

BEETLE

Rotary Cleaning for Curved Pipes/Tubes

OVERVIEW

The Beetle product family is the only set of tools in the industry to deliver high pressure rotary jets in a form factor under 2 inches (51 mm) in length. The BT9.5 has the smallest diameter of any nozzle in the Beetle product line making it the perfect solution when cleaning tubes as small as 12 mm.

Beetle tools leverage the same patented technology that has made Banshee nozzles the most successful tube cleaning tools in the industry. Beetle nozzles are engineered to provide the same powerful cleaning features, but in a compact size that is ideal for navigating tubes and small pipes with curves and elbows. All Beetles tools are rebuildable; the shaft head can be easily replaced when needed to extend the life of the tool.

The small diameter and short length of Beetle tools make them perfect for use with the StoneAge Navigator, AutoBox ABX-PRO, ABX-2L/3L, or Boiler Tube Cleaner for cleaning process piping, drain lines, u-tube bundles and other small ID conduit with bends that may have been inaccessible in the past.

FEATURES	BENEFITS
<ul style="list-style-type: none"> Smallest high-pressure rotary nozzles in the industry 	<ul style="list-style-type: none"> Successfully clean small tubes that are inaccessible with other tools — especially deformed tubes, twisted tubes, and u-tubes Rotary heads deliver better ID coverage for more consistent cleaning and are superior to fixed jets for cutting/clearing blockages
<ul style="list-style-type: none"> Recessed inlet design 	<ul style="list-style-type: none"> Minimizes rigid length when hose is attached
<ul style="list-style-type: none"> Low cost, low maintenance, rebuildable 	<ul style="list-style-type: none"> Unlike fixed tips, Beetle tools are engineered for long term use – shaft head can be easily replaced to keep the tool in service Patented “liquid bearing” technology, no bearings, seals, or lubricants
<ul style="list-style-type: none"> Complete range of tools available up to 22k psi (1500 bar) 	<ul style="list-style-type: none"> Contractors will benefit from owning the entire line of Beetle tools – 9.5, 12, 18, 25 – perfectly sized for all small tube applications
<ul style="list-style-type: none"> Compatible with StoneAge automated equipment 	<ul style="list-style-type: none"> Pair with a Navigator, ABX-PRO, ABX-2L/3L, or Boiler Tube Cleaner for cleaning process piping, drain lines, u-tube bundles, or any small ID tube with bends



BEETLE TOOL OVERVIEW

QUESTIONS TO ASK THE CUSTOMER

- What size and length of hose are you using?
- What pressure and flow are you operating?
- What are the length and diameter of the tubes?
- What is the curve radius of the tubes?
- What type of cleaning is required? Are the tubes plugged?
- Do you need a backout preventer?
You should always use a backout preventer with high pressure tube cleaning tools.

TOOL SPECIFICATIONS

PART ID	BT9.5	BT12	BT18	BT25
Pipe/Tube ID Range	0.47–.63 in. 12–16 mm	0.6–1.0 in. 15–25 mm	0.9–1.3 in. 22–33 mm	1.2–3.0 in. 30–76 mm
Pressure Range	8–22k psi 550–1500 bar	10–22k psi 700–1500 bar	10–22k psi 700–1500 bar	8–22k psi 550–1500 bar
Flow Range	5–7 gpm 19–23 l/min	6.5–8.5 gpm 25–32 l/min	8.5–11 gpm 32–42 l/min	8–20 gpm 30–76 l/min
Inlet Connections	P1, M7	P1, M7, MP4L, MP4R	P1, P2, BSPP2, MP6L, MP6R, MP4L, MP4R	1/8 NPT, 1/4 NPT, 1/4 BSPP, 3/8-28 LH/RH, 9/16-18 LH/RH
Diameter	0.37 in. 9.5 mm	0.5 in. 13 mm	0.7 in. 18 mm	1.0 in. 26 mm
Length	1.4 in. 33 mm	1.3 in. 32 mm	1.5 in. 39 mm	1.9 in. 48 mm
Maximum Water Temperature	250 °F 120 °C	250 °F 120 °C	250 °F 120 °C	250 °F 120 °C

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

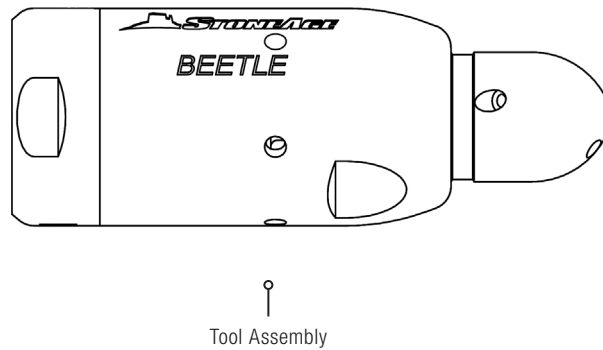
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OTHER INFORMATION

- The Beetle BT9.5 has the smallest diameter of any nozzle in the Beetle product line making it the perfect solution when cleaning tubes as small as 12 mm. Because of the fitting/crimp lengths of currently available 20K hoses, the tool is currently only offered with P1 or M7 inlets and a universal head that accommodates 5-7 gpm ("B" head) as it provides optimal utility based on testing, analysis, and pressure loss limitations.
- We recommend that the entire system be flushed out before installing the Beetle on the end of the hose or stinger. The swivels require a clean water supply for reliable operation; filtration to 25 micron particulates or smaller is recommended.
- When using rotating nozzles in plugged tubes, do not jam the head into the deposit because this may stop the rotation of the tool and impede the cutting ability. When the tool contacts the deposit, allow it to cut away the material and advance at its own rate. If it stops advancing, pull back slightly on the hose to move the head away from the deposit. This action also allows the jets to cut the deposit at different angles.
- Water must be blown out of the Beetle after each use to avoid corrosion damage. It is also important to soak or bathe the tool in a very light oil such as WD-40® between applications.
- The use of pipe wrenches and or pliers with "teeth" will void all tool warranty. All Banshee tube cleaning tools require the use of a correctly sized open-end wrench to fit the flats provided on the inlet nut when attaching the tool to the lance. Incorrect tools can crush or crack the hardened steel body, leading to failure or breakage during operation.
- It is important to consider the length of your hose crimp and avoid couplings and adapters when configuring the Beetle to take advantage of the small profile when cleaning tubes with bends or elbows. The following table illustrates minimum tube size and bend radius specifications for common applications:

APPLICATION	TOOL MODEL	MINIMUM TUBE ID	MINIMUM RADIUS
15k psi/P1 on 3 mm Hose	BT9.5		
	BT12	0.63 in. 16 mm	2.5 in. 64 mm
		0.75 in. 19 mm	2.0 in. 51 mm
	BT18	0.75 in. 19 mm	3.0 in. 76 mm
		1.0 in. 25 mm	2.0 in. 51 mm
	BT25	1.25 in. 32 mm	3.0 in. 76 mm
		1.5 in. 38 mm	2.0 in. 51 mm
15k psi/P2 on 5 mm Hose	BT18	1.0 in. 25 mm	3.0 in. 76 mm
	BT25	1.25 in. 32 mm	3.0 in. 76 mm
20k psi/M7 on 4 mm Hose	BT9.5		
	BT12		
20k psi/L4 on 5 mm Hose	BT12	0.75 in. 19 mm	5.0 in. 127 mm
		1.0 in. 25 mm	3.0 in. 76 mm
	BT18	1.6 in. 41 mm	2.5 in. 64 mm
	BT25	1.6 in. 41 mm	2.5 in. 64 mm

BEETLE TOOL CONFIGURATION



A complete Beetle tool configuration requires the following components:

1. Tool for required working pressure and inlet connection

The following items may also be required:

- Backout preventer

To configure a Beetle tool, the following information should be obtained:

- Pump pressure and flow
- Hose length and ID
- Hose/lance end fitting

ORDERING A BEETLE

Complete tools can be configured by following the steps outlined below.

STEP 1 TOOL SELECTION

TUBE SIZE	MAXIMUM PRESSURE		FLOW RANGE		INLET CONNECTION	TOOL PART ID
0.47–.63 in. 12–16 mm	15k psi	1000 bar	5–6 gpm	19–23 l/min	1/16 NPT (P1)	BT9.5-P1-B
	22k psi	1500 bar	6–7 gpm	23–26 l/min	M7-1.0	BT9.5-M7-B
0.6–1.0 in. 15–25 mm	15k psi	1000 bar	6.5–8.5 gpm	25–32 l/min	1/16 NPT	BT12-P1-B
	22k psi	1500 bar	6.5–8.5 gpm	25–32 l/min	M7-1.0	BT12-M7-B
			6.5–8.5 gpm	25–32 l/min	1/4-28 LH	BT12-MP4L-B
			6.5–8.5 gpm	25–32 l/min	1/4-28 RH	BT12-MP4R-B
0.9–1.3 in. 22–33 mm	15k psi	1000 bar	8.5–11 gpm	32–42 l/min	1/16 NPT	BT18-P1-A
			8.5–11 gpm	32–42 l/min	1/8 NPT	BT18-P2-A
	18k psi	1250 bar	8.5–11 gpm	32–42 l/min	1/8 BSPP	BT18-BSPP2-A
	22k psi	1500 bar	8.5–11 gpm	32–42 l/min	1/4-28 LH	BT18-MP4L-A
			8.5–11 gpm	32–42 l/min	1/4-28 RH	BT18-MP4R-A
			8.5–11 gpm	32–42 l/min	3/8-24 LH	BT18-MP6L-A
			8.5–11 gpm	32–42 l/min	3/8-24 RH	BT18-MP6R-A
1.2–3.0 in. 30–76 mm	15k psi	1000 bar	12–16 gpm	45–60 l/min	1/8 NPT	BT25-P2-A
			12–16 gpm	45–60 l/min	1/4 NPT	BT25-P4-A
	20.3k psi	1400 bar	16–20 gpm	60–76 l/min	1/4 BSPP	BT25-BSPP4-A
	22k psi	1500 bar	16–20 gpm	60–76 l/min	3/8-24 Left Hand	BT25-MP6L-A
			16–20 gpm	60–76 l/min	3/8-24 Right Hand	BT25-MP6R-A
			16–20 gpm	60–76 l/min	9/16-18 Left Hand	BT25-MP9L-A
			16–20 gpm	60–76 l/min	9/16-18 Right Hand	BT25-MP9R-A
	15k psi	1000 bar	8–11 gpm	30–41 l/min	1/8 NPT	BT25-P2-C
			8–11 gpm	30–41 l/min	1/4 NPT	BT25-P4-C
	20.3k psi	1400 bar	11–13 gpm	41–49 l/min	1/4 BSPP	BT25-BSPP4-C
	22k psi	1500 bar	11–13 gpm	41–49 l/min	3/8-24 Left Hand	BT25-MP6L-C
			11–13 gpm	41–49 l/min	3/8-24 Right Hand	BT25-MP6R-C
			11–13 gpm	41–49 l/min	9/16-18 Left Hand	BT25-MP9L-C
			11–13 gpm	41–49 l/min	9/16-18 Right Hand	BT25-MP9R-C

BEETLE TOOL CONFIGURATION

STEP 2 MAINTENANCE RESOURCES

TOOL MODEL	MANUAL
BT9.5	PL 601
BT12	PL 601
BT18	PL 601
BT25	PL 601

Tool maintenance/assembly videos are available on our website:

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When ordering a Beetle tool, you should specify:

1. Tool Part ID
2. Part IDs of maintenance items, if required

FOR EXAMPLE:

Beetle for cleaning 1-inch diameter tube at 22k psi with a 1/4" right hand inlet

QTY	PART ID	DESCRIPTION
1	BT18-MP4R-A	Beetle Tube Spinner, 22k psi (8.5-11gpm)