

**ARCONIC**  
Innovation, engineered.

## Instruction Manual

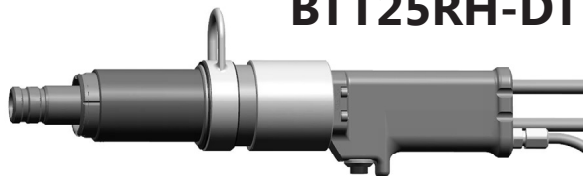
### **BobTail®**

Hydraulic Installation Tool Models

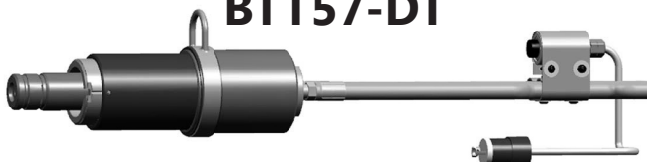
**BTT25-DT    BTT35-DT**



**BTT25RH-DT**



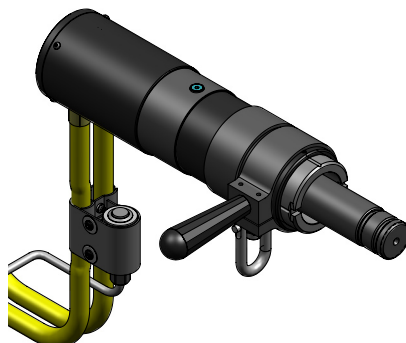
**BTT57-DT**



**BTT57R-DT**



**BT60-325-RA**



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**ARCONIC**

## EC Declaration of Conformity

### Manufacturer:

Huck International, LLC, Industrial Products Group, 1 Corporate Drive, Kingston, NY, 12401, USA

### Description of Machinery:

Models BTT25, 35, 57, and BT60 families of hydraulic installation tools and specials based on their design (e.g. PR####).

### Relevant provisions complied with:

Council Directive related to Machinery (2006/42/EC)

British Standard related to hand held, non-electric power tools (ISO 11148-1:2011)

### European Representative:

Rob Pattenden, Huck International, Ltd. Unit C Stafford Park 7, Telford Shropshire TF3 3BQ, England, United Kingdom

### Authorized Signature/date:

I, the undersigned, do hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Signature: \_\_\_\_\_

Full Name: Robert B. Wilcox

Position: Engineering Manager

Location: Huck International, LLC d/b/a Arconic Fastening Systems and Rings  
Kingston, New York, USA

Date: 28/06/2017 (June 28, 2017)



### Declared dual number noise emission values in accordance with ISO 4871

A weighted sound power level, LWA: **79** dB (reference 1 pW) Uncertainty, KWA: 3 dB

A weighted emission sound pressure level at the work station, LpA: **68** dB (reference 20 µPa) Uncertainty, KpA: 3 dB

C-weighted peak emission sound pressure level, LpC, peak: **96** dB (reference 20 µPa) Uncertainty, KpC: 3 dB

Values determined according to noise test code ISO 3744. The sum of a measured noise emission value and its associated uncertainty represents an upper boundary of the range of values which is likely to occur in measurements.

### Declared vibration emission values in accordance with EN 12096

Measured Vibrations emission value, a:	<b>.32</b> m/s <sup>2</sup>
Uncertainty, K:	<b>.06</b> m/s <sup>2</sup>
Values measured and determined according to ISO 28662-1, ISO 5349-2, and EN 1033	

Test data to support the above information is on file at:  
Arconic Fastening Systems and Rings, Kingston Operations, Kingston, NY, USA.



## Safety Instructions

### GLOSSARY OF TERMS AND SYMBOLS:



Product complies with requirements set forth by the relevant European directives.



Read manual prior to using this equipment.



Eye protection is required while using this equipment.



Hearing protection is required while using this equipment.

Notes: are reminders of required procedures.

***Bold, Italic type, and underline:*** emphasize a specific instruction.



**WARNINGS: Must be understood to avoid severe personal injury.**



**CAUTIONS: Show conditions that will damage equipment or structure.**

### I. GENERAL SAFETY RULES:

1. A half hour long hands-on training session with qualified personnel is recommended before using Huck equipment.
2. Huck equipment must be maintained in a safe working condition at all times. Tools and hoses should be inspected at the beginning of each shift/day for damage or wear. Any repair should be done by a qualified repairman trained on Huck procedures.
3. For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the assembly power tool. Failure to do so can result in serious bodily injury.
4. Only qualified and trained operators should install, adjust or use the assembly power tool.
5. Do not modify this assembly power tool. This can reduce effectiveness of safety measures and increase operator risk.
6. Do not discard safety instructions; give them to the operator.
7. Do not use assembly power tool if it has been damaged.
8. Tools shall be inspected periodically to verify all ratings and markings required, and listed in the manual, are legibly marked on the tool. The employer/operator shall contact the manufacturer to obtain replacement marking labels when necessary. Refer to assembly drawing and parts list for replacement.
9. Tool is only to be used as stated in this manual. Any other use is prohibited.
10. Read MSDS Specifications before servicing the tool. MSDS specifications are available from the product manufacturer or your Huck representative.
11. Only genuine Huck parts shall be used for replacements or spares. Use of any other parts can result in tooling damage or personal injury.
12. Never remove any safety guards or pintail deflectors.
13. Never install a fastener in free air. Personal injury from fastener ejecting may occur.
14. Where applicable, always clear spent pintail out of nose assembly before installing the next fastener.
15. Check clearance between trigger and work piece to ensure there is no pinch point when tool is activated. Remote triggers are available for hydraulic tooling if pinch point is unavoidable.
16. Do not abuse tool by dropping or using it as a hammer. Never use hydraulic or air lines as a handle or to bend or pry the tool. Reasonable care of installation tools by operators is an important factor in maintaining tool efficiency, eliminating downtime, and preventing an accident which may cause severe personal injury.
17. Never place hands between nose assembly and work piece. Keep hands clear from front of tool.
18. Tools with ejector rods should never be cycled with out nose assembly installed.
19. When two piece lock bolts are being used always make sure the collar orientation is correct. See fastener data sheet for correct positioning.

### II. PROJECTILE HAZARDS:

1. Risk of whipping compressed air hose if tool is pneudraulic or pneumatic.
2. Disconnect the assembly power tool from energy source when changing inserted tools or accessories.
3. Be aware that failure of the workpiece, accessories, or the inserted tool itself can generate high velocity projectiles.
4. Always wear impact resistant eye protection during tool operation. The grade of protection required should be assessed for each use.
5. The risk of others should also be assessed at this time.
6. Ensure that the workpiece is securely fixed.
7. Check that the means of protection from ejection of fastener or pintail is in place and operative.
8. There is possibility of forcible ejection of pintails or spent mandrels from front of tool.

### III. OPERATING HAZARDS:

1. Use of tool can expose the operator's hands to hazards including: crushing, impacts, cuts, abrasions and heat. Wear suitable gloves to protect hands.
2. Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool.
3. Hold the tool correctly and be ready to counteract normal or sudden movements with both hands available.
4. Maintain a balanced body position and secure footing.
5. Release trigger or stop start device in case of interruption of energy supply.
6. Use only fluids and lubricants recommended by the manufacturer.
7. Avoid unsuitable postures, as it is likely for these not to allow counteracting of normal or unexpected tool movement.
8. If the assembly power tool is fixed to a suspension device, make sure that fixation is secure.
9. Beware of the risk of crushing or pinching if nose equipment is not fitted.

### IV. REPETITIVE MOTION HAZARDS:

1. When using assembly power tool, the operator can experience discomfort in the hands, arms, shoulders, neck or other parts of the body.
2. When using tool, the operator should adopt a comfortable posture while maintaining a secure footing and avoid awkward or off balanced postures.
3. The operator should change posture during extended tasks to help avoid discomfort and fatigue.
4. If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations or stiffness, these warnings should not be ignored. The operator should tell the employer and consult a qualified health professional.

Continued on next page...



## Safety Instructions (continued)

### V. ACCESSORIES HAZARDS:

1. Disconnect tool from energy supply before changing inserted tool or accessory.
2. Use only sizes & types of accessories & consumables that are recommended. Do not use other types or sizes of accessories or consumables.

### VI. WORKPLACE HAZARDS:

1. Be aware of slippery surfaces caused by use of the tool & of trip hazards caused by the air line or hydraulic hose.
2. Proceed with caution while in unfamiliar surroundings; there could be hidden hazards such as electricity or other utility lines.
3. The assembly power tool is not intended for use in potentially explosive environments.
4. Tool is not insulated against contact with electrical power.
5. Ensure there are no electrical cables, gas pipes, etc., which can cause a hazard if damaged by use of the tool.

### VII. NOISE HAZARDS:

1. Exposure to high noise levels can cause permanent, disabling hearing loss & other problems such as tinnitus, therefore risk assessment & the implementation of proper controls is essential.
2. Appropriate controls to reduce the risk may include actions such as damping materials to prevent workpiece from 'ringing'.
3. Use hearing protection in accordance with employer's instructions & as required by occupational health & safety regulations.
4. Operate & maintain tool as recommended in instruction handbook to prevent unnecessary increase in noise level.
5. Select, maintain & replace the consumable/inserted tool as recommended to prevent an unnecessary increase in noise.
6. If the tool has a silencer, always ensure that it is in place & in good working order when the tool is being operated.

### VIII. VIBRATION HAZARDS:

1. Exposure to vibration can cause disabling damage to the nerves & blood supply to the hands & arms.
2. Wear warm clothing when working in cold conditions & keep hands warm & dry.
3. If numbness, tingling, pain or whitening of the skin in the fingers or hands, stop using the tool, tell your employer & consult a physician.
4. Support the weight of the tool in a stand, tensioner or balancer in order to have a lighter grip on the tool.

### X. HYDRAULIC TOOL SAFETY INSTRUCTIONS:



#### WARNINGS:

**Do not exceed maximum pull or return settings on tool.**

**Be sure all hose connections are tight. All tool hoses must be connected.**

1. Carry out a daily check for damaged or worn hoses or hydraulic connections & replace if necessary.
2. Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers & cause overheating.
3. Ensure that couplings are clean & correctly engaged before operation.
4. Use only clean oil & filling equipment.
5. Power units require a free flow of air for cooling purposes & should therefore be positioned in a well ventilated area free from hazardous fumes.
6. Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool

can cause serious injury.

7. Be sure all hose connections are tight.
8. Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers & cause overheating.

### XI. HOIST RING SAFETY INFORMATION



#### WARNINGS:

**Hoist ring components are not interchangeable with hoist rings of other manufacturers. Substitution of parts voids all liabilities and may result in hoist ring failure and possible injury.**

**The hoist ring assembly is proof-tested to 200% of rated load capacity.**

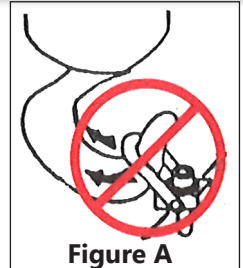
**Heed the warning label affixed to the clevis.**

**5:1 strength factor**



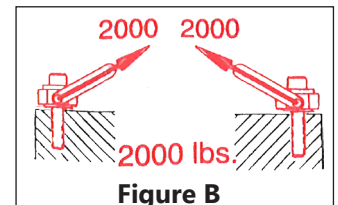
**CAUTION: Never use a hook or other lifting device which will pry or tend to open the "U" shaped baron center-pull hoist rings! (Figure A).**

1. Do not lift more than the rated load capacity. (See top of hoist ring.)
2. Tap workpiece so that hoist ring screw is installed perpendicular to workpiece surface. The work surface must be flat providing complete contact for the hoist ring bushing.
3. When installing in soft metal, such as aluminum, the minimum effective thread engagement must be 2 times the diameter of the thread. Alternate method in soft metal would be a through hole mounting with a nut & washer on the other side of the soft metal.



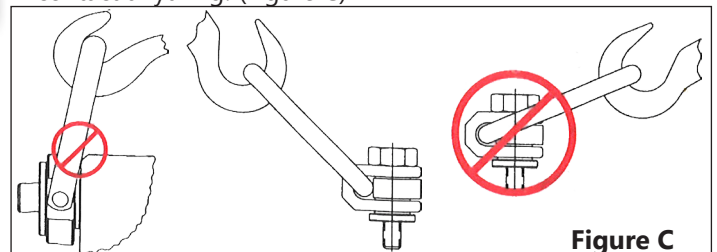
**Figure A**

4. Do not use spacers between the bushing flange & the mounting surface.
5. Screws must be tightened to the recommended torque values. (SEE TOP OF HOIST RING)
6. Depending upon the sling angle, the applied load may be more than the weight being lifted. Two-point lifting of a 2000 lb weight with a sling angle of 30° will result in an applied load of 2000 lbs to each hoist ring! (Figure B)



**Figure B**

7. After installation, check the ring to be sure it swivels & pivots freely in all directions. The side of the ring must not contact anything! (Figure C)



**Figure C**

8. When lifting, apply force gradually. Do not apply shock loads. Order a new hoist ring if shock load occurs.
9. Loosening may develop during use. Periodic re-tightening to the required torque values must be done whenever the screw loosens. (SEE TOP OF HOIST RING)





## Description

HUCK Model BTT##-DT & BT60 are Hydraulic Installation Tools that install and remove BobTail® fasteners in limited clearance applications. This tool design consists of a cylinder housing with two chambers to accommodate two tandem pull pistons. This feature increases pull capacity while maintaining optimum centerline-to-edge clearance and lightweight.

The tool is intended for use with Huck standard industrial Powerig® Hydraulic Units (models 913H, 918, d 940, and 968) or equivalent - sold separately. The tool is complete with hydraulic hoses, couplings and electric control cord ready to be attached to the Powerig® hoses and control cord, and ready to have the nose assembly (sold separately) attached.

## Principle of Operation

The operator pushes the Tool Nose over the end of the fastener until the Tool Puller bottoms on the fastener. When the trigger is pressed, the Piston moves back to start the swaging process.

After the fastener is fully swaged, the operator must release the trigger, at which point the Tool's Anvil is ejected off of the collar and the Tool is released from the fastener.

## Specifications

**POWER SOURCE:** Huck POWERIG Hydraulic Unit

**HOSE KITS:** Use only genuine HUCK Hose Kits rated @ 10,000 psi working pressure.

**HYDRAULIC FLUID:** Hydraulic fluid shall meet DEXRON III, DEXRON VI, MERCON, Allison C-4 or equivalent ATF specifications. Fire resistant fluid may be used if it is an ester based fluid such as Quintolubric HFD or equivalent. Water based fluid shall NOT be used as serious damage to equipment will occur.

**MAX OPERATING TEMP:** 125°F (51.7°C)

**MAX FLOW RATE:** 2 gpm (7.5 l/m)

**STROKE:** BTT25-DT = 1.63 inches (4.14 cm)  
 BTT35-DT = 1.63 inches (4.14 cm)  
 BTT57-DT = 2.2 inches (5.59 cm)  
 BTT57R-DT = 2.2 inches (5.59 cm)  
 BT60-325-RA = 3.25 inches (8.26 cm)

**WEIGHT:** BTT25-DT = 9 lbs (4.1 kg)  
 BTT35-DT = 11 lbs (5 kg)  
 BTT57-DT = 21 lbs (9.5 kg)  
 BTT57R-DT = 22 lbs (9.98 kg)  
 BT60-325-RA = 28 lbs (12.7 kg)

Where the following trade names are used in this manual, please note:

**DEXRON** is a registered trademark of General Motors Corporation.

**Loctite** is a registered trademark of Henkel Corporation, U.S.A.

**LUBRIPLATE** is a registered trademark of Fiske Brothers Refining Co

**MERCON** is a registered trademark of Ford Motor Corp.

**Never-Seez** is a registered trademark of Bostik, Inc.

**Quintolubric** is a registered trademark of Quaker Chemical Corp.

**Slic-tite** is a registered trademark of LA-CO Industries, Inc.

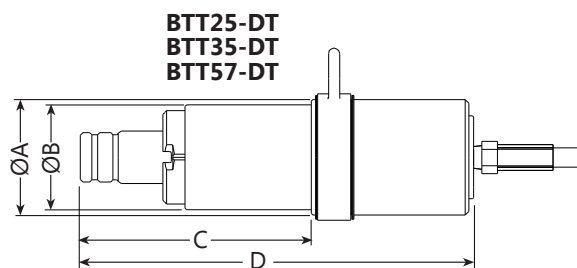
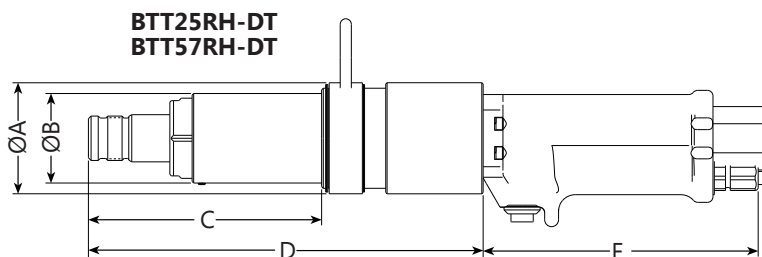
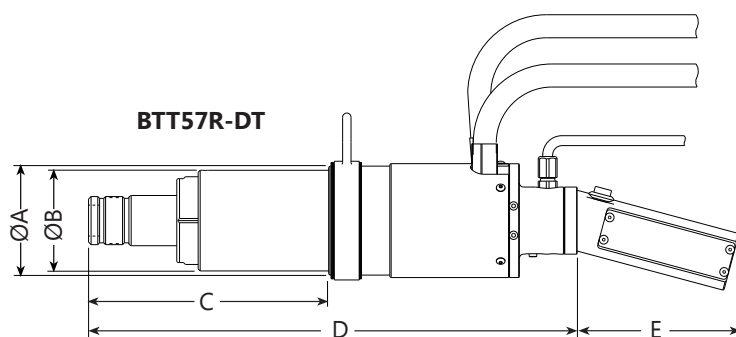
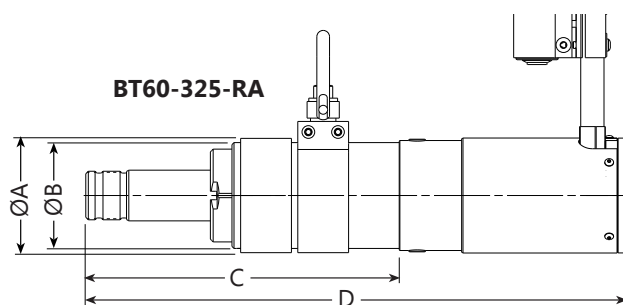
**Spirolax** is a registered trademark of Smalley Steel Ring Company

**Teflon** is a registered trademark of E. I. du Pont de Nemours and Company.

**Threadmate** is a registered trademark of Parker Intangibles LLC.

**TRUARC** is a trademark of TRUARC Co. LLC.

**Vibra-Tite** is a registered trademark of ND Industries, Inc. USA.



inches (cm)	Ø A	Ø B	C	D	E
<b>BTT25-DT</b>	2.25 (5.71)	2.01 (5.10)	5.24 (13.31)	8.46 (21.49)	n/a
<b>BTT35-DT</b>	2.62 (6.65)	2.38 (6.04)	5.49 (13.94)	8.92 (22.65)	n/a
<b>BTT57-DT</b>	3.25 (8.25)	3.00 (7.62)	7.14 (18.13)	11.31 (28.73)	n/a
<b>BTT57R-DT</b>	3.25 (8.25)	3.00 (7.62)	7.16 (18.19)	14.56 (36.98)	4.82 (12.24)
<b>BTT25RH-DT</b>	2.49 (6.33)	2.01 (5.10)	5.24 (13.30)	8.86 (22.51)	6.18 (15.69)
<b>BTT57RH-DT</b>	3.54 (8.99)	3.00 (7.62)	7.16 (18.19)	11.80 (29.97)	6.16 (15.65)
<b>BT60-325-RA</b>	3.40 (8.64)	3.12 (7.92)	9.26 (23.52)	16.01 (40.67)	n/a



## Preparation for Use



### WARNINGS:

Read full manual before using tool.

A half-hour training session with qualified personnel is recommended before using Huck equipment.

When operating Huck installation equipment, always wear approved eye protection.

Be sure there is adequate clearance for the operator's hands before proceeding.

Correct PULL and RETURN pressures are required for operator safety and for Tool function. Gauge T-124833CE is available for checking pressures. See Tool SPECIFICATIONS and Gauge Instruction Manual. Failure to verify pressures may result in severe personal injury.

Be sure to connect hydraulic tool hoses to Powerig® Hydraulic Unit before connecting Tool switch control cord to unit. If not connected in this order, severe personal injury may occur.



### CAUTIONS:

Do not use TEFLON®\* tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction.

Do not let disconnected hoses and couplers contact a dirty floor. Keep harmful material out of hydraulic fluid. Dirt in hydraulic fluid causes valve failure In Tool and In Powerig® Hydraulic Unit.

Hose couplers must be completely joined together to insure that ball checks in both nipple and body are completely open. Improperly assembled couplers will cause overheating and malfunctions in both tool and Powerig. Hand tighten couplers. Do NOT use a pipe wrench.

Huck recommends that only HUCK Powerig® Hydraulic Unit be used as the power source for Huck installation equipment. Hydraulic power units that deliver high pressure for both PULL and RETURN, and are not equipped with relief valves are specifically not recommended, and may be dangerous.

### POWER SOURCE CONNECTIONS

1. Coat hose fitting threads with a non-hardening Teflon™ thread compound such as Parker Threadmate, Loctite 567, or Slic-tite stick to male pipe threads per manufacturer's instructions.
2. Use only a HUCK Powerig that is recommended or equivalent that has been prepared for operation per applicable instruction manual. Check both PULL and RETURN pressures with gauge part number T-124833CE, and adjust as necessary to match installation tool.
3. Turn Powerig® to "OFF" and couple tool hoses to Powerig® hoses.
4. Turn Powerig® to "ON" and depress and release trigger a few times to circulate hydraulic fluid. Observe action of tool. Check for fluid leaks.
5. Attach the proper Nose Assembly to the tool.

### Pressure Settings

TOOL	FASTENER SIZE	NOSE PART NO.	STYLE	GRADES 5 & 8.8		GRADES 8 & 10.9	
				PULL psi (bar)	RETURN psi (bar)	PULL psi (bar)	RETURN psi (bar)
BTT25	12mm	99-7850	Installation	n/a		4100 (282)	2400 (165)
		99-7850CX	Removal				
	14mm	99-7854	Installation	4200 (289)	2500 (172)	5400 (372)	3200 (220)
		99-7854CX	Removal				
	-16 (1/2")	99-7855	Installation	3000 (206)	1800 (124)	4200 (289)	2500 (172)
		99-7855CX	Removal				
BTT35	16mm -20 (5/8")	99-7851	Installation	3800 (262)	2700 (186)	4800 (331)	3400 (234)
		99-7851CX	Removal				
BTT57	20mm -24 (3/4")	99-7852	Installation	2600 (179)	1800 (124)	4650 (320)	3500 (241)
		99-7852CX	Removal	3000 (206)			
	-24 (3/4")	99-7856	Installation	2600 (179)	1800 (124)	3900 (269)	2700 (186)
	-28 (7/8")	99-7853	Installation	3800 (262)	2700 (186)	n/a	
		99-7853CX	Removal				
	-32 (1")	99-7857	Installation	3000 (206)	2700 (186)	5800 (399)	4000 (275)
99-7857CC		Removal					
BT60	27mm	99BT-M27-IRBH	Installation	n/a		7600 (530)	4500 (310)
		99BT-M27-CRBH	Removal				



## Tool to Powerig Setup

FIGURE 3

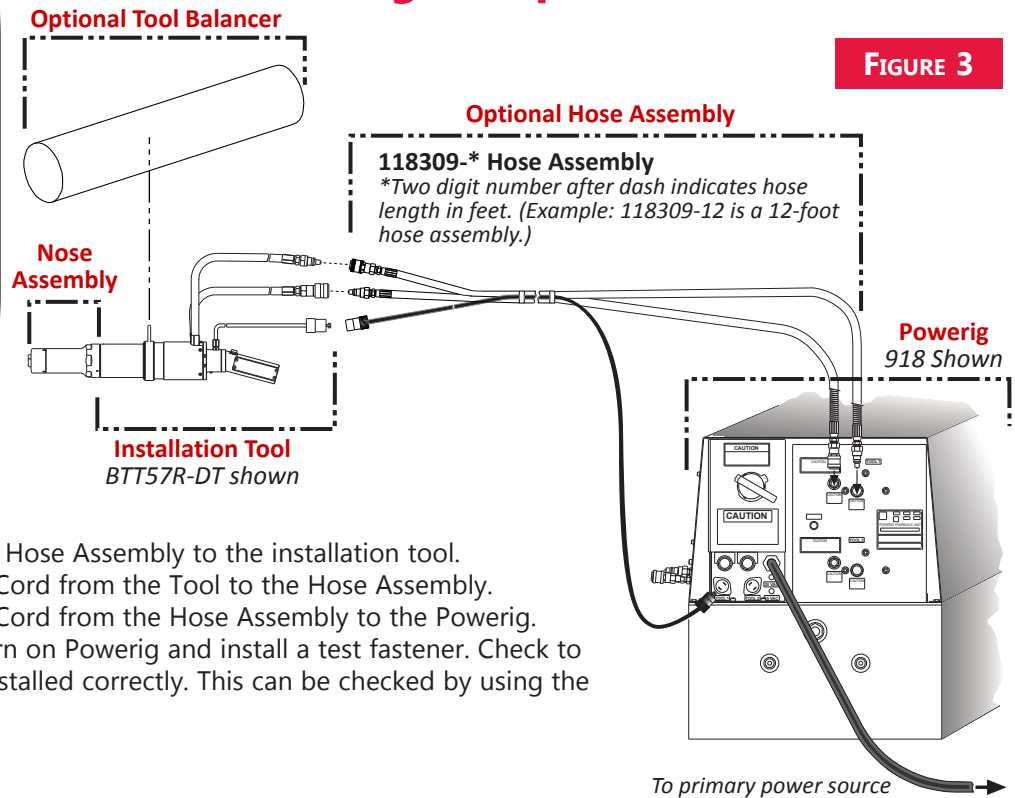


### WARNINGS:

To prevent tripping hazard, suspend tools and route hoses off of floors.

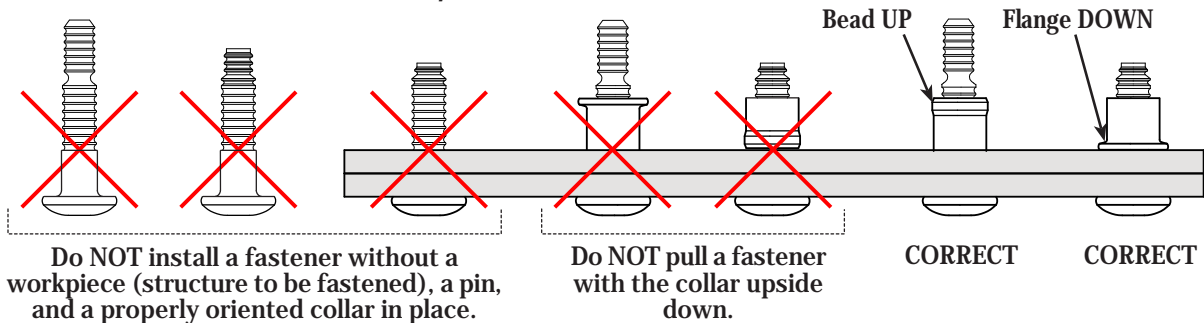
Only use compatible equipment with this tool.

1. Set Pull and Return pressures on Powerig according to **Pressure Settings** chart on previous page using HUCK Gauge T-124833CE.
2. Connect the Hydraulic Hoses to the Powerig first.
3. Connect the other end of the Hose Assembly to the installation tool.
4. Connect the Trigger/Control Cord from the Tool to the Hose Assembly.
5. Connect the Trigger/Control Cord from the Hose Assembly to the Powerig.
6. Once the system is set up, turn on Powerig and install a test fastener. Check to be sure that the fastener is installed correctly. This can be checked by using the appropriate swage gauge.



## Operating Instructions

FOR SAFE OPERATION, THIS SECTION MUST BE READ AND UNDERSTOOD.



### WARNINGS:

To avoid severe personal injury, wear approved eye and ear protection. Be sure of adequate clearance for operator's hands before proceeding with fastener installation.

Do NOT attempt to install a pin without placing the fastener and collar in the work piece (structure to be fastened).

Do NOT attempt to install a pin without a properly oriented collar in place.

The collar flange must be against work piece.

If these safety measures are not followed, the fastener could eject with great velocity and cause severe personal injury.

This condition can cause pin to eject with great velocity and force if the pintail breaks off or teeth/grooves strip. This may cause severe personal injury.

To avoid pinch point, never place hand between nose assembly and work piece.

Only use compatible equipment with this tool.



**CAUTION:** Remove excess gap from between the sheets. This permits enough pintail to emerge from collar for ALL jaw teeth to engage with pintail. If ALL teeth do not engage properly, jaws will be damaged.

**Note:** In certain situations, it may be permissible to use a BobTail tool and fastener without a collar to remove sheet gap prior to full installation with a collar. Consult qualified Huck engineering personnel before attempting this operation.

1. Push the tool's nose over the end of the fastener until it bottoms out.
2. Press the trigger and hold until the collar is swaged and the tool's Anvil is ejected off the collar and the tool is released from the fastener.



## Maintenance



**WARNING:** Inspect tool for damage or wear before each use. Do not operate if damaged or worn, as severe personal injury may occur.



### CAUTIONS:

Consult MSDS before servicing tool.

Keep dirt and other material out of hydraulic system.

Separated parts must be kept away from dirty work surfaces.

Dirt/debris in hydraulic fluid causes failure in Powerig® Hydraulic Unit's valves.

Do not use TEFLON® tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction.

Always replace seals, wipers, and back-up rings when tool is disassembled for any reason.

Read this section completely before proceeding with maintenance and repair. Use proper hand tools in a clean and well-lighted area. Only standard hand tools are required in most cases. Where a special tool is required, the description and part number are given. While clamping tool or parts in a vise, and when parts require force, use suitable soft materials to cushion impact. For example, using a half-inch brass drift, wood block and vise with soft jaws greatly reduces possibility of damaging tool. Remove components in a straight line without bending, cocking or undue force. Reassemble tool with the same care.

**STICKER LOCATIONS:** HUCK tools come with stickers which contain important safety and pressure settings information. Stickers must remain on the tool and easily read. **If a sticker becomes damaged, worn, unreadable, or missing; or when replacing Cylinder, the sticker(s) must be ordered and placed in the location shown.**

HUCK/Year of Manufacture Sticker **590517**

CE and PRESSURES WARNING Sticker **590512-15**

**SEALANTS, LUBRICANTS, SERVICE KITS:** See **SPECIFICATIONS** for fluid type. Dispose of fluid in accordance with local

environmental regulations. Recycle steel, aluminum, and plastic parts in accordance with local lawful and safe practices. Coat hose fitting threads with a non-hardening Teflon™ thread compound such as Threadmate™ (available from Huck in a 4oz. tube as p/n 508517.) Lubricate o-rings and mating surfaces with LUBRIPLATE® 130AA\* (available in a tube as Huck p/n 502723), or equivalent to aid assembly and prevent damage to o-rings. Each Service Kit contains perishable parts for your specific tool. Keep extra kits (o-rings, back-up rings, other standard items) and tool parts in stock.

### PREVENTIVE MAINTENANCE

**SYSTEM INSPECTION:** An effective preventive maintenance program includes scheduled inspections of the tool with nose assembly, hydraulic hoses, trigger, control cord, and Powerig to detect and correct minor troubles. At the beginning of each shift/day:

- Inspect tool and nose assembly for external damage.
- Verify that hydraulic hose fittings, couplings, and electrical connections are secure.
- Inspect hydraulic hoses for damage and deterioration, and replace if necessary. Do not use hoses to carry tool.
- Observe tool, hoses, and hydraulic unit during operation to detect abnormal heating, leaks, or vibration.
- Max hydraulic fluid contamination level: NAS 1638 class 9, or ISO CODE 18/15, or SAE level 6.

**POWERIG MAINTENANCE:** Maintenance instructions and repair procedures are in the appropriate Powerig Instruction Manual.

**TOOL MAINTENANCE:** Whenever disassembled, and also at regular intervals (depending on severity and length of use), replace all seals, wipers, and back-up rings in tool. Service Kits, hoses, and extra parts should be kept in stock. Inspect cylinder bore, pistons, and piston rods for scored surfaces and excessive wear or damage. Replace as necessary.

**NOSE ASSEMBLY MAINTENANCE:** Clean nose assembly often. Dip in mineral spirits or similar solvent to clean puller and wash away metal chips and debris. At regular intervals, disassemble nose and use a sharp "pick" to remove particles from grooves of puller.

## Assembly of NPTF Threaded Components

### AIR FITTINGS

- 1) Apply TEFLON® stick to male threads which do not have pre-applied sealant per manufacturer's recommendations. (Proceed to All Fittings step 2)

### HYDRAULIC FITTINGS

- 1) Apply Threadmate™ to male and female threads which do not have pre-applied sealant per manufacturer's recommendations. (Proceed to All Fittings step 2)

### ALL FITTINGS:

- 2) Tighten to finger-tight condition.

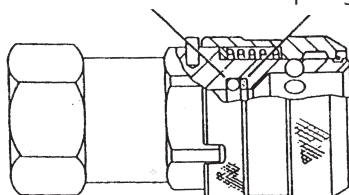
- 3) Wrench tighten to 2-3 turns past finger-tight condition.
- 4) Final thread engagement can be checked (optional) by measuring the dimension from the flange of male fitting to the end of the thread before assembly and subtracting the distance under the flange after assembly.

Thread Size	Final thread engagement at full make-up
1/8-27 NPTF	.235 inch (.59 cm)
1/4-18 NPTF	.339 inch (.86 cm)
3/8-18 NPTF	.351 inch (.89 cm)

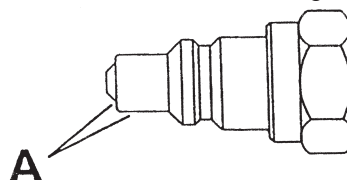
## Hydraulic Couplings

O-ring (P/N 504438)

Back-up ring (P/N 501102)



**TIP:** Use a fine India stone to remove nicks and burrs from diameter A and leading edge to prevent damage to O-ring.

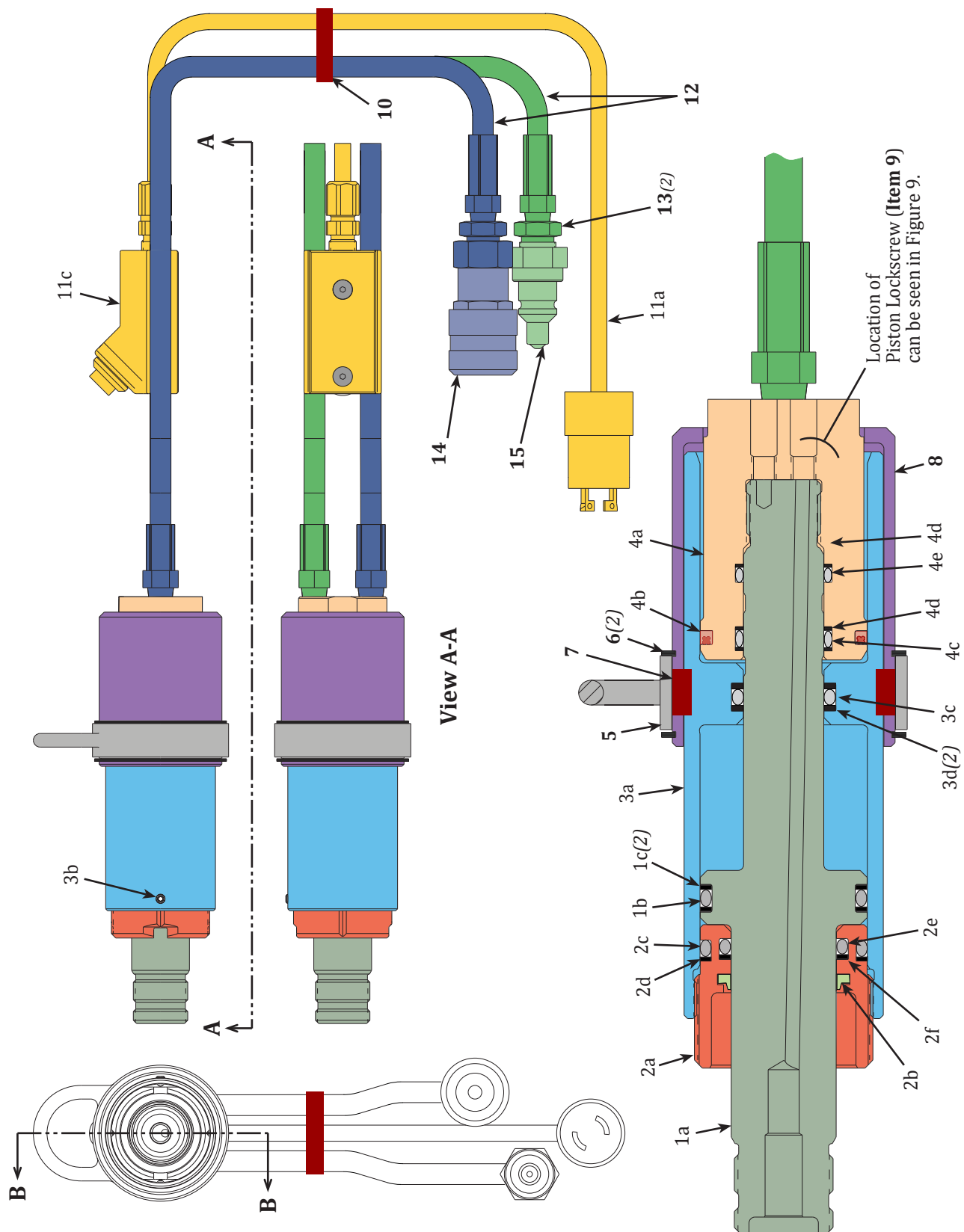






## Tool Components Drawing BTT25-DT & BTT35-DT

Figure 5



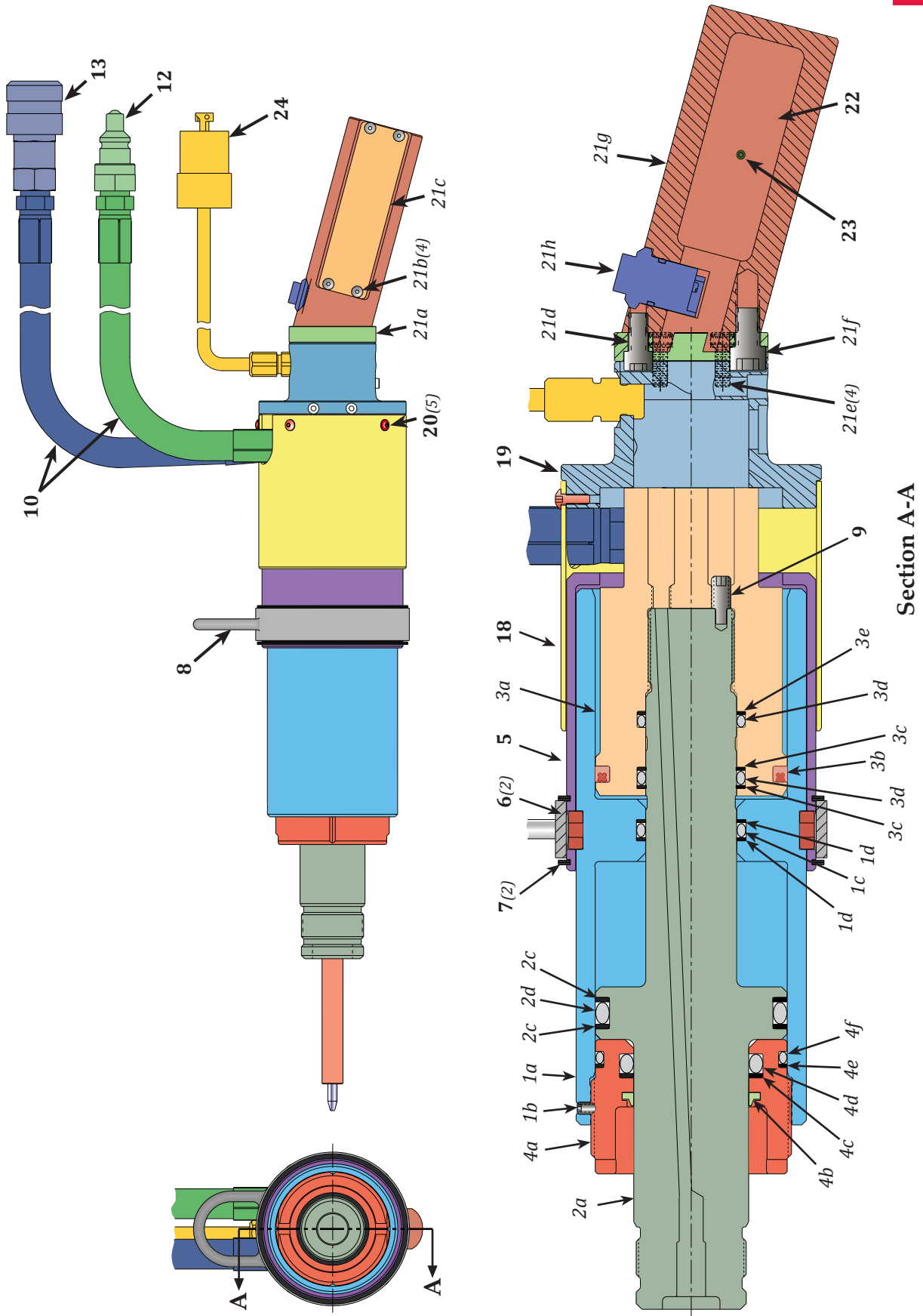
### Figure 6





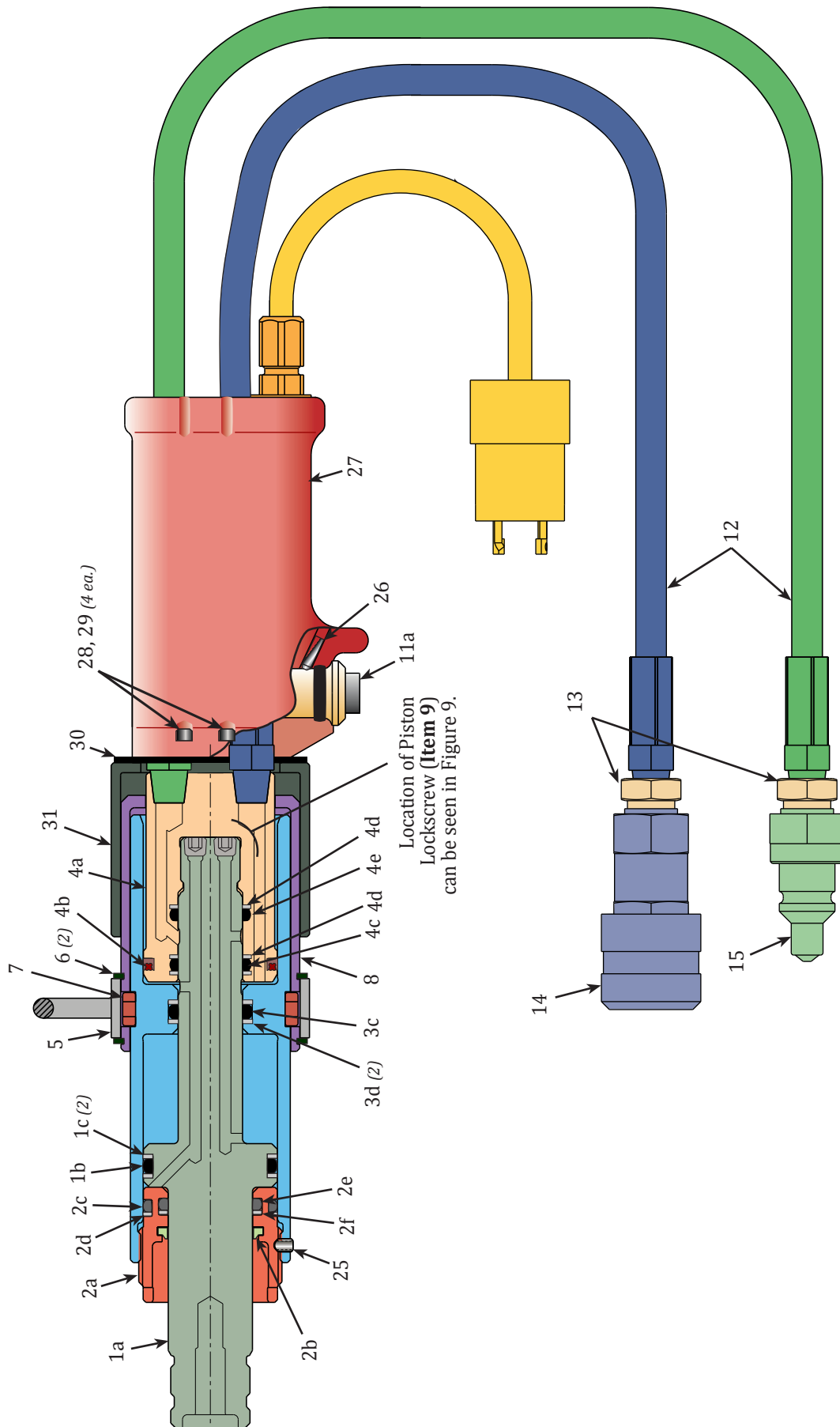
## Tool Components Drawing BTT57R-DT

Figure 7



## Tool Components Drawing BTT25RH-DT

Figure 8

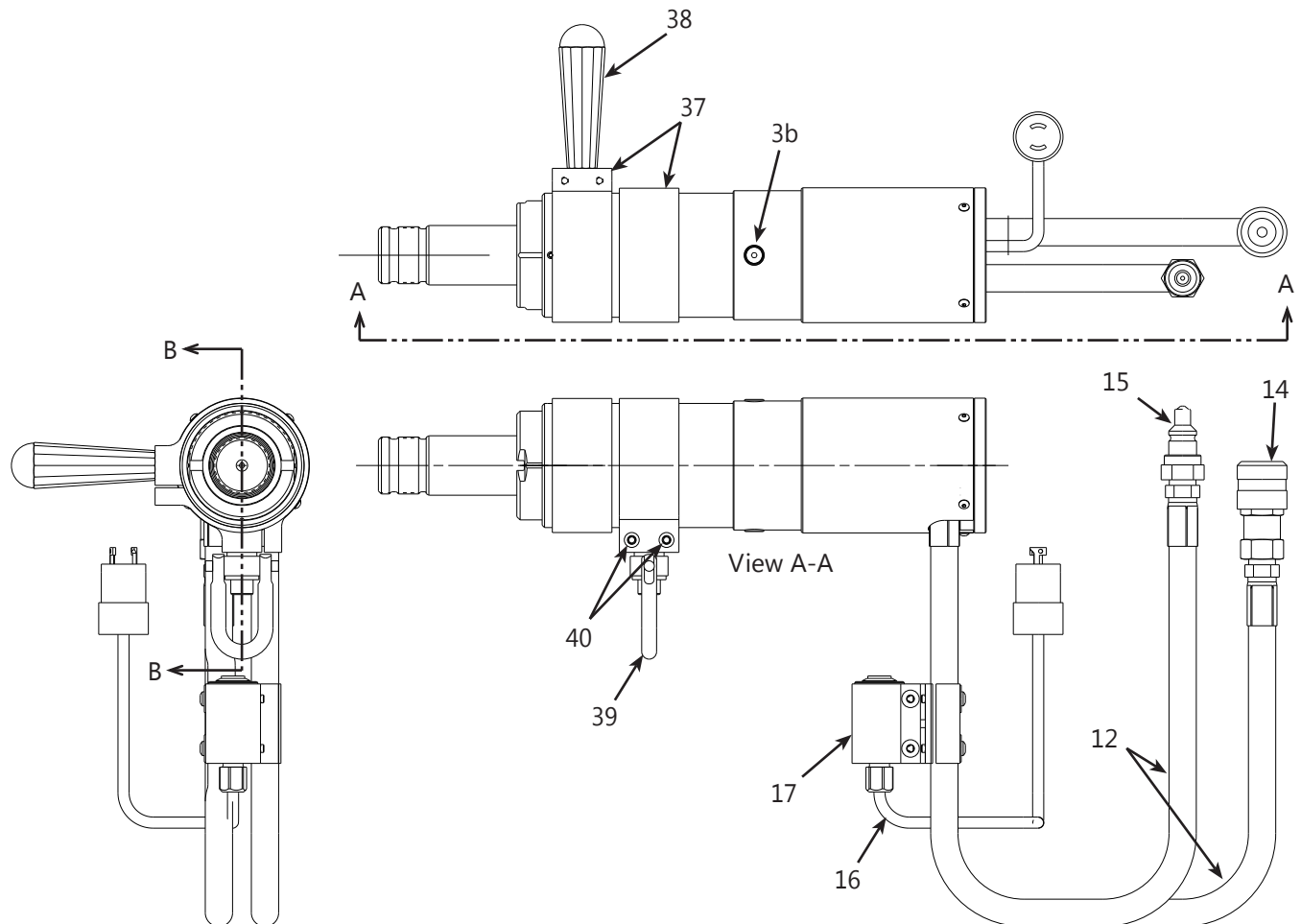
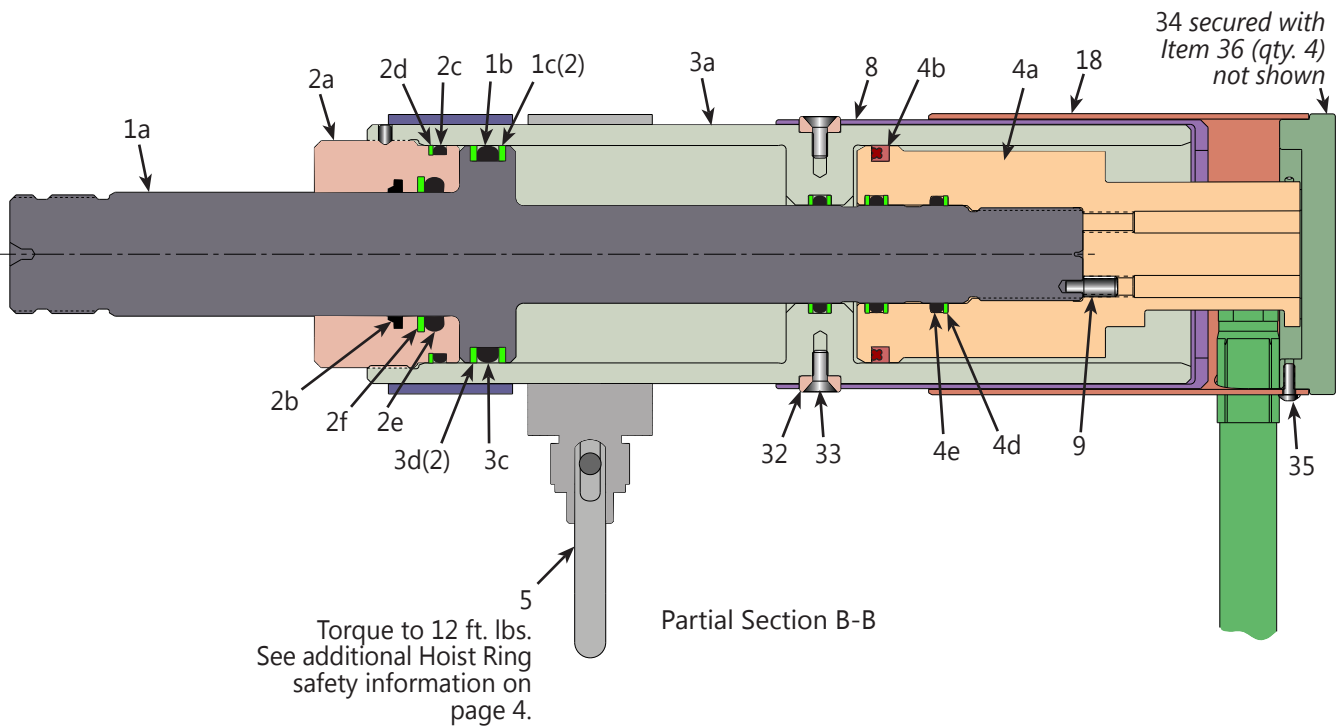






## Tool Components Drawing BT60-325-RA

Figure 9





## Tool Assembly Parts Lists *(Figures 5-8)*

ITEM	DESCRIPTION	BTT25-DT (Figure 5)	BTT25RH-DT (Figure 8)	BTT35-DT (Figure 5)	BTT57-DT (Figure 6)	BTT57R-DT (Figure 7)	BT60 (Figure 9)	QTY		
1	Piston Assembly	128694		128282	128717		131403	1		
1a*	Piston Rod	n/a		n/a	n/a	n/a	n/a	1		
1b	O-Ring	506080		506089	506085		503875	1	✓	
1c	Back-up Ring	501148		501151	502855		508932	2	✓	
1d	Pipe Plug (not shown)	507635		503703	503703		503703	2		
2	Front Gland Assy	128708		121890	121891		131390	1		
2a*	Front Gland	n/a		n/a	n/a	n/a	n/a	1		
2b	Wiper	506064		506065	506066		506066	1	✓	
2c	O-Ring	506080		506089	506090		503852	1	✓	
2d	Back-up Ring	501148		501151	501155		501156	1	✓	
2e	O-Ring	506078		506079	506082		506082	1	✓	
2f	Back-up Ring	501142		501144	503610		503610	1	✓	
3	Main Housing Assy	128968		121981	128716		131408	1		
3a*	Main Housing	n/a		n/a	n/a	n/a	n/a	1		
3b	Lock Screw	121343		121343-35	121343-57		121343-57	1		
3c	O-Ring	506077		506078	506079		506079	1	✓	
3d	Back-up Ring	501138		501142	501144		501144	2	✓	
4	Rear Piston Assy	128696		128281	128718		131388	1		
4a*	Rear Piston	n/a		n/a	n/a	n/a	n/a	1		
4b	Polyseal	505917		505918	505919		508929	1	✓	
4c	O-Ring	500814 (qty 2)		503808	500850 (qty 2)		506079 (qty 2)	1	✓	
4d	Back-up Ring	501108 (qty 3)		501112	501144 (qty 3)		501144 (qty 3)	2	✓	
4e	O-Ring	n/a		503818	n/a	n/a	n/a	1	✓	
5	Suspension Sleeve	128702		128430	128722		n/a	1		
6	Retaining Ring	507473		507474	503448			2		
7	Locator Button	125902		125902	125902-1			2		
8	Shield	128706		125903	128721		131409	1		
9	Locking Screw (shown in Figure 10)	128701		128440	128701		128701	1		
10	Cable Tie	n/a		505839	n/a			1		
11	Electric Trigger Assy	118940-2	n/a	118940-2				1		
11a	Trigger & Cord Assy	120245-3	119812-2	120245-3				1		
11b	Trigger Guard (not shown)	122447	n/a	122447				1		
11c	Trigger Housing Assy	118938	n/a	118938				1		
12	High Pressure Hose	128788	128788	118944-2	123749-5		123749-5	2		
13	Reducer	503431	503431	503431	n/a		n/a	2		
14	Coupler Body	110439						1		
15	Coupler Nipple	110438						1		
16	Trigger & Cord Assy	n/a			123381		131400	1		
17	Hose Clamp Assy	n/a			123380		123880	1		
18	Pinch Guard	n/a				129349		131392	1	
19	Switch Housing Assy					129440		n/a	1	
20	Button Head Screw					502468		n/a	5	

☐ These parts are also included in the tool Service Kit.

\* When replacing these parts, the assembly must be ordered since a critical subcomponent may not be sold separately.

\*\* If this sticker is lost, damaged, or unreadable, it must be ordered and placed on tool in location shown.



## Parts Lists (continued)

ITEM	DESCRIPTION	BTT25-DT (Figure 5)	BTT25RH-DT (Figure 8)	BTT35-DT (Figure 5)	BTT57-DT (Figure 6)	BTT57R-DT (Figure 7)	<b>BT60</b> (Figure 9)	QTY	
	<b>Handle-Switch Assy</b> (includes items 19 & 24)	n/a				<b>129441</b>	n/a	1	
21	Handle Assy	n/a				128428	n/a	1	
21a*	Switch Housing Assy	n/a				129440	n/a	1	
21b	Button Head Screws	n/a				502467	n/a	4	
21c	Handle Cover	n/a				128427	n/a	1	
21d	Socket Head Screw 1/4-20	n/a				500069	n/a	1	
21e	Socket Head Screw 10-32	n/a				500101	n/a	4	
21f	Socket Head Screw 5/16-18	n/a				500077	n/a	1	
21g	Handle	n/a				128426	n/a	1	
21h	Trigger Assy	n/a				120361	n/a	1	
22	Terminal Strip	n/a				124379	n/a	1	
23	Socket Head Screw	n/a				505879	n/a	1	
24	Cable Assy	n/a				129072	n/a	1	
25	Lock Screw	n/a	121343	n/a				1	
26	Setscrew		501618					1	
27	Handle		122276					1	
28	Screw		501209					4	
29	Lock Washer		500179					4	
30	Cushion		123172-25					1	
31	Guard		130883					1	
32	Locater Button	n/a				131404		2	
33	Flat Head Screw	n/a				504282		2	
34	Rear Piston Cap	n/a				131393		1	
35	Button Head Screw	n/a				502468		5	
36	Socket Head Cap Screw	n/a				500100		4	
37	Hanger Collar	n/a				131395		1	
38	Tapered Handle	n/a				508930		1	
39	Hoist Ring	n/a				508933		1	
40	Socket Head Cap Screw	n/a				500102		4	
98	Trademark/Year of Mfr. Sticker	590517						1	
99**	CE and Warning Sticker	590512-15						1	

✓ These parts are also included in the tool Service Kit.

\* When replacing these parts, the assembly must be ordered. One or more individual sub-components are not sold separately.

\*\* This sticker must remain readable. If sticker is lost or damaged, it must be ordered and placed on tool in location shown.



## Disassembly Procedure



**WARNING:** Be sure to disconnect tool electrical control trigger system from Powerig® Hydraulic Unit **BEFORE** disconnecting tool's hydraulic hoses from unit. If not disconnected in this order, severe personal injury may occur.

The following procedures are for complete disassembly. Remove **ONLY** those parts necessary. Check and replace damaged or worn components. **Replace O-rings and back-up rings.**

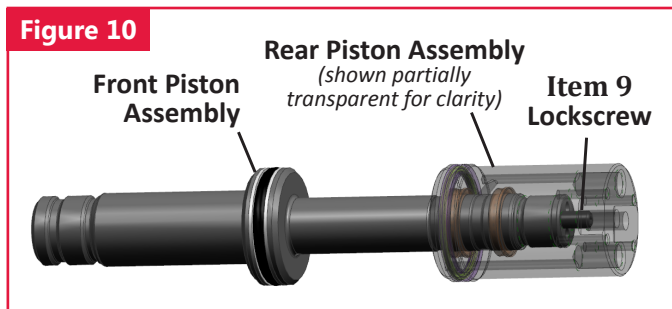
### NOSE DISASSEMBLY

1. Unplug trigger cord from Powerig®; then disconnect hoses from Powerig.
2. Loosen setscrew in anvil holder, and unscrew anvil holder from front gland.
3. Pull anvil and anvil holder off over puller.
4. Loosen setscrews on puller, and unscrew puller from front piston.

### TOOL DISASSEMBLY

1. Remove 4 cap screws attaching handle to rear piston, if necessary.
2. Slide handle and guard back over hoses, if necessary.
3. Remove front retaining ring, and slide suspension sleeve off front of tool.
4. Remove 2 locator buttons from rear piston shield, and slide shield back over hoses.
5. Unscrew and remove lock screw from front piston (Figure 10).
6. Push front piston toward back of main housing; then unscrew rear piston from front piston and pull rear piston out of main housing.
7. Loosen setscrews in main housing, and unscrew front gland assembly from housing.
8. Pull front piston assembly from main housing.
9. Using a small diameter, dull-pointed rod, remove and discard all O-rings, back-up rings, wipers, and seals from the disassembled components.

**Figure 10**







## Assembly Procedure

**WARNINGS:**

**Do not omit any seals during servicing, leaks will result and personal injury may occur.**

**Tool must be fully assembled with all components included.**



**CAUTION: Do not use TEFLON tape.**

**ASSEMBLY PREPARATION:**

- Clean components in mineral spirits or other solvent compatible with O-ring seals.
- Clean out O-ring grooves.
- Inspect components for scoring, excessive wear or damage.
- Replace O-rings and back-up rings. Be sure that relative positions of the O-rings and back-up rings are as shown in assembly drawing.
- Service Kits, listed in **OPTIONAL EQUIPMENT**, contain O-Rings, Back-up Rings and other seals necessary for servicing this tool.
- Smear Lubriplate 130AA on O-rings and mating surfaces to prevent damage to O-rings and to aid assembly.

**ASSEMBLY PROCEDURE:**

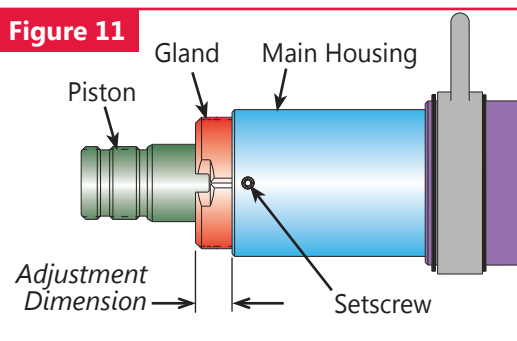
- Install O-ring and back-up rings in main housing.
- Install O-ring and back-up rings on front piston.
- Slide assembled front piston assembly into the front of the main housing assembly.
- Noting the correct orientations**, install the internal o-rings and back-up rings of the rear piston.
- Noting the correct orientation**, install the rear piston polyseal.
- Slide assembled rear piston assembly into back of main housing. Thread the rear piston fully onto the front piston, then back it off until the piston lock screw can be installed. (Figure 10) Verify the installation of the lock screw by attempting to loosen

and tighten the two pistons. When these components are installed correctly, rotational movement between them should not be possible.

- Noting the correct orientations**, install the o-rings and back-up rings, and wiper of the front gland.
  - Slide assembled gland over front piston rod and thread it into the main housing; then check the dimension from the face of the gland to the face of the main housing (Figure 11), and adjust it to the following range by aligning the groove in the gland closest to the setscrew hole in the main housing, and fastening the two together with the setscrew.
- |              |                              |
|--------------|------------------------------|
| BTT25 series | .515-.530 in. (1.31-1.35 cm) |
| BTT35 series | .480-.520 in. (1.22-1.32 cm) |
| BTT57 series | .630-.645 in. (1.60-1.64 cm) |
| BT60 series  | .630-.645 in. (1.60-1.64 cm) |
- Slide rear piston shield over main housing, align the locator button holes, and install the buttons.
  - Slide the suspension sleeve into place, and install the retaining rings to secure it.
  - Slide the handle and guard in place and secure with 4 cap screws.

**ATTACHING NOSE ASSEMBLY:**

- Thread puller fully onto front piston, and tighten setscrews to lock in place.
- Apply anti-seize lubricant (Huck part no. 508183) to outside of puller and inside of anvil where they would contact each other.
- Slide anvil assembly and anvil holder over puller, and thread anvil holder fully onto gland; then unscrew until setscrew in anvil holder lines up with closest groove on gland; then tighten setscrew to lock in place.

**Figure 11**



## Optional Equipment

**To maintain CE conformity, only CE compatible equipment should be used with these tools. Installation tools and nose assemblies are the only CE components unless otherwise noted. Controls and other hardware shown in the manual are for domestic use only.**

**TEFLON® Stick** - 503237  
**TEFLON® Sealant** - 620012  
**Loctite® 243** - 508567  
**Never-Seez® NS-160** - 505565  
*(anti-seize and lubricating compound)*

**LUBRIPLATE® 130-AA** - 502723  
**Threadmate™ (4oz. tube)** - 508517  
**Pressure Gauge** - T-124833CE  
**Service Parts Kits**                      **Tools**                      **Kit No.**  
*(Includes all perishable* - BTT25 series **BTT25KIT**  
*seals, O-rings, and* - BTT35 series **BTT35KIT**  
*Back-up rings. A spare* - BTT57 series **BTT57KIT**  
*Service Parts Kit should* - BT60 series **BT60KIT**  
*be kept on hand at all*  
*times.)*

**Swage Gage** - **HG-S-MBT12** (12mm)  
 - **HG-S-MBT14** (14mm)  
 - **HG-S-MBT20** (20mm)  
 - **HG-S-BT20** (5/8" & 16mm)  
 - **HG-S-BT24** (3/4")  
 - **HG-S-BT28** (7/8")  
 - **HG-S-BT32** (1")

Hose Assembly	Hose Length	Part No.
(Contains 2 identical	- 6 ft	<b>118309-6</b>
hydraulic hoses with	- 12 ft	<b>118309-12</b>
one male and one female	- 26 ft	<b>118309-26</b>
quick connect fitting at	- 38 ft	<b>118309-38</b>
each end)	- 52 ft	<b>118309-52</b>

## Troubleshooting

Always check the simplest possible cause of a malfunction first. For example, a loose or disconnected trigger line. Then proceed logically, eliminating each possible cause until the defective part is located. Where possible, substitute known good parts for suspected defective parts. Use Trouble Shooting Chart as an aid for locating and correcting trouble.

1. Tool fails to operate when trigger is depressed.
  - a. Inoperative POWERIG® Hydraulic Unit. See applicable instruction manual.
  - b. Loose air or electric connections.
  - c. Damaged trigger assembly.
  - d. Loose or faulty hydraulic hose couplings.
  - e. Unloading valve not installed in Tool.
2. Tool operates in reverse.
  - a. Reversed hydraulic hose connections between hydraulic unit and Tool.
3. Tool leaks hydraulic fluid.
  - a. Defective Tool O-rings or loose hose connections at Tool.
4. Hydraulic couplers leak fluid.
  - a. Damaged or worn O-rings in coupler body. See Coupler 110440.
5. Hydraulic fluid overheats.
  - a. Hydraulic unit not operating properly.
  - b. Unloading valve installed incorrectly.
  - c. POWERIG Hydraulic Unit running in reverse (918: 918-5) See unit's manual.
6. Tool operates erratically and fails to install fastener properly.
  - a. Low or erratic hydraulic pressure -- air in system
  - b. Damaged or worn piston O-ring in Tool.
  - c. Unloading valve installed incorrectly.
  - d. Excessive wear on sliding surfaces of Tool parts.
  - e. Excessive wear of unloading valve in Tool.
7. Pull grooves on fastener pintail stripped during PULL stroke.
  - a. Operator not sliding anvil completely onto fastener pintail.
  - b. Incorrect fastener grip.
  - c. Worn or damaged jaw segments.
  - d. Metal particles in pull grooves of jaw segments.
  - e. Excessive sheet gap.
8. Collar of HUCKBOLT® fastener not completely swaged.
  - a. Improper Tool operation. See Trouble 6.
  - b. Scored anvil.
9. Tool "hangs-up" on swaged collar of HUCKBOLT Fastener.
  - a. Improper Tool operation. See Trouble 6.
  - b. RETURN pressure too low.
  - c. Nose assembly not installed correctly.
10. Pintail of fastener fails to break.
  - a. Improper Tool operation. See Trouble 6.
  - b. Pull grooves on fastener stripped. See Trouble 7.
  - c. PULL pressure too low.
  - d. Worn unloading valve.



## Limited Warranties

### Limited Lifetime Warranty on BobTail® Tools:

Huck International, Inc. warrants to the original purchaser that its BobTail® installation tools manufactured after 12/1/2016 shall be free from defects in materials and workmanship for its **useful lifetime**. This warranty does not cover special order / non-standard products, or part failure due to normal wear, tool abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

### Two Year Limited Warranty on Installation Tools:

Huck International, Inc. warrants that its installation tools and Powerigs® manufactured after 12/1/2016 shall be free from defects in materials and workmanship for a period of two years from date of purchase by the end user. This warranty does not cover special order / non-standard products, or part failure due to normal wear, tool abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

### 90 Day Limited Warranty on Nose Assemblies and Accessories:

Huck International, Inc. warrants that its nose assemblies and accessories shall be free from defects in materials and workmanship for a period of 90 days from date of purchase by the end user. This warranty does not cover special clearance noses, or special order / non-standard product, or part failure due to normal wear, abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

**Useful lifetime** is defined as the period over which the product is expected to last physically, up to the point when replacement is required due to either normal in-service wear, or as part of a complete overhaul. Determination is made on a case-by case basis upon return of parts to Huck International, Inc. for evaluation.

### Tooling, Part(s) and Other Items not manufactured by Huck:

HUCK makes no warranty with respect to the tooling, part(s), or other items manufactured by third parties. HUCK expressly disclaims any warranty expressed or implied, as to the condition, design, operation, merchantability, or fitness for use of any tool, part(s), or other items thereof not manufactured by HUCK. HUCK shall not be liable for any loss or damage, directly or indirectly, arising from the use of such tooling, part(s), or other items or breach of warranty or for any claim for incidental or consequential damages.

Huck shall not be liable for any loss or damage resulting from delays or non-fulfillment of orders owing to strikes, fires, accidents, transportation companies or for any reason or reasons beyond the control of the Huck or its suppliers.

### Huck Installation Equipment:

Huck International, Inc. reserves the right to make changes in specifications and design and to discontinue models without notice.

Huck Installation Equipment should be serviced by trained service technicians only.

Always give the serial number of the equipment when corresponding or ordering service parts.

Complete repair facilities are maintained by Huck International, Inc. Please contact one of the offices listed below.

#### Eastern

One Corporate Drive Kingston, New York 12401-0250  
Telephone (845) 331-7300 FAX (845) 334-7333

#### Outside USA and Canada

Contact your nearest Huck International location (see reverse).

In addition to the above repair facilities, there are Authorized Tool Service Centers (ATSC's) located throughout the United States. These service centers offer repair services, spare parts, Service Parts Kits, Service Tool Kits and Nose Assemblies. Please contact your Huck Representative or the nearest Huck International location (see reverse) for the ATSC in your area.



# ARCONIC

Innovation, engineered.

Arconic Inc. (NYSE: ARNC) creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power.

Through the ingenuity of our people and cutting-edge advanced manufacturing, we deliver these products at a quality and efficiency that ensures customer success and shareholder value.

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## **Arconic Fastening Systems and Rings world-wide locations:**

### **AMERICAS**

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1 Corporate Drive  
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900 Watson Center Rd.  
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800-421-1459  
310-830-8200  
FAX: 310-830-1436

#### **Waco Operations**

PO Box 8117  
8001 Imperial Drive  
Waco, TX 76714-8117  
800-388-4825  
254-776-2000  
FAX: 254-751-5259

#### **Tucson Operations**

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Clayton, Victoria  
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FAX: 03-764-5510

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