

# RAPTOR

## High Flow Rotary Cleaning for Small Pipes



The Raptor self-rotating pipe cleaning tool is ideal for cleaning process drains, totes, closed head drums, water well screens, ducts and exhaust stacks.

The Raptor handles flows up to 60 gpm to cut through heavy deposits in pipes as small as 2.25 inches (57 mm) in diameter. Combined with a centralizer, it cleans pipes as large as 12 inches (305 mm).

### COMPETITIVE ADVANTAGES

- Versatile tool design — clean pipes from 2.25–12 inches (57–305 mm) with simple modifications
- Rotary tools provide complete coverage inside the pipe being cleaned
- Multiple head options to allow for flush mounted nozzles, extension arms, plugs, and pulling rings
- Interchangeable heads allow the operator to use the tool on any of their varying pump types
- Simple nozzle changes allow you to match all cleaning applications
- Easily pairs with the AutoBox ABX-500 for hands-free pipe cleaning

FEATURES	BENEFITS
<ul style="list-style-type: none"> <li>• Wide operating range</li> </ul>	<ul style="list-style-type: none"> <li>• Better match your pump capacity for more versatile cleaning capabilities of heavy to light deposits with one tool</li> </ul>
<ul style="list-style-type: none"> <li>• Multiple head options</li> </ul>	<ul style="list-style-type: none"> <li>• Same tool pairs with multiple heads, saving the cost of purchasing a second specialized tool</li> </ul>
<ul style="list-style-type: none"> <li>• Pulling ring option available</li> </ul>	<ul style="list-style-type: none"> <li>• Clean vertical or extra long horizontal lines, a feature not widely available on similar tools</li> </ul>
<ul style="list-style-type: none"> <li>• Two speed ranges</li> </ul>	<ul style="list-style-type: none"> <li>• Maximize cleaning by choosing slower speeds for hard to clean or plugged pipes, and faster speeds for polishing easy to clean pipes with a single tool</li> </ul>
<ul style="list-style-type: none"> <li>• Jetting options to match the work required</li> </ul>	<ul style="list-style-type: none"> <li>• Same tool can be re-jetted to match a variety of cleaning applications — great for when you need more pulling force vs. forward hitting power</li> </ul>

## QUESTIONS TO ASK YOUR CUSTOMER

- 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?
- Are extensions required? See *Nozzles and Extensions* for availability.

## TOOL SPECIFICATIONS

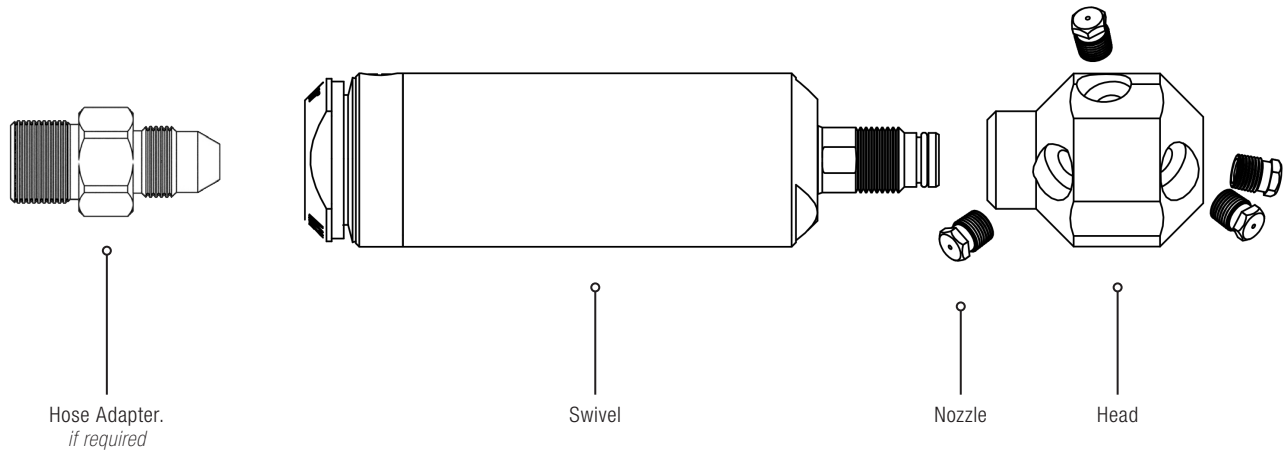
MODEL	RPT-P8	RPT-MP9/RPT-M24
<b>Pressure Range</b>	2–15k psi 140–1000 bar	2–22k psi 140–1500 bar
<b>Flow Range</b>	10–60 gpm 38–227 l/min	10–60 gpm 38–227 l/min
<b>Flow Coefficient</b>	2.3 Cv	2.3 Cv
<b>Rotation Speed</b>	15-60 rpm (Slow Fluid) 50-250 rpm (Fast Fluid)	15-60 rpm (Slow Fluid) 50-250 rpm (Fast Fluid)
<b>Inlet Connection</b>	1/2 NPT	9/16 MP, M24
<b>Port Size</b>	1/8 NPT (P2), 1/4 NPT (P4)	1/8 NPT (P2), 1/4 NPT (P4)
<b>Extension Port Size</b>	1/4 NPT (P4)	1/4 NPT (P4)
<b>Nozzle Type</b>	AP2, AP4, APF4	AP2, AP4, APF4
<b>Port Plug</b>	<b>GP 025-P2SS</b>	<b>GP 025-P2SS</b>
<b>Extension Port Plug</b>	<b>GP 025-P4SS</b>	<b>GP 025-P4SS</b>
<b>Swivel Diameter</b>	2 in. 51 mm	2 in. 51 mm
<b>Swivel Length</b>	9.5 in. 240 mm	9.5 in. 240 mm
<b>Swivel Weight</b>	4.2 lb 1.9 kg	4.2 lb 1.9 kg
<b>Head Weight</b>	1.1–2.4 lb 0.5–1.1 kg	1.1–2.4 lb 0.5–1.1 kg
<b>Maximum Water Temperature</b>	160 °F 70 °C	160 °F 70 °C

Visit the StoneAge Dealer Portal for tool resources including sales, operation and maintenance videos:

**DEALER.STONEAGETOOLS.COM**

# RAPTOR TOOL CONFIGURATION

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## A complete Raptor tool configuration requires the following components:

1. Swivel for required working pressure
2. Head for required pressure, flow and application
3. Nozzles/Plugs of appropriate number and size

## The following items may also be required:

- Suitable hose/lance adapter
- Centralizer, extension nipples, pulling ring
- Backout preventer

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

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

# RAPTOR TOOL CONFIGURATION

## ORDERING A STANDARD PACKAGE

StoneAge offers standardized Raptor tool packages for the most commonly used configurations. These packages come fully assembled and include: 1. Tool, 2. Head, and 3. 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 Raptor tool packages:

MAXIMUM PRESSURE	INLET CONNECTION	HEAD TYPE	PACKAGE CONTENTS	PACKAGE PART ID
15k psi 1000 bar	1/2 NPT Female	6 x P2 ports	1 x Raptor swivel 1 x Head 6 x AP2 nozzles/plugs	<b>RPT-P8-P2-6-PKG</b>
		7 x P2 ports	1 x Raptor swivel 1 x Head 7 x AP2 nozzles/plugs	<b>RPT-P8-P2-7-PKG</b>
		6 x P4 ports	1 x Raptor swivel 1 x Head 6 x AP4 or APF4 nozzles/plugs	<b>RPT-P8-P4-6-PKG</b>
22k psi 1500 bar	M24 Female	6 x P2 ports	1 x Raptor swivel 1 x Head 6 x AP2 nozzles/plugs	<b>RPT-M24-P2-6-PKG</b>
		7 x P2 ports	1 x Raptor swivel 1 x Head 7 x AP2 nozzles/plugs	<b>RPT-M24-P2-7-PKG</b>
		6 x P4 ports	1 x Raptor swivel 1 x Head 6 x AP4 or APF4 nozzles/plugs	<b>RPT-M24-P4-6-PKG</b>
	9/16 MP Female	6 x P2 ports	1 x Raptor swivel 1 x Head 6 x AP2 nozzles/plugs	<b>RPT-MP9-P2-6-PKG</b>
		7 x P2 ports	1 x Raptor swivel 1 x Head 7 x AP2 nozzles/plugs	<b>RPT-MP9-P2-7-PKG</b>
		6 x P4 ports	1 x Raptor swivel 1 x Head 6 x AP4 or APF4 nozzles/plugs	<b>RPT-MP9-P4-6-PKG</b>

**When ordering a standard Raptor tool package, the Dealer should specify:**

1. Package Part ID
2. Fast or Slow rotation speed
3. Pump pressure and flow
4. Jetting configuration with nozzle type (AP2, AP4 or flush mounted APF4) or plugs
5. Hose length and ID
6. Hose lance adapter, if required

FOR EXAMPLE:

QTY	PART ID	DESCRIPTION
1	<b>RPT-P8-P2-6-PKG</b>	15,000 psi 25 gpm 100 ft 1/2" ID hose 1/2 NPT Male hose end

## ORDERING BY LINE ITEM

Complete tools can be configured by following the steps outlined below.  
Contact your StoneAge Account Representative for questions about specific applications.

### STEP 1 SWIVEL SELECTION

There are six Raptor swivel options available. The correct swivel is selected based on the maximum working pressure, inlet connection and required rotation speed.

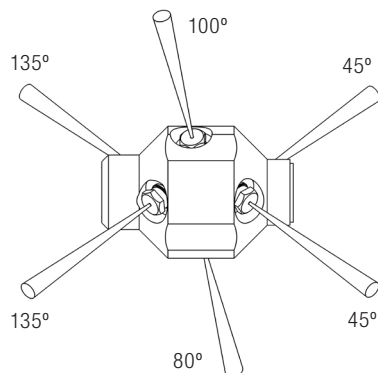
MAXIMUM PRESSURE	INLET CONNECTION	SWIVEL PART ID BASED ON ROTATION SPEED	
		SLOW (15-60 RPM)	FAST (50-250 RPM)
15k psi 1000 bar	1/2 NPT Female	RPT-P8-S	RPT-P8-F
22k psi 1500 bar	M24 Female	RPT-M24-S	RPT-M24-F
	9/16 MP Female	RPT-MP9-S	RPT-MP9-F

### STEP 2 HOSE CONNECTION

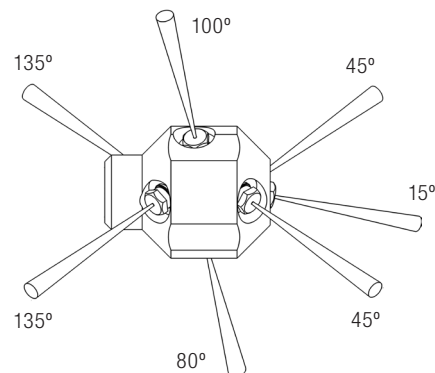
A hose/lance connector may be required depending on the inlet connection of your swivel. See *Fittings and Adapters* for available options.

### STEP 3 HEAD SELECTION

There are two standard head configurations for Raptor tools. Custom heads are available on request.



**6-PORT**  
2 @ 45°  
1 @ 80°  
1 @ 100°  
2 @ 135°



**7-PORT**  
1 @ 15°  
2 @ 45°  
1 @ 80°  
1 @ 100°  
2 @ 135°

The correct head specification is based on the pressure and flow of the pump and the required port size.  
The following table lists head selection approximations of common jetting scenarios.

For most accurate head selection, use the StoneAge Jetting App:

**JETTING.STONEAGETOOLS.COM**

# RAPTOR TOOL CONFIGURATION

The following table lists head selection approximations of common jetting scenarios for Raptor swivels:

PRESSURE	FLOW	HEAD TYPE		
		6 X P2 PORTS 2" Ø	7 X P2 PORTS 2" Ø	6 X P4 PORTS 2.5" Ø
5k psi 350 bar	10–23 gpm 38–87 l/min	RPT 043-P2-6-R30	RPT 043-P2-7-R30	RPT 044-P4-6-R30
	16–38 gpm 60–140 l/min	RPT 043-P2-6-R18	RPT 043-P2-7-R18	RPT 044-P4-6-R18
	25–60 gpm 95–230 l/min	RPT 043-P2-6-R11	RPT 043-P2-7-R11	RPT 044-P4-6-R11
10k psi 700 bar	10–18 gpm 38–68 l/min	RPT 043-P2-6-R30	RPT 043-P2-7-R30	RPT 044-P4-6-R30
	15–31 gpm 57–120 l/min	RPT 043-P2-6-R18	RPT 043-P2-7-R18	RPT 044-P4-6-R18
	25–51 gpm 95–190 l/min	RPT 043-P2-6-R11	RPT 043-P2-7-R11	RPT 044-P4-6-R11
15k psi 1000 bar	10–17 gpm 38–64 l/min	RPT 043-P2-6-R30	RPT 043-P2-7-R30	RPT 044-P4-6-R30
	16–28 gpm 60–110 l/min	RPT 043-P2-6-R18	RPT 043-P2-7-R18	RPT 044-P4-6-R18
	26–47 gpm 98–180 l/min	RPT 043-P2-6-R11	RPT 043-P2-7-R11	RPT 044-P4-6-R11
22k psi 1500 bar	10–16 gpm 38–60 l/min	RPT 043-P2-6-R30	RPT 043-P2-7-R30	RPT 044-P4-6-R30
	17–26 gpm 64–100 l/min	RPT 043-P2-6-R18	RPT 043-P2-7-R18	RPT 044-P4-6-R18
	27–43 gpm 100–160 l/min	RPT 043-P2-6-R11	RPT 043-P2-7-R11	RPT 044-P4-6-R11

## STEP 4 NOZZLES AND PLUGS

Raptor tool heads can be jetted in different configurations depending on the application. Here are the most commonly used nozzle/plug configurations:

HEAD TYPE	45° PORTS	80° PORT	100° PORT	135° PORTS
6-Port	2 x Nozzle	1 x Nozzle	1 x Nozzle	2 x Nozzle
	2 x Plug	1 x Nozzle	1 x Nozzle	2 x Nozzle
	2 x Plug	1 x Nozzle	1 x Nozzle	2 x Plug
	2 x Plug	1 x Plug	1 x Plug	2 x Nozzle

HEAD TYPE	15° PORT	45° PORTS	80° PORT	100° PORT	135° PORTS
7-Port	1 x Nozzle	2 x Nozzle	1 x Nozzle	1 x Nozzle	2 x Nozzle
	1 x Nozzle	2 x Plug	1 x Nozzle	1 x Nozzle	2 x Nozzle
	1 x Nozzle	2 x Nozzle	1 x Plug	1 x Plug	2 x Nozzle
	1 x Nozzle	2 x Plug	1 x Plug	1 x Plug	2 x Nozzle

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

## STEP 5 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.

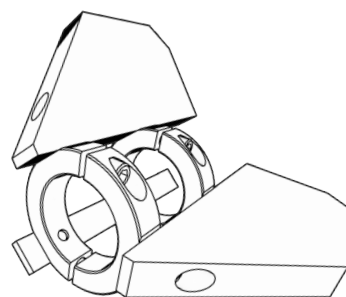
Two types of centralizers are available for Raptor tools:

### CENTRALIZER WITH SKIDS AND COLLARS

PIPE SIZE	CENTRALIZER (COMPLETE)	WEIGHT	COLLAR*	SKID**
4 in. 100 mm	RPT 070-4	1.6 lb 0.7 kg	RPT 070.1	RJ 070.2-4
5 in. 127 mm	RPT 070-5	1.8 lb 0.8 kg	RPT 070.1	RJ 070.2-4
6 in. 152 mm	RPT 070-6	2.0 lb 0.9 kg	RPT 070.1	RJ 070.2-4
8 in. 203 mm	RPT 070-8	2.4 lb 1.1 kg	RPT 070.1	RJ 070.2-4
10 in. 254 mm	RPT 070-10	3.7 lb 1.7 kg	RPT 070.1	RJ 070.2-4
12 in. 305 mm	RPT 070-12	4.0 lb 1.8 kg	RPT 070.1	RJ 070.2-4

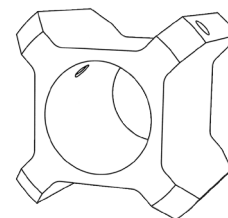
\*Set of 2 collars

\*\*Set of 3 skids with 6 screws



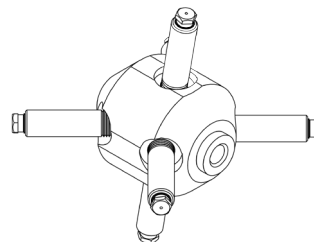
### PLASTIC CENTRALIZER WITH SET SCREWS

PIPE SIZE	CENTRALIZER (COMPLETE)	WEIGHT
3 in. 76 mm	RPT 075-3	0.3 lb 0.1 kg
4.5 in. 114 mm	RPT 075-4.5	0.5 lb 0.2 kg



## STEP 6 EXTENSION NIPPLES

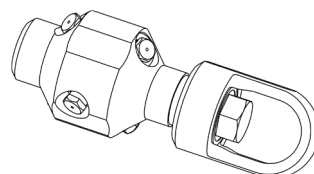
Extension nipples up to 12 inches are available for use with 6-port P4 Raptor heads. See *Nozzles and Extensions* for a complete list of extension options.



## STEP 7 PULLING RING

A pulling ring is available for 6-port Raptor heads.

DESCRIPTION	PART ID	WEIGHT
Pulling ring for 6-port Raptor head	RPT 045	1.0 lb 0.5 kg



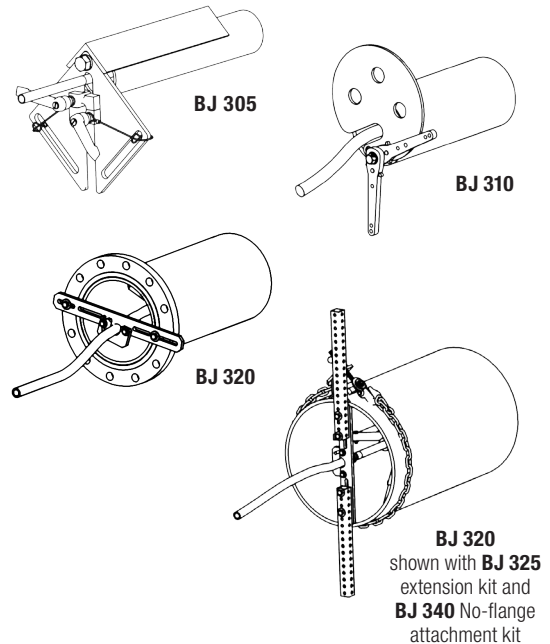
# RAPTOR TOOL CONFIGURATION

## 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
2–6 in. 51–150 mm	0.3–0.7 in. 8–18 mm	<b>BJ 305*</b>	Backout preventer for small pipes	5.6 lb 2.5 kg
4–8 in. 100–200 mm	0.3–1.5 in. 8–38 mm	<b>BJ 310</b>	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	<b>BJ 320</b>	Backout preventer for medium to large pipes	6.3 lb 2.9 kg
15–36 in. 380–910 mm	N/A	<b>BJ 325</b>	Extension kit for <b>BJ 320</b> backout preventer	8.5 lb 3.6 kg
8–36 in. 130–910 mm	N/A	<b>BJ 340</b>	No-flange kit for <b>BJ 320</b> backout preventer	17 lb 7.7 kg

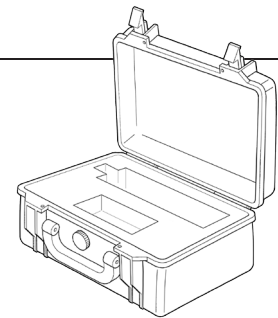
\*Securing device not supplied



## STEP 9 ACCESSORIES

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

EXTERIOR DIMENSIONS (L X W X D)	INTERIOR DIMENSIONS (L X W X D)	COLOR	CASE PART ID
11.6 x 8.3 x 3.8 in. 29.6 x 21.2 x 9.6 cm	10.5 x 6.0 x 3.2 in. 26.8 x 15.3 x 8.0 cm	Black	<b>RPT 080</b>



## STEP 10 MAINTENANCE RESOURCES

ROTATION	SERVICE KIT	SEAL KIT	OVERHAUL KIT	TOOL KIT	LUBRICANT	MANUAL
Fast	<b>RPT 600-F</b>	<b>RPT 602</b>	<b>RPT 610-F</b>	<b>RPT 612</b>	<b>BJ 048-F</b>	<b>PL 543</b>
Slow	<b>RPT 600-S</b>	<b>RPT 602</b>	<b>RPT 610-S</b>	<b>RPT 612</b>	<b>BJ 048-S</b>	<b>PL 543</b>

Kit components and tool maintenance/assembly videos are available on the StoneAge Dealer Portal:

**DEALER.STONEAGETOOLS.COM**

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



### When ordering a Raptor tool by line item, the Dealer should specify:

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

#### FOR EXAMPLE:

Raptor tool for 15,000 psi @ 25 gpm with 100 ft 1/2 in. ID hose. Slow rotation speed. 6-port head, 2 in. diameter with plugs in the 45° ports, nozzles in all other ports. Complete with a centralizer for an 8 in. ID pipe, pulling ring and a service kit.

QTY	PART ID	DESCRIPTION
1	<b>RPT-P8-S</b>	Raptor Swivel, Slow - 15k psi
1	<b>RPT 043-P2-6-R18</b>	Head, 2.0" Dia -6-port @ 1/8 NPT
2	<b>GP 24-P2SS</b>	Port plug, 1/8 NPT
2	<b>AP2 035</b>	Attack Tip, 1/8 NPT
2	<b>AP2 047</b>	Attack Tip, 1/8 NPT
1	<b>RJ 070-8</b>	Centralizer, 5 Pc - 8" Dia
1	<b>RPT 090</b>	Pulling ring for 6-port Raptor head
1	<b>RPT 600-S</b>	Service Kit

## TOOL COMPONENT VIEW

### RAPTOR

