



# HotJetusa®

## CUSTOM NOZZLES CATALOG

AUTHORIZED DISTRIBUTOR FOR:



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1-800-624-8186  
1-801-545-0777



**OPERATING WATERBLASTING EQUIPMENT  
CAN BE POTENTIALLY HAZARDOUS.**

**SEE PAGE 4 & 5 FOR IMPORTANT SAFETY  
INSTRUCTIONS.**

***There is no better "Sewer Nozzle Resource" than the actual user and manufacturer of jetting equipment!***

Here at HotJet USA we test nozzles in our own facility and field test with thousands of plumbing, roofer and municipalities that operate our jetting equipment and from whom we receive tons of application feedback.

HotJet USA's custom drilled sewer nozzles have set the "Industry Standard" in Quality and Performance. We partner with the largest nozzle manufacturers in the industry and share in the development of our nozzle packages including the 3/8" Warthog nozzle with Stone Age Manufacturing - worldwide leader in Nozzle Tool Design and Engineering - Reaper and Ripsaw by Hydraflex and the custom kits from Arthur Products.

***Our commitment to our customer's jetter success sets us apart - we look forward to another 40 years of being your supplier!***

Many Thanks!  
HotJet USA



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**SAFETY  
FIRST**

## POTENTIAL HAZARD!

If ANY NOZZLE 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.

ASK US ABOUT OUR LINE UP OF STINGERS AND HOW WE CAN HELP YOU SELECT THE RIGHT ONE FOR YOUR APPLICATION.



### ← CORRECT

A rigid Stinger should be installed between the tool inlet and the hose end in pipes larger than 4" (102 mm) in diameter. This prevents the tool from turning around inside of the pipe and coming back toward the operator.

**ATTACH SAFETY STINGER PIPE IF NEEDED TO ENSURE NOZZLE CANNOT TURN BACK ON OPERATOR IF IN A PIPE DIAMETER THAT THE HOSE COULD TURN AROUND.**

**DO NOT OPERATE WITHOUT "SAFETY LEADER HOSE" AND/OR HOSE IS MARKED SO THAT OPERATOR CAN SEE WHEN HOSE IS NEARING THE CLEANING POINT.**

## **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 Highpressure 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.

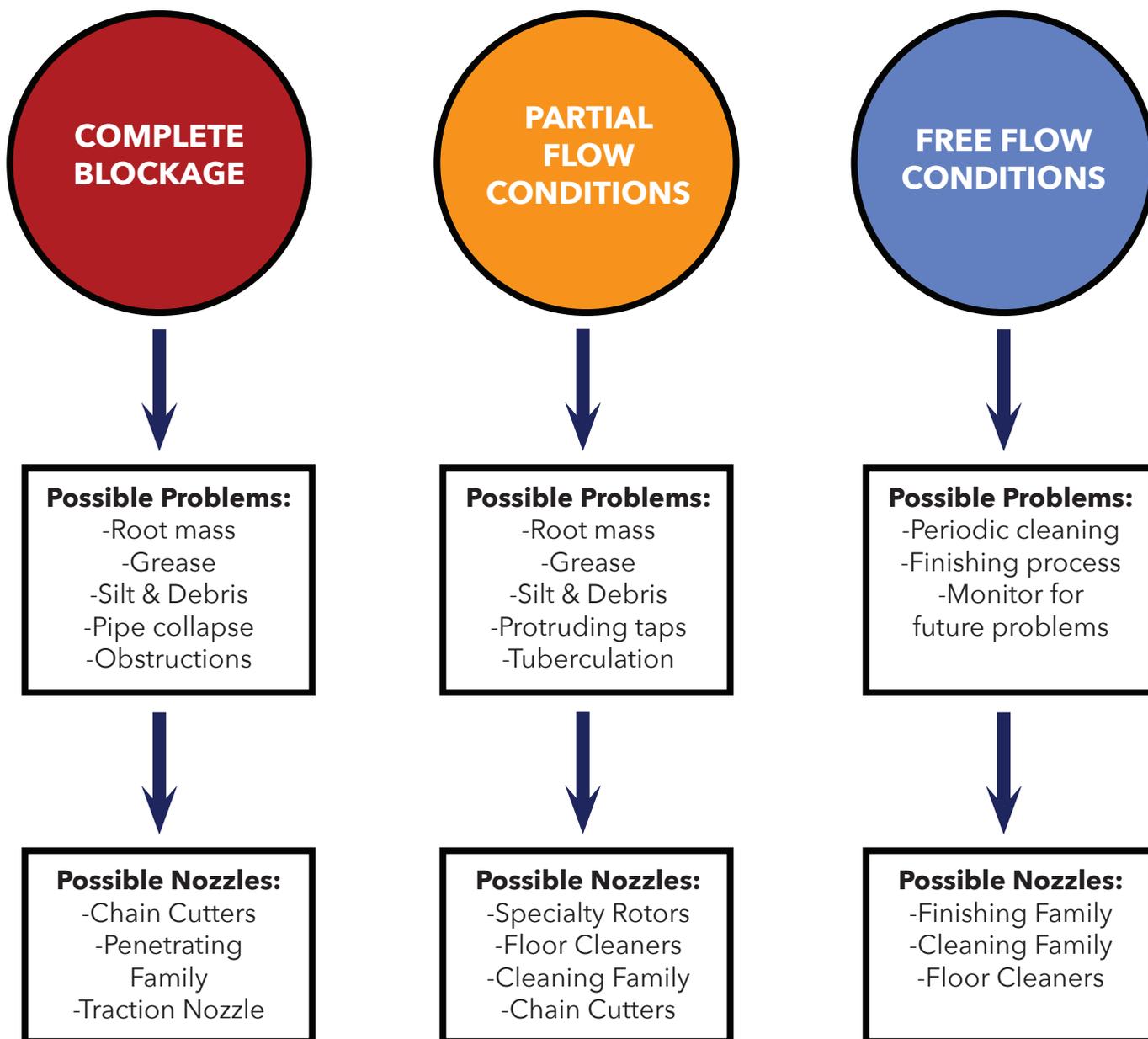
StoneAge has designed and manufactured this equipment, considering all hazards associated with its operation. StoneAge assessed these risks and incorporated safety features in the design. StoneAge **WILL NOT** accept responsibility for the results of misuse.

- 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.**

## When placing an order, please provide the following information:

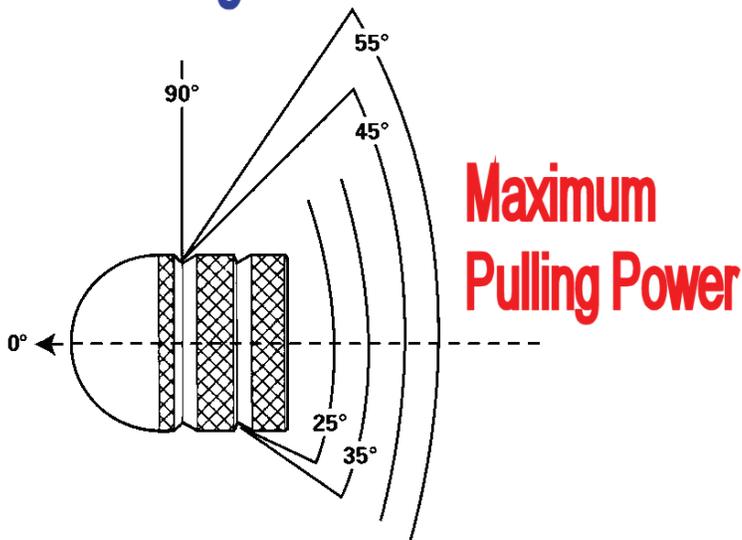
- 1) Thread Size (NPT): \_\_\_\_\_
- 2) System Pressure (PSI): \_\_\_\_\_
- 3) System Flow Rate (GPM): \_\_\_\_\_
- 4) Primary Size of Line to be Cleaned: \_\_\_\_\_
- 5) Total Hose Length on Machine: \_\_\_\_\_
- 6) Desired Distance of Nozzle Travel: \_\_\_\_\_
- 7) System Operating Temperature:     **HOT**                   **COLD**

## Choosing the Correct Tools for the Job!



**Every jetter has a fixed amount of power. The choice of a spray pattern determines how the jetter's power will be used.**

## Maximum Cleaning Power



## Spray Angles Matter!

- Angles aimed towards the pipe sidewall deliver more cleaning power.
- Angles directed more parallel to the hose deliver more pulling power.
- More of one = less of the other

## Factors to consider when choosing a spray pattern to match an application

### How long is the run?

- Long runs require maximum pulling power. Choose patterns with pulling power (15° - 30° rear jets).
- Shorter runs require less pulling power.
- Choose patterns with more cleaning power (35° - 55°) to work more effectively.

### Is the pipe blocked?

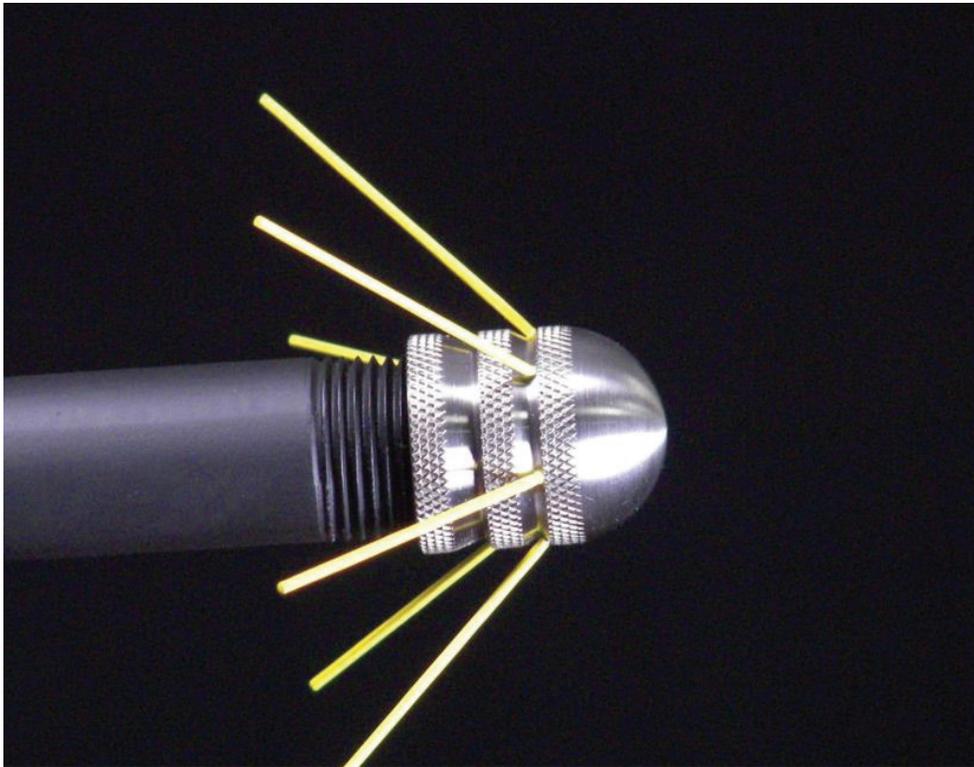
- If blocked, a forward jet or jets are required.
- If not blocked, a forward jet is optional. Forward jets will reduce overall distance capabilities. If distance is a consideration choose a blind nozzle (no forward jet).

### Are you pushing or pulling?

- Pushing debris forward is more efficient with a pattern using multiple forward jets (Degreaser pattern).
- Pulling heavy debris like sand or gravel is aided by the use of dual rear angles (Monster pattern).

# TYPES OF SPRAY PATTERNS

AVAILABLE IN: 1/4", 3/8", 1/2", 3/4" SIZES



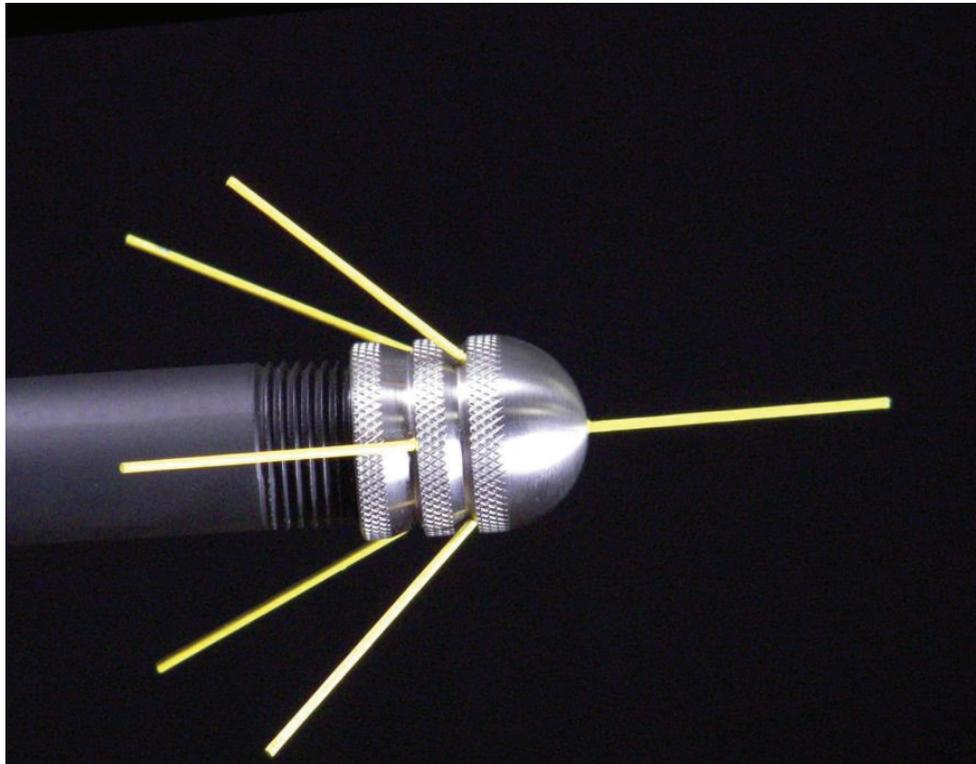
## MONSTER / FLUSHER / THRUSTER / PULLER

- 6 Rear Jets @ 45°
- Variations: 8 or 12 Rear Jets

SIZE	PART NO.	GPM	PSI
1/8"	PL0125MP-4	4	3,000
1/4"	PL0250MP-6	6	3,500
3/8"	PL0375MP-10	10	4,000
1"	PL0500MP-20	20	4,000

### Application:

More effective cleaning of pipe walls after flow has been established in a blocked pipe



## MONSTER / PENETRATOR / PULLER

- 3 Rear Jets @ 45°
- 3 Rear Jets @ 25°
- 1 Fwd Jet @ 0°

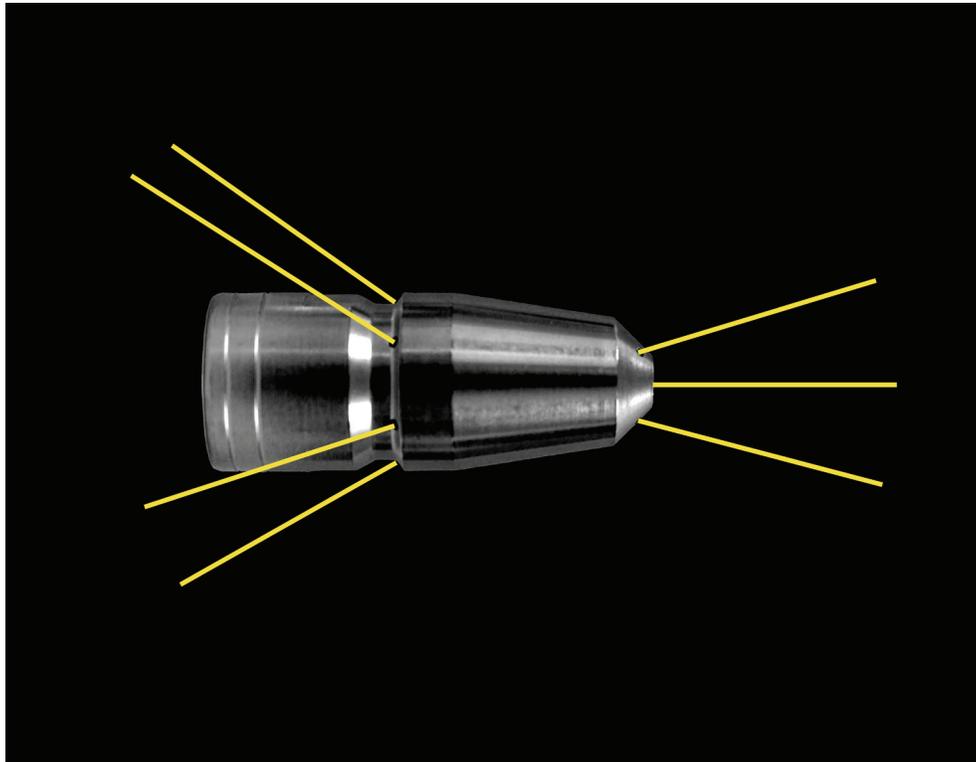
SIZE	PART NO.	GPM	PSI
1/8"	PL0125PH-4	4	3,000
1/4"	PL0250PH-6	6	3,500
3/8"	PL0375PH-10	10	4,000
1"	PL0500PH-20	20	4,000

### Application:

Dual rear angles creates a wider area of turbulence helping to keep sand, gravel, and heavier debris suspended and moving while flushing a pipe.

# TYPES OF SPRAY PATTERNS

AVAILABLE IN: 1/4", 3/8", 1/2", 3/4" SIZES



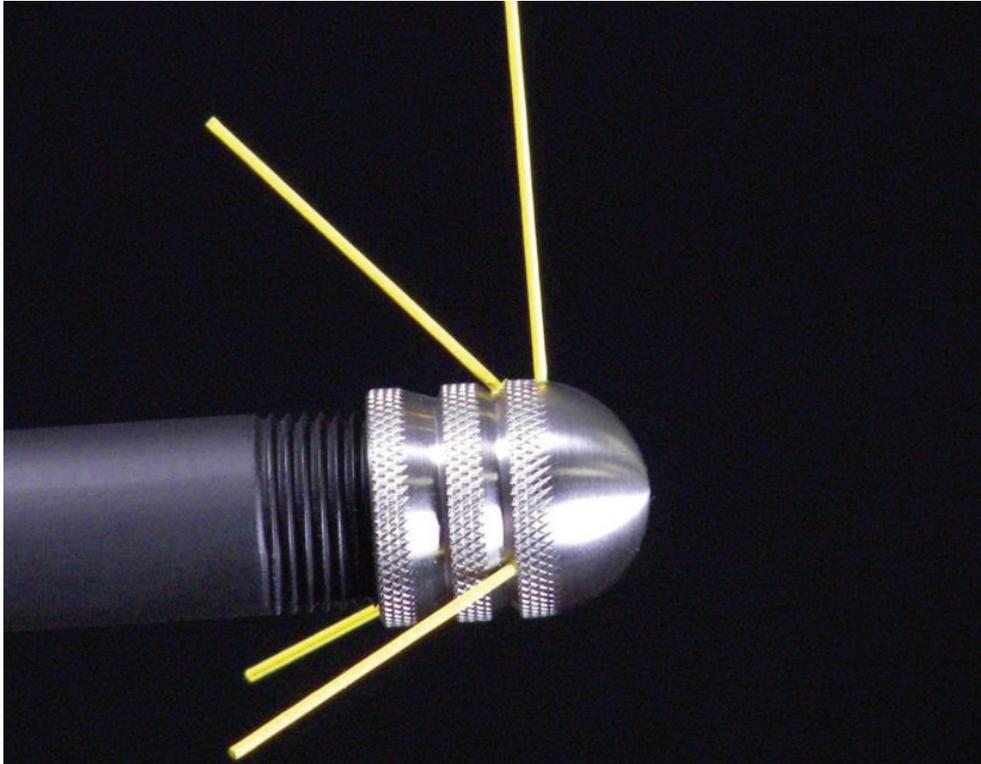
## DEGREASER / DE-ICER

- 3 Fwd Jets @ 10°
- 6 Rear Jets @ 45°

SIZE	PART NO.	GPM	PSI
1/8"	PL0125EV-4	4	3,000
1/4"	PL0250EV-6	6	3,500
3/8"	PL0375EV-10	10	4,000
1"	PL0500EV-20	20	4,000

### Application:

Used for degreasing, de-icing, and it is very useful in situations where it's necessary to push debris forward rather than pull it back.



## CORNER MOLE

- 3 Rear Jets @ 45°
- 1 Side Jet @ 90°

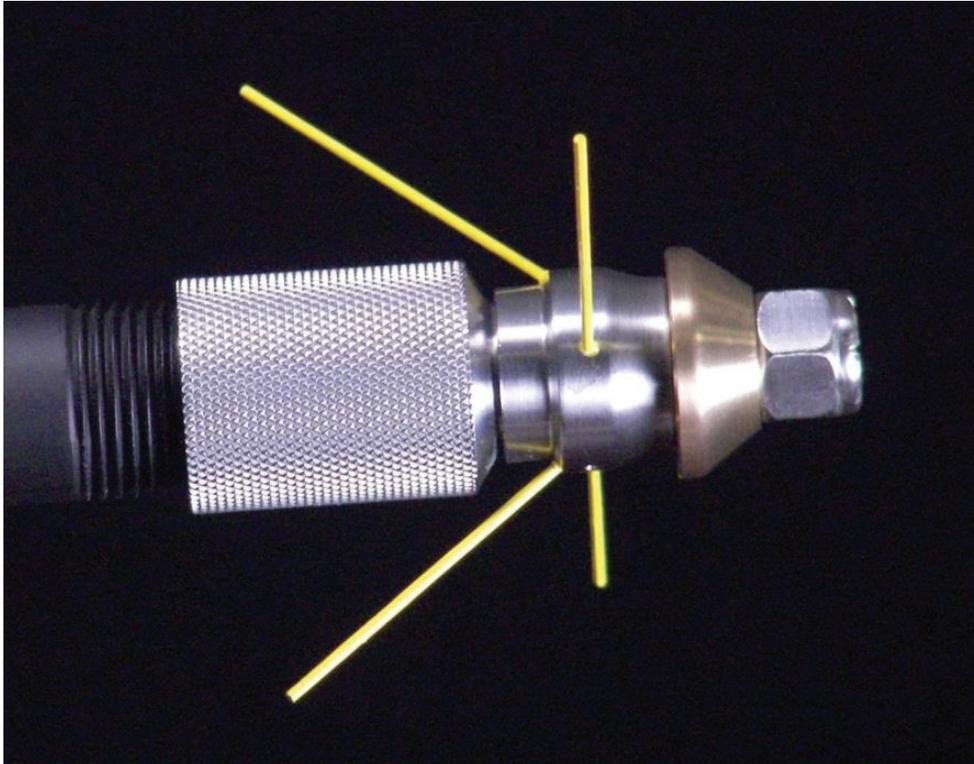
SIZE	PART NO.	GPM	PSI
1/8"	PL0125CM-4	4	3,000
1/4"	PL0250CM-6	6	3,500
3/8"	PL0375CM-10	10	4,000
1"	PL0500CM-20	20	4,000

### Application:

Side jet pushes hose towards one side of pipe & combined with twisting of the hose the Corner Mole can be steered into a tee or branch fitting.

# TYPES OF SPRAY PATTERNS

AVAILABLE IN: 1/4", 3/8", 1/2", 3/4" SIZES



## ROTOR JET (SPINNER) / POLISHER

- 2 Rear Jets @ 30 °- 45°
- 2 Side Jets @ 90°
- Variations: Many, call to discuss

SIZE	PART NO.	GPM	PSI
1/8"	PL0125P-4	4	3,000
1/4"	PL0250P-6	6	3,500
3/8"	PL0375P-10	10	4,000
1"	PL0500P-20	20	4,000

### Application:

Rotor Jets feature a spinning head the provides 360° of coverage. Use for polishing or finishing a pipe that has had some preliminary cleaning. Not for primary use!

## 1/8" Complete Nozzle Kits



PULLER / PUSHER



PENETRATOR



POLISHER



DEGREASER /  
DE-ICER

PART NO.	GPM	PSI
PL125HJ04P-215	2	1,500
PL125HJ04PC	4	1500

## 1/4" Complete Nozzle Kits



PART NO.	GPM	PSI
PL1250J04PC-4.4	4	1,600
PL1250J04PC-4.7	7	4,000
PL1250J04PC-4.10	10 / 12	4,000

## 3/8" Complete Nozzle Kits



**PULLER / PUSHER**



**PENETRATOR**



**POLISHER**



**DEGREASER /  
DE-ICER**

PART NO.	GPM	PSI
PL375HJ04PC-P1.4	4	1,600
PL375HJ04PC-P1.7	7	4,000
PL375HJ04PC-P1.10	10 / 12	4,000

## 1/2" Complete Nozzle Kits



**PULLER / PUSHER**

**PENETRATOR**

**POLISHER**

**DEGREASER /  
DE-ICER**

PART NO.	GPM	PSI
PL500HJ04PC-P2.9	9	4,000
PL500HJ04PC-P2.12	12	3,000
PL500HJ04PC-P2.14	14	4,000
PL500HJ04PC-P2.18	18 / 20	4,000

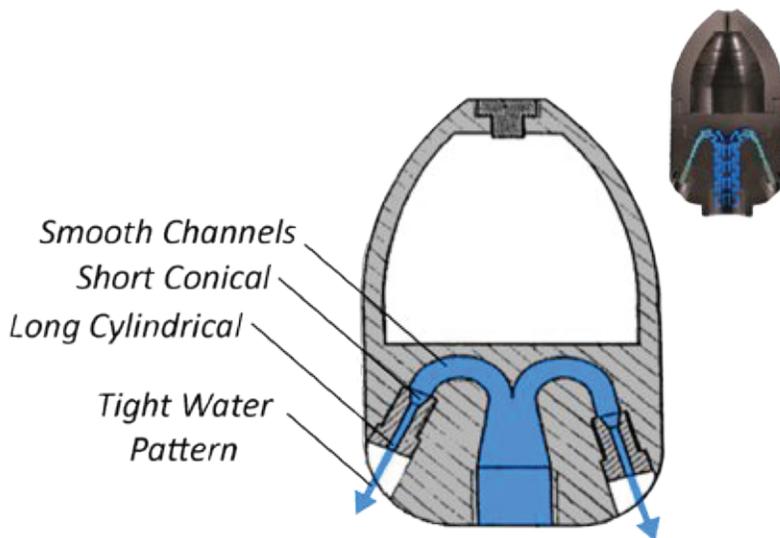
## OVERVIEW: FLUID MECHANICS

Efficient design maximizes power and reduces operational costs

The National Association of Sewer Service Companies (NASSCO) and its NASSCO Jetter Code of Practice publication have determined that nozzles with an efficiency rating of 80% and above are classified as Tier Three nozzles. Our nozzles are hand-picked and tested to exceed efficiency ratings of 95% and thus provide a powerful, long lasting, and cost effective product.



### Tier Three Nozzle Cross Section



### NO TURBULANCE

As we follow the path of water through a Tier three nozzle, it is easy to see that our high performance design leaves little room for excessive turbulence and power losses.

Water exits the jetter hose and enters into the nozzle body where it is carried through smooth, curved channels and maintains its speed and power. As water then enters our replaceable titanium ceramic inserts, a short conical shape funnels water into a longer cylindrical shape and a tight and powerful water pattern emerges.

## HJ ROCKET EGG

Tight water pattern for efficient cleaning and pulling

5 REAR JETS • 1 FORWARD JET

The HJ Rocket Egg Nozzle is an excellent multi-purpose nozzle. When an extremely tight water pattern is needed for intense directed cleaning and propulsion. With 8° and 12° angled jets, the Traction nozzle will provide tremendous thrust and highly efficient cleaning using state of the art fluid mechanics.



An optional forward penetrating jet can turn the Traction into an efficient penetrating nozzle to blast sand and mud or to create a pathway through heavy debris for other nozzles to be used in the pipe.

The 6 insert set-up (5 rear, 1 forward) can be configured in steel or titanium ceramic. **The Rocket is a Tier Three nozzle, features the highest performing fluid mechanics and is over 80% efficient!**

### Advantages:

- 8° and 12° alternating jet angles
- Penetrator and/or Cleaning nozzle
- Replaceable threaded inserts

### Applications:

- Sanitary, Storm
- Clears path for other nozzles
- Gentle on deteriorated pipe
- Mud & sand removal



HJ ROCKET EGG NOZZLE			
Hose Size	Part Number	Dimensions	Pipe Size
1.00"	CONTACT US	4.25" X 2.75"	4" to 24"
0.75"	CONTACT US	4" X 2.375"	3" to 18"
0.50"	HJ1083	2" X 1.5"	2" to 12"
0.38"	HJ1084	2" X 1.5"	2" to 6"



## HJ ROCKET 3D

Tight water pattern for efficient cleaning and pushing

- Hardened Stainless Steel
- Designed To Push & Clean
- 4 Forward Jets
- 6 Rear Jets



HJ ROCKET EGG 3D NOZZLE			
Hose Size	Part Number	Dimensions	Pipe Size
1.00"	CONTACT US	4.25" X 2.75"	4" to 24"
0.75"	CONTACT US	4" X 2.375"	3" to 18"
0.50"	HJ1174	2" X 1.5"	2" to 12"
0.38"	HJ1175	2" X 1.5"	2" to 6"

## HJ ROTOR CHISEL

Tight water pattern for efficient cleaning and shredding

- Designed To Shred/Cut
- Spinning Chisel
- Rotates On Hardened Shaft
- No Bearings
- 1 Year Warranty



HJ ROTOR CHISEL NOZZLE			
Hose Size	Part Number	Dimensions	Pipe Size
1.00"	CONTACT US	4.25" X 2.75"	4" to 24"
0.75"	CONTACT US	4" X 2.375"	3" to 18"
0.50"	HJ1974	2" X 1.5"	2" to 12"
0.38"	HJ1976	2" X 1.5"	2" to 6"

## HJ 360° CLEANER

A 360° maintenance tool that provides the finishing touch  
**FINISHER / POLISHER**

HotJet Rotors are an excellent tool for complete pipe cleaning when removing the remnants of grease, roots, and scale before TV inspections. It should be noted, however, that a Rotor is NOT a cleaning nozzle and should not be used in cleaning applications. **Rotors are intended to remove the grease and sludge that remain in lines after usage of a cleaning nozzle.** This sludge is the adhesive for the next clog to begin. Rotor Nozzles are made with our unique water driven design and requires No Form of lubrication for maintenance and operation. Don't use grease, oils, or other lubrication when performing maintenance on this nozzle.



### Advantages:

- High rotational speed
- Reversible rotating barrel
- No lubrication required
- Ease of maintenance
- Replaceable inserts

### Applications:

- SANITARY
- Use before video inspection
- Grease & scale removal
- Small roots & vegetation
- Manholes & lift stations

ROTOR NOZZLES			
Hose Size	Part Number	Dimensions	Pipe Size
1.00" small	CONTACT US		6" to 20"
1.00" large	CONTACT US		
0.75"	CONTACT US	4.375" X 2.5"	4" to 12"
0.50"	HJ1357	3" X 1.75"	3" to 10"
0.38"	HJ1360	2.5" X 1.25"	2" to 8"
0.25"	HJ1364	2.5" X 1.25"	2" to 6"

## ROTOR HAMMER

A vibration nozzle that beats away hardened material in the pipe!

### Advantages:

- Unique vibrating 'Jackhammer' action
- Replaceable titanium ceramic inserts
- No maintenance or lubrication required
- More efficient than cutting and milling

### Applications:

- Sanitary, Storm
- Scale removal
- Mineral deposits
- Tuberculation
- Concrete, asphalt



### Technical Specifications:

- **DO NOT USE IN CLAY OR "ORANGEBURG" PIPE**
- Nozzle body made of highly wear-resistant, stainless steel

### QUICK FACTS

- Pipe Range: 2"+
- Flow Range: 5 GPM - 125 GPM
- Pressure Range: 1300 PSI - 2000 PSI
- Hose Sizes: 0.375" - 1.25"

ROTOR HAMMER NOZZLES			
Hose Size	Number of Inserts	Dimensions	Pipe Size
1.00"	CONTACT US	6.5 x 4."	from 6"
1.00"	CONTACT US	5" x 3"	from 4"
0.75"	CONTACT US	5" x 3"	from 4"
0.50"	HJ1339	3.4" x 1.8"	from 4"
.375"	HJ1340	2.0" x 1.30"	from 2"

# HOTJET'S ROCKET NOZZLE SETS

AVAILABLE IN: 3/8", 1/2" SIZES



## RELEASE THE BEAST™



### ROCKET 3 PACK

Includes HJ ROCKET EGG, HJ ROCKET 3D and REAPER

SIZE	PART NO.
3/8"	RTB-3-0375-10
1/2"	RTB-3-0375-20

### FREE CASE!

THESE ARE THE FINEST ENGINEERED NOZZLES IN THE WORLD!

TO ORDER CONTACT: 1.800.624.8186

# HOTJET'S ROCKET NOZZLE SETS

AVAILABLE IN: 3/8", 1/2" SIZES

# RELEASE THE BEAST™



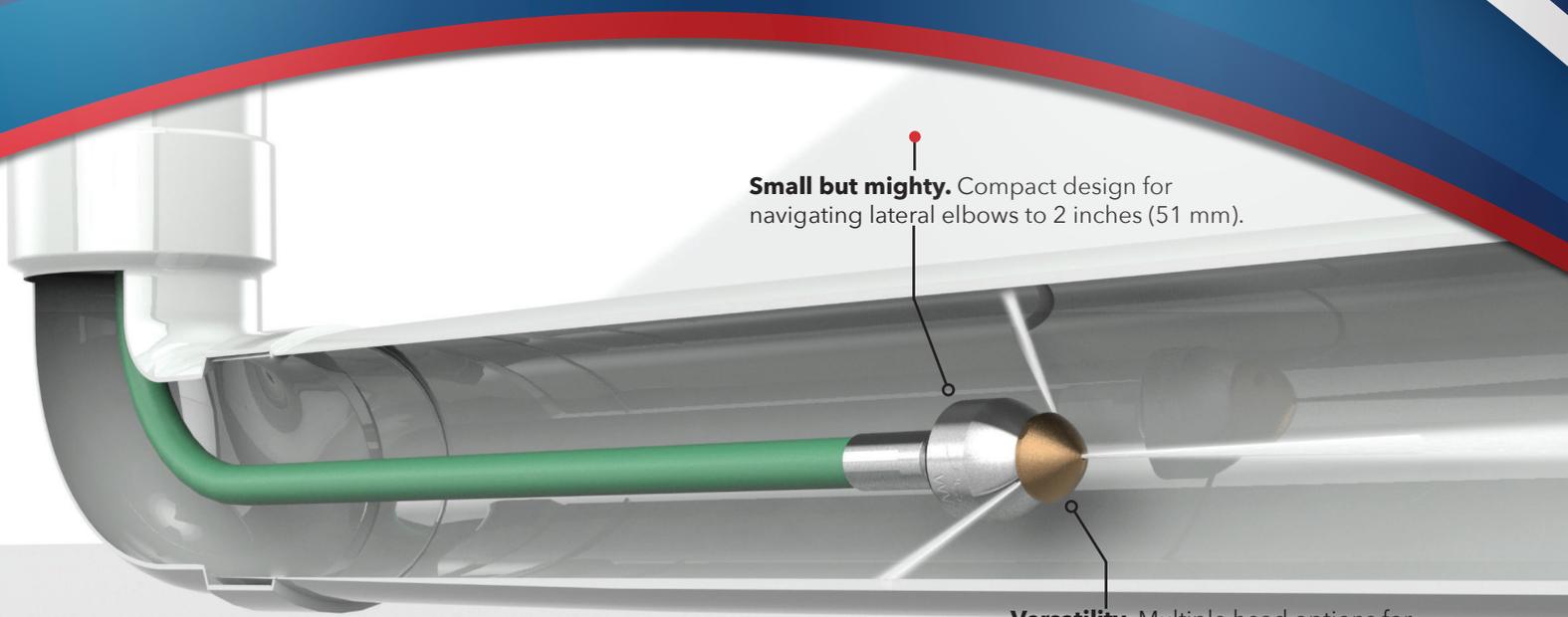
## ROCKET 5 PACK

Includes HJ ROCKET EGG, HJ ROCKET 3D, HJ 360° CLEANER, ROTOR HAMMER and REAPER.

SIZE	PART NO.
3/8"	RTB-5-0375-10
1/2"	RTB-5-0375-20

## FREE CASE!

THESE ARE THE FINEST ENGINEERED NOZZLES IN THE WORLD!



**Small but mighty.** Compact design for navigating lateral elbows to 2 inches (51 mm).

**Versatility.** Multiple head options for customizing to different pressures and flows.



## WARTHOG WV-1/4 JETTER NOZZLE

The WV-1/4 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" with long sweeping elbows. The head design also features permanent, pre-drilled orifices, rather than threaded nozzles.

- 2" to 4" lines with elbow
- Cart and trailer jettors
- Small lines with light to moderate blockages
- 4 Head Options Available



## WARTHOG WV-1/4 JETTER NOZZLE



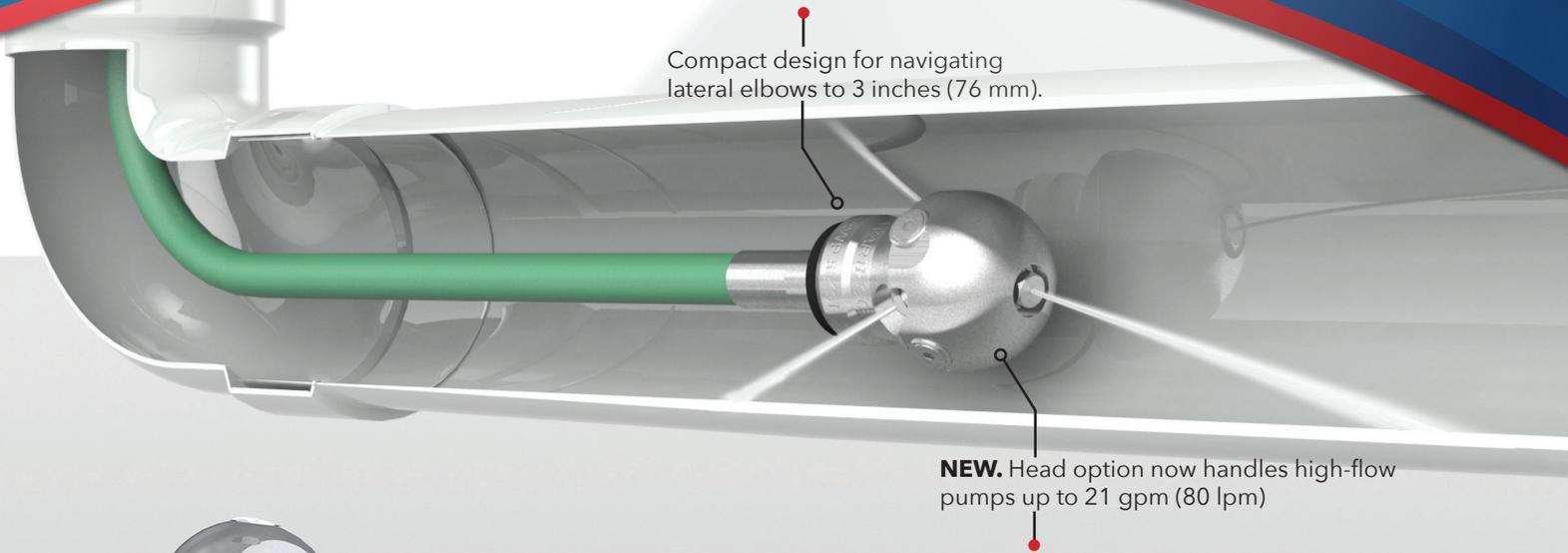
### Specifications

Tool Family	Warthog Classic	
Tool Model	WV-1/4	
Pipe Size	2-4 in.	51-102 mm
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-A	.024 in.	2 x .052 in.	7-8 gpm
WV-1/4-B	.020 in.	2 x .039 in.	5-6 gpm
WV-1/4-C	.018 in.	2 x .032 in.	4-4.5 gpm
WV-1/4-D	.018 in.	2 x .028 in.	3-3.5 gpm



#### WHEN ORDERING SPECIFY:

- GPM
- PSI OF HOSE
- SIZE OF HOSE
- LENGTH OF HOSE

## WARTHOG WT-3/8 & WT-1/2 JETTER NOZZLE

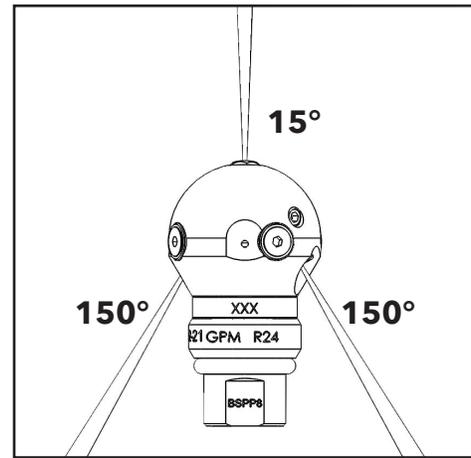
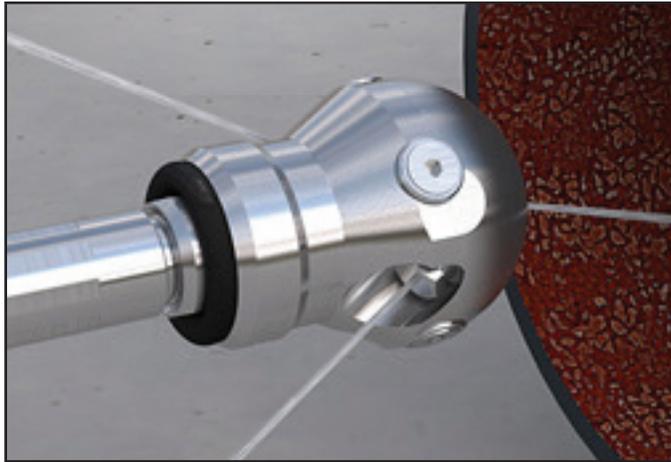
Part No: HJ-WT-3/8 | 3/8" HOSE SIZE • HJ-WT-1/2 | 1/2" HOSE SIZE

The Classic Series Warthog models can negotiate elbows and clean-outs commonly found in laterals in homes, buildings, restaurants and other light commercial facilities. Also an excellent choice for cutting roots, clearing ice and removing blockages, the WT-3/8-C is designed specifically to handle 3"-6" lines and clean-outs.

- 3" to 6" lines with elbows - 3" to 12" without elbows
- Up to 5,000 PSI
- Classic Model
- Cart and Trailer Jetters

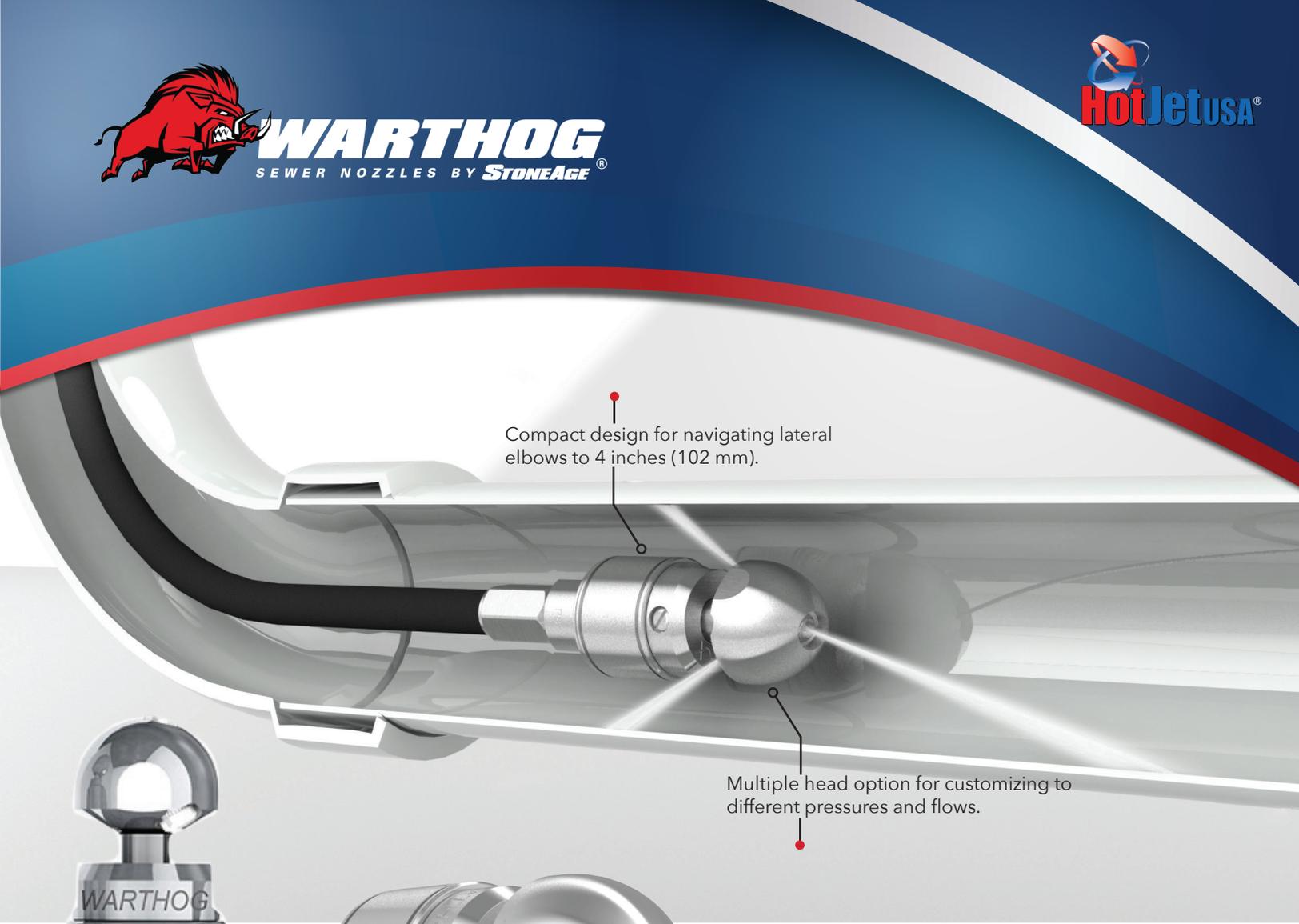
## WARTHOG WT-3/8 JETTER NOZZLE

### JET ANGLES



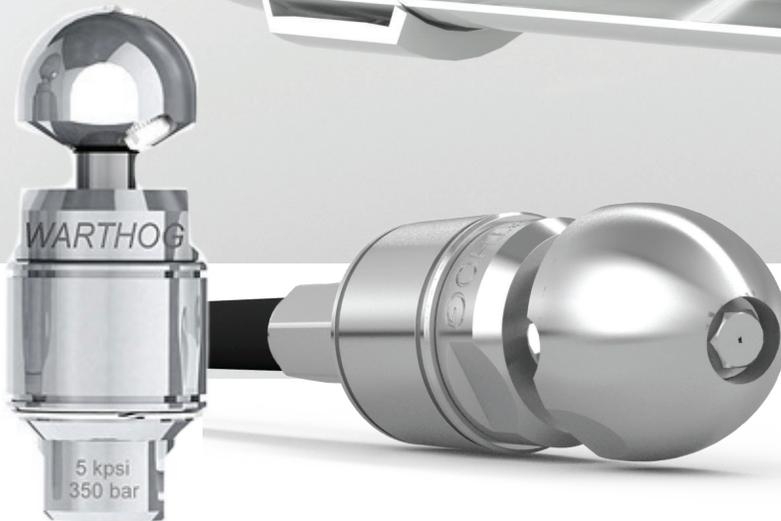
## Specifications

Tool Family	Warthog Classic
Part Number	HJ-WT-3/8-C
Pipe Size	3-6 in.
Pressure Range	1500-5k psi
Flow Range	5-12 gpm - NEW 21GPM
Flow Rating	0.75 Cv
Pulling Force	5-20 lb
Inlet Connection	3/8 NPT or BSPP
Nozzle Ports	3 x 1/8 NPT
Diameter	1.9 in.
Length	3.0 in.
Weight	1.2 lb



Compact design for navigating lateral elbows to 4 inches (102 mm).

Multiple head option for customizing to different pressures and flows.



#### WHEN ORDERING SPECIFY:

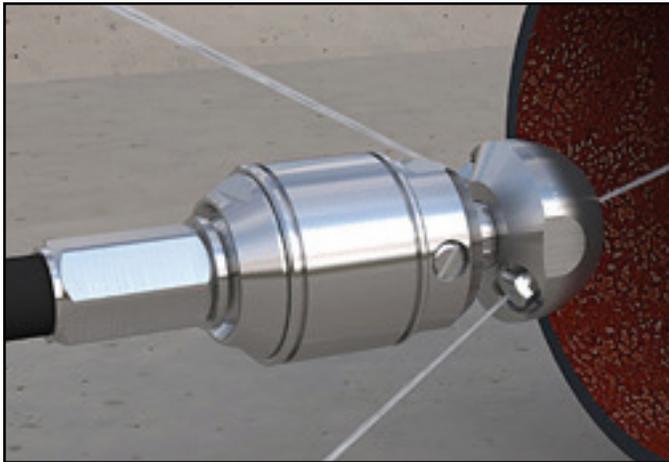
- GPM
- PSI OF HOSE
- SIZE OF HOSE
- LENGTH OF HOSE

## WARTHOG WS-H-1/2 JETTER NOZZLE

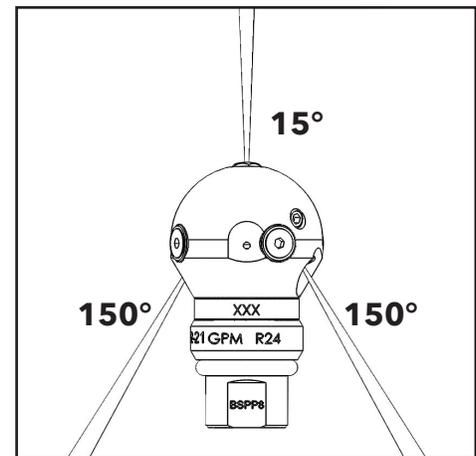
Part No: HJ-WS-H-1/2

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

## WARTHOG WS-H-1/2 JETTER NOZZLE

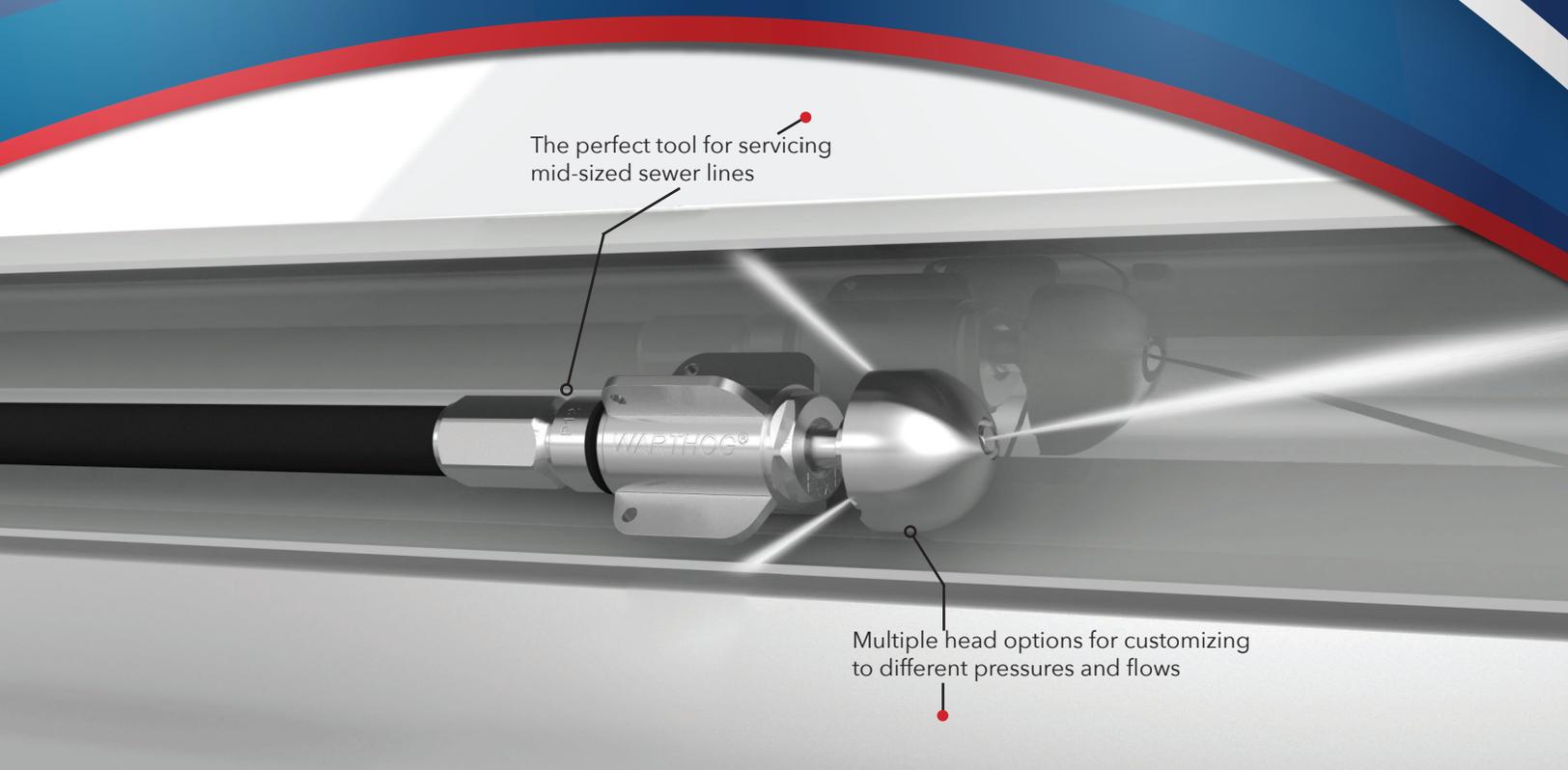


### JET ANGLES



### Specifications

<b>Tool Family</b>	Warthog Classic
<b>Tool Model</b>	WS-H-1/2
<b>Pipe Size</b>	4-8 in.
<b>Pressure Range</b>	1500-5k psi
<b>Flow Range</b>	8-20 gpm
<b>Flow Rating</b>	0.75 Cv
<b>Rotation Speed</b>	200-500 rpm
<b>Pulling Force</b>	9-27 lb
<b>Inlet Connection</b>	1/2 NPT or BSPP
<b>Nozzle Ports</b>	3 x 1/8 NPT
<b>Diameter</b>	1.7 in.
<b>Length</b>	4.4 in.
<b>Weight</b>	2.98 lb



The perfect tool for servicing mid-sized sewer lines

Multiple head options for customizing to different pressures and flows

## WH CLASSIC: HJ-WH-1/2 & HJ-WH-3/4

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

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

### BENEFITS:

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

### WHEN ORDERING SPECIFY:

- GPM
- PSI OF HOSE
- SIZE OF HOSE
- LENGTH OF HOSE

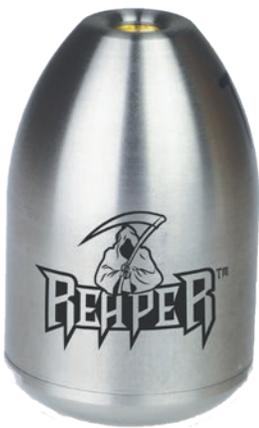
HEAD OPTION	INLET	FLOW RANGE	PRESSURE	MODEL
		GPM	PSI	
STANDARD	1/2" NPT OR BSPP	10-20	1200-8K	HJ-WH-1/2
	3/4" NPT OR BSPP	10-50	1200-8K	HJ-WH-3/4



The Reaper line of rotating sewer jetting nozzles offer the most powerful cutting force in the industry. Available in sizes that take you from the drain to the main to eliminate roots, FOG, and the toughest blockages in fewer passes. These nozzles were engineered to hit specific angles that cut faster to save you time and money.



**1/4"**



2-4" Pipes

**3/8"**



3-6" Pipes

**1/2"**



4-8" Pipes

**1"**



6-18" Pipes

SPRAY ANGLE	FLOW RATES	INLET PRESSURE	NOZZLES SIZES
1/4" Reaper 30-Degree Cone	3.7 - 9.0 GPM	1,500 - 5,000 PSI	#6.0 - 8.0
3/8" Reaper 30-Degree Cone	3.7 - 12.0 GPM	1,500 - 4,000 PSI	#6.0 - 12.0
1/2" Reaper 24-Degree Cone	7.3 - 24.0 GPM	1,500 - 4,000 PSI	#12.0 - 24.0
1" Reaper 30-Degree Cone	28.2 - 74.5 GPM	1,500 - 3,000 PSI	#40.0 - 80.0

**20-Degree Rear Jets on All**

**TO ORDER CONTACT: 1.800.624.8186**



### ROTATING SEWER JETTING NOZZLE

The Reaper is the most powerful cutting tool in the industry, designed to hit specific angles that shorten the time it takes to cut through blockages.

#### DESIGN FEATURES

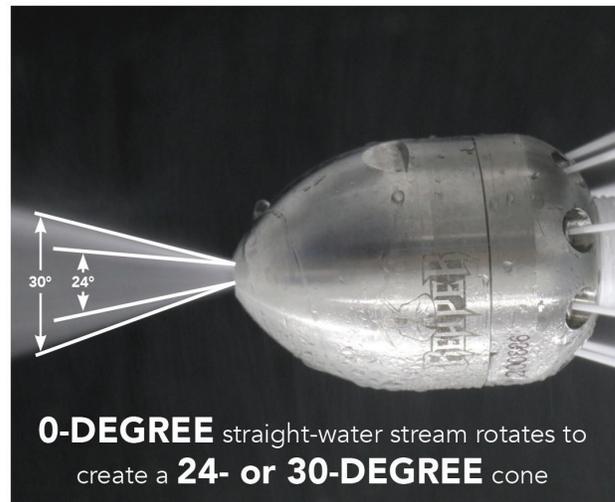
- Stainless steel housing and tungsten carbide wear surfaces
- Spray angles optimized for maximum pulling, thrusting and cleaning power
- Fully field-repairable – Repair kits get you back up and running in about 10 minutes
- Greater impingement allows you to cut through the blockages faster, completing more jobs in a day



AVAILABLE IN NPT AND BSPP

#### APPLICATIONS

- Municipal Sewer Cleaning
- Commercial Drain Cleaning
- Paraffin Wax Removal
- FOG Removal
- Root Removal



#### SPRAY CHARACTERISTICS

- Front Jet Spray Angle: 24 (3/8") or 30-degree (1/4", 1/2", 1")
- Rear Jets Spray Angles: 20-degree angle
- Flow Rates: 3.7 – 74.5 GPM
- Inlet Pressure: 1500 – 4000 PSI (1" maximum 3000 PSI)
- Nozzle Sizes: #6.0 – #80.0

Repair kits for front and rear jets available for extended life





PART NUMBER	REAPER™ NOZZLE DESCRIPTION
HJ-20022461	1/4" Reaper #6
HJ-20022462	1/4" Reaper #8
HJ-20022416	3/8" Reaper #6
HJ-20022417	3/8" Reaper #9
HJ-20022418	3/8" Reaper #12
HJ-20022419	1/2" Reaper #12
HJ-20022420	1/2" Reaper #15
HJ-20022421	1/2" Reaper #18
HJ-20022423	1/2" Reaper #24
HJ-2022434	1" Reaper #40
HJ-20022435	1" Reaper #60
HJ-20022436	1" Reaper #80
REAPER™ NOZZLE REPAIR KITS & ACCESSORIES	
HJ-20022303	Reaper 1/4" #6, #8 Front Rotor Repair Kit
HJ-20022403	Reaper 3/8" #6 Front Rotor Repair Kit
HJ-20022404	Reaper 3/8" #9 Front Rotor Repair Kit
HJ-20022405	Reaper 3/8" #12 Front Rotor Repair Kit
HJ-20022406	Reaper 1/2" #12 Front Rotor Repair Kit
HJ-20022407	Reaper 1/2" #15 Front Rotor Repair Kit
HJ-20022408	Reaper 1/2" & 1" #18, #24, #40, #60, #80 Front Rotor Repair Kit
HJ-20022409	Reaper 3/8" #6 Rear Jet Repair Kit
HJ-20022410	Reaper 3/8" #9 Rear Jet Repair Kit
HJ-20022411	Reaper 3/8" & 1/2" #12 Rear Jet Repair Kit
HJ-20022412	Reaper 1/2" #15 Rear Jet Repair Kit
HJ-20022413	Reaper 1/2" #18 Rear Jet Repair Kit
HJ-20022415	Reaper 1/2" #24 Rear Jet Repair Kit
HJ-20022437	Reaper 1" #40 Rear Jet Repair Kit
HJ-20022438	Reaper 1" #60 Rear Jet Repair Kit
HJ-20022439	Reaper 1" #80 Rear Jet Repair Kit
HJ-20022304	Reaper Dome Screen 1/4" 10 Pack
HJ-20022296	Reaper Dome Screen 1/8" 10 Pack
HJ-20022297	Reaper Dome Screen 1/2" 10 Pack
HJ-20022301	Reaper Dome Screen 1" 10 Pack
HJ-10015337	Reaper Bushing 1" NPT to 3/4" NPT

## Cnt-r-KUT ELITE



**1/4" NPT - 3/8" NPT**  
**1/2" NPT - 1.0" NPT**

The CNT-R-KUTTM ELITE mini was designed to allow an operator to get a mechanical cutter nozzle in "Those Tight Places" where other water driven mechanical cutting nozzles fear to go. The Cnt-r-KUT ELITE mini kit is a complete rotating nozzle pipe cleaning system. Manufactured from high grade stainless steel and an Aerospace elastomer the ELITE mini is designed to clean pipe using a rotating head which can be equipped with a chain or cable. A flexible light weight centering guide stabilizes and centers the rotating head yielding an excellent 360° internal cleaning. The addition of an optional deicing/degreasing head further enhances the ELITE mini's capabilities.



<b>CNT-R-KUTTM ELITE KIT</b>	
<b>Description</b>	<b>Qty</b>
Stainless Steel Body	1
Guide Vane 6	1
Rotor Head for Chain	1
Chain Set	3
Cable Set	3
Orifice Cleaner	1
Tool Case (lockable)	1
Utility Knife	1
Silver Marker	1
Straight Edge	1
Carrying Case	1
8-32 Screws	3
1/16" Allen Wrench	1
4-40 Screws	2
1/4-28 Locknut	1
3/32" Allen Wrench	1

## Cnt-r-KUT ELITE

The CNT-R-KUTTM ELITE was designed to allow an operator to get a mechanical cutter nozzle in "Those Tight Places" where other water driven mechanical cutting nozzles fear to go. The Cnt-r-KUT ELITE kit is a complete rotating nozzle pipe cleaning system. Manufactured from high grade stainless steel and an Aerospace elastomer the ELITE mini is designed to clean pipe using a rotating head which can be equipped with a chain or cable. A flexible light weight centering guide stabilizes and centers the rotating head yielding an excellent 360° internal cleaning. The addition of an optional deicing/degreasing head further enhances the ELITE mini's capabilities.



**Linked Chain Configuration:**

Linked Chain allows for a more flexible approach to removing heavier roots and grease from pipe in good structural condition.



**Roller Chain Configuration:**

Roller Chain is utilized for lighter roots and grease removal from pipe in good structural condition.



**Cable Configuration:**

Cable enables removal of lighter root systems in more delicate pipe.



**Deicing/Degreasing Configuration (Option):**

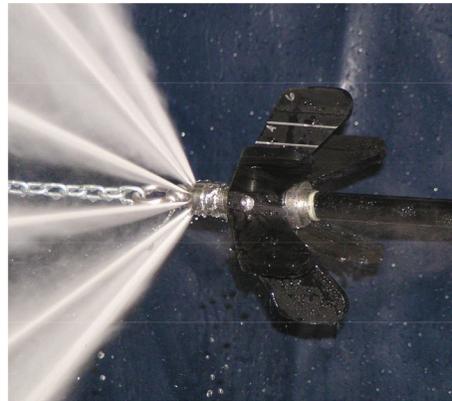
This option is excellent for ice and grease removal by utilizing sidekick jets specifically configured for this task.

## Cnt-r-KUT Tow Hook



**3/8" NPT**  
**1/2" NPT**

**Tow**



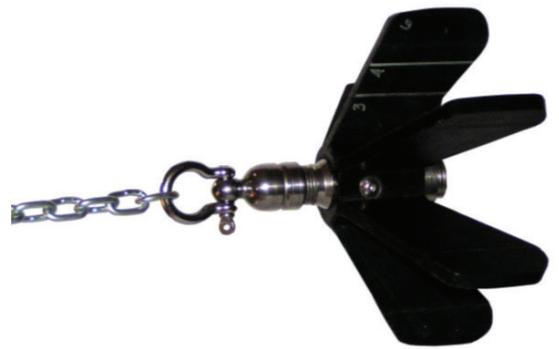
**Clean**



**Polish**

## Cnt-r-KUT Tow Hook

The model allows for 100% of the pressurized water to be applied to the task at hand by the integration of a towing nozzle which can be pulled through the line. Another option for this configuration is the ability to pull a line from point "A" to point "B" if required. The Cnt-r-KUT "TOW HOOK" is flexible enough to conform to damaged or deformed lines and can easily be trimmed in the field to fit virtually any line from 2" to 8" in diameter. Simply attach your 3/8" or 1/2" npt hose to one end of the "TOW HOOK" and you are ready to tackle the task at hand.



**3/8" NPT**  
**1/2" NPT**



CNT-R-KUTTM TOW HOOK	
Description	Qty
Stainless Steel Body	1
Guide Vane -6"	1
Penetrator Nozzle	1
Flushing Nozzle	1
Deicing/Degreasing Nozzle	1
Tool Case (lockable)	1
Orifice Cleaner	1
Utility Knife	1
Silver Marker	1
Straight Edge	1
Carrying Case	1
8-32 Screws	3
3/32" Allen Wrench	1

## Cnt-r-KUT ELITE MAX

### CENTER DEVICE DELUXE KIT

"CENTERING DEVICE (CD) MAX" allows itself to conform to those unfortunate line situations operators always run into. Manufactured from an aerospace elastomer this flexible CD MAX will conform to damaged or deformed lines and can easily be trimmed in the field to fit virtually any line from 2" to 8" in diameter. Simply attach your 3/8" or 1/2" npt hose to one end of the CD and your favorite 3/8" or 1/2" npt nozzle to the other end of the CD and you are ready to tackle the task at hand. Three flexible light weight centering guides 3", 4" and 6" diameters can quickly be changed in the field to stabilize and center the nozzle for cleaning. This kit comes complete with a tread plate carrying case; three guide vanes; a plastic parts box with a 10K rated stainless steel body, attachment screws, wrench and orifice cleaner; a utility knife; and a 6" ruler.



Part Number	Female Pipe Thread (NPT)
HJ0250CD-MAX	1/4 x 18
HJ0375CD-MAX	3/8 x 18
HJ0500CD-MAX	1/2 x 14



Traditional Coating

Heavy Duty Coating

**PERFORMANCE** - The RIPS AW blasts a 0° straight water stream at up to 3200 PSI while rotating at an optimal speed to provide an 18° cone of coverage. The cone shaped flow pattern is ideally suited for potholing applications.

**DURABILITY** - These heavy duty, high impact nozzles are constructed with a stainless steel housing and tungsten carbide wear surfaces to withstand harsh environments and provide longer life than ceramic nozzles. Repair kits are also available for extended life and lower operating costs.

**SAFETY** - Non-conductive urethane coating on the nozzle body protects users and sensitive underground utilities. Select from the traditional coating or upgrade to the new heavy duty coating - a special formulation designed for use in extreme environments including frost, shale, and other rocky conditions.

**EFFICIENCY** - Greater impingement allows you to complete jobs faster or use a smaller nozzle size while getting the same impact as nozzles with higher GPM flow rates.

**SPECIFICATIONS:**

- Minimum Inlet Pressure: 1,000 PSI (69 bar)
- Maximum Inlet Pressure: 3,200 PSI (220 bar)
- Maximum Water Temperature: 180°F (+82°C)
- Housing Material: Stainless Steel
- Coating Material: Urethane
- Nozzle Tip & Seat Material: Tungsten Carbide
- Inlet Connection Thread: 1/2" FNPT

NOZZLE SIZE	RIPS AW HD NOZZLE PART NUMBER	REPAIR KIT PART NUMBER	FLOW RATE CHART (GPM)					
			@ 1000 PSI	@ 1500 PSI	@ 2000 PSI	@ 2500 PSI	@ 3000 PSI	@ 3200 PSI
3.0	HJ-1002719-030	1001858-030	1.5 GPM	1.8 GPM	2.1 GPM	2.4 GPM	2.6 GPM	2.7 GPM
4.0 *	HJ-1002719-040	1001858-040	2.0 GPM	2.4 GPM	2.8 GPM	3.2 GPM	3.5 GPM	3.6 GPM
5.0	HJ-1002719-050	1001858-050	2.5 GPM	3.1 GPM	3.5 GPM	4.0 GPM	4.3 GPM	4.5 GPM
6.0	HJ-1002719-060	1001858-060	3.0 GPM	3.7 GPM	4.2 GPM	4.7 GPM	5.2 GPM	5.4 GPM
8.0	HJ-1002719-080	1001858-080	4.0 GPM	4.9 GPM	5.7 GPM	6.3 GPM	6.9 GPM	7.2 GPM
10.0 *	HJ-1002719-100	1001858-100	5.0 GPM	6.1 GPM	7.1 GPM	7.9 GPM	8.7 GPM	8.9 GPM
12.0	HJ-1002719-120	1001858-120	6.0 GPM	7.3 GPM	8.5 GPM	9.5 GPM	10.4 GPM	10.7 GPM

\* STOCK ITEM

## MACHETE™ BY:HYDRA-FLEX

### LINEAR OSCILLATING HYDRO-EXCAVATION NOZZLE

A premium oscillating tool and the first of its kind in the hydro-excavation market, the Machete is a “do-it-all tool” that combines the penetration of a straight tip and the movement of a rotating tip. The depth at which the Machete can cut the Earth is second-to-none, making it the most efficient tool that digs the deepest distances. The Machete’s oscillating stream also means less movement, better ergonomics, and less wear and tear on the operator.

#### DESIGN FEATURES

- Stainless steel housing and tungsten carbide wear surfaces
- Replacement covers and repair kits available for extended life
- Greater impingement allows you to use smaller nozzle sizes while getting the same impact as nozzles with higher GPM

#### APPLICATIONS

- Bell Holing
- Sloping
- Trenching
- Finishing Tool
- Caliche / Hard Soils



#### SPRAY CHARACTERISTICS

- Spray Angle: 15-degree wedge
- Flow Rates: 1.5 – 8.9 GPM
- Inlet Pressure: 1000 – 3200 PSI
- Nozzle Sizes: #3.0 – #10.0





The unique oscillating design of the Machete helps reduce undermining that may occur with traditional nozzles.



"This tip rocks. It's definitely my go-to whether I'm into harsh ground or making my work look great with finishing touches. I've been using it for over a year now; it'll last a long time. This is definitely the tip to use and recommend it on every truck!"

**Dave Temple, Owner / Operator**  
CDT Hydrovac Excavation

**48%** FASTER DIGGING

The Machete provided 48 percent faster digging than competing rotating nozzles.



#### SUPERIOR PERFORMANCE

The Machete offers the best of both worlds – the safety and rotation of the Ripsaw combined with the Switchblade's straight-line power. The long stream and powerful slicing motion help you dig faster through compact soil. Just aim and let the Machete do the work!

## PENETRATING NOZZLE FAMILY

Designed to handle the toughest clogs and obstructions!

When the toughest clogs and obstructions are encountered in a sewer line, we recommend any of our high performance penetrating nozzles for the task at hand. For total blockages caused by roots, grease or other impediments to flow, choose one of our penetrating nozzles available in sizes from .25" to 1.25".

### TIER ONE & TIER TWO EFFICIENCY



TRIPLE EDGE QUATTRO NOZZLE  
(Good thrust, Forward jets)

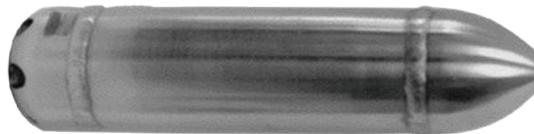


DRILL POINT QUATTRO NOZZLE  
(Better thrust, Drill point)

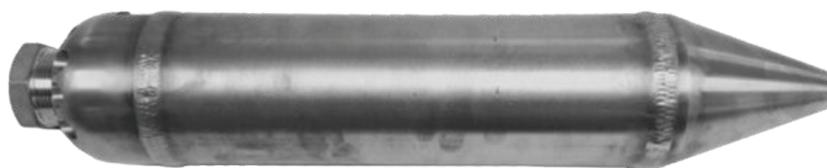


RAMBO NOZZLE  
(Best thrust, Forward jets, Drill point)

### TIER THREE EFFICIENCY



STALLION NOZZLE  
(Penetrating & Flushing in small to medium pipe; Heavy debris removal; Gentle on pipe walls)



OMG NOZZLE  
(Penetrating & Flushing in larger pipe; Heavy debris removal; Gentle on pipe walls)

## CHISEL NOZZLE

Reliable obstruction removal with forward jets and sharp edge design

The Chissel Nozzle is an excellent penetrating nozzle for a variety of applications Deformed pipes, sand, mud, roots, trash, or other blockages inevitably yield to this high performance nozzle. The combination of four forward jets and sharp edges of the Chissel Nozzles make it an ideal selection for total blockage removal.

Chissel Nozzles have tier one and tier two efficiency ratings, are manufactured from hardened stainless steel, and are available with steel or titanium ceramic inserts.



### Advantages:

- Forward jets
- Sharp chiseled edges
- Cost competitive;  
Tier 1 & 2
- Replaceable inserts

### Applications:

- Sanitary
- Total blockages
- Deformed pipe
- Pipes from 2" +

CHISSEL NOZZLES				
Hose Size	Part Number	Weight (lbs)	Dimensions	Pipe Size
1.25"	CONTACT US	6.00 lbs	7" x 3"	from 4"
1.00"	CONTACT US	1.85 lbs	4" x 2.5"	from 4"
1.00"	CONTACT US	1.85 lbs	4" x 2.5"	from 4"
0.75"	CONTACT US	0.80 lbs	2.75" x 1.75"	from 3"
0.75"	CONTACT US	0.80 lbs	2.75" x 1.75"	from 3"
0.50"	CONTACT US	0.30 lbs	2.75" x .875"	from 3"
0.50"	HJCN50	0.30 lbs	2.75" x .875"	from 3"
0.38"	HJCN38	0.10 lbs	1.25" x .875"	from 2"
0.25"	HJCN25	0.10 lbs	1.25" x .875"	from 2"

## 3 TIER CHISEL RAMBO NOZZLE

High traction power, drill point and forward jet

The Rambo nozzle combines the best characteristics of all penetrating nozzles into a maximum performance, maximum clog busting nozzle with its wedge-shaped design, drill point, and excellent thrust.

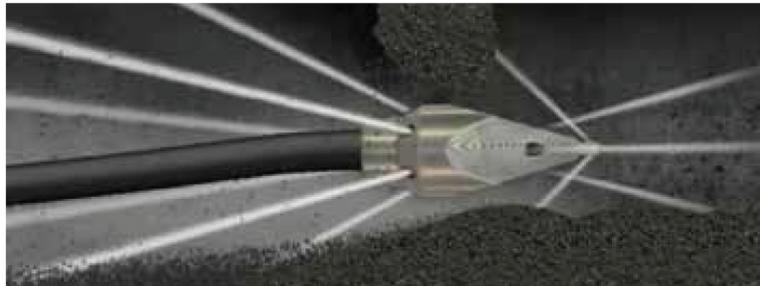
The Rambo Nozzle is sure to get you out of a jam at 2am when flow needs to be restored and clogs need to be eliminated. The Rambo can be configured with steel or titanium ceramic inserts.

### Advantages:

- 3 nozzles in one
- Maximum penetration
- Replaceable drill point
- Replaceable inserts
- Tier Two (3/4"+)

### Applications:

- Sanitary, Storm
- Total blockages
- Roots, grease, ice, stone, sand, rags,
- Small to large pipe



RAMBO NOZZLE				
Hose Size	Part Number	Weight (lbs)	Dimensions	Pipe Size
1.25"	CONTACT US	5.35 lbs	7.8" x 3"	from 6"
1.00"	CONTACT US	4.75 lbs	6.7" x 3"	from 4"
0.75"	CONTACT US	1.55 lbs	4.8" x 2.1"	from 3"
0.50"	CONTACT US	0.35 lbs	3.25" x 1.2"	from 3"
0.38"	CONTACT US	0.10 lbs	1.85" x 0.9"	from 2"
0.25"	CONTACT US	0.10 lbs	1.8" x 0.9"	from 2"

## CHAIN CUTTER FAMILY

The only match for the toughest obstructions!

There are five models for customers with root infiltration, grease, concrete, protruding taps, and scaling problems. They offer the Micro Chain Cutter in 2" to 4" applications, Mini Chain Cutter in 4" to 10" applications, the Super Cutter Plus 150 for 6" to 24" pipes, the Super Cutter Plus 200 for pipes 8" to 48", and finally the Supernova 4000 Chain Cutter for 6" to 48" pipe, all with one Cutter. Let us show you the power and capabilities of their Cutter Family with a demonstration. This family of chain cutters has the flexibility to handle the removal of the heaviest obstructions, while being gentle on pipe walls.



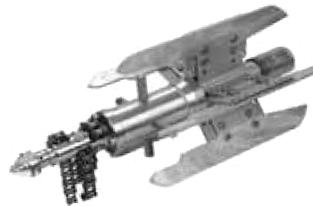
MICRO-CUTTER  
(2-6")



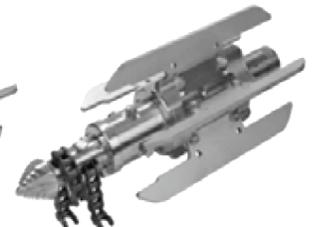
MINI-CUTTER  
(4-10")



SCP 150 CUTTER  
(6-24")



SCP 200 CUTTER  
(8-48")



SCP 4000 CUTTER  
(6-48")

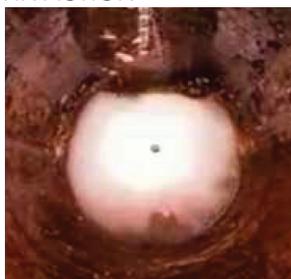
### Superior Design, Construction, Performance & Flexibility

Chain cutters are made of stainless steel and offer superior thrust and drive efficiency. Stabilized by stainless steel guide carriage skids, the cutters feature a unique spinner nozzle design that rotates the main shaft, spinning the attached chains at 2,500 RPM. The cross cutter bit installed on the front of the shaft also serves as a penetrating bit to "bore" into the root or obstruction. Chains can be configured for grease or scale removal, or for root removal.

### Ease of Configuration & Maintenance

The ease of field configuration is a definite plus for the operator. Installation of replacement chain, or skid configuration for larger diameters, is a simple matter and is quickly done in the field. Standard maintenance and cleaning is easy and prolongs the service life of the cutter. Chain Cutters also feature a 2 year limited warranty and come configured with titanium ceramic inserts for better performance. Finally, no lubrication (other than the HP Swivel joint at the hose connection) is required to operate a Chain Cutter. Cutters can be maintained with a gentle soap or detergent and water.

CHAIN CUTTER IN ACTION



**ALWAYS CLEAN & VIDEO BEFORE OPERATING ANY CHAIN CUTTER. FOLLOW OPERATING GUIDELINES IN THE CUTTER MANUAL.**

**CONTACT US FOR INFORMATION REGARDING TRAINING & INSTALLATION.**

## MICRO CHAIN CUTTER

### Advantages

- Easily configured for multiple jobs
- Use in sweeping 90 degree or 45 degree elbows
- Kit includes Case, Tools and Manual
- Clean with soap and water

### Applications

- Sanitary
- 2", 3", 4" Pipes (6" w/optional skid)
- Plumbing Applications
- Offsets, Pipe Rips, Services, Laterals, Small Pipes
- Root Removal in Laterals & Sanitary Service Lines
- Scale and Rust Removal
- Use with 1/2" hose; 1/2" swivel included

### Technical Specification

- No skid required for 2" & 3" applications
- Individual skid for 4" applications provided
- Individual skid for 6" applications (optional)
- Lubrication is not required
- Pump minimum of 8 GPM & 1700 PSI required
- Tier Two Nozzle
- Titanium ceramic inserts included
- 6 feet of chain included
- Pulling device available (optional)
- 90 degree lateral applications should not utilize the guide carriage skids



### QUICK FACTS

- Pipe Range: 2", 3", 4", 6"
- Flow Range: 8 GPM+
- Pressure Range: 1700 PSI - 4000 PSI
- Hose Sizes: 3/8"-1/2"

MICRO CHAIN CUTTER				
Number of Inserts	Part Number	Weight (lbs)	Dimensions	Pipe size
6	HJ-200110-C	1.2lbs	3.9" x 1.5"	2", 3", 4"

## MINI CHAIN CUTTER

### Advantages

- Easily configured for multiple jobs
- Use with 1/2", 3/4", & 1" hose applications
- Kit includes Case, Tools and Manual
- Clean with soap and water

### Applications

- Sanitary, Storm
- 4", 6", & 8" pipes (10" optional)
- Roots, Scaling, Grease
- Root Removal in Laterals and Sanitary Service Lines
- Removal of Protruding Taps
- Scale and Rust Removal



### Technical Specifications

- Individual skid for 4", 6" & 8" pipe
- 10" skid available (optional)
- 3/4" swivel is the standard configuration
- Reducers or expanders available (optional)
- Lubrication is not required
- Pump minimum of 18 GPM & 1700 PSI required
- Tier Two Nozzle
- Titanium ceramic inserts included
- 6 feet of chain included

### QUICK FACTS

- Pipe Range: 4", 6", 8", 10"
- Flow Range: 18 GPM - 60 GPM
- Pressure Range: 1700 PSI - 4000 PSI
- Hose Sizes: 1/2", 3/4", 1"

MINI CHAIN CUTTER					
Number of Inserts	Insert Part Number	Swivel Size	Weight (lbs)	Dimensions	Pipe Size
7	HJ-200343-C	0.5"	2.9lbs	1.96" x 6.7"	4, 6, 8"
7	HJ-200344-C	0.75"	2.9lbs	1.96" x 6.7"	4, 6, 8"
7	HJ-200345-C	1"	2.9lbs	1.96" x 6.7"	4, 6, 8"

## FLOOR CLEANER FAMILY

Maximum power for large diameter pipe!

### Storm Water Infrastructure - Evolution of Maintenance Requirements

As Federal requirements for greater storm water system monitoring and maintenance grow, storm water departments are facing more and more demand on their budgets, manpower, and expertise. If you are a storm water professional and need help determining affordable solutions to your system's maintenance requirements, call us for innovative products and services. We can help!

### Superior Design Equals Superior Performance

Due to our advanced design fluid mechanics, the flow from the high pressure water hose is converted to maximum cleaning power in each jet of the floor cleaner. The resulting flow from the various jets, as well as the jet angle design make these floor cleaners ideal for removing sludge, mud, and other compacted materials and heavy debris (rocks, bricks, broken concrete, etc.) from storm lines, detention systems, culverts, and large sanitary lines.



## FLOOR CLEANER NOZZLES

Extreme power for bottom cleaning and heavy debris removal



### Advantages:

- Self righting design
- Fillable weight port for high flow conditions
- Reduced operating costs
- High efficiency cleaning
- Superior water pattern design

### Applications:

- SANITARY, STORM
- Heavy or compacted solids
- Removal of sludge
- Tandem applications (culverts)
- High pump flow applications
- Large stone & brick removal

Recommended flow rates	Jets	Part Number	Weight (lbs)	Dimensions	Pipe Size
from 80	14	HJ-100125	51.35lbs	11.25" x 18'	from 20"-72"
65 to 120	12	HJ-100124	44.6lbs	10.5" x 18"	from 16"-60"
50 to 80	10	HJ-100123	44.75lbs	10.25" x 18"	from 12"-48"
30 to 80	8	HJ-100122	33.40lbs	8.25" x 17.5"	from 10"-36"
30 to 60	6	HJ-100121	28.85lbs	6.5" x 16.25"	from 8"-24"
18 to 40	5	HJ-100120	18.75lbs	3.75" x 10.25"	from 4"-12"



## **CNT-R-KUT SAFETY**

### **SAFETY PROCEDURES FOR USING Cnt-r-KUT**

1. Inspect Nozzle prior to using to ensure that all orifices are unobstructed. Blocked orifices could result in dangerous over-pressuring of pumping equipment. Also, inspect for any surface damage as this can compromise nozzle safety.
2. Discard Nozzle If: A) The nozzle shows any signs of cracking or damage, particularly to threaded connections. B) The nozzle shows significant wear to sidewall at any point. C) The ability of the nozzle to hold pressure is in any way in question.
3. Use Teflon Tape on all male NPT threads before installing the nozzle. For those nozzles with machine screw threads use a good quality anti-seize compound.
4. Use Wrench Flats (if available) and an open ended wrench when- ever possible, to install nozzles. A properly adjusted pipe wrench can be used for tightening nozzles which do not have wrench flats. Remember **DO NOT OVERTIGHTEN**. Avoid deep wrench marks which can severely weaken the nozzle.
5. Nozzle Flow Ratings must be compatible with pump flow and pressure rating to avoid dangerous over pressuring of the system.



## CNT-R-KUT SAFETY Terms and Conditions of Sales Agreement

**Agreement.** This Agreement between Arthur Products Co (APC) of Medina, Oh and Buyer for the sale of the APC products or parts covered in this invoice shall consist of the terms and conditions herein, shall constitute the entire agreement between the Parties for such sale, and shall supersede all prior oral or written representations or agreements between the Parties. This Agreement may only be modified by a written amendment signed by an authorized representative of both Parties. APC objects and shall not be bound by any additional or different terms, whether printed or otherwise in Buyer's purchase order or any other communication from Buyer unless expressly agreed to by APC in writing. Prior courses of dealing between the Parties or trade usage, to the extent they add to, detract from, supplant or explain this Agreement, shall not be binding on APC.

**Safety Training.** APC products are designed to use highly pressurized water to perform waterblasting operations. Misuse or improper maintenance of these products may cause damage to the product, other property damage, serious personal injury or even death. Accordingly Buyer agrees to become familiar with and follow the instructions available from APC for the safe and proper operation and maintenance of the product and to train all personnel who will use the product in the safe and proper operation and maintenance of the product in accordance with the recommended safety and maintenance practices in the operations manual or video available from APC. Should Buyer or its personnel at any time have a question regarding the proper use and maintenance of the product or the proper installation, use or maintenance of any part or accessory, Buyer agrees to contact a APC representative for further instruction.

**Warranty.** APC warrants its product parts to be free from defects in material and workmanship for 30 days from the date of invoice. This warranty covers only metal parts sold individually or as part of an assembled waterblasting unit. This warranty does not cover damage due to normal wear and tear; misuse or failure to use or maintain a part or product in accordance with operating or maintenance instructions furnished by APC; improper installation by Buyer or alteration of a part or accessory; or use of an unauthorized or non-standard part or accessory. Items not manufactured by APC are covered only by the warranty of the actual manufacturer. APC EXPRESSLY DISCLAIMS ALL OTHER REPRESENTATIONS AND WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER STATUTORY OR COMMON LAW WARRANTY.

**Warranty Service.** During the warranty period, APC will provide warranty service for any covered part or product returned by Buyer to APC, shipping prepaid by Buyer, for inspection by APC, and such inspection reveals a defect in material or workmanship. APC will then, at its option, repair or replace the part or product and reship to Buyer F.O.B. APC's warranty service center, or refund the purchase price for the part or product. Buyer bears the risk of loss or damage to the part or product during shipment to and from APC.

**Limitation of Liability.** Buyer's sole remedy for breach of warranty shall be as set forth above. APC SHALL NOT BE RESPONSIBLE FOR LOSS OF USE OF ANY PRODUCT, LOST PROFITS OR ANY INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES, NOR SHALL APC'S LIABILITY FOR ANY OTHER DAMAGES WHATSOEVER ARISING OUT OF OR CONNECTED WITH THIS AGREEMENT OR THE MANUFACTURE, SALE, DELIVERY OR USE OF THE PRODUCT EXCEED

## **100% MONEY BACK GUARANTEE ON ALL PRODUCTS!**

- **5 years on titanium ceramic inserts**
- **3 years on all tool bodies with replaceable ceramic inserts**
- **1 year on camera nozzles**
- **1 year on replaceable steel inserts**
- **1 year on all tool bodies with replaceable steel inserts**
- **2 years on chain cutter fins and tube assemblies**
- **2 years on rotating bodies (chain cutter and rotor nozzles)**
- **1 year on chain cutter skids and distance plates**
- **1 year on swivels (when shipped with original tool)**
- **1 year on Tier 1 nozzles, steel inserts, holders**
- **180 days on re-manufactured tools**
- **90 days on new replacement warranty items**

HotJet USA offers a limited lifetime warranty on tools and items manufactured. This warranty applies against manufacturing defects. Limited warranties exist on all bodies, inserts, and components. HotJet USA will not warranty against loss, failure and/or damage due to: improper set-up, improper assembly, abnormal wear, improper use, use outside the design parameters of these tools, unauthorized modification of these tools, or failure to perform recommended maintenance on said tools.





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