

# 2" BADGER

Rotary Cleaning for Small Pipes with Elbows



The 2" Badger is a self-rotating swivel designed for cleaning 2 to 4 inch (51–102 mm) pipes with bends and long radius elbows, such as U-Tubes and process lines. The latest design includes a spring-loaded pin that ratchets the head to machined edges on the shaft. Therefore, the head can only be removed from the Badger with a special head removal tool and not while in operation.

The 2" Badger is ideal for industries such as oil refineries, power plants, and petrochemical production.

## COMPETITIVE ADVANTAGES

- Navigates pipes with bends as small as 2 inches (51 mm) in diameter
- The only tool in the industry with head locking technology for increased safety

FEATURES	BENEFITS
<ul style="list-style-type: none"> <li>• Unique compact design</li> </ul>	<ul style="list-style-type: none"> <li>• Allows this tool to easily navigate pipe bends</li> </ul>
<ul style="list-style-type: none"> <li>• Locking head</li> </ul>	<ul style="list-style-type: none"> <li>• Safety assurance — head can only be removed with a disassembly tool</li> </ul>
<ul style="list-style-type: none"> <li>• Multiple jetting options</li> </ul>	<ul style="list-style-type: none"> <li>• Optimize the tool for a variety of pump pressures and flows</li> <li>• Unplug, polish, or run longer lines based on jetting</li> <li>• Saves time, money, and water</li> </ul>

## CONSIDERATIONS

- What pressure and flow are you operating?
- What is the hose length, ID, and end fitting?
- Do you need an adapter?
- Do you need a backout preventer?  
*You should always use a backout preventer with high pressure pipe cleaning tools.*
- Do you need a centralizer or stinger?
- Do you need a head removal tool (**BA 182**)?
- Do you need a spanner wrench (**WV 181**)?

## OTHER INFORMATION

The 2" Badger requires a special head removal tool to remove the head.  
See the manual for proper use to prevent damage to the tool.

## TOOL SPECIFICATIONS

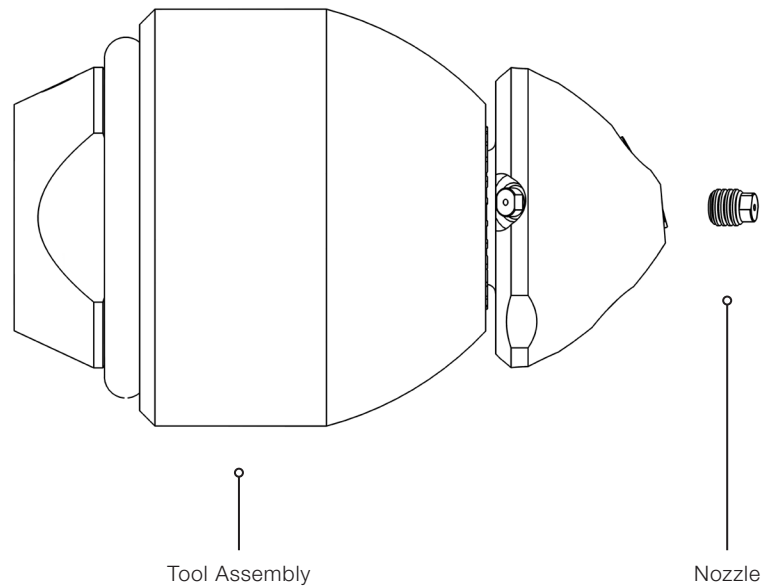
MODEL	BA-LK-P4/ BA-LK-BSPP4	BA-LK-MP9L/ BA-LK-MP9R	BA-LK-MP6R
Pressure Range	2–15k psi 140–1000 bar	22–22k psi 140–1500 bar	22–22k psi 140–1500 bar
Flow Range	3–15 gpm 11–57 l/min	3–20 gpm 11–76 l/min	3–15 gpm 11–57 l/min
Flow Coefficient	0.50 Cv	0.40 Cv	0.40 Cv
Rotation Speed	High Speed	High Speed	High Speed
Inlet Connection	1/4 NPT, 1/4 BSPP	9/16 LH, 9/16 RH	3/8 RH
Port Size	OD3M, M3	OD3M, M3	OD3M, M3
Nozzle Type	OD3M	OD3M	OD3M
Port Plug	<b>OD3M 002</b>	<b>OD3M 002</b>	<b>OD3M 002</b>
Diameter	1.3 in. 33 mm	1.3 in. 33 mm	1.3 in. 33 mm
Length	2.0 in. 50 mm	2.0 in. 50 mm	2.0 in. 50 mm
Weight	0.45 lb 0.20 kg	0.45 lb 0.20 kg	0.45 lb 0.20 kg
Maximum Water Temperature	250 °F 120 °C	250 °F 120 °C	250 °F 120 °C

Visit our website for tool resources including  
operation and maintenance videos:

**WWW.STONEAGETOOLS.COM**

## 2" BADGER TOOL CONFIGURATION

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**A complete 2" Badger tool configuration requires the following components:**

1. Appropriate tool option for the working pressure
2. Nozzles/Plugs of appropriate number and size

**The following items may also be required:**

- Backout preventer
- Fairing assembly

## 2" BADGER TOOL CONFIGURATION

### ORDERING A STANDARD PACKAGE

StoneAge offers standardized 2" Badger tool packages for the most commonly used configurations. All 2" Badger tool packages come fully assembled and include: 1. Tool, 2. Nozzles specified to jetting.

The following table shows the configurations of standard 2" Badger tool packages:

MAXIMUM PRESSURE	INLET CONNECTION	PACKAGE CONTENTS	PACKAGE PART ID
15k psi 1000 bar	1/4 NPT Female	1 x 2" Badger tool assembly 7 x OD3M nozzles/plugs	<b>BA-LK-P4-PKG</b>
	1/4 BSPP Female	1 x 2" Badger tool assembly 7 x OD3M nozzles/plugs	<b>BA-LK-BSPP4-PKG</b>
22k psi 1500 bar	3/8-24 RH Female	1 x 2" Badger tool assembly 7 x OD3M nozzles/plugs	<b>BA-LK-MP6R-PKG</b>
	9/16-18 LH Female	1 x 2" Badger tool assembly 7 x OD3M nozzles/plugs	<b>BA-LK-MP9L-PKG</b>
	9/16-18 RH Female	1 x 2" Badger tool assembly 7 x OD3M nozzles/plugs	<b>BA-LK-MP9R-PKG</b>

*PLEASE NOTE: Custom configurations are available. Contact StoneAge Customer Service for alternative solutions if the available inlet connections are not suitable for your lance or hose.*

### When ordering a 2" Badger package, you should specify:

1. Package Part ID
2. Pump pressure and flow
3. Jetting configuration with nozzle/plug locations
4. Hose length and ID

FOR EXAMPLE:

QTY	PART ID	DESCRIPTION
1	<b>BA-LK-MP9L-PKG</b>	20,000 psi 12 gpm 100 ft 6 mm ID hose

## ORDERING BY LINE ITEM

Complete tools can be configured by following the steps outlined below.  
Contact StoneAge Customer Service for questions about specific applications.

### STEP 1 TOOL SELECTION

There are four 2" Badger options available. All 2" Badger tools are supplied complete with head. The correct tool is selected based on the maximum working pressure and the inlet connection.

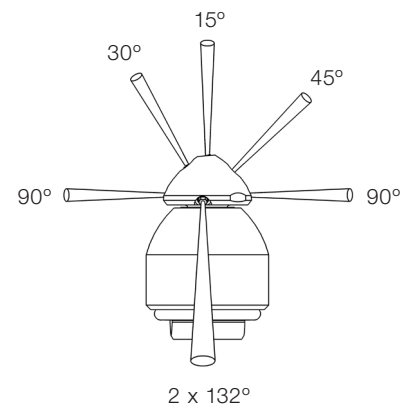
MAXIMUM PRESSURE	INLET CONNECTION	PART ID
15k psi 1000 bar	1/4 NPT Female	<b>BA-LK-P4</b>
	1/4 BSPP Female	<b>BA-LK-BSPP4</b>
22k psi 1500 bar	3/8-24 RH Female	<b>BA-LK-MP6R</b>
	9/16-18 LH Female	<b>BA-LK-MP9L</b>
	9/16-18 RH Female	<b>BA-LK-MP9R</b>

### STEP 2 NOZZLES AND PLUGS

2" Badger tools can be jetted in different configurations depending on the application. The table below shows commonly used nozzle/plug configurations for 2" Badger tools:

15° PORT	30° PORT	45° PORT	90° PORTS	132° PORTS
1 x Nozzle	1 x Nozzle	1 x Nozzle	2 x Nozzle	2 x Nozzle
1 x Nozzle	1 x Plug	1 x Plug	2 x Nozzle	2 x Nozzle
1 x Nozzle	1 x Nozzle	1 x Nozzle	2 x Plug	2 x Nozzle
1 x Plug	1 x Plug	1 x Plug	2 x Nozzle	2 x Nozzle
1 x Plug	1 x Plug	1 x Plug	2 x Plug	2 x Nozzle

Consult StoneAge Customer Service or the StoneAge Jetting App for alternative options: **JETTING.STONEAGETOOLS.COM**



#### 2" BADGER

7 Ports:  
1 @ 15°  
1 @ 30°  
1 @ 45°  
2 @ 90°  
2 @ 132°

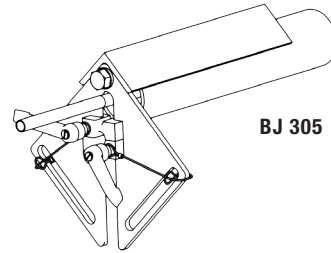
## 2" BADGER TOOL CONFIGURATION

### STEP 3 BACKOUT PREVENTER

Backout preventers increase operator safety by keeping the tool from backing out of the pipe. Several options are available including fixtures for small diameter pipes, pipes with various flange bolt circle diameters, and adapters for pipes with no-flange entry.

PIPE SIZE	HOSE OD	BACKOUT PREVENTER	DESCRIPTION
2–6 in. 51–150 mm	0.3–0.7 in. 8–18 mm	<b>BJ 305*</b>	Backout preventer for small pipes

\*Securing device not supplied

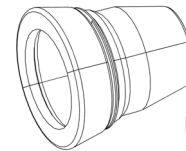


**BJ 305**

### STEP 4 FAIRING

Optional fairing is available to streamline tool retrieval.

PART ID	DESCRIPTION
<b>BJ 305</b>	BA Fairing Set, for Badger, 5&6mm hose, MP9 fitting



**BA 530**

### STEP 5 MAINTENANCE RESOURCES

2" Badger tools have no high pressure seals or bearings therefore no repair kits are available.

For questions or help with a specific application, configuration or tool repairs, please contact your StoneAge Account Representative.

TOOL	TOOL KIT	MANUAL
2" Badger	<b>BA 612-LK</b>	<b>PL 593</b>

**When ordering a 2" Badger tool by line item, you should specify:**

1. Tool Part ID
2. Part IDs of appropriate number of nozzles/plugs
3. Part IDs of any accessories maintenance items

FOR EXAMPLE:

2" Badger with 1/4 BSP inlet, 1000 bar, 40 l/min, 15 m of 1/4 in. ID hose, plugs in 15°, 30°, and 45° ports

QTY	PART ID	DESCRIPTION
1	<b>BA-LK-BSPP4</b>	2" Badger 1/4 BSP inlet
3	<b>OD3M 002</b>	Plug
2	<b>OD3M 022</b>	Nozzle
2	<b>OD3M 035</b>	Nozzle