

NEWSBLAST

February 2002

Ferret Report - Condenser Cleaning

Rolan Plant Services, located in Lafayette, Indiana serves food producers, pharmaceuticals, and industrial plants in the heart of the Midwest. Owner Jack Rolan is particularly proud of the value his company delivers, in terms of minimizing downtime, and reduced exposure of personnel to the hazards of vessel entry. Rolan Plant Services offers complete industrial services including hazardous material response and cleanup.

Rolan's favorite source for StoneAge tools is Blast Technology, in North Royalton, Ohio - who supply all the equipment a waterblast contractor could possibly need. Owner Frank Romito told us about a job Rolan Plant Services recently completed that used more StoneAge Ferret Tube Nozzles at once than we have ever heard of! The record number is 11 Ferrets, with 11 waterblast pumps, and a spare.

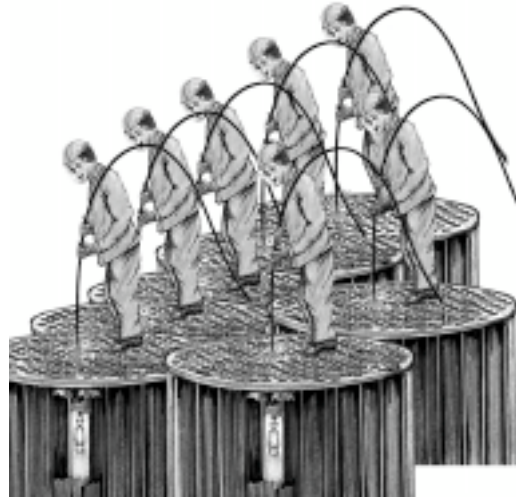
The unit cleaned was a vertical shell and tube condenser in a corn sweetener plant. There were 5,795 tubes, 1-1/4" OD, 44 ft. long in three different zones.

Fouling was extensive enough to completely plug some tubes - but that's not the worst of the problem. The plugs are easily removed using conventional high speed spinner nozzles in 2-5 minutes per tube. But a hard by-product scale is left on the tube walls that seriously impedes heat transfer. Complete scale removal has been accepted as impossible in the past. Only 30 hours are allowed for cleaning operations, because it shuts down the production line - and the customer's revenue stream in the process.

Jack Rolan was not willing to accept doing an incomplete job for the customer, if there was any possible way to completely clean all 5,795 tubes. With the advice of Blast Technology, a test was run at Rolan's Lafayette shop. Tubes were fouled with a paint coating, and cleaned using a variety of rotating nozzles. The high speed spinners normally used for the job achieved 60-75% clean tube wall surfaces, whereas the StoneAge Ferret got the tubes 100% clean. There are three reasons for this dramatic difference. The Ferret uses a positive high pressure seal, so leaks do not subtract from the power delivered from the pump. Secondly, rotation rate is controlled by viscous fluid technology, allowing the Ferret jets longer dwell time on the deposits. Finally, the Ferret jet configuration is the result of extensive experimentation by StoneAge engineers.

The next time the condenser was scheduled down for cleaning, Rolan was ready with eight 200 HP, four 260 HP waterblast pumps, enough Ferrets to continuously operate 6 in unplugging mode, and 5 in polishing mode. Every 3 hours the Ferrets were flushed with viscous fluid, as we recommend to prolong life of bearings and seals. After 30 hours, 3950 tubes were cleaned, cleaner than they had ever been before. Every tube was bore-scoped to confirm cleaning results. The Ferrets are effective enough that Jack is confident the remaining tubes can be completed at the next scheduled cleaning cycle. That way tubes will not be as severely fouled, and all tubes will be completely cleaned in future cycles.

We build the best waterjet tools we know how to, like the Ferret. But we're especially proud to have persistent professionals like Jack Rolan and Frank Romito using StoneAge tools to solve problems and save money for process plant operators like this agricultural products company.



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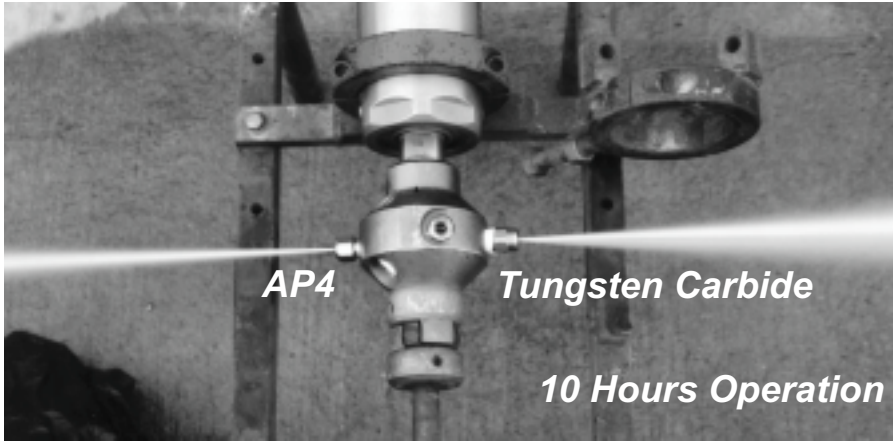
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Long-Lasting Attack Tips



Attack AP4
1/4 npt

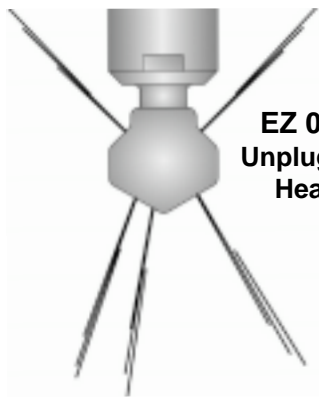


**IN
STOCK**

Thanks to high efficiency nozzle design and StoneAge's unique 7-step manufacturing process, the **Attack Nozzle Tips** are the best quality, longest lasting tips we've found. The 1/8 npt **AP2** was introduced last spring, and customers confirm that they outlast tungsten carbide jets. The new 1/4 npt **AP4** is now available in a wide range of orifice sizes. See above how much better the **AP4** jet quality looks after 10 hours operation, than the tungsten carbide tips. The difference in life is especially dramatic in small orifice sizes at 20,000 psi. Since rapid wear of small diameter tungsten carbide nozzle tips is a problem to users of hand-held shotgun nozzles; the **AP4**'s make an excellent choice for **Barracuda™** and similar nozzles.

With lower cost and longer life, the **AP2** and **AP4** are a clear choice over tungsten carbide nozzle tips. Why pay more?

Weasel Tube Nozzle



EZ 043
Unplugging
Head

Concentrated Cleaning Power
with **Controlled Rotation**
in a **Compact Tool**

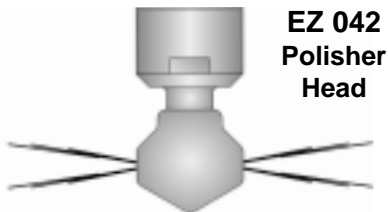
Viscous Fluid Governor
for **Rotation Speed Control**

Sealed, Lubricated Bearings

Two Head
Styles Available



Leak-Free High Pressure Seal



EZ 042
Polisher
Head



Illustrated actual size

StoneAge's newest and smallest self-rotating tool promises big cleaning power for tubes as small as 7/8" ID. It's ideal for condenser, evaporator, precipitator, reboiler tubes; as well as many other small diameter piping applications. The **Weasel** will handle flows up to 8 gpm at pressure up to 15 Kpsi - or 70 HP. Like its big brothers the **Ferret** and **Marten**, the **Weasel's** controlled rotation, leak-free seal, and specially-configured jets make it much more productive than "high speed spinners" often used for tube cleaning.

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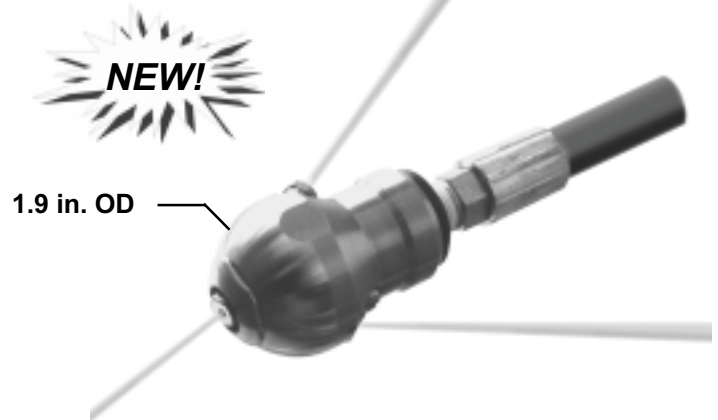
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Smallest Warthog™ - WT-3/8 Introduced

Now the **Warthog™** is capable of cleaning residential drains and laterals. The **WT-3/8** is less than 2" OD, with seals, bearings, and viscous fluid speed control all designed into the rotating head! It negotiates 3" elbows with ease. Like the other **Warthogs™**, The **WT-3/8** uses two powerful rotating jets, with an off-center boring jet to remove roots, sand, grease, silt, scale, and soap deposits from lines up to 4" diameter. It is designed for 3/8 in. ID hose, 4-12 gpm, and rated up to 4,000 psi.

The viscous fluid governor slows rotation, preserving jet quality, and providing sufficient jet dwell time to really produce results!



Every Warthog is Custom-Jetted by Computer Why Is It So Important?

When water flows through a hose, pressure is lost due to friction. As a result most jetters lose 20% and 40% of their power due to hose pressure drop. The effect is easily demonstrated by pumping at maximum throttle, with the hose end restrained, and no nozzle. The pump discharge pressure will be between 400 and 1200 psi - a direct measure of how much pressure is lost due only to flow through your hose. Jet power is directly proportional to pressure.

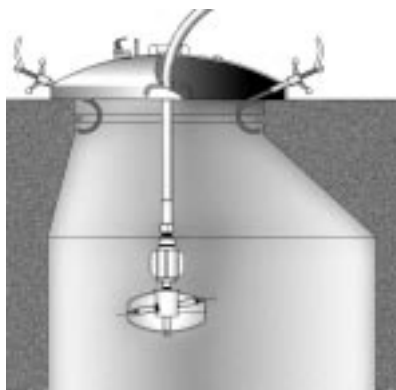
Jetting of the sewer nozzle is very important for delivery of jet power, because its orifices control the flow and pressures at which the jetting pump will operate. When we jet a **Warthog™** nozzle, we run a computer analysis to be sure we're supplying the most powerful possible jetting.

That's why we ask how much flow the customer's pump puts out, at what pressure, as well as hose diameter and length. The computer calculates pressure drop in the hose and in the **Warthog™** nozzle, then calculates jet sizes. With this information, you can be sure that the **Warthog™** will deliver the maximum possible jetting power.

Warthog		Date: 5/31/01	
Customer	City of Possum Hollow, AR		
Input			
Model? WS, WH, or WG			
A for AP2 Tips, O for ODP2			
2000 Pump Discharge Pressure, psi	138 Bar	236 l/min	
62.32 Desired Flow, Nominal gpm	198 meters		
652 Hose Length, ft			
1.00 Hose ID, in			
55.09 Flow, Actual gpm			
Hose Co. = 2.52			
Hose P Drop = 495.4	psi at 0% stretch		
Top P Drop = 148.7			
Total P Drop = 644.1			
Pressure at Tool, psi =	1354		
Co. nozzle coefficient =	0.85		
Input	Pattern 1	Pattern 2	Pattern 3
N. number of jets	1	2	2
Orifice Diameter, in	0.047	0.115	0.125
Orifice Diameter, mm	1.18	2.92	3.18
H. Orifice, in	0.00	0.50	0.50
Jet Angle from Axis, Degree	15	150	135
Flow, gpm	2.07	24.76	29.25
Thrust, lbs	3.84	-41.22	-39.78
Torque, in-lbs	0.00	11.90	19.88
Total Flow, gpm =	66.08	Target:	424.5 in-lb
Total Torque, in-lbs =	31.75	95-117 2Kpsi	354.5 in-lb
Total Pull, lbs =	77.14	95-117 2Kpsi	384.6 in-lb
Total Power, Hp =	44.37	95-117 2Kpsi	11.18 in-lb
		95-117 2.5 Kpsi	25-40 in-lb

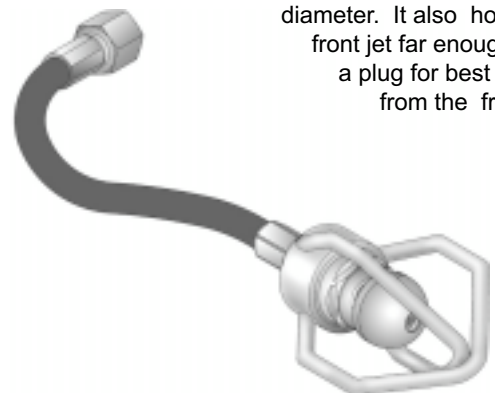
Manhole Restoration

Infiltration of storm water into sewer systems overloads treatment facilities causing effluent flows to exceed permitted levels. Manholes are a major cause for the problem. The **Warthog™ Nozzle** can be used for manhole clean-up preparation for repair, coating, or lining. The **Warthog™** is fitted with a special head. It has extension nipples that clean the vertical walls, bottom, and upper areas of the manhole. The hydraulic hose reel on the jetter is used to stroke the nozzle from top to bottom. A heavy steel cover protects the operator from hazardous jets in case the nozzle is pulled too far up and out of the manhole.



WS 084 Centralizer

The **WS 084 Centralizer** adds length to prevent the **WS-1/2**, or **WS 1/2-J** from reversing direction, a serious safety problem. It allows the **WS-1/2** to clean sewers up to 8" diameter. It also holds the front jet far enough from a plug for best results from the front jet.



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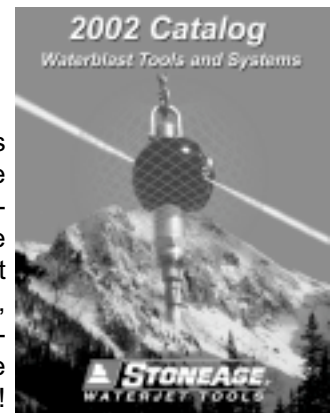
Expanded Sales Staff



Carolyn Klinnert and Daryll Fry have been named to StoneAge's Sales Staff. Many customers already know Carolyn who has handled product literature, mailings, operator manuals, billing inquiries, and new account setup for four years. Daryll Fry has three years experience with StoneAge, having been responsible for Shipping and more recently, Purchasing. We are fortunate to have two such knowledgeable employees who want to focus on customer service. They will be customers' best resource for most inquiries, and they will be easy to find - as they're first to answer the phone when you call StoneAge.



The 2002 StoneAge Catalogs have been mailed, and we hope we didn't miss you! Please discard any old catalogs, because they contain obsolete tools that are no longer available. Call us, e-mail us, or fill out the catalog request at our website. We will be happy to send you a copy, or two!



Nashville Trade Show



John Wolgamott, Brenda Cundiff, Bill Shires, William Hall, and Mark House will attend the Pumper/Cleaner Environmental Exposition in Nashville, Tennessee February 27 through March 2. We have a great new location upstairs in the Delta Ballroom, #S2. Bill Shires has put together a comprehensive display of waterjet tools and equipment. On Wednesday February 27, Mark House will present a seminar "High Powered Waterjet Cleaning of Sewer Pipes" in the Presidential Ballroom A & B, at 4:30 PM. We welcome all to stop and visit our booth!

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