L LOCK WASHER SS	4
15	LWP 531 RAIL CLAMP LEVER	2
16	LWP 532 RAIL CLAMP KNOB	4
17	SRT 333 NYLOCK NUT SS THIN (SEE GN 337-LJ)	2

**DBP 330**  
DELTA T (SIDE MOUNT) TROLLEY CLAMP ASSEMBLY



#	PART NUMBER	QTY.
1	BR 051-2.0-0 AXLE-ZERK	4
2	BR 055 ROLLER ASSY	4
3	BU 151 HANDLE	1
4	DBP 310 BOX RAIL FLANGE MOUNT WELDMENT	1
5	FF 163 SLIDE STOP	1

6	FF 164 SS COMPRESSION SPRING	2
7	GB 575-16 BOLT, HEX .75-10 X 4.00	2
8	GN 350-LJ NYLOK NUT THIN SS	4
9	GN 575-L NYLOK NUT	2
10	GSSH 0312-1000-SS SHOULDER SCREW	2
11	GW 575-F FLAT WASHER	6

**HS 121-XX-XX**  
HOSE STOP CLAMPS



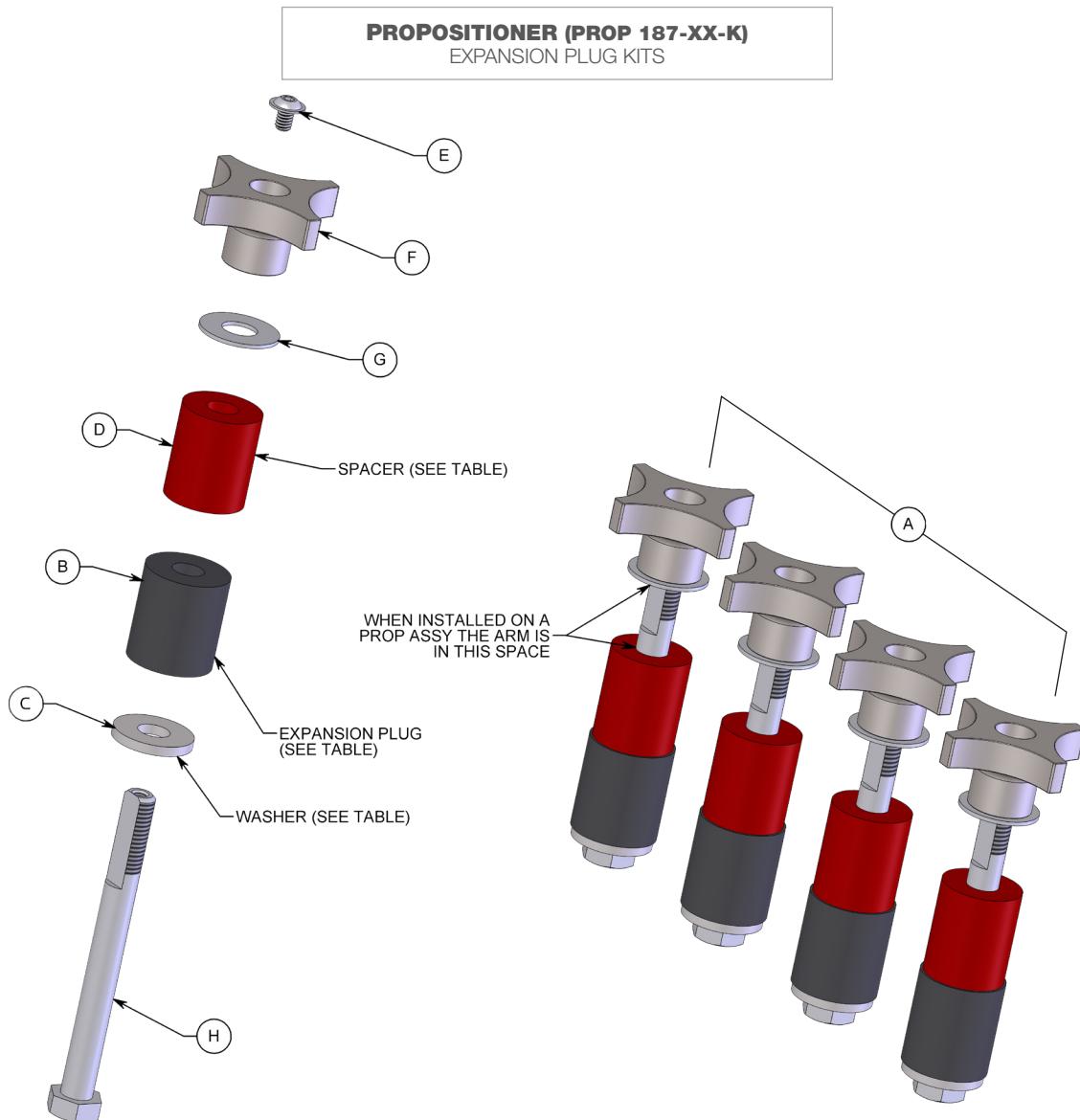
HOSE STOP TO HOSE REFERENCE TABLE

HOSE STOP PART NUMBER	HOSE STOP CLAMP ASSEMBLY SIZE		SPIRSTAR	PARKER
	in.	mm		
HS 121-27-34	0.27-0.34	6.8-8.6	3/2, 3/4	2240D-02, 2440D-02
			4/2	2240D-025
HS 121-34-42	0.34-0.42	8.6-10.7	4/4	2448D-025
			5/2	2240D-03
HS 121-42-50	0.42-0.50	10.7-12.7	4/4	2448D-025
			4/6, 5/4, 6/2	2240D-04
HS 121-50-56	0.50-0.56	12.7-14.2	5/6	2240D-05
			6/4	2440D-04
			8/2	2740D-03
HS 121-56-61	0.56-0.61	14.2-15.5	8/4	

**PROPOSITIONER (PROP 174-54)**  
ROLLERS FOR 8/4 HOSE

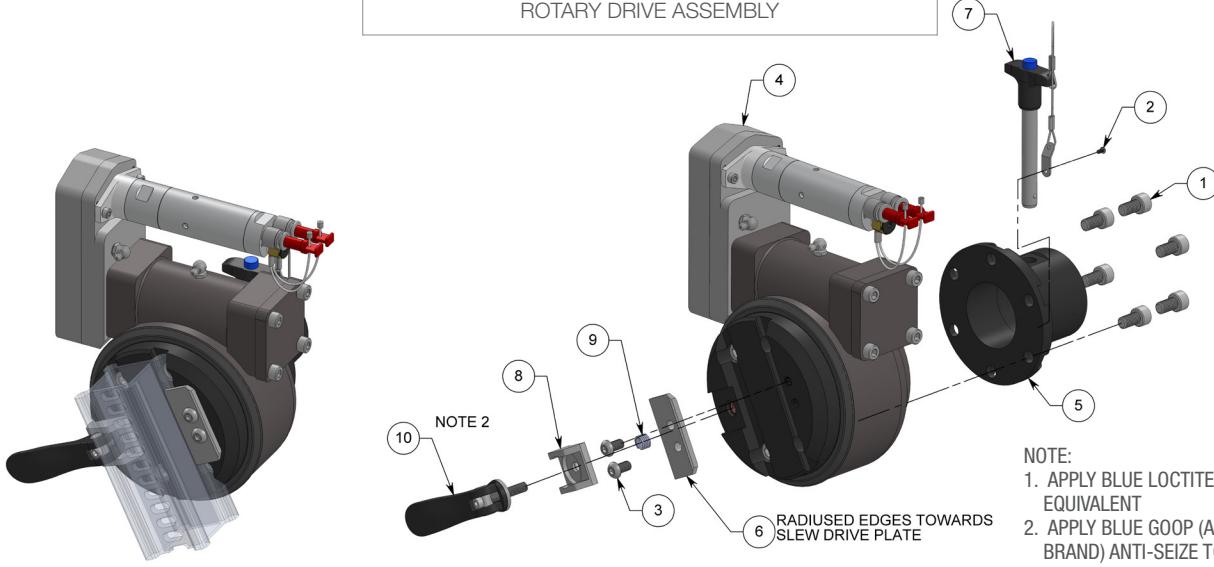


## PART DIAGRAMS



Tube ID Range:		A	B	C	D	E	F	G	H
Inches	mm	Kit Part Number	Expansion Plug	Washer	Spacer	Knob screw	Knob	Washer	Bolt
0.901-0.982	22.88-24.95	PROP 187-22-K	DBP-187-22	DBP 188-20	PROP 435-20	GSB 325-015-F	PROP 438	GW 350-F	PROP 437-001
0.983-1.064	24.96-27.03	PROP 187-24-K	DBP-187-24	DBP 188-22	PROP 435-22				
1.065-1.146	27.04-29.11	PROP 187-26-K	DBP-187-26	DBP 188-24	PROP 435-24				
1.146-1.228	29.12-31.19	PROP 187-28-K	DBP-187-28	DBP 188-26	PROP 435-26				
1.228-1.310	31.20-33.27	PROP 187-30-K	DBP-187-30	DBP 188-28	PROP 435-28				
1.310-1.392	33.28-35.35	PROP 187-32-K	DBP-187-32	DBP 188-30	PROP 435-30				
1.392-1.473	35.36-37.43	PROP 187-34-K	DBP-187-34	DBP 188-32	PROP 435-32				
1.474-1.555	37.44-39.50	PROP 187-36-K	DBP-187-36	DBP 188-34	PROP 435-34				
1.556-1.637	39.52-41.58	PROP 187-38-K	DBP-187-38	DBP 188-36	PROP 435-36				
1.638-1.719	41.60-43.66	PROP 187-40-K	DBP-187-40	DBP 188-38	PROP 435-38				
1.720-1.801	43.68-45.74	PROP 187-42-K	DBP-187-42	DBP 188-40	PROP 435-40				
1.802-1.883	45.76-47.82	PROP 187-44-K	DBP-187-44	DBP 188-42	PROP 435-42				
1.883-1.965	47.84-49.90	PROP 187-46-K	DBP-187-46	DBP 188-44	PROP 435-44				
1.965-2.046	49.92-51.98	PROP 187-48-K	DBP-187-48	DBP 188-46	PROP 435-46				

**PROPOSITIONER (PRO 320)**  
ROTARY DRIVE ASSEMBLY

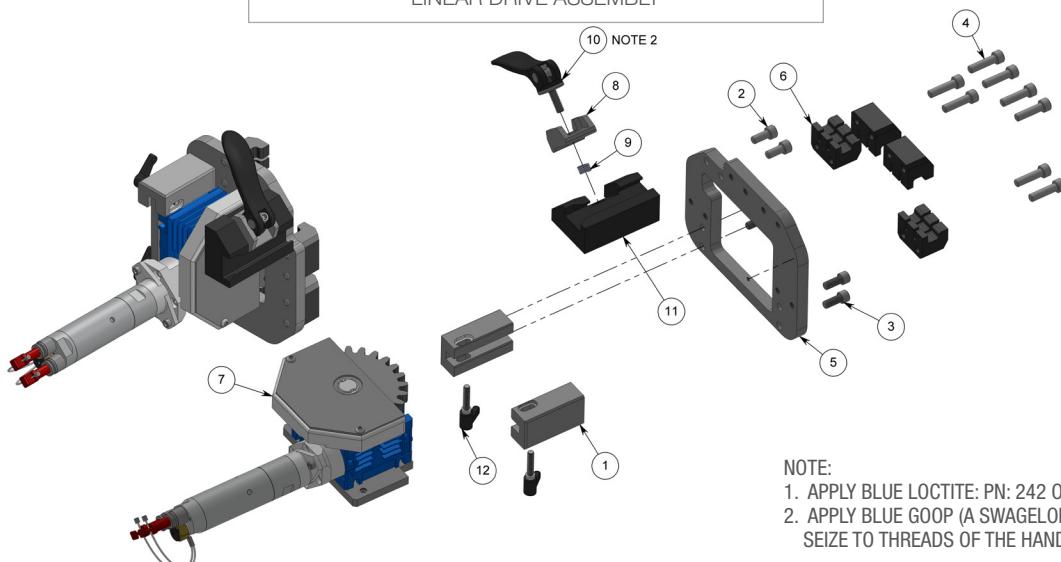


NOTE:  
 1. APPLY BLUE LOCTITE: PN: 242 OR EQUIVALENT  
 2. APPLY BLUE GOOP (A SWAGELOK BRAND) ANTI-SEIZE TO THREADS OF THE HANDLE.

#	PART NUMBER	QTY.
1	GS 3M10-18-1.5 SHCS M10X1.5 X 18 SS	6
2	GSB 3M3-6-0.5 BHCS M3X0.5 X 6 SS	1
3	GSB 3M8-16-1.25 BHCS M8X1.25 X 16 SS	2
4	PROP 310 GEARBOX ASSEMBLY	1
5	PROP 322 COUPLING, SLEW DRIVE	1

6	PROP 323 PLATE, COVER	1
7	PROP 325 PIN, QUICK RELEASE	1
8	PROP 334 TAB, CLAMP	1
9	PROP 335 SPRING, COMPRESSION	1
10	PROP 336 HANDLE ASSY	1

**PROPOSITIONER (PROP 330)**  
LINEAR DRIVE ASSEMBLY



NOTE:  
 1. APPLY BLUE LOCTITE: PN: 242 OR EQUIVALENT  
 2. APPLY BLUE GOOP (A SWAGELOK BRAND) ANTI-SEIZE TO THREADS OF THE HANDLE.

#	PART NUMBER	QTY.
1	DBP 116 HANDLE BLOCK MOUNT HZ	2
2	GS 3M8-18-1.25 SHCS M8x1.25 x 18 SS	2
3	GS 331-03 SHCS .31-18 x .75 SS	4
4	GS 3M8-30-1.25 SHCS M8x1.25 x 30 SS	8
5	PROP 331 PLATE, CARRIAGE	1
6	PROP 332 RAIL SLIDE, PLASTIC	4

7	PROP 333 MOTOVARIO ASSY	1
8	PROP 334 TAB, CLAMP	1
9	PROP 335 SPRING, COMPRESSION	1
10	PROP 336 HANDLE ASSY	1
11	PROP 338 BLOCK, CLAMP	1
12	SRT 557 ADJUSTABLE HANDLE .25-20 X 1.19	2

## PART DIAGRAMS

### LINEAR DRIVE HANDLE REPLACEMENT PARTS

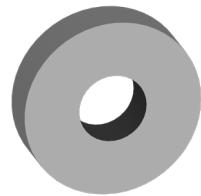
**PROP 337**

ADJUSTABLE M8 HANDLE



**PROP 339**

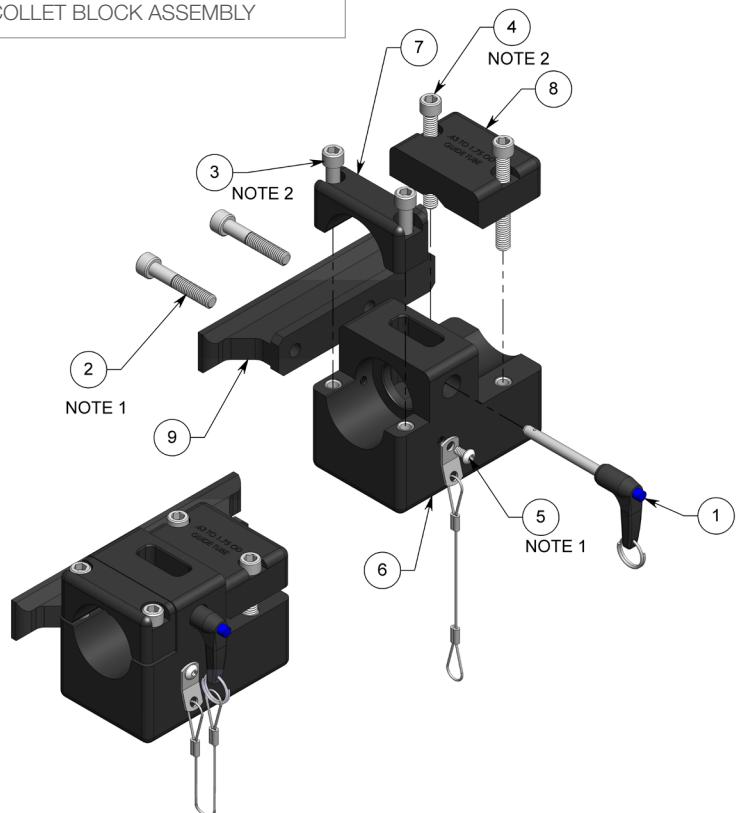
FLAT OVERSIZED M8 WASHER



**PROP 340**

GUIDE TUBE COLLET BLOCK ASSEMBLY

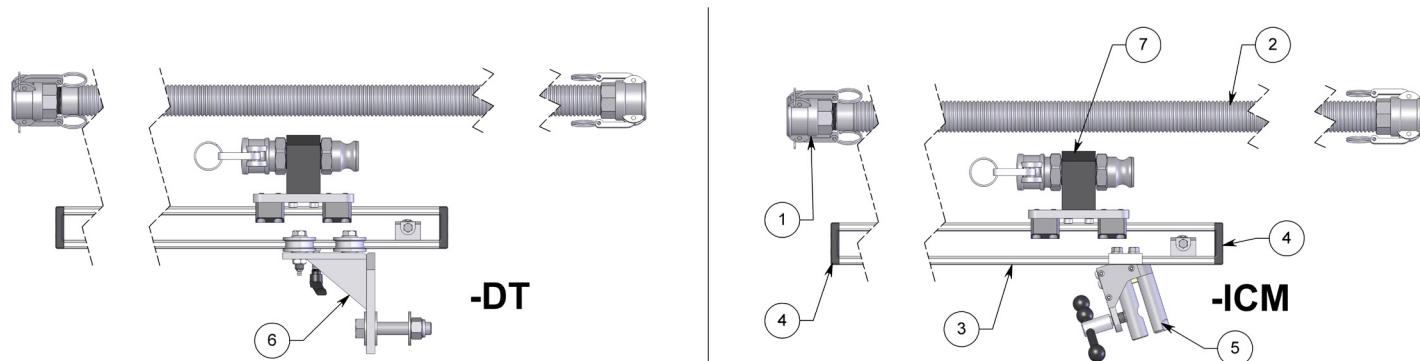
#	PART NUMBER	QTY.
1	BOP 033 QUICK PIN WITH LANYARD	1
2	GS 3M8-45-1.25 SHCS	2
3	GS 331-06 SHCS .31-18 x 1.50 SS	2
4	GS 331-10 SHCS .31-18 x 2.50 SS FULL THD	2
5	GSB 319-015 BHCS 10-24 x .38 SS	1
6	PROP 341 GUIDE TUBE COLLET BLOCK BODY	1
7	PROP 342 COLLET BLOCK CAP	1
8	PROP 343 GUIDE TUBE COLLET BLOCK CAP	1
9	PROP 345 BLOCK, SLIDE	1



NOTE:

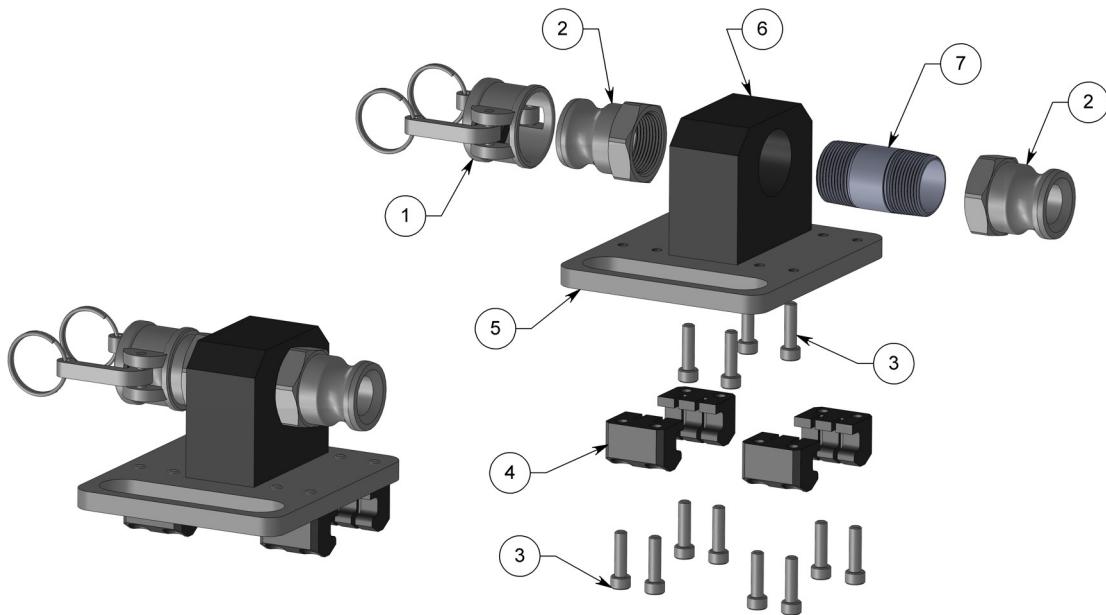
1. APPLY BLUE LOCTITE: PN: 242 OR EQUIVALENT
2. APPLY BLUE GOOP (A SWAGELOK BRAND) ANTI-SEIZE.

**PROPOSITIONER (PROP 420-XX)**  
RAIL FLANGE MOUNT ASSEMBLY



#	PART NUMBER	-ICM/QTY.	-DT/QTY.
1	BOP 085 CAM LOCK 1.25 FEMALE X 1.25 FEMALE NPT	1	1
2	BOP 090-7-001 SNOOT, CORRUGATED, 1.25 CAMLOCK, 7FT	1	1
3	BR 002-4.67-001 2.5" BOX RAIL EXTENSION	1	1
4	DBP 305 RAIL PLUG ASSY	2	2
5	DBP 320 ICM TROLLEY CLAMP ASSY	1	-
6	DBP 330 DELTA T TROLLEY CLAMP ASSY	-	1
7	PROP 425 SNOOT CARRIAGE ASSEMBLY	1	1

**PROPOSITIONER (PROP 425)**  
SNOUT CARRIAGE ASSEMBLY

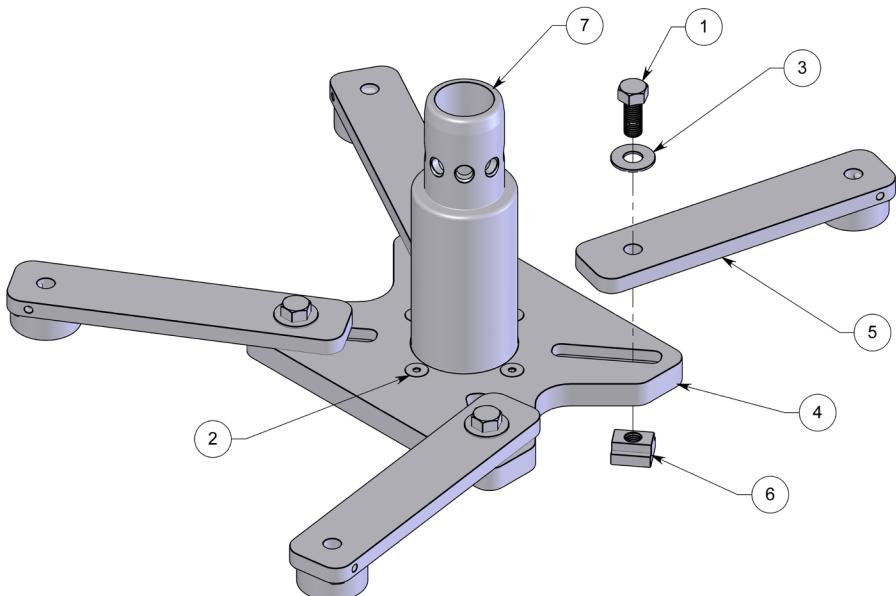


#	PART NUMBER	QTY
1	BOP 048 HOSE STOP ADAPTER, PRODRIVE	1
2	BOP 091 316 STAINLESS STEEL CAM-AND-GROOVE HOSE COUPLING, 1-1/4, PLUG, 1-1/4 NPT FEMALE END	2
3	GS 3M8-30-1.25 SHCS M8X1.25 X 30 SS	12

4	PROP 332 RAIL SLIDE, PLASTIC	4
5	PROP 421 PLATE, SNOOT CARRIAGE	1
6	PROP 422 BLOCK, NIPPLE MOUNT	1
7	PROP 424 FTG, NIPPLE 1.25NPT X 3.0 LG ALUMINUM	1

## PART DIAGRAMS

**PROPOSITIONER (PROP 430-001)**  
SPIDER PLATE ASSEMBLY



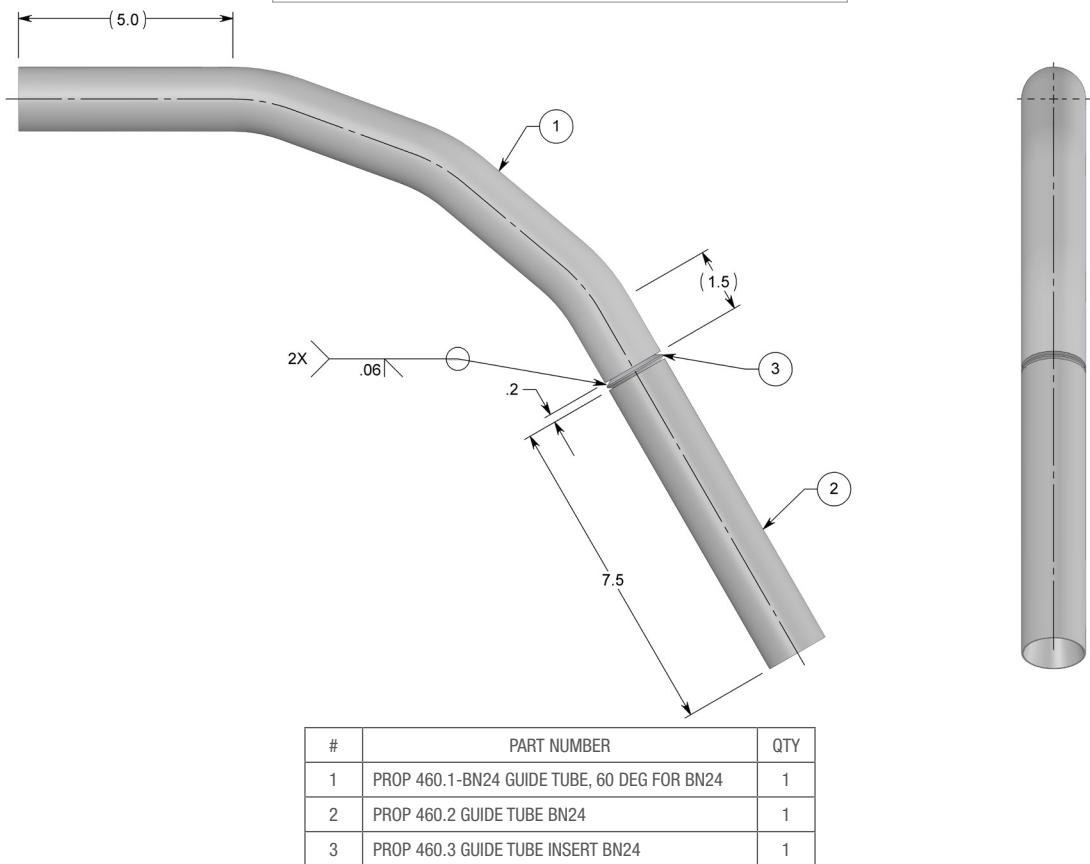
#	PART NUMBER	QTY.
1	GB 350-05 BOLT, HEX .50-13 X 1.25 SS	4
2	GSF 331-03-24 FHCS .31-24 X .75 SS	4
3	GW 350-F WASHER, FLAT .50 SS	4
4	PROP 431 SPIDER PLATE	1
5	PROP 434 SPIDER PLATE WELDMENT	4
6	PROP 436 NUT, T-SLOT .50-13	4
7	PROP 452 SHAFT, SPIDER MOUNTING	1

**PROPOSITIONER (PROP 440-24)**  
CAMERA MOUNT

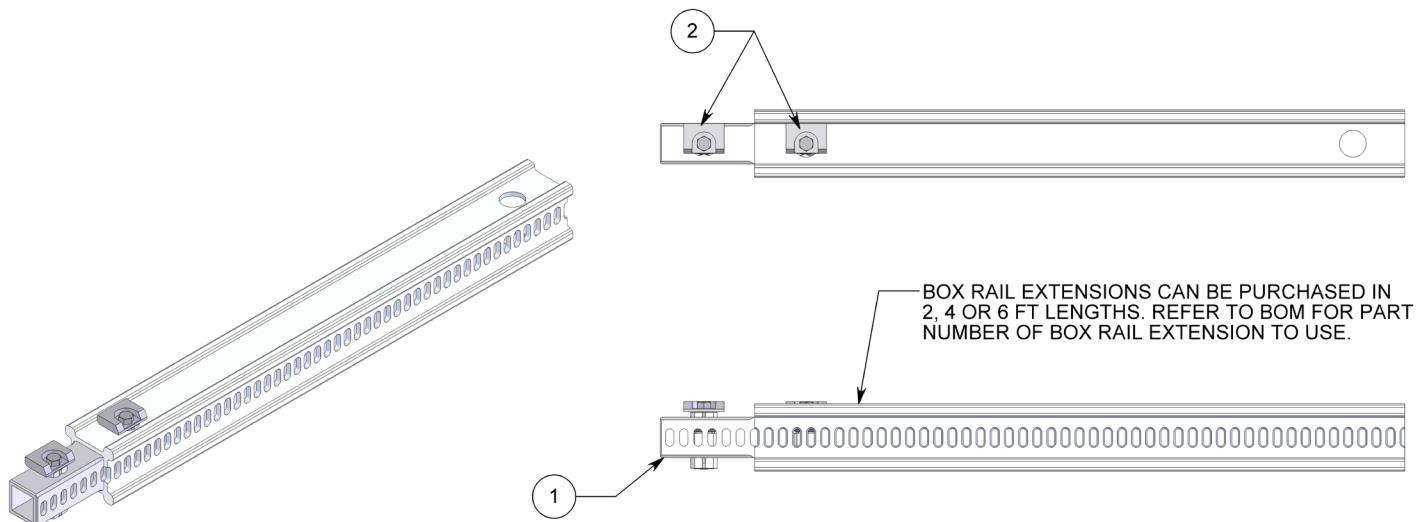


#	PART NUMBER	QTY
1	DB 242 DOWEL PIN, .25 OD X 1.125 LENGTH	1
2	HRS 530 HANDLE, ADJUSTABLE	1
3	PROP 441-24 PLATE, CAMERA CLAMP 1.5 INCH	1

**PROPOSITIONER (PROP 460-24)**  
GUIDE WELDMENT BN24



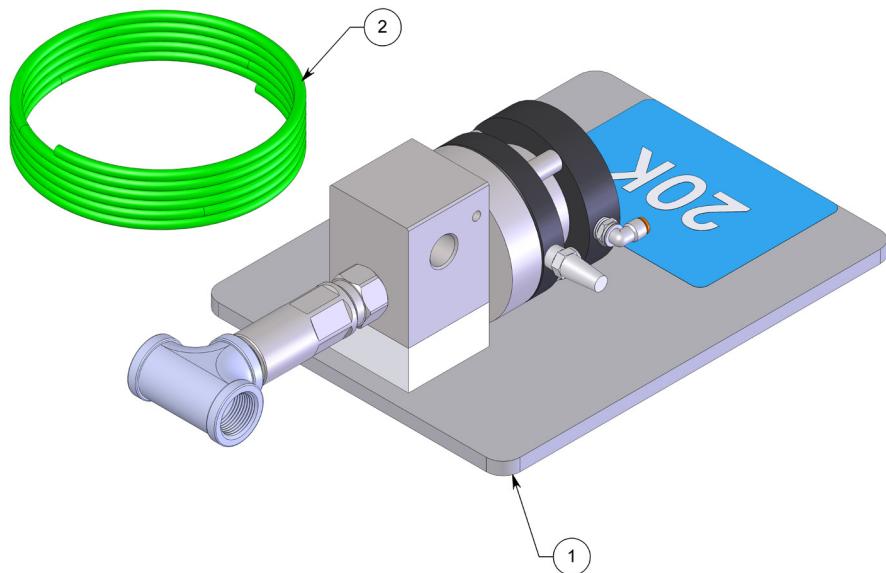
**PROPOSITIONER (PROP 580-1.33-001)**  
2.5" BOX RAIL EXTENSION KIT, SLOTTED, 1.33 FT



#	PART NUMBER	PROP 580-1.33-001/QTY.
1	BR 006-2.5-001 2.5" SPLICE TUBE	1
2	PROP 008-2.5-001 2.5" WEDGE BOLT ASSEMBLY	2
3	BU 002-1.33-001 2.5" BOX RAIL EXTRUSION, SLOTTED	1

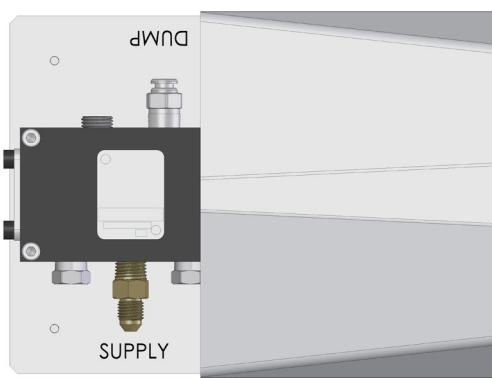
## PART DIAGRAMS

**ACDA 6120019-K**  
20K DUMP VALVE ASSEMBLY WITH AIR FITTINGS



#	PART NUMBER	QTY.
1	ACDA 61020019 DUMP VALVE 20K, AIR FITTINGS	1
2	GPTB 0250-PUR95A-GN 250 URETHANE TUBING GREEN	1

**FPA-SKR**  
FOOT PEDAL ASSEMBLY



#	PART NUMBER	QTY.
1	FPA-100 FOOT PEDAL ASSY	1
2	FPA 102 HOSE ASSY	1

PAGE LEFT BLANK INTENTIONALLY

## NOTES

PAGE LEFT BLANK INTENTIONALLY

PAGE LEFT BLANK INTENTIONALLY

# TERMS AND CONDITIONS

**1. Acceptance of Terms and Conditions.** Receipt of these Terms and Conditions of Sale ("Terms and Conditions") shall operate as the acceptance by StoneAge, Inc. ("Seller") of the order submitted by the purchaser ("Buyer"). Such acceptance is made expressly conditional on assent by Buyer to these Terms and Conditions. Such assent shall be deemed to have been given unless written notice of objection to any of these Terms and Conditions (including inconsistencies between Buyer's purchase order and this acceptance) is given by Buyer to Seller promptly on receipt hereof.

Seller desires to provide Buyer with prompt and efficient service. However, to individually negotiate the terms of each sales contract would substantially impair Seller's ability to provide such service. Accordingly, the product(s) furnished by Seller are sold only according to the terms and conditions stated herein and with the terms and conditions stated in any effective StoneAge Dealer Agreement or StoneAge Reseller Agreement, if applicable. Notwithstanding any terms and conditions on Buyer's order, Seller's performance of any contract is expressly made conditional on Buyer's agreement to these Terms and Conditions unless otherwise specifically agreed to in writing by Seller. In the absence of such agreement, commencement of performance, shipment and/or delivery shall be for Buyer's convenience only and shall not be deemed or construed to be an acceptance of Buyer's terms and conditions.

**2. Payment/Prices.** Unless other arrangements have been made in writing between Seller and Buyer, payment for the product(s) shall be made upon receipt of invoice. The prices shown on the face hereof are those currently in effect. Prices invoiced shall be per pricelist in effect at the time of shipment. Prices are subject to increase for inclusion of any and all taxes which are applicable and which arise from the sale, delivery or use of the product(s), and the collection of which Seller is or may be responsible to provide to any governmental authority, unless acceptable exemption certificates are provided by Buyer in accordance with applicable law. Buyer shall pay all charges for transportation and delivery and all excise, order, occupation, use or similar taxes, duties, levies, charges or surcharges applicable to the product(s) being purchased, whether now in effect or hereafter imposed by any governmental authority, foreign or domestic.

**3. Warranty.** SELLER MAKES NO WARRANTIES OR REPRESENTATIONS AS TO THE PERFORMANCE OF ANY PRODUCT EXCEPT AS SET FORTH IN THE STONEAGE LIMITED WARRANTY PROVIDED WITH THE PRODUCT.

**4. Delivery.** Seller is not obligated to make delivery by a specified date, but will always use its best efforts to make delivery within the time requested. The proposed shipment date is an estimate. Seller will notify Buyer promptly of any material delay and will specify the revised delivery date as soon as practicable. UNDER NO CIRCUMSTANCES SHALL SELLER HAVE ANY LIABILITY WHATSOEVER FOR LOSS OF USE OR FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM DELAY REGARDLESS OF THE REASON(S).

All product(s) will be shipped F.O.B. point of origin, unless specifically agreed otherwise, and Buyer shall pay all shipping costs and insurance costs from that point. Seller, in its sole discretion, will determine and arrange the means and manner of transportation of the product(s). Buyer shall bear all risk of loss commencing with the shipment or distribution of the product(s) from Seller's warehouse. Order shortages or errors must be reported within fifteen (15) business days from receipt of shipment to secure adjustment. No product(s) may be returned without securing written approval from Seller.

**5. Modification.** These Terms and Conditions are intended by Seller and Buyer to constitute a final, complete and exclusive expression of agreement relating to the subject matter hereof and cannot be supplemented or amended without Seller's prior written approval.

**6. Omission.** Seller's waiver of any breach or Seller's failure to enforce any of these Terms and Conditions at any time, shall not in any way affect, limit or waive Seller's right thereafter to enforce and compel strict compliance with every term and condition hereof.

**7. Severability.** If any provision of these Terms and Conditions is held to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the other portions hereof.

**8. Disputes.** Seller and Buyer shall attempt in good faith to promptly resolve any dispute arising under these Terms and Conditions by negotiations between representatives who have authority to settle the controversy. If unsuccessful, Seller and Buyer shall further attempt in good faith to settle the dispute by nonbinding third-party mediation, with fees and expenses of such mediation apportioned equally to each side. Any dispute not so resolved by negotiation or mediation may then be submitted to a court of competent jurisdiction in accordance with the terms hereof. These procedures are the exclusive procedures for the resolution of all such disputes between the Seller and Buyer.

**9. Governing Law.** All sales, agreements for sale, offers to sell, proposals, acknowledgments and contracts of sale, including, but not limited to, purchase orders accepted by Seller, shall be considered a contract under the laws of the State of Colorado and the rights and duties of all persons, and the construction and effect of all provisions hereof shall be governed by and construed according to the laws of such state.

**10. Jurisdiction and Venue.** Seller and Buyer agree that the state or federal courts located within the City and County of Denver, Colorado shall have sole and exclusive jurisdiction over any litigation concerning any dispute arising under these Terms and Conditions not otherwise resolved pursuant to Section 9 as well as any alleged defects of any Products or damages sustained as a result of such alleged defects. Seller and Buyer further agree that should any litigation be commenced in connection with such a dispute, it shall only be commenced in such courts. Seller and Buyer agree to the exclusive jurisdiction of such courts and neither will raise any objection to the jurisdiction and venue of such courts, including as a result of inconvenience.

**11. Attorney's Fees.** If any litigation is commenced between Seller and Buyer, or their personal representatives, concerning any provision hereof, the party prevailing in the litigation shall be entitled, in addition to such other relief that is granted, to a reasonable sum as and for their attorneys' fees and costs in such litigation or mediation.

## STONEAGE TRADEMARK LIST

View the list of StoneAge's trademarks and service marks and learn how the trademarks should be used. Use of StoneAge trademarks may be prohibited, unless expressly authorized.

<http://www.StoneAgetools.com/trademark-list/>

## STONEAGE PATENT DATA

View the list of StoneAge's current U.S. patent numbers and descriptions.

<http://www.sapatents.com>

## STONEAGE TERMS AND WARRANTY

View StoneAge's Terms and Warranty Conditions online.

<http://www.stoneagetoools.com/terms>

<http://www.stoneagetoools.com/warranty>

Warranties set forth herein extend only to End-Users, meaning customers acquiring, or that have previously acquired, a product manufactured by StoneAge ("Product") for their own use and not for resale, either directly from StoneAge Inc. ("StoneAge") or from a StoneAge Authorized Dealer or Reseller ("Dealer"). No warranty of any kind or nature is made by StoneAge beyond those expressly stated herein.

**1. LIMITED WARRANTY PERIOD.** Subject to the limitations and conditions hereinafter set forth, StoneAge warrants its Product to be free from defects in workmanship and material for a period of one (1) year from the date of purchase by the End-User, provided that the end of the limited warranty period shall not be later than eighteen (18) months from the date of shipment of the Product to the Dealer or the End-User by StoneAge ("Limited Warranty Period"). All replacement parts which are furnished under this Limited Warranty and properly installed shall be warranted to the same extent as the original Product under this Limited Warranty if, and only if, the original parts were found to be defective within the original Limited Warranty Period covering the original Product. Replacement parts are warranted for the remainder of the original Limited Warranty Period. This Limited Warranty does not cover any component part of any Product not manufactured by StoneAge. Any such component part is subject exclusively to the component manufacturer's warranty terms and conditions.

**2. LIMITED WARRANTY COVERAGE.** StoneAge's sole obligation under this Limited Warranty shall be, at StoneAge's option and upon StoneAge's inspection, to repair, replace or issue a credit for any Product which is determined by StoneAge to be defective in material or workmanship. StoneAge reserves the right to examine the alleged defective Product to determine whether this Limited Warranty is applicable, and final determination of limited warranty coverage lies solely with StoneAge. No statement or recommendation made by a StoneAge representative, Dealer or agent to End-User shall constitute a warranty by StoneAge or a waiver or modification to any of the provisions hereof or create any liability for StoneAge.

**3. WARRANTY SERVICE PROVIDERS.** Service and repair of the Product is to be performed only by StoneAge authorized service representatives, including Dealers who are authorized repair centers, with StoneAge approved parts. Information about StoneAge authorized service representatives can be obtained through the StoneAge website at [www.stoneagetools.com/](http://www.stoneagetools.com/) service. Unauthorized service, repair or modification of the Product or use of parts not approved by StoneAge will void this Limited Warranty. StoneAge reserves the right to change or improve the material and design of the Product at any time without notice to End-User, and StoneAge is not obligated to make the same improvements during warranty service to any Product previously manufactured.

**4. WARRANTY EXCLUSIONS.** This Limited Warranty does not cover, and StoneAge shall not be responsible for the following, or damage caused by the following: (1) any Product that has been altered or modified in any way not approved by StoneAge in advance in writing; (2) any Product that has been operated under more severe conditions or beyond the rated capacity specified for that Product; (3) depreciation or damage caused by normal wear and tear, failure to follow operation or installation instructions, misuse, negligence or lack of proper protection during storage; (4) exposure to fire, moisture, water intrusion, electrical stress, insects, explosions, extraordinary weather and/or environmental conditions including, but not limited to lightning, natural disasters, storms, windstorms, hail, earthquakes, acts of God or any other force majeure event; (5) damage to any Product caused by any attempt to repair, replace, or service the Product by persons other than StoneAge authorized service representatives; (6) costs of normal maintenance parts and services; (7) damage sustained during unloading, shipment or transit of the Product; or (8) failure to perform the recommended periodic maintenance procedures listed in the Operator's Manual accompanying the Product.

**5. REQUIRED WARRANTY PROCEDURES.** To be eligible for warranty service, the End-User must: (1) report the Product defect to the entity where the Product was purchased (i.e. StoneAge or the Dealer) within the Limited Warranty Period specified in this Limited Warranty; (2) submit the original invoice to establish ownership and date of purchase; and (3) make the Product available to a StoneAge authorized service representative for inspection to

determine eligibility for coverage under this Limited Warranty. This Limited Warranty shall not extend to any person or entity who fails to provide proof of original purchase from StoneAge or a Dealer. No Product may be returned for credit or adjustment without prior written permission from StoneAge.

**6. DISCLAIMER OF IMPLIED WARRANTIES AND OTHER REMEDIES.** EXCEPT AS EXPRESSLY STATED HEREIN (AND TO THE FULLEST EXTENT ALLOWED UNDER APPLICABLE LAW), STONEAGE HEREBY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY AND ALL WARRANTIES, REPRESENTATIONS OR PROMISES AS TO THE QUALITY, PERFORMANCE OR FREEDOM FROM DEFECT OF THE PRODUCT COVERED BY THIS LIMITED WARRANTY. STONEAGE FURTHER DISCLAIMS ALL IMPLIED INDEMNITIES.

**7. LIMITATION OF LIABILITY.** End-User specifically acknowledges that the Product may be operated at high speeds and/or pressures, and that as such it may be inherently dangerous if not used correctly. End-User shall familiarize itself with all operation materials provided by StoneAge and shall at all times use and require its agents, employees and contractors to use all necessary and appropriate safety devices, guards and proper safe operating procedures. In no event shall StoneAge be responsible for any injuries to persons or property caused directly or indirectly by the operation of the Product if End-User or any agent, employee, or contractor of End-User: (1) fails to use all necessary and appropriate safety devices, guards and proper safe operating procedures; (2) fails to maintain in good working order such safety devices and guards; (3) alters or modifies the Product in any way not approved by StoneAge in advance in writing; (4) allows the Product to be operated under more severe conditions or beyond the rated capacity specified for the Product; or (5) otherwise negligently operates the Product. End-User shall indemnify and hold StoneAge harmless from any and all liability or obligation incurred by or against StoneAge, including costs and attorneys' fees, to or by any person so injured.

TO THE FULL EXTENT ALLOWED BY APPLICABLE LAW, STONEAGE SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES (INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF GOODWILL, DIMINUTION OF VALUE, WORK STOPPAGE, INTERRUPTION OF BUSINESS, RENTAL OF SUBSTITUTE PRODUCT, OR OTHER COMMERCIAL LOSS EVEN TO THE EXTENT SUCH DAMAGES WOULD CONSTITUTE DIRECT DAMAGES), WITH RESPECT TO THE COVERED STONEAGE PRODUCT, OR OTHERWISE IN CONNECTION WITH THIS LIMITED WARRANTY, REGARDLESS OF WHETHER STONEAGE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

IT IS UNDERSTOOD THAT STONEAGE'S LIABILITY, WHETHER IN CONTRACT, IN TORT, UNDER ANY WARRANTY, IN NEGLIGENCE, OR OTHERWISE SHALL NOT EXCEED THE AMOUNT OF THE PURCHASE PRICE PAID BY THE END-USER FOR THE PRODUCT. STONEAGE'S MAXIMUM LIABILITY SHALL NOT EXCEED, AND END-USER'S REMEDY IS LIMITED TO EITHER (1) REPAIR OR REPLACEMENT OF THE DEFECTIVE WORKMANSHIP OR MATERIAL OR, AT STONEAGE'S OPTION, (2) REFUND OF THE PURCHASE PRICE, OR (3) ISSUANCE OF A CREDIT FOR THE PURCHASE PRICE, AND SUCH REMEDIES SHALL BE END-USER'S ENTIRE AND EXCLUSIVE REMEDY.

YOU, THE END-USER, UNDERSTAND AND EXPRESSLY AGREE THAT THE FOREGOING LIMITATIONS ON LIABILITY ARE PART OF THE CONSIDERATION IN THE PRICE OF THE STONEAGE PRODUCT YOU PURCHASED.

Some jurisdictions do not allow the limitation or exclusion of liability for certain damages, so the above limitations and exclusions may not apply to you. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction. If any provisions of this Limited Warranty is held to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the other portions hereof.



1-866-795-1586 • [www.STONEAGETOOLS.com](http://www.STONEAGETOOLS.com)

© 2020 StoneAge, Inc. All Rights Reserved