6” BADGER

Rotary Cleaning for Large Pipes with Elbows

TOOL TALK



The 6” Badger features adjustable speed control which allows operators to meet the demands of the task at hand — slower speeds for tough deposits and plugs, faster rotation for easier jobs or polishing.

StoneAge offers a centering device for the 6” Badger. This device centers the tool inside the pipe, providing more consistent cleaning and reducing head wear. A rigid lance increases operator safety by preventing tool turn around in larger pipes.

COMPETITIVE ADVANTAGES

- Only rotary pipe cleaning tool on the market with adjustable speed control for fine-tuning to specific requirements
- Different jetting configurations allow for more or less pull and forward hitting power
- Easy to use and service
- Rotary tools remove the operator from the potential dangers of manually twisting high pressure hose and eliminate the need for expensive rotary hose devices (RHDs)
- Designed to easily pair with the AutoBox ABX-500 hose handling system for hands-free pipe cleaning

FEATURES	BENEFITS
• Navigates elbows as small as 6 inches (152 mm)	• Cleans pipe with bends quickly and easily
• Self-rotary, speed controlled	• Rotary tools provide complete internal coverage, while speed control provides optimum jet delivery
• Adjustable speed	• Maximize cleaning by chosing slower speeds for hard to clean or plugged pipes, and faster speeds for polishing easy to clean pipes with a single tool
• Multiple jetting options	• Optimize the tool for a variety of pumps pressures and flows • Unplug, polish, or run longer lines based on jetting • Saves time, money, and water

QUESTIONS TO ASK THE CUSTOMER

- What type of cleaning is required — hard scale, soft material flush or completely plugged?
- Are there any bends or vertical climbs in the pipe between access points?
- What size and length of hose are you using?
- What pressure and flow are you operating?
- 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?

OTHER INFORMATION

- The 6” Badger can be paired with the AutoBox ABX-500 for a complete hands-free pipe cleaning solution.
- A stinger or centering device is required when the ID of the pipe is 1.5 times larger the diameter of the tool being used, as described in the WJTA Recommended Guide.

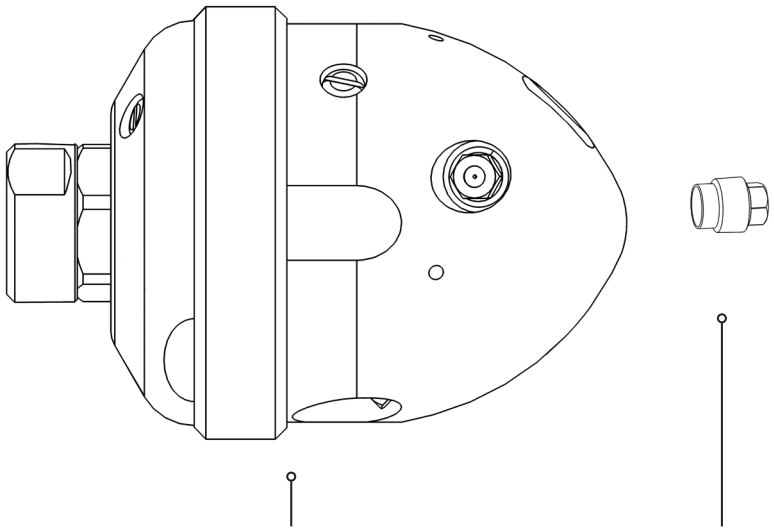
TOOL SPECIFICATIONS

MODEL	BA-P8	BA-MP9/BA-M24
Pressure Range	2–15k psi 140–1000 bar	12–22k psi 840–1500 bar
Flow Range	15–55 gpm 57–208 l/min	14–43 gpm 53–163 l/min
Flow Coefficient	2.3 Cv	2.3 Cv
Rotation Speed	50–300 rpm (Adjustable)	50–300 rpm (Adjustable)
Inlet Connection	1/2 NPT	9/16 MP, M24
Port Size	1/4 NPT (P4)	1/4 NPT (P4)
Nozzle Type	APF4	APF4
Port Plug	**GP 025-P4SS**	**GP 025-P4SS**
Diameter	3.8 in. 96 mm	3.8 in. 96 mm
Length	5.4 in. 140 mm	5.4 in. 140 mm
Weight	8.0 lb 3.6 kg	8.0 lb 3.6 kg
Maximum Water Temperature	160 °F 70 °C	160 °F 70 °C

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

WWW.STONEAGETOOLS.COM

6” BADGER TOOL CONFIGURATION



A complete 6” Badger tool configuration requires the following components:

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

The following items may also be required:

- Suitable hose adapter
- Backout preventer

To configure a 6” Badger tool, the following information should be obtained:

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

6” BADGER TOOL CONFIGURATION

STANDARD PACKAGES

StoneAge offers standardized 6” Badger tool packages for the most commonly used configurations. All 6” Badger tool packages come fully assembled and include: 1. Tool, 2. Nozzles specified to jetting.

PLEASE NOTE: Hose adapters are not included in these packages. If an adapter is required for your configuration, it must be ordered separately. See Fittings and Adapters for options.

The following table shows the configurations of standard 6” Badger tool packages:

MAXIMUM PRESSURE	INLET CONNECTION	PACKAGE CONTENTS	PACKAGE PART ID
15k psi 1000 bar	1/2 NPT Female	1 x 6” Badger tool assembly 5 x APF4 nozzles/plugs	**BA-P8-PKG**
22k psi 1500 bar	M24 Female	1 x 6” Badger tool assembly 5 x APF4 nozzles/plugs	**BA-M24-PKG**
	9/16 MP Female	1 x 6” Badger tool assembly 5 x APF4 nozzles/plugs	**BA-MP9-PKG**

When ordering a 6” 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
5. Hose end fitting

FOR EXAMPLE:

QTY	PART ID	DESCRIPTION
1	**BA-P8-PKG**	15,000 psi, 25 gpm, 100 ft 1/2” ID hose

ORDERING BY LINE ITEM

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

STEP 1 TOOL SELECTION

There are nine 6” Badger tool options available. The correct tool is selected based on the maximum working pressure and inlet connection.

INLET CONNECTION	MAXIMUM PRESSURE	FLOW	SWIVEL PART ID
1/2 NPT Female	15k psi 1000 bar	15–24 gpm 57–91 l/min	**BA-P8-R40**
		23–33 gpm 87–125 l/min	**BA-P8-R31**
		33–55 gpm 125–208 l/min	**BA-P8-R21**
M24 Female	22k psi 1500 bar	14–21 gpm 53–80 l/min	**BA-M24-R40**
		21–30 gpm 80–114 l/min	**BA-M24-R31**
		30–43 gpm 114–163 l/min	**BA-M24-R21**
9/16 MP Female	22k psi 1500 bar	14–21 gpm 53–80 l/min	**BA-MP9-R40**
		21–30 gpm 80–114 l/min	**BA-MP9-R31**
		30–43 gpm 114–163 l/min	**BA-MP9-R21**

STEP 2 HOSE ADAPTER

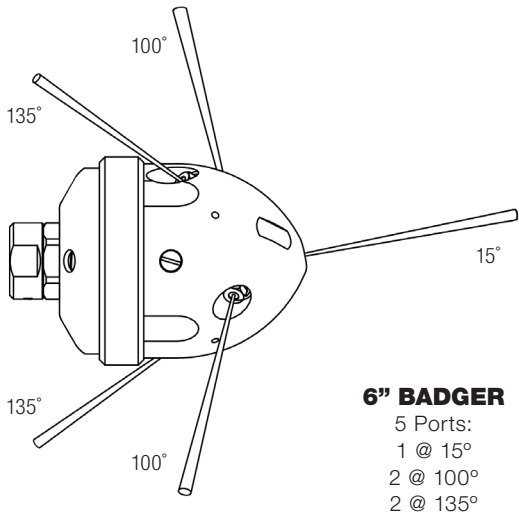
A hose adapter may be required. See *Fittings and Adapters* for options depending on the inlet connection.

STEP 3 NOZZLES AND PLUGS

The 6” Badger can be jetted in different configurations depending on the application. The table below shows commonly used nozzle/plug configurations for the 6” Badger tool.

15º PORT	100º PORTS	135º PORTS
1 x Nozzle	2 x Nozzle	2 x Nozzle
1 x Plug	2 x Nozzle	2 x Nozzle
1 x Nozzle	2 x Plug	2 x Nozzle

Once you have confirmed the required jetting configuration, use the StoneAge Jetting App to determine nozzle sizes:
JETTING.STONEAGETOOLS.COM



6” BADGER
5 Ports:
1 @ 15º
2 @ 100º
2 @ 135º

6” BADGER TOOL CONFIGURATION

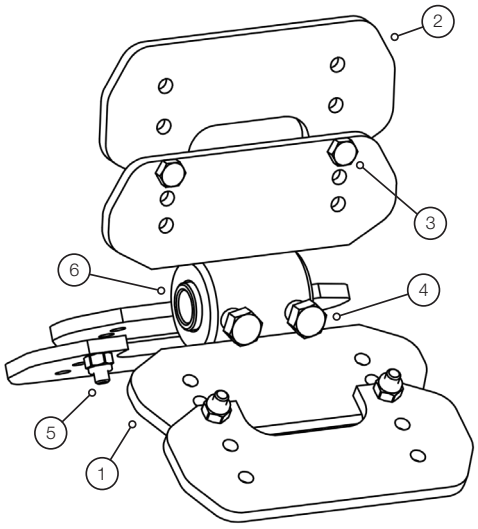
STEP 4 CENTRALIZER OPTIONS

A centralizer helps to protect the tool as it passes through the pipe and balances jet standoff distance for more consistent cleaning. In cases where pipe size is more than 1.5 times the diameter of the tool, a centralizer is an important safety device, preventing the tool from turning around and thrusting backwards out of the pipe.

Centralizer specifications vary for each 6” Badger tool model.

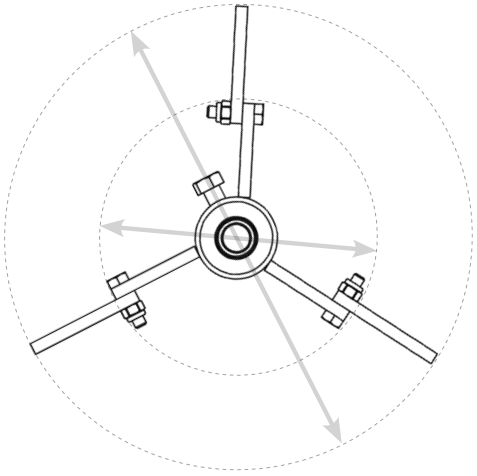
The following components are required:

1. Centralizer weldment assembly
2. Extension nipple
3. Coupler
4. Collar and Antivibe gland for BA-MP9 tool models
5. Hose adaper may be required for BA-M24 and BA-MP9 tool models



WELDMENT ASSEMBLY

BA-385-P8, BA 385-M24, BA 385-MP9



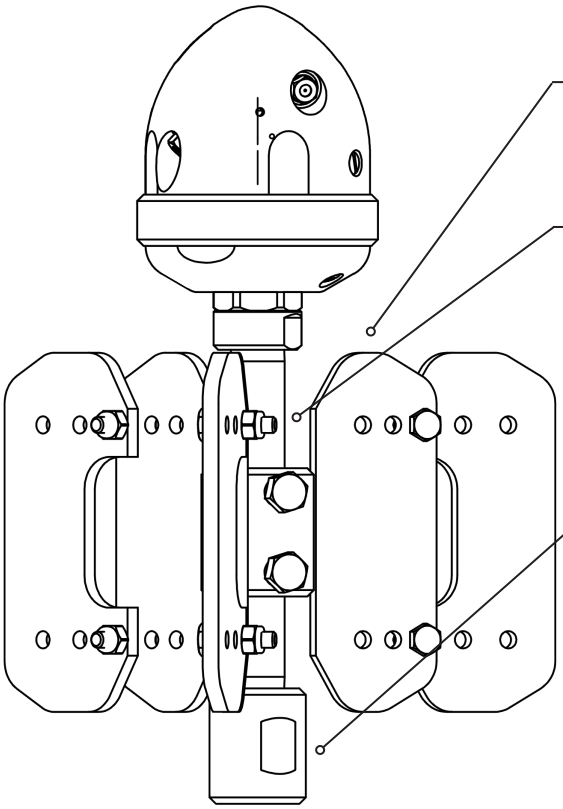
DIAMETER OPTIONS

6.0 in.	152 mm	8.0 in.	203 mm
6.5 in.	165 mm	8.5 in.	216 mm
7.0 in.	178 mm	9.0 in.	229 mm
7.5 in.	191 mm	10 in.	254 mm

Centralizer weldment assembly component parts can be ordered individually, by Part ID listed in the table below:

REF #	PART ID	DESCRIPTION	QUANTITY PER ASSEMBLY		
			BA 385-P8	BA 385-M24	BA 385-MP9
1	**BA 385.1**	Weldment, Centralizer	1		1
1	**BA 385.1-M24**	Weldment, Centralizer		1	
2	**BA 386-10**	Fin	3	3	3
3	**GB 525-04**	Bolt, Hex .25-20x1.00	6	6	6
4	**GB 537-03**	Bolt, Hex .37-16x.75	2	2	2
5	**GN 525-L**	Nylok nut	6	6	6
6	**BA 387**	Spacer, M9			1

CENTRALIZER OPTIONS FOR **BA-P8 TOOLS**



CENTRALIZER WELDMENT ASSEMBLY

TOOL	PART ID	WEIGHT
BA-P8	**BA 385-P8**	6.0 lb 2.7 kg

EXTENSION NIPPLE

PIPE I.D.	NIPPLE LENGTH	PART ID
8–10 in. 203–254 mm	6 in. 152 mm	**SA 356-P8P8-6**
10–12 in. 254–305 mm	8 in. 203 mm	**SA 356-P8P8-8**
12–16 in. 305–406 mm	12 in. 305 mm	**SA 356-P8P8-12**

COUPLER

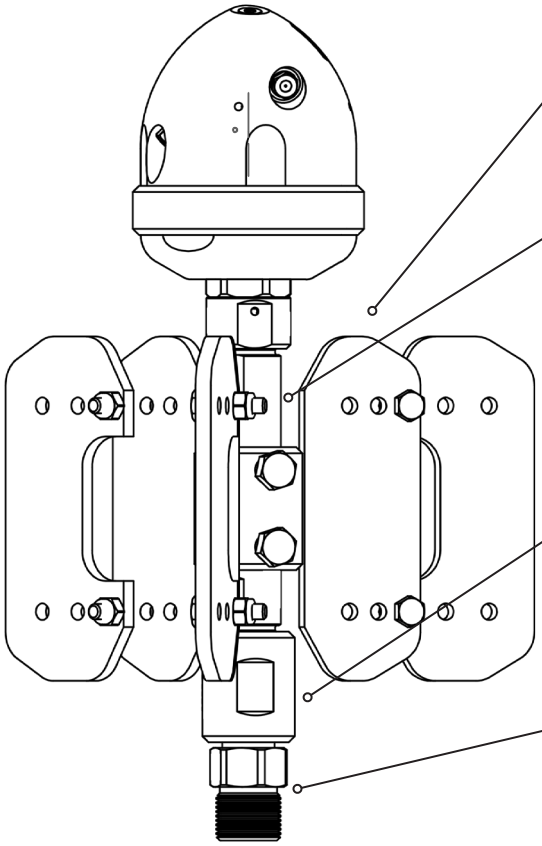
HOSE CONNECTION	PART ID
1/2 NPT Male	**GP 052-P8P8**
3/4 NPT Male	**GP 052-P8P12**

FOR EXAMPLE:
Centralizer for BA-P8 swivel for 10 in. pipe, 1/2 NPT Male hose end

QTY	PART ID	DESCRIPTION
1	**BA 385-P8**	Weldment, Centralizer
1	**SA 356-P8P8-8**	Ext Nipple, 8” OAL
1	**GP 052-P8P8**	Coupler 1/2 NPT

6” BADGER TOOL CONFIGURATION

CENTRALIZER OPTIONS FOR **BA-M24 TOOLS**



WELDMENT ASSEMBLY

TOOL	PART ID	WEIGHT
BA-M24	**BA 385-M24**	9.0 lb 4.1 kg

EXTENSION NIPPLE

PIPE I.D.	NIPPLE LENGTH	PART ID
8–10 in. 203–254 mm	6 in. 152 mm	**SA 368-M24M24-6**
10–12 in. 254–305 mm	8 in. 203 mm	**SA 368-M24M24-8**
12–16 in. 305–406 mm	12 in. 305 mm	**SA 368-M24M24-12**

COUPLER

HOSE CONNECTION	PART ID
1/2 NPT Male	**GP 052-P8P8**
3/4 NPT Male	**GP 052-P8P12**

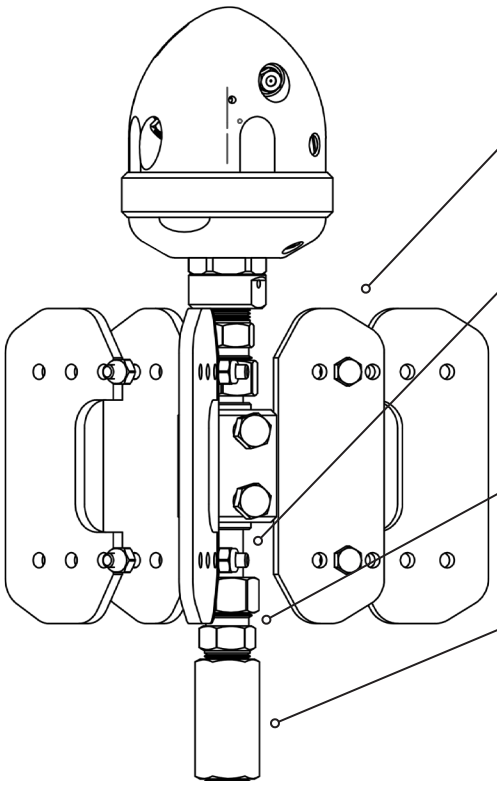
ADAPTER

HOSE CONNECTION	PART ID
1/2 BSP Female	**GP 255-M24OBSPP8C**
3/4 BSP Female	**GP 255-M24OBSPP12C**
M24 Female	**GP 255-M24OM24C**
M36 Female	**GP 255-M24OM36C**

FOR EXAMPLE:
Centralizer for BA-M24 swivel for 10 in. pipe, M24 Female hose end

QTY	PART ID	DESCRIPTION
1	**BA 385-M24**	Weldment, Centralizer
1	**SA 368-M24M24-8**	Ext Nipple, 8” OAL
1	**GP 252-M24M24**	Coupler M24
1	**GP 255-M24OM24C**	Hose adapter M24

CENTRALIZER OPTIONS FOR **BA-MP9 TOOLS**



WELDMENT ASSEMBLY

TOOL	PART ID	WEIGHT
BA-MP9	**BA 385-MP9**	9.0 lb 4.1 kg

EXTENSION NIPPLE

PIPE I.D.	NIPPLE LENGTH	PART ID
8–12 in. 203–305 mm	8 in. 203 mm	**SA 567-MP9LMP9L-8**
12–16 in. (305–406 mm)	12 in. 305 mm	**SA 567-MP9LMP9L-12**

COLLAR AND ANTIVIBE GLAND

COLLAR PART ID	GLAND PART ID
2 x **AF 071-MP9**	2 x **AF 072-MP9**

COUPLER

HOSE CONNECTION	PART ID
9/16 MP	**AF 073-MP9**

FOR EXAMPLE:
Centralizer for BA-MP9 swivel for 10 in. pipe, 9/16 MP inlet

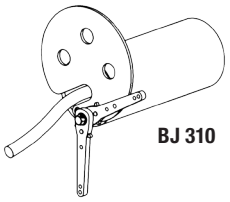
QTY	PART ID	DESCRIPTION
1	**BA-385-MP9**	Weldment, Centralizer
1	**SA 567-M9M9-8**	Nipple 8” length
1	**AF 073-MP9**	Coupler
1	**AF 071-MP9**	Collar
1	**AF 072-MP9**	Antivibe Gland

6" BADGER TOOL CONFIGURATION

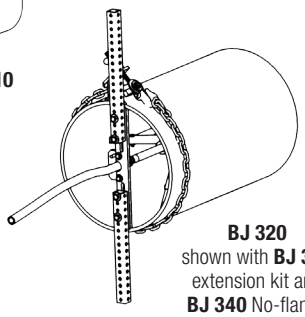
STEP 8 BACKOUT PREVENTER

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.

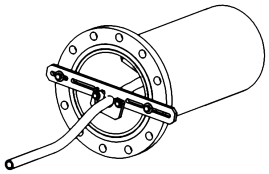
PIPE SIZE	HOSE OD	BACKOUT PREVENTER	DESCRIPTION	WEIGHT
4–8 in. 100–200 mm	0.3–1.5 in. 8–38 mm	**BJ 310**	Backout preventer for small to medium pipes	7.6 lb 3.4 kg
5–17 in. 130–430 mm	0.3–1.5 in. 8–38 mm	**BJ 320**	Backout preventer for medium to large pipes	6.3 lb 2.6 kg
15–36 in. 380–910 mm	N/A	**BJ 325**	Extension kit for **BJ 320** backout preventer	8.5 lb 3.6 kg
8–36 in. 130–910 mm	N/A	**BJ 340**	No-flange kit for **BJ 320** backout preventer	17 lb 7.7 kg



BJ 310



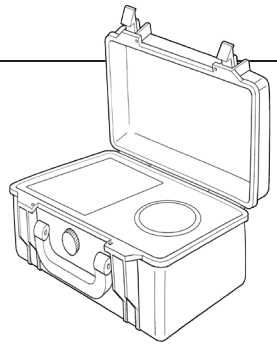
BJ 320 shown with **BJ 325** extension kit and **BJ 340** No-flange attachment kit



STEP 6 ACCESSORIES

A Pelican™ brand protection/carrying case with custom cut foam insert is available for 6" Badger tool models.

EXTERIOR DIMENSIONS (L X W X D)	INTERIOR DIMENSIONS (L X W X D)	COLOR	CASE PART ID
10.6 x 9.7 x 6.9 in. 27 x 24.6 x 17.4 cm	9.9 x 7.0 x 6.1 in. 25.1 x 17.8 x 15.5 cm	Black	**BA 080**



STEP 7 MAINTENANCE RESOURCES

TOOL	SEAL KIT	SERVICE KIT	OVERHAUL KIT	DISK KIT	TOOL KIT	LUBRICANT	MANUAL
BA-P8	**BA 602-P8/MP9**	**BA 600-P8/MP9**	**BA 610-P8/M9**	**BA 606**	**BA 612-P8/MP9**	**BJ 048-F**	**PL 503**
BA-M24	**BA 602-P8/MP9**	**BA 600-P8/MP9**	**BA 610-P8/M9**	**BA 606**	**BA 612-P8/MP9**	**BJ 048-F**	**PL 503**
BA-MP9	**BA 602-P8/MP9**	**BA 600-P8/MP9**	**BA 610-P8/M9**	**BA 606**	**BA 612-P8/MP9**	**BJ 048-F**	**PL 503**

Kit components and tool maintenance/assembly videos are available on our website:
WWW.STONEAGETOOLS.COM

For questions or help with a specific application, configuration or tool repairs, please contact StoneAge Customer Service.

When ordering a 6” Badger tool by line item, you should specify:

1. Tool Part ID
2. Nozzle/Plug Part IDs
3. Part ID of hose adapter, if required
4. Part IDs of any accessories or maintenance items

FOR EXAMPLE:
6” Badger tool for 20k psi, 40 gpm. 100 ft 1/2 in. ID hose with 9/16 LH male end. Plugged 15° port, nozzles for 100° and 135° ports. Centralizer for 12 in. pipe. Service kit.

QTY	PART ID	DESCRIPTION
1	**BA-MP9-R21**	Badger, 6" Elbow, High Flow, 30-43gpm
1	**GP 025-P4SS**	Hex Socket Plug, 1/4 NPT, SS
2	**APF4 057**	Attack Tip, Flush Mount, 1/4 NPT
2	**APF4 042**	Attack Tip, Flush Mount, 1/4 NPT
1	**BA 385-MP9**	Centralizer, 6-10" pipe
1	**SA 567-MP9LMP9L-12**	Nipple, 12" OAL, 9/16 MP
3	**AF 071-MP9**	Collar, 9/16 MP
2	**AF 072-MP9**	Gland Assy, AV, 9/16 MP
1	**AF 073-MP9**	Coupler 9/16 MP to 9/16 MP
1	**BA 600-P8/MP9**	Kit, Service - 6" Elbow Badger