



Our INNOVATION in sewer and pipe cleaning

High Performance Tool 
 golden jet®

  usa inc.



SN EN ISO 9001 : 2008
SN EN ISO 14001 : 2004

STANDARD NOZZLES

Standard cleaning nozzles	7	Flounder	21
Grenade-bombs	12	enz®-Bulldozer	23
Chisel point nozzles	16	Ejector nozzles	26

ROTATING NOZZLES

RGS Radial rotating nozzles 75°	31	Rotopuls vibration nozzles	47
HRH Semi-radially rearward rotating nozzles	33	Propeller nozzles	50
HRV Semi-radial forward rotating nozzles	36	Bulldog® 14,500 psi	52
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General Information

Enz USA / Enz Technik offers a large range of high quality pipe cleaning tools. Since 1985, through innovative designs, we have assisted the sewer and pipe cleaning industry to remain on the forefront of new and creative technologies. This ensures superior quality and gives you, the customer, a product that is efficient and durable. We are interested in being your Partner and helping you find the best solution for your problems. With our know-how and efforts we will accept any new challenges to help keep you on the forefront of the newest techniques available.

The enz golden jet® products

All enz golden jet tools are calibrated to Customer specific Pump and Hose specifications with our own JetCalc® Software to optimize the performance of your tool.

The enz golden jet® rotating nozzles are remarkable for their tremendous cleaning efficiency, which is based on a worldwide patented Drive and Brake jets design which increases and decreases the rotational speed with every half rotation therefore limiting the rotational speed.

The resulting pressure vibrations essentially contribute to the disintegration of the deposits.

We also carry a complete line of Rotating Chain Scrapers and Percussion Milling Cutters

Our ceramic orifice inserts ensure that enz golden jet® tools have an outstanding durability.

Our products are covered by International patents.

Warranty / Safety / Liability

Enz Pipe and Canal Cleaning Tools are designed for highest possible performance. The materials and the heat treatment processes are selected for wear resistance and long life. Enz is applying the most up to date manufacturing and quality assurance methods.

The Enz organization is ISO 9001 and ISO 14001 compliant.

General Tool Warranty: Enz warrants the quality of all tools supplied for the duration of 12 months from date of purchase. The warranty is limited to the replacement of faulty parts or the in house repair of faulty tools. No warranty is accepted if tools are not used or maintained in strict compliance with the operating manual supplied by Enz.

Warranty on ceramic nozzle inserts: The orifice diameters of Enz ceramic nozzles are warranted for wear for the duration of 5 years from the date of purchase when used with potable water. The warranty is limited to the free of charge exchange of worn inserts.

Warranty on Bulldog® nozzles: Enz warrants the internal mechanics of the Bulldog® nozzles for 1 year. No warranty on excessive wear of head or skid body due to prolonged or abusive use.

Despite all due care, this documentation may contain errors. Enz Technik AG and/or its Subsidiaries shall not be liable for any consequential damage. Technical modifications are reserved.

Our Distributor Network covers the United States and Canada

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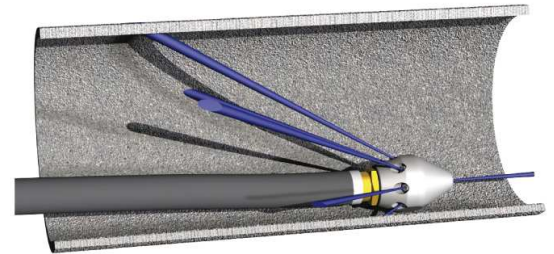
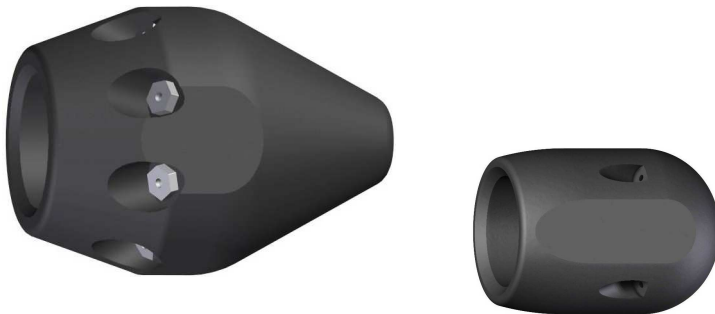
Standard cleaning nozzles

Made of wear-resistant, hardened steel, provided with front jet insert and blind plug (interchangeable). Angle of jet is 30°, sturdy wall thickness, long service life and a minimum of wear and tear.

All nozzles from art. 30.038 onward are provided with ceramic inserts. Because of this, the efficiency is considerably higher compared with those nozzles with drilled holes and the service life is several times longer.

Applications

- Appropriate for removal of sludge deposits and cloggings



Standard cleaning nozzles

Standard cleaning nozzles 1/8"



	30.012NSL10	30.012NSL15	30.012NSL27	30.012NSL10F	30.012NSL15F	30.012NSL30F
	1/8 NPT					
	1 - 4					
	2.6	4	7	2.6	4	8
	4 × Ø 0.75 mm	4 × Ø 0.95 mm	4 × Ø 1.20 mm	4 × Ø 0.75 mm	4 × Ø 0.90 mm	4 × Ø 1.10 mm
	—	—	—	Ø 0.60 mm	Ø 0.60 mm	Ø 1.10 mm
	25°					
	0.5 × 0.7					
	0.02					
	5,075					
	—					

Standard cleaning nozzles 1/4"



	30.0253NSL10	30.0253NSL15	30.0253NSL30	30.0253NSL10F	30.0253NSL15F	30.0253NSL30F
	1/4 NPT					
	1.2 - 4					
	2.6	3.9	7.9	2.6	3.9	7.9
	3 × Ø 0.85 mm	3 × Ø 1.10 mm	3 × Ø 1.55 mm	3 × Ø 1.10 mm	3 × Ø 1.10 mm	3 × Ø 1.55 mm
	—	—	—	Ø 0.80 mm	Ø 0.80 mm	Ø 0.80 mm
	25°	30°				
	0.7 × 0.8					
	0.04					
	5,075					
	—					

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		Maximum pressure [psi]
	Measures [inch]		Jet angle forward		

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Standard cleaning nozzles

Standard cleaning nozzles 1/4"



	30.0256NSL30	30.0256NSL40	30.0256NSL30F	30.0256NSL40F
	1/4 NPT			
	1.2 - 4.5			
	7.9	10.5	7.9	10.5
	6 × Ø 1.10 mm	6 × Ø 1.20 mm	6 × Ø 1.00 mm	6 × Ø 1.20 mm
	—	—	Ø 0.80 mm	Ø 0.80 mm
	25°			
	0.7 × 0.8			
	0.04			
	5,075			
	—			




















	35.0253NSL20	35.0253NSL30	35.0253NSL40	35.0256NSL30	35.0256NSL40
	1/4 NPT				
	1.2 - 4.5				
	5	8	10.5	8	10.5
	3 × Ø 1.10 mm	3 × Ø 1.45 mm	3 × Ø 1.10 mm	6 × Ø 1.00 mm	6 × Ø 1.15 mm
	4 × Ø 0.50 mm	4 × Ø 0.50 mm	4 × Ø 0.50 mm	4 × Ø 0.50 mm	4 × Ø 0.70 mm
	25°				
	15°				
	0.7 × 0.8				
	0.04				
	5,075				
	—				


















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









	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		Maximum pressure [psi]
	Measures [inch]		Jet angle forward		

Standard cleaning nozzles

Standard cleaning nozzles 3/8" - 3/4"

						
	30.038NSL40	30.038NSL60	30.050SL40	30.050SL70	30.050SL100	35.050SL40
	3/8 NPT		1/2			
	2 - 6		2 - 8			
	10.5	16	10.5	18	26	10.5
	6 × Ø 1.30 mm	6 × Ø 1.60 mm	6 × Ø 1.20 mm	6 × Ø 1.60 mm	6 × Ø 1.90 mm	6 × Ø 1.10 mm
	*	*	—	—	—	4 × Ø 1.00 mm
	30°					
	—	—	—	—	—	15°
	1.0 × 1.5		1.2 × 1.0			1.2 × 1.8
	0.15		0.26			0.26
	5,075					
	—					


















						
	35.050SL70	35.050SL100	30.075SL160	30.075SL200	35.075SL160	35.075SL200
	1/2		3/4			
	2.8 - 10		2.8 - 1		2.8 - 10	
	18	26	42	52	42	53
	6 × Ø 1.40 mm	6 × Ø 1.70 mm	6 × Ø 2.45 mm	6 × Ø 2.70 mm	6 × Ø 2.20 mm	6 × Ø 2.50 mm
	4 × Ø 1.10 mm	4 × Ø 1.30 mm	*	*	4 × Ø 1.70 mm	4 × Ø 1.90 mm
	30°					
	15°	15°			15°	15°
	1.2 × 1.8		1.4 × 2.4			
	0.26	0.26	0.52	0.52	0.52	0.52
	5,075					
	—					

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		Maximum pressure [psi]
	Measures [inch]		Jet angle forward	*	Optional front jet





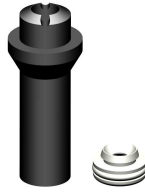











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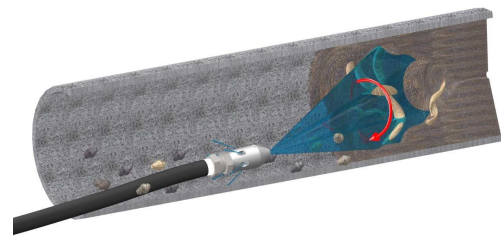
Standard cleaning nozzles

Standard cleaning nozzle 3/8" - 1 1/4"

						
	30.038N	30.050	30.075	30.100	30.100SP20	30.125
	3/8 NPT	1/2	3/4	1	1	1 1/4
	1.6 - 6	2 - 8	2.8 - 10	6 - 14	6 - 14	8 - 16
	2.6	13	13	32	32	53
	6 × M4	6 × M6	6 × M6	8 × M8	8 × M8	8 × M8
	1 × M4	1 × M6	1 × M6	1 × M8	1 × M8	1 × M8
	30°	30°	30°	30°	20°	30°
	—	—	—	—	—	—
	1.00 × 1.54	1.20 × 1.85	1.50 × 2.36	2.40 × 3.27	2.40 × 3.27	2.70 × 4.15
	0.15	0.26	0.50	1.60	1.60	3.05
	5,075			3,625		
	x	x	x	x	x	x













Rotodrill™ 1/2" - 1"

					
	36.050**	36.075**	36.100**	66.21040-060	66.21060-200
	1/2	3/4	1	Repair set for 36.050, 36.075 Repair set 36.100	
	2 - 8	2.8 - 10	6 - 14		
	8/13	20	47		
	6 × M4	6 × M6	6 × M8		
	1 × 1.2/1.5	1 × 1.5	1 × 2.7		
	25°	30°	30°		
	—	—	—		
	1.26 × 2.20	1.50 × 2.36	2.16 × 3.74		
	0.38	0.74	1.92		
	5,075	5,075	3,625		
	—	—	—		



** Rotating front jet

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	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		Maximum pressure [psi]
	Measures [inch]		Jet angle forward		* Optional front jet

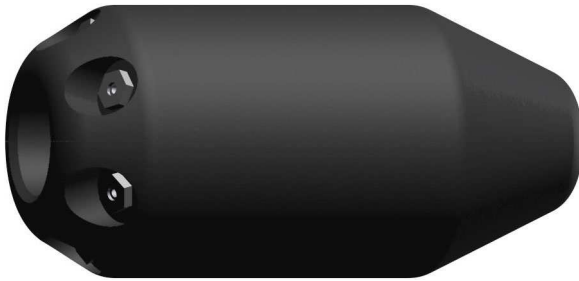
Grenade-bombs

This **enz golden jet[®]** jet nozzle is made of wear-resistant hardened steel. Two different jet angles of 10° and 30° perform together providing strong traction and effective cleaning. The high efficiency is reached by appropriate water guidance.

For optimal around cleaning, the nozzles 40.075 to 42.125A can be equipped with fan-jet ceramic inserts.

Applications

- Removal of stone, gravel and soft deposits
- Cleaning pipes before the use of chain flail head or cutter



Grenade-bombs

Grenade-bombs 1/4"



	40.025N-10	40.025N-30	40.025N-40
	1/4 NPT		
	1.2 - 4		
	2.5	8	10.5
	4 × 0.8	4 × 1.3	4 × 1.45
	1 × M4		
	20°		
	1.0 × 1.6		
	0.21		
	5,075		
	—	—	—

Grenade-bombs 3/8" - 3/4"



	40.038N	40.050	42.050	40.075	40.075-SP30	42.075
	3/8 NPT	1/2		3/4		
	1.8 - 4	2.5 - 6		3 - 8		
	2.6	13		26		39.5
	6 × M6	6 × M8	3 × M8	4 × M8		4 × M8
			3 × FanJet M8	4 × M8		4 × FanJet M8
	1 × M6	1 × M8				
	25°			10° + 30°	30°	
	1.5 × 3.15	1.9 × 3.5		2.3 × 4.6		
	1.15	1.90		3.40	3.00	
	5,075					
	X	X		X		

The item 42.050 and 42.075 is only available with fan-jet inserts Ø 1.0 mm and Ø 1.5 mm.

High Performance Tool

	Connecting thread [inch]		Thrust jet		Maximum pressure [psi]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		
	Measures [inch]		Weight [lb.]		

Grenade-bombs

Grenade-bombs 1"



	40.100A	40.100A-SP10	40.100A-SP15	40.100A-SP30	42.100A
	1				
	6 - 12				
	40				
	10 × M10				5 × M10 5 × FanJet M10
	—				
	10° + 30°	13°	15°	30°	10° + 30°
	3.1 × 6.9				
	10.90				
	3,625				
	x				



	40.100B	40.100B-SP10	40.100B-SP30	42.100B
	1			
	6 - 16			
	40			
	10 × M10			5 × M10 5 × FanJet M10
	—			
	10° + 30°	10°	30°	10° + 30°
	4 × 8			
	17.78			
	3,625			
	x			

	Connecting thread [inch]		Thrust jet		Maximum pressure [psi]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		
	Measures [inch]		Weight [lb.]		

High Performance Tool **enz golden jet**

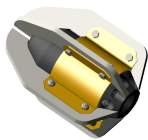
Grenade-bombs

Grenade-bombs 1 1/4"



	40.100C	40.100C-SP10	40.100C-SP20	42.100C	40.125A	40.125-SP10	42.125A
	1 1/4						
	6 - 16				12 - 24		
	53				79		
	10 × M10			5 × M10 5 × FanJet M10	10 × M10		5 × M10 5 × FanJet M10
	—				—	—	
	10° + 30°	10°	20°	10° + 30°	10° + 30°	10°	
	3.9 × 7.5				4.2 × 8.7		
	17.77				23.33		
	3,625						
	X				X	X	

Accessory and wearing parts



Cage with skids for clay pipes + Inliner

40.1004A	for Grenade-bomb 40.100A	Ø	7 - 12
40.1004B	for Grenade-bomb 40.100B	Ø	8 - 16

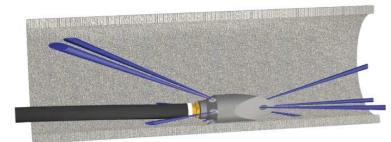
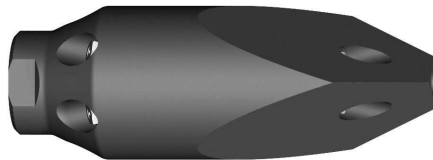
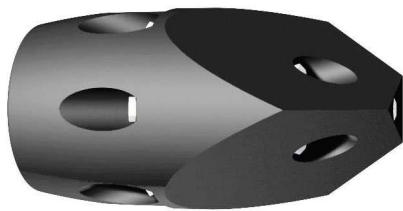
	Connecting thread [inch]		Thrust jet		Maximum pressure [psi]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		
	Measures [inch]		Weight [lb.]		

Chisel point nozzles

With its 4 to 5 very strong concentrated forward jets and the sharp cutting edges, the chisel point nozzles will tear through almost any kind of blockage. The sharp edges cut, break and penetrate through every kind of blockage. Made of wear-resistant, hardened steel. All nozzles from art. 60.050 onward are equipped with replaceable ceramic jets. Because of this, the efficiency is considerably higher compared with those nozzles with drilled holes and the service life is several times longer.

















Applications

















- Penetration of completely clogged pipes
- Opening of root masses
- Opening of frozen pipelines
- Hydraulic thrust boring flushing operations













Chisel point nozzles

Pointed nozzles 1/8" - 1 1/4"

					
	60.012NSL15	60.025NSL15	60.025NSL30	60.038N-30	60.038NSL40
	1/8 NPT	1/4 NPT		3/8 NPT	
	0.8 - 2	1 - 2		1.2 - 4	
	4	4	8	8	10
	3 × Ø 0.95 mm	3 × Ø 0.90 mm	3 × Ø 1.35 mm	3 × Ø 1.30 mm	3 × Ø 1.45 mm
	4 × Ø 0.50 mm	4 × Ø 0.60 mm	4 × Ø 0.70 mm	4 × M4	4 × 0.80
	25°	25°		20°	
	15°	15°		15°	
	0.6 × 1.0	0.75 × 1.3		0.98 × 1.77	
	0.04	0.06		0.15	
	5,075				
	—	—		—	

					
	60.038N-60	60.038NSL60	60.050	0061.0504	61.050
	3/8 NPT		1/2	M4	1/2
	1.1 - 4		1.5 - 6		1.5 - 6
	16		14		14
	3 × Ø 1.50 mm	3 × Ø 1.85 mm	3 × M6		3 × M6
	4 × M4	4 × Ø 0.95 mm	4 × M4		3 × M4
	20°		25°		25°
	15°		15°		15°
	0.98 × 1.60		1.22 × 2.16		1.22 × 3.23
	0.15		0.30		0.35
			5,075		5,075
			x		x

High Performance Tool  **enz golden jet®**

	Connecting thread [inch]		Thrust jet		Maximum pressure [psi]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		
	Measures [inch]		Weight [lb.]		

Chisel point nozzles



60.075



0061.0504



61.075

	3/4
	2.5 - 10
	26
	3 × M6
	4 × M4
	25°
	15°
	1.5 × 3.1
	0.71
	5,075
	x

M4

3/4
2.5 - 10
26
3 × M6
3 × M4
25°
15°
1.5 × 3.8
0.76
5,075
x



60.100



0061.1004



61.100
















	1
	4 - 12
	40
	6 × M6
	4 × M6
	25°
	15°
	1.9 × 3.5
	1.20
	3,625
	x
















M6

1
4 - 12
40
6 × M6
3 × M6
25°
15°
1.9 × 4
1.25
3,625
x











	Connecting thread [inch]		Thrust jet		Maximum pressure [psi]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		
	Measures [inch]		Weight [lb.]		

Chisel point nozzles

	60.100L	0061.1004	61.100L
			
	60.100L	0061.1004	61.100L
	1	M6	1
	6 - 16		6 - 16
	53		53
	6 × M10		6 × M10
	3 × M8 1 × M6		3 × M8
	25°		25°
	15°		15°
	2.7 × 7.4		2.7 × 8.7
	6.00		6.05
	3,625		3,625
	X		X

	60.100L80	0061.1254	61.100L80
			
	60.100L80	0061.1254	61.100L80
	1	M8	1
	6 - 20		6 - 20
	53		53
	6 × M10		6 × M10
	4 × M8		3 × M8
	10°		10°
	15°		15°
	3.1 × 8.6		3.1 × 10.2
	10.40		10.45
	3,625		3,625
	X		X

High Performance Tool  **enz golden jet®**

	Connecting thread [inch]		Thrust jet		Maximum pressure [psi]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		
	Measures [inch]		Weight [lb.]		

Chisel point nozzles



60.125



0061.1004



61.125



1 1/4
6 - 16
53
6 × M6
4 × M6
20°
15°
2.3 × 3.9
2.05
3,625
x

M6

1 1/4
6 - 16
53
6 × M6
3 × M6
20°
15°
2.3 × 5.2
2.10
3,625
x



60.125L



0061.1254



61.125L



1 1/4
8 - 32
79
6 × M10
4 × M8
10°
15°
3.9 × 10.2
18.67
3,625
x

M8

1 1/4
8 - 32
79
6 × M10
3 × M8
10°
15°
3.9 × 11.8
18.72
3,625
x

	Connecting thread [inch]		Thrust jet		Maximum pressure [psi]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		
	Measures [inch]		Weight [lb.]		

Flounder

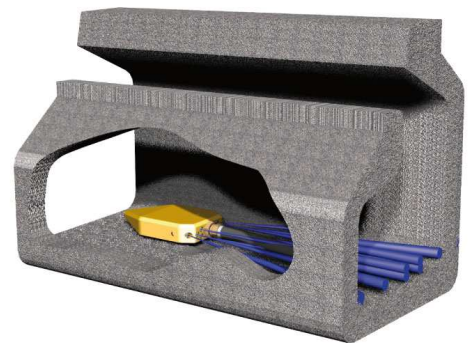
This tool is especially suited to clean flat pipes and channels. The flat design combined with the rounded corners and edges provides the tool with ideal gliding properties.

Ceramic jets with flow straighteners and an optimized flow reversal create compact and aggressive water jets.

The low and compact design facilitates access to a wide variety of pipes and channels.

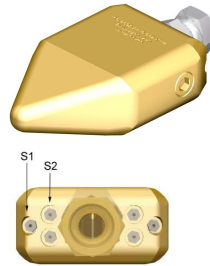
Applications

- Appropriate for removing mud and loose debris in flat pipes and channels, i.e. run-off gutters



Flounder

Flounder 1/2" - 1 1/4"



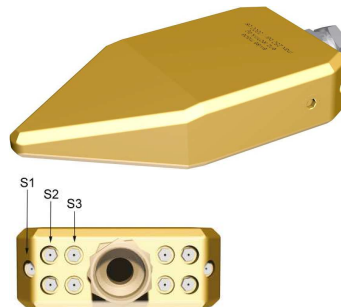
70.050

70.075



1/2
6 - 10
16
S1: 2 × M8
S2: 2 × M8
S1: 15°
S2: 7.5°
7.7 × 3.5 × 1.4
5.78
3,625
x

3/4
8 - 16
26
S1: 2 × M8
S2: 4 × M8
S1: 10°
S2: 0°
7.7 × 3.9 × 2.0
7.11
3,625
x



70.100

70.125



1
12 - 24
53
S1: 2 × M10
S2: 2 × M10
S3: 4 × M10
S1: 15°
S2: 7.5°
S3: 0°
13.4 × 6.3 × 2.2
27.35
3,625
x

1 1/4
16 - 31
66
S1: 2 × M10
S2: 4 × M10
S3: 4 × M10
S1: 15°
S2: 7.5°
S3: 0°
15.0 × 7.1 × 2.8
42.22
3,625
x

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		Maximum pressure [psi]
	Length × Width × Height [inch]		Measures [inch]		

High Performance Tool

enz[®]-Bulldozer

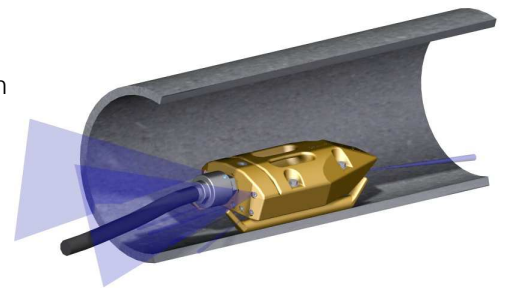
A successful improvement in channel and pipe cleaning. The enz[®]-Bulldozer has a hydrostatic chamber, herewith reducing water turbulences and improving the flow dynamic to the ceramic inserts. The result is a compact, aggressive and most effective water jet not attained up to now. An optional forward jet, on all Enz-Bulldozer Nozzles, clears the debris ahead of the advancing unit. If desired, the front-jet can be closed by a blind plug. Two additional nozzles, set slightly higher, clean the sides of the channel.

Characteristics

- ▶ enormous flushing capacity = reduced water consumption
- ▶ immense water acceleration = superb flushing effect
- ▶ low compact design = very good cleaning of ground in channels with large water passage
- ▶ the replaceable rounded skids give the Bulldozer excellent gliding ability

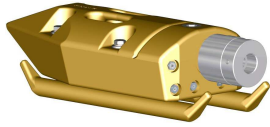
Applications

- ▶ The low and compact construction allows cleaning pipes with heavy debris.












enz[®]-Bulldozer

enz[®]-Bulldozer 3/4" - 1 1/2"



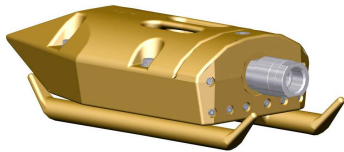
50.075G

	3/4
	8 - 20
	26
	4 × M10
	2 × FanJet M10
	1 × M10
	15.7 × 5.9 × 4.3
	26.67
	3,625
	x












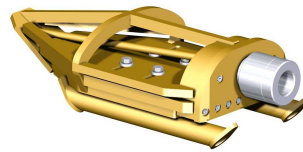
50.100G

	1
	12 - 40
	40
	6 × M10
	2 × FanJet M10
	1 × M10
	19.1 × 7.9 × 5.1
	56.67
	3,625
	x














50.125G

	1 1/4
	16 - 80
	79
	6 × M10
	2 × FanJet M10
	1 × M10
	23.8 × 9.8 × 6.5
	83.35
	3,625
	x



50.150

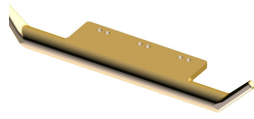
	1 1/2
	20 - 180
	105
	6 × M10
	2 × FanJet M10
	1 × M10
	25.8 × 11.8 × 6.7
	120.00
	3,625
	x

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		Maximum pressure [psi]
	Length × Width × Height [inch]		Measures [inch]		

High Performance Tool 

enz[®]-Bulldozer

Accessory and wearing parts



Spare skids

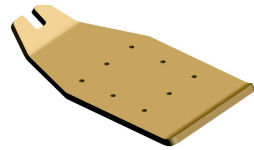
0050.0753G → enz[®]-Bulldozer 50.075 (left/right)

0050.1003G → enz[®]-Bulldozer 50.100G (left/right)

0050.1253G → enz[®]-Bulldozer 50.125G (left/right)

0050.15031 → enz[®]-Bulldozer 50.150 (left)

0050.15032 → enz[®]-Bulldozer 50.150 (right)















Flat runner*

0050.07510 → enz[®]-Bulldozer 50.075G (wear-resistant)

0050.10010G → enz[®]-Bulldozer 50.100G (wear-resistant)

0050.12510 → enz[®]-Bulldozer 50.125G (wear-resistant)

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Jet angle backward		Maximum pressure [psi]
	Length × Width × Height [inch]		Measures [inch]		On order

Ejector nozzles

These tools are outstanding in their enormous flushing capacity. Their main application is cleaning large, fully surcharged pipes and drains bigger than $\text{\O} 10''$. The specific arrangement of the nozzle inserts ensures that cleaning is done carefully because the nozzle jets do not work directly against the pipe wall. As a result, this tool is also appropriate for cleaning older channel systems.

It integrates the heavy water flow in pipes and channels into the flushing and cleaning process. The water volume usable for cleaning is enhanced to five times the actual pump capacity. A pump of 80 GPM increase the flushing capacity of the nozzle to 400 GPM. As a result enormous quantities of sand and gravel can be removed fast and efficiently.

Applications

- for enormous flushing capacity



Ejector nozzles

Ejector nozzles 1" - 1 1/4"



	80.100	80.100A
	1	1
	8 - 20	16 - 60
	53	79
	6 × M6	6 × M10
	11.8* × 6.3 × 4.7	15.9* × 10.2 × 8.1
	3.0	4.7
	16.45	50.00
	3,625	3,625
	X	X



	80.125B	80.125D
	1 1/4	1 1/4
	24 - 79	40 - 118
	79	158
	10 × M10	10 × M10
	18.9* × 11.8 × 9.8	22.8* × 14.2 × 12.2
	4.7 - 6.7	6.3 - 8.7
	68.89	101.10
	3,625	3,625
	X	X

*The length of the tool is indicated without hoses. Swivel joint included.

High Performance Tool
enz golden jet®

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Length × Width × Height [inch]		Recycling
	min. gpm at 1450 psi		Pass [inch]		Maximum pressure [psi]

ROTATING NOZZLES

RGS Radial rotating nozzles 75°	31
HRH Semi-radially rearward rotating nozzles	33
HRV Semi-radial forward rotating nozzles	36
KBR Rotating combination nozzles	38
KBRV Rotating combination nozzles forward	41
Bulldog® recycling rotating nozzles	44
Rotopuls vibration nozzles	47
Propeller nozzles	50
Bulldog® 14,500 psi	52
14,500 psi Rotating nozzles	54
Cross jet nozzles 14,500 psi	59
Surface cleaner	61

Enz USA Inc.
1585 Beverly Ct.
Unit 115
Aurora, IL 60502
Tel. 630-692-7880
Fax 630-692-7885
E-mail: sales@enzusainc.com
Internet: www.enzusainc.com

High Performance Tool 
 golden jet®

 **enz**®  usa inc.

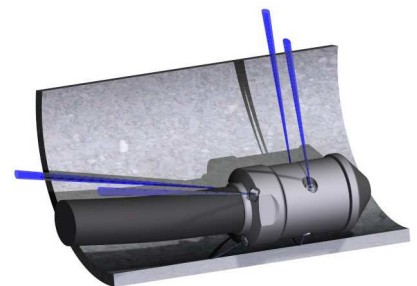
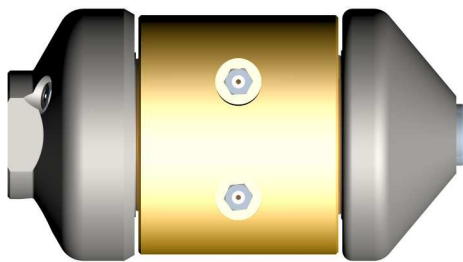
RGS Radial rotating nozzles 75°

The radial rotating nozzles **enz golden jet®** are equipped with 4 radial jets of 75° for the pipe cleaning and 3 thrust jets for the advance which at the same time flush away the loosened residues. As a result, pipe ducts of all kinds, even with cross holes, will be cleaned.

The moving part of the **enz golden jet®** nozzle rotates at a limited speed. These water jets hit the pipe wall directly with great impact, resulting in excellent cleaning capacity.















Applications

- Cleaning of perforated drain pipes
- Cleaning of lateral pipes
- Removal of solid deposits
- Cleaning of Lift stations & wet wells


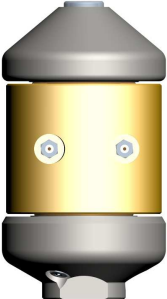
























RGS Radial rotating nozzles 75°

RGS Radial rotating nozzles 75° 1/4" - 3/4"

				
	01.028N	01.040	01.050A	01.050B
	1/4 NPT	1/2	1/2	3/4
	1.5 - 4	2.5 - 6	4 - 8	
	5	11	18	
	4 × M4	4 × M6	4 × M6	
	3 × M4	3 × M6	3 × M6	
	*	*	*	
	1.1 × 2.2	1.6 × 3.1	2.0 × 3.9	
	0.44	1.25	2.45	
	5,075			3,625
	—	—	—	

RGS Radial rotating nozzles 75° 1" - 1 1/4"

				
	01.060	01.100A	01.100B	01.100LS
	1	1	1 1/4	1
	4 - 12	8 - 24		N/A
	26	53		26
	4 × M8	4 × M10		4 × M10
	3 × M8	3 × M10		3 × Plugs
	*	*		*
	2.4 × 4.4	4 × 7.1		4.0 × 7.1
	3.55	16.45		16.30
	3,625			
	—	—		

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

High Performance Tool 
enz  golden jet®

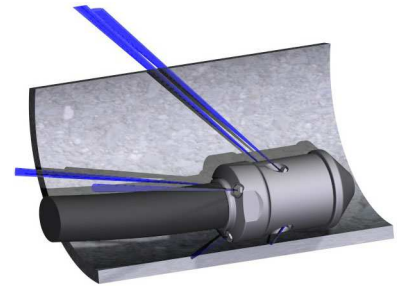
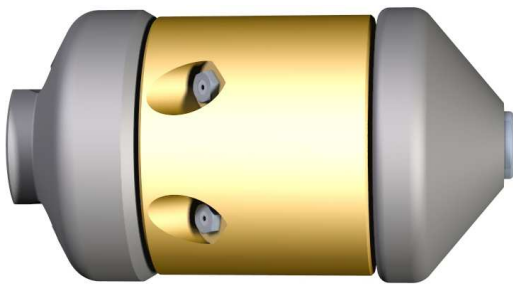
HRH Semi-radially rearward rotating nozzles

The semi-radially rotating **enz golden jet**[®] nozzles has 4- retroacting cutting-jets at an angle of 45°, which provide the cleaning energy as well as the thrust in one function, resulting in a low water consumption, while maximizing cleaning and flushing.

With sufficient water capacity, optional thrust jets can facilitate upward cleaning.

Applications

- Cleaning of pipes for TV-inspection
- To remove mineral deposits in pipes, grease and sludge
- Removal of fine hair roots



HRH Semi-radially rearward rotating nozzles

HRH Semi-radially rearward rotating nozzles 1/4" - 3/4"



02.028AN



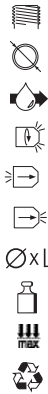
02.028BN



02.028ASN

02.040A

02.040B



1/4 NPT
1.5 - 4
2
4 × M4
—
*
1.1 × 2.2
0.45
5,075
—

3/8 NPT

1/4 NPT
3
4 × M4
3 × M4
*

1/2
3 - 6
4.5
4 × M6
—
*
1.6 × 3.1
1.25
—

3/4
—
3,625



02.040AS



02.050A

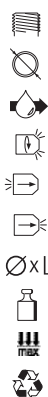


02.050B



02.050AS

02.050BS



1/2
3 - 6
5.5
4 × M6
3 × M6
*
1.6 × 3.1
1.25
5,075
—

1/2
4 - 8
11
4 × M6
—
*
2 × 3.9
2.45
—

3/4
3,625

1/2
4 - 8
11
4 × M6
3 × M6
*
2 × 3.9
2.45
5,075
—











3/4
—
3,625











	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

HRH Semi-radially rearward rotating nozzles

HRH Semi-radially rearward rotating nozzles 1" - 1 1/4"



	02.060	02.100A	02.100B
	1	1	1 1/4
	4 - 12	8 - 24	
	16	53	
	4 × M8	4 × M10	
	3 × M8	3 × M10	
	*	*	
	2.4 × 4.4	4 × 7.1	
	3.55	16.45	
	3,625		
	—	—	

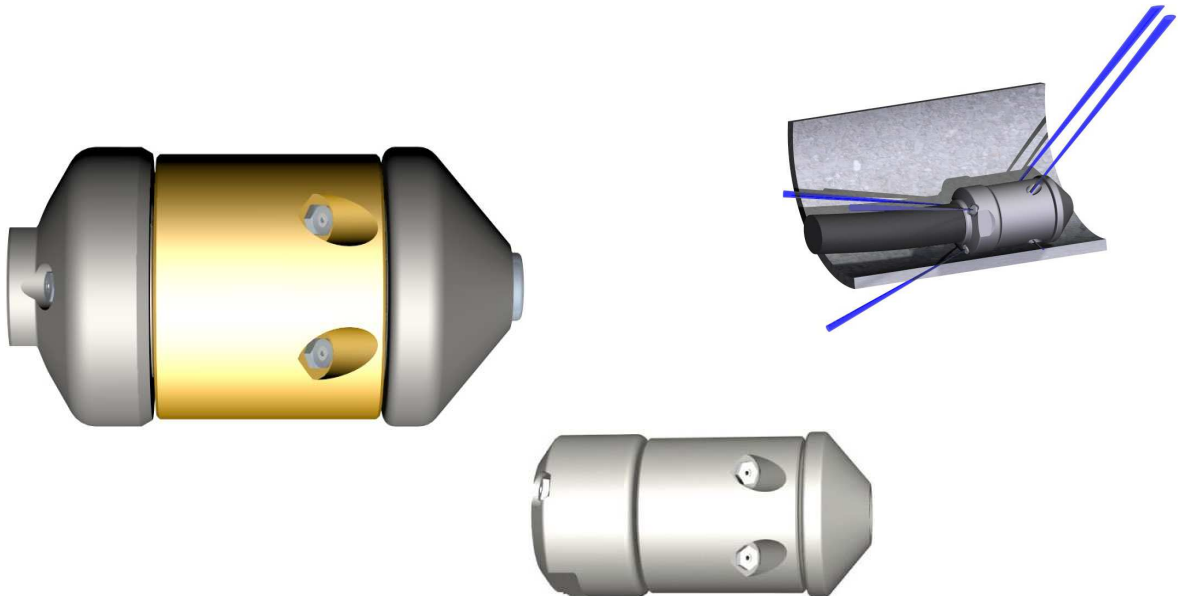
	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

HRV Semi-radial forward rotating nozzles

enz golden jet® semi-radial nozzle is equipped with four 45° angle forward jets (A front jet is available upon request). As a result, this nozzle must either be equipped with extra thrust jets or be mounted on a lance. The forward jets disintegrate most any residue and flush the debris ahead of the nozzle.















Applications

- Core-flushing of the steel pipes during hydraulic thrust-boring
- Cleaning of residential lateral pipes from inside the house out to the mainline
- Removal of ice in manholes


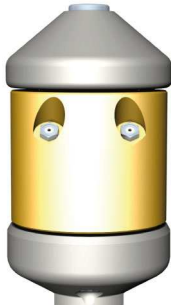
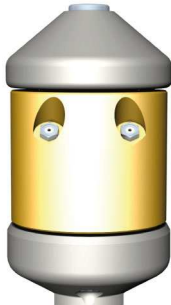












HRV Semi-radial forward rotating nozzles











HRV Semi-radial forward rotating nozzles 1/4" - 3/4"

				
	03.028N	03.040	03.050A	03.050B
	1/4 NPT	1/2	1/2	3/4
	1.5 - 4	2.5 - 6	4 - 8	
	8	13	18	
	4 × M4	4 × M6	4 × M6	
	3 × M4	3 × M6	3 × M6	
	*	*	*	
	1.1 × 2.2	1.6 × 3.1	2.0 × 3.9	
	0.45	1.25	2.45	
	5,075			3,625
	—	—	—	

HRV Semi-radial forward rotating nozzles 1" - 1 1/4"

			
	03.060	03.100A	03.100B
	1	1	1 1/4
	4 - 12	8 - 24	
	26	53	
	4 × M8	4 × M10	
	3 × M8	3 × M10	
	*	*	
	2.4 × 4.4	4 × 7.1	
	3.55	16.45	
	3,625		
	—	—	

High Performance Tool  **enz golden jet®**

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

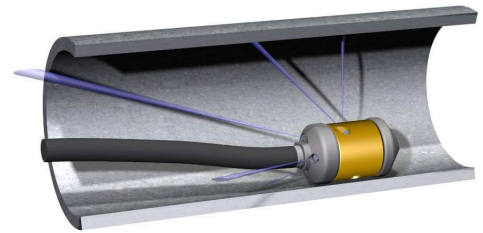
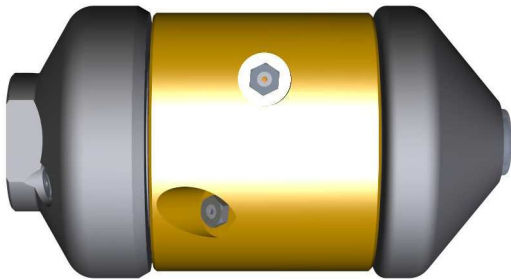
KBR Rotating combination nozzles

This all around **enz golden jet®** Combination nozzle is excellent for flushing out pipes as well as adjoining lateral pipes at any angle. The KBR nozzles combine 2 radial jets at a 90° angle and 2 semi-radial retro-jets at a 45° angle. As a result, the KBR nozzles combine excellent cleaning efficiency with low water consumption.

This combination allows both a forward thrust of the nozzle while simultaneously flushing away debris.

Applications

- To remove plastic deposits, soap, sludge, and small hair roots
- To clean heat exchangers
- Cleaning of grease lines in restaurant districts



KBR Rotating combination nozzles

KBR Rotating combination nozzles M7, 1/8" - 3/4"



	04.011N	04.012N	04.016AxxN	04.016BxxN
	1 1/16 NPT	1/8 NPT	1/8 NPT	1/4 NPT
	0.5 - 1.2	0.5 - 1.2	0.7 - 2.4	
	3		3	
	90°/ 2 × 0.85 mm 45°/ 2 × 0.90 mm		4 × 0.70 – 1.10 mm	
	—		—	
	*		*	
	0.43 × 1.22	0.47 × 1.22	0.63 × 1.20	
	0.04		0.07	
	5,075			
	—		—	



	04.028AN	04.028BN	04.028ASN	04.040A	04.040B
	1/4 NPT	3/8 NPT	1/4 NPT	1/2	3/4
	1.2 - 4		1.2 - 4	3 - 6	
	3		3	5	
	4 × M4		4 × M4	4 × M6	
	—		3 × M4	—	
	*		*	*	
	1.1 × 2.2		1.1 × 2.2	1.6 × 3.1	
	0.44		0.44	1.21	
	5,075				3,625
	—		—	—	

High Performance Tool

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

KBR Rotating combination nozzles



	04.040AS	04.050A	04.050B	04.050AS	04.050BS
	1/2	1/2	3/4	1/2	3/4
	3 - 6	4 - 8		4 - 8	
	5	18		18	
	4 × M6	4 × M6		4 × M6	
	3 × M6	—		3 × M6	
	*	*		*	
	1.6 × 3.2	2.0 × 3.9		2.0 × 3.9	
	1.25	2.45		2.45	
	5,075		3,625	5,075	3,625
	—	—		—	

KBR Rotating combination nozzles 1" - 1 1/4"



	04.060	04.100A	04.100B
	1	1	1 1/4
	4 - 12	8 - 24	
	21	53	
	4 × M8	4 × M10	
	3 × M8	3 × M10	
	*	*	
	2.4 × 4.4	4 × 7	
	3.55	16.22	
	3,625		
	—	—	

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

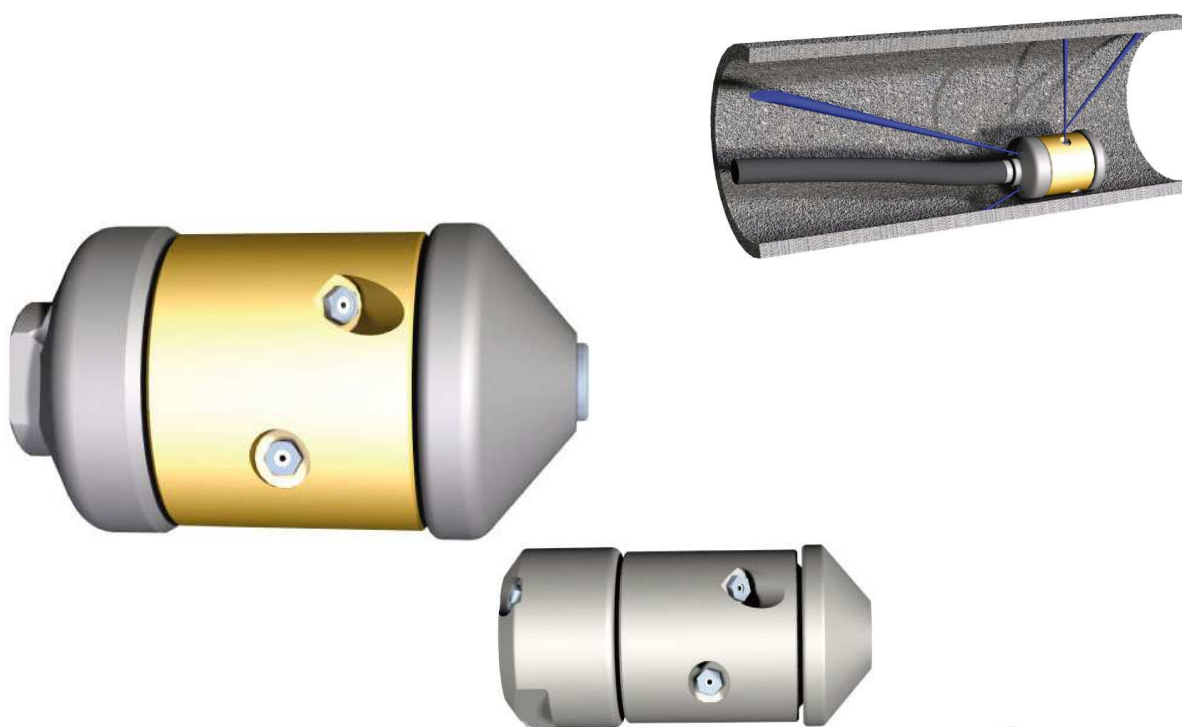
High Performance Tool **enz** golden jet®

KBRV Rotating combination nozzles forward

The nozzle KBRV is provided with 2 semi-radial jets directed forward in an angle of 45°. As a result, this nozzle must either be equipped with extra thrust jets or be mounted on a lance. The forward jets desintegrate most any residue and flush the debris ahead of the nozzle.

Applications

- To remove semi-hard deposits
- To clean heat exchangers
- Cleaning of grease lines
- Flushing of the pipes from the house toward the main line



KBRV Rotating combination nozzles forward

KBRV Rotating combination nozzles forward M7, 1/8" - 3/4"



04.011NV



04.012NV

04.016AVxxN

04.016BVxxN

- 1 1/16 NPT
- 0.5 - 1.2
- 3
- 90°/ 2 × 0.85 mm
45°/ 2 × 0.90 mm
-
- *
- 0.4 × 1.2
- 0.04
- 5,075
-

1 1/16 NPT
0.5 - 1.2
3
90°/ 2 × 0.85 mm
45°/ 2 × 0.90 mm

1/8 NPT
0.5 × 1.2

1/8 NPT
0.7 × 2.4
3
4 × 0.40 - 1.10 mm

1/4 NPT

—

*

0.5 × 1.2

0.6 × 1.2

0.06

—



04.028AVN



04.040AV



04.050AV

04.050BV

- 1/4 NPT
- 1.2 - 4
- 5
- 4 × M4
- 3 × M4
- *
- 1.1 × 2.2
- 0.45
- 5,075
-

1/4 NPT

1.2 - 4

5

4 × M4

3 × M4

*

1.1 × 2.2

0.45

5,075

—

1/2

3 - 6

8

4 × M6

3 × M6

*

1.6 × 3.2

1.20

—

1/2

4 - 8

18

4 × M6

3 × M6

*

2.0 × 3.9

2.45

—

3/4

3,625

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

High Performance Tool **enz golden jet**

KBRV Rotating combination nozzles forward

KBRV Rotating combination nozzles forward 1" - 1 1/4"



	04.060V	04.100AV	04.100BV
	1	1	1 1/4
	4 - 12	8 - 24	
	26	53	
	4 × M8	4 × M10	
	3 × M8	3 × M10	
	*	*	
	2.4 × 4.4	4 × 7	
	3.56	16.22	
	3,625		
	—	—	

High Performance Tool **enz golden jet®**

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

Bulldog[®] recycling rotating nozzles

The **enz golden jet[®]** Bulldog Rotating Nozzle has been designed for operation with recycling water and fresh water. The cleverly built sliding bearing allows the use of every kind of recycled water. An integrated oil-free braking system results in a low wear and tear operation and in controlled numbers of rotation. In this way a most efficient and economic pipe cleaning is achieved. The bore of the nozzle insert determines the admissible size of the dirt particles up to a maximum \varnothing 0.04 inch.

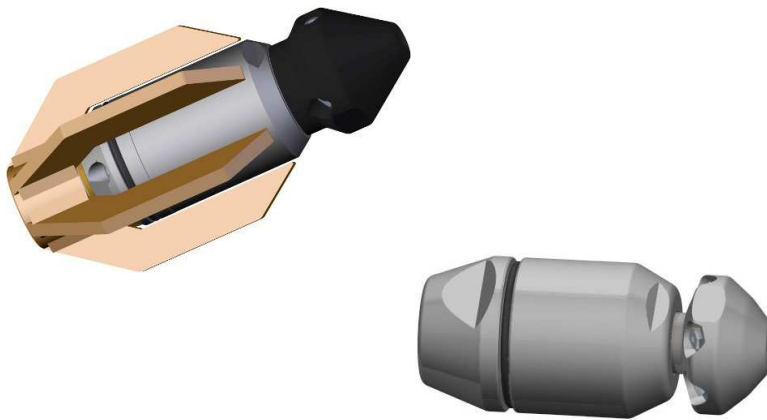
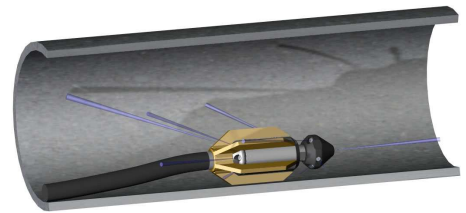
Transport and water costs are noticeably reduced.

Characteristics

- Easy to handle
- The tool is virtually maintenance-free

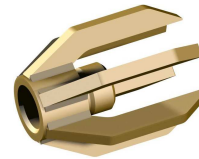
Applications

- For operation with recycling water and fresh water

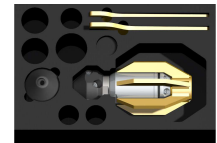
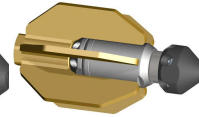
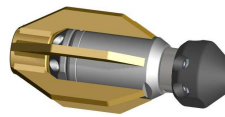
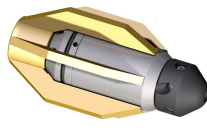
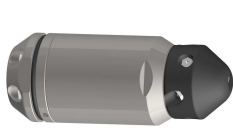


Bulldog® recycling rotating nozzles

Bulldog® rotating nozzle 3/8" - 1 1/4"



	400.037	400.037C	400.037S	00100.03720	00100.03720C
	1/2	3/4	1/2	1/2	3/4
	2 - 8			3 - 8	
	10.5				
	6 × M6				
	—		6 × M6		
	1 × M6				
	1.5 × 3.3	1.5 × 3.5	1.5 × 3.3	2.4 × 4.3	
	0.89	0.93	0.91	0.56	
	2,900				
	x	x	x	x	x



	400.060A	400.060BS	402.080LS100 / 404.080HS100	402.080LS150 / 404.080HS150	400.080SET100 / 400.080SET150
	3/4	1	1	1	
	4 - 12		5 - 16	7 - 16	
	26		53	53	
	6 × M8		6 × M10	6 × M10	
	6 × M8		(6 × M8)*	(6 × M8)*	
	1 × M8		1 × M10	1 × M10	
	2.4 × 6		3.9 × 8.7	5.9 × 10.2	
	4.60		8.22	12.82	
	2,900				
	x	x	x	x	

LS = slow turning

HS = fast turning

* Thrust can be closed with the thrust stop piece

High Performance Tool **enz golden jet®**

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

Bulldog® recycling rotating nozzles



LS*Head HRH slow turning

00402.0805-4

ØxL 2.6 × 2.2

1.50

Inserts not included

6x M10



*Thrust stop

00100.08073

OR 18.0200

O-Ring



HS*Head KBR fast turning

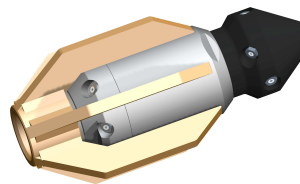
00404.0805-12

ØxL 2.6 × 2.2

1.54

Inserts not included

6x M10



	400.101A	400.101B	600.100A	600.100B
	1	1 1/4	1	1 1/4
	8 - 24		6 - 23.5	
	53		52.5	
	3 × M10 2 × M10 (from 80 GPM)		3 × M10 3 × M10	
	6 × M10		6 × M10	
	1 × M10			
ØxL	5 × 10		4.5 × 10	
	16.00		17.00	
	2,900		2,900	
	x		x	

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
ØxL	Measures [inch]		Weight [lb.]		

High Performance Tool **enz** golden jet®

Rotopuls vibration nozzles

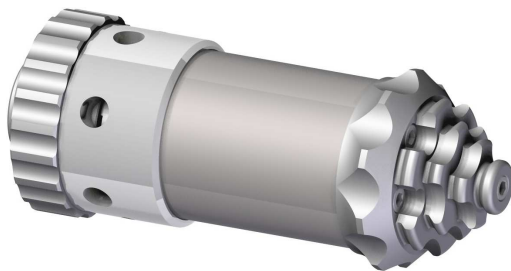
The **enz golden jet®** rotating nozzle is provided with an eccentrically supported rotor, which produces very fast vibrations and pulsating jets. The resulting pulsations become so strong that deposits up to 4" thickness are disintegrated.

In many cases, Rotopuls nozzles can replace the use of Percussion Milling Cutters or Rotating Chain Scrapers.

Important: Rotopuls nozzles develop strong hydraulic impacts and vibrations. This can possibly cause damage in some pipes (i.e. clay pipes, thin-walled plastic pipes or PVC pipes). **Therefore, it is important that Rotopuls Nozzles are only used in Steel, Cement, and Thick Walled Polyethylene pipes.**

Applications

- The Rotopuls nozzles remove middle-hard deposits in pipes of plastic, steel or concrete



Rotopuls vibration nozzles

Rotopuls KBR vibration nozzles 1/4" - 3/4"



	01.028ANE	04.040AE	04.050AE	04.050BE
	1/4 NPT	1/2		3/4
	1.5 - 4	3 - 6	4 - 8	
	3	5	18	
	2 × M4	4 × M4	4 × M6	
	3 × M4	3 × M6	3 × M6	
	*	*	*	
	1.1 × 2.2	1.6 × 3.2	2.0 × 3.8	2.0 × 3.9
	0.42	1.16	2.18	
	5,075			3,625
	—	—	—	

Rotopuls KBR vibration nozzles 1" - 1 1/4"



	04.060EK	04.100BE
	1	1 1/4
	4 - 12	8 - 24
	26	53
	4 × M6	4 × M10
	3 × M8	3 × M10
	*	*
	2.4 × 4.4	3.9 × 6.9
	3.56	16.00
	3,625	
	—	—

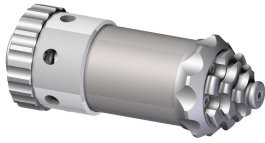
	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

High Performance Tool

enz golden jet®

Rotopuls vibration nozzles

Turbopuls for recycling water 1/2" - 1 1/4" (working pressure up to 2900 psi)



	410.080A*	410.080B*	410.120A	410.120B
	1/2	3/4	1	1 1/4
	6 - 12		8 - 40	
	32		40	
	1 x M8		1 x M8	
	6 x M8		6 x M10	
	—		—	
	3.1 x 8.3		4.7 x 12.6	
	9.56		32.22	
	2,900			
	X	X	X	X

* Can not be used for 1" hose. You will need a transition piece of hose, 59.00 inch, 3/4".



	410.1208 Twin-Kit**	410.1208 Twin-Kit**
	1	1 1/4
	from ca. 16 inch	
	2 x 40 gpm/min	
	14 x 28 inch	
	2,900	
	X	X

** The Turbopuls is not included.

Pointed center for Turbopuls for recycling water 1/2" - 1 1/4" (working pressure up to 2900 psi)



	00410.08010**	00410.12010**
	0.6 x 2.4	0.8 x 2.8
	0.15	0.30

High Performance Tool

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	**	Option
	Measures [inch]		Weight [lb.]		

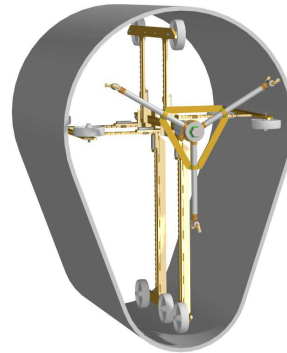
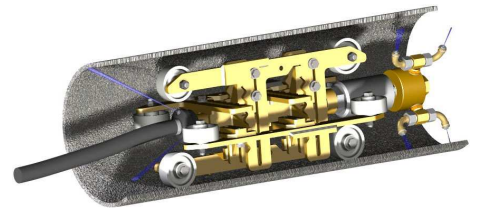
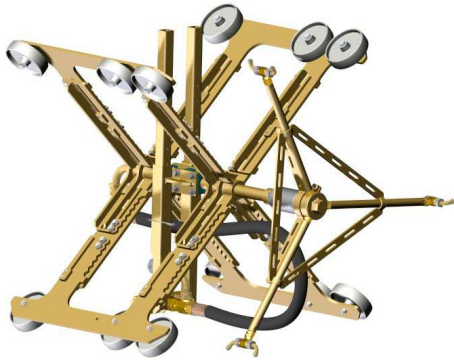
Propeller nozzles

The **enz golden jet®** Propeller Nozzle completely and efficiently cleans pipes from 12" to 80" diameter.

The skids are easy to adjust and can even be adapted to clean egg-shaped or oval pipe profiles. The propeller nozzles have been designed to work with fresh and recycled water. Due to the refined bearing, sealing system, and ceramic jet inserts, the Propeller Nozzles are virtually maintenance-free.

Applications

- For cleaning large pipes



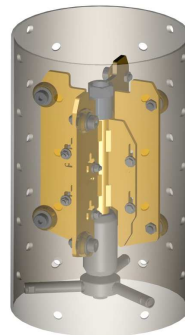
Propeller nozzles

Propeller nozzles 1" - 1 1/4"



	07.300A*	07.300B*	07.600A	07.600B**	07.1400A	07.1400B
	1	1 1/4	1	1 1/4	1	1 1/4
	12 - 24		24 - 47		55 - 79	
	53		53		105	
	3 x M10 3 x FanJet M10		3 x M10 3 x FanJet M10		3 x M10 3 x FanJet M10	
	3 x M10		6 x M10		6 x M10	
	11.2/23.0 x 28.3		23.3/46.6 x 41.3		54.5/78.1 x 42.5	
	77.11		162.22		302.22	
	2,900					
	X		X		X	

**Largest egg profile Ø 23.6/35.4



007.60017

Application area for egg runner
Ø 27.6/41.3 - Ø 39.4/59.0

*Propeller nozzle for cleaning drinking water fountains
Ø 7.9 - 15.8

High Performance Tool **enz golden jet®**

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	On order
	Measures [inch]		Weight [lb.]		

Bulldog[®] 14,500 psi

The **enz golden jet[®]** Bulldog[®] High Pressure rotating nozzle is specially designed for internal pipe cleaning up to 14,500 psi. It is suitable for removing even the most stubborn deposits from the pipe walls. Thanks to its clever bearing system, the Bulldog is virtually leak-free, resulting in higher efficiency. In addition, the forward-facing cross-jet cuts out the material from the blocked pipe like a milling cutter.

Applications

- Cleaning of heat exchangers in chemical and nuclear plants
- general industrial cleaning












Bulldog® 14,500 psi











Bulldog® 14,500 psi M24 × 1.5



500.060

	M24 × 1.5
	2.5 - 6
	9.5
	6 × M6
	2 × 45°, M6
	∅xL 2.4 × 7.3
	5.36
	14,500
	X

Heads with different nozzle angle layout on request.

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 14,500 psi		Front jet	*	On order
	Measures [inch]		Weight [lb.]		

14,500 psi Rotating nozzles

The maximum pressure rotating nozzles **enz golden jet®** are specifically designed for up to 14,500 psi cleaning pressure. They are especially efficient for cleaning the hardest deposits such as heat exchangers pipes in chemical nuclear plants, as well as in general industrial applications.

Applications












- Cleaning of heat exchangers in chemical and nuclear plants and for general industrial pipe cleaning



14,500 psi Rotating nozzles












14,500 psi Rotating nozzles (RGS)

For \varnothing 1.1"–2.0", equipped as radial rotating nozzle with 4 water jets (RGS) at an angle of 75° to the pipe wall.











			
	05.0281N	05.0401	05.0501
	1/4 NPT	M24 × 1.5	
	1.2 - 1.6	1.6 - 2.2	2.2 × 3
	8	10.5	
	4 × M4	4 × M6	
	1.1 × 2.2	1.6 × 4.2	2.0 × 4.8
	0.44	1.56	2.78
	14,500		
	—	—	—

14,500 psi Rotating nozzles (HRH)

For \varnothing 1.1"–2.0", equipped as semi-radial rotating nozzle with 4 water jets (HRH backwards) at an angle of approx. 45° to the back.

			
	05.0282N	05.0402	05.0502
	1/4 NPT	M24 × 1.5	
	1.2 - 1.6	1.6 - 2.2	2.2 - 3
	8	10.5	
	4 × M4	4 × M6	
	1.1 × 2.2	1.6 × 4.2	2.0 × 7.8
	0.44	1.56	2.78
	14,500		
	—	—	—

High Performance Tool 
enz  golden jet®

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet		
	Measures [inch]		Weight [lb.]		

14,500 psi Rotating nozzles

14,500 psi Rotating nozzles (HRV)

For Ø 1.1"–2.0", equipped as semi-radial rotating nozzle with 4 water jets (HRV forwards acting) at an angle of approx. 45° to the front.

Attention! Use only with a lance!











05.0283N













05.0403



05.0503

	1/4 NPT	M24 × 1.5	M24 × 1.5
	1.2 - 1.6	1.6 - 2.2	2.2 - 3
	8	10.5	10.5
	4 × M4	4 × M6	4 × M6
	1.1 × 2.2	1.6 × 4.2	2.0 × 4.8
	0.44	1.56	2.78
	14,500		
	—	—	—

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet		
	Measures [inch]		Weight [lb.]		

High Performance Tool 
enz  golden jet®

14,500 psi Rotating nozzles

14,500 psi Rotating nozzles (KBR)

For Ø 0.5"–2.0", equipped as combination nozzle (KBR) with 2 water jets, semi-radial with an angle of approx. 45°, directed backward and 2 water jets radial acting at an angle of 90° to the pipe wall.



	05.011N	05.012N	05.016N	05.016NB
	1/16 NPT	1/8 NPT	1/8 NPT	1/4 NPT
	0.5 - 0.7		0.7 - 1.2	
	12		12	
	45°/ 2 × 0.90 mm 90°/ 2 × 0.85 mm		45°/ 2 × 1.00 mm 90°/ 2 × 0.90 mm	
	0.4 × 1.2	0.5 × 1.2	0.6 × 1.6	
	0.04		0.09	
	14,500			
	—		—	



	05.0284N	05.0404	05.0504
	1/4 NPT	M24 × 1.5	
	1.2 - 1.6	1.6 - 2.2	2.2 - 3
	8	10.5	
	4 × M4	4 × M6	
	1.1 × 2.2	1.6 × 4.2	2.0 × 4.8
	0.44	1.56	2.78
	14,500		
	—	—	—

High Performance Tool

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet		
	Measures [inch]		Weight [lb.]		

14,500 psi Rotating nozzles

14,500 psi Rotating nozzles (KBRV)

For \varnothing 0.4"–2.0", equipped as combination nozzle (KBRV) with 2 water jets, semi-radial with an angle of approx. 45°, directed forwards and 2 water jets radial acting at an angle of 90° to the pipe wall.

Attention! Use only with a lance!



05.011NV



05.016NV

	1/16 NPT	05.012NV	1/8 NPT	05.016NV	1/8 NPT
	0.5 - 0.7		0.5 - 0.7		0.7 - 1.2
	12				
	45°/ 2 × 0.90 mm 90°/ 2 × 0.85 mm				45°/ 2 × 1.00 mm 90°/ 2 × 0.90 mm
$\varnothing \times L$	0.4 × 1.2		0.5 × 1.2		0.6 × 1.6
	0.04				0.09
	14,500				
	—				—



05.0285N



05.0405



05.0505

	1/4 NPT	05.0405	M24 × 1.5	05.0505	M24 × 1.5
	1.2 - 1.6		1.6 - 2.2		2.2 - 3
	8		10.5		
	4 × M4		4 × M6		
$\varnothing \times L$	1.1 × 2.2		1.6 × 4.2		2.0 × 4.8
	0.44		1.56		2.78
	14,500				
	—		—		—

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet		
$\varnothing \times L$	Measures [inch]		Weight [lb.]		

High Performance Tool **enz golden jet**

Cross jet nozzles 14,500 psi

The cross jet **enz golden jet**[®] nozzle (with brake jet) is applied for industrial cleaning of heat exchangers and completely clogged pipes.

The cross jet, which is directed to the front, cuts the material in the completely clogged pipe like a milling cutter. Simultaneously 2 radial jets of 90° clean the pipe wall. Through the same effect the removed material is flushed away. The cross jet causes a reaction force which, in many cases, makes it necessary to set the nozzle on a lance. If the quantity of water from the pump is sufficient, a thrust piece can be set in between nozzle and hose.

The cross jet nozzle has become a tool for universal use.

Applications

- For industrial cleaning of heat exchangers and completely clogged pipes



Cross jet nozzles 14,500 psi

Cross jet nozzles 1/8" - 1/4"



	06.012N	06.018A_N	06.018B_N	06.022N	06.028N
	1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT	1/4 NPT
	0.5 - 1	0.7 - 1		0.9 - 1	1.2 - 1.7
	8	8 / 16		8	
	1 × 0.55 - 60° 1 × 0.60 - 60°	2 × 0.60 - 90° / 2 × 0.90 - 90°		2 × M4 - 75°	
	*	*		*	*
	2 × 0.80 - 45°	2 × M3 - 45°		2 × M4 - 45°	
	0.5 × 1.7	0.7 × 1.9		0.9 × 2.2	1.1 × 2.4
	0.07	0.17		0.27	0.47
	14,500				
	—	—		—	—

— gallon mass

Accessory and wearing parts



thrust piece

006.0125	1/8" NPT male		5.3		2 × 0.9, 30°
	1/8" female max. 10,875 psi		0.5 × 1.2		0.049
006.0126	1/8" NPT male		5.3		2 × 0.9, 30°
	M 10 × 1		0.5 × 1.2		0.049
006.0225	1/4" NPT male		1.3		3 × M4, 30°
	1/4" NPT female max. 14,500 psi		0.7 × 1.1		0.11
006.0225N	1/4" NPT male		1.5		3 × M4, 30°
	NPT 1/4" female 14,500 psi		0.71 × 1.63		0.02
006.0226W	1/4" NPT male		1.3		3 × M4, 30°
	M 10 ×		0.7 × 1.1		0.11

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	Option
	Measures [inch]		Weight [lb.]		

High Performance Tool

enz

Surface cleaner

Surface cleaner

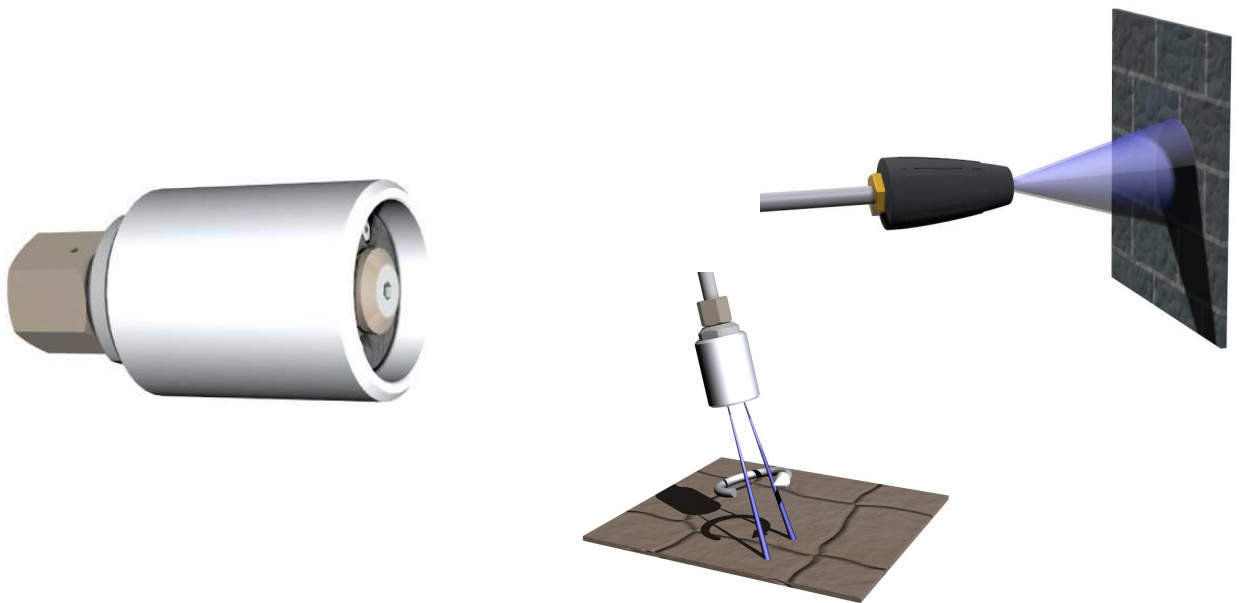
The rotating **enz golden jet®** nozzle for cleaning surfaces is remarkable for its high efficiency. It outperforms conventional flat jet or round jet nozzles with a large margin.

Turbo killer

This special nozzle for cleaning surfaces is rotated by the cleaning liquid by means of an impeller. The exhaust axis has an inclination against the central axis of the rotating nozzle, which results in a circular movement.

Applications

- Surface cleaner: To remove deposits of concrete-slurry, cleaning of facades, steps, walls, traffic signs, etc.
- Turbo killer: for the cleaning of steps, walls, artificial surfaces, traffic signs, etc.



Surface cleaner

Surface cleaner 3/8"



	18.040N**	18.040NHD**
	3/8 NPT	3/8 NPT
	2 × M6	
	1,450 psi: 2.6	14,500 psi: 7.9
	2 × 3.9	
	1.60	
	5,075	14,500
	—	

**Caution, recoil force: the lance must comply with country-specific regulations

Turbo killer 1/4"



	18.020135	18.020150	18.020170	18.020190
	1/4			
	1.35	1.50	1.70	2
	at 1,400 psi: 2.9 at 2,175 psi: 3.6 at 2,900 psi: 4.2	at 1,400 psi: 3.8 at 2,175 psi: 4.7 at 2,900 psi: 5.6	at 1,400 psi: 4.7 at 2,175 psi: 6.1 at 2,900 psi: 7.2	at 1,400 psi: 5.9 at 2,175 psi: 7.3 at 2,900 psi: 8.6
	2.4 × 3.9			
	1.50			
	5,075			
	—			

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450/2'175/2'900 psi		Front jet	*	On order
	Measures [inch]		Weight [lb.]		











High Performance Tool **enz** golden jet®

Surface cleaner



18.020135	18.020150	18.020170	18.020190
Rebuild kit			
0018.020135	0018.020150	0018.020170	10018.020190
for	for	for	for
18.020135	18.020150	18.020170	18.020190

High Performance Tool 
enz  golden jet®

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450/2'175/2'900 psi		Front jet	*	On order
	Measures [inch]		Weight [lb.]		

WIRE ROPE AND CHAIN SCRAPERS

Wire rope and chain scraper

67

Enz USA Inc.
1585 Beverly Ct.
Unit 115
Aurora, IL 60502
Tel. 630-692-7880
Fax 630-692-7885
E-mail: sales@enzusainc.com
Internet: www.enzusainc.com

High Performance Tool 
 golden jet®

 **enz**®  usa inc.

Wire rope and chain scraper

The Chain scraper head **enz golden jet®** is a highly effective multi-purpose tool designed for easy use and maintenance under rugged work conditions. All Rotating Chain Scraper models can be adapted to a wide range of pipe diameters by simply adjusting the skid and selecting the respective chain length.

For extra heavy deposits, chains with welded manganese steel plates and roller chain attachments are available for our larger chain cutters. **(Roller chains are NOT recommended in clay pipes)**

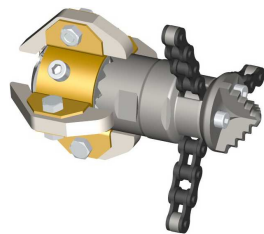
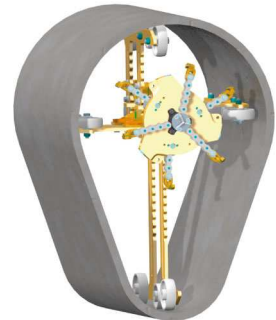
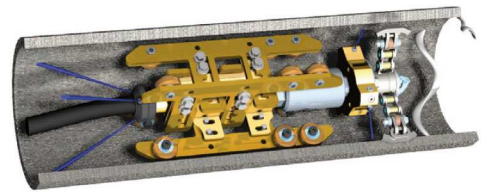
Due to their high cleaning effect, rotating chains generate considerable mechanical forces. Any pipe made from steel, cast iron or plastic will accept these forces without risk of damage.

When working in clay pipes a Cable Loop attachment is available for pipes 8" thru 16" diameter. Clay pipes have a tendency to be brittle due to damage from roots, external forces and offsets. The cable loop attachment offers a softer cleaning effect when operating under these conditions.

(Prior to the use of Chain Scrapers, especially in clay pipes, it is strongly recommended to pre-clean with an Enz Grenade Bomb or Rotojet Nozzle. We also recommend video inspection for pipe offsets and cracks which might impair the integrity of the pipe during the cleaning process.)

Applications

- Cleaning pipes prior to the installation of inliners (application of coating and injections)
- Complete root removal
- Removal of incrustations, hardened grease and mineral deposits
- Removal of concrete seepage in newly installed sewage pipelines
- Removal of certain damaged in-liners
- Cutting of taps with diamond crown cutter

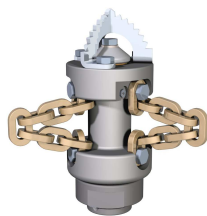


Wire rope and chain scraper

Chain scraper 1/4" - 1"



	10.028N	10.028N	10.060ATR-60-/ 75-/100-/125-/ 150-/200-US**	10.060BTR-60-/ 75-/100-/125-/ 150-/200-US**	10.060CTR-60-/ 75-/100-/125-/ 150-/200-US**	10.125TR-100-/ 125-/150-/200-/ 250-/300-US**
	1/4 NPT		3/8 NPT	1/2	3/4	1
	1.6 - 4		2, 3, 4, 5, 6, 8			4, 5, 6, 8, 10, (12*)
	5		8 (13*)			13 (40*)
	3 × M4		1 × M6			1 × M6 - 200 3 × M6 ab 200
	3 × M4		4 × M6			4 × M8
	1.6/1.1 × 3.2		1.6 × 4.4		1.6 × 5.3	2.4 × 5.7
	0.71		2.10		2.35	5.56
	5,075		5,075	5,075	3,625	3,625
	—		x			x

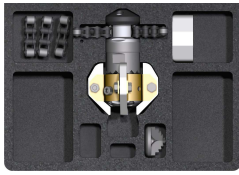


	10.060A	10.060B
	1/2	3/4
	3 - 6	
	16	
	3 × M6	
	3 × M6	
	2.4 × 5.3	
	3.11	
	3,625	
	—	

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	**	Various Ø available

High Performance Tool

Wire rope and chain scraper



10.060ATR/BTR/CTR-SET-US



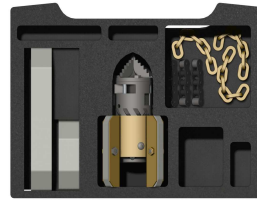
A = 3/8, B = 1/2, C = 3/4



incl. skids and chain for Ø 4"
(3" - 6" kit & 3" - 8" kit are available)

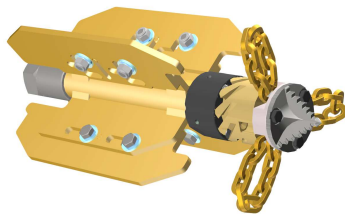


6.89



10.125TR-SET-US

incl. skids and chain
for Ø 5" - 10" (12" available)



10.125TR-US



1



5, 6, 8, 10 (12*)



13 (40*)



1 × M6 up to 52.8
3 × M6 from 52.8



4 × M8



4,000



2.4 × 5.7













16.35



x

High Performance Tool  **enz golden jet®**

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	**	Various Ø available

Wire rope and chain scraper

Wire rope and chain scraper for recycling water 1"

These tools can be operated with Recycling-Water so that they allow an economically working principle. All models below are available in the RS (Link chain) version.



	10.150R/RS	10.150TR/RS	10.200R/RS	10.400R/RS
	1	1	1	1
	6 - 10	6 - 10	8 - 16	16 - 32
	26		53	79
	3 × M8	3 × M6	3 × M10	3 × M10
	3 × M10	4 × M8	3 × M10	3 × M10
	5.3 - 9.2 × 19.7	5.3 - 9.2 × 15.0	7.3 - 15.2 × 22.0	15.2 - 30.9 × 24.6
	29.11	28.67	77.78	104.44
	3,625	3,625	3,625	3,625
	X	X	X	X
	RS on order			

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	[yd]	per yard

High Performance Tool

enz golden jet®

Wire rope and chain scraper

Accessory and wearing parts



Pin bolt chain - Sold by the Yard

11.G → 10.080, 10.040A/B, 10.060A/B, 10.060ATR/BTR/CTR [**yd**]

12.G → 10.200R, 10.400R [**yd**]

0010.028G → 10.028 [**yd**]

0010.125G → 10.125TR [**yd**]

0010.150G → 10.150TR [**yd**]

0010.028050G Ø 2" - 10.028

0010.028075G Ø 3" - 10.028

0010.028100G Ø 4" - 10.028

0010.040060G Ø 2" - 10.060ATR/BTR/CTR

0010.040075G Ø 3" - 10.040, 10.060ATR/BTR/CTR

0010.040100G Ø 4" - 10.040, 10.060ATR/BTR/CTR

0010.040125G Ø 5" - 10.040, 10.060ATR/BTR/CTR

0010.040150G Ø 6" - 10.040/10.060ATR/BTR/CTR

0010.040200G Ø 8" - 10.040/10.060ATR/BTR/CTR

0010.125100G Ø 4" - 10.125TR

0010.125125G Ø 5" - 10.125TR

0010.125150G Ø 6" - 10.125TR / 10.150TR

0010.125200G Ø 8" - 10.125TR / 10.150TR

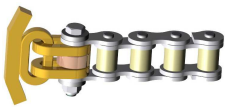
0010.125250G Ø 10" - 10.125TR / 10.150TR

0010.125300G Ø 12" - 10.125TR

High Performance Tool

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	[yd]	per yard

Wire rope and chain scraper



1 Satz Gelenkbolzenkette | 1 Set pin bolt chain | Set chaînons

- 0010.150150G Ø 6 inch - 10.150R
- 0010.150200G Ø 8 inch - 10.150R
- 0010.150250G Ø 10 inch - 10.150R
- 12.200G Ø 8 inch - 10.200R
- 12.250G Ø 10 inch - 10.200R
- 12.300G Ø 12 inch - 10.200R
- 12.350G Ø 14 inch - 10.200R
- 12.401G Ø 16 inch - 10.200R
- 12.402G Ø 16 inch - 10.400R
- 12.450G Ø 18 inch - 10.400R
- 12.500G Ø 20 inch - 10.400R
- 12.600G Ø 24 inch - 10.400R
- 12.700G Ø 28 inch - 10.400R
- 12.800G Ø 32 inch - 10.400R



Chain for center head

12.400ZG



Chain

- 0010.028K → 10.028 [yd]
- 0010.040K → 10.060ATR/BTR/CTR [yd]
- 11 → 10.060A/B, 10.125TR, 10.150TR [yd] 0.18 inch
- 11.B Chain [yd] 0.22 inch
- 12 Chain [yd] 0.27 inch
- 0010.150K → 10.150R [yd] 0.22 inch
- 0010.028050K Ø 2" - 10.028 5 links
- 0010.028075K Ø 3" - 10.028 7 links
- 0010.028100K Ø 4" - 10.028 9 links
- 0010.040060K Ø 2.25" - 10.060ATR/BTR/CTR 4 links
- 0010.040075K Ø 3" - 10.060ATR/BTR/CTR 4 links
- 0010.040100K Ø 4" - 10.060ATR/BTR/CTR 5 links
- 0010.040125K Ø 5" - 10.060ATR/BTR/CTR 6 links
- 0010.040150K Ø 6" - 10.060ATR/BTR/CTR 6 links
- 0010.040200K Ø 8" - 10.060ATR/BTR/CTR 8 links

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	[yd]	per yard

High Performance Tool

Wire rope and chain scraper



1 Set chain

0010.125100K	Ø 4" - 10.125TR
0010.125125K	Ø 5" - 10.125TR
0010.125150K	Ø 6" - 10.125TR/10.150TR
0010.125200K	Ø 8" - 10.125TR/10.150TR
0010.125250K	Ø 10" - 10.125TR/10.150TR
0010.125300K	Ø 12" - 10.125TR/10.150TR

12 Chain [yd] - 0.27 inch

12.03	Ø 8" - 10.200R/RS	3 links
12.07	Ø 10" - 10.200R/RS	7 links
12.07	Ø 16" - 10.400R/RS	7 links
12.09	Ø 12" - 10.200R/RS	9 links
12.09	Ø 18" - 10.400R/RS	9 links
12.11	Ø 14" - 10.200R/RS	11 links
12.11	Ø 20" - 10.400R/RS	11 links
12.13	Ø 16" - 10.200R/RS	13 links
12.15	Ø 24" - 10.400R/RS	15 links
12.17	Ø 26" - 10.400R/RS	17 links
12.19	Ø 28" - 10.400R/RS	19 links
12.21	Ø 30" - 10.400R/RS	19 links
12.23	Ø 32" - 10.400R/RS	19 links













Wire brush

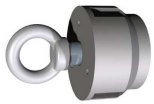
0010.125150SE	➔ 10.125TR	Ø 6"
0010.125200SE	➔ 10.125TR	Ø 8"

Further sizes on request

High Performance Tool 
enz  golden jet®

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	[yd]	per yard

Wire rope and chain scraper



Pull part

0010.2006 → 10.200R, 10.400R



1 Set chain with bracket

0010.1508R → 10.150R (3 links) ∅ all

0010.2008R → 10.200R, 10.400R (3 links) ∅ all



Cutter head

10.20043R → 10.200R, 10.400R



Universal teeth

15.ZU → cutters 10.20043R ∅ 4" - 24"



Centre tooth for centre cap

15.ZS → cutters 10.20043R ∅ 8" - 24"



Centerhead

0010.2004R → 10.200R ∅ 8" - 16"

0010.4004R → 10.400R ∅ 16" - 32"



Wire rope head

0010.200S → 10.200R ∅ 8" - 16"

0010.400S → 10.400R ∅ 16" - 32"

1 Set wire rope loop



1 Set of rope brushes



10.200R

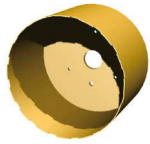
10.400R

12.200S	12.200SE	∅ 8"	
12.250S	12.250SE	∅ 10"	16"
12.300S	12.300SE	∅ 12"	18"
12.350S	12.350SE	∅ 14"	20"
12.400S	12.400SE	∅ 16"	22"
12.600S	12.600SE	∅	24"
12.700S	12.700SE	∅	28"

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	[yd]	per yard

High Performance Tool
enz golden jet

Wire rope and chain scraper



Diamond crown

0010.120D	→ 10.125TR	∅ 5"
0010.150D	→ 10.150TR	∅ 6"
0010.200D	→ 10.200R	∅ 8"
0010.250D	→ 10.200R	∅ 10"
0010.300D	→ 10.200R	∅ 12"



Root Knife

0010.0605TRM
0010.1254TR



Root Knife

0010.0285M



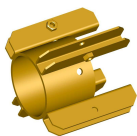
Housing

0010.0286 → 10.028



Housing

0010.0607TR → 10.040A/B, 10.060ATR/BTR/CTR excl. skids













Housing

0010.1257TR → 10.125TR excl. skids



Housing

0010.0407 → 10.060ATR/BTR/CTR ∅ 4"

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	[yd]	per yard

Wire rope and chain scraper



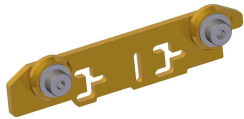
Skids for 60TR

0010.060710TR	Ø 4"
0010.060712TR	Ø 5"
0010.060715TR	Ø 6"
0010.060720TR	Ø 8"



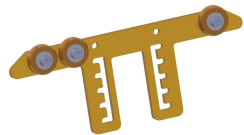
Skids for 125TR

0010.125710TR	Ø 4"
0010.125712TR	Ø 5"
0010.125715TR	Ø 6"
0010.125720TR	Ø 8"
0010.125722TR	Ø 9"
0010.125725TR	Ø 10"
0010.125730TR	Ø 12"



Skids

0010.1502R	→ 10.150R → 10.150TR	with rolls
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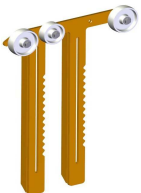
Skids

0010.20071R	→ 10.200R front	with rolls
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Skids

0010.20072R	→ 10.200R back	with rolls
-------------	----------------	------------



Skids for egg shaped pipes

10.4008R	→ 10.400R	with rolls
----------	-----------	------------

	Connecting thread [inch]		Thrust jet		Weight [lb.]
	Application range [inch]		Front jet		Recycling
	min. gpm at 1450 psi		Maximum pressure [psi]	*	Option
	Rotating nozzles		Measures [inch]	[yd]	per yard

CUTTERS

Non-percussion milling cutters

79

Percussion milling cutters

81

Enz USA Inc.
1585 Beverly Ct.
Unit 115
Aurora, IL 60502
Tel. 630-692-7880
Fax 630-692-7885
E-mail: sales@enzusainc.com
Internet: www.enzusainc.com

High Performance Tool 
 golden jet®

 **enz**®  usa inc.

Non-percussion milling cutters

These **enz golden jet®** rotating cutters work without impacts (percussion). The replaceable cutter heads are equipped with tungsten carbide and diamond tipped teeth. The cutters are designed to work in 2" to 3" pipe diameter.

The cutter units can be used in a wide variety of applications. Calcium deposits, cement and grout can be removed as efficiently as mineral deposits, roots and wood.

Series 13 Milling heads are for fixed diameter and one specific pipe size.

Applications

- Concrete or concrete sludges
- Layers of mineral deposits
- Roots, wood



Non-percussion milling cutters

Cutters without impacts 1/2" - 1"



13.040TR



13.060TR

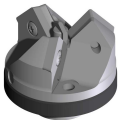
	1/2		1
	1.6 - 2.4		2.4 - 3
	16		21
	1 x M6 to 52.6 3 x M6 from 52.6		1 x M6 to 52.6 3 x M6 from 52.6
	4 x M6		4 x M8
	—		—
	1.6 x 4.2		2.4 x 5.1
	1.67		4.22
	3,625		3,625
	x		x

Accessory and wearing parts



Cutter head

0013.0405TR → 13.040TR, 10.060TR ∅ 1.6 - 2.4



Cutter head

0013.0605TR → 13.060TR ∅ 2.4 - 3



Milling cutter incl. screw

16.16Z → 13.040TR

16.19Z → 13.060TR



Wear ring for plastic pipes

0013.0607TR-68 → 13.060TR



Hard ring for plastic pipes

0013.0604TR-68 → 13.060TR

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet	*	On order
	Measures [inch]		Weight [lb.]		

High Performance Tool

enz golden jet®

Percussion milling cutters

The **enz golden jet®** impact drilling cutters range from 4" to 24" pipe diameter. In many cases, the use of a Percussion Milling Cutter is the only alternative to digging up pipes under foundations or roads.

Percussion Milling Cutters are specifically designed to remove stubborn deposits like concrete, injection cement, as well as calcareous and mineral deposits. They are equipped with tungsten carbide and/or diamond tipped teeth. They work with a percussion system of 600-3000 impulses per minute and up to 12 tons of impact force.

Please ask for special equipment for plastic pipes!

When using the pull rod (drawing device) the cutters can be driven with half the water quantity (from 8").

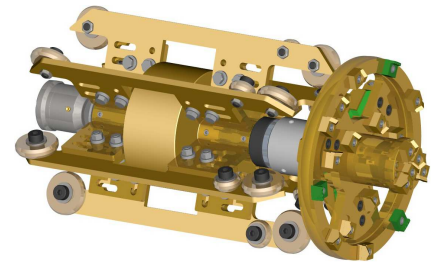
Characteristics

- superior performance compared to other cutters
- extended tooth life
- easy handling
- low maintenance cost
- proven design

All impact drilling cutters can be operated without impacts by means of a simple mechanical change over.

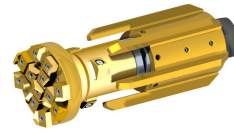
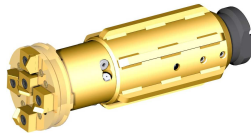
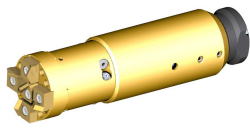
Applications

- To remove concrete, injection cement, calcareous layers etc.
- Ø 4"–24"



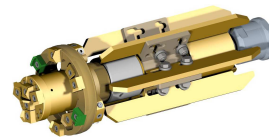
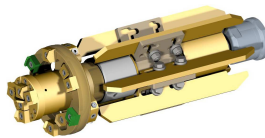
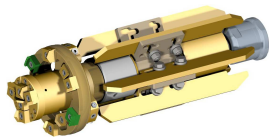
Percussion milling cutters

Impact drilling cutters 1", 1 1/4"



	14.100	14.120	14.150
	1	1	1
	4	5	6
	26	26	40
	3 × M10	3 × M10	3 × M10
	3 × M10	3 × M10	3 × M10
	—	—	—
	3.5 × 13.6	4.3 × 13.6	5.4 × 15.4
	26.67	30.44	47.56
	2,175	2,175	2,175
	—	—	—

Impact drilling and cutting tools from Ø 7.9 inch require a pivot joint (24.125S), not incl.



	14.200* Standard Housing 14.200	14.225* Standard Housing 14.200	14.250* Standard Housing 14.200
	1 / 1 1/4	1 / 1 1/4	1 / 1 1/4
	8	9	10
	52	52	66
	3 × M10	3 × M10	3 × M10
	3 × M10	3 × M10	3 × M10
	—	—	—
	6.9 × 22.8	7.9 × 22.8	8.8 × 22.8
	69.78	77.11	74.22
	2,175	2,175	2,175
	—	—	—

* Swivel joint 24.125S not included, but included in dimension.

To mill in deformed plastic or glass fiber pipes, please ask for special ground tooth.

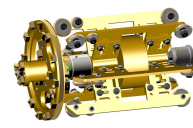
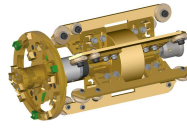
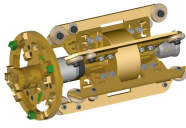
	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet		
	Measures [inch]		Weight [lb.]		

High Performance Tool

enz golden jet®

Percussion milling cutters

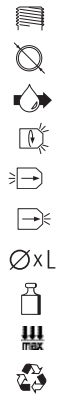
Impact drilling cutters 1", 1 1/4"



14.300*
Standard Housing 14.300

14.350*
Standard Housing 14.300

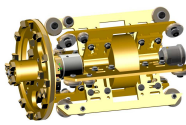
14.400*
Standard Housing 14.300



1 / 1 1/4
12
80
3 × M10
3 × M10
—
10.8 × 27.9
177.78
2,175
—

1 / 1 1/4
14
80
3 × M10
3 × M10
—
12.8 × 27.9
182.22
2,175
—

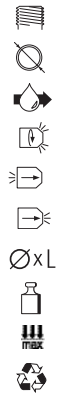
1 / 1 1/4
16
80
3 × M10
3 × M10
—
14.7 × 27.9
197.78
2,175
—



14.450*
Standard Housing 14.300 +
adapter plates

14.500*
Standard Housing 14.300 +
adapter plates

14.600*
Standard Housing 14.300 +
adapter plates



1 / 1 1/4
18
105
3 × M10
3 × M10
—
16.7 × 27.9
237.78
2,175
—

1 / 1 1/4
20
118
3 × M10
3 × M10
—
18.7 × 27.9
246.67
2,175
—

1 / 1 1/4
24
132
3 × M10
3 × M10
—
22.6 × 27.9
266.67
2,175
—

* Swivel joint 24.125S not included, but included in dimension.

To mill in deformed plastic or glass fiber pipes, please ask for special ground tooth.

High Performance Tool

	Connecting thread [inch]		Rotating nozzles		Maximum pressure [psi]
	Application range [inch]		Thrust jet		Recycling
	min. gpm at 1450 psi		Front jet		
	Measures [inch]		Weight [lb.]		

Percussion milling cutters

Accessory and wearing parts



Cutter head

14.200K	→ 14.200, changeable	∅	8"
14.225K*	→ 14.225, changeable	∅	9"
14.250K	→ 14.250, changeable	∅	10"
14.300K	→ 14.300, changeable	∅	12"
14.350K	→ 14.350, changeable	∅	14"
14.400K	→ 14.400, changeable	∅	16"
14.450K	→ 14.450, changeable	∅	18"
14.500K	→ 14.500, changeable	∅	29"
14.600K	→ 14.600, changeable	∅	24"

* 14.225K in combination with 14.200 will need to order skid Art. No. 0014.2257



Hub

14.300NA	→ 14.300K, 14.350K	∅	12" - 14"
14.400NA	→ 14.400K, 14.450K	∅	16" - 18"
14.500NA	→ 14.500K	∅	20"
14.600NA	→ 14.600K	∅	24"



Adapter plates

14.450KU	for the enlargement of the skids diameter (12 parts)	∅	18" - 24"
-----------------	--	---	-----------



Diamond crown

0014.200D	→ 14.200K	∅	8"
0014.250D	→ 14.250K	∅	10"
0014.300D	→ 14.300K	∅	12"
0014.350D	→ 14.350K	∅	14"
0014.400D	→ 14.400K	∅	16"



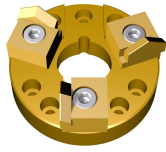
Pull rod

14.2215ZS	→ pulling of the cutter	∅	8" - 24"
------------------	-------------------------	---	----------

	Connecting thread [inch]		Rotating nozzles		Measures [inch]
	Application range [inch]		Thrust jet		Weight [lb.]
	min. gpm at 1450 psi		Front jet		Recycling

High Performance Tool

Percussion milling cutters



Center head with hole

15.ZKB → cutters



Universal cutting tooth, can be used as offset application both inside and outside

15.ZU → cutters ∅ 4" - 24"



Universal cutting tooth, specifically for plastic pipes, can be used as offset application both inside and outside

15.ZU-GSL → cutters ∅ 4" - 24"



Center teeth

15.Z1 → cutters ∅ 5" - 6"



Center teeth

15.Z1-100 → cutters ∅ 4"



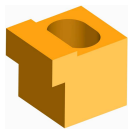
Universal cutting tooth for centre cap

15.Z1-ZK → cutters ∅ 8" - 24"



Diamond tooth

15.ZDU → cutters ∅ 4" - 24"



Diamond tooth

15.ZDSU → cutters ∅ 4" - 24"



Center tooth for centre cap

15.ZS → Chain scraper 10.20043R ∅ 8" - 24"

	Connecting thread [inch]		Rotating nozzles		Measures [inch]
	Application range [inch]		Thrust jet		Weight [lb.]
	min. gpm at 1450 psi		Front jet		Recycling

Percussion milling cutters



Swivel joint with thrust jets

24.125S → cutters ∅ 4" - 24"



Cam plate

14.K04 0.16" Hub for cutters ∅ < 6"

14.K05 0.20" Hub for cutters ∅ < 8" - 24"

14.K06 0.24" Hub for cutters ∅ < 16" - 24"



Disc spring

14. T1



Sliding disc

14.G → cutters



Nord Lock for teeth

65212.08 (always as pairs)

	Connecting thread [inch]		Rotating nozzles		Measures [inch]
	Application range [inch]		Thrust jet		Weight [lb.]
	min. gpm at 1450 psi		Front jet		Recycling

High Performance Tool

enz golden jet®

ACCESSORIES

Ceramic-steel inserts enz® JetMax ceramic (round jet)

89

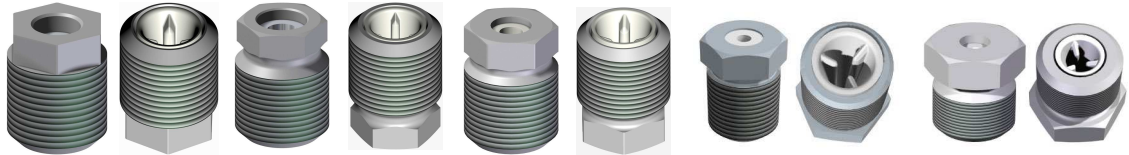
Enz USA Inc.
1585 Beverly Ct.
Unit 115
Aurora, IL 60502
Tel. 630-692-7880
Fax 630-692-7885
E-mail: sales@enzusainc.com
Internet: www.enzusainc.com





High Performance Tool 
  golden jet®

  usa inc.

Ceramic-steel inserts enz[®] JetMax ceramic (round jet)






JetMax ceramic-steel inserts are resistant to recycled or to any other quality water regardless of how aggressive. The lifetime of a ceramic nozzle insert is many times longer, compared to orifices made of hardened steel or other hard materials. Enz fluid mechanics™ improves the flow drastically. The integrated flow-straightener is unique (patent pending). The cleaning affect is exceedingly increased with the same amount of water and energy.








	22.04	22.06	22.08	22.10	22.025
	M4	M6	M8	M10 × 1	G 1/4
 max	14,500	14,500	7,250	7,250	7,250
	3.5	5	7	10	14
	0.3 – 1.5 (in increments of 0.1)	0.3 – 3.0 (in increments of 0.1)	0.3 – 3.0 (in increments of 0.1), 3.2, 3.4	1.0 – 3.0 (in increments of 0.1), 3.2, 3.4, 3.6, 3.8, 4.0	1.0 – 3.0 (in increments of 0.1), 3.2, 3.4, 3.6, 3.8, 4.0

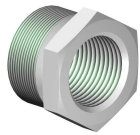
Inserts enz[®] FanJet ceramic-steel (flat jet)



	22.08F	22.10F	22.025F
	M8	M10 × 1	G 1/4
 max	7,250	7,250	7,250
	7	10	14
	30°	30°	30°
	1.0 (= 1.1mm round jet) 1.5 (= 1.6mm round jet)	1.0 (= 1.1 round jet) 1.5 (= 1.6 round jet) 1.9 (= 2.1 round jet) 2.2 (= 2.4 round jet) 2.5 (= 2.7 round jet) 2.8 (= 3.0 round jet)	1.9 (= 2.1 round jet) 2.2 (= 2.4 round jet) 2.5 (= 2.7 round jet) 2.8 (= 3.0 round jet)

High Performance Tool
enz golden jet[®]

	Thread [inch]		Wrenche size [inch]		Jet angle forward
 max	Maximum pressure [psi]		Available nozzle sizes [mm]		



Reductions

	19.025012N	19.050038N	19.075	19.100A	19.100B
	1/4 up to 1/8	G 1/2 up to NPT 3/8	3/4 up to 1/2	1 up to 1/2	1 up to 3/4

19.125	19.150A
1 1/4 up to 1	1 1/2 up to 1



Expansions

	C210	C211	19.050075	C 217	C 213	19.100125
	1/4 up to 3/8	1/4 up to 1/2	1/2 up to 3/4	1/2 up to 1	3/4 up to 1	1 up to 1 1/4

C 214	C 215
1 up to 1 1/2	1 1/4 up to 1 1/2

Swivel joints

Rust proof, sturdy execution, smooth operation, with excellent flow dynamic, suitable for larger channel cleaning and for operating cutters.



24.075



24.100



24.125S



24.125



24.150

	3/4	1	1 male 1 1/4 female	1 1/4	1 1/2
	—	—	3 × M10	—	—
∅xL	2.32 × 2.91	2.95 × 3.14	2.95 × 3.38	3.11 × 3.26	3.30 × 3.78
	2.67	4.89	5.33	4.89	6.00
	3,625	3,625	3,625	3,625	3,625

	Connecting thread [inch]	L	Length [ft.]		Maximum pressure [psi]
	Thrust jet		gpm		
∅xL	Measures [inch]		Weight [lb.]		

High Performance Tool **enz golden jet**

Combo kits

These compact toolboxes contain the most common used tools for pipe cleaning. This allows for clean and easy storage as well as for a rapid inventory check prior to leaving for the job site. The tool case is made from a shock resistant plastic and can withstand high and low temperatures.

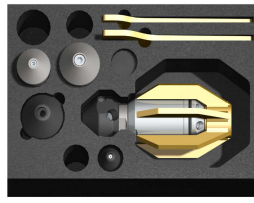


1/2" Combo kit

30.050, 35.050, 40.050, 60.050, 04.040A*, 10.060BTR

* Or Bulldog 400.037

Call for pricing difference



3/4" Combo kit

30.075, 40.075, 60.075, 02.050B, 04.050B*, 10.060CTR or 10.125TR

* Or Bulldog 400.060

Call for pricing difference



1" Combo kit

30.100, 40.100A*, 60.100L, 04.060, 02.100A, 10.125TR

* 40.100B for 80 GPM Kit

Call for pricing difference

* Or Bulldog 400.080 or 400.100A

Also available: 1/4" and 3/8" Combo kits. Other tool kit combinations are available upon request.

Other accessories



Lower single roller

90

Avoid unnecessary wear on high-pressure hoses. The guide system mounts between the inside of the pipe and the upper edge of the manhole. The clamp jaw is adjustable to the manhole depth. Additional extensions are available. Standard length: 13 ft.

L 13 ft.



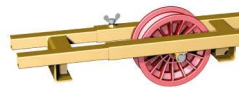
Extension (Deflection device)

0090.02 for 90



Additional second quick-lock

0090.03 for 90



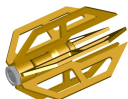
Manhole roller guide

93 for an easy guiding of the high-pressure hose



Rope clip for upper deflection device

93.7



Cage for Bulldog

100.1009A without nozzle

1 1/4 - 1 3/4 10 - 31

8 x 11

100.1009B without nozzle

1 1/4 - 1 1/4 10 - 31

High Performance Tool
enz golden jet

	Connecting thread [inch]		inside: Length x Width x Height [inch]	L	Length [ft.]
	Wrenche size [mm]		outside: Length x Width x Height [inch]		Application range [inch]

ØxL 8 x 11



Banana extra small

91M	Deflection device for cables and high-pressure hoses	Ø	from 6		5.65
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Banana small

91	Deflection device for cables and high-pressure hoses	Ø	from 8		8.89
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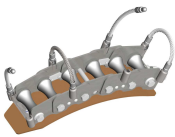
Banana medium

91A	Deflection device for cables and high-pressure hoses	Ø	from 8		11.42
------------	--	---	--------	--	-------



Flex guide for hoses (made out of stainless steel), small

91.05M	until max. 5/8" hoses	Ø	from 3.5		2.22
---------------	-----------------------	---	----------	--	------



Flex guide for hoses (made out of stainless steel)

91.05	for 3/4" - 1 1/4" hoses	Ø	from 6		15.78
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Flex guide for hoses

91.07	for 1" - 1 1/4" hoses	Ø	from 12		20.67
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	Connecting thread [inch]		min. gpm at 1450 psi	ØxL	Measures [inch]
	Application range [inch]		Maximum pressure [psi]		Weight [lb.]

High Performance Tool
 enz golden jet®



Socket wrench

- 09.0935U** 3.5 mm: for M4-inserts
- 09.095U** 5.0 mm: for M6-inserts
- 09.097U** 7.0 mm: for M8-inserts
- 09.100U** 10.0 mm: for M10-inserts

Tip cleaning kit

- 09.500TC** For cleaning debris from jets



Screw locking device light

Loctite® 222



Screw locking device medium

Loctite® 243



Screw locking device high-strength

Loctite® 638



Screw locking device high-strength

Loctite® 270



Corrosion protection spray

W-D 40 or li- Cleans and protects pipe-clea-
quid wrench ning-tools

	Connecting thread [inch]		min. gpm at 1450 psi	ØxL	Measures [inch]
	Application range [inch]		Maximum pressure [psi]		



JetCalc

The programme JetCalc calculates the optimal components for your nozzle and the pressure loss. Specially for enz golden jet® products. External products too can be calculated.

High Performance Tool 



enz technik ag

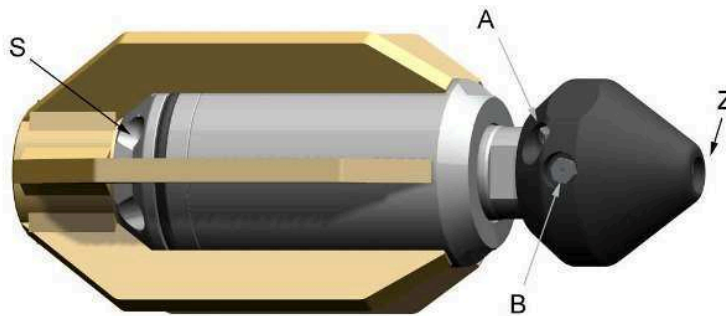
Phone: 041 676 77 66
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Internet: www.enz.com
EMail: info@enz.com

JetCalc Nozzle Calculation Programm

Version 1.6.1.0 © 2010 ENZ USA INC, Aurora, IL 25.06.2012

Article	400.100A/6	
Pump capacity		
Flow rate	80.0 US-G/min	
Pressure	2'500.0 PSI	
Hose system		
1. Length = 600.0 Ft (Plastic)	Nominal diameter = 25.0 mm	Pressure loss = 728.2 PSI
Calculated values		
Flow rate	76.6 US-G/min	
Final pressure	1'771.8 PSI	
Pressure loss	728.2 PSI	
Traction approx.	120 lbs	
Excess	3.4 US-G/min	
Assembly		
	A = 3 x 2.2 mm	
	B = 2 x 1.5 mm	
	S = 6 x 1.9 mm	
	Z = 0.0 mm	



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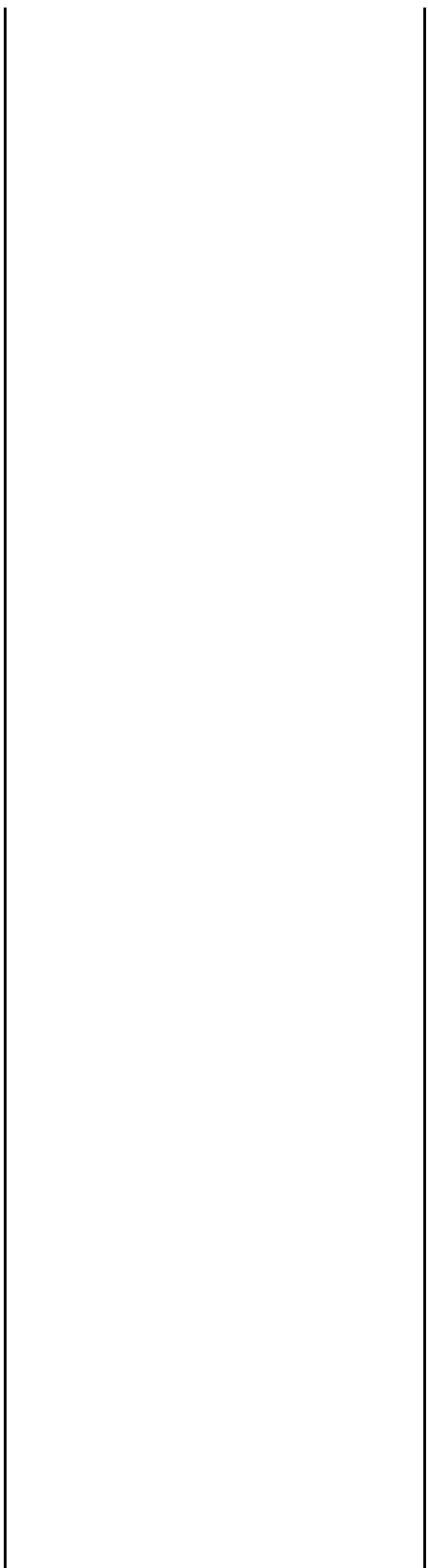
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1585 Beverly Ct. - Unit 115, Aurora, IL 60502 - Phone 630-692-7880 / Fax 630-692-7885

Date: _____ Ship: _____ Purchase Order: _____
Ordered by: _____

Bill to Company: _____ Ship to Company: _____

All merchandise returned due to customer error or without proper authorization will be subject to a 15% re-stocking fee.

Qty.	Item Number	Flowrate GPM	Pump Pressure PSI	Hose Rubber Plastic	Hose Length Feet	Hose Dia. Inch	Connecting Thread	Remarks	List Price Each	Qty. Price
									Total Item Amount =	
									Total Minus Discount =	

All requests must have the GPM's, PSI, hose type and hose length for the order to be complete.

Signature: _____

Date: _____

Standard Terms & Conditions

1. Prices and Validity

Catalog prices effective on the current price list date supersede all previous prices. Catalog prices shown are subject to change without any prior notice and typographical errors are subject to correction. Prices quoted are List Prices valid for 30 days from the date of the quotation.

2. Taxes

All prices shown in the price list and in quotations exclude any federal, state, or local taxes where applicable. Any tax, will be added to the invoice.

3. Title and Transportation / Handling

All prices are to be understood FOB warehouse Aurora. Title to the goods passes to the buyer at the point of origin (Free on board warehouse Schaumburg). The cost of transport and the risk of any transport damage and/or losses lies with the buyer.

Lacking the buyer's specific instruction, Enz USA will ship via UPS and arrange for adequate transport insurance. All cost for transport, handling fee (\$3.00) and insurance incurred will be charged to the buyer. The buyer shall make all claims for transport damages or loss to the freight carrier or the insurance company involved. The buyer will not withhold payment to Enz USA Inc., on damaged or lost goods once title has past to the buyer. Enz USA Inc. , retains a security interest in the goods until the purchase price is paid in full.

4. Terms of Payment and Credit Approval

The Standard Terms of payment of Enz USA Inc. are 30 days net from the date of invoice. Any exception from this rule requires a written agreement. The acceptance of all purchase orders is subject to the approval of the credit Department of ENZ USA Inc. In the case of payments delayed 45 days or more from the date of the invoice, any further shipment will be COD until the total balance is paid off. In the case of payments delayed 60 days or more from the date of the invoice, the shipment of further merchandise is withheld until all invoices are paid down to 45 days. A finance charge of .05% per day will be added to all unpaid invoices past the net 30 days term (18% p.a.).

5. Billing or Shipping Errors

Billing or shipping errors and disputed invoices must be brought to the attention of Enz USA, within 10 days of the invoice date. Credits for returned merchandise may be used against further purchases. All Claims for shipping errors and shortages must be reported immediately.

6. Returns for Credit

No returned goods are accepted without a Returned Goods Authorization (RGA) number. At our discretion, Enz USA reserves the right to apply a 15% re-stocking charge. Merchandise returned must be identified as to original invoice number and date purchased. All return shipments are at the cost and risk of the buyer. Any credit is subject to inspection for damage and wear of the returned good. Worn or obsolete goods are not accepted for return for credit.

7. Special Orders

Once an order for special customs work has been placed in production, no cancellation will be accepted. A premium of 25% will be charged on special orders. All deposits are non-refundable.

8. Express Orders

- Orders called in after 2:30 p.m. Central Time will be shipped the following day.
- Orders called in after 3:30 p.m. Central Time for same day shipment are subject to a \$25 - surcharge.

9. Minimum Purchase Order

The minimum order amount is \$50 - net invoice.

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