



# BADGER 4" 40K (BA-H6) SELF ROTARY SWIVEL USER MANUAL



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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). Updated manuals can be downloaded at:

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

## SPECIFICATIONS

- Tool Family: Badger
- Tool Model: BA-H6 (40k)
- Pressure Range: 22-44k psi (1500-3000 bar)
- Flow Range: 4.5-12 GPM (17-45 l/min)
- Flow Coefficient: .4 Cv
- Rotation Speed: 100-400rpm (Fast Fluid)
- Inlet Connection: 3/8-24 HP Gland
- Port Size: 5 x 1/8" NPT
- Nozzle Type: OS6
- Port Plug: OS6 002
- Outside Diameter: 2.95 in. 75 mm
- Overall Length: 3.9 in. 99 mm
- Weight: 4.0 lbs 1.8 kg
- Maximum Temperature: 160° F 70° C

## DESCRIPTION OF EQUIPMENT AND INTENDED USE

The 4" 40k Badger self-rotary tool makes cleaning pipes with elbows easy, navigating 4 in. (102 mm) bends with controlled rotation which is important for efficiently cleaning larger pipes. The operator can choose between two rotation speeds by selecting fast or slow viscous fluid.

## KEY FEATURES:

- Different jetting configurations allow for more or less pull and forward hitting power
- Navigates elbows as small as 4 in. (102 mm) at up to 44k psi (3000 bar)
- Self-rotary, speed controlled head provides complete internal coverage with optimum jet delivery
- Multiple jetting options optimize the tool for a variety of pumps pressures and flows - unplug, polish, or run longer lines based on jetting
- Designed to easily pair with the AutoBox ABX-500 hose tractor for hands-free pipe cleaning

# TOOL OVERVIEW

## DESCRIPTION

The Badger™ Rotary Waterblast Nozzle was designed for waterblast cleaning of pipes as small as 4 inch with elbows. The BA-H6 has a 3/8 high pressure female inlet connection and a maximum operating pressure of 44,000 psi (3000 bar). A viscous fluid is used to control rotation speed in the range of 100 to 400 rpm. The Badger™ heads have five S6 ports; one at 15 degrees, two at 100 degrees, and two at 125 degrees

Engraved on each head is R25, R35, or R50; this number is the offset of the head that makes it rotate. The flow range for each head is given in the table; nozzle sizes must be selected to fit within this flow range. If the flow is less than the range shown, the tool will not rotate; if it is more than the range maximum, the tool will rotate too fast and wear out the seals and bearings prematurely.

FLOW RANGE			
PRESSURE PSI	R50	R35	R25
44,000 (3000 BAR)	4.5-7 GPM	7-9.5 GPM	9.5-12 GPM



BA-H6

# WARNING AND SAFETY INSTRUCTIONS

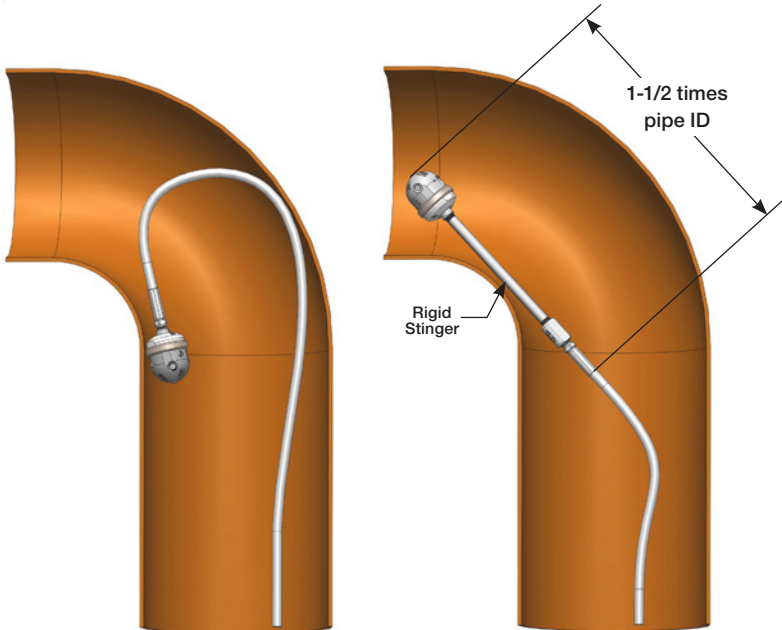
## ⚠ WARNING

Because of the short length of the Badger, the tool can turn around in large pipes and come back at the operator at a high rate of speed. If cleaning larger pipes, a rigid “stinger” should be used between the hose and the tool. It is recommended that the rigid length of the tool including hose end is 1-1/2 times the inside diameter of the pipe being cleaned (see below).

Make sure there is an operator controlled dump in the system, operated by the person closest to the cleaning job. Flush out the high pressure hoses before connecting the Badger. It is recommended that the hose be marked a few feet from the end with a piece of tape so the operator knows when to stop when retracting the tool. Position the tool in the pipe opening. Close the dump and slowly bring up to pressure the first time to make sure no nozzles are plugged and the jet thrust is correct. The Badger should begin to slowly rotate. Once operating pressure is reached, feed the tool into the pipe to begin the cleaning job. Allow the jets time to do their work by feeding the hose out at a controlled rate. The StoneAge ABX-500 Hose Control Device can be used to achieve consistent feed rates for pipe cleaning. When the work is complete and the tool is connected from the hose, blow out all water to prolong the life of the tool. A small amount of oil can be blown into the tool as well as an added measure to maximize tool life.

## ⚠ DANGER

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.



**IMPROPER USE:**  
Badger will turn around  
in large diameter pipe.  
**VERY DANGEROUS!**

**PROPER USE:**  
Badger with rigid “stinger” to  
prevent turnaround, still able  
to pass through elbows.

## OPERATION

The first step is to determine the jet sizes. Jet thrust is used to pull the tool through the pipe. An estimate of the amount of pulling force required is useful and depends on the number of elbows and any vertical climbs that must be made. On a horizontal run with no elbows, roughly 1 pound of pull is required for every ten feet. When climbing vertically, the pulling force must equal the weight of the tool and the hose.

Typically, larger jet sizes using 50-80% of the total flow are used in the back 125° ports. As little as 10% of the total flow is given to the front jet, because it pushes the wrong direction and is only used to open up blockages. The remaining flow goes to the 100° ports, which do help pull as well, but are more functional for pipe cleaning. Nozzles selected should be matched pairs, except the front jet. When installing nozzles, we recommend using Blue Goop® anti-seize.

## TOOL SERVICE INFORMATION

### TOOL SERVICE

\*\*\*Product training and proper tools are required to service this nozzle. If you are uncomfortable performing the service, bring the nozzle to your authorized dealer.\*

The use of a bench vice and an arbor press is highly helpful. Take care throughout the entire procedure to keep the internals clean and free from grit, lint, and contamination. Failure to do so could result in premature failure after service.

### LIST OF TOOLS:

- Bench Vice (recommended)
- Arbor Press (recommended)
- 18" Adjustable Wrench (such as Crescent® C718 Automatic Adjustable Pipe Wrench)
- Medium size flat-head screw driver
- Pick
- Bearing Splitter
- 3/8 Drive Ratchet with 3" Extension
- BA 612-H6 Tool Kit (Includes)
  - BA 481 Bearing Removal Tool
  - BA 482 Socket, 5/16", Deep, 1/4" Drive
  - BA 483 Hex Bit, 3/8", 3/8" Drive
  - BA 484 Seal installation tool

### LIST OF MATERIALS:

- Clean lint free rags or blue shop towels
- Anti-Seize - StoneAge PN (GP 043 Blue Goop)
- Lithium Soap Grease – StoneAge PN (GP 048 Grease)
- Blue Loctite® 242
- Isopropyl Alcohol or Denatured Alcohol

*Blue Goop® is a registered trademark of the Swagelock® Corporation.*

*Loctite® is a registered trademark of Henkel AG & Co. KGaA.*

## VISCOUS FLUID FLUSH INSTRUCTIONS

1. Remove the Port Screws in the Nut and Head (see Figure 1).
2. Fill the Syringe with viscous fluid by removing the end near the handle, pulling out the plunger, and pouring the Viscous Fluid (BJ 048-F) in to fill the Syringe Body. With plunger re-installed, purge air out of Syringe hose.
3. Thread the syringe end into the port in the Head, and squeeze fresh Viscous Fluid in until clean Viscous Fluid comes out the port in the Nut. Hold the tool so the port in the Nut is the highest point. If air bubbles come out of the port on the nut, keep flushing new fluid until air bubbles stop.
4. Install Port Screw into Nut first. Remove the Syringe and install the Port Screw in the Head.
5. If tool rotation speed does not slow down to the normal range, a BA 610-H6 Overhaul Kit may be required. See "Disassembly and Assembly" sections in this manual for service instructions.

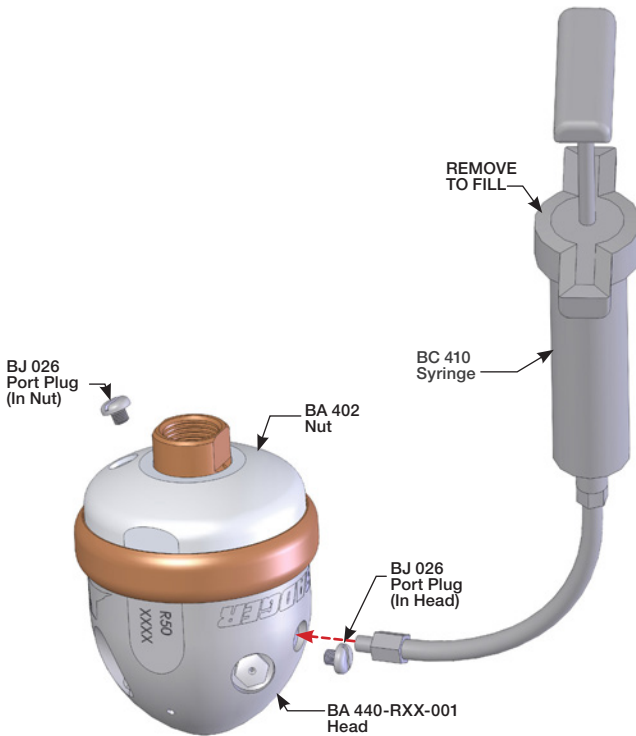


Figure 1: Viscous Fluid Flush

## DISASSEMBLY

1. With the head facing down, place the flats of the head in a vice.
2. Remove Port Screw from Nut.
3. Unscrew Nut from Head and remove Nut and Wear Ring.

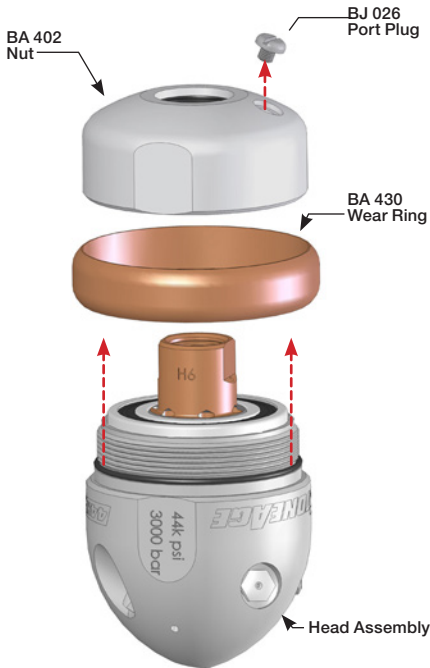


Figure 2: For Steps 1-3

4. Inspect Shaft Seal and remove from Nut if damaged.

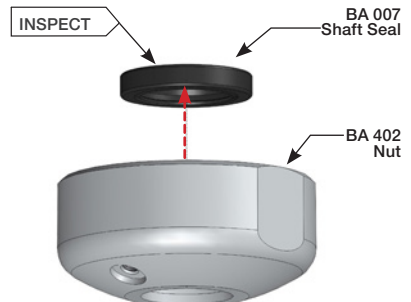


Figure 3: For Step 4

5. Remove Shaft from Head. Pliers or vice grips may be necessary to grab the Shaft as viscous fluid and tool seals can cause a suction force.

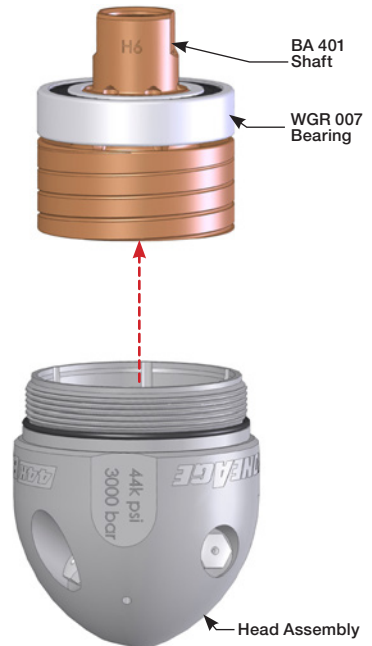


Figure 4: For Step 5



6. Use 3/8" allen key or StoneAge tool BA 483 to remove Compression Nut and set aside.
7. Use a small pick to remove Seal Holder followed by the Carbide Seat, HP Seal Assy, and Spring.
8. Wave Spring can be removed next. If Wave Spring appears flat, replace.
9. Use the *Bearing Removal Tool* BA 481 to remove the Bearing.

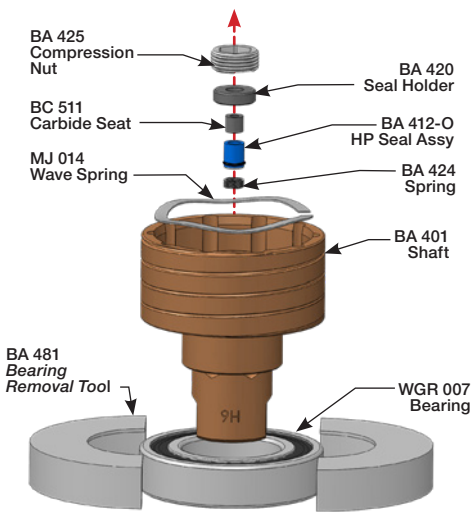


Figure 5: For Steps 6-9

10. Remove Seat Face from head with 5/16" nut driver or StoneAge tool BA 482.
11. Inspect Backup Ring and O-ring and remove if any damage is suspected.
12. Inspect Shaft Seal. If damaged, remove the Seal from head.
13. Remove Bearing from inside the Head.
14. Inspect O-ring. If damaged, remove from Head.
15. Let old Viscous Fluid drain from all parts.

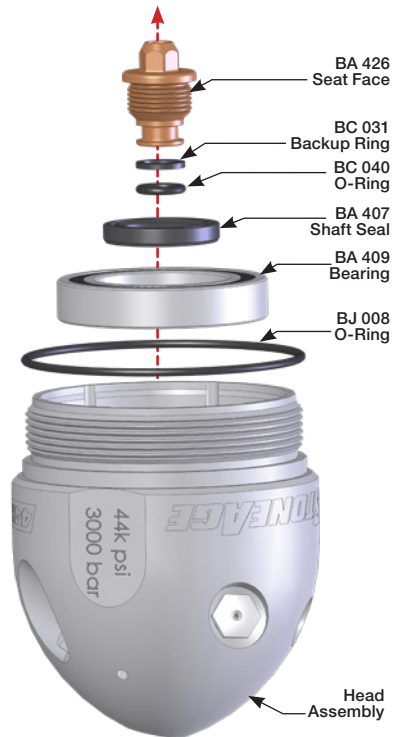


Figure 6: For Steps 10-15

## ASSEMBLY

1. Install O-ring over threads on Head and into groove.
2. Install Bearing on boss inside of Head (may require a light press).
3. Press Shaft into Head with the inner lip side UP. **Grease inner lip.**
4. Install Backup Ring and O-ring into groove on the Seat Face in orientation shown below. **Grease around both rings.** Apply anti-seize on threads prior to installation. Thread the Seat Face into Head and **tighten to approximately 10 ft.-lbs.**

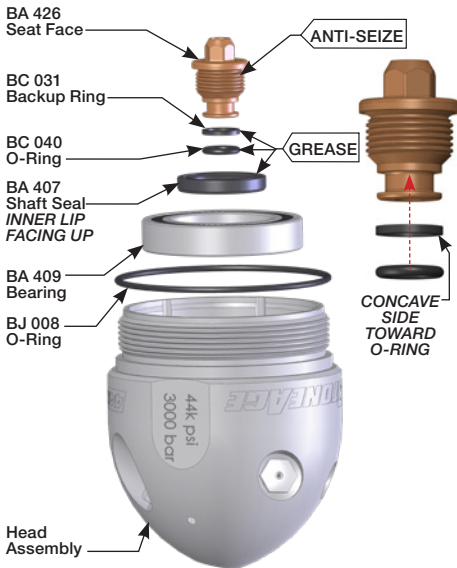


Figure 7: For Steps 1-4

5. Press Bearing onto Shaft.
6. Install the high pressure seal stack into the shaft. Start with the Spring, followed by the HP Seal Assy, then the Seal Holder. Note orientation of groove in Seal Holder and direction of HP Seal Assy. Apply grease to each component when installing to hold them in the shaft.
7. Install Carbide Seat into Seal Holder. Note orientation of chamfer. Use grease to hold the Carbide Seat in place.

8. Thread Compression Nut into Shaft. Tighten to 20 ft lbs. Apply anti-seize to threads prior to installation.
9. Slide Wave Spring in open end of Shaft down to inner shoulder.

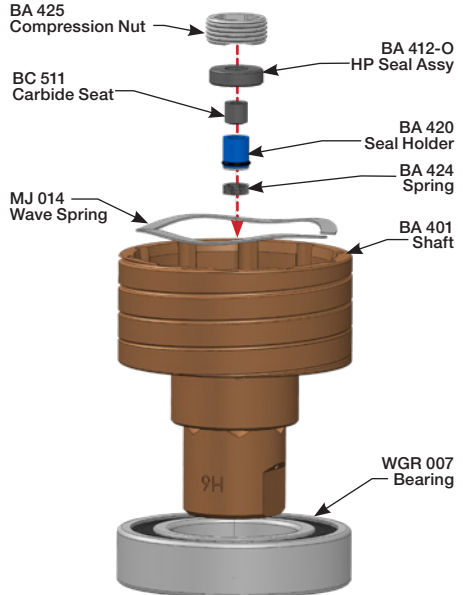


Figure 8: For Steps 5-9

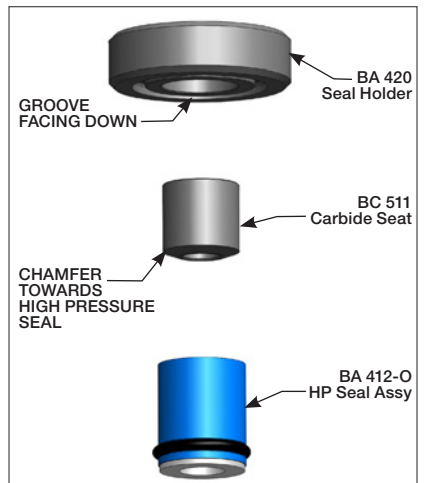


Figure 8.1: For Step 7

10. With the head facing down, place the flats of the head in a vice. Fill inside of Head with Viscous Fluid (BJ 048-F) until it is flush with the top of the Bearing inside the Head. Rock side to side and make sure no air is trapped under Bearing in Head.
11. Slide Shaft into the Head. Push down firmly until Viscous Fluid is forced out of holes in the back of the Shaft.
12. Rotate Shaft clockwise vigorously. Alternate between forcing Viscous Fluid down the holes in the back of the Shaft and rotating Shaft. Repeat until Shaft rotation becomes stiff and no more air bubbles appear when new fluid is forced in. Port Screw can also be removed from Head and Syringe BC 410 can be used to force Viscous Fluid in from the bottom to purge air out of tool. See "Lubricant Replacement Instructions" section of this manual.

## NOTICE

Only use Viscous Fluid filled sealed bearings from StoneAge when performing a complete tool overhaul.



Figure 9: For Steps 10-12

13. Press Shaft Seal into Nut. Grease inner lip of seal.

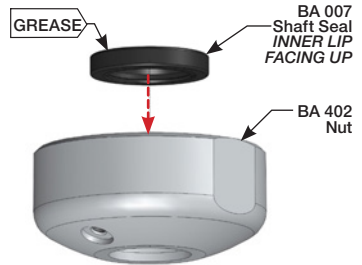


Figure 10: For Step 13

14. Slide Wear Ring over Head with inner lip down.
15. Put layer of Viscous Fluid on top of Bearing.
16. Put anti-seize on threads of Head. Thread Nut onto Head (Port Screw not installed). Tighten Nut to 40 ft-lbs and let excess Viscous Fluid bleed out of Port Screw hole.
17. Install Port Screw into threaded port on Nut.

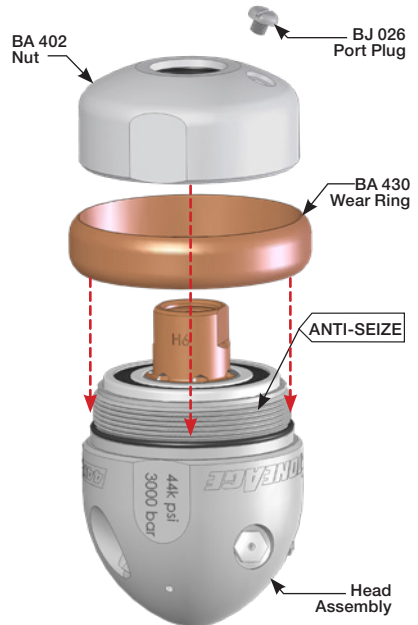


Figure 11: For Steps 14-17

## HIGH-PRESSURE WATER SEALS LEAK:

- The high pressure seal may leak initially at lower pressures, but should pop closed as pressure is increased. A continuous leak at operating pressure from the weep holes (Figure 12) indicates the need to replace the HP Seal and Seat. HP Seals wearing out too quickly can be an indication that the HP Seat is installed upside-down, or the tool is rotating too fast (see below for causes). If the tool is leaking, but not over rotating, the BA 600-H6 Seal Kit is required.

## TOOL WILL NOT ROTATE:

- Check the nozzles for plugging or wear (nozzles have to be removed to check for obstructions).
- Check that the nozzle sizes are correct for the desired flow and that the desired flow matches the head flow range.
- Check that the nozzle sizes are installed in a balanced configuration.
- If the tool feels rough when manually rotating the head, this indicates internal damage and BA 610-H6 Overhaul Kit will be required.

## TOOL SPINS TOO FAST:

- A significant increase in rotation speed means that the speed control mechanism in the tool has lost functionality. This can be a result of viscous fluid loss or fluid contamination. Operation of the tool in this state can cause damage to other components and accelerated wear of the high pressure seal. If this occurs, the first step is to flush the tool with new viscous fluid as shown in the “Lubricant Replacement Instructions” Section in this manual.

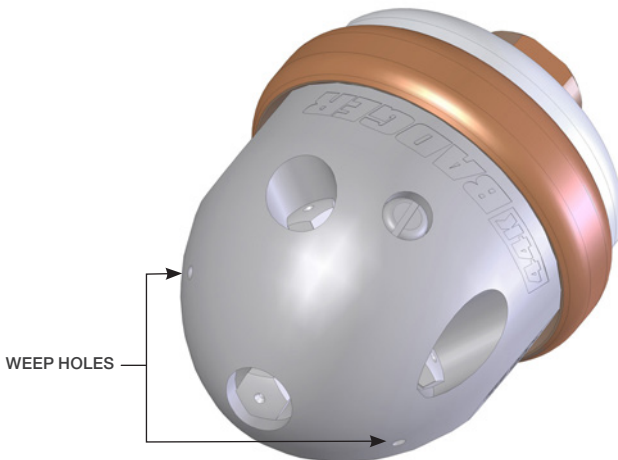
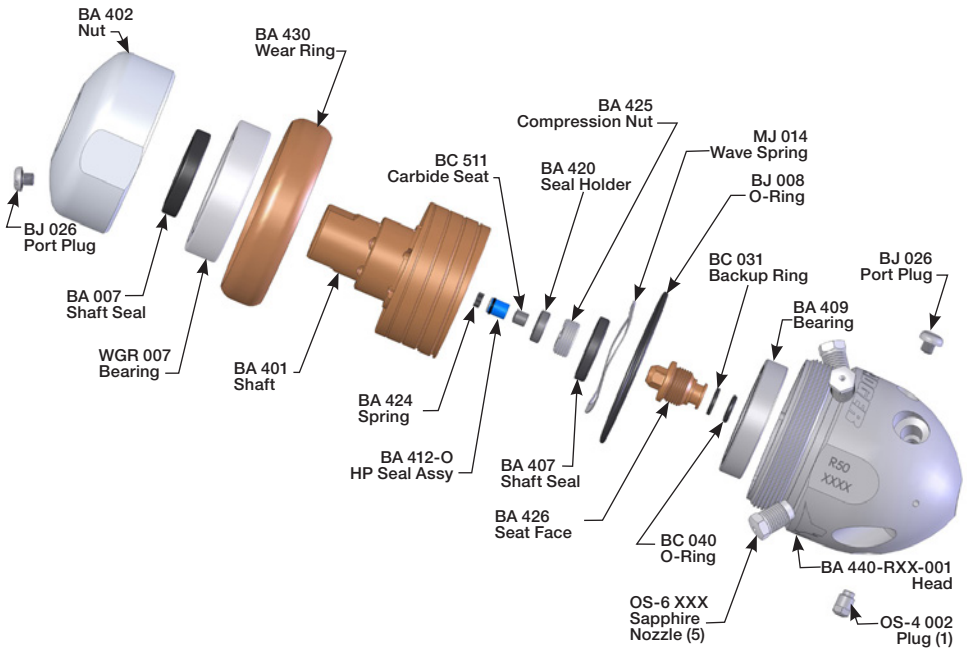


Figure 12

# PART NAMES/NUMBERS AND SERVICE KITS



## MAINTENANCE & OVERHAUL KITS

BA 600-H6 SERVICE KIT	BA 610-H6 OVERHAUL KIT	BA 612-H6 TOOL KIT
<ul style="list-style-type: none"> <li>1 BA 412-O H.P. Seal Assembly</li> <li>1 BA 420 Seal Retainer, 40k</li> <li>1 BA 424 Spring, Compression- 40k</li> <li>1 BC 410 Syringe Assembly</li> <li>1 BC 511 Carbide Seat - 40k</li> <li>1 BJ 048-F Visc Fluid, Fast, 6oz</li> <li>1 BJ 062-S Anti-seize, 2g</li> <li>1 PL 600 BA-H6 40k Manual</li> </ul>	<ul style="list-style-type: none"> <li>1 BA 007 Seal</li> <li>1 BA 407 Seal, Shaft</li> <li>1 BA 409 Bearing, Sealed</li> <li>1 BA 412-O H.P. Seal Assembly</li> <li>1 BA 420 Seal Retainer, 40k</li> <li>1 BA 424 Spring, Compression- 40k</li> <li>1 BA 426 Seat Face - 40k</li> <li>1 BA 430 Wear Ring - 40k</li> <li>1 BC 031 Back-up Ring</li> <li>1 BC 040 O-Ring</li> <li>1 BC 410 Syringe Assembly</li> <li>1 BC 511 Carbide Seat - 40k</li> <li>1 BJ 008 O-Ring</li> <li>2 BJ 026 Port Plug</li> <li>1 BJ 048-F Visc Fluid, Fast, 6oz</li> <li>1 BJ 062-S Anti-seize, 2g</li> <li>1 MJ 014 Wave Spring</li> <li>1 PL 600 BA-H6 40k Manual</li> <li>1 WGR 007 Bearing</li> </ul>	<ul style="list-style-type: none"> <li>1 BA 481 Tool, Bearing Removal</li> <li>1 BA 482 Socket, 5/16", Deep, 1/4" Drive</li> <li>1 BA 483 Hex Bit, 3/8", 3/8" Drive</li> <li>1 BA 484 Seal installation tool</li> </ul>

# TERMS AND CONDITIONS AND WARRANTY INFORMATION

**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.

## TERMS AND CONDITIONS AND WARRANTY INFORMATION

**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.stoneagetools.com/terms>

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

## 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/service](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.



## TERMS AND CONDITIONS AND WARRANTY INFORMATION

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.

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