



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

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**2019/20  
CATALOG**

# YOUR CITY AND CUSTOMERS COUNT ON YOU.

**WARTHOG IS THE BRAND OPERATORS HAVE TRUSTED FOR OVER 25 YEARS.**

- **Warthogs — One All-Purpose Tool**  
Cuts roots, clears grease and hard mineral deposit
- **Patented Controlled Rotation**  
Allows jets the time to evenly clean and clear the pipe
- **Fewer Jets and Larger Orifices**  
Equals more power per jet
- **Jetting is customizable for pressure, flow and application, including reduced toilet blowing**
- **Serviceable onsite or at an Authorized Dealer's location**
- **Manufactured in the USA**



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# STAY INFORMED WITH EASY ONLINE RESOURCES

## VISIT OUR WEBSITE

- Updated nozzle information
- Service literature and user manuals, news and much more
- Complete list of Authorized Dealers and Service Center locations

[www.stoneagetools.com](http://www.stoneagetools.com)



## JETTING APP

- Free suite of nozzle calculators
- Configure jetting, flow and pressure loss
- Based on decades of engineering and field experience
- Allows contractors to dial in the exact working configurations for their nozzle

[jetting.stoneagetools.com](http://jetting.stoneagetools.com)

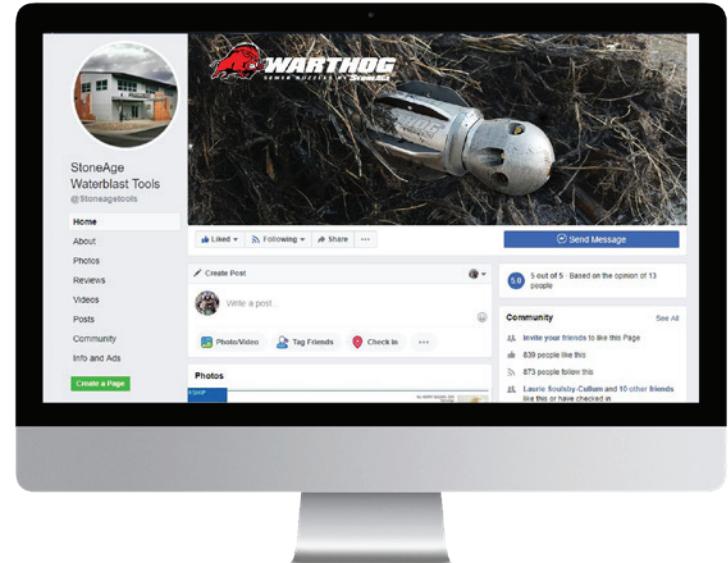


## PICK UP YOUR SMARTPHONE

- Our mobile website provides access to updated product information
- Complete library of instructional videos
- Searchable archive of user manuals in downloadable PDF format
- Contact details of all our Authorized Dealer and Service Centers

## FOLLOW US ON SOCIAL MEDIA

- Don't miss our latest updates!
- Share information with StoneAge and other Warthog users
- See exclusive videos and pics from our trade shows and other events



## SUBSCRIBE TO OUR YOUTUBE CHANNEL

- Check out our latest product videos
- Step-by-step maintenance and repair
- Videos of nozzles in the field

[www.youtube.com/user/StoneAgeWaterTools](http://www.youtube.com/user/StoneAgeWaterTools)

## DOWNLOAD SUPPORT MANUALS

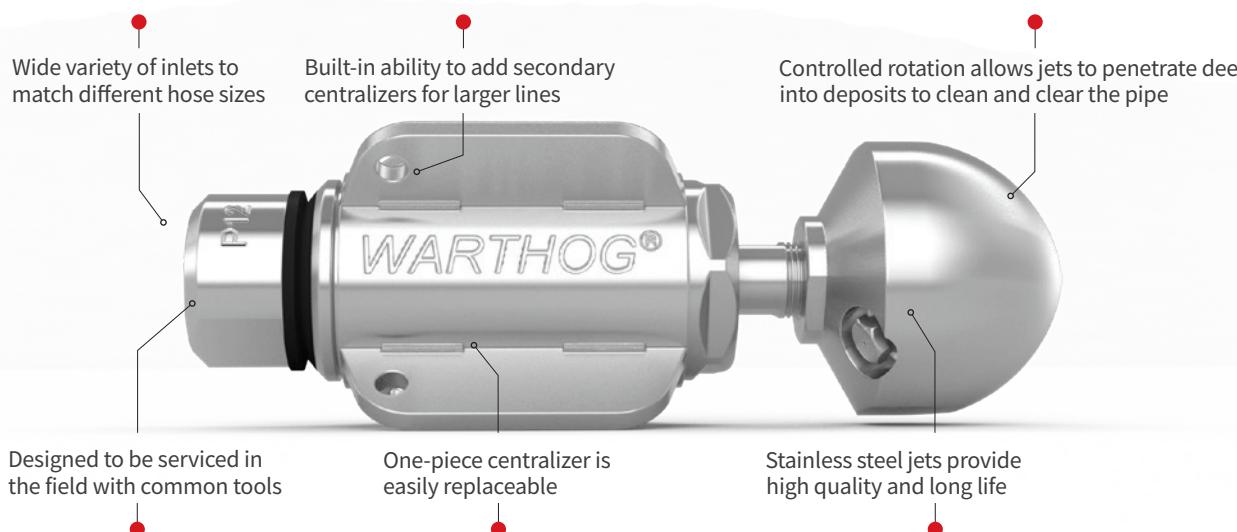
- The latest Repair Manuals and Product Guides to help you get the most out of your Warthog sewer tools.

### ***Our support team is here to help!***

We gladly respond to inquiries and provide advice on your sewer cleaning challenges.



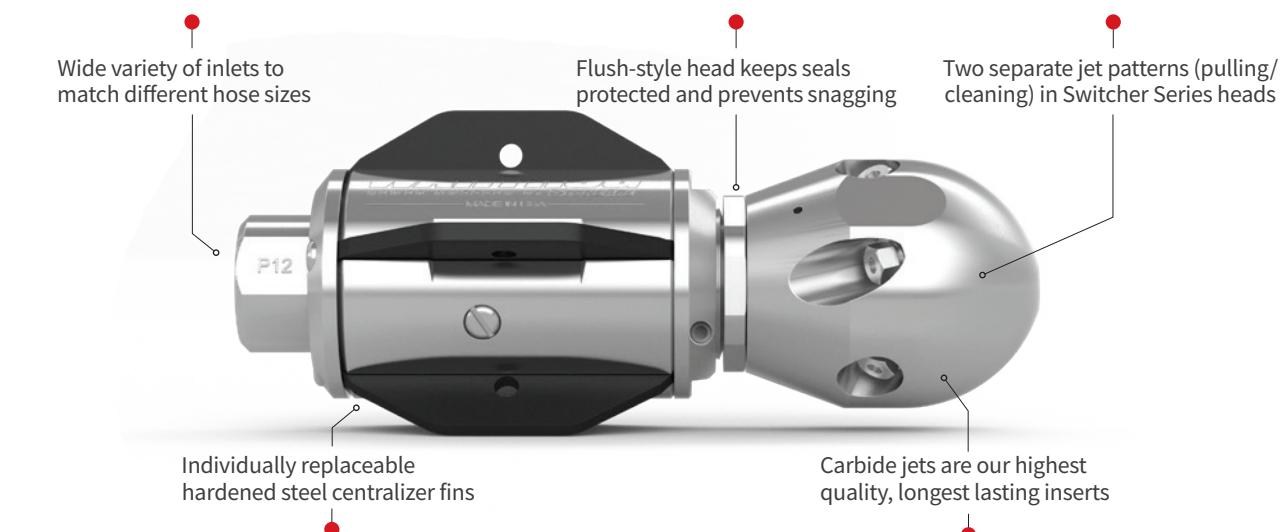
## CLASSIC SERIES



## CLASSIC SERIES

| PG.# | MODEL   | NOZZLE        | PIPE SIZE           | INLET SIZE               | FLOW                      | PRESSURE              | FEATURES  |
|------|---|---------------|---------------------|--------------------------|---------------------------|-----------------------|---|
| 8    |    | <b>WV</b>     | 2-4"<br>51-102 MM   | 1/4" NPT<br>OR BSPP      | 3-8 GPM<br>11-30 LPM      | 1200-5K<br>83-345 BAR | <ul style="list-style-type: none"> <li>• Rotation speed controlled by pressure &amp; flow</li> <li>• Virtually no maintenance</li> </ul>                                    |
| 9    |  | <b>WT</b>     | 3-6"<br>76-152 MM   | 3/8" NPT<br>OR BSPP      | 5-12 GPM<br>19-45 LPM     | 1200-5K<br>83-345 BAR | <ul style="list-style-type: none"> <li>• Carbide wear buttons extend nozzle life</li> <li>• Navigates multiple bends</li> </ul>   |
| 9    |  | <b>WT-1/2</b> | 4-8"<br>102-203 MM  | 1/2" NPT<br>OR BSPP      | 5-21 GPM<br>19-79 LPM     | 1200-5K<br>83-345 BAR | <ul style="list-style-type: none"> <li>• Carbide wear buttons extend nozzle life</li> <li>• Navigates multiple bends</li> <li>• Accommodates higher flow jetters</li> </ul> |
| 10   |  | <b>WS</b>     | 4-8"<br>102-203 MM  | 1/2" NPT<br>OR BSPP      | 8-20 GPM<br>30-76 LPM     | 1200-5K<br>83-345 BAR | <ul style="list-style-type: none"> <li>• 3 Configurations: Standard, Jointed, Rigid</li> <li>• Low maintenance</li> <li>• Descaling head available</li> </ul>               |
| 11   |  | <b>WH</b>     | 6-18"<br>152-457 MM | 1/2, 3/4" NPT<br>OR BSPP | 10-50 GPM<br>38-189 LPM   | 1200-8K<br>83-552 BAR | <ul style="list-style-type: none"> <li>• One piece replaceable centralizer</li> <li>• Descaling head available</li> </ul>   |
| 12   |  | <b>WH-P</b>   | 6-18"<br>152-457 MM | 3/4" NPT<br>OR BSPP      | 15-50 GPM<br>57-189 LPM   | 1200-8K<br>83-552 BAR | <ul style="list-style-type: none"> <li>• More pulling power</li> <li>• One piece replaceable centralizer</li> <li>• Handles longer hose and steeper inclines</li> </ul>     |
| 13   |  | <b>WG</b>     | 8-36"<br>203-914 MM | 1" NPT<br>OR BSPP        | 50-80 GPM<br>189-303 LPM  | 1200-5K<br>83-345 BAR | <ul style="list-style-type: none"> <li>• One piece replaceable centralizer</li> <li>• Descaling head available</li> <li>• Manhole cleaning option available</li> </ul>      |
| 14   |  | <b>WG-P</b>   | 8-36"<br>203-914 MM | 1" NPT<br>OR BSPP        | 50-80 GPM<br>189-303 LPM  | 1200-5K<br>83-345 BAR | <ul style="list-style-type: none"> <li>• More Pulling power</li> <li>• One piece replaceable centralizer</li> <li>• Handles longer hose and steeper inclines</li> </ul>     |
| 15   |  | <b>WD</b>     | 8-36"<br>203-914 MM | 1-1/4" NPT<br>OR BSPP    | 80-120 GPM<br>303-454 LPM | 1200-5K<br>83-345 BAR | <ul style="list-style-type: none"> <li>• High flow option up to 120 gpm</li> <li>• One piece replaceable centralizer</li> <li>• Descaling head available</li> </ul>         |

## MAGNUM SERIES

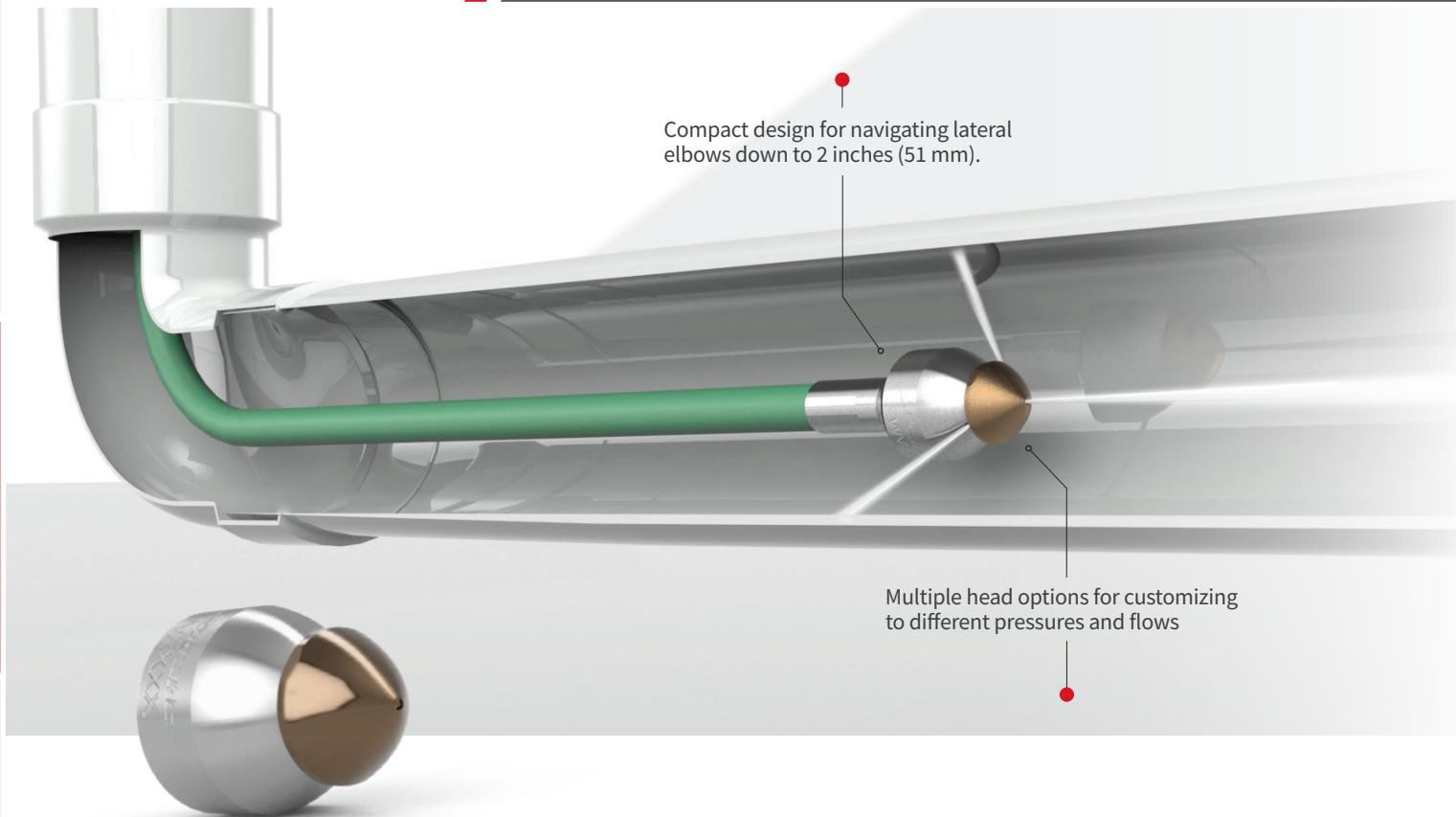


## MAGNUM SERIES

| PG.# | MODEL   | NOZZLE           | PIPE SIZE            | INLET SIZE               | FLOW                      | PRESSURE              | FEATURES  |
|------|---|------------------|----------------------|--------------------------|---------------------------|-----------------------|---|
| 16   |    | <b>WHR</b>       | 6-18"<br>152-457 MM  | 1/2, 3/4" NPT<br>OR BSPP | 14-50 GPM<br>53-189 LPM   | 1200-8K<br>83-552 BAR | <ul style="list-style-type: none"> <li>• Extended service life</li> <li>• Works in recycled water</li> <li>• Carbide inserts</li> <li>• Hardened steel centralizer</li> <li>• Design reduces getting caught in pipes</li> <li>• Individually replaceable fins</li> <li>• Customizable rotation speed</li> <li>• Optional fin sizes available</li> </ul> |
| 17   |  | <b>WGR</b>       | 8-36"<br>203-914 MM  | 1" NPT<br>OR BSPP        | 50-80 GPM<br>189-303 LPM  | 1200-5K<br>83-345 BAR |   |
| 18   |  | <b>WGR-1-1/4</b> | 8-48"<br>203-1219 MM | 1-1/4" NPT<br>OR BSPP    | 80-120 GPM<br>303-454 LPM | 1200-5K<br>83-345 BAR |   |

## SWITCHER SERIES

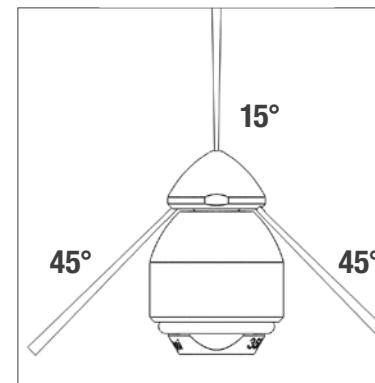
| PG.# | MODEL   | NOZZLE                | PIPE SIZE            | INLET SIZE               | FLOW                      | PRESSURE              | FEATURES   |
|------|---|-----------------------|----------------------|--------------------------|---------------------------|-----------------------|--|
| 21   |  | <b>WHR-SWT</b>        | 6-18"<br>152-457 MM  | 1/2, 3/4" NPT<br>OR BSPP | 14-45 GPM<br>53-170 LPM   | 1200-8K<br>83-552 BAR | <ul style="list-style-type: none"> <li>• Save time and water</li> <li>• 2 Nozzles in 1: Operate in either Pulling or Descaling mode with the same nozzle</li> <li>• Power off the pump to switch between modes while in the pipe</li> <li>• Utilize full pump power in each mode</li> <li>• Jet each mode by pressure/flows separately</li> <li>• Carbide inserts</li> <li>• Hardened steel centralizer fins are individually replaceable</li> <li>• Handles longer hose and steeper inclines</li> </ul> |
| 22   |  | <b>WHR-HYBRID-SWT</b> | 6-18"<br>152-457 MM  | 3/4" NPT<br>OR BSPP      | 30-50 GPM<br>114-189 LPM  | 1200-5K<br>83-345 BAR |  |
| 23   |  | <b>WGR-SWT</b>        | 8-36"<br>203-914 MM  | 1" NPT<br>OR BSPP        | 50-80 GPM<br>189-303 LPM  | 1200-5K<br>83-345 BAR |  |
| 23   |  | <b>WGR-1-1/4-SWT</b>  | 8-48"<br>203-1219 MM | 1-1/4" NPT<br>OR BSPP    | 80-120 GPM<br>303-454 LPM | 1200-5K<br>83-345 BAR |  |

**2-4" LINES**

**WV-1/4-LK**
**PIPE SIZE:** 2-4" LINES (51-102 MM)

**INLET:** 1/4" NPT OR BSPP

**BENEFITS:**

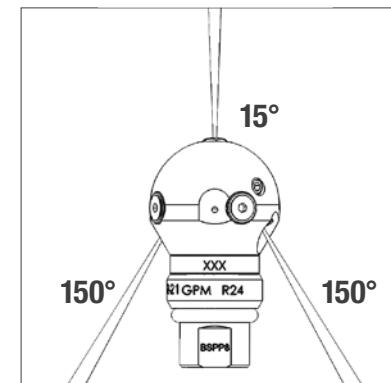
- Rotational speed controlled by pressure and flow
- Excellent for navigating elbows
- Clears grease, fat, ice and fine roots
- Virtually no maintenance

**JET ANGLES**

**NEW WT-1/2-PKG  
& WT-3/8-PKG**
**PIPE SIZE:** 3-6" LINES (76-152 MM)

**INLET:** 1/2" NPT OR BSPP, 3/8" NPT OR BSPP

**BENEFITS:**

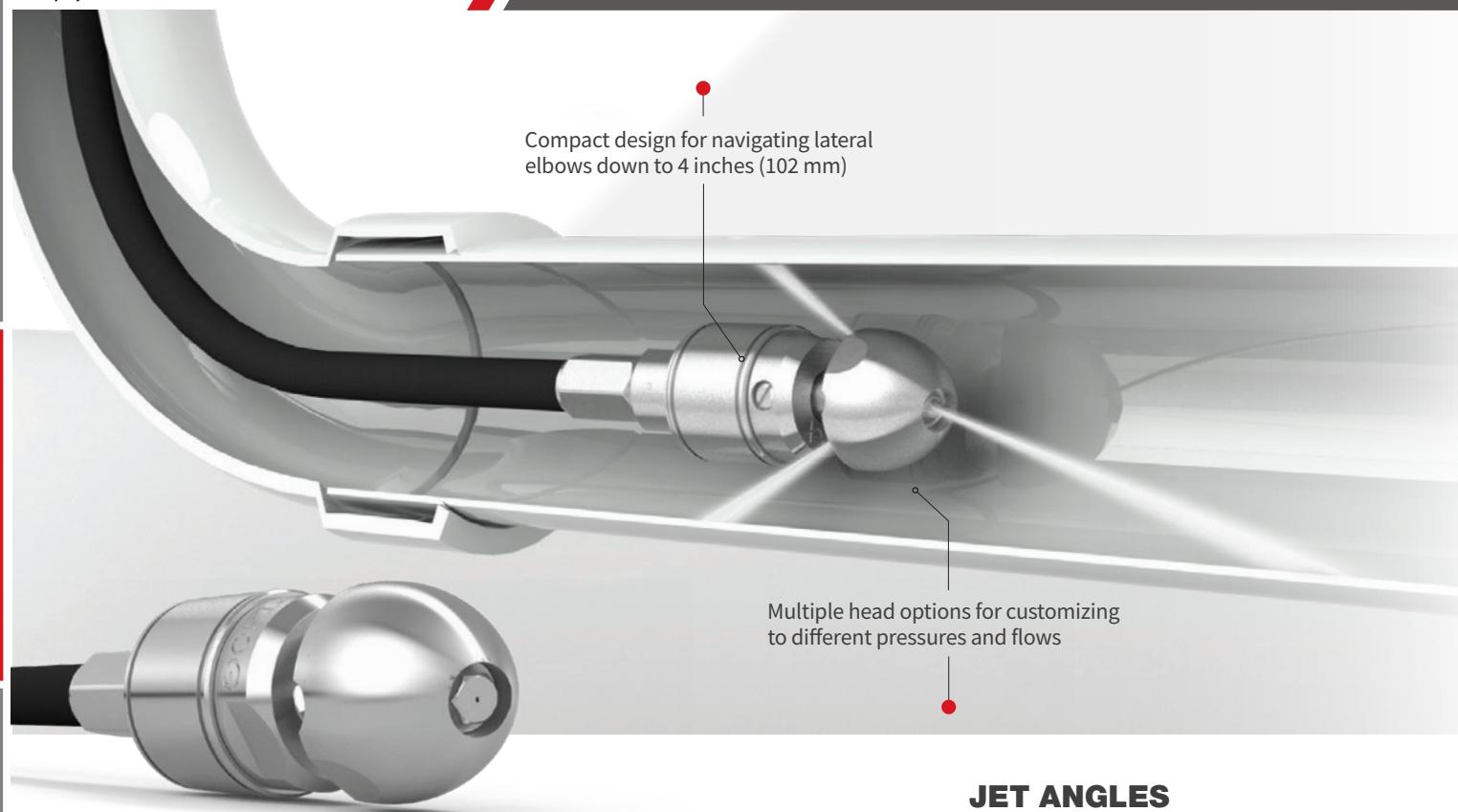
- Viscous fluid controlled rotation
- Carbide wear buttons extend nozzle life
- Navigates multiple bends
- Easily maintained

**JET ANGLES**


| MODEL/INLET CONNECTION | PRESSURE RANGE |        | FLOW RANGE |       | TOOL MODELS | DRILLED FRONT JET |     | DRILLED REAR JETS |     | WEIGHT |     | DIAMETER x LENGTH |         |
|------------------------|----------------|--------|------------|-------|-------------|-------------------|-----|-------------------|-----|--------|-----|-------------------|---------|
|                        | PSI            | BAR    | GPM        | LPM   |             | IN.               | MM  | IN.               | MM  | LB     | KG  | IN.               | MM      |
| WV-1/4-LK OR BSPP      | 1200-5K        | 83-345 | 7-8        | 26-30 | WV-1/4-LK-A | 0.024             | 0.6 | 2 X .052          | 1.3 | .45    | .20 | 1.3 X 2.0         | 33 X 51 |
|                        |                |        | 5-6        | 19-23 | WV-1/4-LK-B | 0.020             | 0.5 | 2 X .039          | 1.0 |        |     |                   |         |
|                        |                |        | 4-4.5      | 15-17 | WV-1/4-LK-C | 0.018             | 0.4 | 2 X .032          | 0.8 |        |     |                   |         |
|                        |                |        | 3-3.5      | 11-13 | WV-1/4-LK-D | 0.018             | 0.4 | 2 X .028          | 0.7 |        |     |                   |         |

| MODEL/INLET    | PRESSURE RANGE |        | FLOW RANGE |       | HEAD         | NOZZLE PORTS | JET TYPE | PORT PLUG   | WEIGHT |      | DIAMETER x LENGTH |         |
|----------------|----------------|--------|------------|-------|--------------|--------------|----------|-------------|--------|------|-------------------|---------|
|                | PSI            | BAR    | GPM        | LPM   |              |              |          |             | LB     | KG   | IN.               | MM      |
| WT-3/8 OR BSPP | 1200-5K        | 83-345 | 9-12       | 34-45 | WT 040-R31-C | 3 X 1/8 NPT  | AP2      | GP 025-P2SS | 1.2    | 0.54 | 1.9 X 3.0         | 48 X 76 |
|                |                |        | 7-9        | 26-34 | WT 040-R45-C |              |          |             |        |      |                   |         |
|                |                |        | 5-7        | 19-26 | WT 040-R60-C |              |          |             |        |      |                   |         |
| NEW WT-1/2     | 1200-5K        | 83-345 | 12-21      | 45-79 | WT 040-R24-C | 3 X 1/8 NPT  | AP2      | GP 025-P2SS | 1.2    | 0.54 | 1.9 X 3.0         | 48 X 76 |
|                |                |        | 9-12       | 34-45 | WT 040-R31-C |              |          |             |        |      |                   |         |
|                |                |        | 7-9        | 26-34 | WT 040-R45-C |              |          |             |        |      |                   |         |
|                |                |        | 5-7        | 19-26 | WT 040-R60-C |              |          |             |        |      |                   |         |

## 4-8" LINES



### WS-1/2

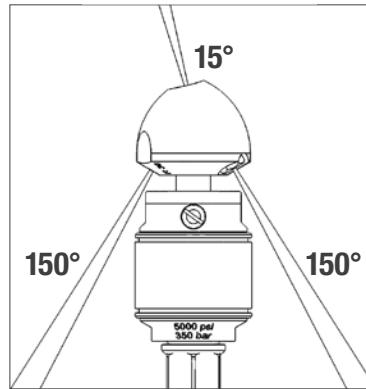
**PIPE SIZE:** 4-8" LINES (102-203 MM)

**INLET:** 1/2" NPT OR BSPP

#### BENEFITS:

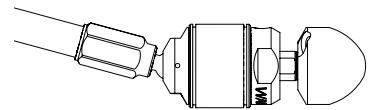
- Navigates sweeping bends
- Included whip hose saves wear on sewer hose
- Descaling head available

#### JET ANGLES



#### WS-J JOINTED INLET OPTION

The inlet hose rotates to the side, shortening the rigid length of the tool. Allows access to tighter areas.

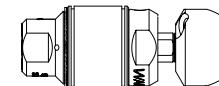


#### WS-P8 RIGID INLET OPTIONS

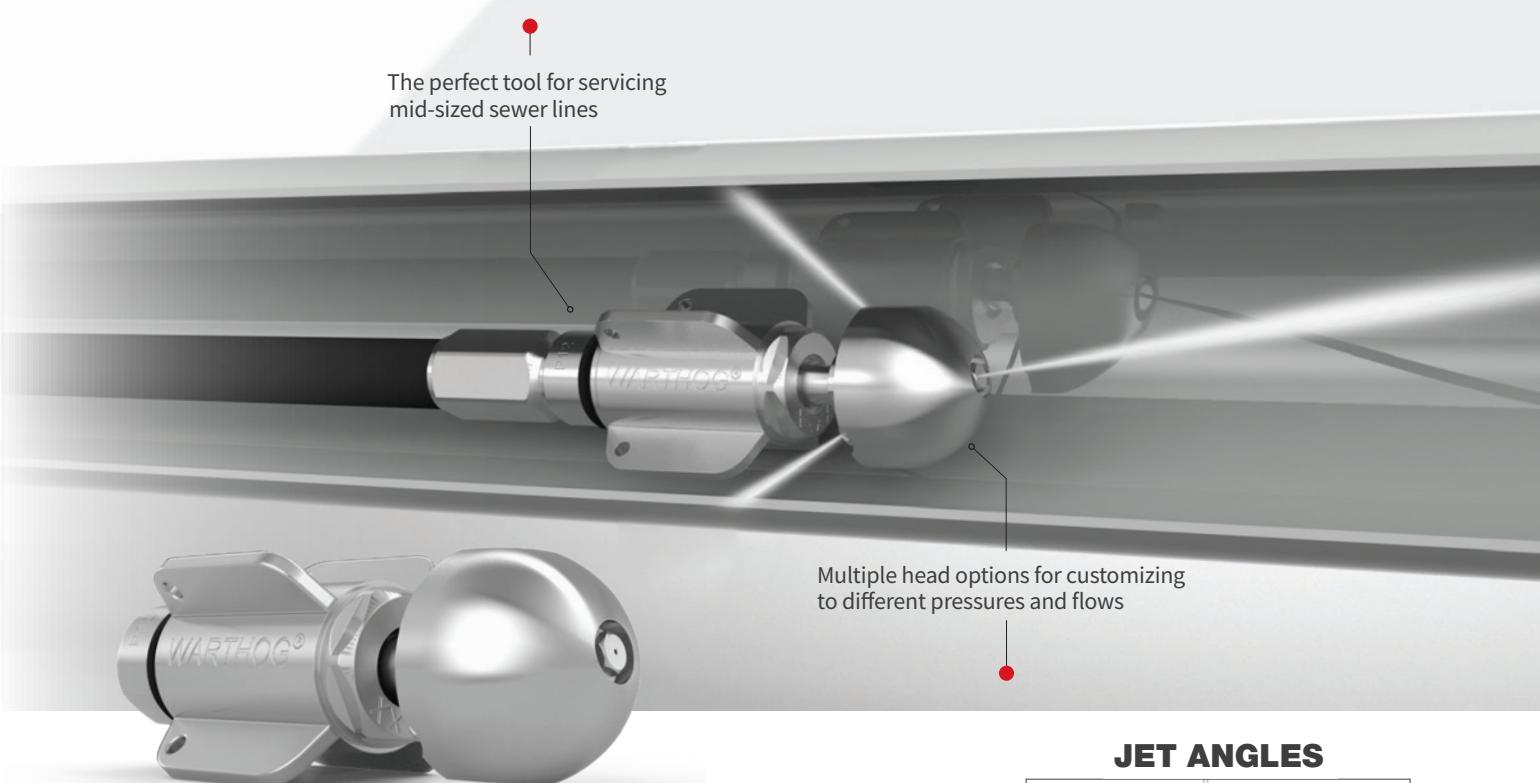
**INLET:** 1/2" NPT OR BSPP

The whip hose is removed, allowing the hose to connect directly to the tool.

**NOTE:** 4" (102 mm) 90° bends are not negotiable with this configuration.



| MODEL/<br>INLET      | PRESSURE RANGE |        | FLOW RANGE |       | HEAD         | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |      | DIAMETER x LENGTH |          |
|----------------------|----------------|--------|------------|-------|--------------|-----------------|-------------|-------------|---------|------|-------------------|----------|
|                      | PSI            | BAR    | GPM        | LPM   |              |                 |             |             | LB      | KG   | IN.               | MM       |
| WS-1/2               | 1200-5K        | 83-345 | 12-21      | 45-79 | WS 040-R3    | 3 X 1/8 NPT     | AP2         | GP 025-P2SS | 2.95    | 1.33 | 1.9 X 4.4         | 48 X 112 |
|                      |                |        | 9-12       | 34-45 | WS 040-R5    |                 |             |             |         |      |                   |          |
| WSDS-1/2<br>DESCALER | 1200-5K        | 83-345 | 12-21      | 45-79 | WS 040-DS-R3 | 3 X 1/8 NPT     | AP2         | GP 025-P2SS | 2.95    | 1.33 | 1.9 X 4.4         | 48 X 112 |
|                      |                |        | 9-12       | 34-45 | WS 040-DS-R5 |                 |             |             |         |      |                   |          |



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

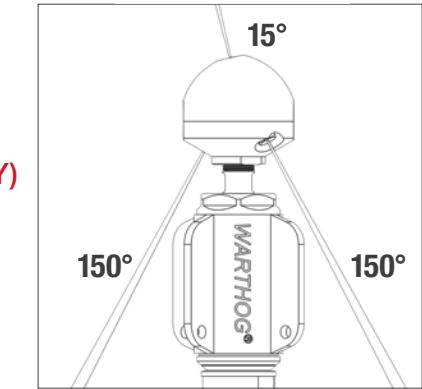
**PIPE SIZE:** 6-18" LINES (152-457 MM)

**INLET:** 1/2" NPT OR BSPP, 3/4" NPT OR BSPP (R24 HEAD ONLY)

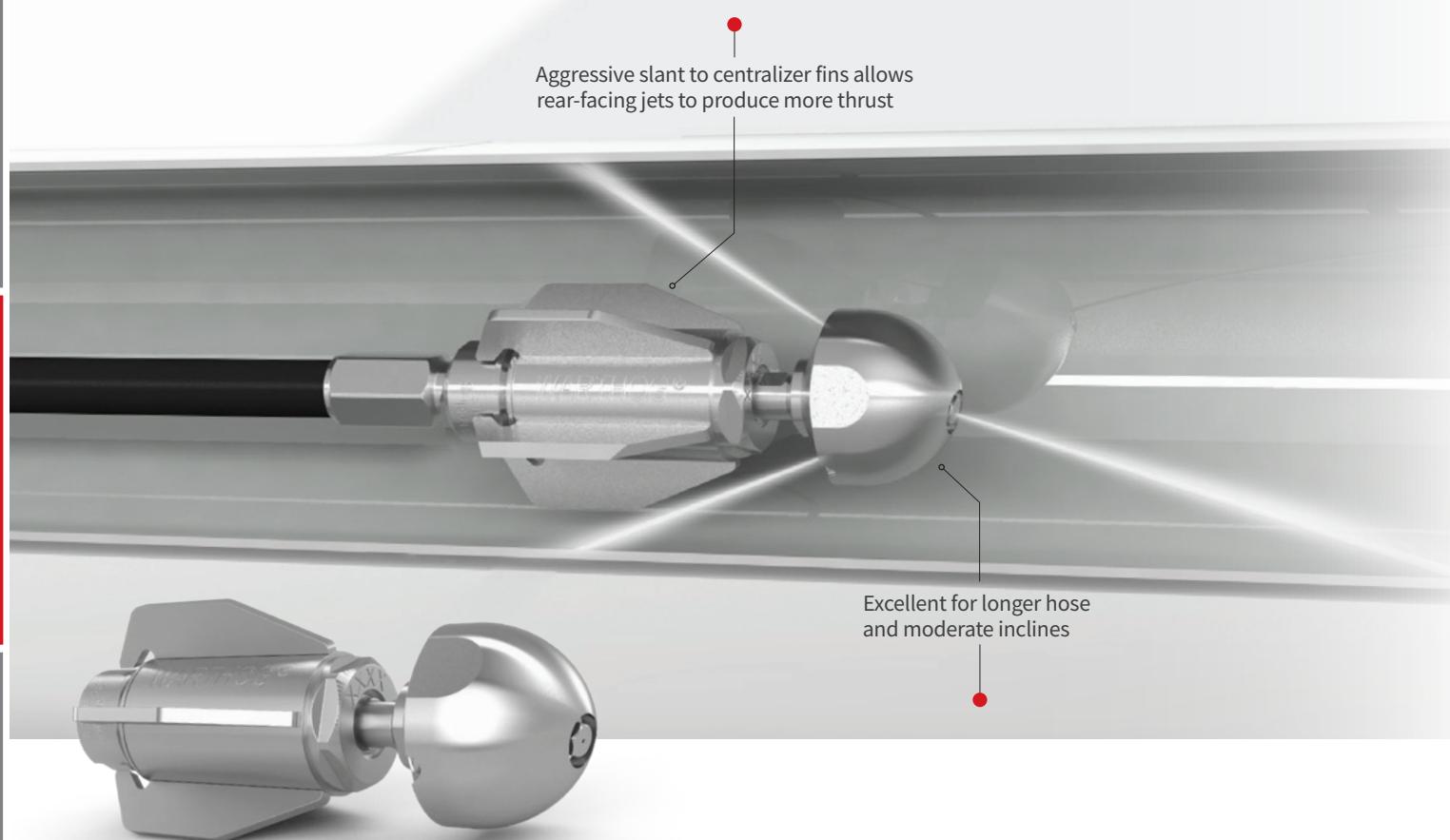
#### BENEFITS:

- Controlled rotation allows jets to penetrate deeper through deposits to clean and clear pipes
- Descaling head available

#### JET ANGLES



| MODEL/<br>INLET       | PRESSURE RANGE |        | FLOW RANGE |        | HEAD          | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |     | DIAMETER x LENGTH |          |
|-----------------------|----------------|--------|------------|--------|---------------|-----------------|-------------|-------------|---------|-----|-------------------|----------|
|                       | PSI            | BAR    | GPM        | LPM    |               |                 |             |             | LB      | KG  | IN.               | MM       |
| WH-1/2                | 1200-8K        | 83-552 | 14-20      | 53-76  | WH 040-R6     | 3 X 1/8 NPT     | AP2         | GP 025-P2SS | 4.7     | 2.1 | 3.4 X 7.5         | 86 X 191 |
|                       |                |        | 10-14      | 38-53  | WH 040-R8     |                 |             |             |         |     |                   |          |
| WH-1/2-DS<br>DESCALER | 1200-8K        | 83-552 | 10-14      | 38-53  | WH 040-DS-R8  | 5 X 1/8 NPT     | AP2         | GP 025-P2SS | 4.7     | 2.1 | 3.4 X 7.5         | 86 X 191 |
|                       |                |        |            |        |               |                 |             |             |         |     |                   |          |
| WH-3/4                | 1200-8K        | 83-552 | 24-50      | 91-189 | WH 040-R3     | 3 X 1/8 NPT     | AP2         | GP 025-P2SS | 4.7     | 2.1 | 3.4 X 7.5         | 86 X 191 |
|                       |                |        | 16-24      | 61-91  | WH 040-R45    |                 |             |             |         |     |                   |          |
|                       |                |        | 12-16      | 45-61  | WH 040-R6     |                 |             |             |         |     |                   |          |
|                       |                |        | 10-12      | 38-45  | WH 040-R8     |                 |             |             |         |     |                   |          |
| WH-3/4-DS<br>DESCALER | 1200-8K        | 83-552 | 24-50      | 91-189 | WH 040-DS-R3  | 5 X 1/8 NPT     | AP2         | GP 025-P2SS | 4.7     | 2.1 | 3.4 X 7.5         | 86 X 191 |
|                       |                |        | 16-24      | 61-91  | WH 040-DS-R45 |                 |             |             |         |     |                   |          |
|                       |                |        | 10-12      | 38-45  | WH 040-R8     |                 |             |             |         |     |                   |          |



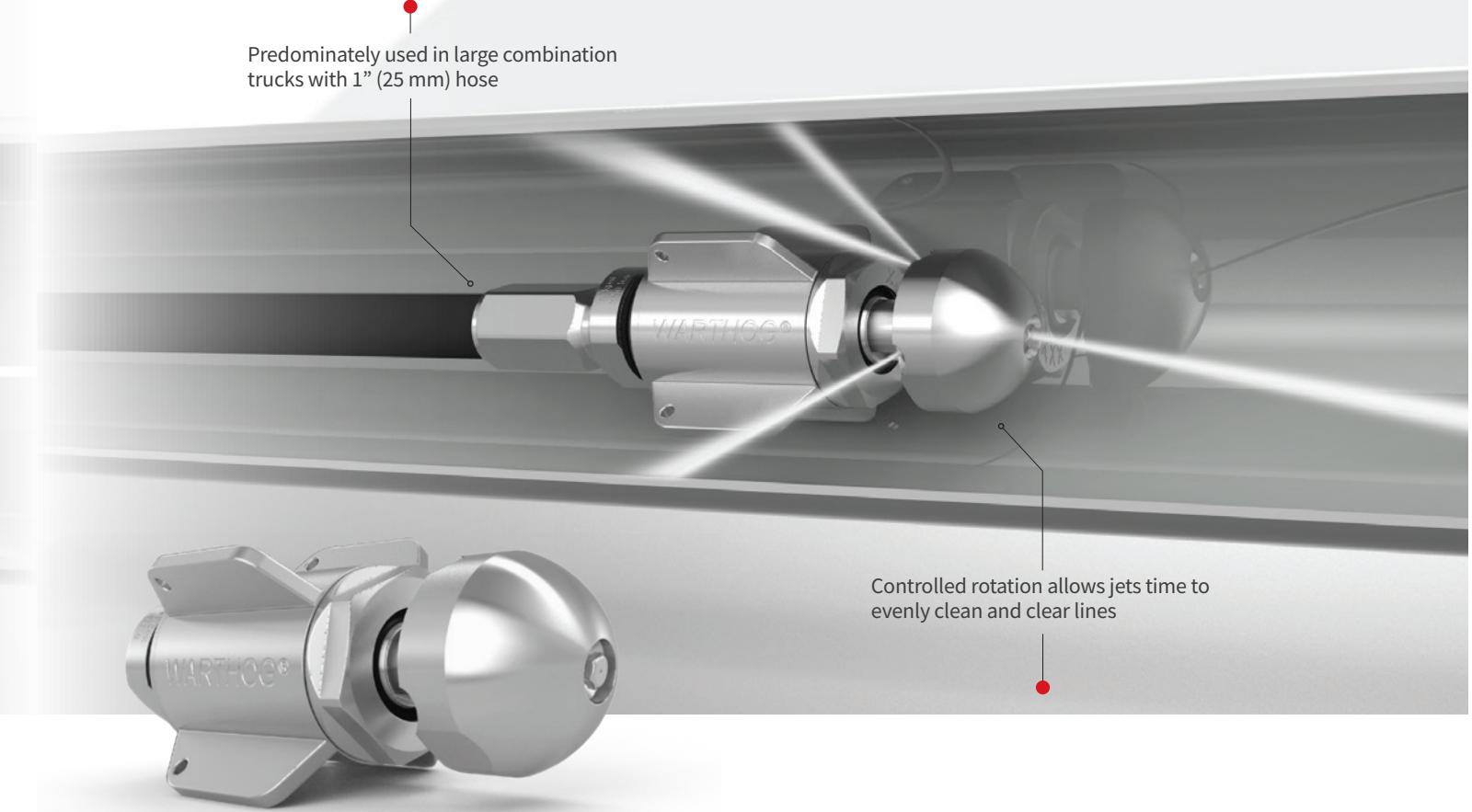
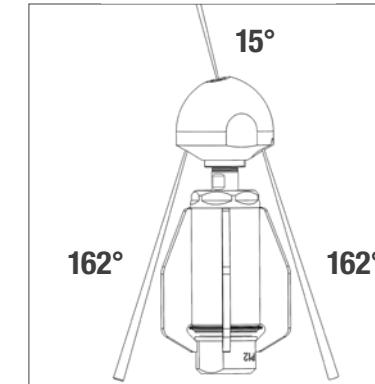
## WHP-3/4-PKG

**PIPE SIZE:** 6-18" LINES (152-457 MM)  
**INLET:** 1/2 3/4" NPT OR BSPP, 3/4" NPT OR BSPP

### BENEFITS:

- Handles longer hoses and steeper inclines
- Streamlined fin design reduces hangups and enhances pulling power
- Controlled rotation allows jets to penetrate deeper through deposits to clean and clear pipes
- Plug front jet for 40% more thrust

JET ANGLES



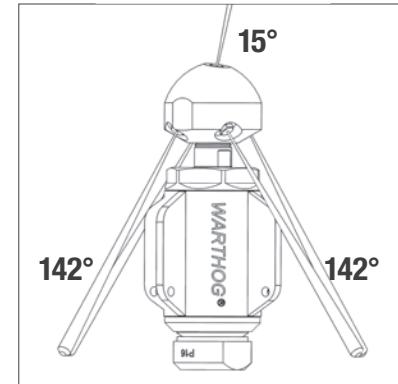
## WG-PKG

**PIPE SIZE:** 8-36" (203-914 MM)  
**INLET:** 1" NPT OR BSPP

### BENEFITS:

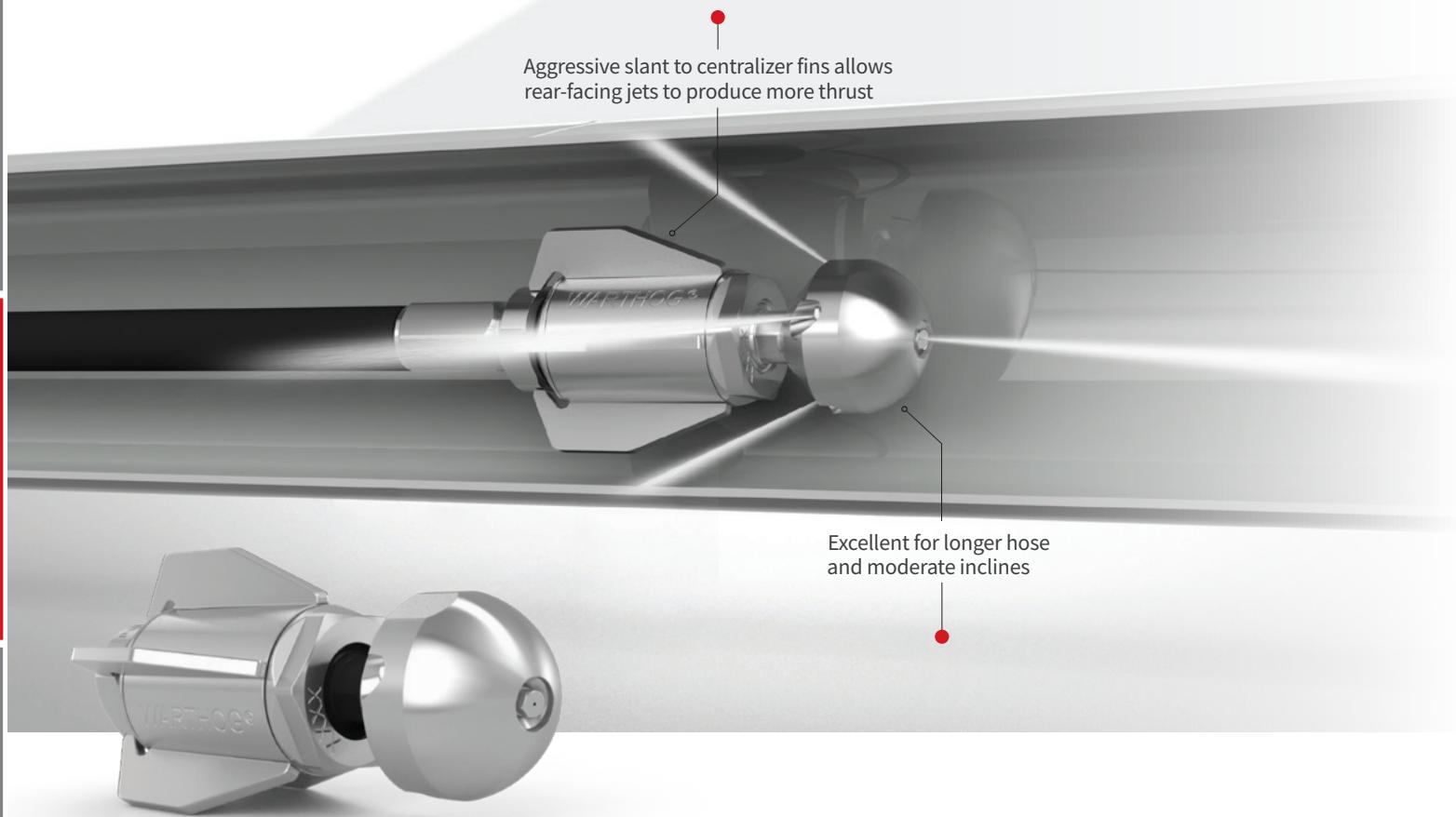
- The industry's work-horse nozzle
- Controlled rotation allows jets to penetrate deeper through deposits to clean and clear pipes
- Descaling head available

JET ANGLES



| MODEL/<br>INLET | PRESSURE RANGE |        | FLOW RANGE |        | HEAD       | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |     | DIAMETER X LENGTH |          |
|-----------------|----------------|--------|------------|--------|------------|-----------------|-------------|-------------|---------|-----|-------------------|----------|
|                 | PSI            | BAR    | GPM        | LPM    |            |                 |             |             | LB      | KG  | IN.               | MM       |
| WHP-3/4         | 1200-8K        | 83-552 | 15-50      | 57-189 | WHP 040-R5 | 3 X 1/8 NPT     | AP2         | GP 025-P2SS | 4.7     | 2.1 | 3.4 X 7.5         | 86 X 191 |

| MODEL/<br>INLET | PRESSURE RANGE |        | FLOW RANGE |         | HEAD         | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |     | DIAMETER X LENGTH |           |
|-----------------|----------------|--------|------------|---------|--------------|-----------------|-------------|-------------|---------|-----|-------------------|-----------|
|                 | PSI            | BAR    | GPM        | LPM     |              |                 |             |             | LB      | KG  | IN.               | MM        |
| WG-1            | 1200-5K        | 83-345 | 50-80      | 189-303 | WG 040-R5    | 5 X 1/8 NPT     | AP2         | GP 025-P2SS | 10.9    | 4.9 | 4.8 X 9.1         | 122 X 231 |
| WGDS-1 DESCALER | 1200-5K        | 83-345 | 50-80      | 189-303 | WG 040-DS-R5 | 7 X 1/8 NPT     | AP2         | GP 025-P2SS | 10.9    | 4.9 | 4.8 X 9.1         | 122 X 231 |



## WGP-1

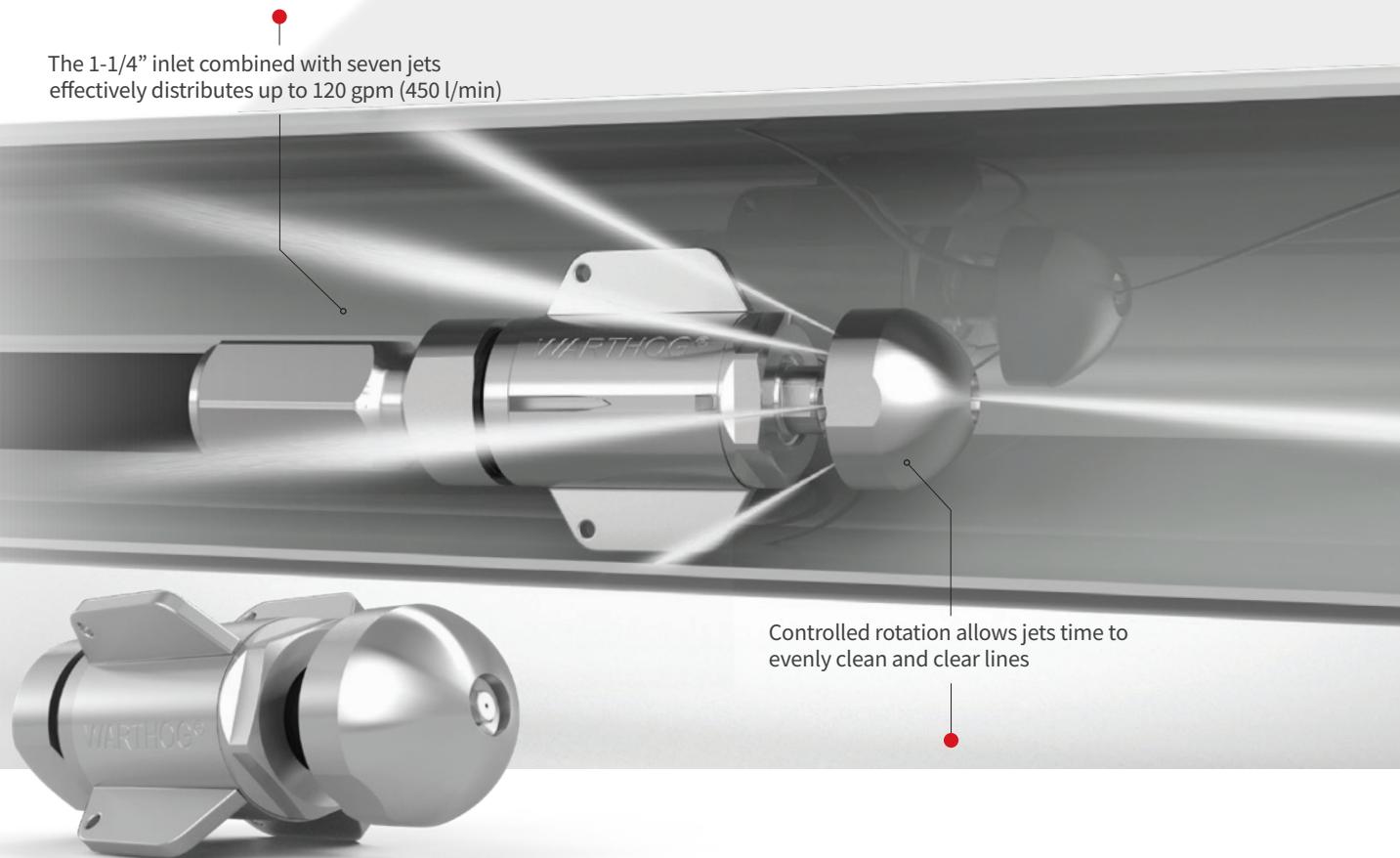
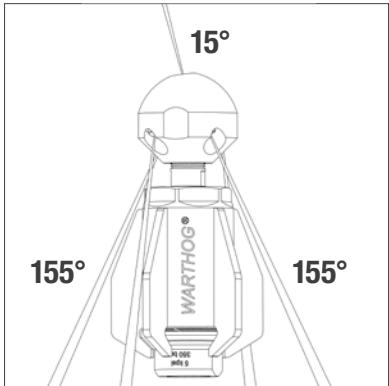
**PIPE SIZE:** 6-18" LINES (152-457 MM)

**INLET:** 1" NPT OR BSPP

### BENEFITS:

- Handles longer hose and steeper inclines
- Streamlined fin design reduces hangups and enhances pulling power
- Produces up to 40% more pulling power than the WG-1
- Controlled rotation allows jets to penetrate deeper through deposits to clean and clear pipes

### JET ANGLES



## WD 1-1/4

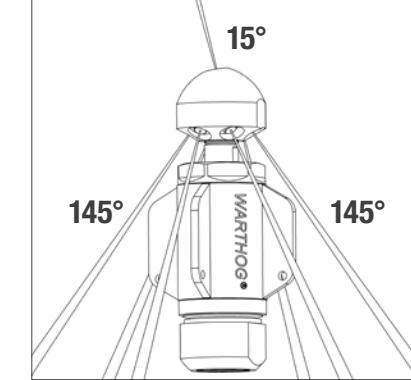
**PIPE SIZE:** 8-36" (203-914 CM)

**INLET:** 1-1/4" NPT OR BSPP

### BENEFITS:

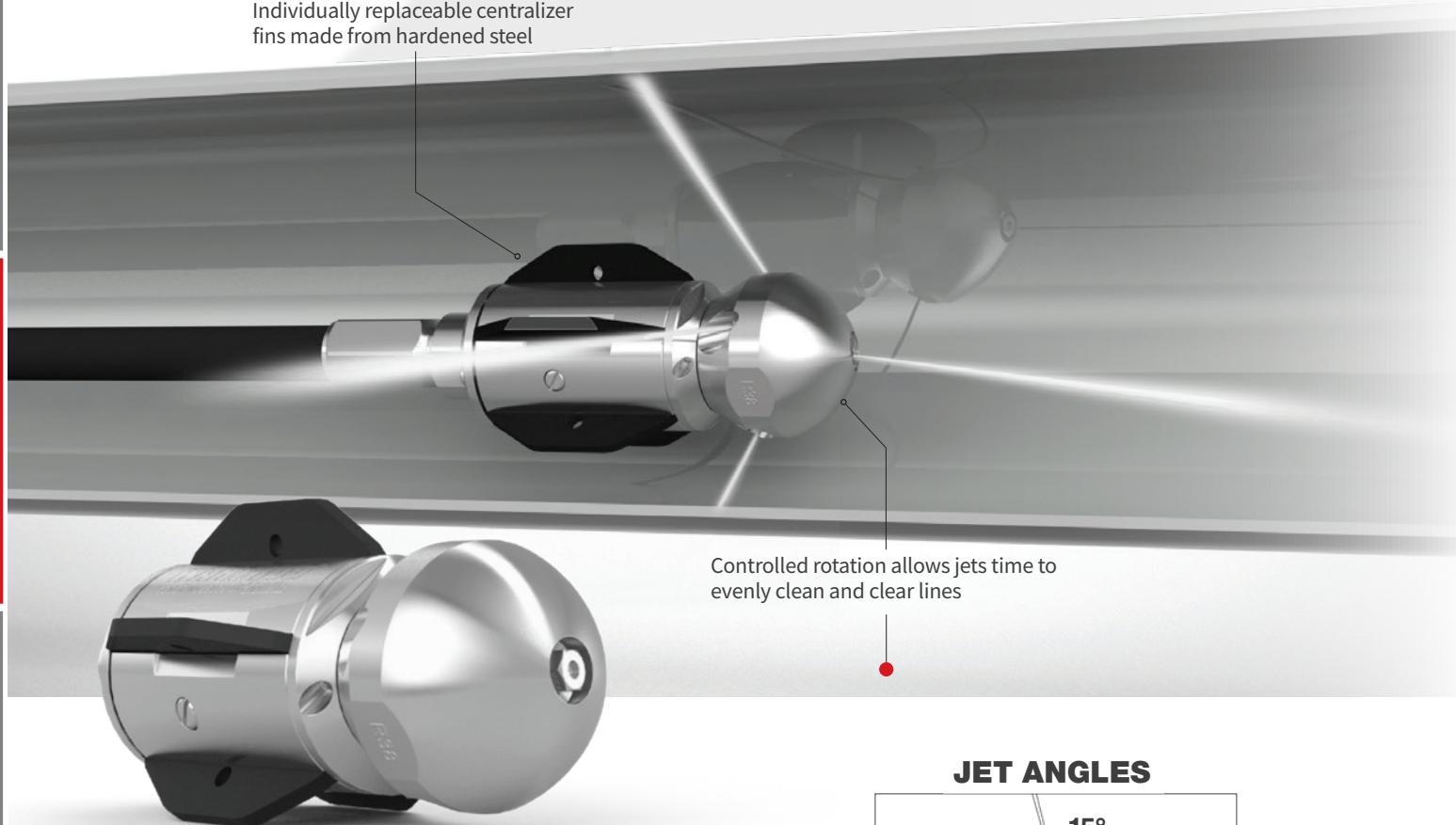
- High flow capacity up to 120 gpm (450 l/min)
- Proven effective for municipal, industrial and commercial drain cleaning applications
- Controlled rotation allows jets to penetrate deeper through deposits to clean and clear pipes
- Descaling head available

### JET ANGLES



| MODEL/<br>INLET | PRESSURE RANGE |        | FLOW RANGE |         | HEAD       | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |     | DIAMETER X LENGTH |           |
|-----------------|----------------|--------|------------|---------|------------|-----------------|-------------|-------------|---------|-----|-------------------|-----------|
|                 | PSI            | BAR    | GPM        | LPM     |            |                 |             |             | LB      | KG  | IN.               | MM        |
| WGP-1           | 1200-5K        | 83-345 | 50-80      | 189-303 | WGP 040-R8 | 5 X 1/8 NPT     | AP2         | GP 025-P2SS | 10.9    | 4.9 | 4.8 X 9.1         | 122 X 231 |

| MODEL/<br>INLET | PRESSURE RANGE |        | FLOW RANGE |         | HEAD       | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |    | DIAMETER X LENGTH |           |
|-----------------|----------------|--------|------------|---------|------------|-----------------|-------------|-------------|---------|----|-------------------|-----------|
|                 | PSI            | BAR    | GPM        | LPM     |            |                 |             |             | LB      | KG | IN.               | MM        |
| WD-1/4          | 1200-5K        | 83-345 | 80-120     | 303-454 | WD 040-R35 | 7 X 1/8 NPT     | AP2         | GP 025-P2SS | 11      | 5  | 4.8 X 9.1         | 122 X 231 |



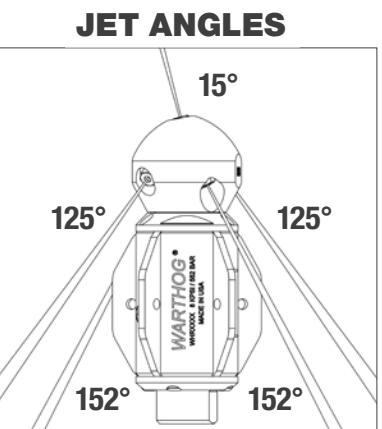
## WHR MAGNUM

**PIPE SIZE:** 6-18" (152-457 MM)

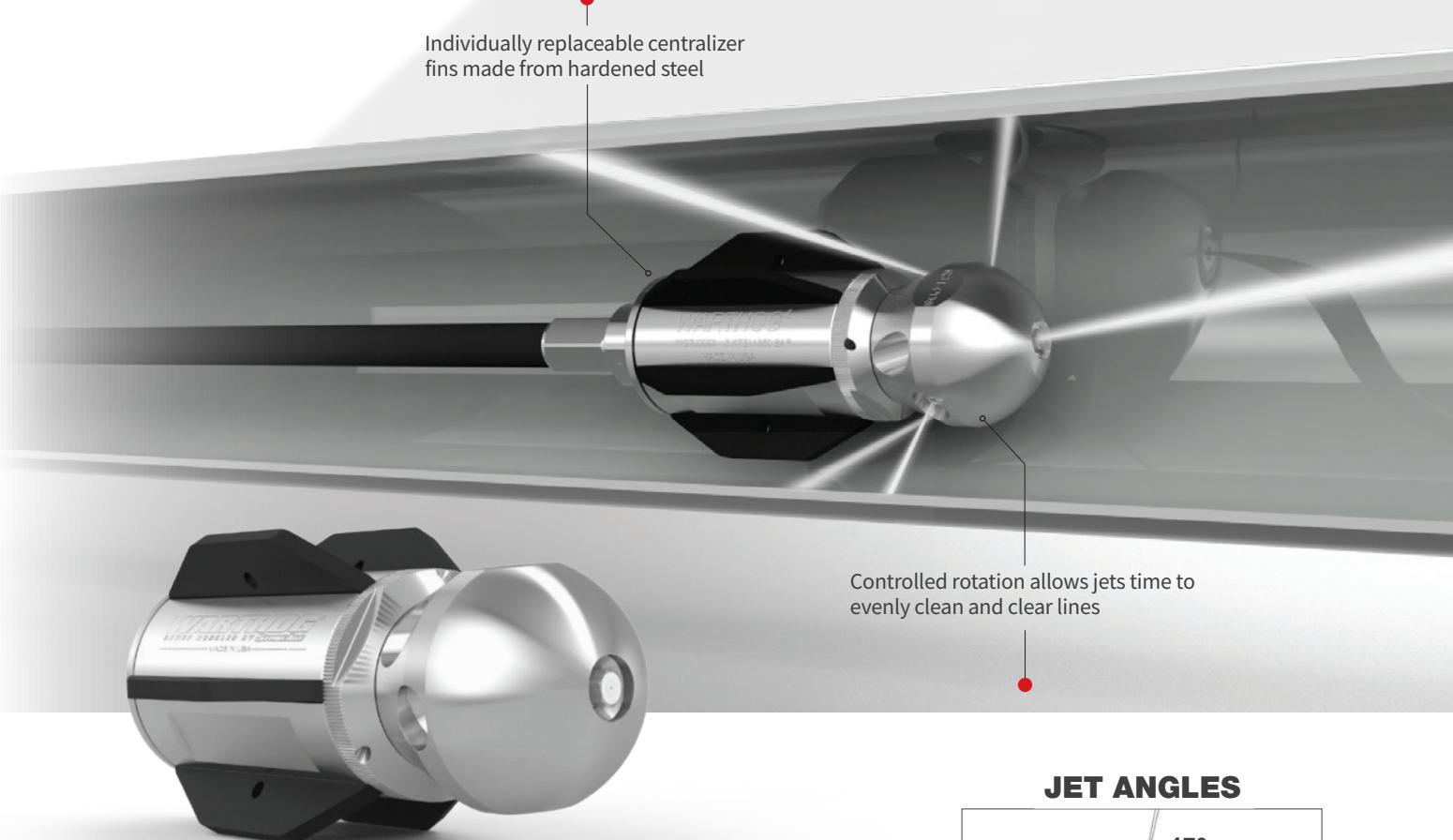
**INLET:** 1/2" NPT OR BSPP, 3/4" NPT OR BSPP

### BENEFITS:

- Reduced operation expense and less downtime
- Effectively handles recycled water
- Carbide nozzles generate higher quality, longer lasting jets
- Independently replaceable centralizer fins
- Customizable rotation speed via viscous fluid options



| MODEL/<br>INLET | PRESSURE RANGE |        | FLOW RANGE |         | HEAD        | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |     | DIAMETER X LENGTH |          |
|-----------------|----------------|--------|------------|---------|-------------|-----------------|-------------|-------------|---------|-----|-------------------|----------|
|                 | PSI            | BAR    | GPM        | LPM     |             |                 |             |             | LB      | KG  | IN.               | MM       |
| WHR-1/2         | 1200-8K        | 83-552 | 14-20      | 53-76   | WHR 040-R38 | 5 X 1/8 NPT     | CNP2        | GP 025-P2SS | 6.3     | 2.9 | 3.6 X 7.25        | 92 X 184 |
| WHR-3/4         | 1200-5K        | 83-552 | 30-50      | 114-189 | WHR 040-R18 | 5 X 1/8 NPT     | CNP2        | GP 025-P2SS | 6.3     | 2.9 | 3.6 X 7.25        | 92 X 184 |
|                 |                |        | 20-40      | 76-151  | WHR 040-R28 |                 |             |             | 6.3     | 2.9 | 3.6 X 7.25        | 92 X 184 |
|                 |                |        | 14-20      | 53-76   | WHR 040-R38 |                 |             |             | 6.3     | 2.9 | 3.6 X 7.25        | 92 X 184 |



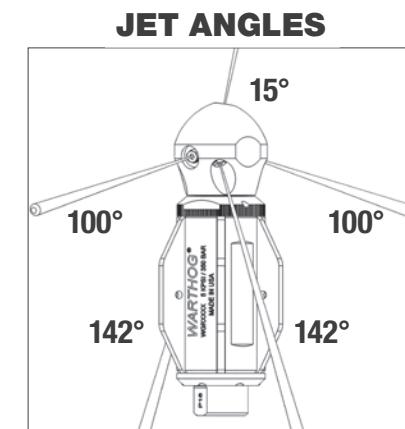
## WGR MAGNUM

**PIPE SIZE:** 8-36" (203-914 MM)

**INLET:** 1" NPT OR BSPP

### BENEFITS:

- Reduced operation expense and less downtime
- Effectively handles recycled water
- Carbide nozzles generate higher quality, longer lasting jets
- Independently replaceable centralizer fins
- Customizable rotation speed via viscous fluid options

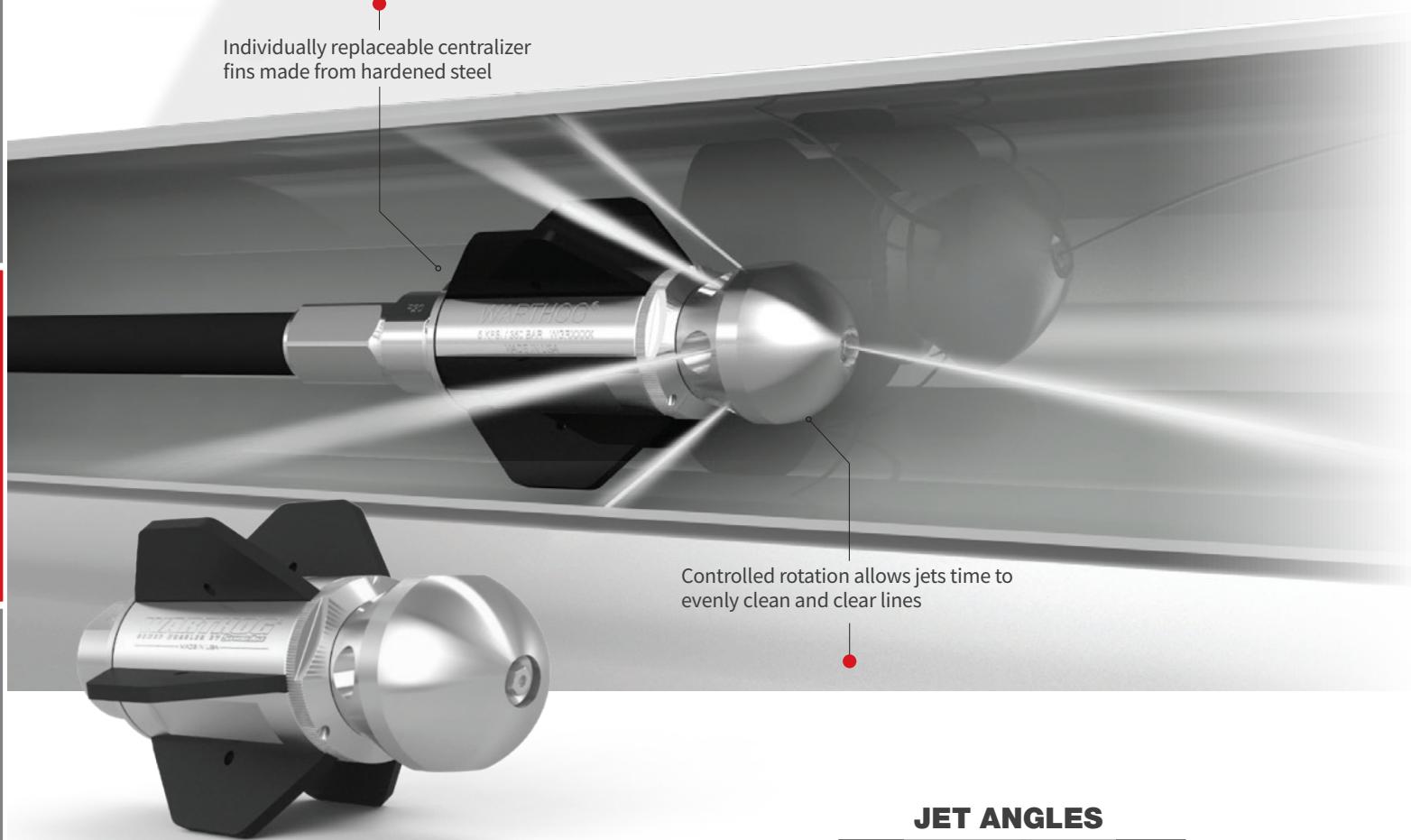


| MODEL/<br>INLET | PRESSURE RANGE |        | FLOW RANGE |         | HEAD            | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |    | DIAMETER X LENGTH |           |
|-----------------|----------------|--------|------------|---------|-----------------|-----------------|-------------|-------------|---------|----|-------------------|-----------|
|                 | PSI            | BAR    | GPM        | LPM     |                 |                 |             |             | LB      | KG | IN.               | MM        |
| WGR-1           | 1200-5K        | 83-345 | 60-80      | 227-303 | WGR 040-R20-SDS | 7 X 1/8 NPT     | CNP2        | GP 025-P2SS | 13.25   | 6  | 4.5 X 10          | 114 X 254 |
|                 |                |        | 50-70      | 189-265 |                 |                 |             |             |         |    |                   |           |

Individually replaceable centralizer fins made from hardened steel

Controlled rotation allows jets time to evenly clean and clear lines

8-36" LINES



## WGR-1-1/4 MAGNUM

**PIPE SIZE:** 8-36" (203-914 MM)

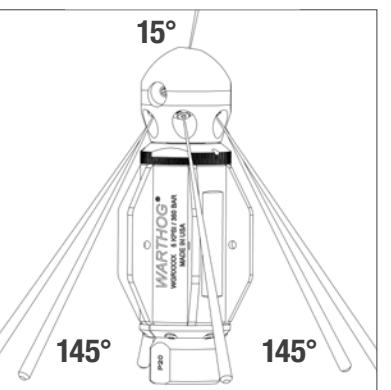
**INLET:** 1-1/4" NPT OR BSPP

### BENEFITS:

- Reduced operation expense and less downtime
- High flow capacity up to 120 gpm (450 l/min)
- Effectively handles recycled water
- Carbide nozzles generate higher quality, longer lasting jets
- Independently replaceable centralizer fins
- Optional fin sizes for different pipe diameters

| MODEL/<br>INLET | PRESSURE<br>RANGE |        | FLOW RANGE |         | HEAD            | NOZZLE<br>PORTS | JET<br>TYPE | PORT PLUG   | WEIGHTS |    | DIAMETER x<br>LENGTH |           |
|-----------------|-------------------|--------|------------|---------|-----------------|-----------------|-------------|-------------|---------|----|----------------------|-----------|
|                 | PSI               | BAR    | GPM        | LPM     |                 |                 |             |             | LB      | KG | IN.                  | MM        |
| WGR-1/4         | 1200-5K           | 83-345 | 80-120     | 303-454 | WGR 042-R20-SDS | 9 X 1/8 NPT     | CNP2        | GP 025-P2SS | 13.55   | 6  | 4.5 X 10.5           | 114 X 267 |

### JET ANGLES



# TOOL TALK

## MAXIMIZE YOUR PUMP'S POWER

### PRESERVING JET QUALITY

The first prerequisite for a successful job is excellent quality jets. A jet is the stream of water after it has been forced through an orifice via high pressure. The orifice is nothing more than a shaped restriction in the flow channel that forces the water to accelerate, converting potential energy (pressure) into kinetic energy (velocity). The orifice shape, materials and upstream flow turbulence are all important to delivering maximum energy to the work. The powerful, cohesive, high-velocity jet is established in the first 8 to 25 orifice diameters downstream from the orifice. Farther away, the outside surface of the jet is slowed by drag through the air. Even the best jet deteriorates with air drag. It is possible, though, to lose as much as half the jet's power at the start due to excessively turbulent flow upstream of the nozzle tip.

### MANAGING THE NUMBERS

The second important principle is to use the fewest jets possible. If one good jet doesn't cut through the deposits, then more of them will not do better. Greater power is delivered to the surface with fewer, more powerful jets, rotated to cover the entire surface in a helical jet path. For example, in a nozzle using three or five jets, each jet is 2 to 2.5 times as powerful as the non-rotating alternative.

### CONTROLLED ROTATION

Thirdly, the bigger the diameter of pipe, the slower the rotation required. Large pipes or vessels may require air-motor-powered gearboxes to keep rotation slow enough to maintain the necessary transverse velocity at the wall. A good rule of thumb is to provide about 15 mph transverse jet velocity along the surface being cleaned. This rule works whether the tool is cleaning a one-inch diameter heat exchanger tube, a 12 in. sewer pipe or a 40-foot-diameter crude oil storage facility.



Photo Credit: 502 Equipment

### HOSE PRESSURE DROP

A fourth important factor is to balance hose pressure drop for the pump being used. Hose pressure drop is a direct, proportional loss in power caused by friction as water molecules slide across the wall of the hose and against other water molecules in the hose. The only way to reduce pressure drop is to use a shorter or a larger-diameter hose. Sewer cleaning requires relatively long hoses and large-diameter hose is heavier and therefore more difficult to pull through the pipe. So even in the best case, 20 to 25 percent of a jetter's power is lost to hose pressure drop. If you notice more powerful jetting with a shorter hose, that's because there is less pressure drop. It can make sense to buy shorter lengths as replacements.

### SAFETY

Finally, safety should always be a top priority on the job and that's especially true when working with high pressure jetting nozzles. To prevent a tool from "backing out" and turning toward the operator, we recommend using a rigid pipe "stinger". Centralizers can also eliminate the possibility of tool turn around, as well as improving performance by allowing for nipple extensions to deliver the jet power closer to the pipe wall, and protecting the head of the tool from hitting the side walls.

# SWITCHER™

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

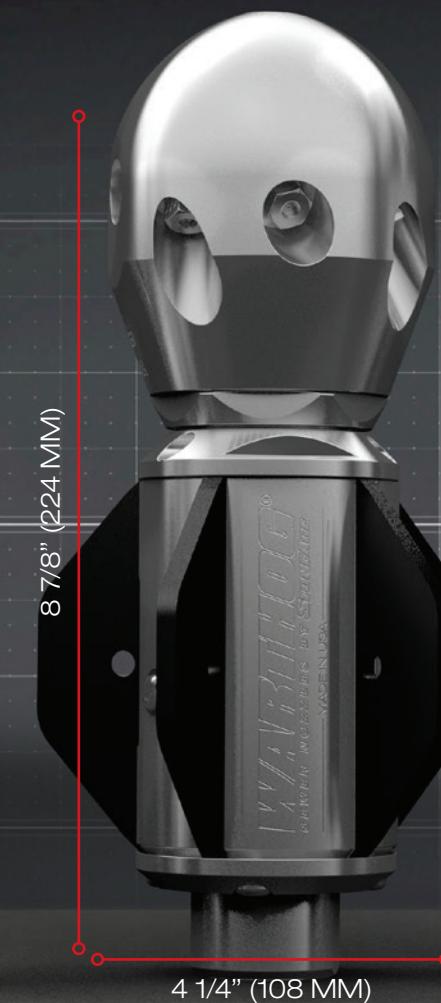
## WHR SWITCHER

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



## WHR-HYBRID SWITCHER

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

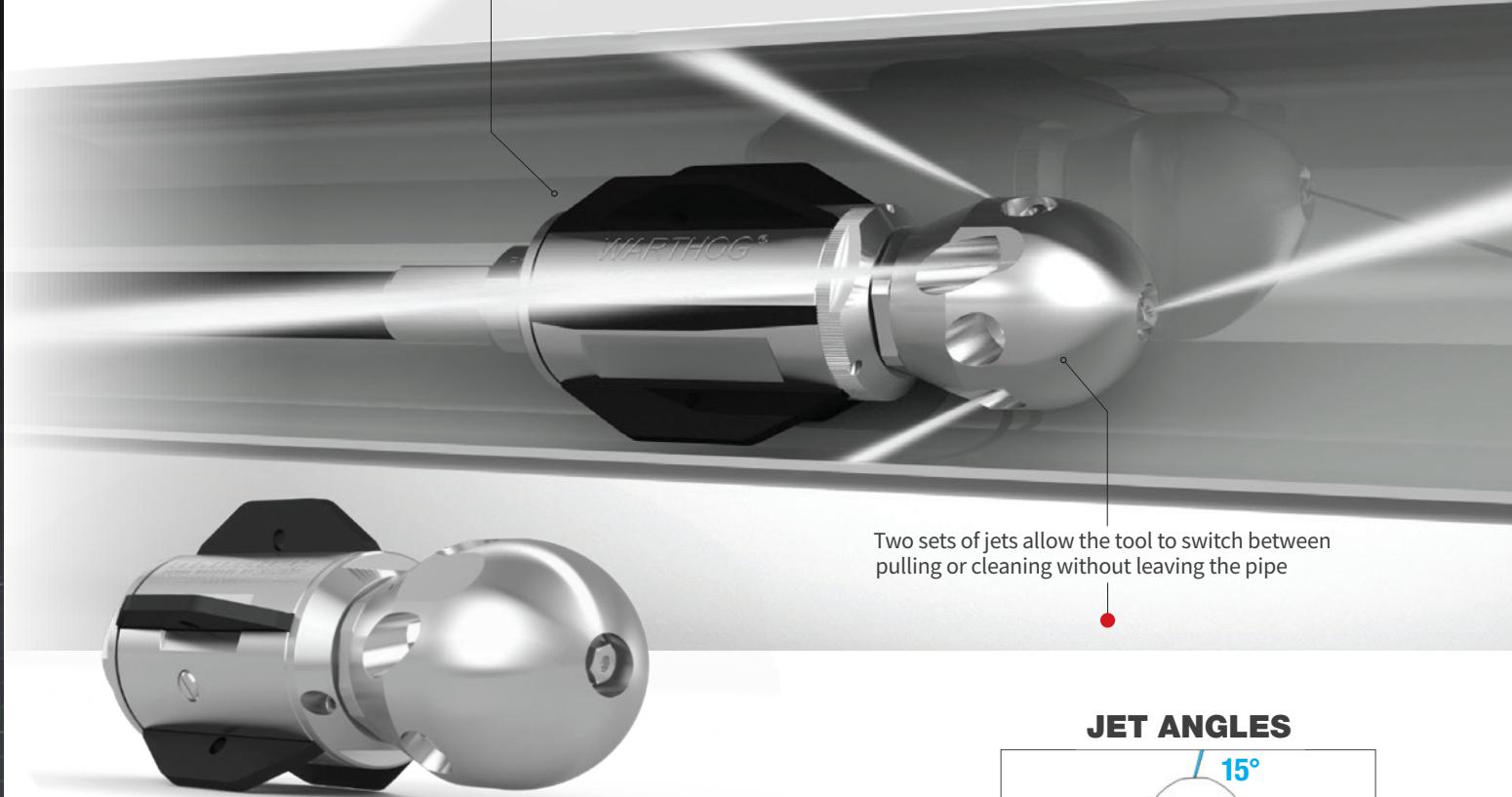


## WGR SWITCHER

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



Individually replaceable centralizer fins made from hardened steel



## WHR-1/2 & WHR-3/4 SWITCHER

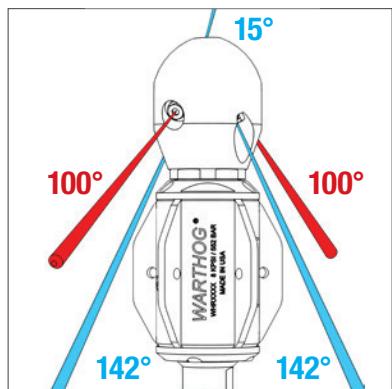
**PIPE SIZE:** 6-18" (152-457 MM)

**INLET:** 1/2" NPT OR BSPP, 3/4" NPT OR BSPP

### BENEFITS:

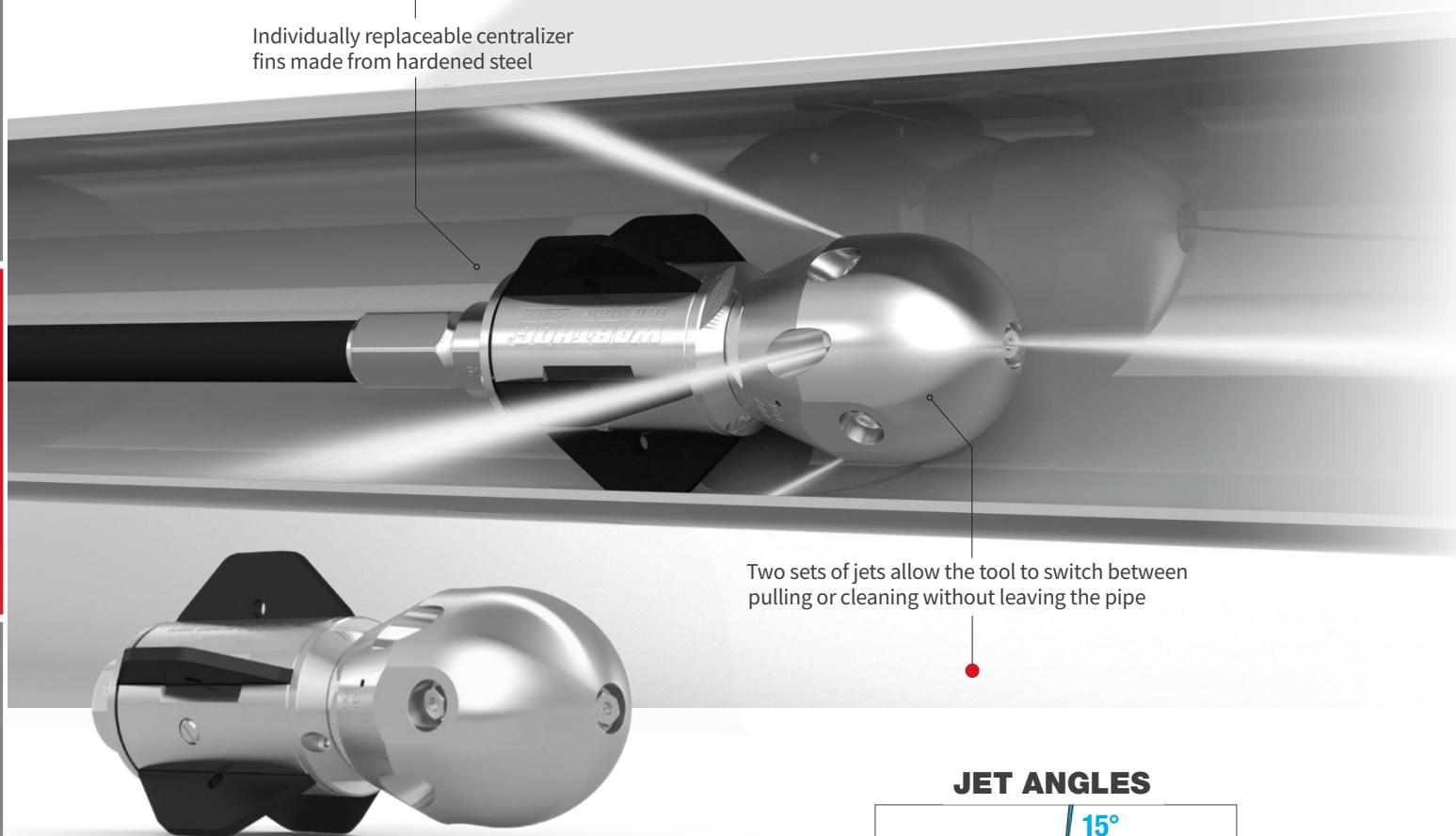
- Two tools in one - both puller and descaler
- Saves time and water
- Switch jet patterns without ever leaving the pipe
- Customized jetting for each mode of operation

### JET ANGLES



Pulling/Flushing Mode  
Cleaning Mode

| MODEL/INLET               | PRESSURE RANGE |        | FLOW RANGE |         | HEAD            | NOZZLE PORTS | JET TYPE | PORT PLUG   | WEIGHTS |     | DIAMETER X LENGTH |          |
|---------------------------|----------------|--------|------------|---------|-----------------|--------------|----------|-------------|---------|-----|-------------------|----------|
|                           | PSI            | BAR    | GPM        | LPM     |                 |              |          |             | LB      | KG  | IN.               | MM       |
| <b>NEW</b><br>WHR-1/2-SWT | 1200-8K        | 83-552 | 14-45      | 53-170  | WHR-040-R38-SWT | 5 X 1/8 NPT  | CNP2     | GP 025-P2SS | 7.35    | 3.3 | 3.6 X 8.25        | 92 X 210 |
| WHR-3/4-SWT               | 1200-8K        | 83-552 | 30-45      | 114-170 | WHR 040-R18-SWT | 7 X 1/8 NPT  | CNP2     | GP 025-P2SS | 7.35    | 3.3 | 3.6 X 8.25        | 92 X 210 |
|                           |                |        | 20-40      | 76-151  | WHR 040-R28-SWT |              |          |             |         |     |                   |          |



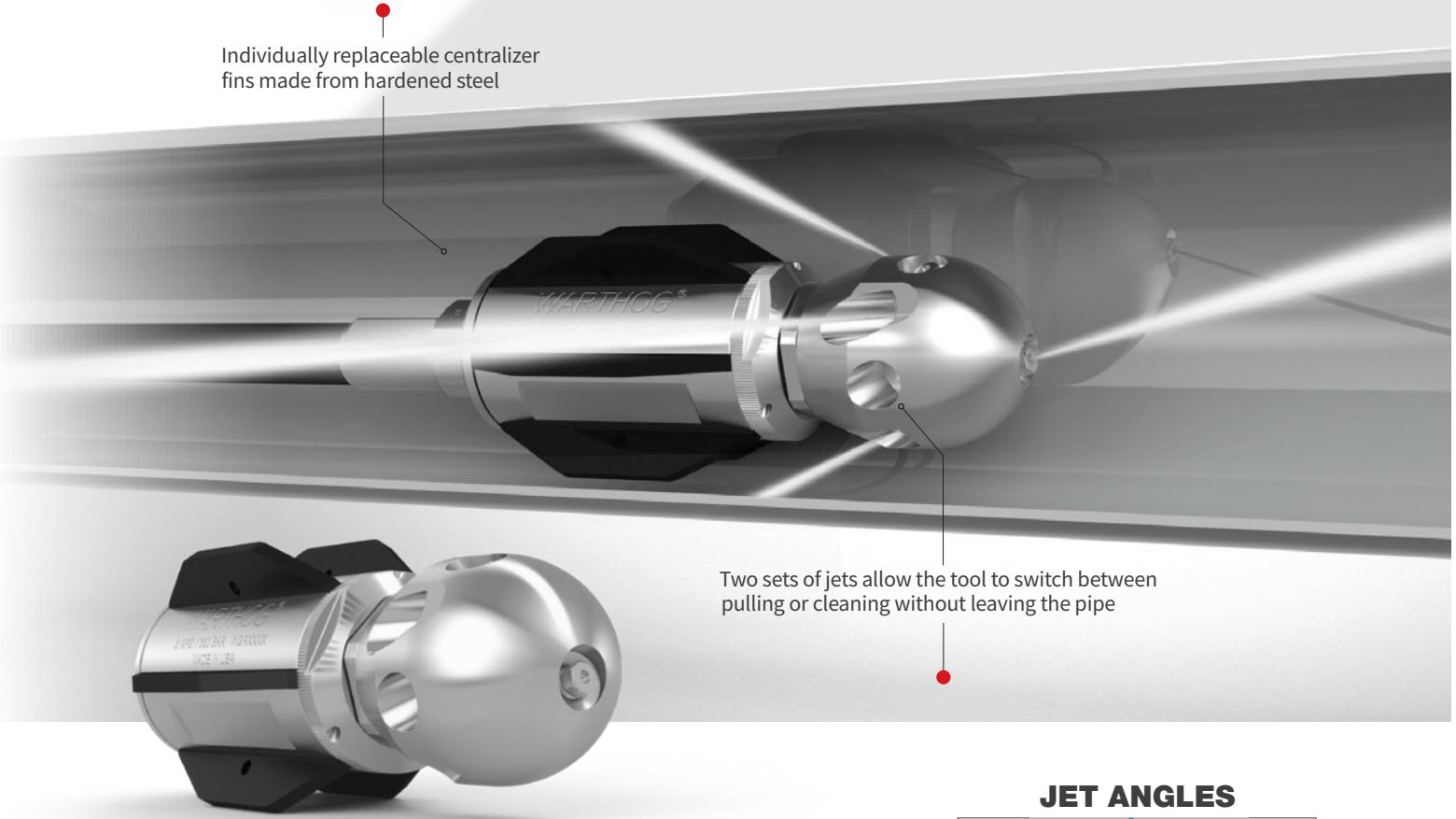
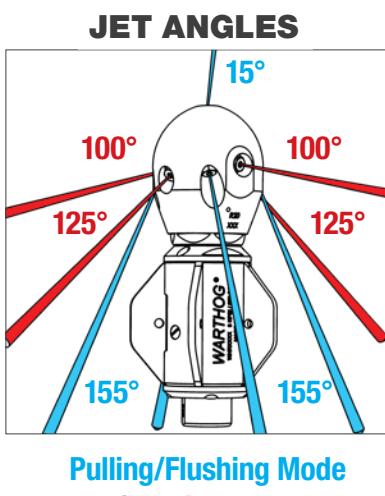
## WHR HYBRID SWITCHER

**PIPE SIZE:** 6-18" (152-457 MM)

**INLET:** 3/4" NPT OR BSPP

**BENEFITS:**

- Two tools in one - both puller and descaler
- Saves time and water
- Switch jet patterns without ever leaving the pipe
- Customized jetting for each mode of operation



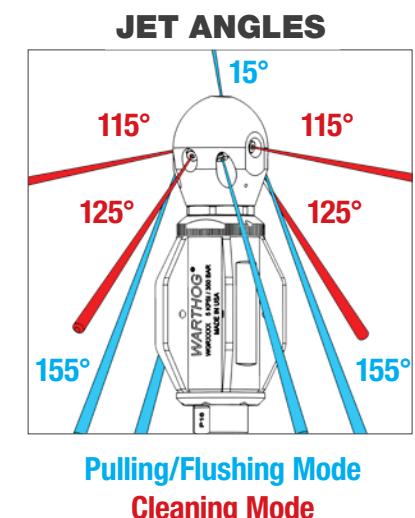
## WGR SWITCHER

**PIPE SIZE:** 8-36" (203-914 MM)

**INLET:** 1" NPT, 1-1/4" NPT OR BSPP

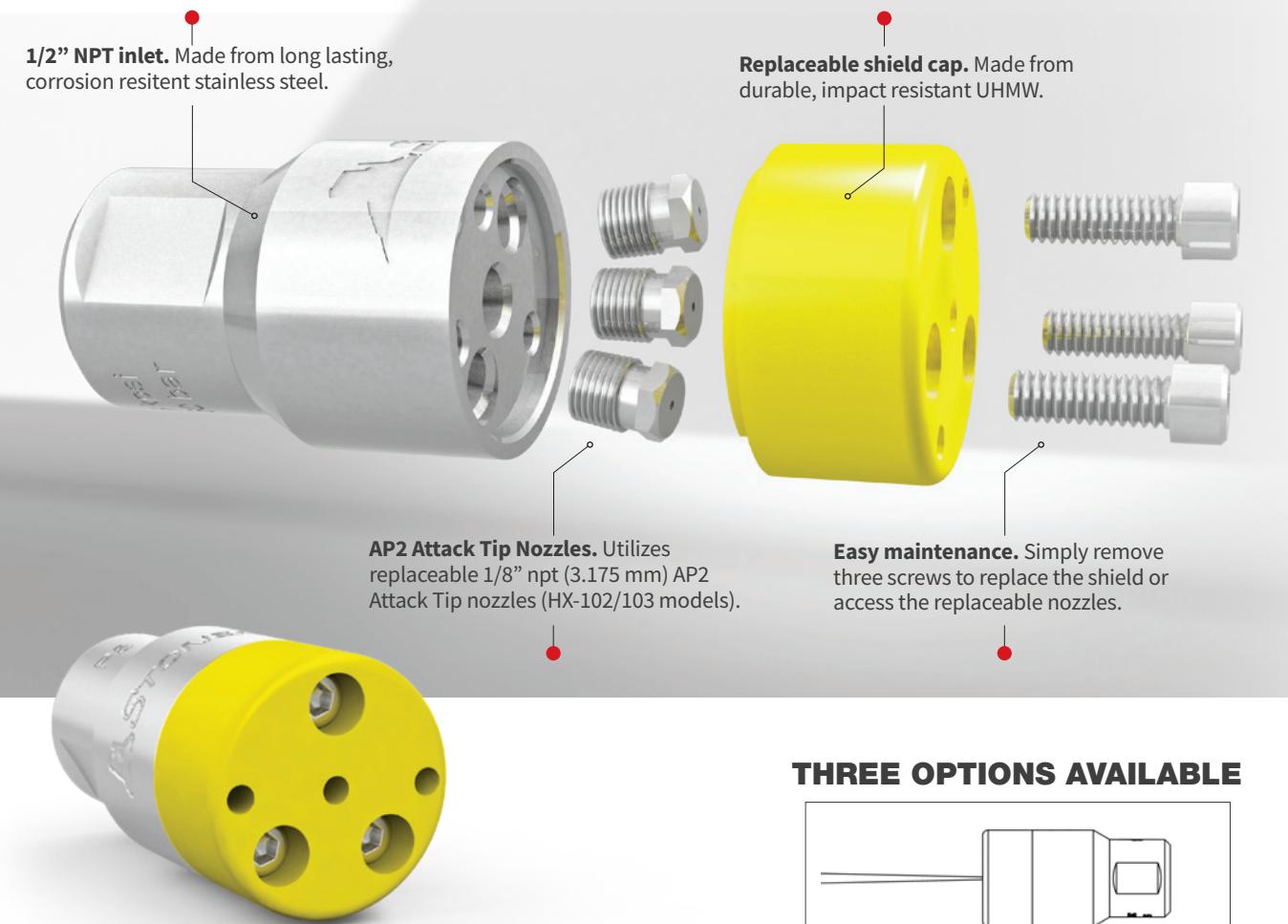
**BENEFITS:**

- Two tools in one - both puller and descaler
- Saves time and water
- Switch jet patterns without ever leaving the pipe
- Customized jetting for each mode of operation



| MODEL/INLET        | PRESSURE RANGE |        | FLOW RANGE |         | HEAD            | NOZZLE PORTS | JET TYPE | PORT PLUG   | WEIGHTS |    | DIAMETER X LENGTH |           |
|--------------------|----------------|--------|------------|---------|-----------------|--------------|----------|-------------|---------|----|-------------------|-----------|
|                    | PSI            | BAR    | GPM        | LPM     |                 |              |          |             | LB      | KG | IN.               | MM        |
| WHR-3/4-SWT-HYBRID | 1200-5K        | 83-345 | 30-50      | 114-189 | WHR 042-R20-SWT | 9 X 1/8 NPT  | CNP2     | GP 025-P2SS | 9       | 4  | 4.25 X 8.8        | 108 X 224 |

| MODEL/INLET   | PRESSURE RANGE |        | FLOW RANGE |         | HEAD            | NOZZLE PORTS | JET TYPE | PORT PLUG   | WEIGHTS |     | DIAMETER X LENGTH |           |
|---------------|----------------|--------|------------|---------|-----------------|--------------|----------|-------------|---------|-----|-------------------|-----------|
|               | PSI            | BAR    | GPM        | LPM     |                 |              |          |             | LB      | KG  | IN.               | MM        |
| WGR-1-SWT     | 1200-5K        | 83-345 | 50-80      | 189-303 | WGR 040-R31-SWT | 9 X 1/8 NPT  | CNP2     | GP 025-P2SS | 14.5    | 6.6 | 4.5 X 11          | 114 X 279 |
| WGR-1 1/4-SWT | 1200-5K        | 83-345 | 80-100     | 303-379 | WGR 040-R20-SWT | 9 X 1/8 NPT  | CNP2     | GP 025-P2SS | 14.9    | 6.8 | 4.5 X 11.5        | 114 X 292 |

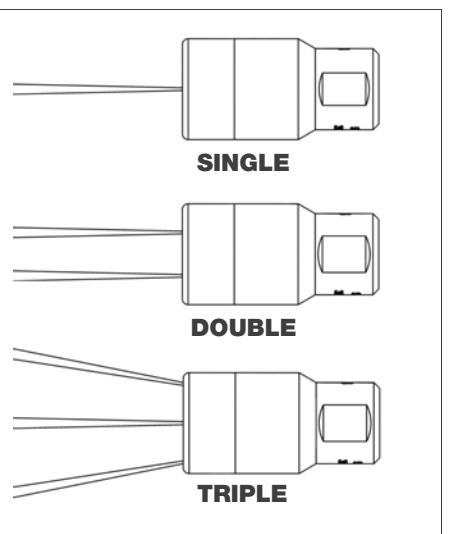


## HYDRO EXCAVATION

### BENEFITS:

- Three models available
- 1/2" NPT inlet connection
- Replaceable high visibility urethane guard

### THREE OPTIONS AVAILABLE



| MODEL  | PRESSURE RANGE |     | FLOW RANGE |      | JET TYPE           | WEIGHTS |     |
|--------|----------------|-----|------------|------|--------------------|---------|-----|
|        | PSI            | BAR | GPM        | LPM  |                    | LB      | KG  |
| HX-101 | UP TO 5K       | 345 | 2-15       | 8-57 | 1 X OCIH CARBIDE   | 1.1     | 0.5 |
| HX-102 | UP TO 5K       | 345 | 2-15       | 8-57 | 2 X AP2 ATTACK TIP | 1.1     | 0.5 |
| HX-103 | UP TO 5K       | 345 | 2-15       | 8-57 | 3 X AP2 ATTACK TIP | 1.1     | 0.5 |



## MANHOLE CLEANING CONVERSION KIT

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 — making it much more effective and safer than 3D style tools.

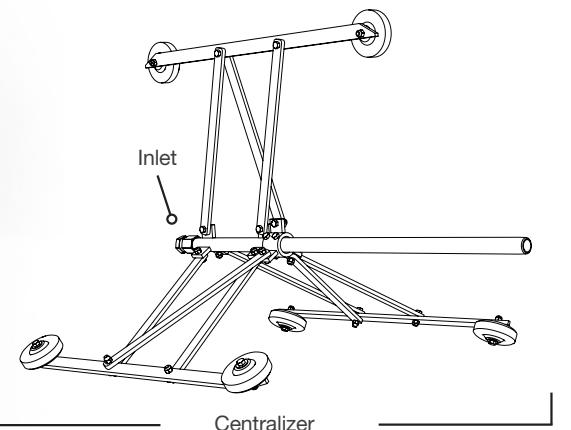
This conversion simply requires exchanging the standard WG 040 head with the Manhole Cleaner head kit.

**NOTE: StoneAge recommends the use of a manhole cover plate for increased safety.**



### INCLUDES:

- 1 x WGR 040-R35-MH Head, 5k psi (350 bar)
- 4 x CNP2 Nozzles, Sized for application
- 2 x SA 356-P8P4-8 Extension Nipples, 1/2 x 1/4" NPT x 8" (203 mm)
- 2 x WGR 057 Stainless Steel Bushings, P4M x P2F

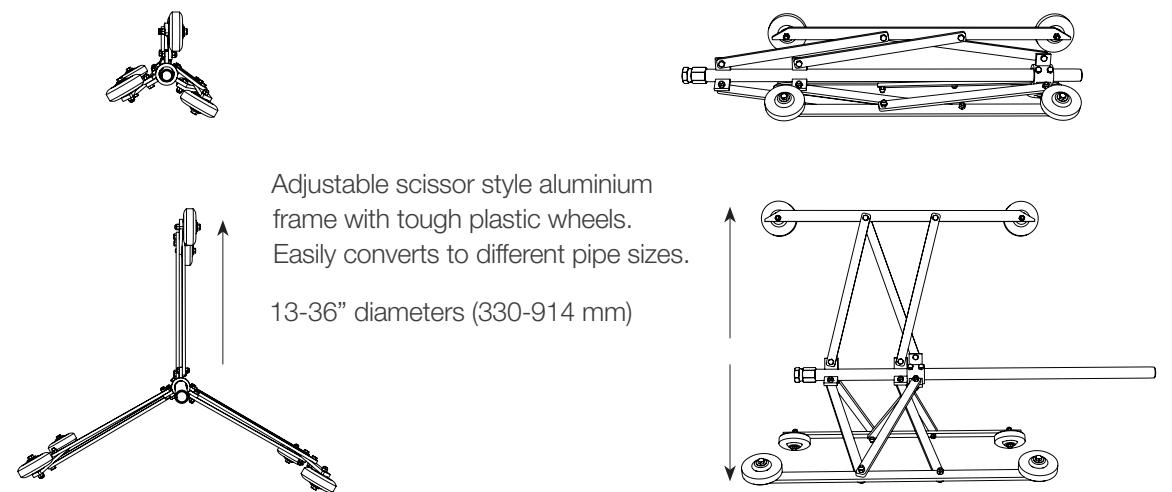


## 6-WHEEL ADJUSTABLE CENTRALIZER

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.

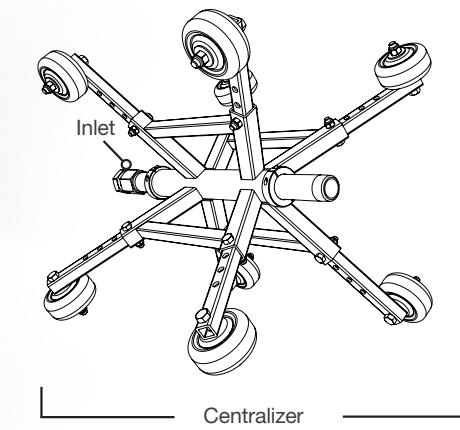
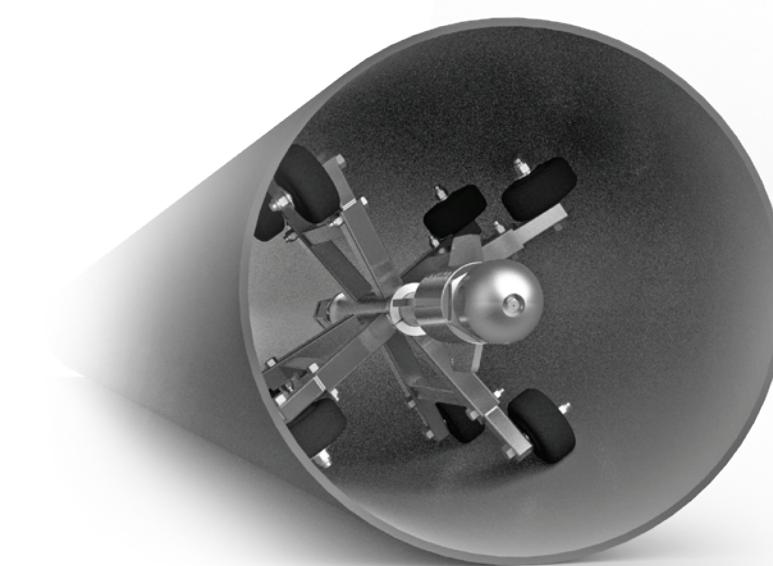
### WG 286-M-P16 – DESIGNED FOR STRAIGHT PIPES

These centralizers utilize a scissor style aluminium frame for diameter adjustment. They are suitable for straight pipes as large as 5 feet (1.5 m). Custom sizes are available.



#### Specifications

|            |                        |
|------------|------------------------|
| TOOL MODEL | WG 286-M-P16           |
| DIAMETER   | 13-36 in. (330-914 mm) |
| INLET SIZE | 1" NPT                 |

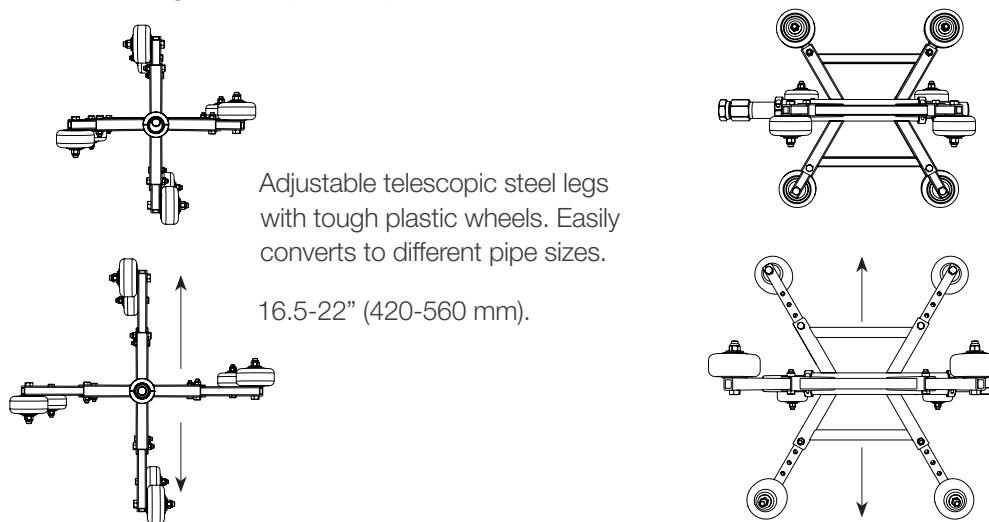


## 8-WHEEL ADJUSTABLE CENTRALIZER

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.

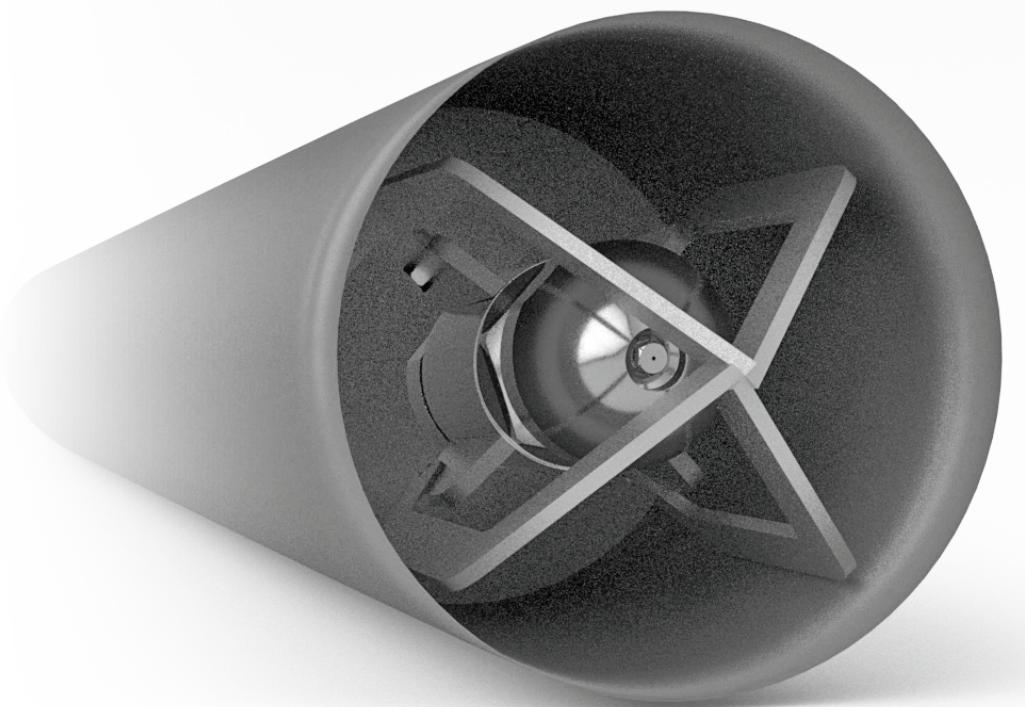
### WG 288-S-P16 – DESIGNED FOR PIPES WITH BENDS

These centralizers utilize telescoping steel legs for diameter adjustment. They are suitable for pipes with bends as large as 36" (914 mm). Custom sizes are available.



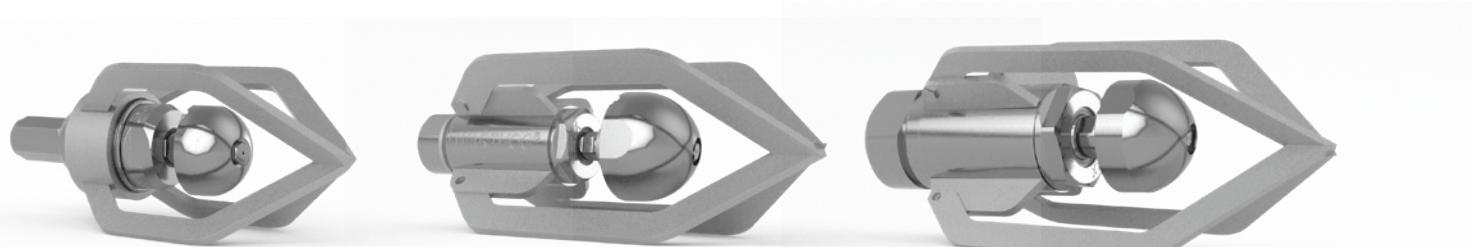
#### Specifications

|            |                          |
|------------|--------------------------|
| TOOL MODEL | WG 288-S-P16             |
| DIAMETER   | 16.5-22 in. (420-560 mm) |
| INLET SIZE | 1" NPT                   |



## SUPER CENTRALIZERS

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.



**WS 084 - 4.5"  
DIAMETER**

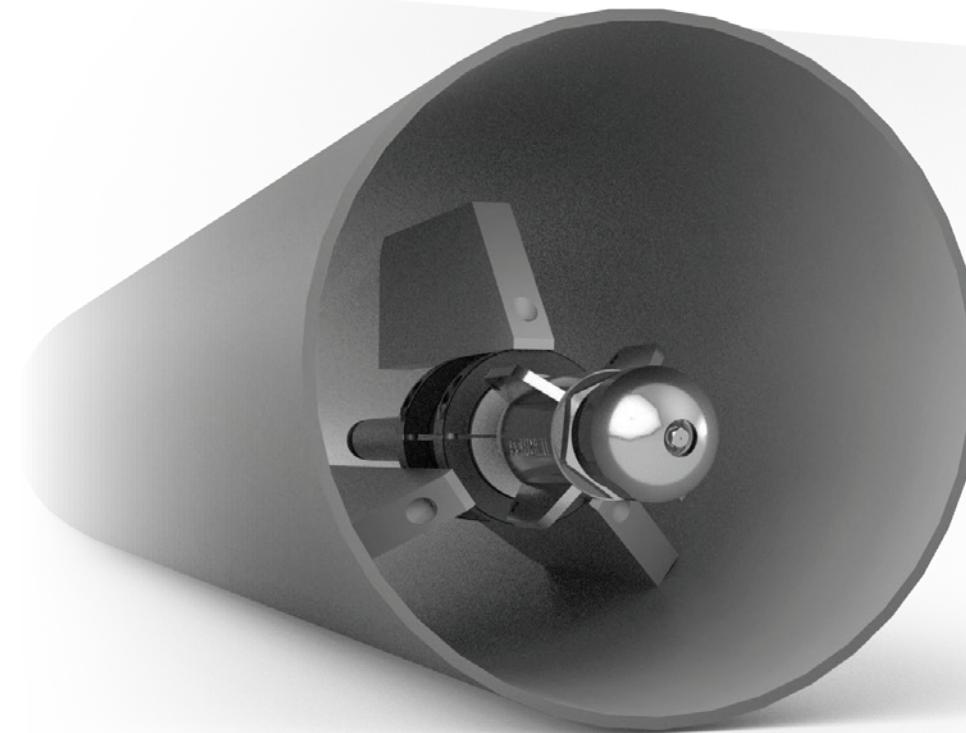
For 5" (127 mm) minimum pipe ID

**WH 085 - 5.5"  
DIAMETER**

For 6" (152 mm) minimum pipe ID

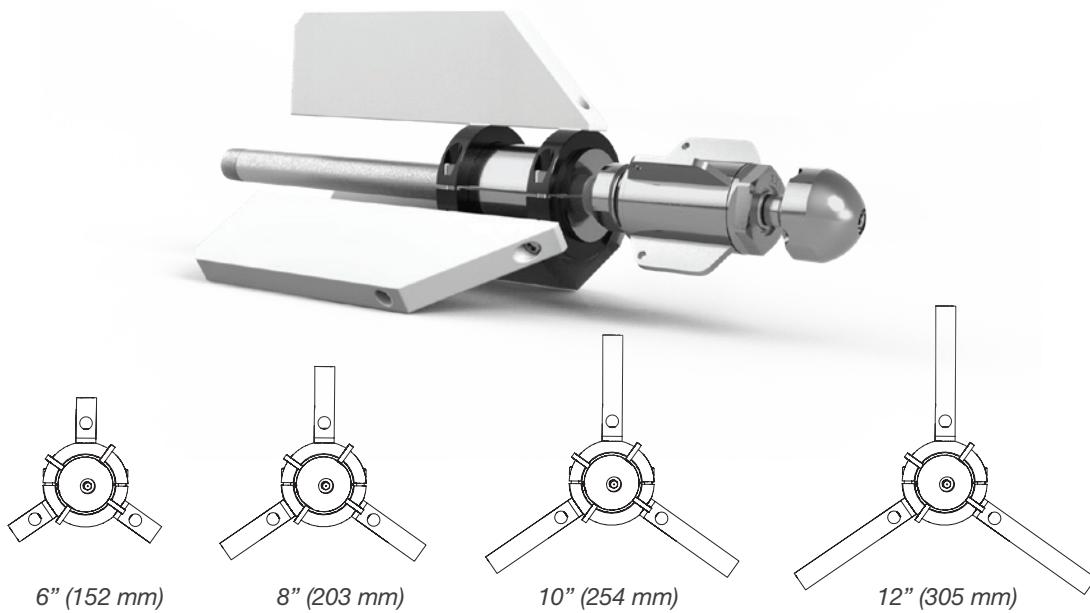
**WG-085 - 7"  
DIAMETER**

For 8" (203 mm) minimum pipe ID



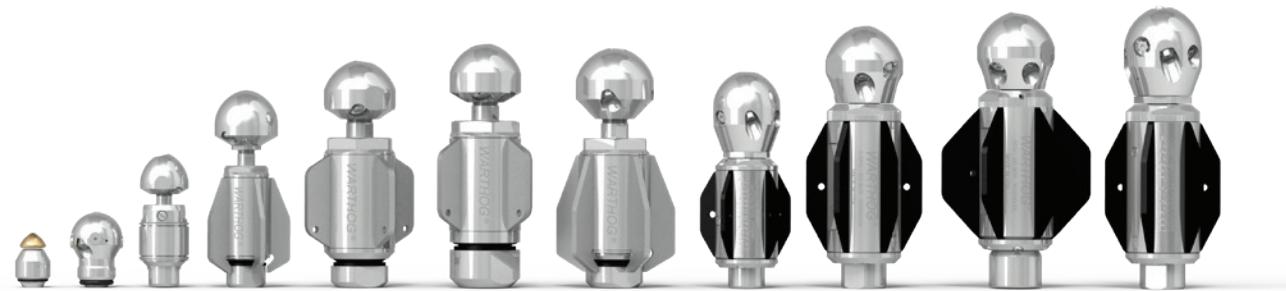
## POLY-FIN CENTRALIZERS

Interchangeable poly skids that bolt on to collars and change out easily. This skid navigates elbows and can effectively handle up to 12" (305 mm) diameter pipes.



**WG 070**

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



# CUSTOMER SERVICE

**WARTHOG® SEWER NOZZLES ARE SOLD EXCLUSIVELY  
THROUGH OUR NETWORK OF AUTHORIZED DEALERS.**

## A GREAT TEAM AT YOUR SERVICE • WARTHOG AUTHORIZED DEALERS

Good service means personal service. That's why you can only get Warthog products from a trained Warthog Authorized Dealer. Our Dealers provide you with competent advice, professional service and total customer care in all respects.

## TECHNICAL SUPPORT

For Technical Support in North America, please contact your local Authorized Dealer. Outside of North America, please visit our website at [www.sewernozzles.com/dealers](http://www.sewernozzles.com/dealers) for a list of Authorized Dealers near you. You can also contact StoneAge directly for technical support questions: (970) 259-2869

## 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

First check with your nearest Authorized Dealer for questions and inquiries regarding repair. Visit [www.sewernozzles.com/dealers](http://www.sewernozzles.com/dealers) for an Authorized Repair Center near you.

Repairs are also available through StoneAge tools. Visit: [www.stoneagetools.com/service](http://www.stoneagetools.com/service) to request a Return Merchandise Authorization (RMA) number for return of any StoneAge parts.

## LEAD TIME

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

## ORDERING

Call your preferred Authorized Dealer to order. Please provide pressure, flow, size of hose, size of pipe to be cleaned and application information to determine the best nozzle for your job.

**VISIT [WWW.SEWERNOZZLES.COM/DEALERS](http://WWW.SEWERNOZZLES.COM/DEALERS)  
FOR A LIST OF AUTHORIZED DEALERS IN YOUR AREA.**

## ⚠️ 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](http://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.
- 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 expressly 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 price list 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](http://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.

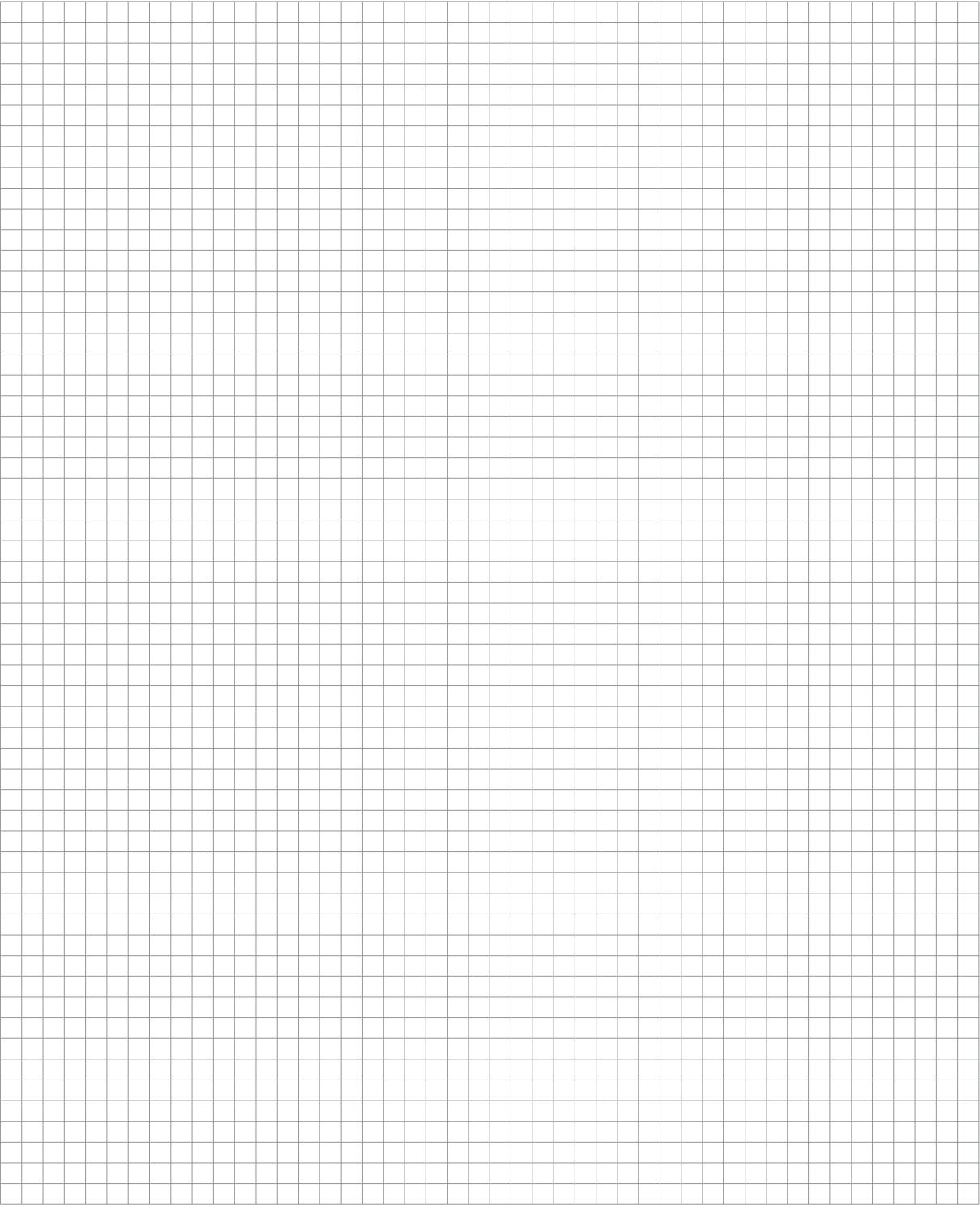
TO THE FULL EXTENT ALLOWED BY APPLICABLE LAW, STONEAGE SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES (INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF GOODWILL, DIMINUTION OF VALUE, WORK STOPPAGE, INTERRUPTION OF BUSINESS, RENTAL OF SUBSTITUTE PRODUCT, 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.

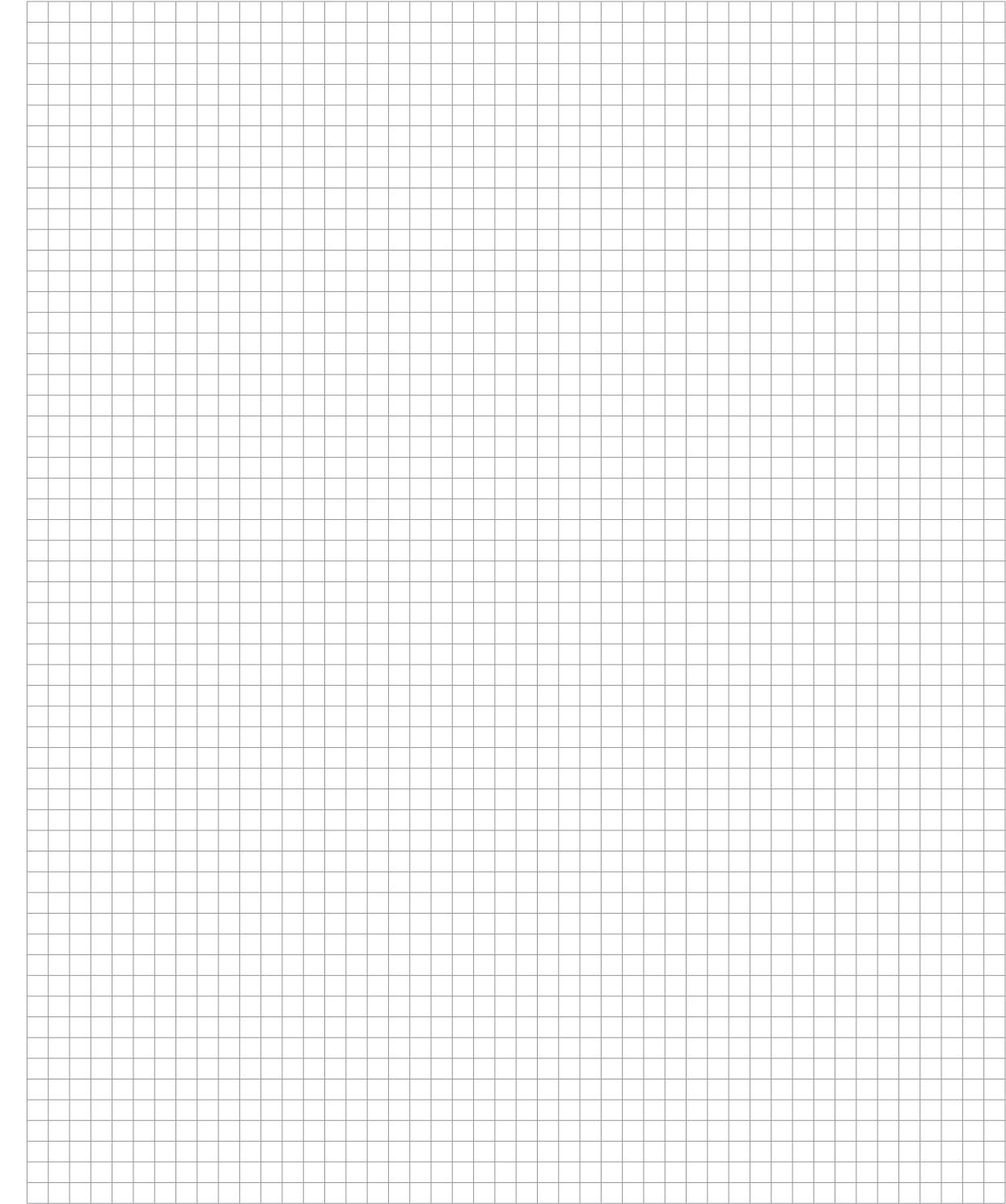
YOU, THE END-USER, UNDERSTAND AND EXPRESSLY AGREE THAT THE FOREGOING LIMITATIONS ON LIABILITY ARE PART OF THE CONSIDERATION IN THE PRICE OF THE STONEAGE PRODUCT YOU PURCHASED.

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.

**NOTES:**



**NOTES:**





## **OUR DEALERS ARE OUR PARTNERS**

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All Authorized Warthog Dealers are skilled professionals who understand your business and provide you with outstanding service and industry expertise.

They stand ready to supply you with Warthog's superior quality products and the support you need.

All Authorized Warthog Dealers are trained and knowledgeable about Warthog products, their best use and optimal maintenance for performance and durability.

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