

SWITCHER™

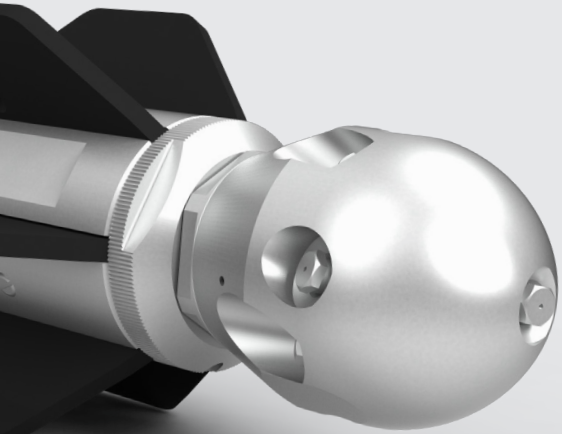
The new Switcher head for Warthog Magnum tools does the job of **two tools in one** — Switch between pulling and cleaning mode without changing nozzles.

HOW IT WORKS:

When the pump is idled down and brought back to pressure, the tool will switch the water flow between two different sets of jets.

KEY BENEFITS:

- Saves time and water by eliminating extra runs needed to swap between a cleaning nozzle and a pulling/flushing nozzle
- Switch to pulling jets for maximum pull/flushing
- Switch to descaling jets maximize power for cleaning and cutting roots
- Run more jobs with one tank of water
- Operation with a camera is most efficient, allowing the operator to switch the tool as needed to clean and flush the pipe in a single run



NEW
WARTHOG
SWITCHER

2 TOOLS IN 1
SAVE TIME. SAVE WATER.

TOOL TALK

What tools can the Switcher head be used with?

The Switcher head is compatible with Warthog Magnum WGR 1" and 1.25" tools. StoneAge is working on a prototype for WHR Magnum tool models.

What is the recommended use for the Switcher head?

For maximum water and time savings, StoneAge recommends operating the Switcher in conjunction with a live feed camera.

1. Camera is run down the line from the manway above where the tool is being run. Camera operator and pump operator should have radio communication with each other.
2. Switcher begins in pulling/flushing mode and runs up the line to meet the camera.
3. The tool can then be retracted back down the line with the camera following (still in pulling mode).
4. Once the camera operator identifies a problem area, he can radio the pump operator to idle down the pump to change the switcher to cleaning/descaling mode.
5. Tool can be run in the problem area until the debris is cleared.
6. Once debris is cleared, the camera operator can radio the pump operator to switch back to pulling/flushing mode to flush the debris back down the line.
7. This process can be repeated back down the entire line as needed.

The Switcher can be used without a camera and still provide time and water savings. The Switcher should mainly be started in the pulling position when first placed in the pipe. Without a camera, our recommendation would be to run up the pipe in pulling mode, switch to descaling mode and retract the tool back down the line. Depending on debris size, an extra run may be needed up and down the pipe in the pulling mode to fully flush the line.

What is the difference between the pulling/flushing and cleaning/descaling modes?

The **pulling/flushing jet pattern** has 4 jets at 155° and 1 boring jet at 15°. The front jet comes plugged by default, but can be sent with a front jet upon request. This mode directs maximum power to the rear jets in order to pull the tool quickly to problem areas or flush debris backwards out of the pipe.

The **cleaning/descaling jet pattern** has 2 jets at 100° and 2 at 125°. With jet power directed out the side jets, the Switcher can do the tough work of cleaning deposits, cutting roots, etc. This mode allows the head to flush some debris without compromising descaling power. If there is larger debris from mineral deposits or similar, an extra run may have to be made up and down the line in pulling mode to fully flush out larger debris pieces.

Are custom heads available to accommodate different applications?

We currently do not offer custom Switcher heads. The combination of standard ports has proven to handle a wide range of applications with appropriate jetting.

Is the Switcher head recommended for operation with dirty or recycled water?

The Switcher handles recycled water effectively. We performed testing by injecting .030" particles into the high pressure line and repeatedly submerging the head in sand-filled water and reported no instances of the mechanism locking up. Nonetheless, repeated use in dirty water or sandy conditions will accelerate wear.

Where can I find help with maintenance & repair issues?

Basic disassembly, assembly, and troubleshooting are described in the tool manual, which can be referenced on our website. If you have specific questions, contact StoneAge directly.