



WARTHOG
SEWER NOZZLES BY **STONEAGE®**

NEW!

**WHR HYBRID
SWITCHER**

PAGE #30



**THE INDUSTRY'S MOST
POWERFUL & DURABLE SEWER TOOLS**

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**2018/19
CATALOG**

THE INDUSTRY'S MOST POWERFUL & DURABLE SEWER TOOLS



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CLASSIC

WARTHOG CLASSIC ROTARY SEWER CLEANING TOOLS are industry-proven for performance, durability, and ease of use. The Warthog is a truly powerful all-purpose tool for cutting roots, clearing grease, and removing hard mineral deposits. All tools in the Classic line are field-serviceable for high value and low cost of ownership. Puller models with extra thrust are available for climbing inclined laterals.

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MAGNUM

WARTHOG MAGNUM SEWER TOOLS are built to withstand the consistent demands of large municipalities. Magnum series tools have long maintenance intervals and deliver consistent jet quality over time. Durable carbide nozzle inserts effectively handle recycled water and excess debris. These tools are completely serviceable and feature individually replaceable, hardened steel centralizer fins to protect the tool body. Switcher models are available to convert from pulling to descaling on the fly.

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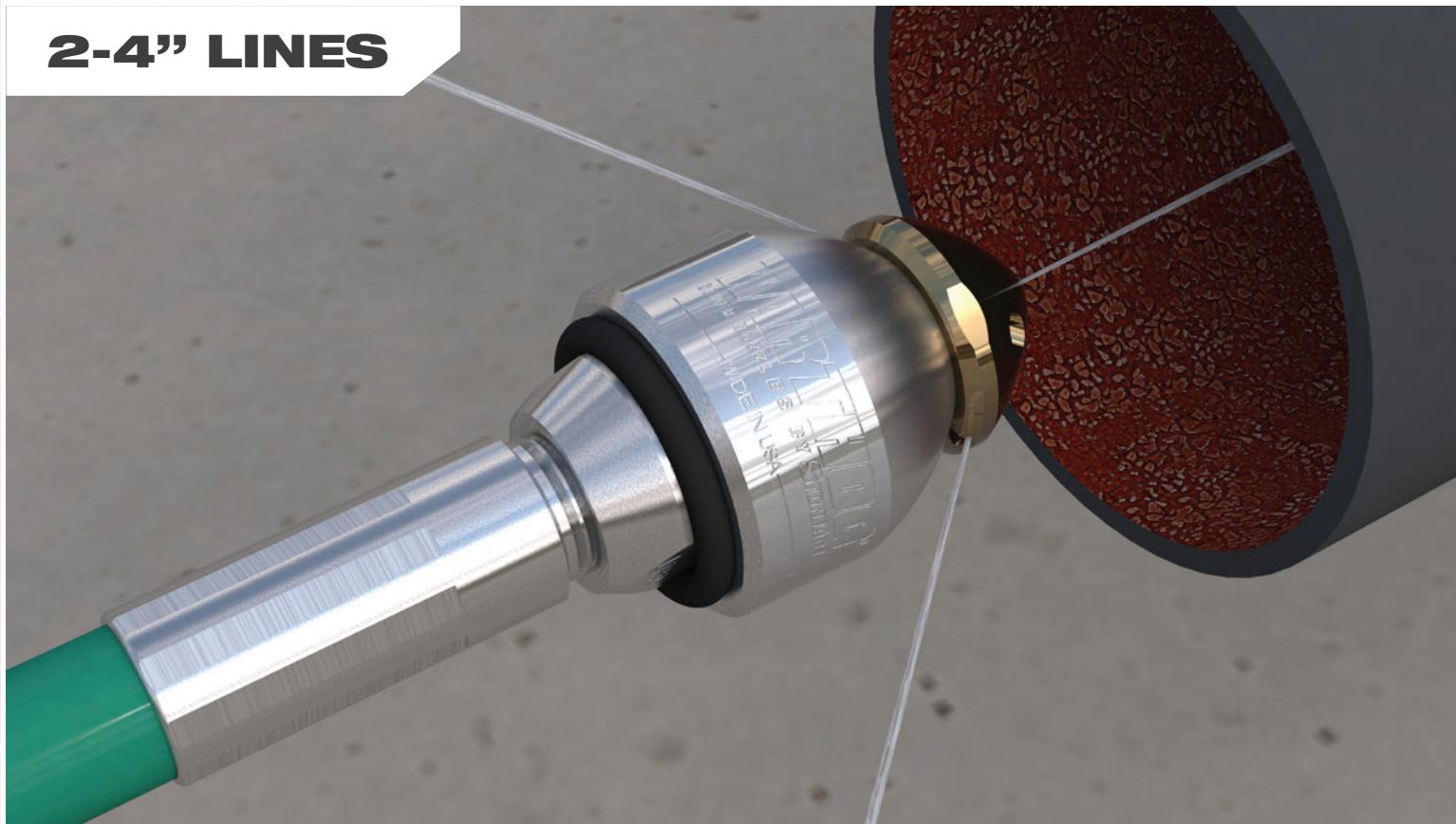
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2-4" LINES

CLASSIC



WV-1/4-LK

The WV-1/4-LK uses StoneAge's flow-through technology and features a revolutionary high-speed rotating design with no high pressure seals or bearings to service. It cleans lines as small as 2" (51 mm) with long sweeping elbows. The head design also features permanent, pre-drilled orifices rather than threaded nozzles.

The tool has a 1/4" NPT pipe thread inlet and can pass through long radius elbows in lines 2" (51 mm) and larger if a 1/4" NPT hose fitting is used.

FEATURES:

- Cleans lines as small as 2" (51 mm) I.D.
- Excellent for navigating elbows
- No high pressure seals or bearings to service

WV-1/4-LK

Up to 5k psi (350 bar)
3-8 gpm Flows (11-30 l/min)
2"-4" Lines (51-102 mm)

WV-1/4-LK Specifications

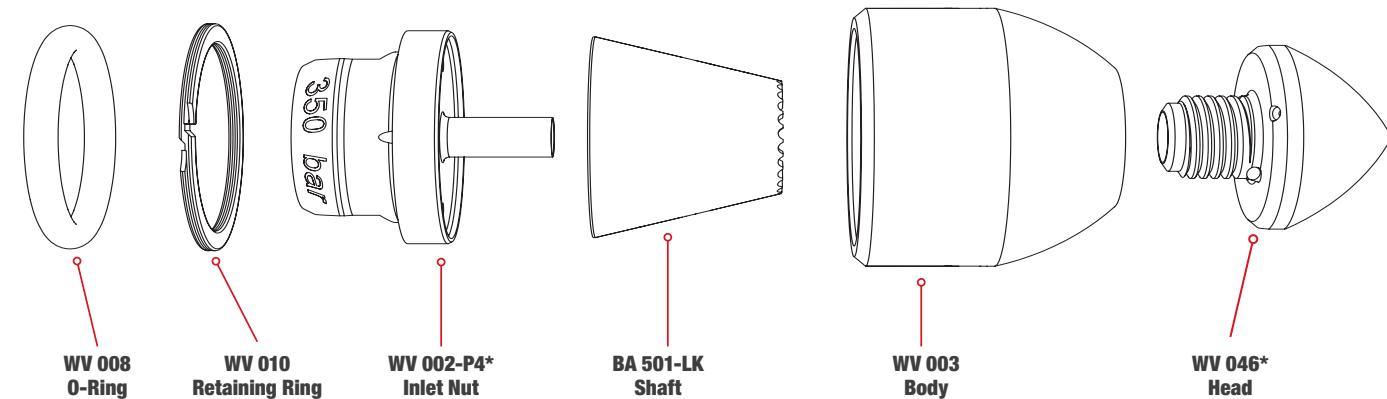
MAXIMUM PRESSURE	5k psi 350 bar
PRESSURE RANGE	2-5k psi 140-350 bar
FLOW RANGE	3-8 gpm 11-30 l/min
FLOW RATING	0.8 Cv
PULLING FORCE	4-9 lb 40 N
INLET CONNECTION	1/4 NPT or BSPP
NOZZLE PORTS	3-drilled
DIAMETER	1.3 in 33 mm
LENGTH	2.0 in. 51 mm
WEIGHT	0.45 lb 0.20 kg

Head Options

PART #	Front Jet	Back Jets	Flow
WV-1/4-LK-A	0.024 in. 0.6 mm	2 x .052 in. 1.3 mm	7-8 gpm 26-30 l/min
WV-1/4-LK-B	0.020 in. 0.5 mm	2 x .039 in. 1.0 mm	5-6 gpm 19-23 l/min
WV-1/4-LK-C	0.018 in. 0.45 mm	2 x .032 in. 0.8 mm	4-4.5 gpm 15-17 l/min
WV-1/4-LK-D	0.018 in. 0.45 mm	2 x .028 in. 0.7 mm	3-3.5 gpm 11-13 l/min

WV-1/4-LK

EXPLODED VIEW - PART NAMES AND NUMBERS



*See charts on the opposite page for inlet nut and head options.

This is a low-maintenance tool. There are no maintenance or overhaul kits. However, the **WV 612** tool kit is available for easy tool disassembly.

POTENTIAL HAZARD!

If any Warthog is being used in pipes larger than the recommended diameter, a rigid stinger with a minimum length of 1.5 times the diameter of the pipe I.D. should be installed between the tool inlet and the hose end. Otherwise the tool can turn around inside the line (as shown here) and come back toward the operator, causing serious injury or death.

STONEAGE CARRIES A COMPLETE LINE OF STINGERS AND CAN HELP YOU PROPERLY SELECT THE RIGHT ONE FOR YOUR APPLICATION.

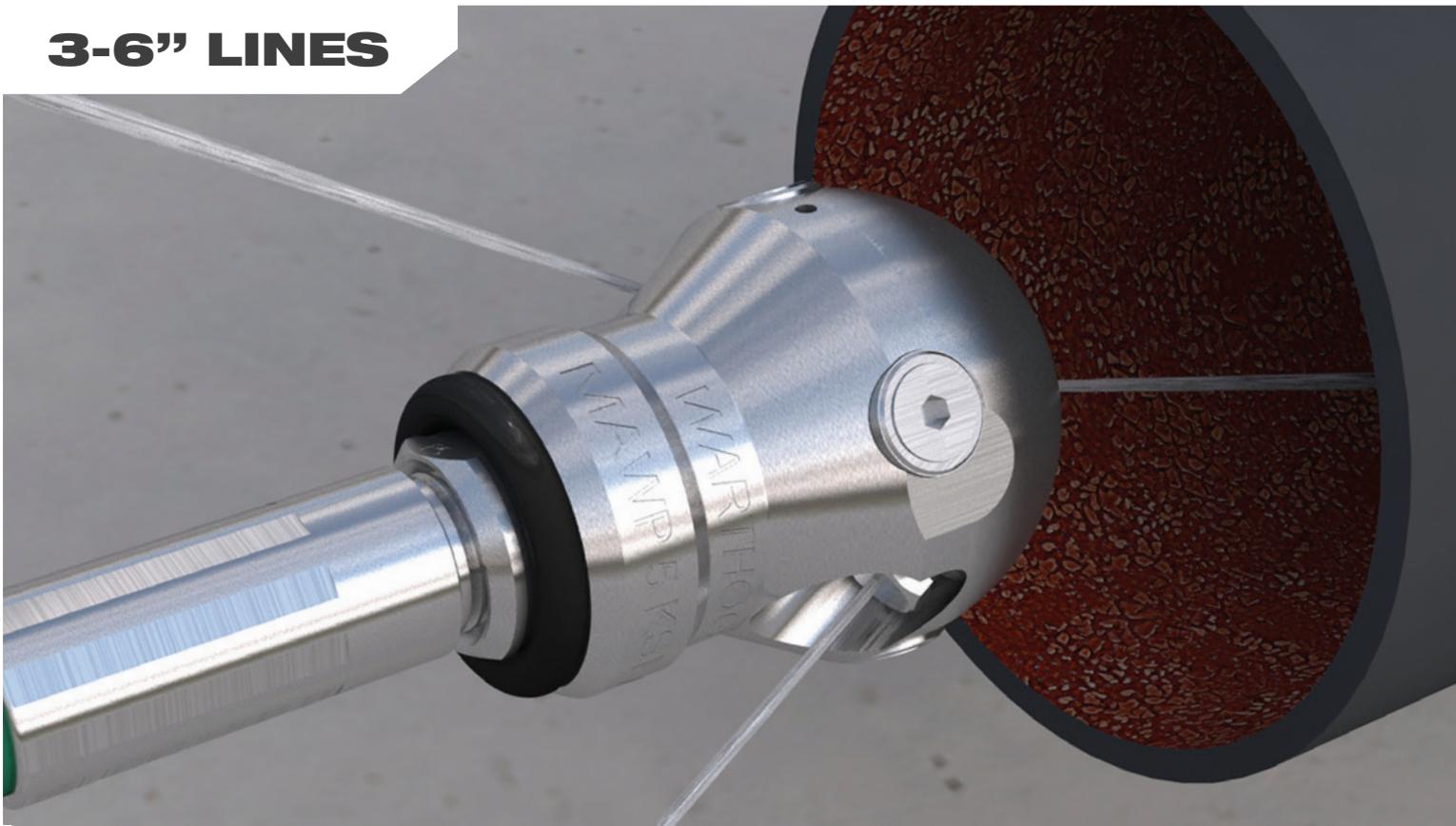


CORRECT

This is an example of **WV-1/4-LK** set up for correct usage in pipes larger than 4" (102 mm) in diameter. A rigid Stinger should be installed between the tool inlet and the hose end. This helps to prevent the tool from turning around inside of the pipe and coming back toward the operator.

3-6" LINES

CLASSIC



WT-3/8-C

Our smaller Classic series models can negotiate elbows and clean-outs commonly found in laterals at homes, buildings, restaurants and other light commercial facilities. This tool is most commonly used on small capacity pumps and cart jetters. Also an excellent choice for cutting roots, clearing ice and removing blockages.

FEATURES:

- Excellent for navigating elbows
- Cuts roots, clears ice and blockages
- Carbide buttons extend tool life up to 5 times
- Replaceable AP2 nozzles

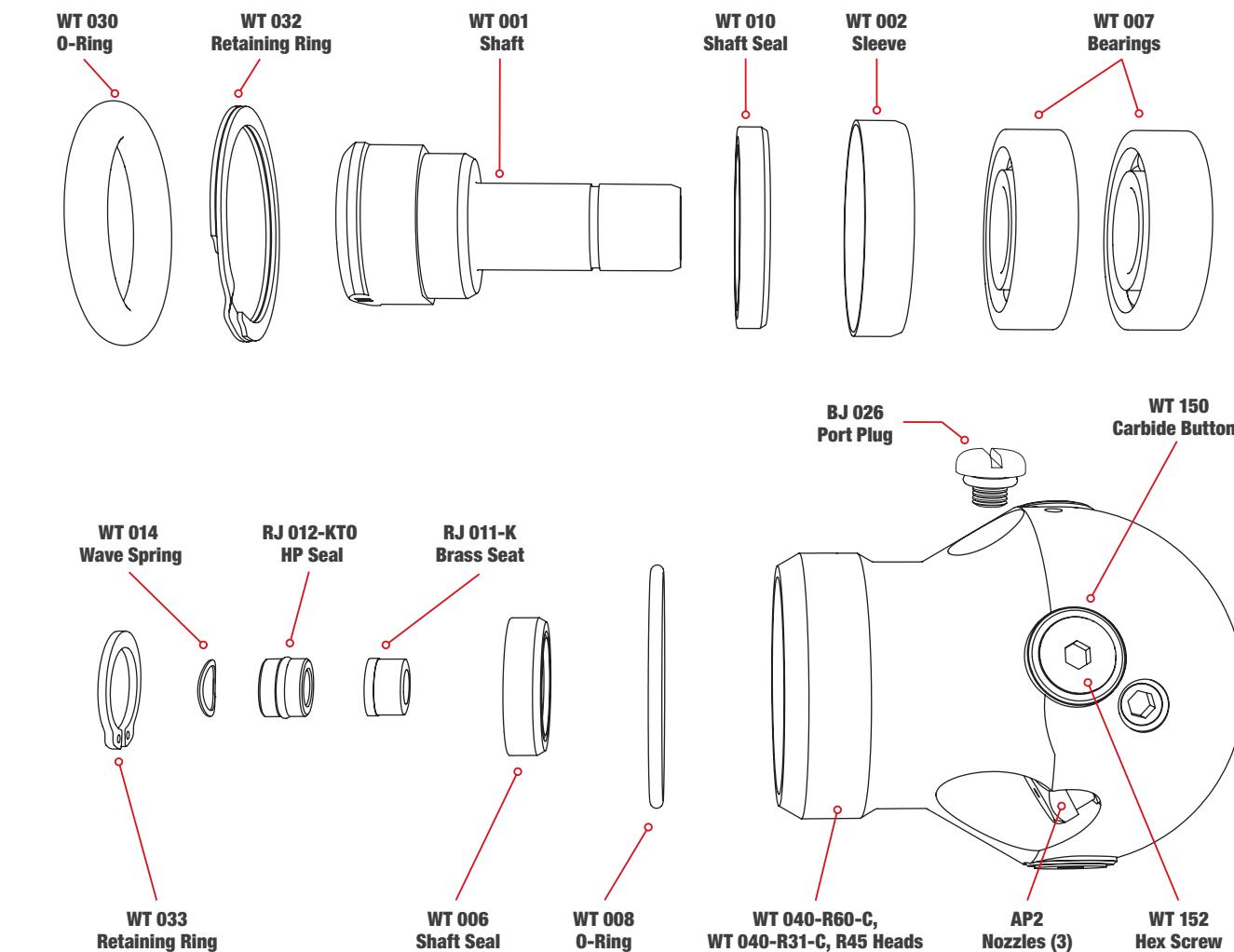
WT-3/8-C	Up to 5k psi (350 bar)
3-6" Lines (76-152 mm)	5-12 gpm Flows (20-45 l/min)
	Classic Workhorse Model

WT-3/8-C Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1500-5k psi 100-350 bar
ROTATION SPEED	300-500 rpm
FLOW	5-12 gpm 20-45 l/min
FLOW RATING	0.75 Cv
PULLING FORCE	5-20 lb 22-90 N
INLET CONNECTION	3/8 NPT or BSPP
TOOL DIAMETER	1.9 in. 48 mm
LENGTH	3.0 in. 76 mm
NOZZLE PORTS	3 x 1/8 NPT
WEIGHT	1.2 lb .54 kg

WT-3/8-C

EXPLODED VIEW - PART NAMES AND NUMBERS

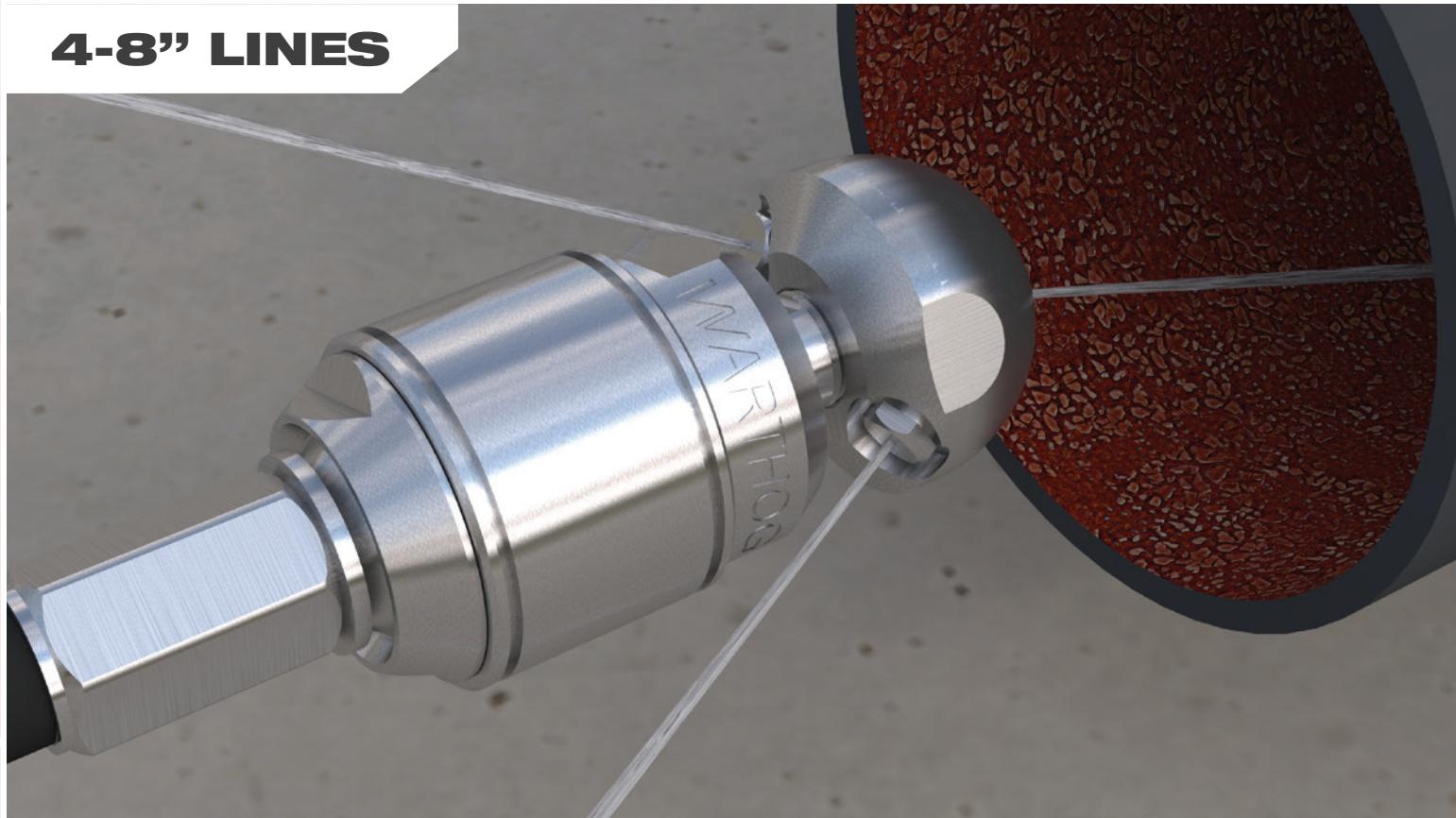


Maintenance & Overhaul Kits

WT 600 • SERVICE KIT	WT 602 • SEAL KIT	WT 610 • OVERHAUL KIT	WT 612 • TOOL KIT
(1) BC 410 Syringe Assembly	(1) RJ 011-K Brass Seat	(1) BJ 026 Port Plug	(1) BA 100 Retaining Ring Pliers
(1) BJ 026 Port Plug	(1) RJ 012-KTO HP Seal & O-Ring	(1) BJ 048-S Visc. Fluid, 6oz.	(1) WT 105 Tool
(1) BJ 048-S Visc. Fluid, 6oz.	(1) WT 014 Wave Spring	(1) RJ 011-K Brass Seat	
(1) BJ 062-S Antiseize, 2g		(1) RJ 012-KTO HP Seal & O-Ring	
(1) GP 025-P2SS Hex Socket Plug		(1) WT 006 Seal	
(1) RJ 011-K Brass Seat		(2) WT 007 Bearing, Ball	
(1) RJ 012-KTO HP Seal & O-Ring		(1) WT 008 O-Ring	
(1) WT 014 Wave Spring		(1) WT 010 Seal	
		(1) WT 014 Wave Spring	
		(1) WT 032 Retaining Ring	
		(1) WT 030 O-Ring	

4-8" LINES

CLASSIC



4-8" LINES

WS-1/2

The WS-1/2 is designed to handle 4"-8" (102-204 mm) lines and is most commonly used with trailer jetters. It is used to clean lines in restaurants, hospitals, multi-story apartment buildings, residential, and other applications. Easily removes grease, cuts roots, and clears ice and soil blockages.

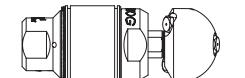
WS-J JOINTED INLET MODELS

This model allows the inlet hose to bend to the side, shortening the rigid length of the tool and allowing limited access applications to be cleaned much easier. 1/2" NPT or BSPP inlet ports available.



WS-P8 OPTIONAL RIGID INLETS

The WS-P8 is excellent for straight pipes. The whip hose is removed, allowing the hose to connect directly to the tool. Available with a female 1/2" NPT or BSPP connection.



NOTE: 4" (102 mm) 90° bends are no longer negotiable in this configuration.

WS-1/2

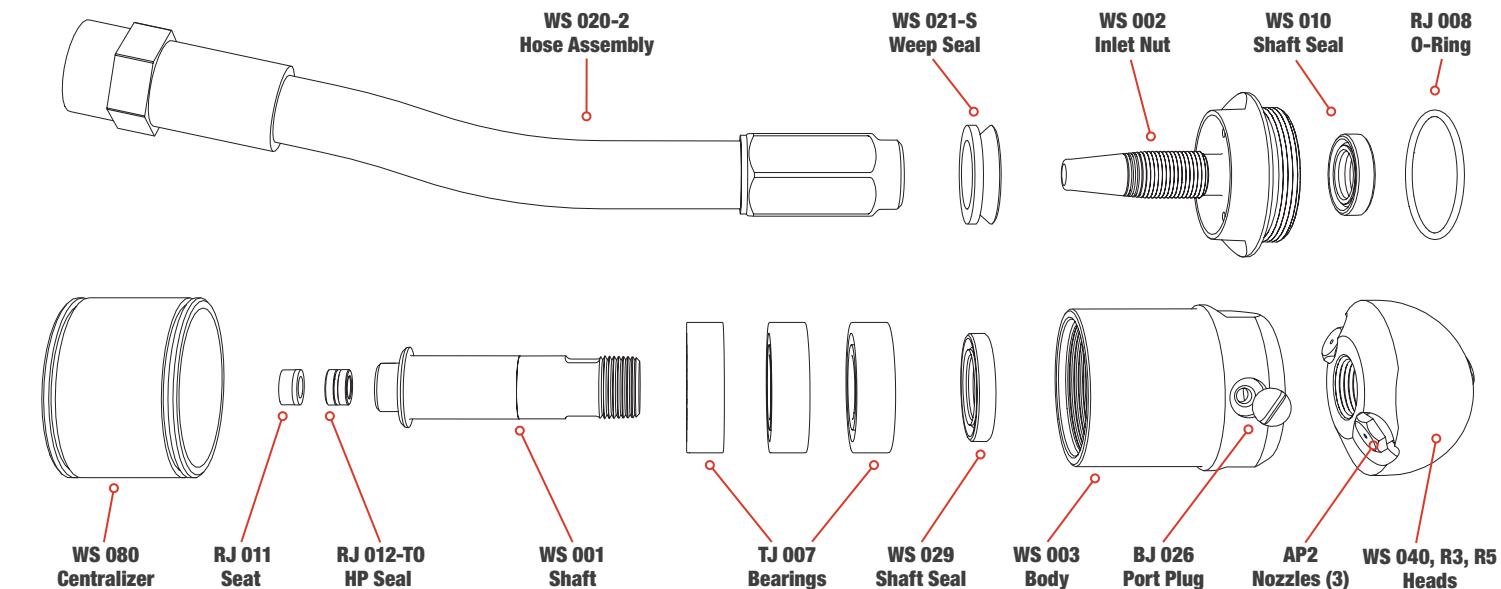
Up to 5k psi (350 bar)
8-20 gpm Flows (30-76 l/min)
Three Models Available

WS-1/2 Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1500-5k psi 100-350 bar
ROTATION SPEED	200-500 rpm
FLOW	8-20 gpm 30-76 l/min
FLOW RATING	1.3 Cv
PULLING FORCE	9-27 lb 40-120 N
INLET CONNECTION	1/2 NPT & BSPP
TOOL DIAMETER	1.9 in. 48 mm
LENGTH	4.4 in. 112 mm
NOZZLE PORTS	3 x 1/8 NPT
WEIGHT	2.95 lb 1.33 kg

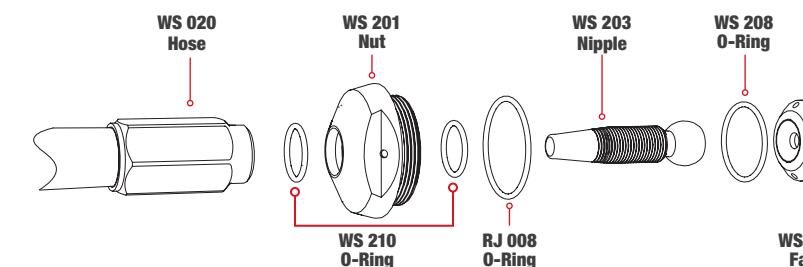
WS-1/2

EXPLODED VIEW - PART NAMES AND NUMBERS



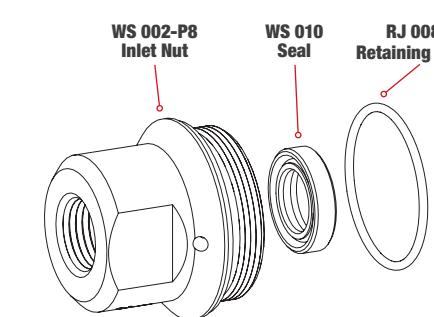
WS-1/2-J

INLET AREA PARTS



WS-P8

INLET AREA PARTS



Maintenance & Overhaul Kits

WS 600 • SERVICE KIT

- (1) BC 410..... Syringe Assembly
- (1) BJ 048-S..... Visc. Fluid, 6oz.
- (1) BJ 062-S..... Antiseize, 2g
- (1) GP 025-P2..... Hex Socket Plug
- (1) RJ 011..... Brass Seat
- (1) RJ 012-T0..... HP Seal & O-Ring

WS 602 • SEAL KIT

- (1) RJ 011..... Brass Seal
- (1) RJ 012-T0..... HP Seal & O-Ring

WS 610 • OVERHAUL KIT

- (1) BJ 026..... Port Plug
- (1) BJ 048-S..... Visc. Fluid, 6oz.
- (1) BJ 062-S..... Antiseize, 2g
- (1) RJ 008..... O-Ring
- (1) RJ 011..... Brass Seat
- (1) RJ 012-T0..... HP Seal & O-Ring
- (3) TJ 007..... Ball Bearings
- (1) WS 010..... Small Seal
- (1) WS 021-S..... Weep Seal
- (1) WS 029..... Large Seal

WS 610-J • OVERHAUL KIT

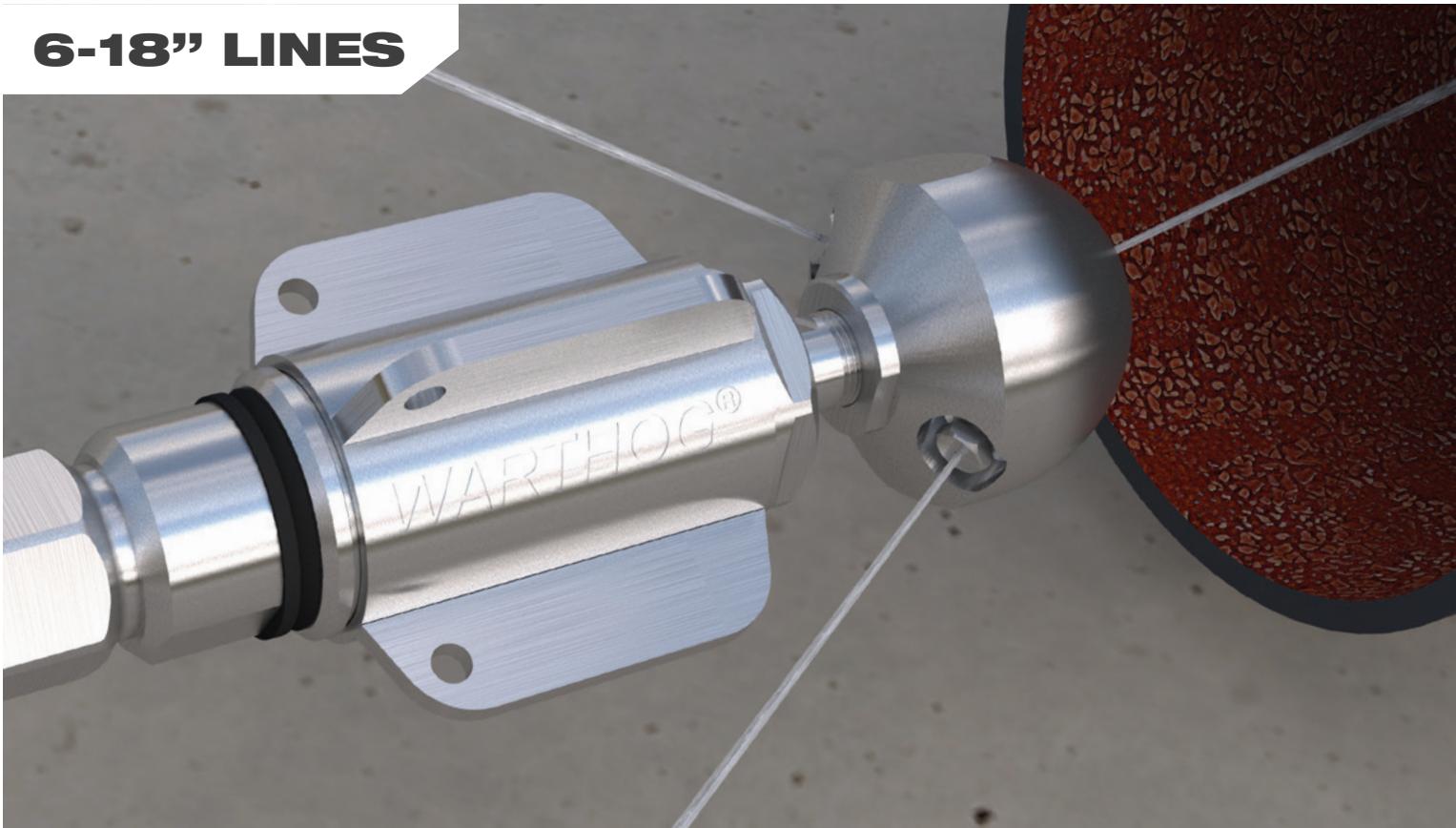
- (1) BJ 026..... Port Plug
- (1) BJ 048-S..... Visc. Fluid, 6oz.
- (1) BJ 062-S..... Antiseize, 2g
- (1) RJ 008..... O-Ring
- (1) RJ 011..... Brass Seat
- (1) RJ 012-T0..... HP Seal & O-Ring
- (3) TJ 007..... Ball Bearings
- (1) WS 010..... Small Seal
- (1) WS 029..... Large Seal
- (2) WS 210..... O-Rings

WS 612 • TOOL KIT

- (1) TJ 064..... Fill Tube
- (1) WS 105..... Tool

6-18" LINES

CLASSIC



WH-1/2 & WH-3/4

The WH-1/2 and the WH-3/4 are the same tool offered with different inlet ports, either 3/4" NPT or BSPP. The WH models are best for 6-18" (152-457 mm) lines. These tools are most commonly used with small capacity combination trucks and large trailer jetters. Descaling Heads are available for both models.

FEATURES:

- Controlled rotation — Slower dwell time allows jets to penetrate deeper through deposits
- Multiple head options — Customize tool for unplugging, descaling or manhole cleaning
- Highest quality jets — Hardened stainless steel orifices resist cracking and scratching
- Optional descaling head available

WH-1/2 & 3/4

6-18" Lines (152-457 mm)

Up to 8k psi (550 bar)

10-50 gpm Flows (40-170 l/min)

Two Inlet Options Available

TECH TIP: DESCALING HEADS

We recommend plugging the front jets to help maximize descaling and pulling power when using this option.

Optional Descaling Head Part Number:
WH 040-DS

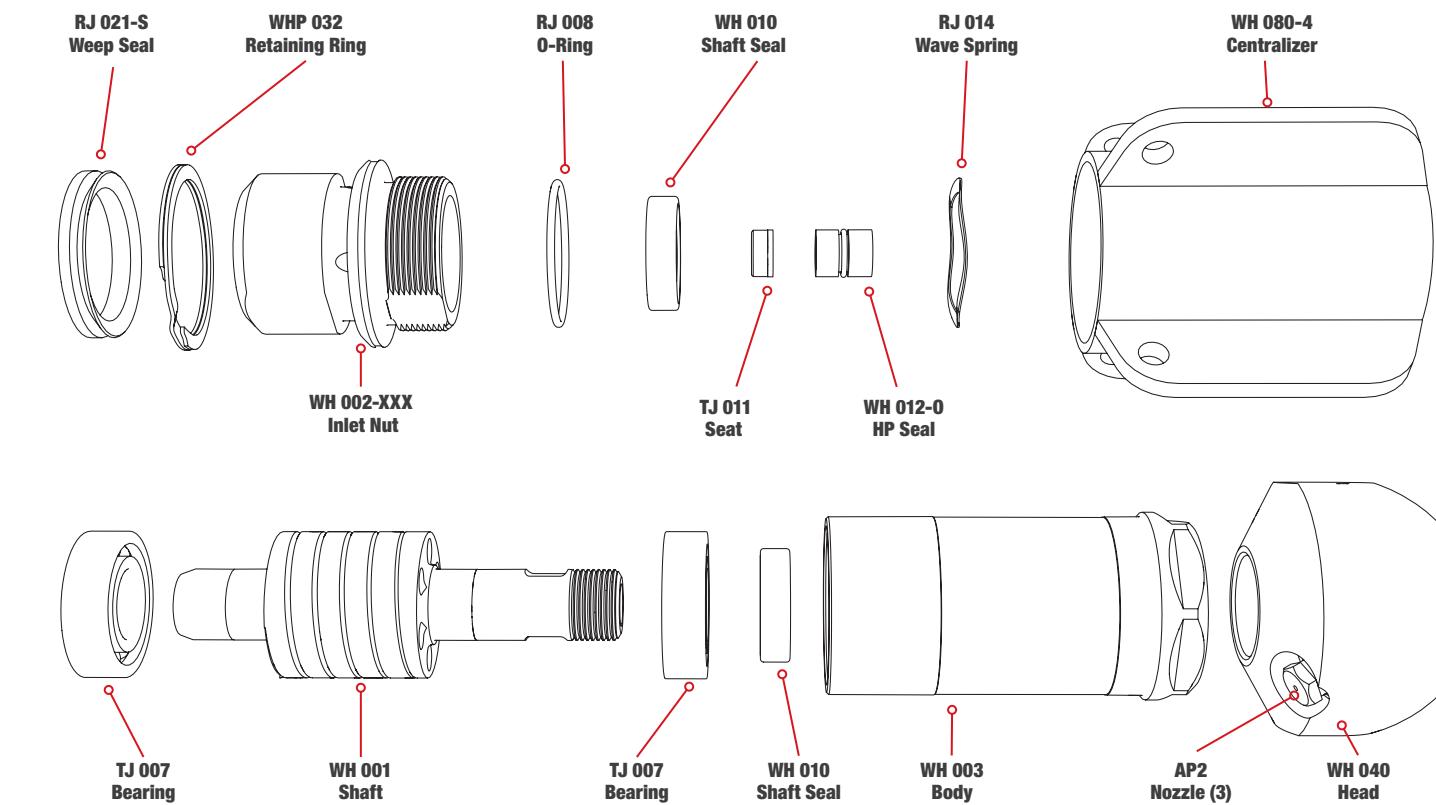


WH-1/2 & WH-3/4 Specifications

MAXIMUM PRESSURE	8k psi 550 bar
OPERATING PRESSURE	1500-8k psi 100-550 bar
ROTATION SPEED	150-300 rpm
FLOW	10-50 gpm 40-170 l/min
FLOW RATING	2.6 Cv
PULLING FORCE	18-50 lb 80-220 N
INLET CONNECTION	1/2 NPT or BSPP & 3/4 NPT or BSPP
LENGTH	7.5 in. 191 mm
DIAMETER INCL. CENT.	3.4 in. 86 mm
NOZZLE PORTS	3 x 1/8 NPT
WEIGHT	4.7 lb 2.1 kg

WH-1/2 & WH-3/4

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WH 600 • SERVICE KIT

- (1) BJ 048-F Viscous Fluid, 6oz.
- (1) BJ 062-S Antiseize, 2g
- (1) GP 025-P2SS Hex Socket Plug
- (1) TJ 011 Brass Seat
- (1) WH 012-0 HP Seal & O-Ring

WH 602 • SEAL KIT

- (1) TJ 011 Brass Seat
- (1) WH 012-0 HP Seal & O-Ring

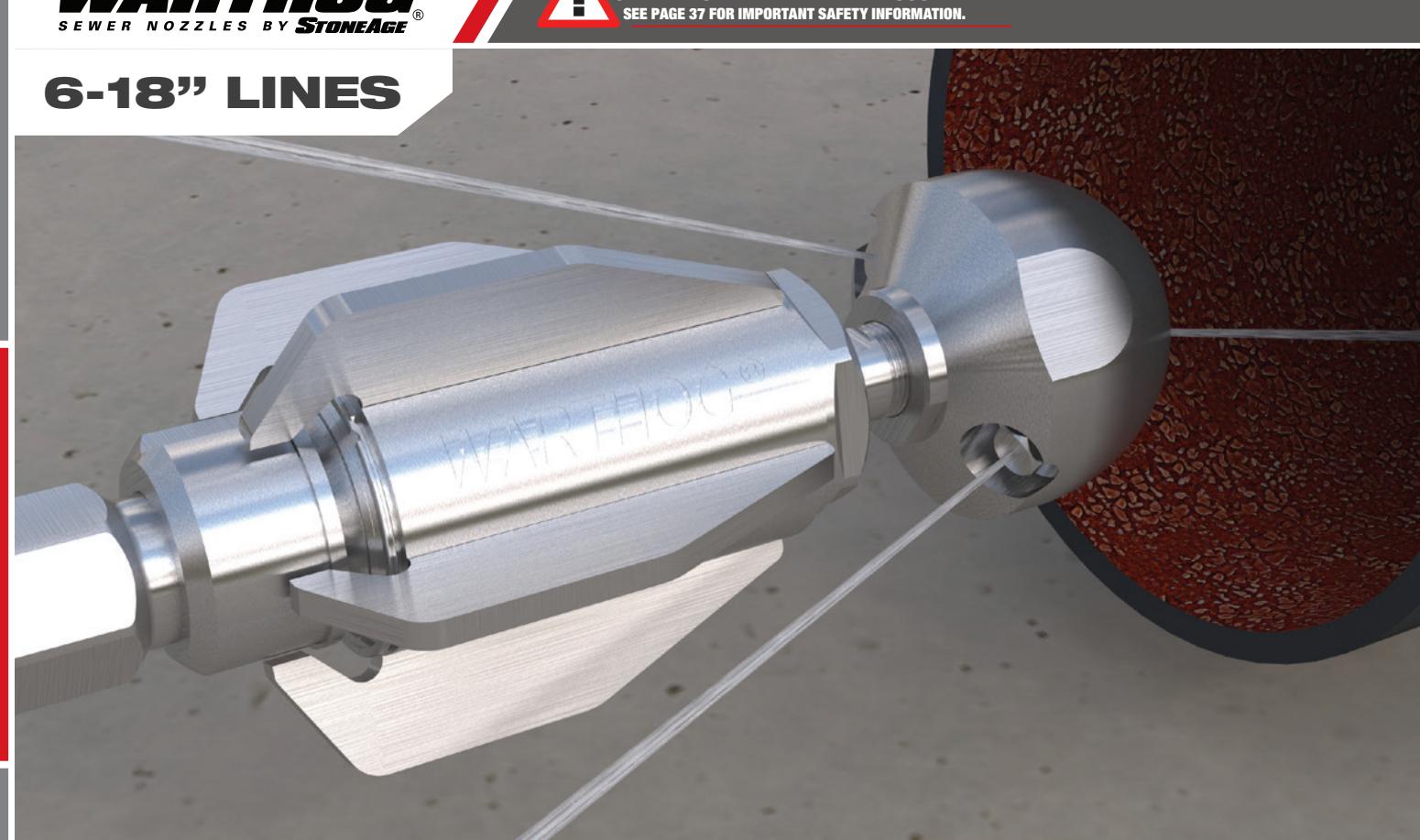
WH 610 • OVERHAUL KIT

- (1) BJ 048-F Viscous Fluid, 6oz.
- (1) BJ 062-S Antiseize, 2g
- (1) RJ 008 O-Ring
- (1) TJ 011 Brass Seat
- (1) WH 012-0 HP Seal & O-Ring
- (2) TJ 007 Ball Bearing
- (2) WH 010 Shaft Seal
- (1) RJ 021-S Weep Seal
- (1) RJ 014 Wave Spring

WH 612 • TOOL KIT

- (1) TJ 064 Fill Tube
- (1) WH 105 Tool

6-18" LINES



CLASSIC

WHP-3/4 PULLER

The Warthog WHP-3/4 has been designed to produce more pulling power than other tools available on the market. The centralizer fins are streamlined to allow the rear facing jets to be angled more sharply, giving the tool more forward thrust. The result is more pulling power to handle longer lines and moderate inclines.

FEATURES:

- Controlled rotation — Slower dwell time allows jets to penetrate deeper through deposits
- Multiple head options — Customize tool for unplugging, descaling or manhole cleaning
- Highest quality jets — Hardened stainless steel orifices resist cracking and scratching

WHP-3/4 PULLER	Up to 8k psi (550 bar)
6-18" Lines (152-457 mm)	15-50 gpm Flows (60-190 l/min)
	Up to 20% More Thrust*

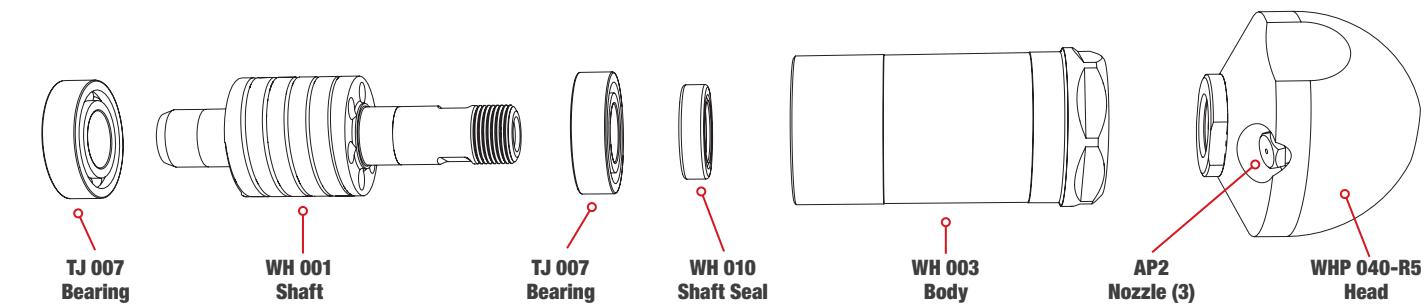
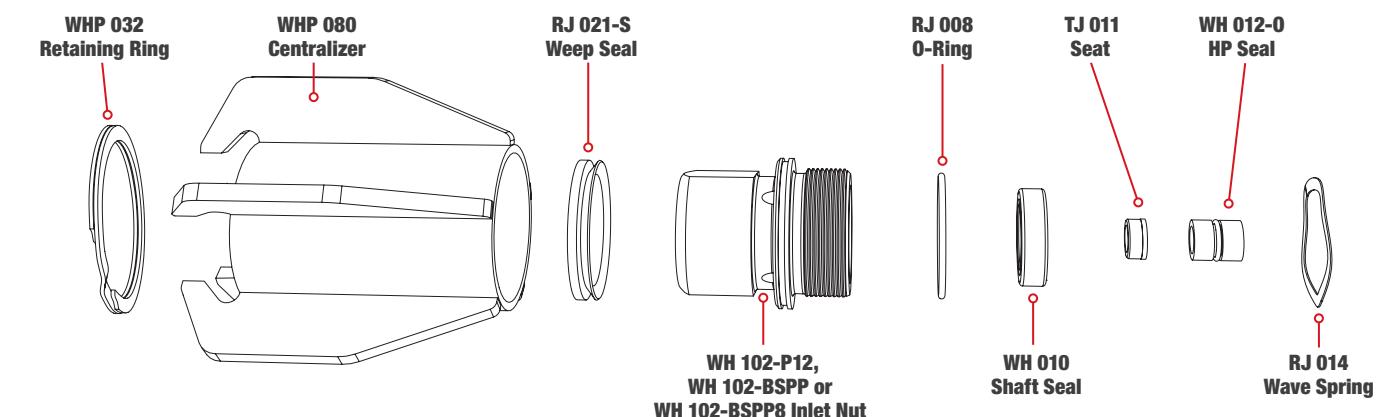
WHP-3/4 Specifications

MAXIMUM PRESSURE	8k psi 550 bar
OPERATING PRESSURE	1500-4k psi 00-275 bar
ROTATION SPEED	150-300 rpm
FLOW	15-50 gpm 60-190 l/min
FLOW RATING	3.0 Cv
PULLING FORCE	45-90 lb 00-400 Nm
INLET PORT	1/2 NPT, 1/2 BSPP, 3/4 NPT, 3/4 BSPP
DIA. INCLUDING CENTRALIZER	3.4 in. 86 mm
LENGTH	7.5 in. 190 mm
NOZZLE PORTS	3 x 1/8 NPT
WEIGHT	4.7 lb 2.1 kg

* With the front jet plugged.

WHP-3/4

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WH 600 • SERVICE KIT

- (1) BJ 048-F Visc. Fluid Fast, 6oz.
- (1) BJ 062-S Antiseize, 2g
- (1) GP 025-P2SS Hex Socket Plug
- (1) TJ 011 Brass Seat
- (1) WH 012-0 HP Seal & O-Ring

WH 602 • SEAL KIT

- (1) TJ 011 Brass Seat
- (1) WH 012-0 HP Seal & O-Ring

WH 610 • OVERHAUL KIT

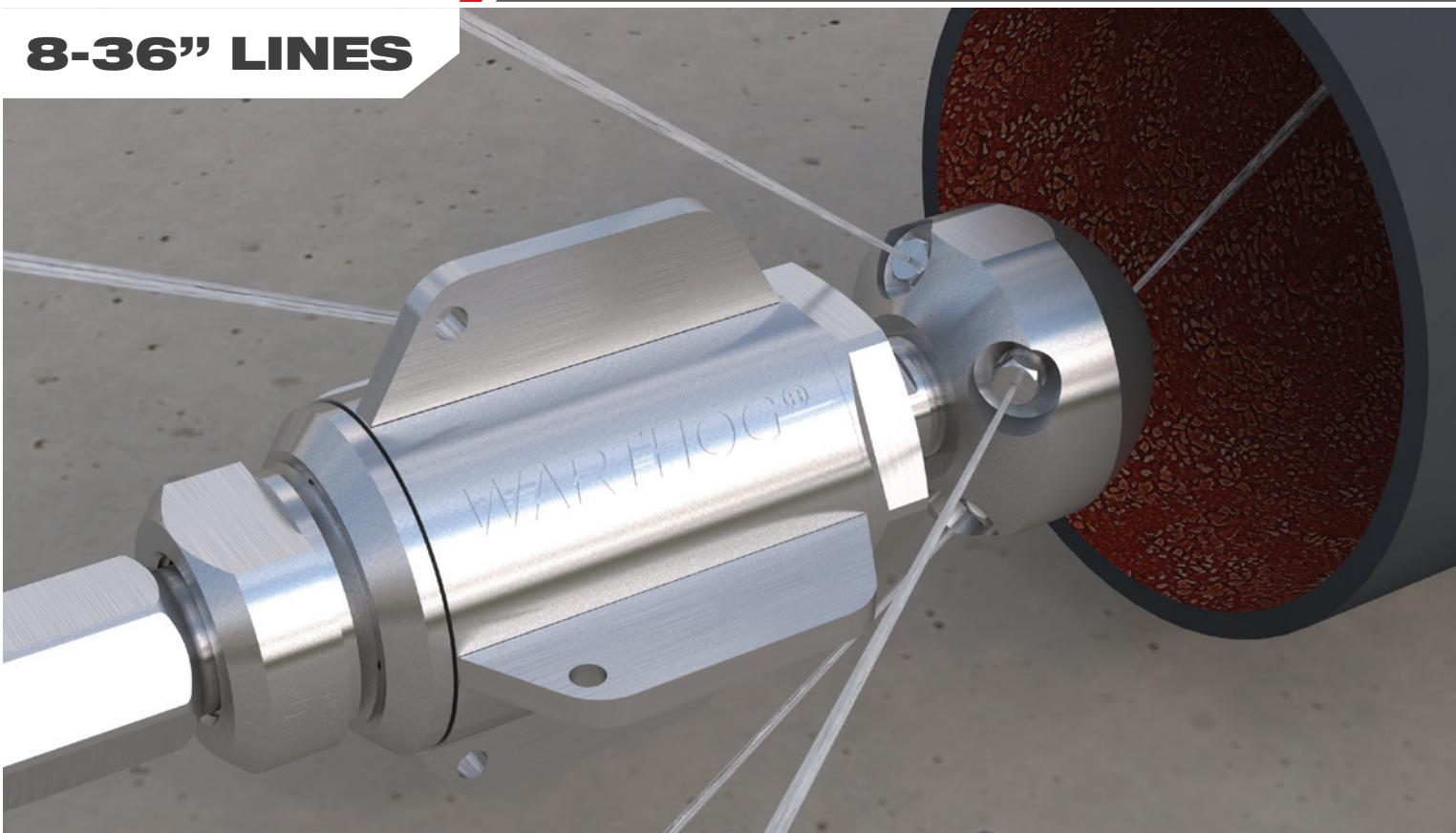
- (1) BJ 048-F Visc. Fluid Fast, 6oz.
- (1) BJ 062-S Antiseize, 2g
- (1) RJ 008 O-Ring
- (1) TJ 011 Brass Seat
- (1) WH 012-0 HP Seal & O-Ring
- (2) TJ 007 Ball Bearing
- (2) WH 010 Shaft Seal
- (1) RJ 021-S Weep Seal
- (1) RJ 014 Wave Spring
- (1) WHP 032 Retaining Ring

WH 612 • TOOL KIT

- (1) TJ 064 Fill Tube
- (1) WH 105 Tool

8-36" LINES

CLASSIC



WG-1

The WG-1 is the proven choice for municipal, industrial and commercial drain cleaning applications. Predominately used in large combination trucks with 1" (25 mm) hose, the WG-1 is field-maintainable for low cost of ownership and can be fitted with replaceable AP2 nozzle tips sized to maximize pump efficiency and effectiveness.

FEATURES:

- Controlled rotation — Slower dwell time allows jets to penetrate deeper through deposits
- Multiple head options — Customize tool for unplugging, descaling or manhole cleaning
- Highest quality jets — Hardened stainless steel orifices resist cracking and scratching
- Optional descaling head available

WG-1	Up to 5k psi (350 bar)
8-36" Lines (203-914 mm)	50-80 gpm Flows (190-300 l/min)
Classic WG-1 Model	

WG-1 Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1500-5k psi 100-350 bar
ROTATION SPEED	150-300 rpm
FLOW	50-80 gpm 190-300 l/min
FLOW RATING	4.6 Cv
PULLING FORCE	70-100 lb 310-450 Nm
INLET CONNECTION	1 NPT or BSPP
NOZZLE PORTS	5 x 1/8 NPT (P2)
LENGTH	9.1 in. 231 mm
DIAMETER	4.8 in. 122 mm
WEIGHT COMPLETE	10.9 lb 4.9 kg

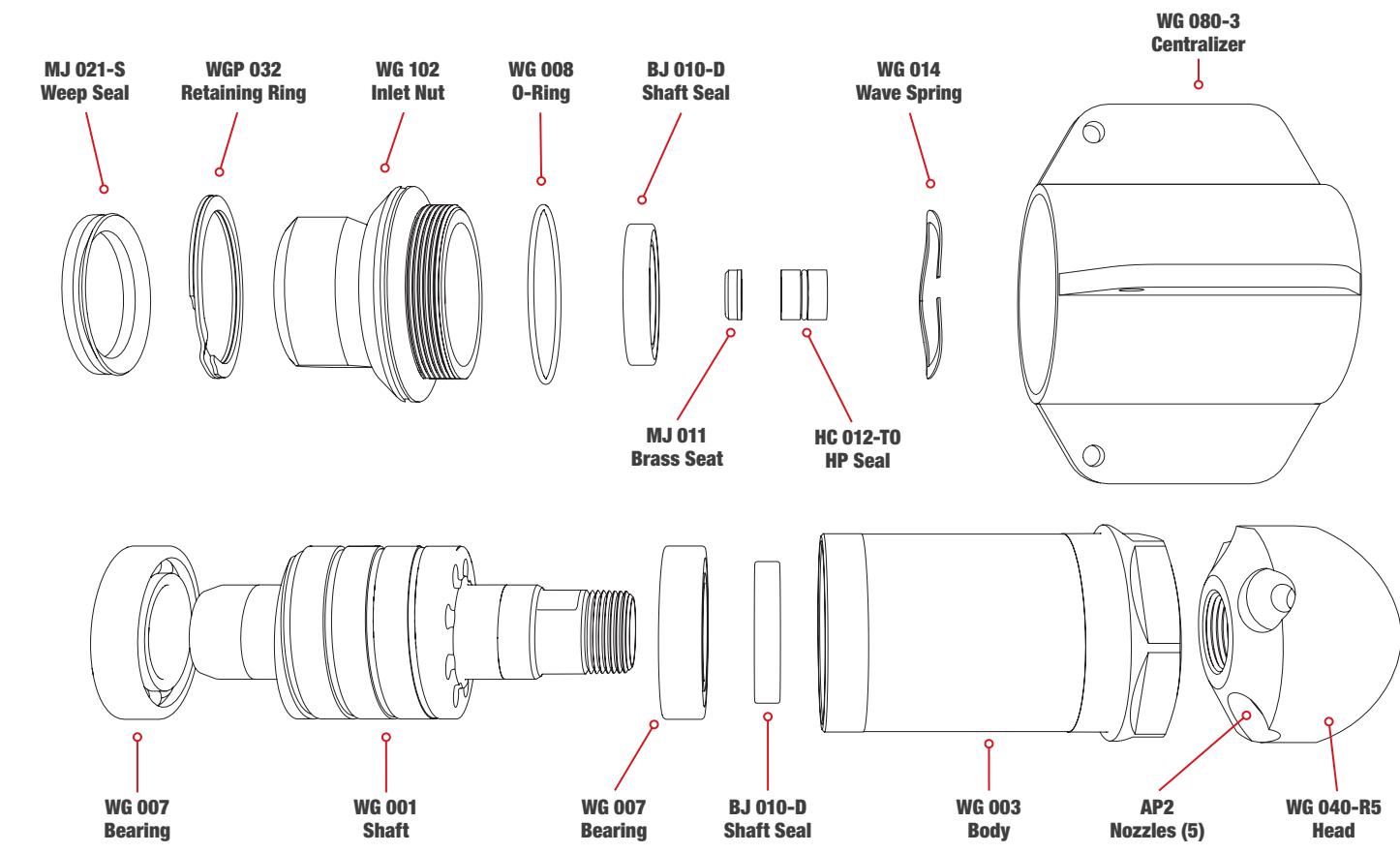
TECH TIP: DESCALING HEADS

We recommend plugging the front jets to help maximize descaling and pulling power when using this option.

Optional Descaling Head Part Number:
WG 040-DS-R5

WG-1 CLASSIC

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WG 600 • SERVICE KIT

- (1) BJ 048-F Visc. Fluid, 6oz.
- (1) BJ 062-S Antiseize, 2g
- (1) GP 025-P2SS Hex Socket Plug
- (1) MJ 011 Brass Seat
- (1) HC 012-T0 HP Seal & O-Ring

WG 602 • SEAL KIT

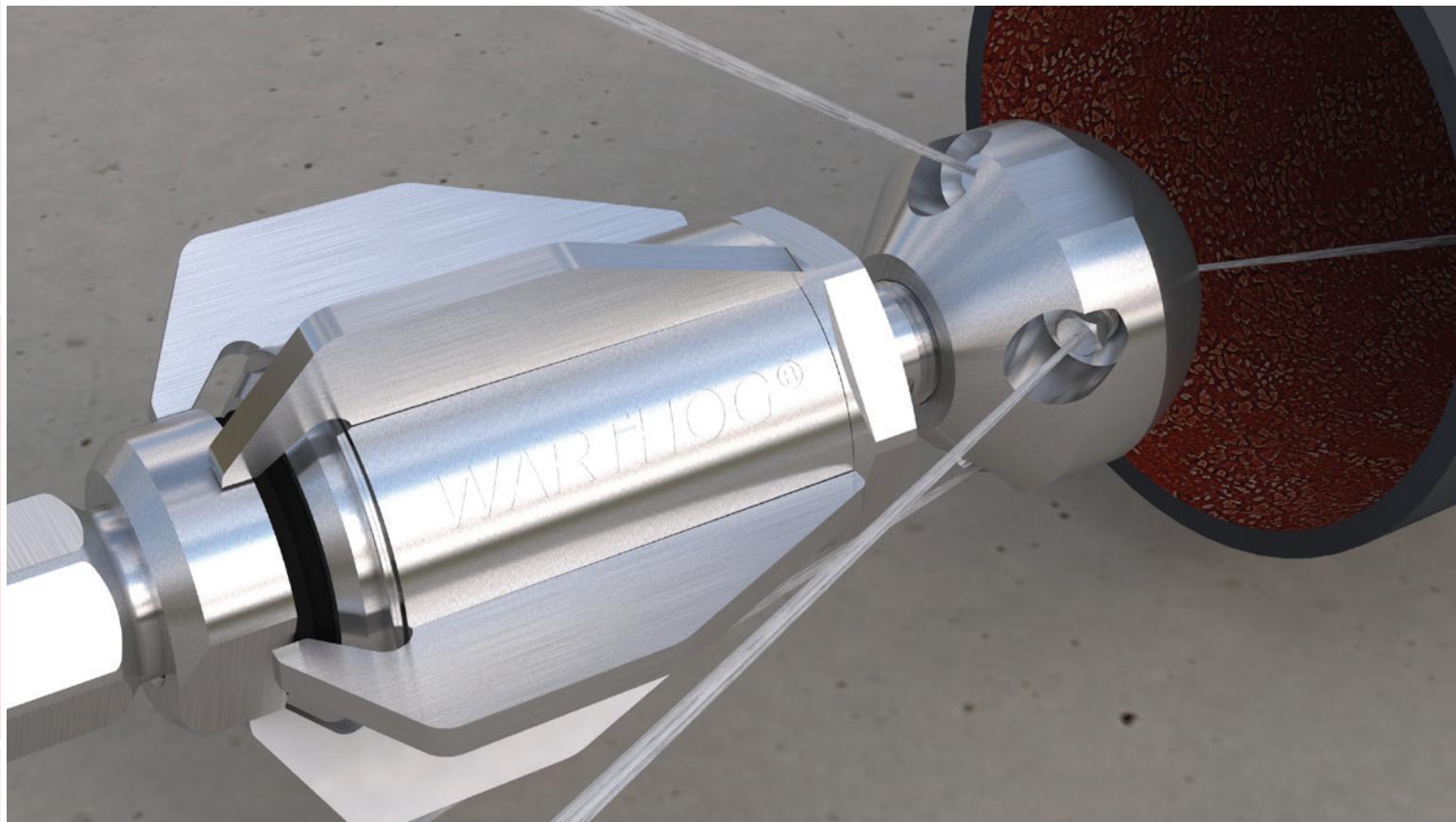
- (1) MJ 011 Brass Seat
- (1) HC 012-T0 HP Seal & O-Ring

WG 610 • OVERHAUL KIT

- (2) BJ 010-D Shaft Seals
- (1) BJ 048-F Visc. Fluid, 6oz.
- (1) BJ 062-S Antiseize, 2g
- (1) MJ 011 Brass Seat
- (1) HC 012-T0 HP Seal & O-Ring
- (2) WG 007 Ball Bearings
- (1) WG 008 O-Ring
- (1) WG 014 Wave Spring
- (1) MJ 021-S Weep Seal
- (1) WGP 032 Retaining Ring

WG 612 • TOOL KIT

- (1) HC 064 Fill Tube
- (1) BJ 105 Tool



WGP-1 PULLER

The Warthog WGP-1 is designed to produce up to 40% more pulling power than the WG-1, with the front jet plugged. The rear facing jets are angled more sharply and the centralizer fins have been streamlined. The result is more pulling power to navigate longer lines and moderate inclines, plus makes retrieval of the tool easier.

FEATURES:

- Controlled rotation — Slower dwell time allows jets to penetrate deeper through deposits
- Multiple head options — Customize tool for unplugging, descaling or manhole cleaning
- Highest quality jets — Hardened stainless steel orifices resist cracking and scratching
- Optional descaling head available

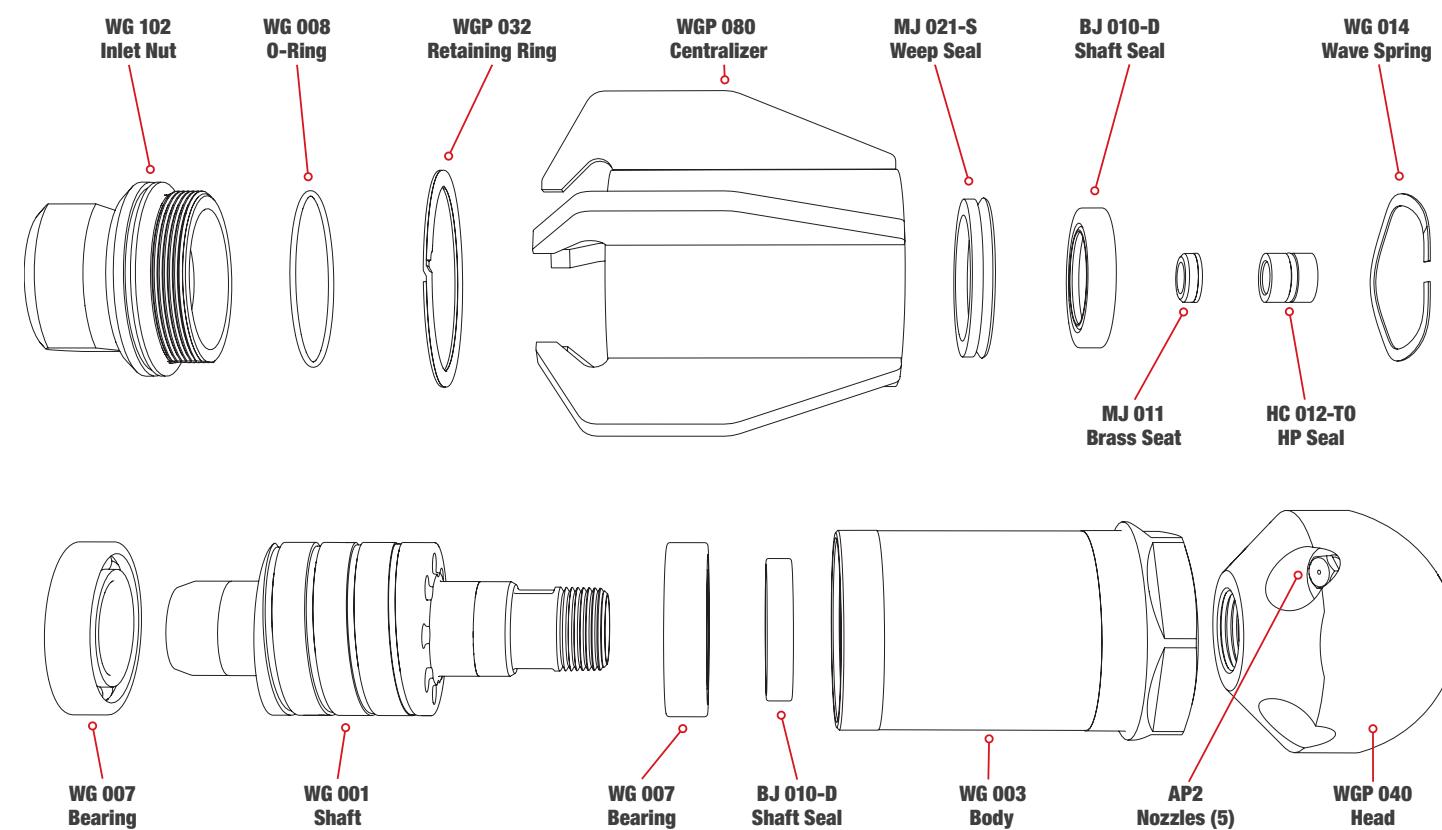
WGP-1 Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1500-5k psi 100-350 bar
ROTATION SPEED	150-300 rpm
FLOW	50-80 gpm 190-300 l/min
FLOW RATING	4.6 Cv
PULLING FORCE	100-140 lb 450-623 N
INLET CONNECTION	1 NPT or BSPP
LENGTH	9.1 in. 231 mm
DIAMETER WITH CENT.	4.8 in. 122 mm
PORTS	5 x 1/8 NPT
WEIGHT	10.9 lb 4.9 kg

* With the front jet plugged.

WGP-1 CLASSIC

EXPLODED VIEW - PART NAMES AND NUMBERS

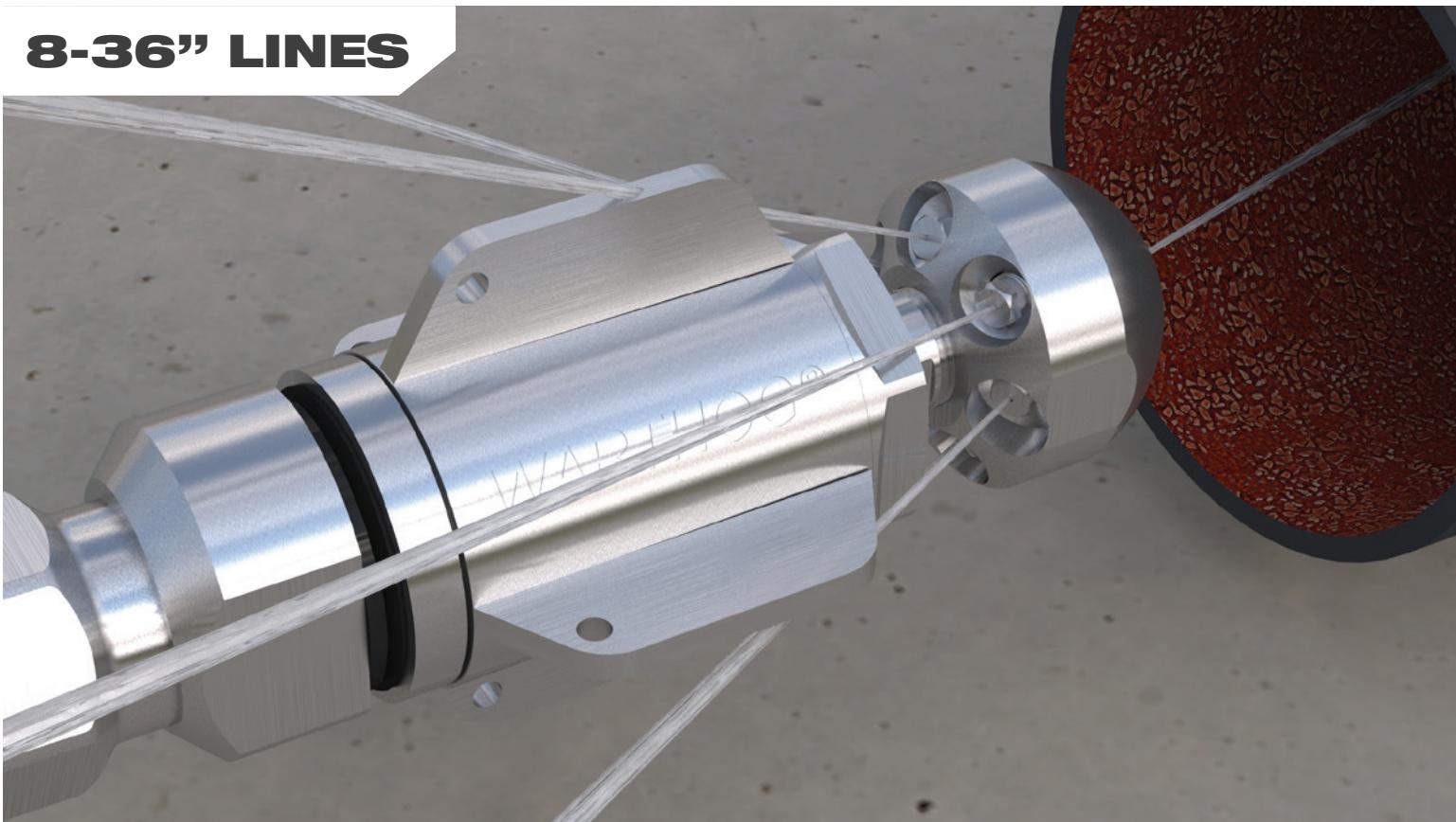


Maintenance & Overhaul Kits

WG 600 • SERVICE KIT	WG 610 • OVERHAUL KIT	WG 612 • TOOL KIT	WG 602 • SEAL KIT
(1) BJ 048-F Visc. Fluid, 6oz.	(2) BJ 010-D Shaft Seals	(1) HC 064 Fill Tube	(1) MJ 011 Brass Seat
(1) BJ 062-S Antiseize, 2g	(1) BJ 048-F Visc. Fluid, 6oz.	(1) BJ 105 Tool	(1) HC 012-T0 HP Seal & O-Ring
(1) GP 025-P2 Hex Socket Plug	(1) BJ 062-S Antiseize, 2g		
(1) MJ 011 Brass Seat	(1) MJ 011 Brass Seat		
(1) HC 012-T0 HP Seal & O-Ring	(1) HC 012-T0 HP Seal & O-Ring		
(2) WG 007 Ball Bearings	(2) WG 007 Ball Bearings		
(1) WG 008 O-Ring	(1) WG 008 O-Ring		
(1) WG 014 Wave Spring	(1) WG 014 Wave Spring		
(1) MJ 021-S Weep Seal	(1) MJ 021-S Weep Seal		
(1) WGP 032 Retaining Ring	(1) WGP 032 Retaining Ring		

8-36" LINES

CLASSIC



WD 1-1/4

Proven effective for municipal, industrial and commercial drain cleaning applications, the Warthog WD 1-1/4 is designed to handle the same applications as the WG-1 but at higher flows. The 1-1/4" inlet combined with seven ports effectively distributes more water. The WD 1-1/4 is field-maintainable for low cost of ownership and can be fitted with replaceable AP2 nozzle tips sized to maximize pump efficiency.

FEATURES:

- High flow capacity up to 120 gpm (450 l/min)
- Controlled rotation — Slower dwell time allows jets to penetrate deeper through deposits
- Multiple head options — Customize tool for unplugging, descaling or manhole cleaning
- Highest quality jets — Hardened stainless steel orifices resist cracking and scratching
- Optional descaling head available

WD 1-1/4 CLASSIC

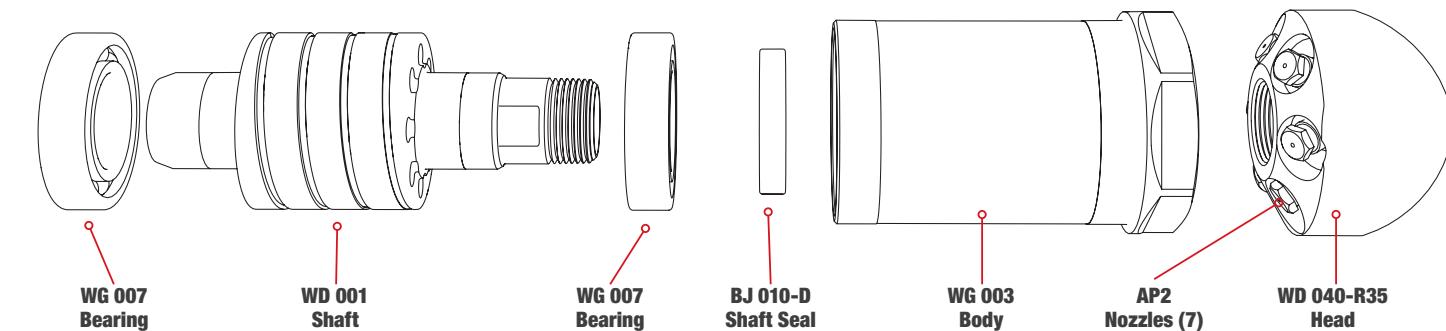
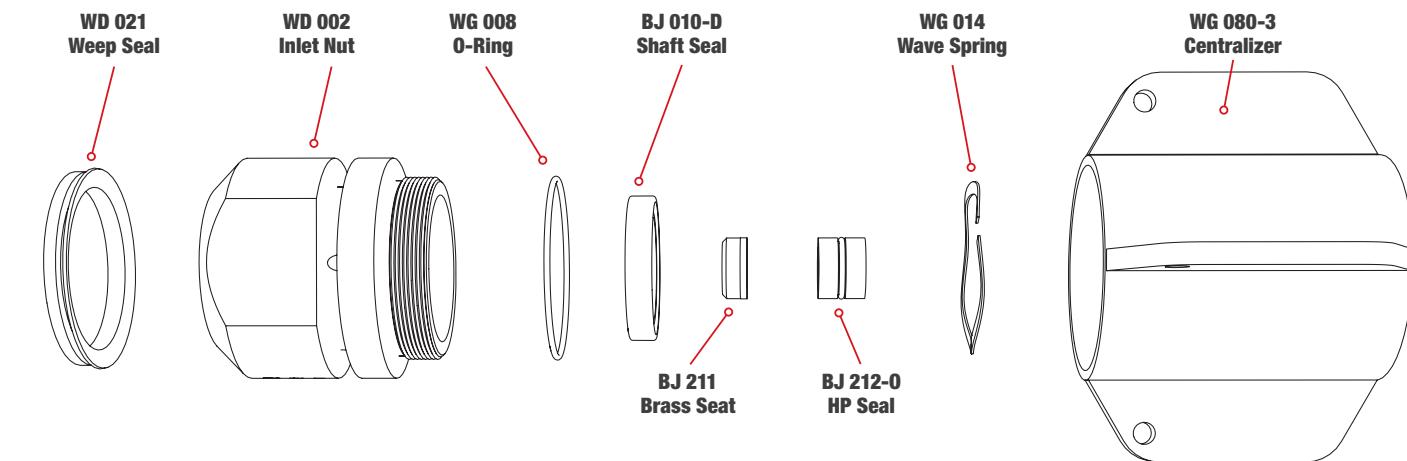
Up to 5k psi (350 bar)
80-120 gpm Flows (300-450 l/min)
High Flow Model

WD 1-1/4 Classic Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1500-5k psi 100-350 bar
ROTATION SPEED	150-300 rpm
FLOW	80-120 gpm 300-450 l/min
FLOW RATING	7.6 Cv
PULLING FORCE	130-190 lb 600-850 Nm
INLET CONNECTION	1-1/4 NPT or BSPP
LENGTH	9.1 in. 231 mm
DIAMETER WITH CENT.	4.8 in. 122 mm
NOZZLE PORTS	7 x 1/8 NPT
WEIGHT	11 lb 5.0 kg

WD 1-1/4 CLASSIC

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WD 600 • SERVICE KIT

- (1) BJ 048-F Visc. Fluid, 6oz.
- (1) BJ 062-S Antiseize, 2g
- (1) GP 025-P2SS Hex Socket Plug
- (1) BJ 211 Brass Seat
- (1) BJ 212-0 HP Seal & O-Ring

WD 602 • SEAL KIT

- (1) BJ 211 Brass Seat
- (1) BJ 012-0 HP Seal & O-Ring

WD 610 • OVERHAUL KIT

- (1) BJ 048-F Visc. Fluid, 6oz.
- (2) BJ 010-D Shaft Seals
- (1) BJ 062-S Antiseize, 2g
- (1) BJ 211 Brass Seat
- (1) BJ 012-0 HP Seal & O-Ring
- (2) WG 007 Ball Bearings
- (1) WD 021 Seal
- (1) WG 008 O-Ring
- (1) WG 014 Wave Spring

WG 612 • TOOL KIT

- (1) HC 064 Fill Tube
- (1) BJ 105 Tool

6-18" LINES



WHR MAGNUM

The Warthog WHR Magnum is designed for mid-size pipes and lines, with the proven power and durability of the Magnum line of sewer tools

FEATURES:

- Latest seal technology effectively handles dirty or recycled water
- Optimized speed control mechanism extends maintenance intervals
- Flush style head protects front shaft seals for longer fluid life
- Carbide nozzles generate higher quality jets
- Streamlined design improves forward and reverse movement through pipe
- Hardened steel centralizer fins with 4x longer life
- Independently replaceable fins can be easily replaced as wear occurs without opening tool body

WHR MAGNUM

6-18" Lines (152-457 mm)

Up to 8k psi (550 bar)

14-50 gpm Flows (60-190 l/min)

Two Inlet Options Available

WHR Magnum Specifications

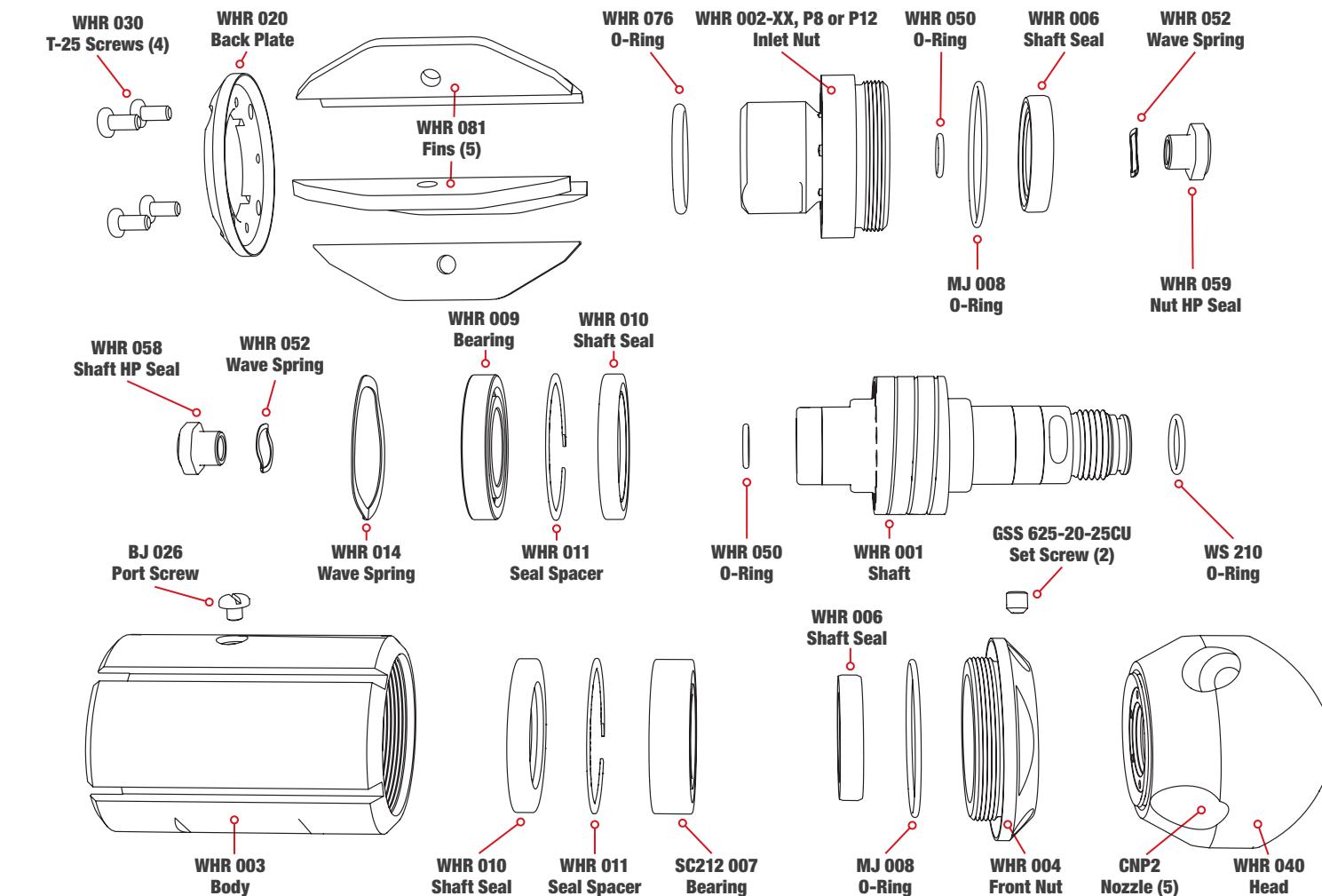
MAXIMUM PRESSURE	8k psi 550 bar
OPERATING PRESSURE	1500-8k psi 100-550 bar
ROTATION SPEED	150-400 rpm
FLOW	14-50 gpm 60-190 l/min
FLOW RATING	2.6 Cv
PULLING FORCE	30-90 lb 13-41 kg
INLET CONNECTION	1/2 NPT or BSPP, 3/4 NPT or BSPP
NOZZLE PORTS	5 x 1/8 NPT
TOOL DIAMETER INCL. CENT.	3.625 in. 92 mm
LENGTH	7.25 in. 184 mm
WEIGHT	6.75 lb 3 kg

TECH TIP: SWITCHER HEAD

If you own a **WHR MAGNUM**, the head can be replaced with the **SWITCHER** heads:
WHR 040-RXX-SWT or
WHR 042-RXX-SWT (Hybrid) to expand usage.

WHR MAGNUM

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WHR 600 • SERVICE KIT

- (1) BJ 048-M Visc Fluid, 6oz
- (1) BJ 062-S Antiseize, 2g
- (1) GP 049 Grease Syringe
- (2) GSS 625-20-25CU Set Screw
- (2) MJ 008 Nut O-Ring
- (1) SC212 007 Front Bearing
- (2) WHR 006 Outer Shaft Seal
- (1) WHR 009 Rear Bearing
- (2) WHR 010 Inner Shaft Seal
- (2) WHR 050 O-Ring
- (1) WHR 076 Weep Seal O-Ring
- (4) WHR 030 Torx Screws
- (1) WS 210 O-Ring

WHR 602 • HP SEAL KIT

- (1) BJ 062-S Antiseize, 2g
- (2) WHR 050 O-Ring
- (2) WHR 052 HP Wave Spring
- (1) WHR 058 HP Shaft Seal
- (1) WHR 059 HP Nut Seal
- (2) WHR 050 O-Ring
- (2) WHR 052 HP Wave Spring
- (1) WHR 058 HP Shaft Seal
- (1) WHR 059 HP Nut Seal
- (1) WHR 076 Weep Seal O-Ring
- (1) WS 210 O-Ring
- (1) WGR 180 Torx L-Wrench

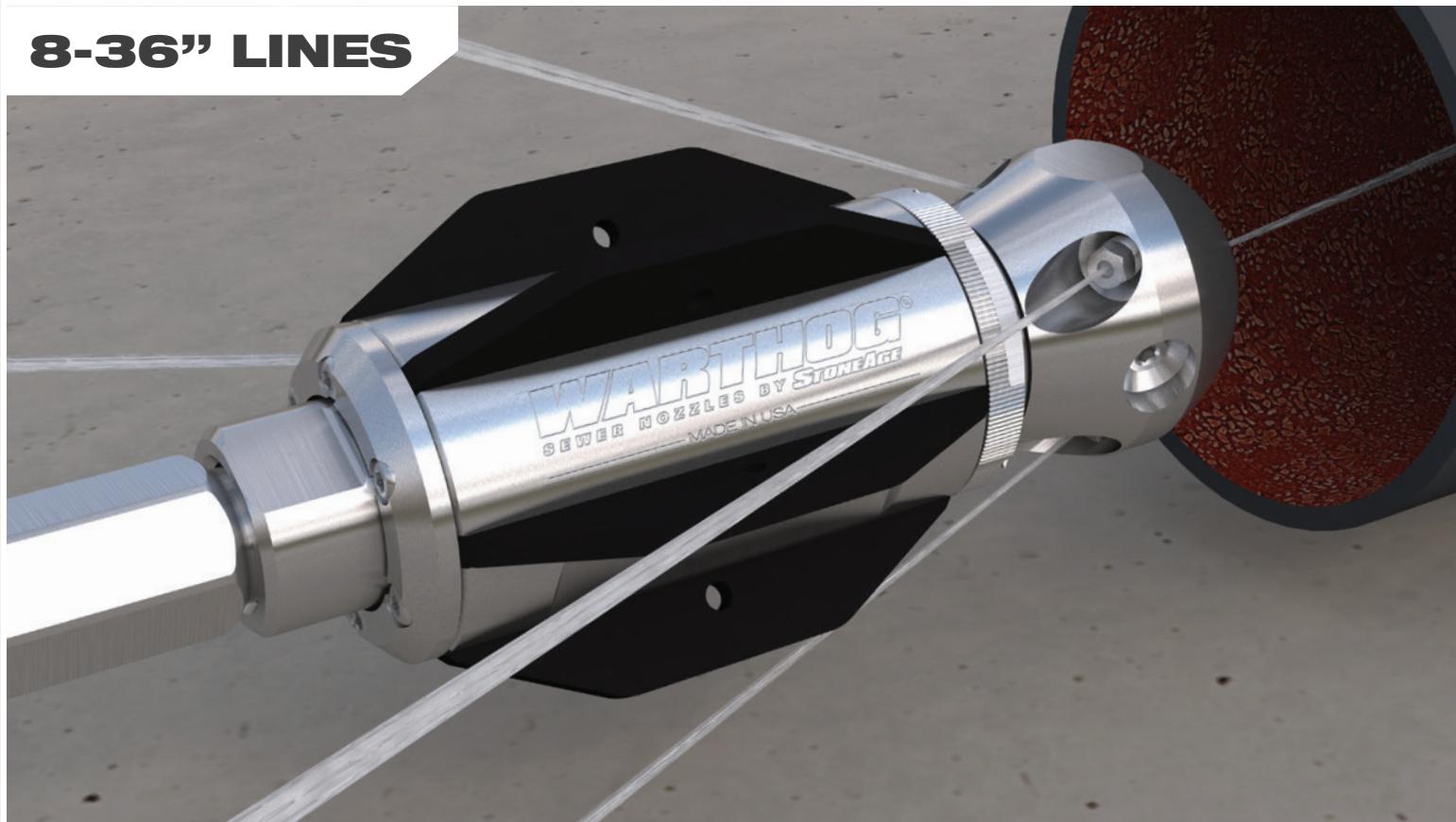
WHR 612 • TOOL KIT

- (1) BA 481 Bearing Removal Tool
- (1) WGR 180 Torx L-Wrench
- (1) WHR 181 Removal Press Tube
- (1) WHR 182 Install Press Tube
- (1) WHR 183 Hex Tool
- (1) WHR 184 HP Seal Install Tool
- (1) WGR 186 HP Seal Puller
- (1) WHR 187 HP Seal Puller Pin

WHR 610 • OVERHAUL KIT

- (2) BJ 026 Port Plug
- (1) BJ 048-M Visc Fluid, 6oz
- (1) BJ 062-S Antiseize, 2g
- (1) WHR 011 Seal Spacer
- (1) GP 025-P2SS Hex Plug
- (1) GP 049 Grease Syringe
- (2) GSS 625-20-25CU Set Screw
- (2) MJ 008 Nut O-Ring
- (1) SC212 007 Front Bearing

8-36" LINES



WGR MAGNUM

The WGR Magnum is the first tool in the Warthog Magnum series, specifically designed for extended tool durability and optimal handling of dirty or recycled water.

FEATURES:

- Optimized speed control extends maintenance intervals
- Effectively handles dirty or recycled water
- Flush style head protects front shaft seals for longer tool life
- Streamlined design keeps tool from catching inside pipe
- Hardened steel centralizer with 4x longer life
- Optional fin sizes for different pipe diameters
- Independently replaceable fins can be easily replaced without opening tool body
- Choose your rotation speed with 3 viscous fluid options

TECH TIP: SWITCHER HEAD

If you own a WGR MAGNUM, the head can be replaced with the SWITCHER head: WHR 040-RXX-SWT to expand usage.

WGR MAGNUM

8-36" Lines (203-914 mm)

Up to 5k psi (350 bar)

50-80 gpm Flows (190-300 l/min)

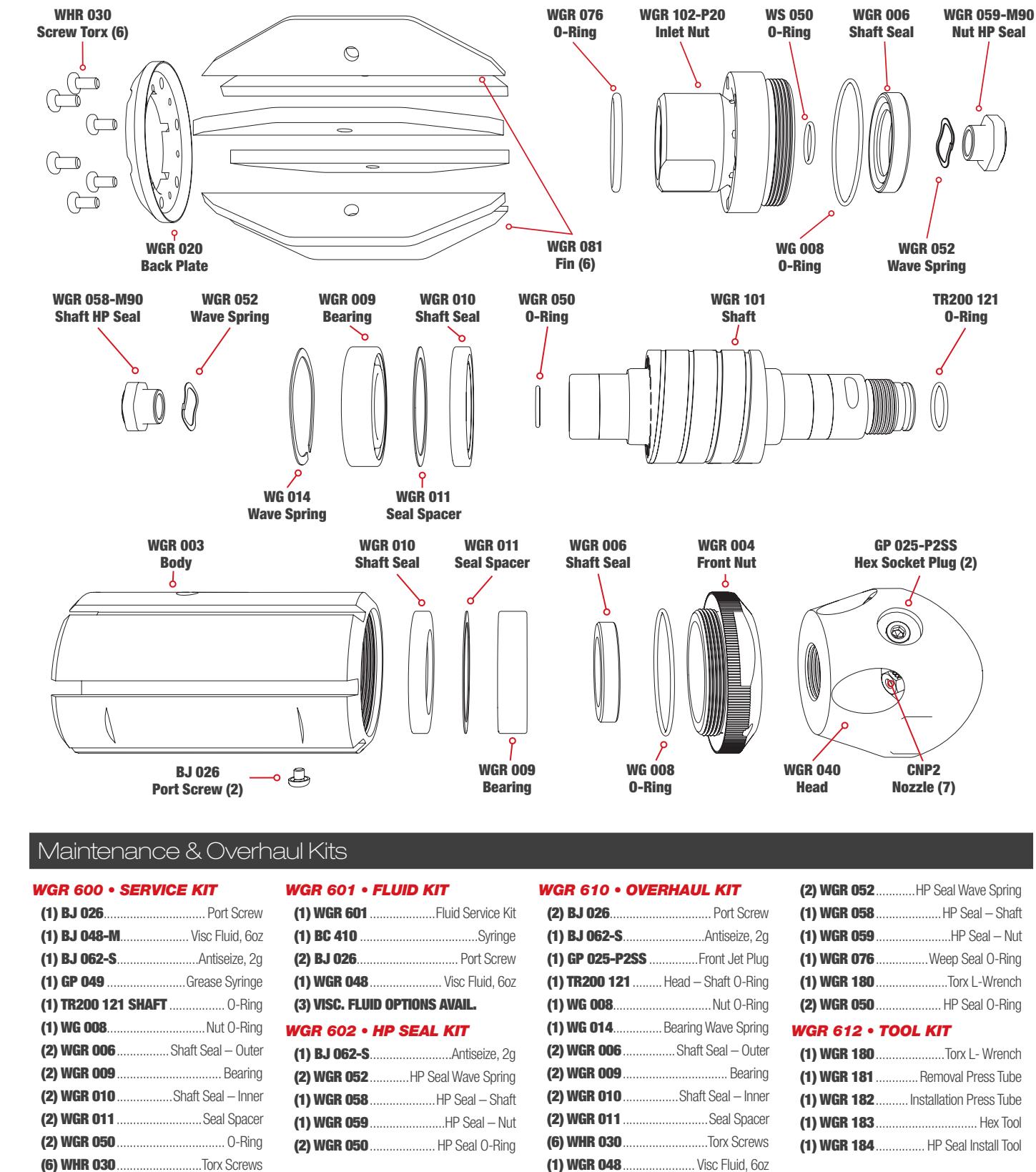
Standard Descaler or
Puller Descaler

WGR Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1500-5k psi 100-350 bar
ROTATION SPEED	150-300 rpm
FLOW	50-80 gpm 190-300 l/min
FLOW RATING	6 Cv
INLET CONNECTION	1 in. NPT or 1in. BSPP
NOZZLE PORTS	7 x 1/8 NPT
DIAMETER	4.5 in. 114 mm
LENGTH	10.25 in. 260 mm
WEIGHT	13 lb 5.9 kg

WGR MAGNUM

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WGR 600 • SERVICE KIT

- (1) BJ 026.....Port Screw
(1) BJ 048-M.....Visc Fluid, 6oz
(1) BJ 062-S.....Antiseize, 2g
(1) GP 049.....Grease Syringe
(1) TR200 121 SHAFT.....O-Ring
(1) WG 008.....Nut O-Ring
(2) WGR 006.....Shaft Seal – Outer
(2) WGR 009.....Bearing
(2) WGR 010.....Shaft Seal – Inner
(2) WGR 011.....Seal Spacer
(2) WGR 050.....O-Ring
(6) WHR 030.....Torx Screws

WGR 601 • FLUID KIT

- (1) WGR 601.....Fluid Service Kit
(1) BC 410Syringe
(2) BJ 026.....Port Screw
(1) WGR 048.....Visc Fluid, 6oz
(3) VISC. FLUID OPTIONS AVAIL.

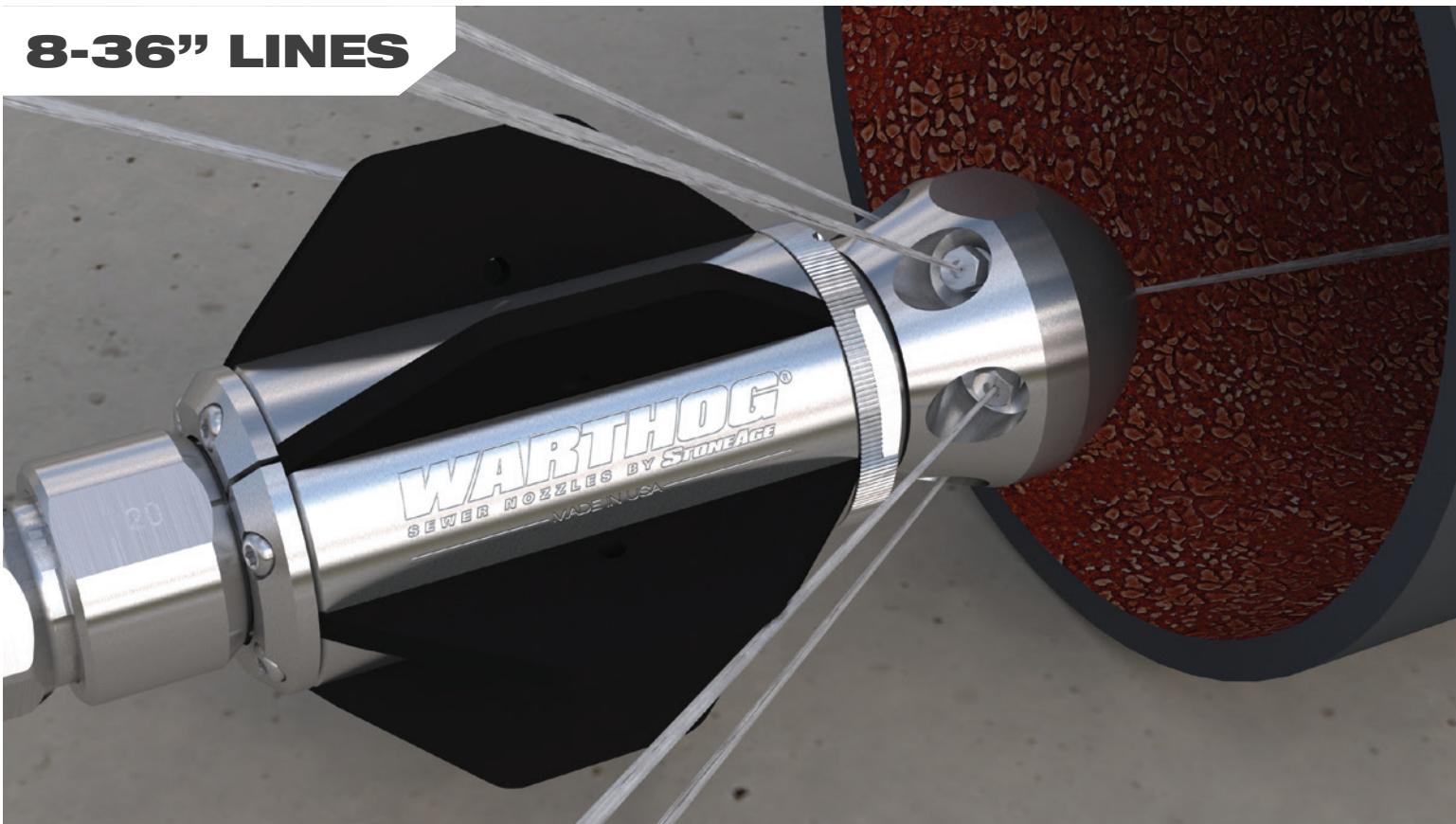
WGR 602 • HP SEAL KIT

- (1) BJ 062-S.....Antiseize, 2g
(2) WGR 052.....HP Seal Wave Spring
(1) WGR 058.....HP Seal – Shaft
(1) WGR 076.....Weep Seal O-Ring
(1) WGR 180.....Torx L-Wrench
(2) WGR 050.....HP Seal O-Ring

WGR 610 • OVERHAUL KIT

- (2) BJ 026.....Port Screw
(1) WGR 058.....HP Seal – Shaft
(1) WGR 059.....HP Seal – Nut
(1) WGR 180.....Torx L-Wrench
(1) WGR 181.....Removal Press Tube
(1) WGR 182.....Installation Press Tube
(1) WGR 183.....Hex Tool
(1) WGR 184.....HP Seal Install Tool

8-36" LINES



WGR-1-1/4 MAGNUM

The WGR-1-1/4 Magnum is specifically designed for higher water flow, extended tool durability, and optimal handling of dirty or recycled water.

FEATURES:

- Optimized speed control extends maintenance intervals
- Latest seal technology effectively handles dirty or recycled water for improved performance
- Flush style head protects front shaft seals for longer tool life
- Streamlined design keeps tool from catching inside pipe
- Carbide nozzles generate higher quality jets
- Descaling ports now come standard
- Hardened steel centralizer with 4x longer life
- Optional fin sizes for different pipe diameters
- Independently replaceable fins can be easily replaced as wear occurs without opening tool body
- Choose your rotation speed with 3 viscous fluid options

WGR-1-1/4 MAGNUM

8-36" Lines (203-914 mm)

Up to 5k psi (350 bar)

80-120 gpm Flows (300-455 l/min)

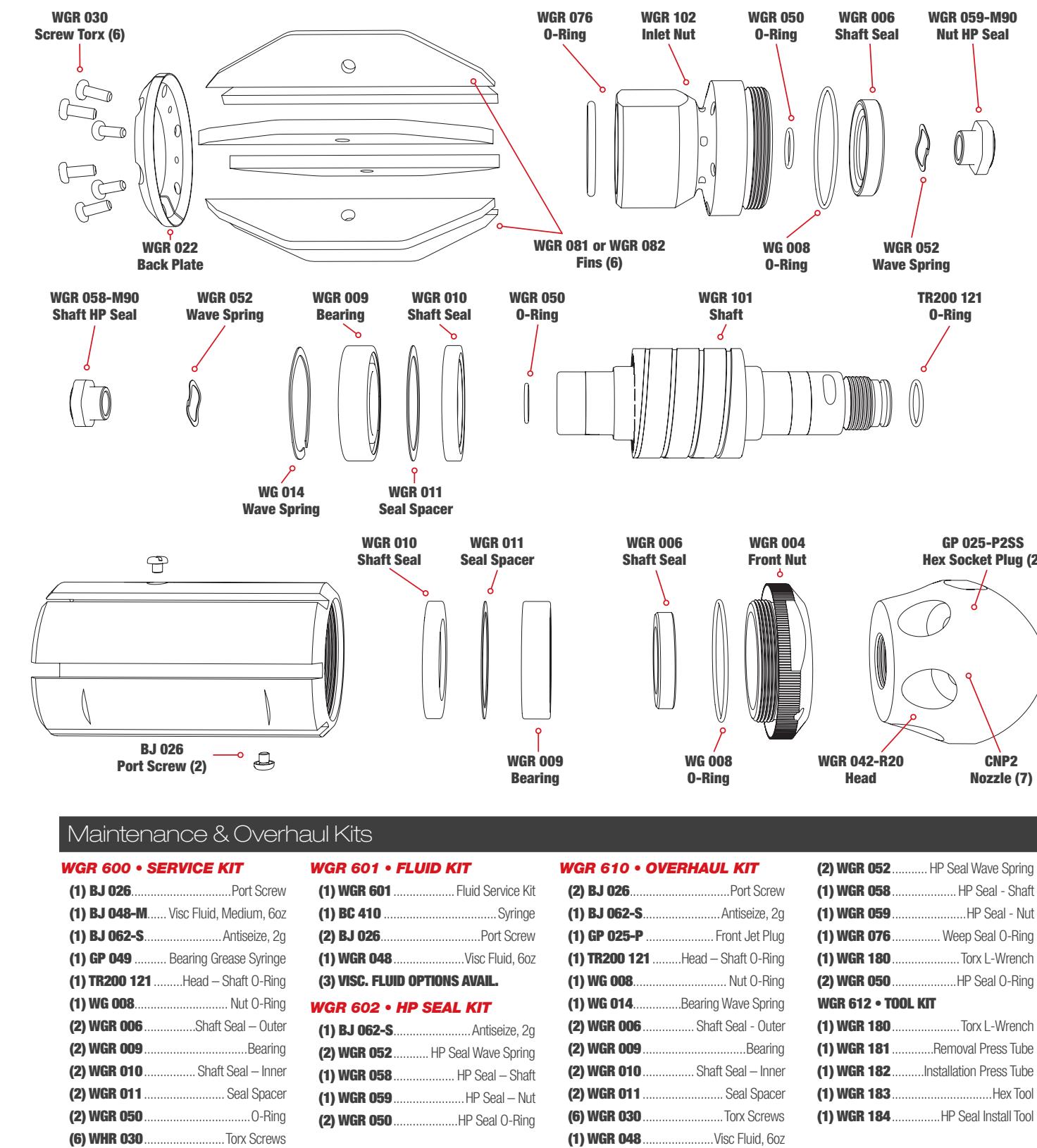
9 Port Head Comes Standard
with Descaling Jets

WGR Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1500-5k psi 100-350 bar
ROTATION SPEED	150-300 rpm
FLOW	80-120 gpm (300-455 l/min)
FLOW RATING	6 Cv
INLET CONNECTION	1.25 in NPT / BSPP
NOZZLE PORTS	9 x 1/8 NPT
DIAMETER	5.75 in. 146 mm
LENGTH	10.25 in. 260 mm
WEIGHT	13 lb 5.9 kg

WGR-1-1/4 MAGNUM

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WGR 600 • SERVICE KIT

- (1) BJ 026Port Screw
(1) BJ 048-MVisc Fluid, Medium, 6oz
(1) BJ 062-SAntiseize, 2g
(1) GP 049Bearing Grease Syringe
(1) TR200 121Head – Shaft O-Ring
(1) WG 008Nut O-Ring
(2) WGR 006Shaft Seal – Outer
(2) WGR 009Bearing
(2) WGR 010Shaft Seal – Inner
(2) WGR 011Seal Spacer
(2) WGR 050O-Ring
(6) WGR 030Torx Screws

WGR 601 • FLUID KIT

- (1) WGR 601Fluid Service Kit
(1) BC 410Syringe
(2) BJ 026Port Screw
(1) WGR 048Visc Fluid, 6oz
(3) VISC. FLUID OPTIONS AVAIL.

WGR 602 • HP SEAL KIT

- (1) BJ 062-SAntiseize, 2g
(2) WGR 052HP Seal Wave Spring
(1) WGR 058HP Seal – Shaft
(2) WGR 010Shaft Seal – Inner
(1) WGR 059HP Seal – Nut
(2) WGR 050HP Seal O-Ring

WGR 610 • OVERHAUL KIT

- (2) WGR 052HP Seal Wave Spring
(1) WGR 058HP Seal – Shaft
(1) WGR 059HP Seal – Nut
(1) WGR 076Weep Seal O-Ring
(1) WGR 180Torx L-Wrench
(2) WGR 050HP Seal O-Ring
WGR 612 • TOOL KIT
(1) WGR 180Torx L-Wrench
(1) WGR 181Removal Press Tube
(1) WGR 182Installation Press Tube
(1) WGR 183Hex Tool
(1) WGR 184HP Seal Install Tool

SWITCHER™

“For me, it’s the versatility. It has the ability to cut roots in cleaning mode without blowing up the houses. It’s also very important that it climbs hills very effectively – which it does.

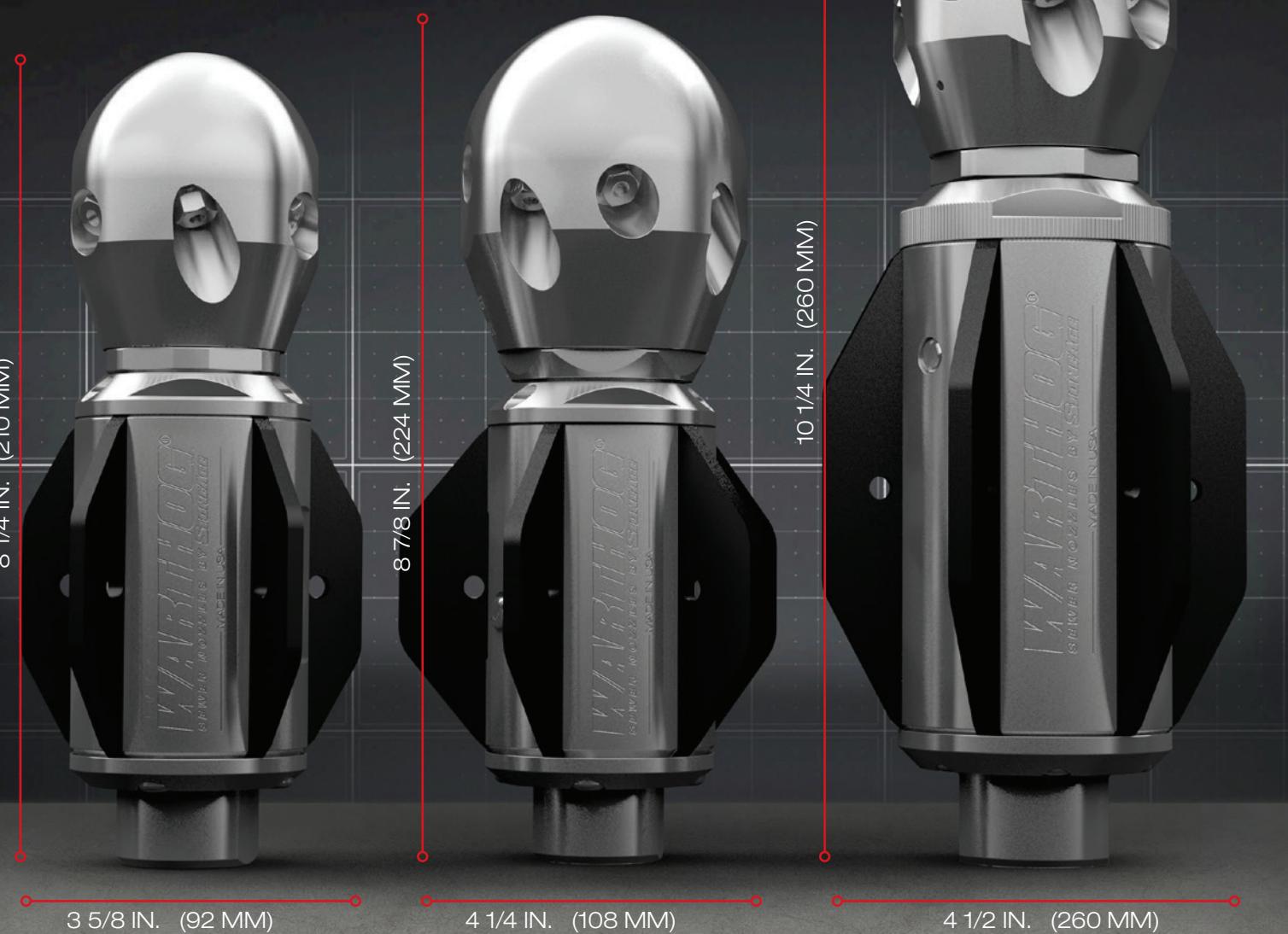
It’s revolutionary. There is no other product in the market today that will switch like that.”

JASON DEMARTINI
VALLEJO SANITATION

- GET JOBS DONE IN LESS TIME, WITH LESS WATER AND HALF THE RUNS
- CLIMBS HILLS & EFFECTIVELY PULLS UPSTREAM
- ELIMINATES THE NEED TO CHANGE HEADS

WHR SWITCHER

For cleaning 6-18" (152-457mm) sewer lines.



NEW! WHR-HYBRID SWITCHER

For cleaning 6-36" (152-914mm) sewer lines.

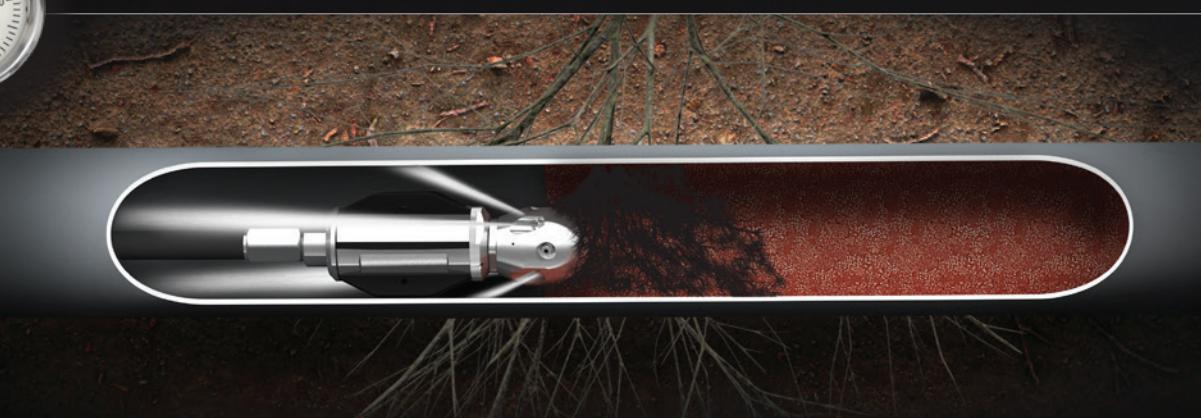
WGR SWITCHER

For cleaning 8-36" (203-914mm) sewer lines.

OPERATOR CAN REMOTELY SWITCH BETWEEN PULLING AND CLEANING WITH THE NOZZLE IN THE PIPE.



Use full pulling thrust to climb inclines and go upstream to problem area.



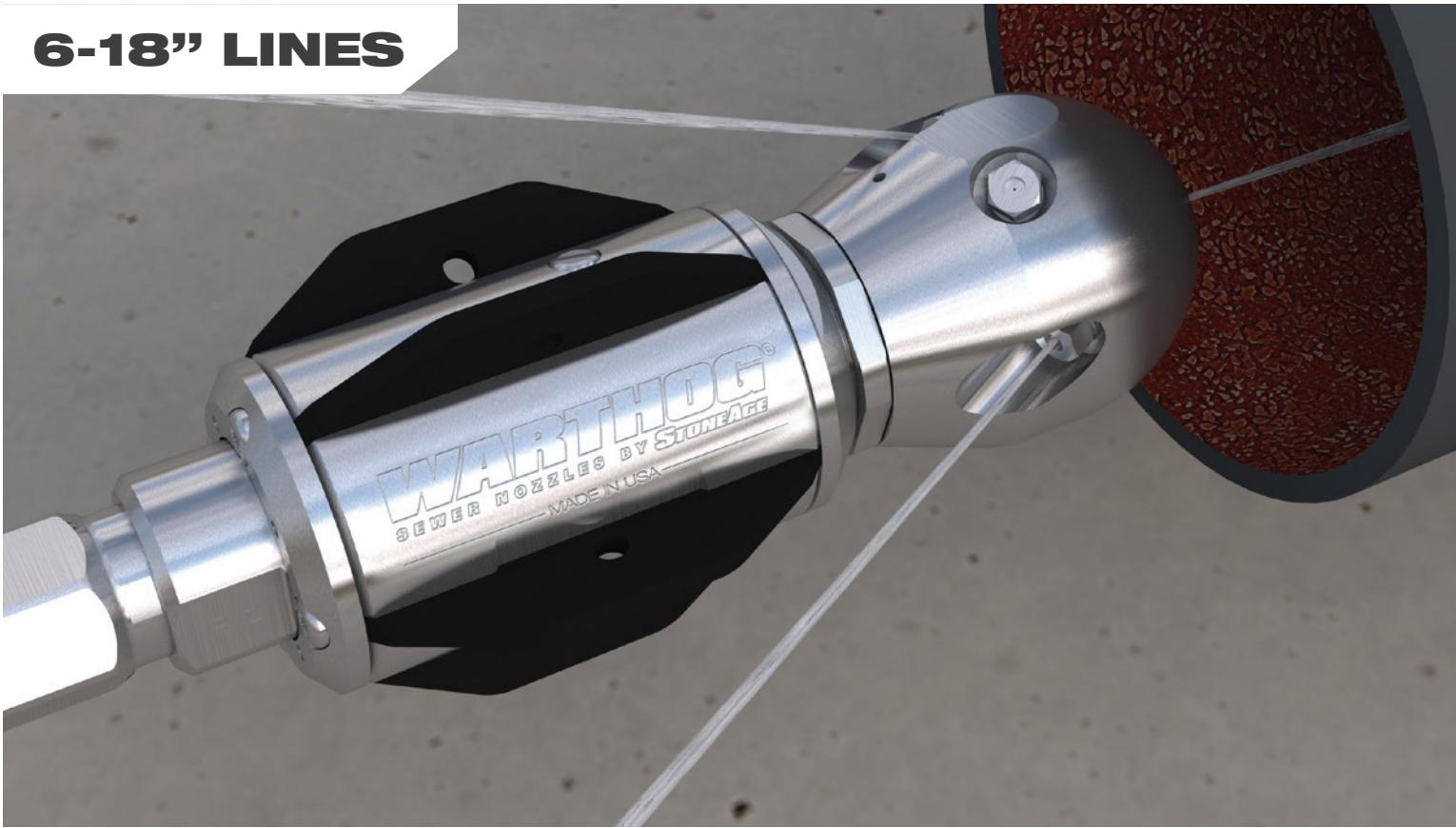
Idle the pump down to “switch” jets to cleaning mode.



Bring the pump back to pressure to begin cleaning/cutting mode.



6-18" LINES



WHR SWITCHER

The new WHR Switcher is two tools in one. Switch between pulling or cleaning without removing the nozzle from the pipe. When the pump is idled down and brought back to pressure the tool will switch the water flow between two different sets of jets.

FEATURES:

- Eliminates extra runs needed to swap nozzles – saving water and time
- Run more jobs with one tank of water
- Switch to pulling jets for maximum thrust. Excellent for longer runs, climbing hills, going against the flow and flushing large amounts of material
- Switch to cleaning jets to maximize power for cutting roots and clearing debris, all with out affecting the houses

OUR CUSTOMERS SUCCEED

"I used the Switcher non-stop every day, 8 hours a day, and didn't have one problem with it. I've been waiting for something like this."

JASON DEMARTINI - VALLEJO SANITATION

WHR SWITCHER

6-18" Lines (152-457 mm)

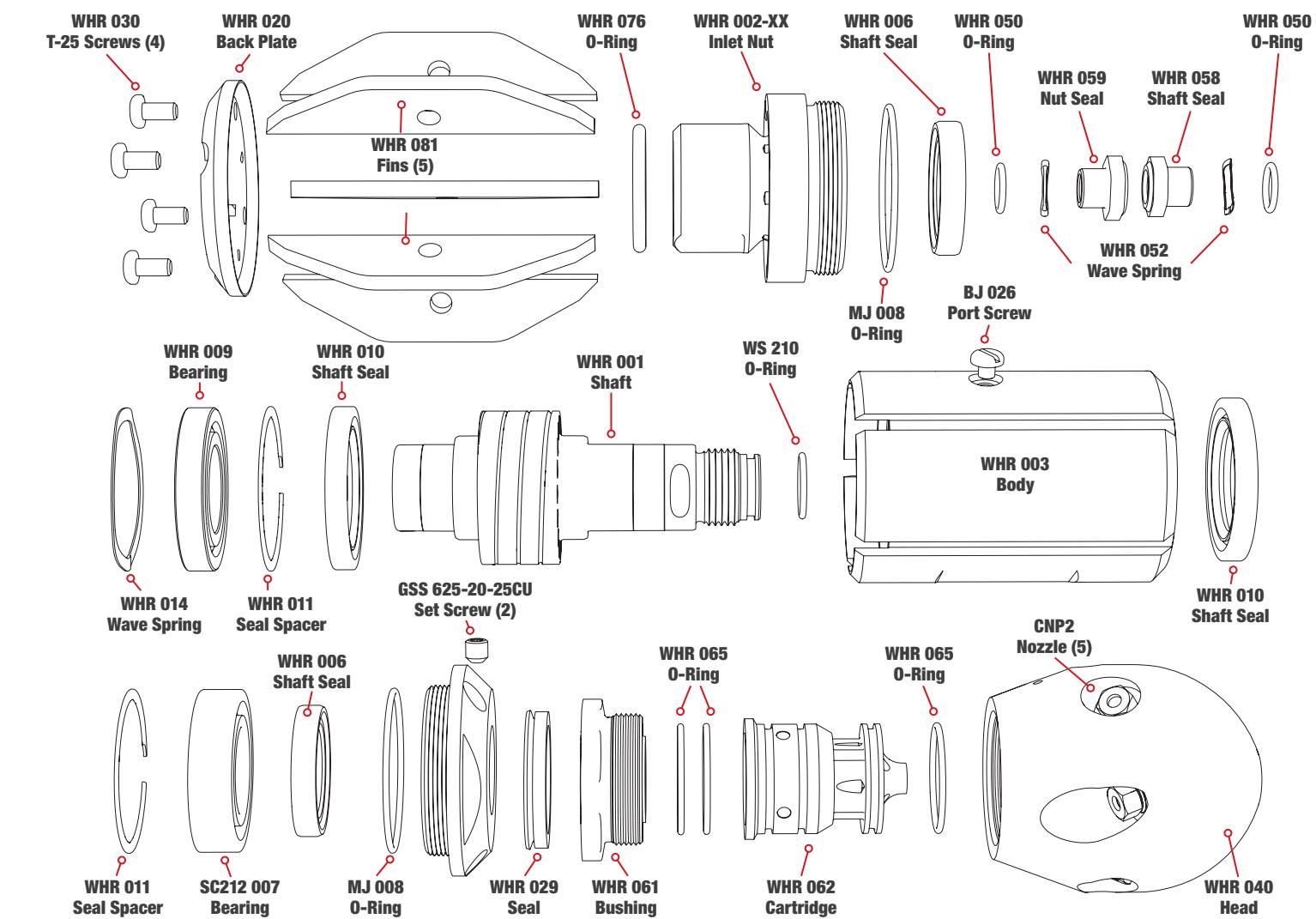
Up to 5k psi (350 bar)
14-30 gpm Flows (60-114 l/min)
Two Inlet Options Available

WHR Magnum Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1200-5k psi 83-350 bar
ROTATION SPEED	150-400 rpm
FLOW	14-30 gpm 60-114 l/min
FLOW RATING	2.6 Cv
PULLING FORCE	30-90 lb 13-41 kg
INLET CONNECTION	1/2 NPT or BSPP, 3/4 NPT or BSPP
NOZZLE PORTS	5 x 1/8 NPT
TOOL DIAMETER INCL. CENT.	3.625 in. 92 mm
LENGTH	8.26 in. 210 mm
WEIGHT	7.48 lb 3.4 kg

WHR SWITCHER

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WHR 600 • SERVICE KIT

- (1) BJ 048-M Visc Fluid, 6oz
(1) BJ 062-S Antiseize, 2g
(1) GP 049 Grease Syringe
(2) GSS 625-20-25CU Set Screw

- (2) MJ 008 Nut O-Ring
(1) SC212 007 Front Bearing
(2) WHR 006 Outer Shaft Seal

- (1) WHR 009 Rear Bearing
(2) WHR 010 Inner Shaft Seal
(2) WHR 011 Seal Spacer

- (2) WHR 050 O-Ring
(1) WHR 076 Weep Seal O-Ring
(4) WHR 030 Torx Screws
(1) WS 210 O-Ring

- (1) SC212 007 Front Bearing
(1) WHR 058 HP Shaft Seal
(1) WHR 059 HP Nut Seal
(1) WHR 076 Weep Seal O-Ring
(2) GSS 625-20-25CU Set Screw
(2) MJ 008 Nut O-Ring
(1) SC212 007 Front Bearing

WHR 602 • HP SEAL KIT

- (1) BJ 062-S Antiseize, 2g
(2) WHR 050 O-Ring
(2) WHR 052 HP Wave Spring

- (1) WHR 058 HP Shaft Seal
(1) WHR 059 HP Nut Seal
(1) WHR 076 Weep Seal O-Ring
(1) WS 210 O-Ring
(1) WGR 180 Torx L-Wrench

- (2) WHR 050 O-Ring
(2) WHR 052 HP Wave Spring
(1) WHR 058 HP Shaft Seal
(1) WHR 059 HP Nut Seal
(1) WHR 076 Weep Seal O-Ring
(1) WS 210 O-Ring
(1) WGR 180 Torx L-Wrench

WHR 612 • TOOL KIT

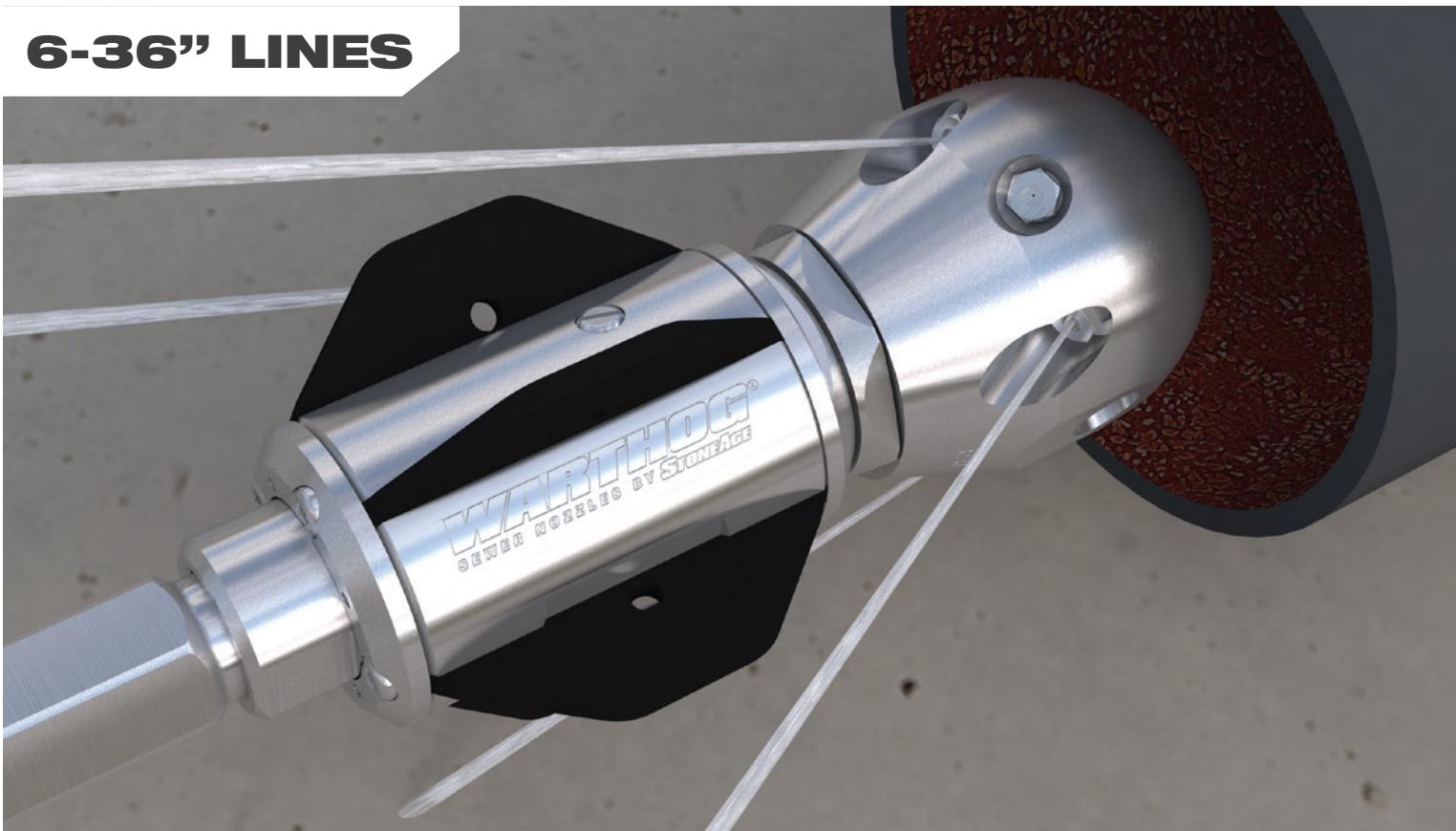
- (1) BA 481 Bearing Removal Tool
(1) WGR 180 Torx L-Wrench

- (1) WGR 181 Removal Press Tube
(1) WGR 181 Removal Press Tube
(1) WGR 182 Install Press Tube

- (1) WGR 182 Hex Tool
(1) WGR 183 Hex Tool
(1) WGR 184 HP Seal Install Tool

- (1) WGR 186 HP Seal Puller
(1) WGR 187 HP Seal Puller Pin

6-36" LINES



NEW! WHR-HYBRID SWITCHER

Our latest addition to the product line, the WHR Hybrid Switcher, provides greater pulling force for use in uphill jetting applications. This is a specialized tool oriented toward users with 3000 psi/50 gpm (207 bar/190 l/min) pumps using 1" (305 mm) hose to clean 6" (1830 mm) pipes in hilly terrain.

FEATURES:

- Replaces the need for two separate nozzles
- Increases production – Removes More Debris
- Better efficiencies – Adjust water flow per operating mode
- Jet angles optimized for better cleaning and trust
- Easy Maintenance – Can be repaired anywhere with SAE Tools
- 1,200 to 5,000 (83-350 bar) operating pressures for a wide range of applications

WHR HYBRID SWITCHER

6-18" Lines (152-457 mm)

Up to 5k psi (350 bar)

30-50 gpm Flows (115-190 l/min)

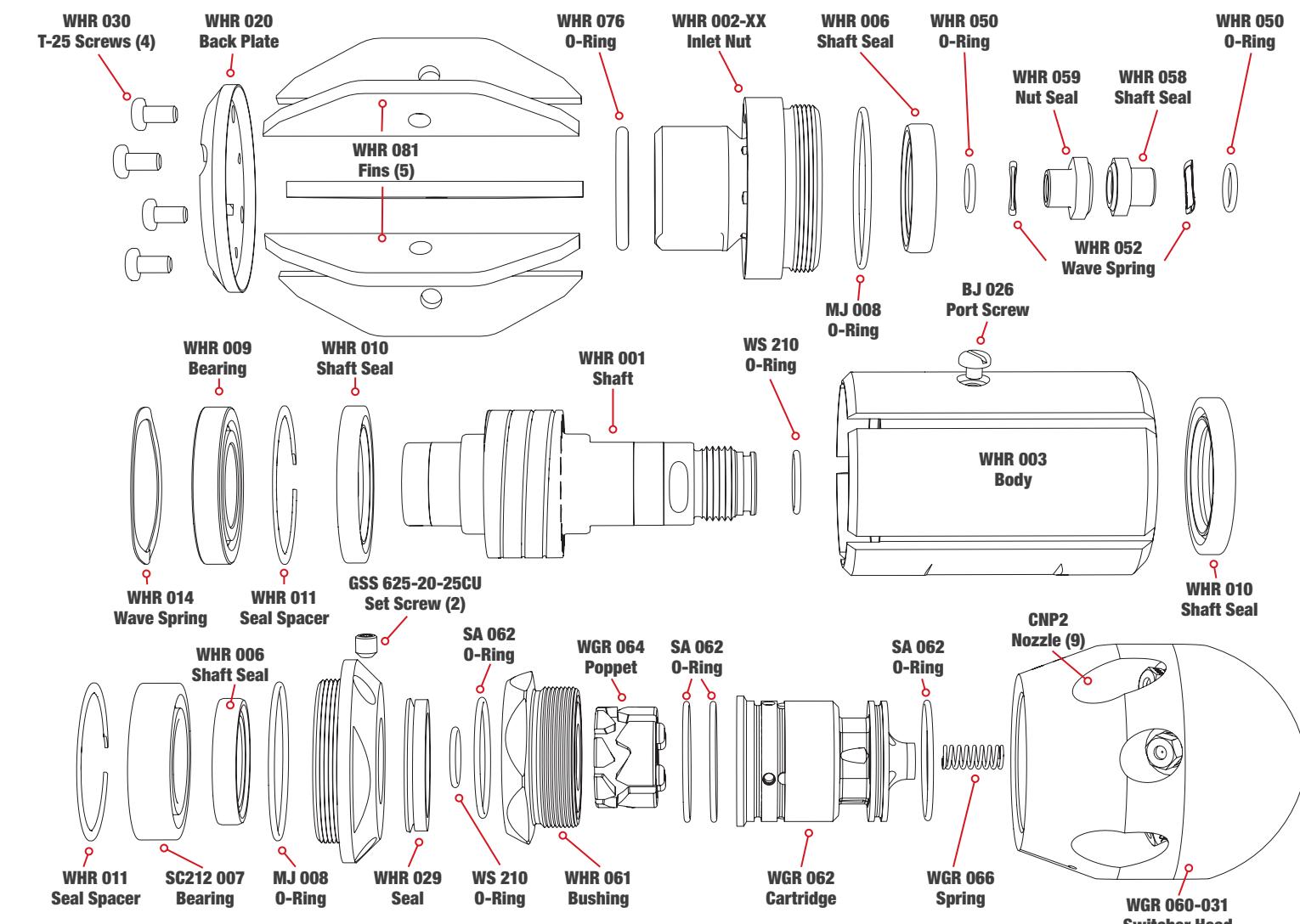
Our Latest Warthog Tool

WHR Hybrid Switcher Specifications

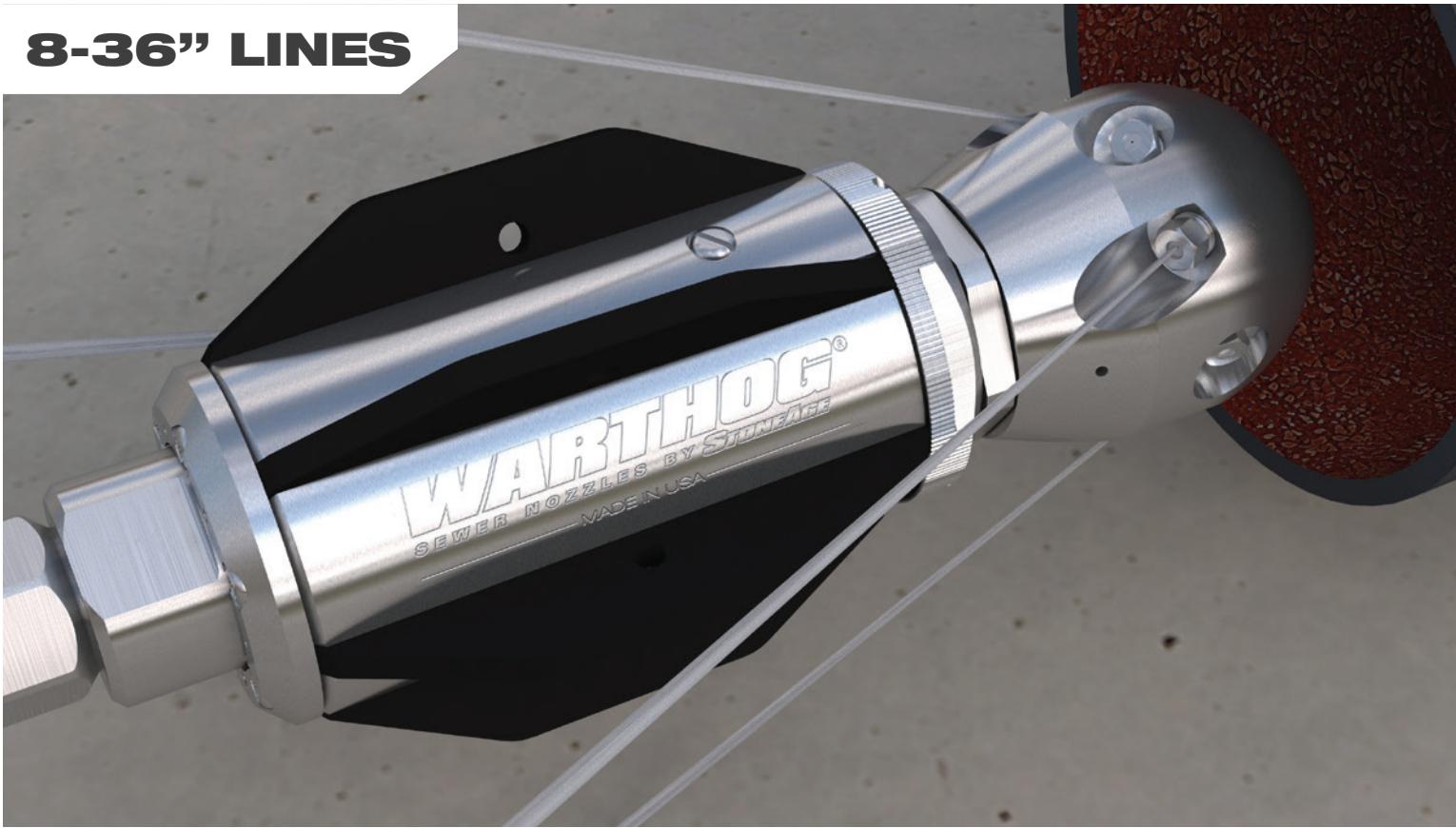
MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1200-5k psi 83-350 bar
ROTATION SPEED	150-400 rpm
FLOW	30-50 gpm 115-190 l/min
FLOW RATING	2.0 Cv
PULLING FORCE	15-90 lb 7-41 kg
INLET CONNECTION	3/4 NPT or BSPP
NOZZLE PORTS	8 x 1/8 NPT
TOOL DIAMETER INCL. CENT.	4.25 in 108 mm
LENGTH	8.8 in. 233 mm
WEIGHT	9.05 lb 4.1 kg

WHR SWITCHER

EXPLODED VIEW - PART NAMES AND NUMBERS



8-36" LINES



WGR SWITCHER

The new WGR Switcher is two tools in one. Switch between pulling or cleaning without removing the nozzle from the pipe. When the pump is idled down and brought back to pressure the tool will switch the water flow between two different sets of jets.

FEATURES:

- Eliminates extra runs needed to swap nozzles – saving water and time
- Run more jobs with one tank of water
- Switch to pulling jets for maximum thrust. Excellent for longer runs, climbing hills, going against the flow and flushing large amounts of material
- Switch to cleaning jets to maximize power for cutting roots and clearing debris, all with out affecting the houses

OUR CUSTOMERS SUCCEED

"We can now use the same nozzle in either cutting or flushing mode. We're very close to 50% faster with 35% less water usage when using the Switcher vs a rotational/fixed nozzle combination."

JASON DEMARTINI – VALLEJO SANITATION

WGR SWITCHER

8"-36" in. Lines (203-914 mm)

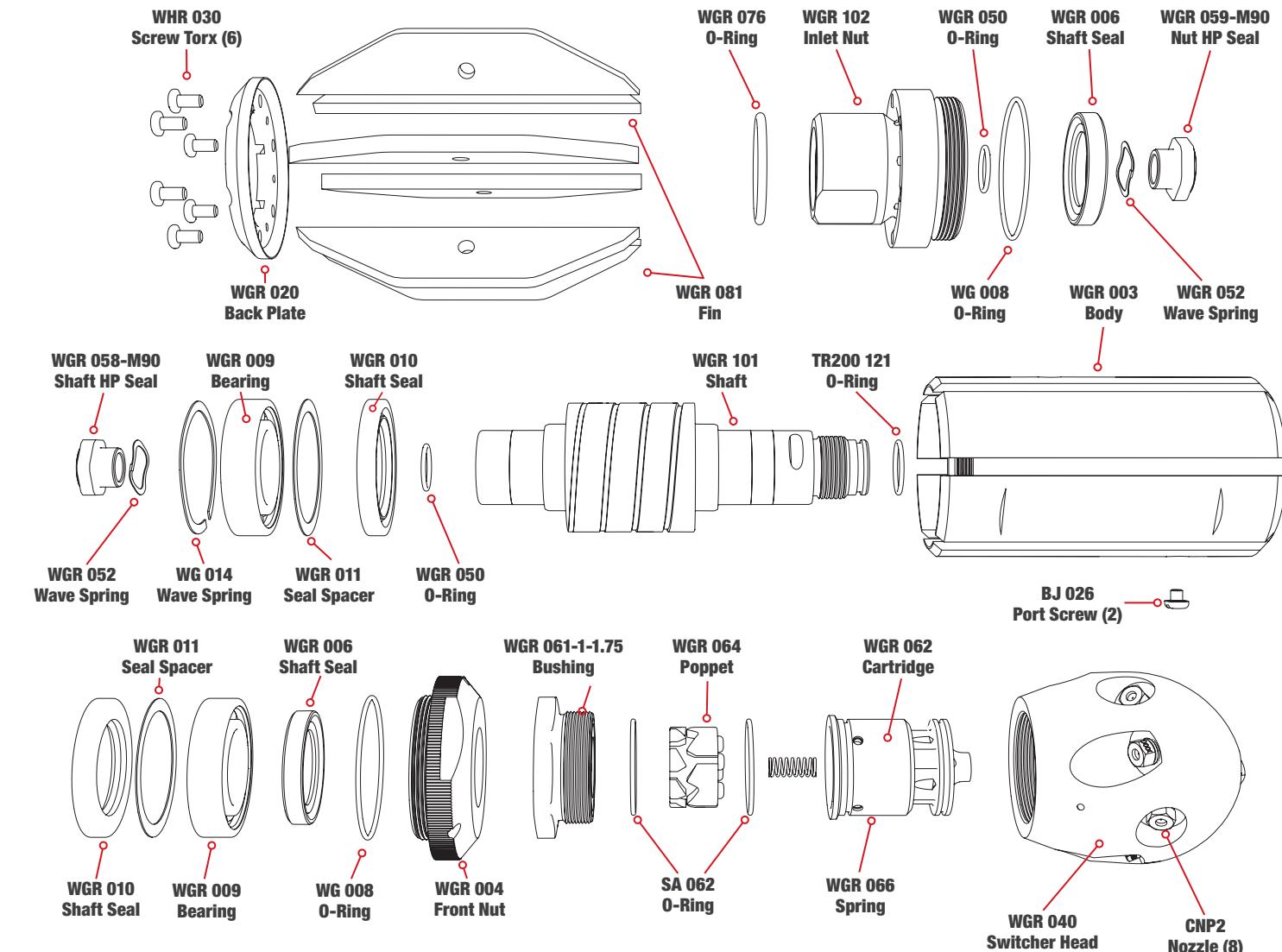
Up to 8k psi (550 bar)
50-80 gpm Flows (190-300 l/min)
Two Inlet Options Available

WGR Switcher Specifications

MAXIMUM PRESSURE	5k psi 350 bar
OPERATING PRESSURE	1500-5k psi 100-350 bar
ROTATION SPEED	150-300 rpm
FLOW	50-80 gpm 190-300 l/min
FLOW RATING	6 Cv
INLET CONNECTION	1 in. NPT or 1in. BSPP
NOZZLE PORTS	7 x 1/8 NPT
DIAMETER	4.5 in. 114 mm
LENGTH	10.25 in. 260 mm
WEIGHT	13 lb 5.9 kg

WGR SWITCHER

EXPLODED VIEW - PART NAMES AND NUMBERS



Maintenance & Overhaul Kits

WGR 600 • SERVICE KIT

- (1) BJ 026Port Screw
(1) BJ 048-MVisc Fluid, 6oz
(1) BJ 062-SAntiseize, 2g
(1) GP 049Grease Syringe
(1) TR200 121Shaft O-Ring
(1) WG 008Nut O-Ring
(2) WGR 006Shaft Seal – Outer
(2) WGR 009Bearing
(2) WGR 010Shaft Seal – Inner
(2) WGR 011Seal Spacer
(2) WGR 050O-Ring
(6) WHR 030Torx Screws

WGR 601 • FLUID KIT

- (1) WGR 601Fluid Service Kit
(1) BC 410Syringe
(2) BJ 026Port Screw
(1) WGR 048Visc Fluid, 6oz
(3) VISC. FLUID OPTIONS AVAIL.

WGR 602 • HP SEAL KIT

- (1) BJ 062-SAntiseize, 2g
(2) WGR 006Shaft Seal – Outer
(2) WGR 052HP Seal Wave Spring
(2) WGR 009Bearing
(1) WGR 058HP Seal – Shaft
(1) WGR 059HP Seal – Nut
(2) WGR 010Shaft Seal – Inner
(2) WGR 011Seal Spacer
(6) WHR 030Torx Screws
(1) BJ 048-MVisc Fluid, 6oz

WGR 610 • OVERHAUL KIT

- (2) WGR 052HP Seal Wave Spring
(1) WGR 058HP Seal – Shaft
(1) WGR 059HP Seal – Nut
(1) WGR 076Weep Seal O-Ring
(1) WGR 180Torx L-Wrench
(2) WGR 050HP Seal O-Ring
- WGR 612 • TOOL KIT**
- (1) WGR 180Torx L-Wrench
(1) WGR 181Removal Press Tube
(1) WGR 182Installation Press Tube
(1) WGR 183Hex Tool
(1) WGR 184HP Seal Install Tool

SINGLE, DOUBLE OR TRIPLE JETS — FOR PRECISE & ACCURATE SOIL REMOVAL



HX-101

Single Head Assembly
• OCIH Carbide (1)

HX-102

Double Head Assembly
• AP2 Attack Tips (2)

HX-103S

Triple Head Assembly
• AP2 Attack Tips (3)

HYDRO-X

Utilizes replaceable 1/8" npt AP2 Attack Tip nozzles (HX-102/103 models) or a single OCIH 1/4" npt carbide nozzle (HX-101). Using a single nozzle channels all of your pumps power in one direction for the most digging power. Whereas the in-line 2 and 3 patterns give operators the ability to jet with a wider spray pattern to trench material faster.

FEATURES:

- Each head has a 1/2" npt inlet connection to attach to the operating wand.
- The included high-visibility urethane guard is replaceable with three bolts.

HYDRO-X

Up to 5k psi (350 bar)

3-12 gpm Flows (9-58 l/min)

3 Jet Patterns Available

Hydro-X Specifications

PRESSURE RANGE	Up to 5k psi 350 bar
FLOW RANGE	2c15 gpm 11-57 l/min
INLET CONNECTION	1/2 NPT
NOZZLES	1 x OCIH Carbide, 2 or 3 AP2 Attack Tip
WEIGHT	1.1 lb 0.5 kg



6 OR 8-WHEEL ADJUSTABLE CENTRALIZERS

WG 286-M-P16 – STRAIGHT PIPES
13"-36" diameters (330-915 mm)

WG 288-S-P16 - PIPES W/BENDS
16.5"-22" diameters (420-560 mm)



POLY-FIN CENTRALIZERS

WG 070

Available in 6", 8", 10" & 12" interchangeable skid sizes.
(152 mm, 203 mm, 254 mm & 305 mm)



SUPER CENTRALIZERS

WS 085 – 4.5" DIAMETER

For 5" (127 mm) minimum pipe ID

WH 085 – 5.5" DIAMETER

For 6" (152 mm) minimum pipe ID

WG-085 – 7" DIAMETER

For 8" (203 mm) minimum pipe ID



MANHOLE CLEANERS

TURN YOUR WARTHOG PIPE CLEANING TOOL INTO AN EFFECTIVE MANHOLE CLEANER

The benefit of using this design is that the jets are directed at the manhole walls at all times which makes it much more effective and safer than 3D tools. The conversion is simple and requires exchanging the standard WG 040 head with our Manhole Cleaner head kits. The head conversion kits include a head with 1/2" extension arms and nozzles. Call our Customer Service team for kit options. We recommend the use of manhole cover plates for increased safety.

CUSTOMER SERVICE

1-866-795-1586 (TOLL FREE IN THE U.S.)

OUTSIDE THE US: 970-259-2869 • SALES@STONEAGETOOLS.COM
HOURS: 8:00 AM - 5:00 PM MONDAY - FRIDAY (USA MOUNTAIN TIME)

TECHNICAL SUPPORT

For Technical Support in North America, please contact StoneAge. Outside of North America, please visit our website at www.stoneagetoools.com.

MANUALS

Operator's manuals and repair videos for all equipment are available online. They illustrate tools, identify parts, and detail maintenance and overhaul procedures.

REPAIRS

Repair & Maintenance Service is available by the same technicians who build and test our tools. We try to complete repairs and test every tool within three days of receipt. You must call StoneAge for an RMA number prior to sending your tool in for repair.

Send tool to:

StoneAge Inc. Attention Repairs, 466 S. Skylane Dr., Durango CO 81303, USA

Serial Number Database is maintained on all equipment sold. If a serial number is provided when ordering parts, we can verify that the right parts are specified.

LEAD TIME

Parts and Service Kits are available to ship same day as ordered. Standard tools can usually be shipped the next day. Custom porting of heads usually requires 3-4 days to schedule through the factory. More complicated systems like Lancing Machines are built when ordered, which can take several weeks depending on factory backlog. Check availability and place orders early enough to avoid scheduling conflicts.

ORDERING

Call or email your order to StoneAge or an authorized dealer with purchase order number, shipping and billing addresses, and delivery date. Check datasheet to ensure specifications are complete. Advise whether we should hold shipment until all items are available.

SHIPPING

Shipping is pre-paid and invoiced with order but may be charged directly to the customer's account with selected courier by special instruction. Most orders are shipped via UPS or Fed Ex couriers; specify a preference if you wish. Larger equipment will be shipped by truck or air freight. Either party may make the arrangements. Airline counter-to-counter delivery is not reliable from our mountain location.

PAYMENT

Major credit cards or bank transfers are accepted. Pre-payment is required to ship custom equipment.

RETURNS

Any parts returned for credit or warranty must be accompanied by a StoneAge RMA number. Please contact a Customer Service Specialist or Authorized Dealer to obtain an RMA number. A minimum restocking fee of 15% applies to standard items returned unused. Returns will only be accepted on unused items returned 6 months or less from invoice date. All returns and restocking fees are subject to StoneAge final decision. Returns of custom products and obsolete items are not accepted.

⚠ WARNING ⚠

Operations with waterblast equipment can be potentially hazardous. Caution MUST be exercised prior to and during machine and water jet tool use.

Please read and follow all of these instructions, in addition to the guidelines in the WJTA Recommended Practices handbook, available online at www.wjta.org. Deviating from safety instructions and recommended practices can lead to severe injury and/or death.

- Do not exceed the maximum operating pressure specified for any component in a system.
- Refer to individual tool manuals for proper and safe operation, maintenance and assembly.
- The immediate work area MUST be marked off to keep out untrained persons.
- Inspect the equipment for visible signs of deterioration, damage, and improper assembly. Do not operate if damaged, until repaired.
- Make sure all threaded connections are tight and free of leaks.
- Always de-energize the system before opening a door to service or replace any parts. Failure to do so can result in severe injury and/or death.

Pre-Run Safety Check

Install mechanical stops, stingers and back out preventers as appropriate when doing any tube, pipe or vessel cleaning. See the WJTA-IMCA's Recommended Practices for the use of high-pressure water jetting equipment and/or the water jetting association's, WJA Code of Practice for additional safety information.

- Complete a job specific risk assessment and act on the resulting actions.
- Adhere to all site specific safety procedures.
- Ensure the waterblasting zone is properly barricaded and that warning signs are posted.
- Ensure the work place is free of unnecessary objects (e.g. loose parts, hoses, tools).
- Ensure all Operators are using the correct Personal Protective Equipment (PPE).
- Check that the air hoses are properly connected and tight.
- Check all hoses and accessories for damage prior to use. Do not use damaged items. Only high quality hoses intended for waterblast applications should be used as high-pressure hoses.
- Check all high-pressure threaded connections for tightness.
- Operate the high-pressure water at full pressure and use the Pneumatic Foot Pedal Dump Control to verify that the dump valve is working properly.
- Ensure that Operators never connect, disconnect, or tighten hoses, adapters, or accessories with the high-pressure water pump unit running.
- Ensure no personnel are in the hydroblasting zone.

Personal Protective Equipment

Use of Personal Protective Equipment (PPE) is dependent on the working pressure of water and the cleaning application. Managers, Supervisors, and Operators MUST carry out a job specific risk assessment to define the exact requirements for PPE. See Protective Equipment for Personnel (Section 6) of WJTA-IMCA's Recommended Practices For The Use Of High-pressure Water jetting Equipment for additional information.

- Hygiene—Operators are advised to wash thoroughly after all waterjetting operations to remove any waterblast residue which may contain traces of harmful substances.
- First aid provision—users MUST be provided with suitable first aid facilities at the operation site.

PPE MAY INCLUDE:

- Eye protection: Full face visor
- Foot protection: Kevlar® brand or steel toe capped, waterproof, non-slip safety boots
- Hand protection: Waterproof gloves
- Ear protection: Ear protection for a minimum of 85 dBA
- Head protection: Hard hat that accepts a full face visor and ear protection
- Body protection: Multi-layer waterproof clothing approved for water jetting
- Hose protection: Hose shroud
- Respiratory protection: May be required; refer to job specific risk assessment

StoneAge has designed and manufactured this equipment considering all hazards associated with its operation. StoneAge assessed these risks and incorporated safety features in the design. StoneAge WILL NOT accept responsibility for the results of misuse.

- IT IS THE RESPONSIBILITY OF THE INSTALLER/OPERATOR to conduct a job specific risk assessment prior to use. Job specific risk assessment MUST be repeated for each different set up, material, and location.
- The risk assessment MUST conform to the Health and Safety at Work Act 1974 and other relevant Health and Safety legislation.
- The risk assessment MUST consider potential material or substance hazards including: **Aerosols, Biological and microbiological (viral or bacterial) agents, Combustible materials, Dusts, Explosion, Fibers, Flammable substances, Fluids, Fumes, Gases, Mists, Oxidizing Agents.**

TERMS & CONDITIONS

1. Acceptance of Terms and Conditions. Receipt of these Terms and Conditions of Sale ("Terms and Conditions") shall operate as the acceptance by StoneAge, Inc. ("Seller") of the order submitted by the purchaser ("Buyer"). Such acceptance is made expressively conditional on assent by Buyer to these Terms and Conditions. Such assent shall be deemed to have been given unless written notice of objection to any of these Terms and Conditions (including inconsistencies between Buyer's purchase order and this acceptance) is given by Buyer to Seller promptly on receipt hereof.

Seller desires to provide Buyer with prompt and efficient service. However, to individually negotiate the terms of each sales contract would substantially impair Seller's ability to provide such service. Accordingly, the product(s) furnished by Seller are sold only according to the terms and conditions stated herein and with the terms and conditions stated in any effective StoneAge Dealer Agreement or StoneAge Reseller Agreement, if applicable. Notwithstanding any terms and conditions on Buyer's order, Seller's performance of any contract is expressly made conditional on Buyer's agreement to these Terms and Conditions unless otherwise specifically agreed to in writing by Seller. In the absence of such agreement, commencement of performance, shipment and/or delivery shall be for Buyer's convenience only and shall not be deemed or construed to be an acceptance of Buyer's terms and conditions.

2. Payment/Prices. Unless other arrangements have been made in writing between Seller and Buyer, payment for the product(s) shall be made upon receipt of invoice. The prices shown on the face hereof are those currently in effect. Prices invoiced shall be per pricelist in effect at the time of shipment. Prices are subject to increase for inclusion of any and all taxes which are applicable and which arise from the sale, delivery or use of the product(s), and the collection of which Seller is or may be responsible to provide to any governmental authority, unless acceptable exemption certificates are provided by Buyer in accordance with applicable law. Buyer shall pay all charges for transportation and delivery and all excise, order, occupation, use or similar taxes, duties, levies, charges or surcharges applicable to the product(s) being purchased, whether now in effect or hereafter imposed by any governmental authority, foreign or domestic.

3. Warranty. SELLER MAKES NO WARRANTIES OR REPRESENTATIONS AS TO THE PERFORMANCE OF ANY PRODUCT EXCEPT AS SET FORTH IN THE STONEAGE LIMITED WARRANTY PROVIDED WITH THE PRODUCT.

4. Delivery. Seller is not obligated to make delivery by a specified date, but will always use its best efforts to make delivery within the time requested. The proposed shipment date is an estimate. Seller will notify Buyer promptly of any material delay and will specify the revised delivery date as soon as practicable. UNDER NO CIRCUMSTANCES SHALL SELLER HAVE ANY LIABILITY WHATSOEVER FOR LOSS OF USE OR FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM DELAY REGARDLESS OF THE REASON(S).

All product(s) will be shipped F.O.B. point of origin, unless specifically agreed otherwise, and Buyer shall pay all shipping costs and insurance costs from that point. Seller, in its sole discretion, will determine and arrange the means and manner of transportation of the product(s). Buyer shall bear all risk of loss commencing with the shipment or distribution of the product(s) from Seller's warehouse. Order shortages or errors must be reported within fifteen (15) business days from receipt of shipment to secure adjustment. No product(s) may be returned without securing written approval from Seller.

5. Modification. These Terms and Conditions are intended by Seller and Buyer to constitute a final, complete and exclusive expression of agreement relating to the subject matter hereof and cannot be supplemented or amended without Seller's prior written approval.

6. Omission. Seller's waiver of any breach or Seller's failure to enforce any of these Terms and Conditions at any time, shall not in any way affect, limit or waive Seller's right thereafter to enforce and compel strict compliance with every term and condition hereof.

7. Severability. If any provision of these Terms and Conditions is held to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the other portions hereof.

8. Disputes. Seller and Buyer shall attempt in good faith to promptly resolve any dispute arising under these Terms and Conditions by negotiations between representatives who have authority to settle the controversy. If unsuccessful, Seller and Buyer shall further attempt in good faith to settle the dispute by nonbinding third-party mediation, with fees and expenses of such mediation apportioned equally to each side. Any dispute not so resolved by negotiation or mediation may then be submitted to a court of competent jurisdiction in accordance with the terms hereof. These procedures are the exclusive procedures for the resolution of all such disputes between the Seller and Buyer.

9. Governing Law. All sales, agreements for sale, offers to sell, proposals, acknowledgments and contracts of sale, including, but not limited to, purchase orders accepted by Seller, shall be considered a contract under the laws of the State of Colorado and the rights and duties of all persons, and the construction and effect of all provisions hereof shall be governed by and construed according to the laws of such state.

10. Jurisdiction and Venue. Seller and Buyer agree that the state or federal courts located within the City and County of Denver, Colorado shall have sole and exclusive jurisdiction over any litigation concerning any dispute arising under these Terms and Conditions not otherwise resolved pursuant to Section 9 as well as any alleged defects of any Products or damages sustained as a result of such alleged defects. Seller and Buyer further agree that should any litigation be commenced in connection with such a dispute, it shall only be commenced in such courts. Seller and Buyer agree to the exclusive jurisdiction of such courts and neither will raise any objection to the jurisdiction and venue of such courts, including as a result of inconvenience.

11. Attorney's Fees. If any litigation is commenced between Seller and Buyer, or their personal representatives, concerning any provision hereof, the party prevailing in the litigation shall be entitled, in addition to such other relief that is granted, to a reasonable sum as and for their attorneys' fees and costs in such litigation or mediation.

STONEAGE TRADEMARK LIST

View the list of StoneAge's trademarks and service marks and learn how the trademarks should be used. Use of StoneAge trademarks may be prohibited, unless expressly authorized.

<http://www.Stoneagetools.com/trademark-list/>

STONEAGE PATENT DATA

View the list of StoneAge's current U.S. patent numbers and descriptions.

<http://www.sapatents.com>

STONEAGE TERMS AND WARRANTY

View StoneAge's Terms and Warranty Conditions online.

<http://www.stoneagetools.com/terms>

<http://www.stoneagetools.com/warranty>

Warranties set forth herein extend only to End-Users, meaning customers acquiring, or that have previously acquired, a product manufactured by StoneAge ("Product") for their own use and not for resale, either directly from StoneAge Inc. ("StoneAge") or from a StoneAge Authorized Dealer or Reseller ("Dealer"). No warranty of any kind or nature is made by StoneAge beyond those expressly stated herein.

1. LIMITED WARRANTY PERIOD. Subject to the limitations and conditions hereinafter set forth, StoneAge warrants its Product to be free from defects in workmanship and material for a period of one (1) year from the date of purchase by the End-User, provided that the end of the limited warranty period shall not be later than eighteen (18) months from the date of shipment of the Product to the Dealer or the End-User by StoneAge ("Limited Warranty Period"). All replacement parts which are furnished under this Limited Warranty and properly installed shall be warranted to the same extent as the original Product under this Limited Warranty if, and only if, the original parts were found to be defective within the original Limited Warranty Period covering the original Product. Replacement parts are warranted for the remainder of the original Limited Warranty Period. This Limited Warranty does not cover any component part of any Product not manufactured by StoneAge. Any such component part is subject exclusively to the component manufacturer's warranty terms and conditions.

2. LIMITED WARRANTY COVERAGE. StoneAge's sole obligation under this Limited Warranty shall be, at StoneAge's option and upon StoneAge's inspection, to repair, replace or issue a credit for any Product which is determined by StoneAge to be defective in material or workmanship. StoneAge reserves the right to examine the alleged defective Product to determine whether this Limited Warranty is applicable, and final determination of limited warranty coverage lies solely with StoneAge. No statement or recommendation made by a StoneAge representative, Dealer or agent to End-User shall constitute a warranty by StoneAge or a waiver or modification to any of the provisions hereof or create any liability for StoneAge.

3. WARRANTY SERVICE PROVIDERS. Service and repair of the Product is to be performed only by StoneAge authorized service representatives, including Dealers who are authorized repair centers, with StoneAge approved parts. Information about StoneAge authorized service representatives can be obtained through the StoneAge website at www.stoneagetools.com/service. Unauthorized service, repair or modification of the Product or use of parts not approved by StoneAge will void this Limited Warranty. StoneAge reserves the right to change or improve the material and design of the Product at any time without notice to End-User, and StoneAge is not obligated to make the same improvements during warranty service to any Product previously manufactured.

4. WARRANTY EXCLUSIONS. This Limited Warranty does not cover, and StoneAge shall not be responsible for the following, or damage caused by the following: (1) any Product that has been altered or modified in any way not approved by StoneAge in advance in writing; (2) any Product that has been operated under more severe conditions or beyond the rated capacity specified for that Product; (3) depreciation or damage caused by normal wear and tear, failure to follow operation or installation instructions, misuse, negligence or lack of proper protection during storage; (4) exposure to fire, moisture, water intrusion, electrical stress, insects, explosions, extraordinary weather and/or environmental conditions including, but not limited to lightning, natural disasters, storms, windstorms, hail, earthquakes, acts of God or any other force majeure event; (5) damage to any Product caused by any attempt to repair, replace, or service the Product by persons other than StoneAge authorized service representatives; (6) costs of normal maintenance parts and services; (7) damage sustained during unloading, shipment or transit of the Product; or (8) failure to perform the recommended periodic maintenance procedures listed in the Operator's Manual accompanying the Product.

5. REQUIRED WARRANTY PROCEDURES. To be eligible for warranty service, the End-User must: (1) report the Product defect to the entity where the Product was purchased (i.e. StoneAge or the Dealer) within the Limited Warranty Period specified in this Limited Warranty; (2) submit the original invoice to establish ownership and date of purchase; and (3) make the Product available to a

StoneAge authorized service representative for inspection to determine eligibility for coverage under this Limited Warranty. This Limited Warranty shall not extend to any person or entity who fails to provide proof of original purchase from StoneAge or a Dealer. No Product may be returned for credit or adjustment without prior written permission from StoneAge.

6. DISCLAIMER OF IMPLIED WARRANTIES AND OTHER REMEDIES.

EXCEPT AS EXPRESSLY STATED HEREIN (AND TO THE FULLEST EXTENT ALLOWED UNDER APPLICABLE LAW), STONEAGE HEREBY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY AND ALL WARRANTIES, REPRESENTATIONS OR PROMISES AS TO THE QUALITY, PERFORMANCE OR FREEDOM FROM DEFECT OF THE PRODUCT COVERED BY THIS LIMITED WARRANTY. STONEAGE FURTHER DISCLAIMS ALL IMPLIED INDEMNITIES.

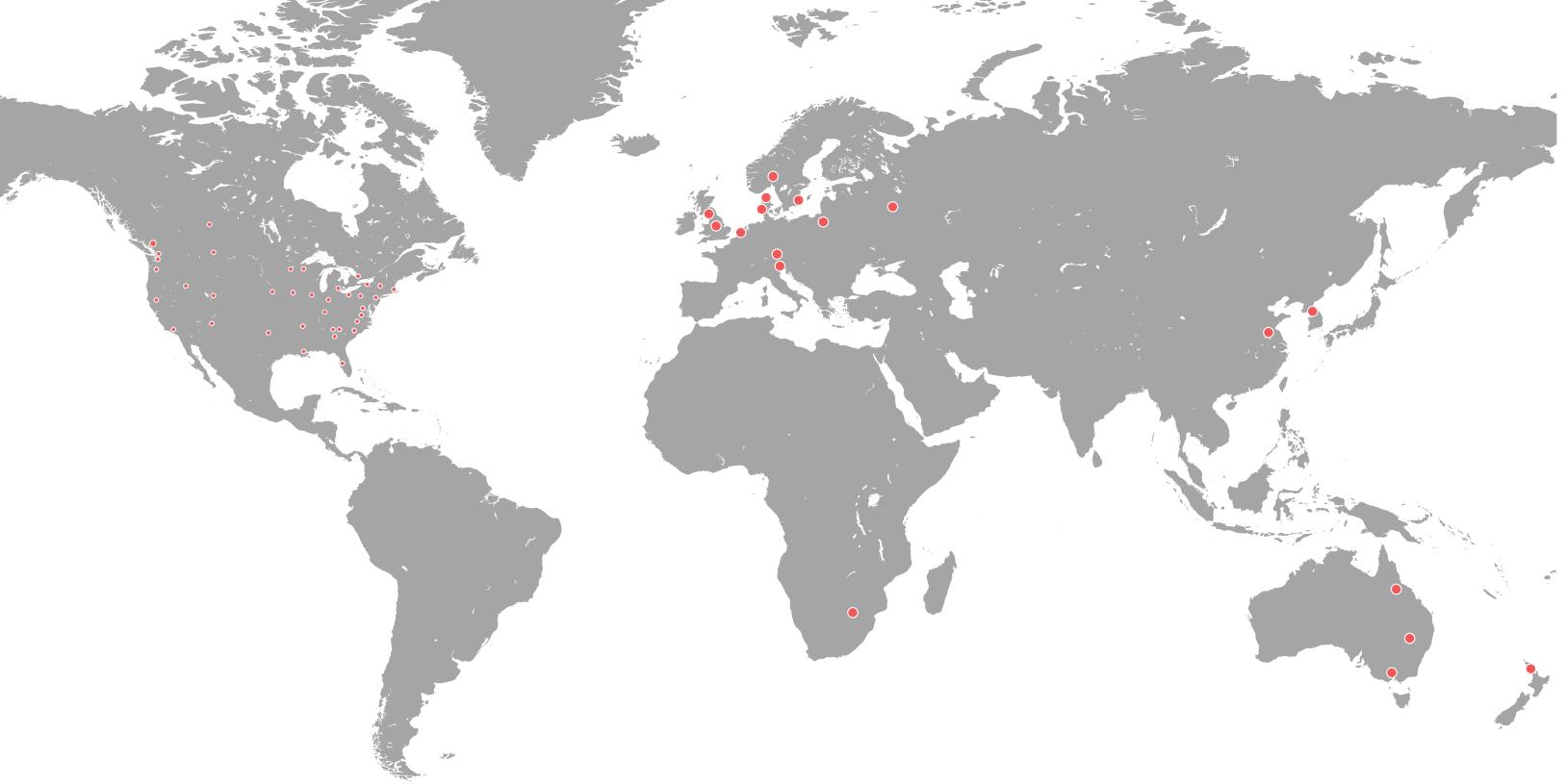
7. LIMITATION OF LIABILITY. End-User specifically acknowledges that the Product may be operated at high speeds and/or pressures, and that as such it may be inherently dangerous if not used correctly. End-User shall familiarize itself with all operation materials provided by StoneAge and shall at all times use and require its agents, employees and contractors to use all necessary and appropriate safety devices, guards and proper safe operating procedures. In no event shall StoneAge be responsible for any injuries to persons or property caused directly or indirectly by the operation of the Product if End-User or any agent, employee, or contractor of End-User: (1) fails to use all necessary and appropriate safety devices, guards and proper safe operating procedures; (2) fails to maintain in good working order such safety devices and guards; (3) alters or modifies the Product in any way not approved by StoneAge in advance in writing; (4) allows the Product to be operated under more severe conditions or beyond the rated capacity specified for the Product; or (5) otherwise negligently operates the Product. End-User shall indemnify and hold StoneAge harmless from any and all liability or obligation incurred by or against StoneAge, including costs and attorneys' fees, to or by any person so injured.

TO THE FULL EXTENT ALLOWED BY APPLICABLE LAW, STONEAGE SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES (INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF GOODWILL, DIMINUTION OF VALUE, WORK STOPPAGE, INTERRUPTION OF BUSINESS, RENTAL OF SUBSTITUTE PRODUCT, OR OTHER COMMERCIAL LOSS EVEN TO THE EXTENT SUCH DAMAGES WOULD CONSTITUTE DIRECT DAMAGES), WITH RESPECT TO THE COVERED STONEAGE PRODUCT, OR OTHERWISE IN CONNECTION WITH THIS LIMITED WARRANTY, REGARDLESS OF WHETHER STONEAGE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

IT IS UNDERSTOOD THAT STONEAGE'S LIABILITY, WHETHER IN CONTRACT, IN TORT, UNDER ANY WARRANTY, IN NEGLIGENCE, OR OTHERWISE SHALL NOT EXCEED THE AMOUNT OF THE PURCHASE PRICE PAID BY THE END-USER FOR THE PRODUCT. STONEAGE'S MAXIMUM LIABILITY SHALL NOT EXCEED, AND END-USER'S REMEDY IS LIMITED TO EITHER (1) REPAIR OR REPLACEMENT OF THE DEFECTIVE WORKMANSHIP OR MATERIAL OR, AT STONEAGE'S OPTION, (2) REFUND OF THE PURCHASE PRICE, OR (3) ISSUANCE OF A CREDIT FOR THE PURCHASE PRICE, AND SUCH REMEDIES SHALL BE END-USER'S ENTIRE AND EXCLUSIVE REMEDY.

YOU, THE END-USER, UNDERSTAND AND EXPRESSLY AGREE THAT THE FOREGOING LIMITATIONS ON LIABILITY ARE PART OF THE CONSIDERATION IN THE PRICE OF THE STONEAGE PRODUCT YOU PURCHASED.

Some jurisdictions do not allow the limitation or exclusion of liability for certain damages, so the above limitations and exclusions may not apply to you. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction. If any provisions of this Limited Warranty is held to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the other portions hereof.



► LOOKING FOR A DEALER?

Go to **WWW.SEWERNOZZLES.COM** to view a list of dealers near you.

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