

2022



enz®



 SWISS  
MADE

enz® 





## Legende

	Connecting thread (inch)
	Application range (inch)
	min. G/Min. at 1450 psi   min. G/Min. at 14'500/22'000 psi
	Rotating jet
	Thrust jet
	Front jet
	Jet angle backward
	Jet angle forward
	Dimensions [inch]
	Weight [lb.]
	Recycling
	Maximum pressure (psi)



# General terms of sale and delivery

## General Information

enz® usa inc. / enz® technik ag 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® products

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

The enz® 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® tools have an outstanding durability. Our products are covered by International patents.

## Warranty / Safety / Liability

enz® Pipe and Channel 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 nozzles 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. And 2 years from the date of purchase when used with recycled 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 NOZZLES**

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**ROTATING NOZZLES**

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**WIRE ROPE AND CHAIN SCRAPERS**

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**CUTTERS**

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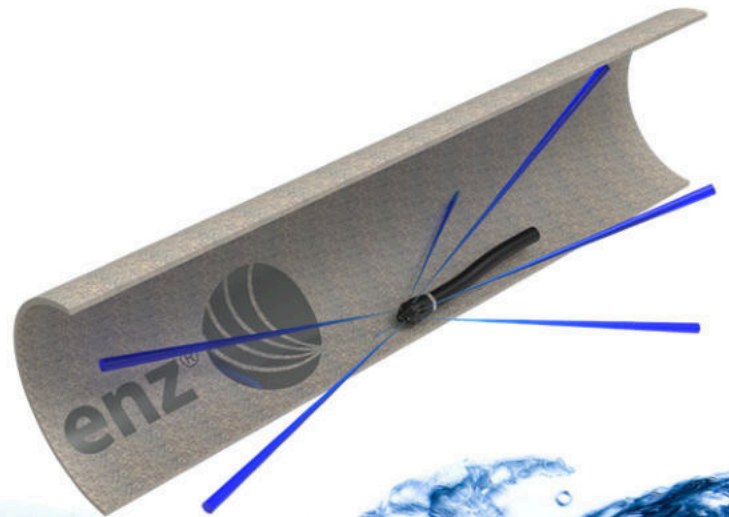


## Standard cleaning nozzles

Made of wear-resistant, hardened steel, provided with front jet insert and blind plug (interchangeable). Angle of jet backwards, sturdy wall thickness, long service life and a minimum of wear and tear. All nozzles from art.30.038 onward are provided with steel, ceramic lined 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



**Silverline standard cleaning nozzles 1/8" NPT**



30.012NSL10	1/8" NPT	0.8 - 4	2.6	4 x 0.75	-	25°		0.5 x 0.7	0.02	-	5,000
30.012NSL10F	1/8" NPT	0.8 - 4	2.9	4 x 0.75	1 x 0.60	25°	0°	0.5 x 0.7	0.02	-	5,000
30.012NSL15	1/8" NPT	0.8 - 4	4	4 x 0.90	-	25°		0.5 x 0.7	0.02	-	5,000
30.012NSL15F	1/8" NPT	0.8 - 4	4.2	4 x 0.90	1 x 0.60	25°	0°	0.5 x 0.7	0.02	-	5,000

**Silverline standard cleaning nozzles 1/4" NPT**



30.0253NSL10F	1/4" NPT	1.2 - 4.3	2.6	3 x 0.80	1 x 0.80	25°	0°	0.7 x 0.8	0.04	5,000
30.0253NSL15	1/4" NPT	1.2 - 4.3	4	3 x 1.10	-	25°	-	0.7 x 0.8	0.04	5,000
30.0253NSL15F	1/4" NPT	1.2 - 4.3	4	3 x 1.10	1 x 0.80	25°	0°	0.7 x 0.8	0.04	5,000
30.0253NSL20F	1/4" NPT	1.2 - 4.3	5.3	3 x 1.20	1 x 0.80	25°	0°	0.7 x 0.8	0.04	5,000
30.0256NSL30	1/4" NPT	1.2 - 4.3	8	6 x 1.10	-	25°	-	0.7 x 0.8	0.04	5,000
30.0256NSL30F	1/4" NPT	1.2 - 4.3	8	6 x 1.00	1 x 0.80	25°	0°	0.7 x 0.8	0.04	5,000

**Silverline standard cleaning nozzles 3/8" NPT**



30.038NSL40	3/8" NPT	1.6 - 5.9	11	6 x 1.30	-	25°	-	1.0 x 0.9	0.15	5,000
30.038NSL60	3/8" NPT	2 - 6	16	6 x 1.50	-	25°	-	1.0 x 0.9	0.13	5,000

**Silverline standard cleaning nozzles 1/2"**



30.050SL40	1/2"	2 - 8	10.6	6 x 1.2	-	25°	-	1.2 x 1.1	0.13		5,075
30.050SL40F	1/2"	2 - 8	13	6 x 1.2	1 x 1.1	25°	-	1.2 x 1.1	0.13		5,075
30.050SL70	1/2"	2 - 8	18	6 x 1.6	-	25°	-	1.2 x 1.1	0.13		5,075
30.050SL70F	1/2"	2 - 8	21	6 x 1.6	1 x 1.4	25°	-	1.2 x 1.1	0.13		5,075
35.050SL40	1/2"	2 - 8	10.6	6 x 1.1	3 x 1.00	25°	15°	1.2 x 1.1	0.22		5,075
35.050SL70	1/2"	2 - 8	18	6 x 1.4	4 x 1.1	25°	15°	1.2 x 1.1	0.22		5,075

**Egg nozzle 1/2"**



30.050EI	1/2"	2 - 8	8	6 x M6	1 x M6	25°	-	1.6 x 1.9	0.55	ok	5000
35.050EI	1/2"	2 - 8	13	6 x M6	4 x M4	25°	15°	1.6 x 1.9	0.55	ok	5000

**Standard cleaning nozzles 3/8" NPT - 1 1/4"**



30.038N	3/8" NPT	2 - 6	3	6 x M4	1 x M4	30°	-	1.0 x 1.5	0.15	ok	5,000
30.050	1/2"	2 - 8	8	6 x M6	1 x M6	30°	-	1.2 x 1.9	0.26	ok	5000
30.075	3/4"	2 - 10	13	6 x M6	1 x M6	30°	-	1.5 x 2.4	0.53	ok	5000
30.100	1"	6 - 14	32	8 x M8	1 x M8	30°	-	2.4 x 3.3	1.55	ok	3600
30.100SP20	1"	6 - 14	32	8 x M8	1 x M8	20°	-	2.4 x 3.3	1.55	ok	3600
30.125	1 1/4"	8 - 16	53	8 x M8	1 x M8	30°	-	2.7 x 4.1	3.02	ok	3600
35.038N	3/8" NPT	2 - 6	3	6 x M4	4 x M4	30°	15°	1.0 x 1.6	0.15	ok	5,000
35.050	1/2"	2 - 8	13	6 x M6	3 x M4, 1 x M6	30°	15°	1.2 x 1.9	0.26	ok	5000
35.100	1"	6 - 14	32	8 x M8	4 x M8	30°	15°	2.4 x 3.3	1.55	ok	3600

## Grenade-bomb

This enz® jet nozzle is made of wear-resistant hardened steel. The "grenade" and the "bomb" are joined in the same nozzles. Different jet angles perform together strong traction and effective cleaning. The high efficiency is reached by appropriate water guidance.

### Applications











- For removal of loose rubble stone, gravel and soft deposits
- For a previous cleaning before the use of chain flail head or cutter















**Grenade-bombs 1/4" NPT**



										
40.025N-10	1/4" NPT	1 - 4	3	4 x 0.70	1 x M4	20°	1.0 x 1.6	0.22		5,000
40.025N-30	1/4" NPT	1 - 4	8	4 x 1.30	1 x M4	20°	1.0 x 1.6	0.22		5,000
40.025N-40	1/4" NPT	1 - 4	10	4 x 1.45	1 x M4	20°	1.0 x 1.6	0.22		5,000











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



										
40.038N	3/8" NPT	2 - 4	3	6 x M6	1 x M6	25°	1.5 x 3.2	1.15	ok	5,000
40.050	1/2"	2 - 6	8	6 x M8	1 x M8	25°	1.9 x 3.5	1.89	ok	7,200
40.075A	1/2"	3 - 8	13	8 x M8	1 x M8	10° + 30°	2.3 x 4.6	3.37	ok	5,000
40.075B	3/4"	3 - 8	26	8 x M8	1 x M8	10° + 30°	2.3 x 4.6	3.37	ok	5,000











**Grenade-bombs 1"**



										
40.100A	1"	5 - 12	40	10 x M10	1 x M10	10° + 30°	3.1 x 6.9	10.80	ok	3,600
40.100A-SP10	1"	5 - 12	40	10 x M10	1 x M10	10°	3.1 x 6.9	10.80	ok	3,600
40.100B	1"	6 - 16	40	10 x M10	1 x M10	10° + 30°	3.9 x 8.1	17.64	ok	3,600



**Grenade-bombs 1 1/4"**



										
40.100C	1 1/4"	6 - 16	50	10 x M10	1 x M10	10° + 30°	3.9 x 7.7	17.64	ok	3,600
40.125A	1 1/4"	12 - 24	79	10 x M10	1 x M10	10° + 30°	4.3 x 8.7	23.15	ok	3,600

**Accessory and wearing parts grenade-bombs**



			∅	📦
40.1004A		Cage with skids (for grenade-bombs 10.3 lbs)	7 - 12	2.91
40.1004B		Cage with skids (for grenade-bombs 17.8 lbs)	8 - 16	3.35

## 360° Grenade-bombs

This enz® jet nozzle is made of wear-resistant hardened steel. The grenade and the bomb are joined in the same nozzles. Different jet angles perform together strong traction and effective cleaning. The high efficiency is reached by appropriate water guidance.

For optimal all-around cleaning all nozzles are equipped with fan-jet ceramic-steel inserts.











### Applications

- For removal of loose rubble stone, gravel and soft deposits
- For a previous cleaning before the use of chain flail head or cutter
- For an all-around cleaning













**360° Grenade-bombs 1/2" - 3/4"**



										
42.050	1/2"	2 - 6	7.9	6 x M8	1 x M8	25°	1.9 x 3.5	1.89	ok	7,200
42.075A	1/2"	3 - 8	13	8 x M8	1 x M8	10° + 30°	2.3 x 4.6	3.37	ok	5,000
42.075B	3/4"	3 - 8	26	8 x M8	1 x M8	10° + 30°	2.3 x 4.6	3.37	ok	5,000

**360° Grenade-bombs 1" - 1 1/4"**



										
42.100A	1"	6 - 12	50	12 x M10	1 x M10	10° + 30°	3.1 x 6.9	10.2	ok	3,600
42.100B-12	1"	6 - 16	50	12 x M10	1 x M10	10° + 45°	3.9 x 7.2	17	ok	3,600
42.100B-18	1"	6 - 16	80	18 x M10	1 x M10	10° + 45°	3.9 x 7.2	17	ok	3,600
42.100C-12	1 1/4"	6 - 16	50	12 x M10	1 x M10	10° + 45°	3.9 x 8.1	17	ok	3,600
42.100C-18	1 1/4"	6 - 16	80	18 x M10	1 x M10	10° + 45°	3.9 x 8.1	17	ok	3,600
42.125A	1 1/4"	12 - 24	80	10 x M10	1 x M10	10° + 30°	4.3 x 8.7	23.15	ok	3,600

## Drainage channel nozzles

The enz® drainage channel nozzle is suited for cleaning drainage gutters and systems, for example along motorways, in pedestrian zones or parkings. The 0° jets deploy all the cleaning power to the rear, thus preventing contamination of the environment or passing vehicles.











Advantages of the drainage channel nozzle

- No discharge of water from drainage channels
- Optimal flushing performance
- No cleaning of the area after the fact



**Drainage channel nozzles 1/2" - 1 1/4"**



										
40.050-SPO	1/2"	3 - 8	13	6 x M8	1 x M8	0°	1.9 x 3.5	1.75	ok	7,250
40.075A-SPO	1/2"	3 - 8	13	8 x M8	1 x M8	0°	2.3 x 4.6	3.3	ok	5,000
40.075B-SPO	3/4"	3 - 8	26	8 x M8	1 x M8	0°	2.3 x 4.6	3.3	ok	5,000
40.100A-SPO	1"	6 - 12	40	10 x M10	1 x M10	0°	3.1 x 6.9	10.4	ok	3,625
40.125A-SPO	1 1/4"	12 - 34	73	10 x M10	1 x M10	0°	4.3 x 8.7	23.15	ok	3,625

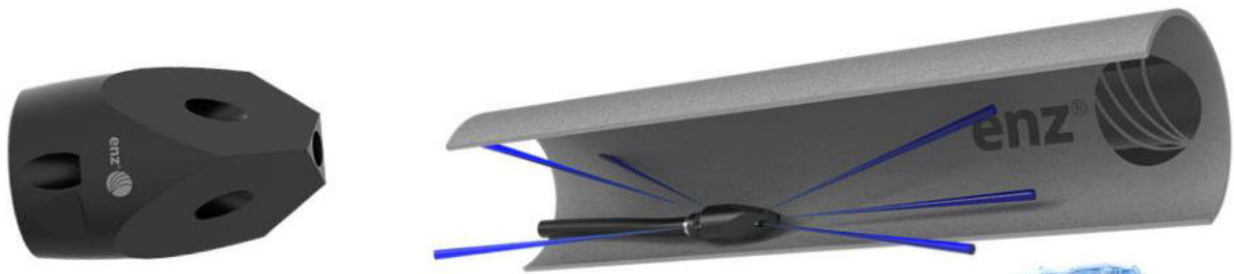


## Chisel point nozzles

Concentrated powerful advance by means of 4 front jet nozzles. The sharp edges cut, break and penetrate through every kind of blockage. Made of wear-resistant, hardened steel. All nozzles from art. 60.038 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

- Penetrating of completely clogged pipes
- Opening of interlaced roots
- Opening of frozen pipelines














## Silverline chisel point nozzles 1/8" NPT - 3/4"



										
60.012NSL15	1/8" NPT	1 - 2	4	3 x 0.95	4 x 0.50	25°	15°	0.6 x 1.0	0.04	5,075
60.025NSL15	1/4" NPT	1 - 2	4	3 x 0.90	4 x 0.60	25°	15°	0.8 x 1.3	0.06	5,075
60.050SL100	1/2"	2 - 6	26	3 x 2.40	4 x 1.10	25°	15°	1.3 x 2.2	0.31	5,075
60.050SL40	1/2"	2 - 6	11	3 x 1.50	4 x 0.80	25°	15°	1.3 x 2.2	0.31	5,075
60.050SL70	1/2"	2 - 6	18	3 x 1.80	4 x 0.90	25°	15°	1.3 x 2.2	0.31	5,075












## Chisel point nozzles 3/8" NPT - 1 1/4"



											
60.038N	3/8" NPT	1.1 - 3.9	7.9	3 x M4	4 x M4	20°	15°	1 x 1.7	0.18	ok	5,000
60.050	1/2"	2 - 6	13	3 x M6	4 x M4	25°	15°	1.3 x 2.2	0.31	ok	5,000
60.075	3/4"	2 - 10	26	3 x M6	4 x M4	25°	15°	1.5 x 3.2	0.71	ok	5,075
60.100	1"	4 - 12	40	6 x M6	4 x M6	25°	15°	1.9 x 3.5	1.21	ok	3,625
60.100L	1"	6 - 16	53	6 x M10	4 x M8	25°	15°	2.7 x 7.4	5.95	ok	3,625
60.100L80	1"	6 - 20	53	6 x M10	4 x M8	10°	15°	3.1 x 8.6	10.32	ok	3,625
60.125	1 1/4"	6 - 16	53	6 x M6	4 x M6	20°	15°	2.3 x 3.9	17.6	ok	3,600
60.125L	1 1/4"	8 - 32	79	6 x M10	4 x M8	10°	15°	3.9 x 10.2	18.52	ok	3,625

## Chisel point nozzles with centre spire 1/2" - 1 1/4"









											
61.050	1/2"	2 - 6	13	3 x M6	3 x M4	25°	15°	1.3 x 3.2	0.32	ok	5,075
61.075	3/4"	2 - 10	26	3 x M6	3 x M4	25°	15°	1.5 x 4.1	0.72	ok	5,075
61.100	1"	4 - 12	40	6 x M6	3 x M6	25°	15°	1.9 x 4.9	1.24	ok	3,625
61.100L	1"	6 - 16	53	6 x M10	3 x M8	25°	15°	2.7 x 8.7	5.96	ok	3,625
61.100L80	1"	6 - 20	53	6 x M10	3 x M8	10°	15°	3.1 x 10.2	10.37	ok	3,625
61.125	1 1/4"	6 - 16	53	6 x M6	3 x M6	20°	15°	2.3 x 5.2	2.07	ok	3,625
61.125L	1 1/4"	8 - 32	79	6 x M10	3 x M8	10°	15°	3.9 x 11.8	18.57	ok	3,625



**Accessory and wearing parts chisel point nozzles**



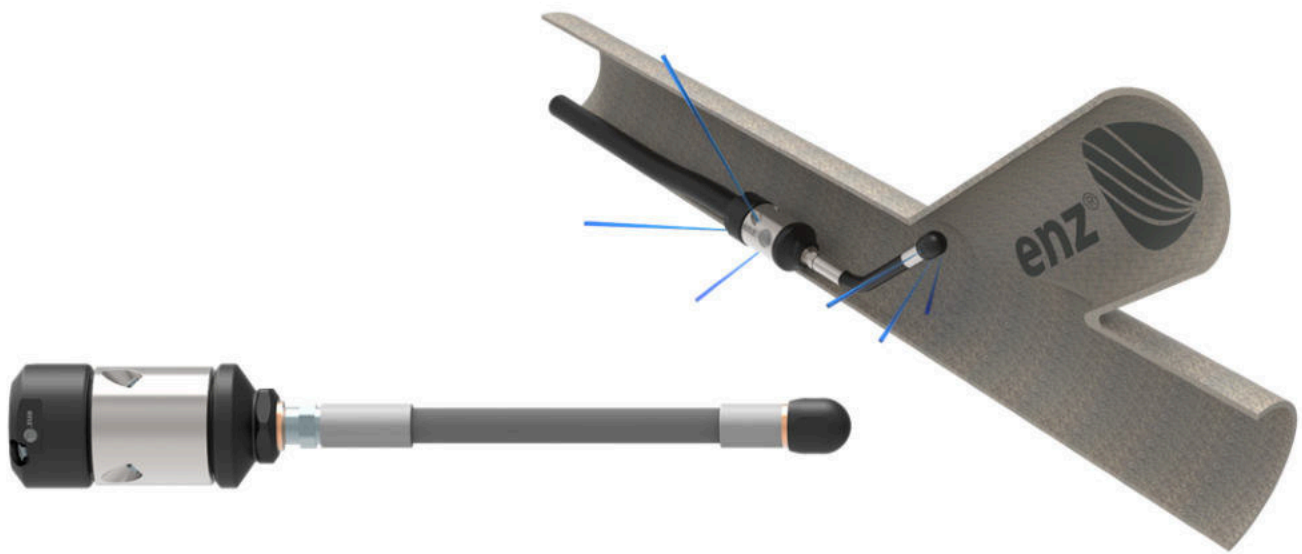
					
0061.0504		Centre spire for Pointed Nozzle 60.050	M4	0.2 x 1.0	0.22
0061.1004		Centre spire for Pointed Nozzle 60.100	M6	0.4 x 1.3	0.22
0061.1254		Centre spire for Pointed Nozzle 60.100L80,	M8	0.4 x 2.0	0.22

## Guiding nozzles

The enz® steering nozzle was specially developed for targeted cleaning of pipe inlets. It is used to search for connections in ground pipes so that, for example, cleaning through a house connection can be avoided. The head nozzle on the flexible hose is used to enter the connection.









### Applications

- For removal of loose rubble stone, gravel and soft deposits











**Guiding nozzles standard 1/2"**



								
17.050-001	1/2"	2.4 - 5.9	13	6 x M8	-	1.89 x 10.51	2.09	5000








**Guiding nozzle rotative 1/2"**



									
17.040A-001	1/2"	3 - 6	11	4 x M6	3 x M6	-	1.7 x 10.4	1.46	5000

**Vibration guiding nozzle 1/2"**



									
17.044AE-001	1/2"	3 - 6	11	4 x M4	3 x M6	-	1.7 x 11.5	1.54	5000

**Accessory and wearing parts guiding nozzles**



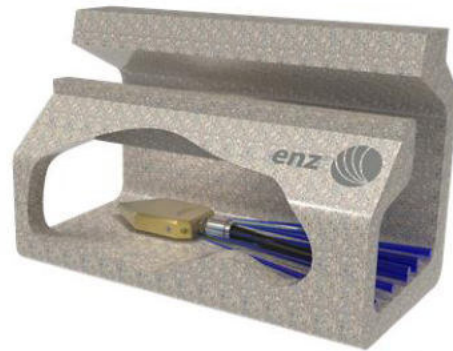
		
95.001	 Steering Set to 17.040A/44AE	0.25

# Flounder

This enz® 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 inserts 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 rubble in flat pipes and channels, e.g. run-off gutters



**Flounder 1/2" - 1 1/4"**



									 max
70.050	1/2"	6 - 10	16	S1: 2 x M8, S2: 2 x M8	S1: 15°, S2: 7.5°	7.7 x 3.5 x 1.4	5.73	ok	3600
70.075	3/4"	8 - 16	26	S1: 2 x M8, S2: 4 x M8	S1: 15°, S2: 0°	7.7 x 3.9 x 2.0	7.06	ok	3600
70.100	1"	12 - 24	53	S1: 2 x M10, S2: 2 x M10, S3: 4 x M10	S1: 15°, S2: 7.5°, S3: 0°	13.4 x 6.3 x 2.2	27.12	ok	3600
70.125	1 1/4"	16 - 32	66	S1: 2 x M10, S2: 4 x M10, S3: 4 x M10	S1: 15°, S2: 7.5°, S3: 0°	15.0 x 7.4 x 2.8	41.89	ok	3600

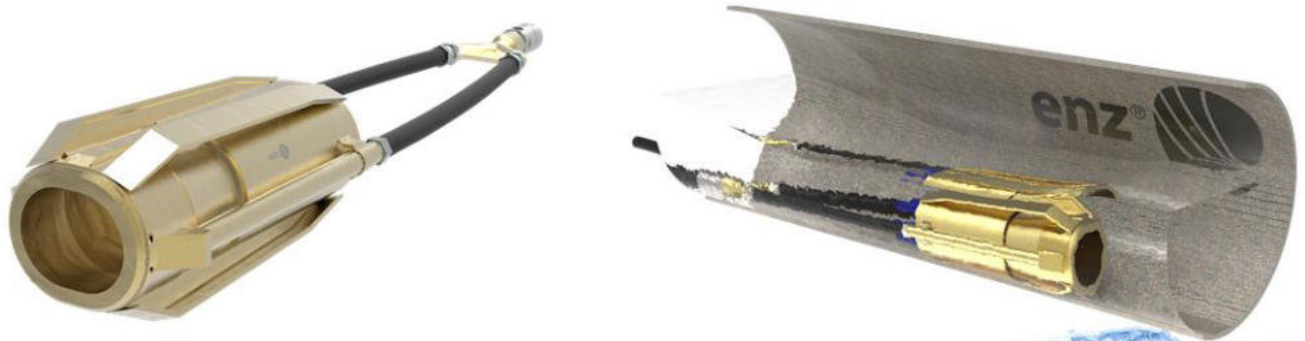


## Ejector nozzles

These enz® tools are outstanding in their enormous flushing capacity. Their main application is cleaning large fully surcharged pipes and drains bigger than Ø 19 inch. 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. In this way 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 1" - 1 1/4"**



80.100	1"	8 - 20	53	6 x M6	11.8 x 6.3 x 4.7	16.31	ok	2,900
80.100A	1"	16 - 59	79	6 x M10	16.0 x 10.2 x 9.8	49.6	ok	2,900
80.125B	1 1/4"	24 - 79	79	10 x M10	18.9 x 11.8 x 9.8	68.34	ok	2,900
80.125D	1 1/4"	39 - 118	160	10 x M10	22.8 x 14.2 x 12.2	100.31	ok	2,900

**Accessory and wearing parts Ejector nozzles**



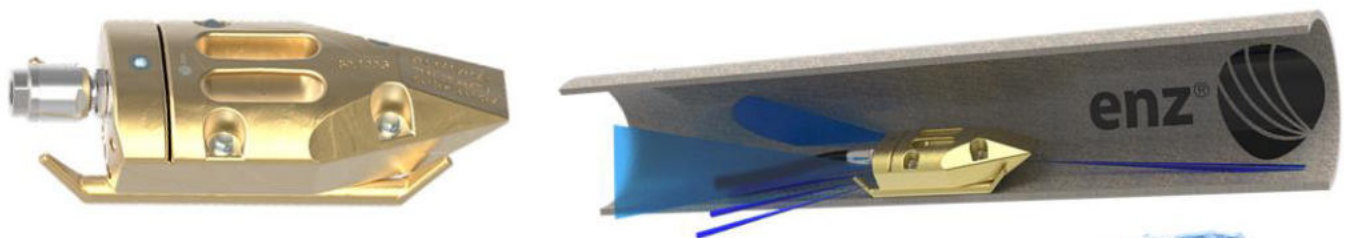
0080.100A02		Y - Connection 1" - 2 x 3/4"	1" - 2 x 3/4"	1.01
0080.125B02		Y - Connection 1 1/4" - 2 x 1"	1 1/4" - 2 x 1"	3.00
0080.10002		Y - Connection 1" - 2 x 1/2"	1" - 2 x 1/2"	0.99
0080.12501		Swivel Joint for 80.125B/D	1 1/4"	3.40
0080.10001		Swivel Joint for 80.100/A	1"	2.09
0080.10003		HP hose 1/2" - for 80.100	1/2"	4.19
0080.100A03		HP hose 3/4" - for 80.100A	3/4"	4.19
0080.125B03		HP hose 1" - for 80.100B/D	1"	4.19

## enz®-Bulldozer

The scraper is used where particularly high flushing capacity and a correspondingly good flushing effect are required. Depending on the design, the tool is suitable for channel diameters between 200 and 2,500 mm. During this process, the scraper does not float. It thus ensures excellent basic cleaning even in channels that have a lot of water passing through them.

Area of application:










- Pipe diameter of 8" - 98.5"
- Cleaning large quantities of deposits
- Cleaning the bottom of a channel










## enz®-Bulldozer 3/4" - 1 1/4"



									
50.075G	3/4"	12 - 20	26	4 x M10, 2 x FanJet M10	1 x M10	15.8 x 8.6 x 9.2	26.46	ok	3,625
50.100G	1"	16- 60	40	6 x M10, 2 x FanJet M10	1 x M10	20.1 x 10.8 x 10.6	56.22	ok	3,625
50.125G	1 1/4"	20 - 100	79	6 x M10, 2 x FanJet M10	1 x M10	25.5 x 12.6 x 11.8	82.67	ok	3,625













## enz®-Bulldozer 1 1/2"





									
50.150	1 1/2"	20 - 177	106	8 x M10, 2 x FanJet M10	1 x M10	27.8 x 11.8 x 6.7	119.05	ok	3,625

## Accessory and wearing parts enz®-Bulldozer

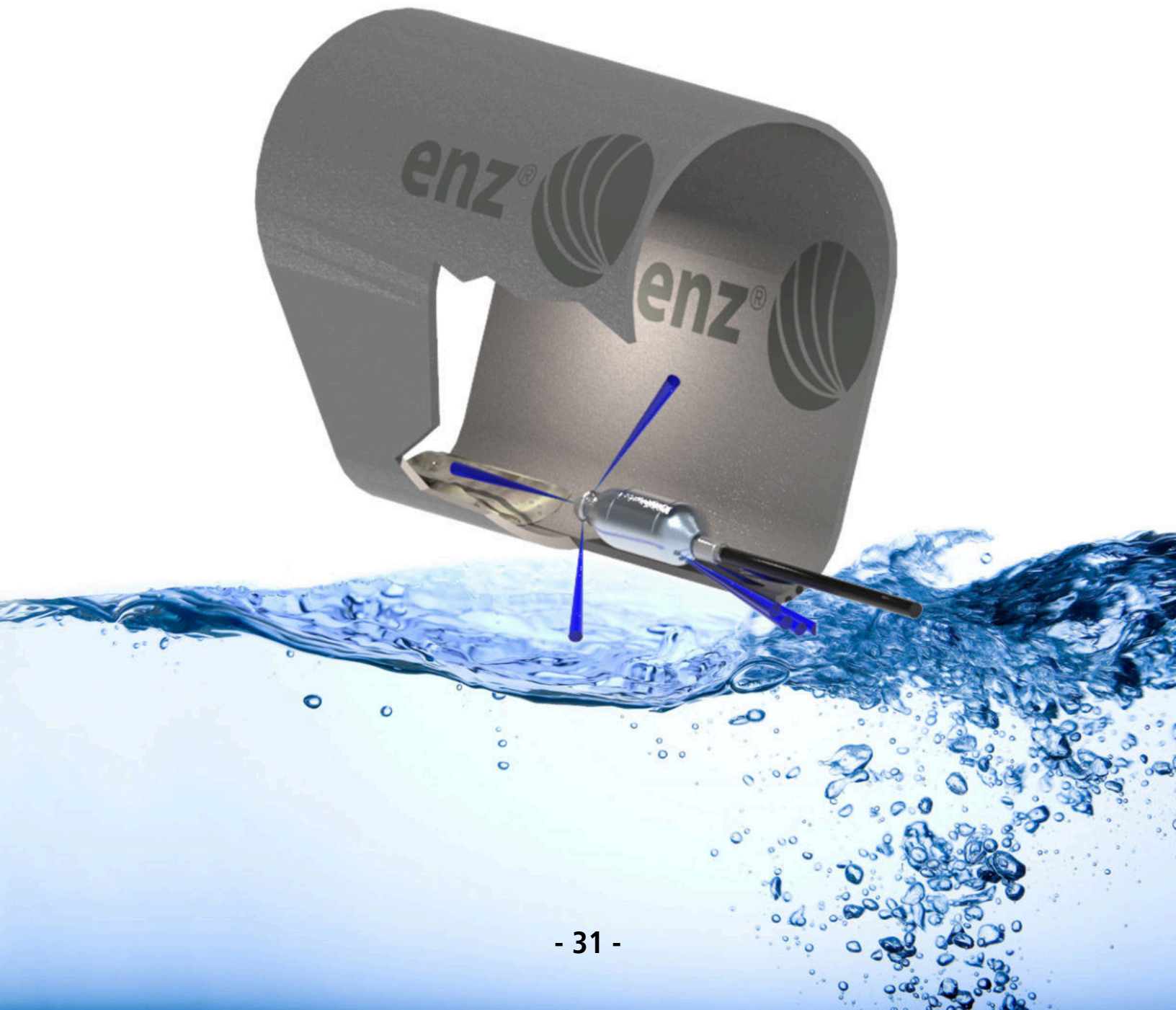


			
0050.15032		Skid for Scraper 1 1/2"	11.60
0050.0753G		Skid for Scraper 3/4"	2.59
0050.1003G		Skid for Scraper 1"	5.95
0050.1253G		Skid for Scraper 1 1/4"	9.68
50.10012G		Enlargement plate with screws for 50.100G	14.55
0050.07510		Bulldozer flat skid 3/4"	13.01
0050.10010G		Bulldozer flat skid 1"	14.33
0050.12510G		Bulldozer flat skid 1 1/4"	29.98
0050.1005G		Roll bar	6.20
	16 - 59.1	11.7 x 10.8 x 9.1	

					
0050.1255G		Roll bar	19.7 - 100	14.3 x 12.6 x 9.3	7.7
0050.0755G		Roll bar	11.9 - 19.7	9.1 x 8.7 x 7.7	5.3








## Pendulum Nozzle

The enz® pendulum nozzle (oval profile bottom cleaner) cleans the bottom surface of large channels very well. This nozzle is especially suitable for the optimum cleaning and transport service in oval profiles. Thanks to the pendulum weight, a swivel joint that is offset from the middle, and water jets that are only directed downwards; stone deposits, debris and sludge can be removed effectively. Harder deposits can also be loosened and removed by using a special head with front jet. The heavy weight ensures that even with high water volumes, the nozzle does not fly up in the pipe. Thus, demonstrating its' cleaning performance.



**Pendulum Nozzle**



							
45.125B	1"	16 - 47	40	23 x 6.3	68	ok	2900
45.125C	1 1/4"	16 - 47	40	23 x 6.3	68	ok	2900





## RGS nozzles

The radial rotating nozzles enz® 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 vertical borings etc., will be cleaned. The moving part of the enz® nozzle rotates at a limited speed. These water jets hit the pipe wall directly with great impact, striking every corner.










### Applications

- Cleaning of drain pipes
- Cleaning of lateral pipes
- Removal of solid deposits



**RGS nozzles**



									
01.028N	1/4" NPT	2 - 4	5	4 x M4	3 x M4	*	1.1 x 2.2	0.44	5,075
01.040	1/2"	3 - 6	11	4 x M6	3 x M6	*	1.6 x 3.2	1.24	5,075
01.050A	1/2"	4 - 8	18	4 x M6	3 x M6	*	2.0 x 3.9	2.43	5,075
01.050B	3/4"	4 - 8	18	4 x M6	3 x M6	*	2.0 x 3.9	2.43	3,625
01.060	1"	4 - 12	26	4 x M8	3 x M8	*	2.4 x 4.4	3.53	3,625
01.100A	1"	8 - 24	53	4 x M10	3 x M10	*	2.9 x 7.1	16.31	3,625
01.100B	1 1/4"	8 - 24	53	4 x M10	3 x M10	*	3.9 x 7.1	16.31	3,625

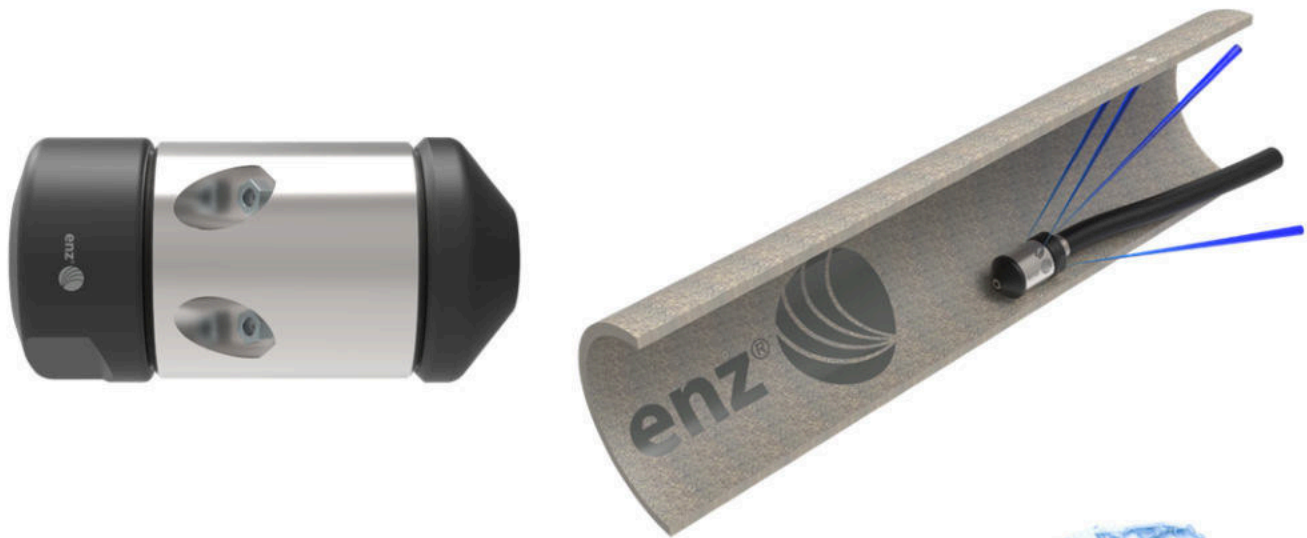


## HRH nozzles

The semi-radial rotating enz® nozzles with their 4 retroacting cutting-jets at an angle of approx. 45° cause simultaneously the cleaning procedure and the thrust for the forward move of the tool i.e. the jets combine rotation and thrust in one function resulting in a low water consumption. With sufficient water capacity, optional thrust jets can facilitate upward cleaning.

### Applications

- Cleaning of pipes before TV-recordings
- To remove mineral deposits in pipes
- To remove roots up to Ø 5 mm



**HRH nozzles 1/8" NPT - 1/4" NPT drilled**



02.016A08N	1/8" NPT	2 x 0.8 - 2 x 0.7	-	*	0.07
02.016A13N	1/8" NPT	2 x 1.3 - 2 x 1.1	-	*	0.07
02.016B08N	1/4" NPT	2 x 0.8 - 2 x 0.7	-	*	0.07
02.016B13N	1/4" NPT	2 x 1.3 - 2 x 1.1	-	*	0.07

**HRH nozzles 1/4" NPT - 3/4"**



02.022BN	1/4" NPT	1 - 4	3	45°: 4 x M4	-	-	0.9 x 1.6	0.2	5,000
02.028AN	1/4" NPT	2 - 4	2	4 x M4	-	*	1.1 x 2.2	0.45	5,075
02.028ASN	1/4" NPT	2 - 4	3	4 x M4	3 x M4	*	1.1 x 2.2	0.45	5,075
02.028BN	3/8" NPT	2 - 4	2	4 x M4	-	*	1.1 x 2.2	0.45	5,075
02.040A	1/2"	3 - 6	4	4 x M6	-	-	1.6 x 3.2	1.24	5,075
02.040AS	1/2"	3 - 6	9	4 x M6	3 x M6	-	1.6 x 3.2	1.24	5,075
02.040B	3/4"	3 - 6	4	4 x M6	-	-	1.6 x 3.2	1.24	3,625
02.050A	1/2"	4 - 8	9	4 x M6	-	-	2.0 x 3.9	2.43	5,075
02.050AS	1/2"	4 - 8	9	4 x M6	3 x M6	-	2.0 x 3.9	2.43	5,075
02.050B	3/4"	4 - 8	8	4 x M6	-	-	2.0 x 3.9	2.43	3,625
02.050BS	3/4"	4 - 8	9	4 x M6	3 x M6	-	2.0 x 3.9	2.43	3,625

**HRH nozzles 1" - 1 1/4"**



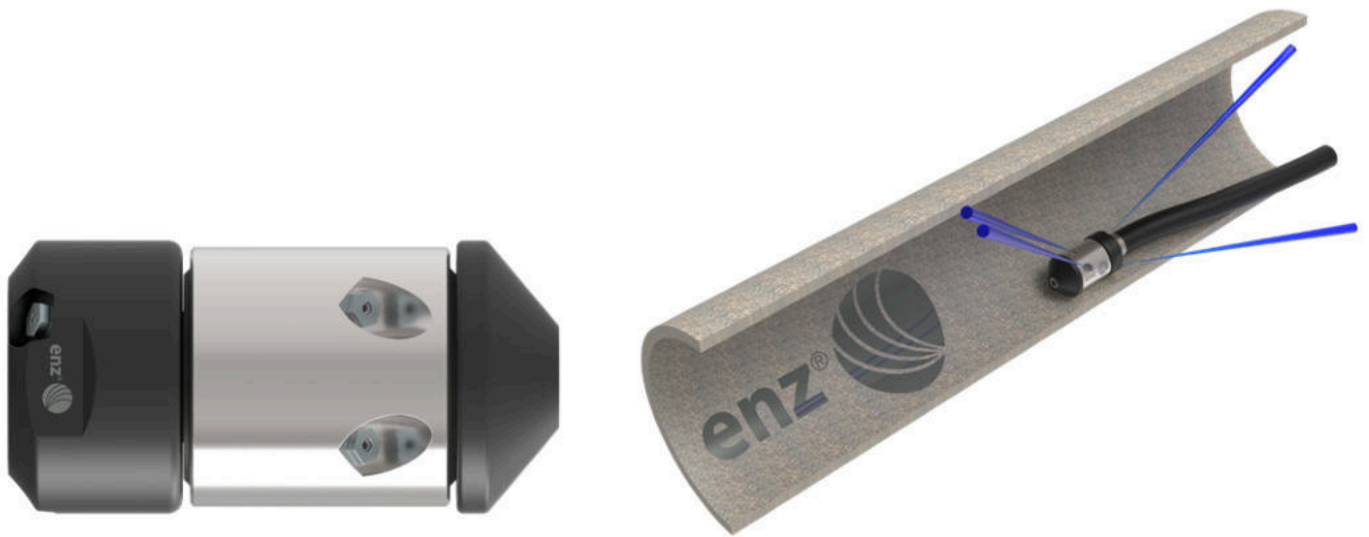
02.060	1"	4 - 12	16	4 x M8	3 x M8	*	2.4 x 4.4	3.53	3,625
02.100A	1"	8 - 24	53	4 x M10	3 x M10	*	2.9 x 7.1	16.31	3,625
02.100B	1 1/4"	8 - 24	53	4 x M10	3 x M10	*	3.9 x 7.1	16.31	3,625

## HRV nozzles

enz® nozzles with forward impact angle of approx. 45° on the pipe wall as well as a front jet (on request) and 3 retro-thrust jets cause a cork-screw-like advance through the clogged pipe. While the front nozzle loosens and the semi-radial nozzles disintegrate the residues, the thrust nozzles are driving the nozzle head forwards and simultaneously pushing the waste material backwards.










### Applications

- Core-flushing of the steel pipes during hydraulic thrust-boring
- Cleaning of house connecting pipework from inside to the drain system
- Removal of ice in manholes



HRV nozzles 1/4" NPT - 1 1/4"



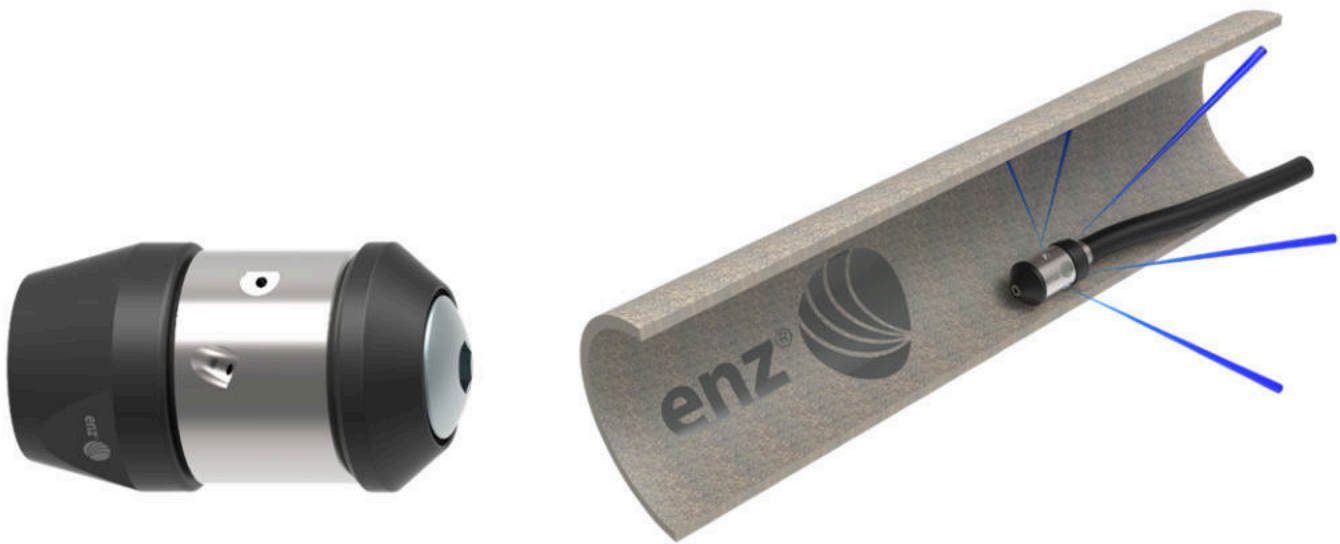
									
03.028N	1/4" NPT	2 - 4	8	4 x M4	3 x M4	*	1.1 x 2.2	0.45	5,075
03.040	1/2"	3 - 6	13	4 x M6	3 x M6	*	1.6 x 3.2	1.24	5,075
03.050A	1/2"	4 - 8	18	4 x M6	3 x M6	*	2.0 x 3.9	2.43	5,075
03.050B	3/4"	4 - 8	18	4 x M6	3 x M6	*	2.0 x 3.9	2.43	3,625
03.060	1"	4 - 12	26	4 x M8	3 x M8	*	2.4 x 4.4	3.53	3,625
03.100A	1"	8 - 24	53	4 x M10	3 x M10	*	3.9 x 7.1	16.31	3,625
03.100B	1 1/4"	8 - 24	53	4 x M10	3 x M10	*	3.9 x 7.1	16.31	3,625

## KBR nozzles

This allround enz® combination nozzle is excellent for flushing out pipes as well as adjoining lateral pipes at any angle. It only requires a very small pump capacity and uses 2 radial jets at a 90° angle to the pipe wall and 2 semi-radial retro-jets at a 45° angle. This combination allows both, a forward thrust of the nozzle and simultaneously, a flushing away of the waste material.

### Applications









- To remove organic deposits
- To clean heat exchangers
- Cleaning of fat deposits













## KBR nozzles 1/8" NPT drilled



								
04.012B05N	1/8" NPT	0.5 - 1	1.6	4 x 0.5		0.5 x 1.0	0.03	5,000
04.012B06N	1/8" NPT	0.5 - 1	1.8	4 x 0.6		0.5 x 1.0	0.03	5,000
04.012B07N	1/8" NPT	0.5 - 1	2.4	4 x 0.7		0.5 x 1.0	0.03	5,000
04.012B09N	1/8" NPT	0.5 - 1	3.2	4 x 0.9		0.5 x 1.0	0.03	5,000
04.012B12N	1/8" NPT	0.5 - 1	4.2	4 x 1.2		0.5 x 1.0	0.03	5,000
04.016A07N	1/8" NPT	1 - 2	3	4 x 0.7	-	0.6 x 1.2	0.07	5,075
04.016A08N	1/8" NPT	1 - 2	4	4 x 0.80	-	0.6 x 1.2	0.07	5,075
04.016A09N	1/8" NPT	1 - 2	4.5	4 x 0.90	-	0.6 x 1.2	0.07	5,075
04.016A10N	1/8" NPT	1 - 2	5.5	4 x 1.00	-	0.6 x 1.2	0.07	5,075
04.016A11N	1/8" NPT	1 - 2	7	4 x 1.10	-	0.6 x 1.2	0.07	5,075

## KBR nozzles 1/4" NPT drilled



								
04.016B04N	1/4" NPT	1 - 2	1.5	4 x 0.40	-	0.6 x 1.2	0.07	5,075
04.016B07N	1/4" NPT	1 - 2	3	4 x 0.70	-	0.6 x 1.2	0.07	5,075
04.016B08N	1/4" NPT	1 - 2	3.5	4 x 0.80	-	0.6 x 1.2	0.07	5,075
04.016B09N	1/4" NPT	1 - 2	4.5	4 x 0.90	-	0.6 x 1.2	0.07	5,075
04.016B10N	1/4" NPT	1 - 2	5.5	4 x 1.00	-	0.6 x 1.2	0.07	5,075
04.016B11N	1/4" NPT	1 - 2	6.5	4 x 1.10	-	0.6 x 1.2	0.07	5,075
04.016BS07N	1/4" NPT	1 - 2	6	4 x 0.70	3 x 0.80	-	0.6 x 1.2	0.05
04.016BS08N	1/4" NPT	1 - 2	6	4 x 0.80	3 x 0.80	-	0.6 x 1.2	0.05










## KBR nozzles 1/4" NPT



					
04.028AN	1/4" NPT	4 x M4	-	*	0.44
04.028ASN	1/4" NPT	4 x M4	3 x M4	-	0.44










**KBR nozzles 3/8" NPT**



									
04.028B	3/8"	1 - 4	3	4 x M4	-	*	1.1 x 2.2	0.44	5,075
04.028BN	3/8" NPT	1 - 4	3	4 x M4	-	*	1.1 x 2.2	0.44	5,075










**KBR nozzles 1/2"**



									
04.040A	1/2"	3 - 6	5	4 x M6	-	-	1.6 x 3.2	1.2	5,075
04.040AS	1/2"	3 - 6	11	4 x M6	3 x M6	-	1.6 x 3.2	1.2	5,075
04.050A	1/2"	4 - 8	18	4 x M6	-	-	2.0 x 3.9	2.4	5,075
04.050AS	1/2"	4 - 8	18	4 x M6	3 x M6	-	2.0 x 3.9	2.4	5,075










**KBR nozzles 3/4"**



									
04.040B	3/4"	3 - 6	5	4 x M6	-	-	1.6 x 3.2	1.19	3,625
04.050B	3/4"	4 - 8	18	4 x M6	-	-	2.0 x 3.9	2.4	3,625
04.050BS	3/4"	4 - 8	18	4 x M6	3 x M6	-	2.0 x 3.9	2.4	3,625

**KBR nozzles 1" - 1 1/4"**



									
04.060	1"	4 - 12	21	4 x M8	3 x M8	-	2.4 x 4.4	3.53	3,625
04.100A	1"	8 - 24	53	4 x M10	3 x M10	-	3.9 x 6.9	16.09	3,625
04.100B	1 1/4"	8 - 24	53	4 x M10	3 x M10	-	3.9 x 6.9	16.09	3,625



## KBRV nozzles

The nozzle enz® 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 plastic deposits
- To clean heat exchangers
- Cleaning of fat deposits
- Flushing of the pipes from the house toward the main line












## KBRV nozzles 1/8" - 1/4"



									
04.016AV07N	1/8" NPT	0.7 - 2.4	1.5	90°: 2 x 0.70, 45°: 2 x 0.70		*	0.6 x 1.2	0.06	5,000
04.016AV08N	1/8" NPT	0.7 - 2.4	3	90°: 2 x 0.80, 45°: 2 x 0.80		*	0.6 x 1.2	0.06	5,000
04.016AV09N	1/8" NPT	0.7 - 2.4	4	90°: 2 x 0.90, 45°: 2 x 0.90		*	0.6 x 1.2	0.06	5,000
04.016AV10N	1/8" NPT	0.7 - 2.4	4.5	90°: 2 x 1.00, 45°: 2 x 1.00		*	0.6 x 1.2	0.06	5,000
04.016AV11N	1/8" NPT	0.7 - 2.4	6.5	90°: 2 x 1.10, 45°: 2 x 1.10		*	0.6 x 1.2	0.06	5,000
04.016BV07N	1/4" NPT	0.7 - 2.4	1.5	90°: 2 x 0.70, 45°: 2 x 0.70	-	*	0.6 x 1.2	0.06	5,000
04.016BV08N	1/4" NPT	0.7 - 2.4	3	90°: 2 x 0.80, 45°: 2 x 0.80	-	*	0.6 x 1.2	0.06	5,000
04.016BV09N	1/4" NPT	0.7 - 2.4	4	90°: 2 x 0.90, 45°: 2 x 0.90	-	*	0.6 x 1.2	0.06	5,000
04.016BV10N	1/4" NPT	0.7 - 2.4	4.5	90°: 2 x 1.00, 45°: 2 x 1.00	-	*	0.6 x 1.2	0.06	5,000
04.016BV11N	1/4" NPT	0.7 - 2.4	6.5	90°: 2 x 1.10, 45°: 2 x 1.10	-	*	0.6 x 1.2	0.06	5,000

## KBRV nozzles 1/4" - 1 1/4"



									
04.028AVN	1/4" NPT	1.2 - 3.9	5	90°: 2 x M4, 45°: 2 x M4	3 x M4	*	1.1 x 2.2	0.45	5,000
04.040AV	1/2"	3 - 6	8	90°: 2 x M6, 45°: 2 x M6	3 x M6	*	1.6 x 3.2	1.19	5,000
04.050AV	1/2"	4 - 8	18	90°: 2 x M6, 45°: 2 x M6	3 x M6	*	2.0 x 3.9	2.43	5,000
04.050BV	3/4"	4 - 8	18	90°: 2 x M6, 45°: 2 x M6	3 x M6	*	2.0 x 3.9	2.43	3,600
04.060V	1"	4 - 12	26	90°: 2 x M8, 45°: 2 x M8	3 x M8	*	2.4 x 4.4	3.53	3,600
04.100AV	1"	8 - 24	53	90°: 2 x M10, 45°: 2 x M10	3 x M10	*	3.9 x 6.9	16.09	3,600
04.100BV	1 1/4"	8 - 24	53	90°: 2 x M10, 45°: 2 x M10	3 x M10	*	3.9 x 6.9	16.09	3,600

# Bulldog

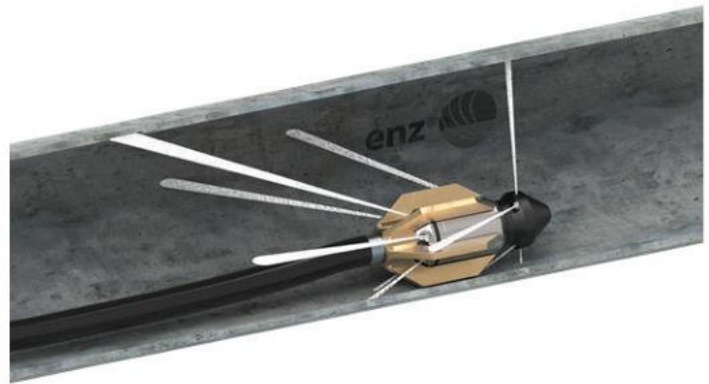
The enz® Bulldog® rotating nozzle has been designed for operation with recycling water and fresh water. The cleverly built sliding bearing allows the use of every kind of recycled water. An integrated oil-free braking system results in a low wear and tear operation and in controlled numbers of rotation. 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 Ø 1mm.

## Characteristics

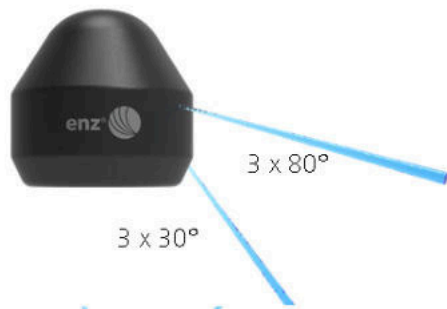
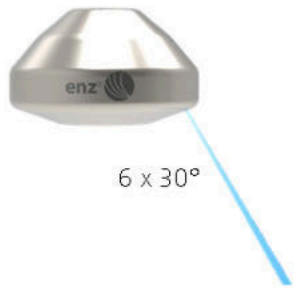
- Easy to handle
- The tool is practically maintenance-free

## Applications

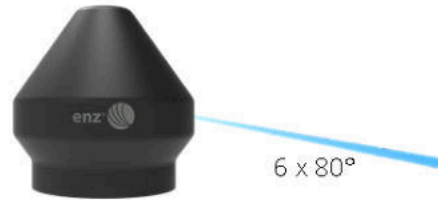
- To remove fat, roots and harder incrustations
- For operation with recycling water and fresh water














40x.037














40x.101















**Bulldog® low flow 1/4" NPT - 1/2"**


											
408.037	1/2"	1.6 - 4	6.5	50°: 2 x M6	-	1 x M6	165°	1.5 x 3.4	0.97	ok	5000
408.037AN	1/4" NPT	1.6 - 4	6.5	50°: 2 x M6	-	1 x M6	170°	1.5 x 3.5	1.06	ok	5000
408.037BN	3/8" NPT	1.6 - 4	6.5	50°: 2 x M6	-	1 x M6	170°	1.5 x 3.5	1.01	ok	5000

**Bulldog® 1/2" - 3/4"**


												
400.037	1/2"	1.6 - 5	13	30°: 6 x M6	-	1 x M6		165°	1.5 x 3.4	0.93	ok	2900
400.037S	1/2"	1.6 - 5	24	30°: 6 x M6	3 x M4	1 x M6	25°	165°	1.5 x 3.4	0.93	ok	2900

**Bulldog® with skid 1/2" - 3/4"**


												
401.037	1/2"	3 - 8	11	80°: 3 x M6	-	-			2.4 x 4.8	1.59	ok	5000
401.037CS	3/4"	3 - 8	16	80°: 3 x M6	3 x M4	-	25°		2.4 x 4.8	1.72	ok	5000
401.037S	1/2"	3 - 8	16	80°: 3 x M6	3 x M4	-	25°		2.4 x 4.8	1.59	ok	5000
404.037	1/2"	3 - 8	13	30°: 3 x M6, 80°: 3 x M6	-	-			2.4 x 4.8	1.59	ok	5000
404.037CS	3/4"	3 - 8	21	30°: 3 x M6, 80°: 3 x M6	3 x M4	-	25°		2.4 x 4.8	1.72	ok	5000
404.037S	1/2"	3 - 8	21	30°: 3 x M6, 80°: 3 x M6	3 x M4	-	25°		2.4 x 4.8	1.59	ok	5000
406.037	1/2"	3 - 8	17	30°: 6 x M6	-	2 x M4		150°/165°	2.4 x 4.8	1.59	ok	5000

406.037CS	3/4"	3 - 8	22	30°: 6 x M6	3 x M4	2 x M4	25°	150°/165°	2.4 x 4.8	1.72	ok	5000
406.037S	1/2"	3 - 8	22	30°: 6 x M6	3 x M4	2 x M4	25°	150°/165°	2.4 x 4.8	1.59	ok	5000

**Accessory and wearing parts Bulldog 1/4" - 3/4"**



00100.037101		Head Bulldog 1/2"	1.3 x 0.8	
00100.037107		Head Bulldog 1/2" 3x2	1.3 x 0.8	0.13
00100.037104		Head KBR Bulldog 37	1.3 x 1.2	0.23
00100.03720		Cage for Bulldog 37	1/2"	3 - 8
00100.03720B		Skid for Bulldog 37	3/4"	3 - 8

**Bulldog® 3/4" - 1"**



400.060A	3/4"	4 - 12	26	6 x M8	6 x M8	1 x M8	15°	2.4 x 6.0	4.63	ok	2,900
400.060B	1"	4 - 12	26	6 x M8	6 x M8	1 x M8	15°	2.4 x 6.0	4.63	ok	2,900
400.080SET100	1"	8 - 16	53	6 x M10	6 x M8	1 x M10	15°	5.9 x 10.2	8.16	ok	2,900
400.080SET150	1"	8 - 16	53	6 x M10	6 x M8	1 x M10	15°	5.9 x 10.2	12.82	ok	2,900
402.080LS100	1"	5 - 16	53	6 x M10	6 x M8	1 x M10	15°	3.9 x 8.7	8.16	ok	2,900
402.080LS150	1"	7 - 16	53	6 x M10	6 x M8	1 x M10	15°	5.9 x 10.2	12.72	ok	2,900
404.080HS100	1"	5 - 16	53	6 x M10	6 x M8	1 x M10	15°	3.9 x 8.7	8.16	ok	2,900
404.080HS150	1"	7 - 16	53	6 x M10	6 x M8	1 x M10	15°	5.9 x 10.2	12.72	ok	2,900



**Accessory and wearing parts Bulldog 3/4" - 1"**



100.060300P		Scissors skid with polyurethane wheels	3/4"	12 - 43	12 - 43 x 30	22.2	5,000
100.060300JP		Scissors skid with polyurethane wheels	3/4"	12 - 43	12 - 43 x 30	21.4	5,000
100.060300JS		Scissors skid with steel wheels + hand lever	3/4"	12 - 43	12 - 43 x 30	20.4	5,000
100.060300J		Scissors skid with hand lever	3/4"	12 - 43	12 - 43 x 30	18.8	5,000
100.060300S		Scissors skid with steel wheels	3/4"	12 - 43	12 - 43 x 30	21.2	5,000
100.060300		Scissors skid	3/4"	12 - 32	12 - 43 x 30	19.6	5,000
00100.0807		Skid guidance for Bulldog 80 / 60	1"	5 - 16	3.9 x 5.3	2.4	
00100.0808		Skid guidance for Bulldog 80/60	1"	7 - 16	5.9 x 7.1	6.3	
00400.0605		Head Bulldog 60			2.0 x 1.7	0.71	
00402.0805-4		Head HRH Bulldog 80			2.5 x 2.1	1.48	
00404.0805-12		Head KBR Bulldog 80			2.5 x 2.1	1.52	
00100.08073		Thrust stop with O-Ring and screw				0.09	

**Bulldog® 1" - 1 1/4"**



400.101A	1"	10 - 24	53	35°: 3 x M10, 90°: 2 x M10	6 x M10	1 x M10	15°	5.1 x 10.2	15.87	ok	2,900
400.101B	1 1/4"	10 - 24	53	35°: 3 x M10, 90°: 2 x M10	6 x M10	1 x M10	15°	5.1 x 10.2	15.87	ok	2,900



401.101AS	1"	10 - 24	53	80°: 6 x M10	6 x M10	1 x M10	15°	5.1 x 10.2	15.87	ok	2,900
401.101BS	1 1/4"	10 - 24	53	80°: 6 x M10	6 x M10	1 x M10	15°	5.1 x 10.2	15.87	ok	2,900
404.101AS	1"	10 - 24	53	80°: 3 x M10, 45°: 3 x M10	6 x M10	1 x M10	15°	5.1 x 10.2	15.87	ok	2,900
404.101BS	1 1/4"	10 - 24	53	80°: 3 x M10, 45°: 3 x M10	6 x M10	1 x M10	15°	5.1 x 10.2	15.87	ok	2,900

**Accessory and wearing parts Bulldog 1" - 1 1/4"**



00400.1014		Head KBR Bulldog 100	3.1 x 3.0	2.7
00400.1015		Head RGS Bulldog 100	3.0 x 3.0	2.4
100.1004RA		Cage 16'	1 1/4" m -> 1" f	16 - 39
100.1004RB		Cage 16"	1 1/4" m -> 1 1/4" f	16 - 39
100.1019A		BULLDOG Skids for cage 400.100 8"	1 1/4" - 1" f	10 - 31
100.1019B		BULLDOG Skids for cage 400.100	1 1/4" - 1 1/4" f	10 - 31
100.10073		Thrust stop with O-Ring and screw		
00100.1017B		Skid guidance 5/4" Bulldog 100 mm	1" - 1 1/4"	8 - 23
00100.1017A		Skid guidance 1" for Bulldog 100mm	1" - 1 1/4"	8 - 23

# Bulldog® Antiblast

Cleaning sewer lines when near home installations brings the risk of pressure equalisation through toilets or stench traps. This comes from negative pressure arising ahead of the nozzle or excess pressure following the nozzle if the installation is not correct or venting is not working properly. It's a very unpleasant surprise when this effect unintentionally turns a toilet into a shower! For this reason, enz® collaborated with a prestigious technical institute to develop and test the Bulldog® Antiblast. The Bulldog® Antiblast prevents this unpleasant side effect and guarantees cleaning in all directions, right down to the pores.












## Advantages

- No pressure equalisation through stench traps or toilets
- Excellent streak-free, all-around cleaning
- Low maintenance, and compatible with recycled water
- Proven design
- Very simple to match to pump capacity
- Scientifically examined and tested



**Bulldog® Antiblast 1" - 1 1/4"**



											
600.080	1"	8 - 16	48	6 x M10	6 x M8	1 x M10	15°	3.9 x 8.1	9.39	ok	1,160
600.100A	1"	10 - 24	53	6 x M10	6 x M10	1 x M10	15°	5.1 x 10.2	16.76	ok	1,160
600.100B	1 1/4"	10 - 24	53	6 x M10	6 x M10	1 x M10	15°	5.1 x 10.2	16.76	ok	1,160

## Manhole nozzles

The enz® manhole nozzles are specifically designed for cleaning shafts and vertical pipes. The forward facing water jets provide circumferential cleaning without stripes. The nozzles are self-centering during operation and do not have protruding parts that can cause the nozzle to become wedged on the access ladder. They clean with a front jet on the floor as well and require little space in the cleaning vehicle. Additional advantages include the manhole nozzles having no water loss from leaks and require practically no maintenance. The arduous cleaning with a hand nozzle or a lance is history with the manhole nozzle. Likewise, conical shafts can be cleaned easily.

### Advantages

- Circumferential cleaning of vertical pipes such as shafts or fountains
- Thorough cleaning even of very deep shafts



**Manhole nozzles 1/2" - 3/4"**



403.060A	1/2"	24 - 59	26	6 x M8	-	2 x M6	2.4 x 6.1	4.56	ok	2,900
403.060B	3/4"	24 - 59	26	6 x M8	-	2 x M6	2.4 x 6.1	4.56	ok	2,900

**Manhole nozzles 1"**



01.100LS	1"	24 - 59	26	4 x M10	-		3.9 x 7.0	16.09	3,625

**Manhole nozzles 1" - 1 1/4"**



401.101A	1"	10 - 79	40	6 x M10	-	1 x M10	15°	5.1 x 10.2	15.87	ok	2,900
401.101B	1 1/4"	10 - 79	40	6 x M10	-	1 x M10	15°	5.1 x 10.2	15.87	ok	2,900

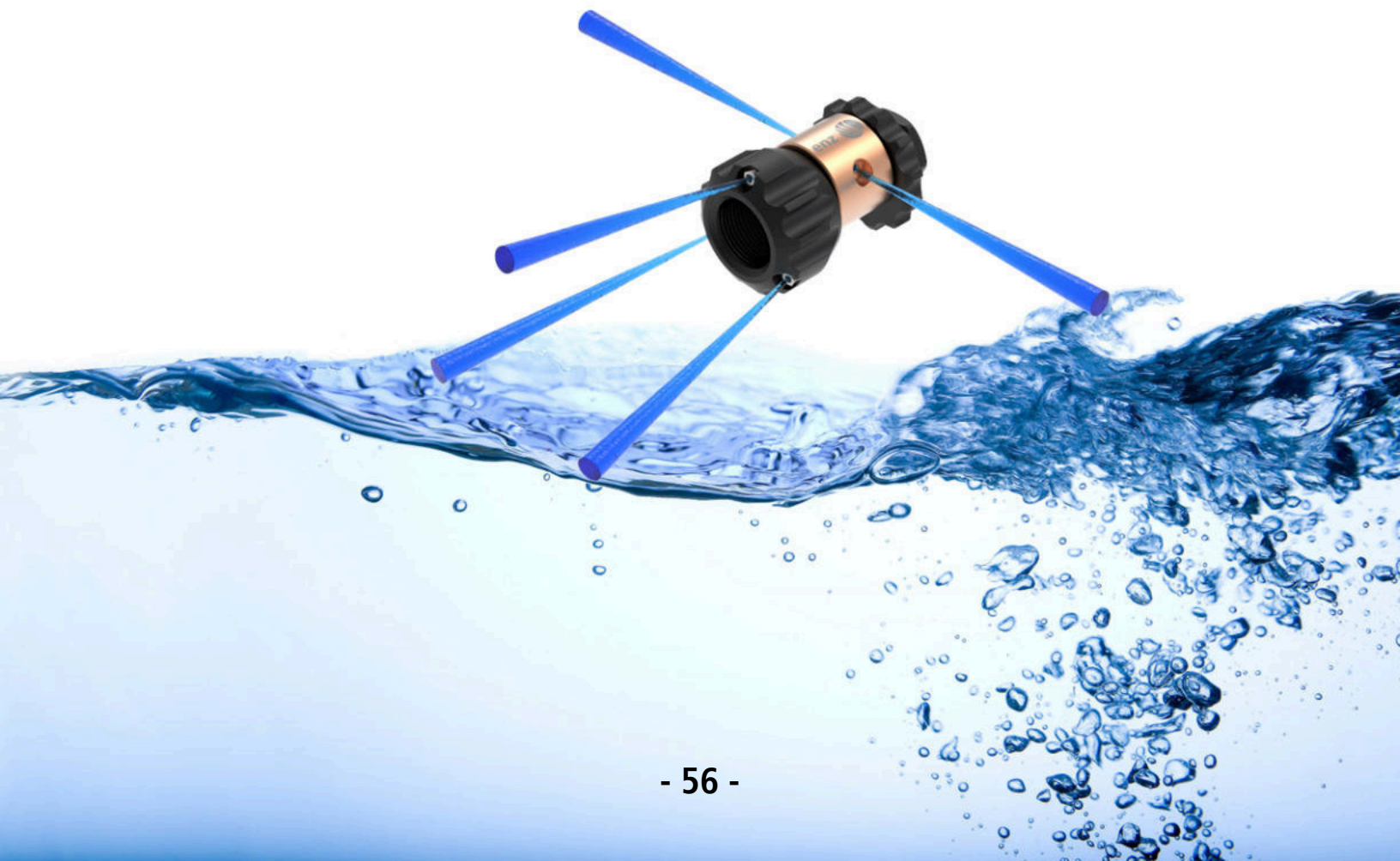
## Rotopuls vibration nozzles

The enz® rotating nozzle is provided with an eccentrically supported rotor, which produces very fast vibrations and pulsating jets. The resulting pulsations become as strong that deposits up to 10cm thickness are disintegrated. Thanks to the application of the rotopuls nozzle, the more expensive work with the cutting tools or with the chain flail head can be avoided in many cases.

Important: Rotopuls nozzles develop strong mechanical impacts and vibrations. This can possibly cause damage in some sort of pipes (e.g. earthenware pipes, thinwalled plastic pipes or badly-bedded PVC pipes).










### Applications

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













**Rotopuls nozzles 1/8" NPT - 1/4" NPT**



									
04.016AE08	1/8"	1 - 3.5	3	45°: 2 x 0.80, 90°: 2 x 0.80	-	*	0.9 x 1.1	0.06	5,000
04.016AE10	1/8"	1 - 3.5	4.6	45°: 2 x 1.00, 90°: 2 x 1.00	-	*	0.9 x 1.1	0.06	5,000
04.016AES08	1/8"	1 - 3.5	5.2	45°: 2 x 0.80, 90°: 2 x 0.80	3 x 0.80	*	0.9 x 1.2	0.06	5,000
04.016AES10	1/8"	1 - 3.5	7	45°: 2 x 1.00, 90°: 2 x 1.00	3 x 0.80	*	0.9 x 1.2	0.06	5,000
04.016ANE08	1/8" NPT	2 - 4	4	4 x 0.8	-	-	0.8 x 1.1	0.06	5,075
04.016ANE10	1/8" NPT	2 - 4	4	4 x 1.0	-	-	0.8 x 1.1	0.06	5,075
04.016ANES08	1/8" NPT	2 - 4	7	4 x 0.8	3 x 0.8	-	0.8 x 1.2	0.06	5,075
04.016ANES10	1/8" NPT	2 - 4	7	4 x 1.0	3 x 0.8	-	0.8 x 1.2	0.06	5,075
04.016BE08	1/4"	1 - 3.5	3	45°: 2 x 0.80, 90°: 2 x 0.80	-	*	0.9 x 1.1	0.06	5,000
04.016BE10	1/4"	1 - 3.5	4.6	45°: 2 x 1.00, 90°: 2 x 1.00	-	*	0.9 x 1.1	0.06	5,000
04.016BES08	1/4"	1 - 3.5	5.2	45°: 2 x 0.80, 90°: 2 x 0.80	3 x 0.80	*	0.9 x 1.2	0.06	5,000
04.016BES10	1/4"	1 - 3.5	7	45°: 2 x 1.00, 90°: 2 x 1.00	3 x 0.80	*	0.9 x 1.2	0.06	5,000
04.016BNE08	1/4" NPT	2 - 4	4	4 x 0.8	-	-	0.8 x 1.1	0.06	5,075
04.016BNE10	1/4" NPT	2 - 4	4	4 x 1.0	-	-	0.8 x 1.1	0.06	5,075
04.016BNES08	1/4" NPT	2 - 4	7	4 x 0.8	3 x 0.8	-	0.8 x 1.2	0.06	5,075
04.016BNES10	1/4" NPT	2 - 4	7	4 x 1.0	3 x 1.0	-	0.8 x 1.2	0.06	5,075

**Rotopuls nozzles 1/4" NPT - 1 1/4"**












										
01.028ANE	1/4" NPT	2 - 4	3	2 x M4	3 x M4	*	1.1 x 2.2	0.42	-	5,075
01.030ANE	1/4" NPT	2 - 4	3	2 x M4	3 x M4	-	1.2 x 2.0	0.33	-	5,075
02.028BNE	3/8" NPT	1 - 4	2	2 x M4	-	-	1.1 x 2.4	0.44	-	5,075
04.040AE	1/2"	3 - 6	5	4 x M4	3 x M6	*	1.6 x 3.2	1.16	-	5,075
04.050AE	1/2"	4 - 8	18	4 x M6	3 x M6	*	2.0 x 3.8	2.16	-	5,075
04.050BE	3/4"	4 - 8	18	4 x M6	3 x M6	*	2.0 x 3.8	2.16	-	3,625
04.060EK	1"	4 - 12	26	4 x M6	3 x M8	*	2.4 x 4.4	3.53	-	3,625
04.100BE	1 1/4"	8 - 24	53	4 x M10	3 x M10	*	3.9 x 6.9	15.87	-	3,625








**Rotopuls nozzles 3/8" NPT - 1/2"**



									
01.034ANE	3/8" NPT	1.8 - 6	5	2 x M4	3 x M4	*	1.3 x 2.3	0.49	5,075
01.034BE	1/2"	1.8 - 6	5	2 x M4	3 x M4	*	1.3 x 2.3	0.49	5,075
04.044AE	1/2"	3 - 6	5	4 x M4	3 x M6	*	1.7 x 3.6	1.32	5,075
04.044NE	3/8" NPT	3 - 6	5	4 x M4	3 x M6	*	1.7 x 3.6	1.32	5,075

**Accessory and wearing parts Rotopuls**



					
95.F100M075150		HP Textile-Hose	3/4" m - 1" f	59.1	3.18
004.0444E		Centre spire for ROTOPULS 04.044AE	0.5 x 1.2	0.04	

## Turbopuls vibration nozzles

The enz® Turbopuls nozzle is provided with an eccentrically supported rotor, which produces very fast vibrations and pulsating jets. The resulting pulsations become as strong that deposits up to 10cm thickness are disintegrated. Thanks to the application of the Turbopuls nozzle, the more expensive work with the cutting tools or with the chain flail head can be avoided in many cases.

Important: Turbopuls nozzles develop strong hydraulic impacts and vibrations. This can possibly cause damage in some sort of pipes (e.g. earthenware pipes, thinwalled plastic pipes or badly-bedded PVC pipes).

### Applications

The Turbopuls nozzles are conceived to remove middle-hard deposits in pipes of plastic, steel or concrete



**Turbopuls 1/2" - 3/4"**



410.060A	1/2"	4 - 8	16	1 x M6	3 x M8	-	2.5 x 7.1	5.29	ok	2,900
410.060B	3/4"	4 - 8	16	1 x M6	3 x M8	-	2.5 x 7.1	5.29	ok	2,900
410.080A	1/2"	6 - 12	21	1 x M6	3 x M8	-	3.1 x 8.3	9.48	ok	2,900
410.080A-G	1/2"	6 - 12	21	1 x M6	3 x M8	-	3.1 x 8.3	9.48	ok	2,900
410.080B	3/4"	6 - 12	21	1 x M6	3 x M8	-	3.1 x 8.3	9.48	ok	2,900
410.080B-G	3/4"	6 - 12	21	1 x M6	3 x M8	-	3.1 x 8.3	9.48	ok	2,900

**Turbopuls 1" - 1 1/4"**



410.120A	1"	8 - 39	40	1 x M8	6 x M10	-	4.7 x 12.6	31.97	ok	2,900
410.120A-W	1"	8 - 39	40	1 x M8	6 x M10	-	4.7 x 12.6	31.97	ok	2,900
410.120B	1 1/4"	8 - 39	40	1 x M8	6 x M10	-	4.7 x 12.6	31.97	ok	2,900
410.120B-W	1 1/4"	8 - 39	40	1 x M8	6 x M10	-	4.7 x 12.6	31.97	ok	2,900

**Accessory and wearing parts Turbopuls**



410.0805		Impact head standard		3.1 x 2.1	2.5	
410.08052		Impact head 3.9" with screws		4.1 x 2.1	2.5	
410.1205		Impact head standard with screws		4.72 x 2.75	5.22	
410.12051		Impact head soft with screws		4.72 x 2.75	5.22	

Turbopuls vibration nozzles



410.1209		Twinholder for 410.120	1" / 1 1/4"	from 16	2 x 39.63	14.2 x 27.6	15.43	2,900
00410.08010		Pointed center for Turbopuls Ø 80				0.6 x 2.4	0.15	
00410.12010		Pointed center for Turbopuls Ø 120mm				0.8 x 2.8	0.27	

## Propeller nozzles

With this enz® tool large channels will be efficiently cleaned. They can be used for dimensions of Ø 600 - 3000 mm. The skirts are easy to adjust and can even be adapted to clean egg-shaped or oval pipe profiles. The propeller nozzles have been designed for the use of recycling-water, of course they can be used for fresh water as well.









### Applications

- For cleaning large channels



**Propeller nozzles 1" - 1 1/4"**



								
07.2500A	1"	24 - 118	66	10 x M10	7 x M10	132	ok	2,900
07.2500B	1 1/4"	24 - 118	66	10 x M10	7 x M10	132	ok	2,900

**Accessory and wearing parts propeller nozzles**



			
007.281400		Extension tube	2.4



# Surface cleaner

## Surface cleaner

The rotating enz® 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 store fronts, steps, walls, traffic signboards etc.
- Turbo Killer: for the cleaning of steps, walls, artificial surfaces, traffic signs, etc.





**Surface cleaner 3/8" - 1/2"**



18.040-C-0	1/2"	1.3	2 / 4 x M8	2.0 x 3.9	1.59	5,000
18.040-NB-0	3/8" NPT	1.3	2 / 4 x M8	2.0 x 4.2	1.59	5,000

**Turbo killer 1/4"**



18.020135	1/4"	3	1.35	20°	2.3 x 4.5	1.7	5,000
18.020150	1/4"	4	1.50	20°	2.3 x 4.5	1.70	5,000
18.020170	1/4"	5	1.70	20°	2.3 x 4.5	1.70	5,000
18.020190	1/4"	5	1.90	20°	2.3 x 4.5	1.70	5,000

**Accessory and wearing parts Turbo killer**



66.0106.20050	Rebuild kit for 18.041135	0.05
66.0106.20065	Rebuild kit for 18.041150	0.05
66.0106.20080	Rebuild kit for 18.041170	0.05
66.0106.20100	Rebuild kit for 18.041190	0.05

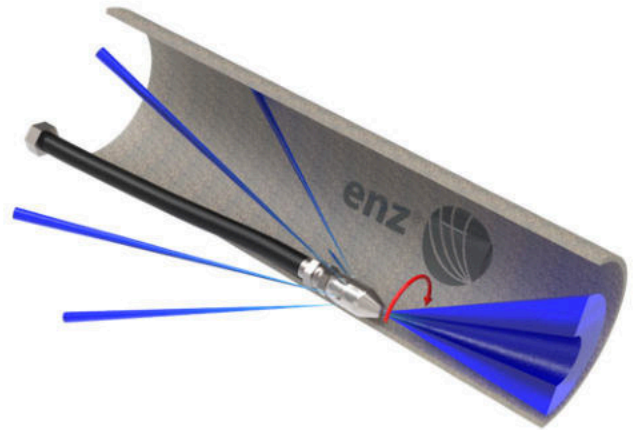
# Rotodrill

The Rotodrill is a universal pipe cleaning nozzle suitable for pipe diameters between 2" and 10", depending on the design. Its special feature: Thanks to its cone-shaped rotating front jet, the Rotodrill mills through the clog in one operation. At the same time, most of the available water volume pushes the Rotodrill forward and transports the dirt out of the pipe. Customized repair kits allow for quick, easy maintenance.

In the Rotodrill REV (Reverse), the rotating jet is directed backwards. This allows deposits to be flushed efficiently out of the pipe. The pipe wall is cleaned at the same time.

Application:

Sludge deposits, fine roots, clogs, and maintenance cleaning.



**Rotodrill 1/4" NPT - 3/8" NPT**



36.025NiREV	1/4" NPT	3 - 6	4	1 x 1.50	-	25°	-	2.7 x 4.1	0.57	5,000
36.025REV	1/4"	3 - 6	4	1 x 1.50	-	7°	-	2.7 x 4.1	0.57	5,000
36.038NiREV	3/8" NPT	75 - 150	15	1 x 1.50	-	25°	-	52 x 72	0.26	5,000

**Rotodrill 3/8" NPT - 1"**



36.038N	3/8" NPT	2 - 6	6.6	6 x M4	1 x 0.90 - 1.80	15°	7°	1.3 x 2.6	0.66	5,000
36.050	1/2"	2 - 6	6.6	6 x M4	1 x 0.90 - 1.80	15°	7°	1.3 x 2.4	0.44	5,000
36.075	3/4"	3 - 8	20	6 x M6	1 x 0.90 - 1.80	30°	7°	1.5 x 3.0	0.75	5,000
36.100	1"	4 - 10	27	6 x M8	1 x 2.70	25°	7°	2.2 x 3.7	1.91	3,600

**Accessory and wearing parts Rotodrill**



66.21040-020		Re-build kit for Rotodrill 36.0xx		Ø 0.90	0.06
66.21040-040		Re-build kit for Rotodrill 36.0xx		Ø 1.20	0.06
66.21040-060		Re-build kit for Rotodrill 36.0xx		Ø 1.50	0.06
66.21040-080		Re-build kit for Rotodrill 36.0xx		Ø 1.80	0.06
66.21060-200		Re-build kit for Rotodrill 36.100		Ø 2.70	0.11

# HydroX

The HydroX has a powerful rotating front jet. However, it manages without thrust nozzles. This tool is designed for efficient hydraulic excavation with low water consumption – for working with a lance outside pipes. During operation, a rotating 18° water cone is created, which acts like a drill in the ground. A plastic sheath prevents any flying sparks. Customized repair kits allow for simple, fast maintenance.

Application:  
Hydraulic excavation, surface cleaning.



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



36.038HE235N	3/8" NPT	7	-	2.35	-	7°	1.3 x 2.2	.57	5,000
36.050HE235	1/2"	7	-	2.35	-	7°	1.3 x 2.2	.57	5,000

**Accessory HydroX**



66.21040HE-235	Re-build kit for HydroX	0.06

**MJ4**



550.04001	3/8" BSPP	1.45	0.6 - 2.8	22°	1.7 x 4.3	1.10	7,500
550.04002	3/8" NPT	1.45	0.6 - 2.8	22°	1.7 x 4.3	1.10	7,500
550.04003	1/2" BSPP	1.45	0.6 - 2.8	22°	1.7 x 4.3	1.10	7,500
550.04004	1/2" NPT	1.45	0.6 - 2.8	22°	1.7 x 4.3	1.10	7,500
550.04005	1/4" BSPP	1.45	0.6 - 2.8	22°	1.7 x 4.3	1.10	7,500
550.04011	9/16" x 18 UNF LH	1.45	0.6 - 2.8	22°	1.7 x 4.3	1.10	7,500
550.04012	M14 x 1.5 LH	1.45	0.6 - 2.8	22°	1.7 x 4.3	1.10	7,500
550.04015	M26 x 1.5	1.45	0.6 - 2.8	22°	1.7 x 4.3	1.10	7,500







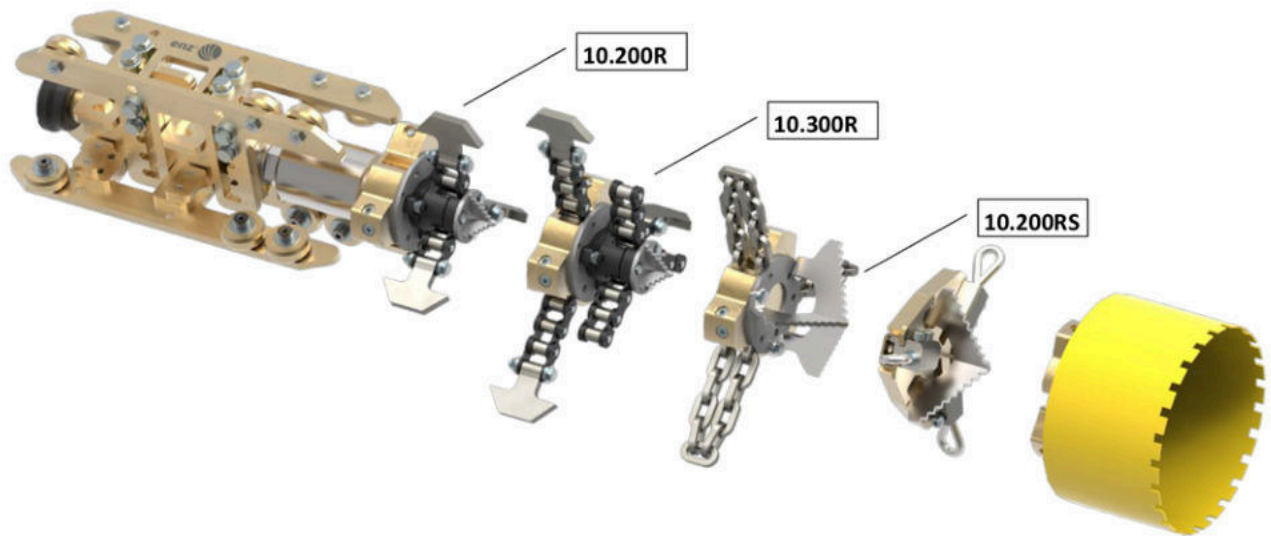


## Wire rope and chain scrapers

The Chain scraper enz® is an apparatus which has many uses and is simple in handling and maintenance. Several different pipe diameters can be cleaned with the same tool. Layers of mineral deposits and concrete residues are efficiently removed.

### Applications

- As preliminary operation before renovation with liners, coatings or by injections
- Complete root removal
- Removal of incrustations and deposits
- Removal of concrete residues in newly installed sewage pipelines prior to inspection



**Chain scraper 10.028 1/4" NPT**



10.028N	1/4" NPT	2 - 4	5	3 x M4	3 x M4	1.6 / 1.1 x 3.1	2.0		5,000

**Chain scrapers 10.060TR 3/8" NPT - 3/4" NPT**



10.060ATR-US	3/8" NPT	2.4 - 8	8	2 x M6	4 x M6	1.6 x 4.4	2.10	ok	5,000
10.060BTR-US	1/2"	2.4 - 8	8	2 x M6	4 x M6	1.6 x 4.4	2.10	ok	5,000
10.060CTR-US	3/4"	2.4 - 8	8	2 x M6	4 x M6	1.6 x 5.3	2.35	ok	3,600

**Chain scrapers 10.061A/B 1/2" - 3/4"**



10.061A	1/2"	3 - 6	16	3 x M6	3 x M6	2.4 x 5.3	3.09		3,600
10.061B	3/4"	3 - 6	16	3 x M6	3 x M6	2.4 x 5.3	3.09		3,600

**Chain scrapers 10.125TR 1"**



10.125TR-Set	1"	6 - 10	13	2 x M6	4 x M8	2.4 x 6	5.56	ok	3,600
10.125TR-Set	1"	6 - 12	13	2 x M6	4 x M8	2.4 x 6	5.56	ok	3,600
10.125TR-Set	1"	8 - 12	13	1 x M6	4 x M8	2.4 x 6	5.56	ok	3.625

**Chain scrapers 10.150RL 1"**



10.150RL	1"	6 - 10	26	3 x M8	3 x M10	5.3 - 9.3 x 19.7	28.88	ok	2,900
10.150RS	1"	6 - 10	26	3 x M8	3 x M10	5.3 - 9.3 x 19.7	28.7	ok	2,900

**Wire rope and chain scrapers sets**



10.060BTR-SET-US	chain flail 2.36 - 6"	1/2" 3.8
10.060ATR-SET-US	chain flail 2.36 - 6"	3/8" 3.8
10.060CTR-SET-US	chain flail 2.36 - 6"	3/4" 3.8

**Wire rope and chain scrapers 10.200R/RS & 10.300R 1"**



10.200R	1"	7.8 - 16	53	3 x M10	3 x M10	7.3 - 15.2 x 22.1	77.16	ok	2,900
10.300R	1"	7.8 - 19.7	53	3 x M10	3 x M10	7.3 - 19.2 x 22.1	108	ok	2,900

**Wire rope and chain scrapers 10.400R/RS 1"**



10.400R	1"	16 - 32	79	3 x M10	3 x M10	15.2 - 30.9 x 24.6	103.62	ok	2,900
10.400RS	1"	16 - 32	79	3 x M10	3 x M10	15.2 - 30.9 x 24.6	104.44	ok	2'900

**Chain scrapers 10.800R 1 1/4"**



10.800R	1 1/4"	32 - 47	106	3 x M10	6 x M10	22.1 / 30.4 x 64.6	407.86	ok	2,900

**Accessory 10.028**







0010.028050KE link chains	0.03

## Wire rope and chain scrapers



### Accessory 10.028



#### 10.028

	Pipe diameter	Ø 2 "	Ø 3 "	Ø 4 "	Ø per yard
	Pin bolt chain Ø 1.9 inch	0010.028050G	0010.028075G	0010.028100G	0010.028G
	Link chain Ø 2 inch	0010.028050K	0010.028075K	0010.028100K	0010.028K
	Cover with cutter and screw	0010.0285M	0010.0285M	0010.0285M	
	Plastic guide	0010.0286	0010.0286	0010.0286	






### Accessories 10.060

#### 10.060ATR

	Pipe diameter	Ø 2 "	Ø 3 "	Ø 4 "	Ø 5 "	Ø 6 "	Ø 8 "	per yard
	Set Pin bolt chain with plates Ø 2.4 inch	0010.060060G	0010.060075G	0010.060100G	0010.060125G	0010.060150G	0010.060200G	11.G
	Set link chains Ø 2.4 inch	0010.040060K	0010.040075K	0010.040100K	0010.040125K	0010.040150K	0010.040200K	0010.040K
	Cover with cutter and screws	0010.0605TRM	0010.0605TRM	0010.0605TRM	0010.0605TRM	0010.0605TRM	0010.0605TRM	

Wire rope and chain scrapers



Pipe diameter	Ø 2 "	Ø 3 "	Ø 4 "	Ø 5 "	Ø 6 "	Ø 8 "	per yard
 Cage for TurboJet 60	0010.0607TR	0010.0607TR	0010.0607TR	0010.0607TR	0010.0607TR	0010.0607TR	
 Plastic guide	0010.0407	0010.0407					
 Skid Turbojet 60			0010.060710TR	0010.060712TR	0010.060715TR	0010.060720TR	



Accessoires 10.061A/B

10.061A

Pipe diameter	Ø 3 "	Ø 4 "	Ø 6 "	Ø 8 "	per yard
 Set chains 0.18" - 7 links	11.07	11.09	11.11	11.13	11
 Bronze-bushing for 10.061A/B					









Accessories 10.125TR

10.125TR



## Wire rope and chain scrapers








Pipe diameter	Ø 5 "	Ø 6 "	Ø 8 "	Ø 9 "	Ø 10 "	Ø 12 "	per yard
 Set Pin bolt chain with plates	0010.125125G	0010.125150G	0010.125200G	0010.125225G	0010.125250G	0010.125300G	
 Set link chains	0010.125125K	0010.125150K	0010.125200K	0010.125225K	0010.125250K	0010.125300K	11
 Set wire brushes		0010.125150SE	0010.125200SE		0010.125250SE		
 Cover with cutter	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	
 Cage for 10.125TR	0010.1257TR	0010.1257TR	0010.1257TR	0010.1257TR	0010.1257TR	0010.1257TR	
 Skid for	0010.125712TR	0010.125715TR	0010.125720TR	0010.125722TR	0010.125725TR	0010.125730TR	



### Accessories 10.150RL

#### 10.150RL












Pipe diameter	Ø 6 "	Ø 8 "	Ø 10 "	per yard
 Set Pin bolt chain	0010.150150G	0010.150200G	0010.150250G	0010.150G
 Set chains	0010.150150K	0010.150200K		11.B
 Set Chain plates	0010.1508R	0010.1508R	0010.1508R	
 Skids Chain Flail 150 - 250	0010.1502R	0010.1502R	0010.1502R	
 Diamond crown	0010.150D	0010.200D	0010.250D	

## Wire rope and chain scrapers











### Accessories 10.200R/RS & 10.300R

#### 10.200R

	Pipe diameter	Ø 8 "	Ø 10 "	Ø 12 "	Ø 14 "	Ø 16 "	Ø 20 "	per yard
	Set Pin bolt chain with plate	12.200G	12.250G	12.300G	12.350G	12.401G	12.600G	12.G
	Set chains	12.03	12.07	12.09	12.11	12.13	12.17	12
	Pull part 10.200R/10.400R	0010.2006	0010.2006	0010.2006	0010.2006	0010.2006	0010.2006	
	Set Chain plates	0010.2008R	0010.2008R	0010.2008R	0010.2008R	0010.2008R	0010.2008R	
	Universal tooth (all Ø)	15.ZU	15.ZU	15.ZU	15.ZU	15.ZU	15.ZU	
	Center head with 4 link chain	0010.2004R	0010.2004R	0010.2004R	0010.2004R	0010.2004R	0010.2004R	
	Wire rope head adaption kit	0010.2005	0010.2005	0010.2005	0010.2005	0010.2005	0010.2005	
	Set of wire rope loop	12.200S	12.250S	12.300S	12.350S	12.400S		
	Set of wire rope brush	12.200SE	12.250SE	12.300SE	12.350SE	12.400SE		
	Diamond crown	0010.200D	0010.250D	0010.300D				
	Skid Front Chain Scraper	0010.20071R	0010.20071R	0010.20071R	0010.20071R	0010.20071R		

Wire rope and chain scrapers



Pipe diameter	Ø 8 "	Ø 10 "	Ø 12 "	Ø 14 "	Ø 16 "	Ø 20 "	per yard
 Skid back Chain Scraper	0010.20072R	0010.20072R	0010.20072R	0010.20072R	0010.20072R		
 Cover with cutter	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	
 Root knife chain flail 10.200RS	0010.2509	0010.2509	0010.2509	0010.2509	0010.2509		
 Center head with 4 link chain	0010.2004R1	0010.2004R1	0010.2004R1	0010.2004R1	0010.2004R1		
 Skid adapter 19.7"			10.2005R	10.2005R	10.2005R	10.2005R	
 Head 300R with chain	0010.2005R	0010.2005R	0010.2005R	0010.2005R	0010.2005R	0010.2005R	
 Head 200RS with chain	0010.2006R	0010.2006R	0010.2006R	0010.2006R	0010.2006R		
 Set chains with 3 links and plates	12.03P	12.07P	12.09P	12.11P	12.13P		



Accessories 10.400R/RS

10.400R

Pipe diameter	Ø 16 "	Ø 18 "	Ø 20 "	Ø 22 "	Ø 24 "	Ø 26 "	Ø 28 "	Ø 30 "	Ø 32 "	per yard
 Set Pin bolt chain with plate	12.402G	12.450G	12.500G	12.600G	12.600G	12.700G	12.700G	12.800G	12.800G	12.G

## Wire rope and chain scrapers



	Pipe diameter	Ø 16 "	Ø 18 "	Ø 20 "	Ø 22 "	Ø 24 "	Ø 26 "	Ø 28 "	Ø 30 "	Ø 32 "	per yard
	Chain for center head of 10.400R	12.400ZG	12.400ZG	12.400ZG	12.400ZG	12.400ZG	12.400ZG	12.400ZG	12.400ZG	12.400ZG	
	Set chains	12.07	12.09	12.11	12.13		12.17				12
	Pull part 10.200R/10.400R	0010.2006	0010.2006	0010.2006	0010.2006	0010.2006	0010.2006	0010.2006	0010.2006	0010.2006	
	Universal tooth (all Ø)	15.ZU	15.ZU	15.ZU	15.ZU	15.ZU	15.ZU	15.ZU	15.ZU	15.ZU	
	Center head (all Ø)	0010.4004R	0010.4004R	0010.4004R	0010.4004R	0010.4004R	0010.4004R	0010.4004R	0010.4004R	0010.4004R	
	Wire rope head	0010.400S	0010.400S	0010.400S	0010.400S	0010.400S					
	Wire rope loop (1 set)	12.250S	12.300S	12.350S	12.400S	12.600S		12.700S			
	Set of wire rope brush 9.8"	12.250SE	12.300SE	12.350SE	12.400SE						
	Egg Skid's complete 23.6" - 35.4"	10.4008R	10.4008R	10.4008R	10.4008R	10.4008R	10.4008R	10.4008R	10.4008R	10.4008R	
	Root knife chain scraper	0010.3804	0010.3804	0010.3804	0010.3804	0010.3804	0010.3804	0010.3804	0010.3804	0010.3804	
	Cover with cutter	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	0010.1254TR	
	Set chains with 7 links and plates	12.07P	12.09P	12.11P		12.15P		12.19P			





## Cutters without impacts

These enz® rotating cutters work without impacts. The cutter heads are equipped with hard metal plates, which are able to remove the most any kind of deposits. Their field of application is versatile. Layers of mineral deposits, concrete or concrete sludges can be milled out with them as well as roots and wood.

### Applications

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





**Cutters without impacts 1/4"**



13.028N	1/4" NPT	1.2	5	3 x M4	3 x M4	1.1 x 3.2	0.6	5,000

**Cutters without impacts 1/2" - 1"**



13.040TR	1/2"	1.7 - 2.4	8	2 x M6	4 x M6	-	1.6 x 4.3	1.65	ok	3,600
13.060TR	1"	2.4 - 3.1	13	2 x M6	4 x M8	-	2.4 x 5.1	4.40	ok	3,600










**Accessory and wearing parts cutters without impacts**



0013.0605TR	Milling Cutter Head 2.4"	2 - 3	1.43
0013.0405TR	Milling Cutter Head complete for 1.6"	2 - 2	0.66
0013.0404TR-48	Wear resistant ring for Milling Cutter 40 mm		0.15
0013.0407TR-48	Wear ring for Milling Cutter 40 mm		0.23
0013.0604TR-68	Wear resistant ring		0.28
0013.0607TR-68	Wear ring for Milling Cutter 60mm		0.28

# Cutters without impacts



			
16.16Z		Carbide Insert with Screw for 13.040TR	0.06
16.19Z		Carbide Insert with Screw for 13.060TR	0.06
0013.0606TR		exchangeable centre for Ø60 Cutter	0.022
FS242		Insert-Clamp-Screw for 16.16ZW	
FS1010		Insert-Clamp-Screw for 16.19ZW	
C20			

## Cutting ball










The CB range (enz® cutting ball) is equipped with a carbide root knife or penetrator blade for pipes that are clogged by more than 50%. The CB90 and CB70 (enz cutting ball) work without impact, but are equipped with a plug that can be removed, that creates a vibration in the tool when rotating. (not the CB50). The cutters on the side are self-sharpening and maintain their sharpness over their entire service life. The area of application of the cutting ball is diverse. Due to its spherical shape it can easily navigate bends without damaging the pipe. Moreover, the proven braking system from enz® ensures for a lower rotation speed. The CB90 + CB70 are leakage-free and can be operated with recycling water.

- The enz® CB cutting balls are particularly suitable for roots in seepage pipes, mineral deposits and limescale.
- All CB cutting balls are supplied in an enz® case.












**CB50 1/4" -1/2"**



									
420.050AN	1/4" NPT	2.2 x 4.0	6.6	4 x M6	-	1.9 x 2.4	0.9		2,900
420.050BN	3/8" NPT	2.2 x 4.0	6.6	4 x M6	-	1.9 x 2.4	0.9		2,900
420.050BSN	3/8" NPT	2.2 - 4.0	14.5	4 x M6	4x Ø 1.3mm	1.9 x 2.4	0.9		2,900
420.050C	BSPP 1/2"	2.2 x 4.0	6.6	4 x M6	-	1.9 x 2.3	0.9		2,900
420.050CS	BSPP 1/2"	2.2 - 4.0	14.5	4 x M6	4x Ø 1.3mm	1.9 x 2.3	0.9		2,900





**CB70 1/2"**



									
420.070A	1/2"	3 - 5	15	6 x M6	-	2.67 x 3.6	2.43	ok	2,900
420.070AS	1/2"	3 - 5	21	6 x M6	3 x M4	2.67 x 3.6	2.43	ok	2,900





**CB90 1/2"**



										
420.090A	1/2"	4 - 6	16	6 x M6	-		3.5 x 3.8	4.94	ok	2,900
420.090AS	1/2"	4 - 6	21	6 x M6	3 x M4		3.5 x 3.8	4.94	ok	2,900
425.090A	1/2"	4 - 6	16	6 x M6	-	*	3.5 x 3.8	4.94	ok	2,900
425.090AS	1/2"	4 - 6	21	6 x M6	3 x M4	*	3.5 x 3.8	4.94	ok	2,900

**Accessory cutting balls**



			
00420.0902		Locking pin	0.5
00420.0702		Locking pin for cutting ball Ø70	0.5
857.1230		Cylinder pin Ø 12x30	0.1

## Impact milling cutters

These tools are a radical innovation for milling-off deposits in pipes. The enz® impact milling cutters are designed to remove the most stubborn deposits like concrete, injection cement, mineral deposits etc. 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 deposits! When using the pull rod (drawing device) the cutters can be driven with half the water quantity (from 200 mm).

### Characteristics

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

All impact milling cutters can be operated without impacts.



**Impact milling cutters 1"**



14.100	1"	4	26	3 x M10	3 x M10	-	3.5 x 13.6	26.46	2,100
14.120	1"	5	23	3 x M10	3 x M10	-	4.3 x 13.6	30.20	2,100
14.150	1"	6	40	3 x M10	3 x M10	-	5.1 x 15.4	47.18	2,100

**Impact milling cutters 1" - 1 1/4"**


















14.400	1", 1 1/4"	16	79	3 x M10	3 x M10	-	14.8 x 22.0	196.21	2,100
14.450	1", 1 1/4"	18	106	3 x M10	3 x M10	-	16.7 x 28.0	235.90	2,100
14.500	1", 1 1/4"	20	119	3 x M10	3 x M10	-	18.7 x 28.0	244.71	2,100
14.600	1", 1 1/4"	24	132	3 x M10	3 x M10	-	22.6 x 28.0	264.56	2,100











**Accessory and wearing parts impact milling cutters**



0014.100D	Diamond crown	4	1.87
0014.120D	Diamond crown	5	2.42
0014.150D	Diamond crown	6	4.96
0014.200D	Diamond crown	8	6.61
0014.250D	Diamond crown	10	6.83



			Ø	
0014.300D		Diamond crown	12	15.65
0014.350D		Diamond crown	14	28.6
0014.400D		Diamond crown	16	34.52
14.400K		Impact milling cutter head 15.7"	16	26.46
14.450K		Impact milling cutter head 17.7"	18	29.76
14.500K		Impact milling-cutter head 19.7"	20	37.48
14.600K		Impact milling-cutter head 23.6"	24	41.89
0014.3008		Additional weight for impact milling cutter	12 - 24	14.88
65212.08		Nord-Lock wedge lock washers M8		0.002
14.K05		Cam plate 0.19 inch per pc. with screws	8 - 24	0.44
14.K04		Cam plate 0.15 inch per pc. with screws	till 6	1.01
14.D		1 pair spacers for cutter heads		0.65
14.T1		Cup spring 0.14" - per pc.		0.22
14.G		Glide plate cutter 200 - 600		0.55
15.ZKB		Center cap with bored hole		1.32

			∅	
14.400NA		Hub for impact drilling-cutter 15.7"	16 - 18	26.46
14.500NA		Hub for impact drilling-cutter 19.7"	20	28.00
14.600NA		Hub for impact drilling-cutter 23.6"	24	28.00
15.Z1-100		Impact tooth for center for 14.100	4	0.13
0014.30011		Extension for the shaft of IM 300		0.99
0014.2257		skid for cutter head Ø225mm		
0014.2007		Skid for cutter 7.8-9.8 inch	7.8 / 9.9	2.19
14.450KU		Adapter plates for skids 17.7"	18 - 24	35.27
14.2215ZS		Pull-rod M22x1.5 x 8"	8 - 24	2.21

# Recycling IMC

These tools are a radical innovation for milling-off deposits in pipes. The enz® im-pact milling cutters are designed to remove the most stubborn deposits like concrete, injection cement, mineral deposits etc. 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 deposits! When using the pull rod (drawing device) the cutters can be driven with half the water quantity (from 200 mm).

## Characteristics

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

All impact milling cutters can be operated without impacts.



**IMC 1" - 1 1/4"**



14.200R	1", 1 1/4"	7.8	53	3 x M10	3 x M10	-	6.8 x 23.6	95.68	ok	2,100
14.225R	1", 1 1/4"	8.9	58.1	3 x M10	3 x M10	-	7.9 x 23.6	101.41	ok	2,100
14.250R	1", 1 1/4"	9.9	63.4	3 x M10	3 x M10	-	8.7 x 23.6	115.74	ok	2,100
14.300R	1", 1 1/4"	11.8	73.9	3 x M10	3 x M10	-	11.8 x 28	211.6	ok	2,100
14.350R	1", 1 1/4"	13.8	73.9	3 x M10	3 x M10	-	13.8 x 28	218.2	ok	2,100

**Accessory and wearing parts IMC**



14.200KR		Impact drilling cutter head 7.9"	8		8.16	
14.225KR		Impact drilling cutter head 8.9"	9		8.16	
14.250KR		Impact drilling cutter head 9.8"	10		12.13	
14.300KR		Impact drilling cutter head 11.8"	12		16.54	
14.350KR		Impact drilling cutter head 13.8"	14		21.83	
14.375KR		Impact drilling cutter head 14.76"	14.76			
15.Z1		Impact segment tooth for center			0.18	
15.ZU		Universal tooth (all Ø)	4 - 24		0.18	

15.ZU-GSL		Impact segment tooth for plastic		4 - 24			0.11	
15.ZHU		Carbide tooth for impact cutter		4 - 24			0.24	
15.ZD		Diamant tooth for impact cutter		4 - 24			0.17	
14.KR35W		Cam plate to Impact Milling Cutter Recycling					0.79	
15.ZKBR		Center cap with bored hole for drawbar					1.32	
14.99001		Torque wrench Stahlwille					0.24	
14.99002		Hex socket 3/4" SW 41					0.24	
14.99003		Socket adapter 3/4" - 1/2" with magnet					0.24	
14.99004		Hand lever grease gun Pressol					0.24	
14.99008		Grease						
14.ZSR		Pull-rod M16 x 1.5 x 12.4"						
24.1255		Swivel joint with thrust jets	1" m - 1 1/4" f		3 x M10	3.2 x 5.0	4.08	3,600









# eBomb

enz® Camera – the camera nozzle with integrated data management

The enz® Camera Nozzle adds a new dimension to the enz® nozzle product range! The modular design allows universal use with all nozzle types, such as the eBomb or the eBulldog, and thus guarantees streak-free all-around cleaning in every application! The HD-ready resolution and 12 high-power LEDs deliver high-resolution video footage for quality control, documentation, and preliminary inspection. Data management is fully integrated into the system through the WiFi interface and connection to the enz® Cloud. All your manholes and channels are automatically mapped on Google Maps with the videos. The enz® Camera Nozzle, which is simple, fast, and robust, increases productivity without any negative impact on the cleaning performance or quality.



**eBomb 1" - 1 1/4"**



40.150iB	1"	6 - 16	40	10 x M10	10.4 x 3.7	20.2	ok	3,600
40.150iC	1 1/4"	6 - 16	40	10 x M10	10.4 x 3.7	20.2	ok	3,600

**eBomb 1" - 1 1/4" with skid**



40.250iB	1"	10 - 16	40	10 x M10	10.4 x 6.8	27.3	ok	3,600
40.250iC	1 1/4"	10 - 16	40	10 x M10	10.4 x 6.8	27.3	ok	3,600

**Accessory and wearing parts eBomb**



40.2504i		Cage for eBomb 250	6.6

## eBulldog

enz® Camera – the camera nozzle with integrated data management










The enz® Camera Nozzle adds a new dimension to the enz® nozzle product range! The modular design allows universal use with all nozzle types, such as the eBomb or the eBulldog, and thus guarantees streak-free all-around cleaning in every application!

The HD-ready resolution and 12 high-power LEDs deliver high-resolution video footage for quality control, documentation, and preliminary inspection. Data management is fully integrated into the system through the WiFi interface and connection to the enz® Cloud. All your manholes and channels are automatically mapped on Google Maps with the videos. The enz® Camera Nozzle, which is simple, fast, and robust, increases productivity without any negative impact on the cleaning performance or quality.













**eBulldog 3/4" - 1 1/4"**



									
402.200iA	3/4"	8 - 23	53	6 x M10	9 x M8	12.8 x 6.3 x 5.1	20	ok	2,900
402.200iB	1"	8 - 23	53	6 x M10	9 x M8	12.8 x 6.3 x 5.1	20	ok	2,900
402.200iC	1 1/4"	8 - 23	53	6 x M10	9 x M8	12.8 x 6.3 x 5.1	20	ok	2,900

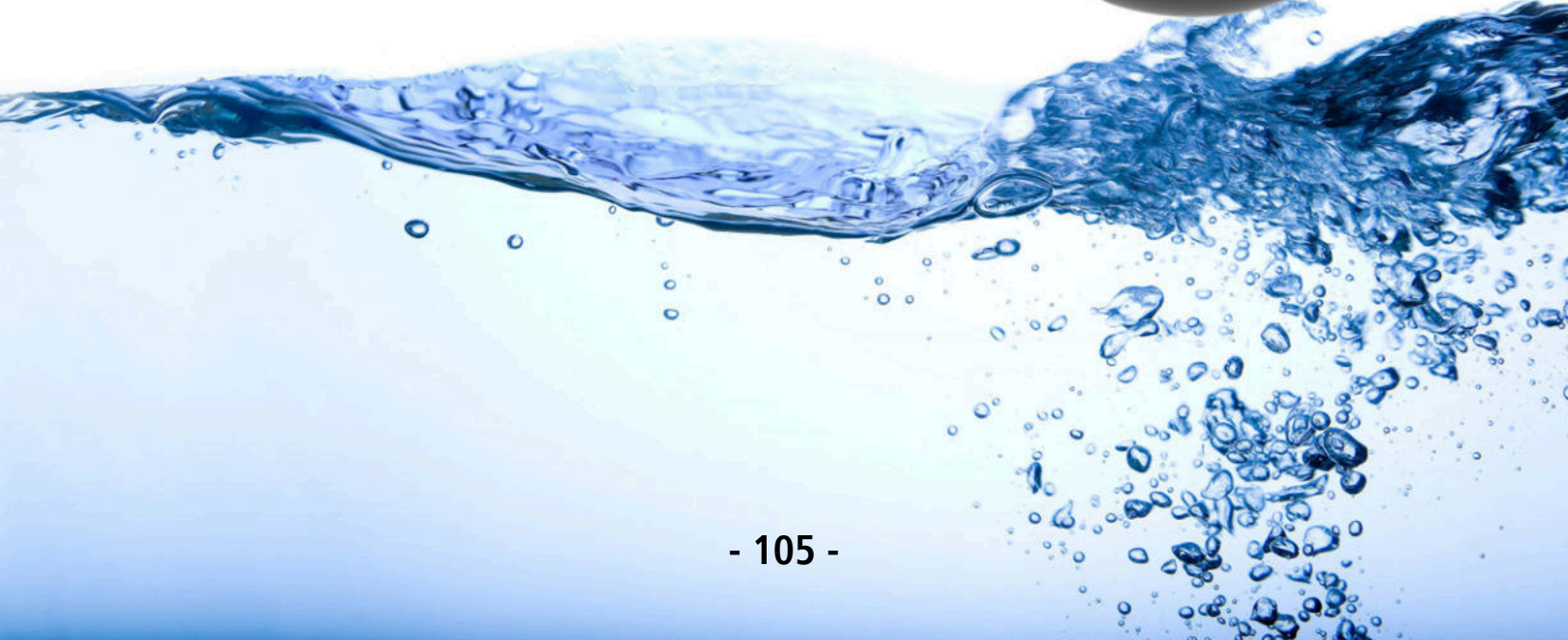
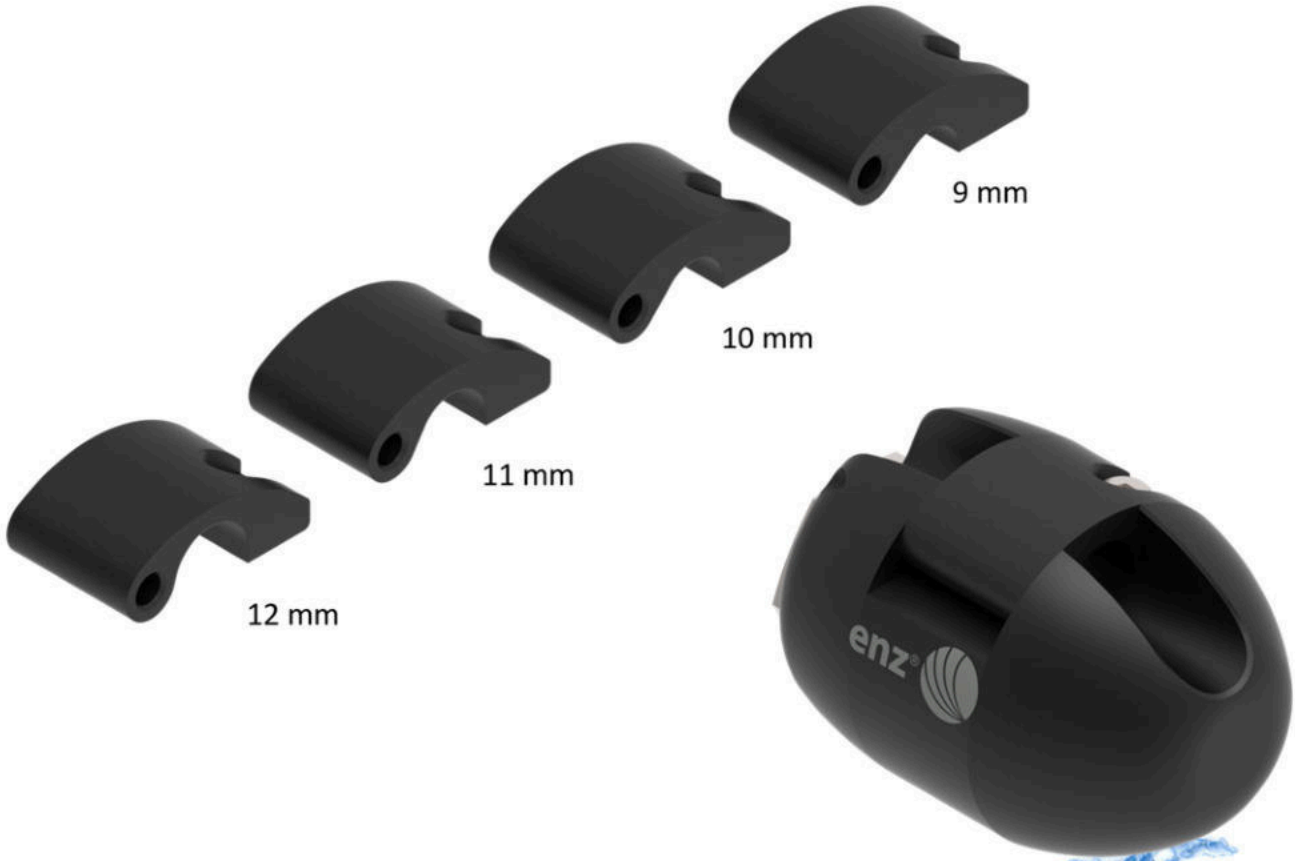
**Accessory and wearing parts eBulldog**



										
100.2004i		Skid guidance for eBulldog				5.1 x 11.8	6.8			
402.060iB		eBULLDOG Rotating nozzle 2.4"	1"	53	6 x M10	9 x M8	5.8 x 2.3	4.63	ok	2,900









# Camera pull nozzle

The new camera pull nozzle from enz® is compatible with most cameras on the market. It convinces with a very high cleaning and pulling performance. Due to the loss-proof screw and cover, the nozzle is extremely user-friendly. Furthermore, the enz® camera nozzle is curved, wear-resistant and easy to handle. The application range is 3" - 10".



Camera pull nozzle 3/8" NPT - 1/2"



								
230.050ZAN09	3/8" NPT	3 - 10	13	4 x M6	2.4 x 1.8	1.1	ok	3,600
230.050ZAN10	3/8" NPT	3 - 10	13	4 x M6	2.4 x 1.8	1.1	ok	3,600
230.050ZAN11	3/8" NPT	3 - 10	13	4 x M6	2.4 x 1.8	1.1	ok	3,600
230.050ZAN12	3/8" NPT	3 - 10	13	4 x M6	2.4 x 1.8	1.1	ok	3,600
230.050ZB09	1/2"	3 - 10	13	4 x M6	2.4 x 1.8	1.1	ok	3,600
230.050ZB10	1/2"	3 - 10	13	4 x M6	2.4 x 1.8	1.1	ok	3,600
230.050ZB11	1/2"	3 - 10	13	4 x M6	2.4 x 1.8	1.1	ok	3,600
230.050ZB12	1/2"	3 - 10	13	4 x M6	2.4 x 1.8	1.1	ok	3,600



## Camera Nozzle Accessories











enz® Camera – the camera nozzle with integrated data management

The enz® Camera Nozzle adds a new dimension to the enz® nozzle product range! The modular design allows universal use with all nozzle types, such as the eBomb or the eBulldog, and thus guarantees streak-free all-around cleaning in every application!



Camera Nozzle Accessories



				
09.210080N		Case for camera	15.4 x 12.2 x 5.8	3.94
C290		Lens cleaner	1.6 x 5.7	0.33
C291		Lens polish	1.6 x 5.7	0.33
210.080		Enz® Camera	3 x 6.4	1.74
210.0801		Enz® Magnet	1.0 x 2.2	0.075
291.0801		Enz® Charging station	5.9 x 5.9 x 3.2	0.564
210.080-SET		Enz® Camera Set	3 x 6.4	7.26
0040.1005i		Blind cover		2.478





## JetCam 4.0






Cleaning, inspecting, bending, and documenting in one operation!

The camera nozzle is particularly well-suited for the simultaneous cleaning and inspection of municipal and private pipe systems thanks to its powerful cleaning performance and live image. The JetCam 4.0 cleans pipes from 2" - 6". Not only does the JetCam camera nozzle make it through multiple bends (even multiple 90° bends), but it also unclogs thanks to the front jet nozzle.



JetCam 4.0



					
220.02.038S	1/2"	2 - 6	24.76x19.68x32.76	122	2600
220.02.050S	1/2"	2 - 6	24.76x19.68x32.76	130	2300
220.02.050WDS	1/2"	2 - 6	24.76x19.68x32.76	139	2300

## JetCam 40 Pro

Cleaning, inspecting, bending, and documenting in one operation!






The camera nozzle is particularly well-suited for the simultaneous cleaning and inspection of municipal and private pipe systems thanks to its powerful cleaning performance and live image. The JetCam 40 Pro cleans pipes from 2" - 6". Not only does the JetCam camera nozzle make it through multiple bends (even multiple 90° bends), but it also unclogs thanks to the front jet nozzle.







**JetCam 40 Pro**



					
220.01.038S	1/2"	2 - 6	22x23x34	106	2600
220.01.050S	1/2"	2 - 6	22x23x34	115	2300
220.01.050WDS	1/2"	2 - 6	22x23x34	124	2300

**Accessories JetCam 40 Pro**



		
220.1001136 Powerbank for JC40	10.4x5.2x3.2	1.9

## JetCam Truck Version






Cleaning, inspecting, bending, and documenting in one operation.

The camera nozzle is particularly well-suited for the simultaneous cleaning and inspection of municipal and private pipe systems thanks to its powerful cleaning performance and live image. The JetCam Truck Version cleans pipes from 2" - 6". Not only does the JetCam camera nozzle make it through multiple bends (even multiple 90° bends), but it also unclogs thanks to the front jet nozzle.



**JetCam Truck Version**



					 max
220.03.050S-100	1/2"	2 - 6	9 x 4 x 3.5	82	2300
220.03.050S-80	1/2"	2 - 6	9 x 4 x 3.5	66	2300
220.03.050WDS-100	1/2"	2 - 6	9 x 4 x 3.5	88	2300
220.03.050WDS-80	1/2"	2 - 6	9 x 4 x 3.5	73	2300





## JetCam Accessories

The interchangeable nozzle set from enz® consisting of a standard nozzle, KBR, HRH nozzle, and a Rotopuls allows you to solve all problems such as grease, hair roots, or incrustations in household applications. Another big advantage of JetCam is that it saves resources on cleaning and properties no longer have to be cleaned from the outside in, rather than from the inside out.






**JetCam Accessories**



					
220.11045	JetCam Nozzle Set			16x12.4x6	8.8
220.1011708	Steering part with rotation nozzle 3/8"			18x1.12x1.12	1.5
220.1001598	JetCam - 1/2" HRH rotating nozzle with steering part	1/2"	2 - 6		1.0

**JetCam Accessories**



				
220.1001421	Mugel JC40 (Impact guard)	2.24x2.24x2.84	0.2	
220.1001321	JetCam - 1/2" hose extension, 20 meters (screwable)		16.5	2300
220.1001044B	Forward jetting nozzle with impact guard	2.2x2.2x3.12	0.3	

## ACCESSORIES

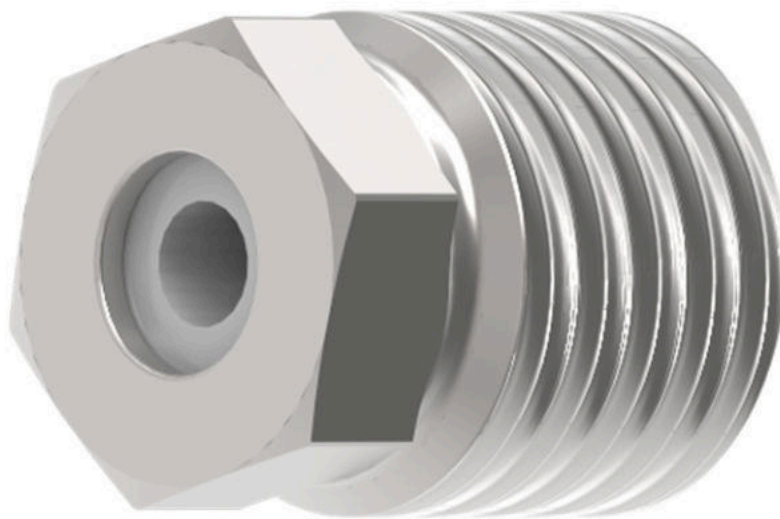
Round and fan jet nozzle inserts (enz® JetMax)	121
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## Round and fan jet nozzle inserts (enz® JetMax)

The stainless steel ceramic inserts stand out from the competition thanks to a very compact and aggressive water jet. The service life of a JetMax ceramic insert is many times longer than that of hardened steel nozzles or other hard materials. The inserts are available in a wide variety of diameters. The integrated jet stabilizer ensures a concentrated and high-energy water jet. The cleaning affect is greatly increased for the same amount of water and energy.





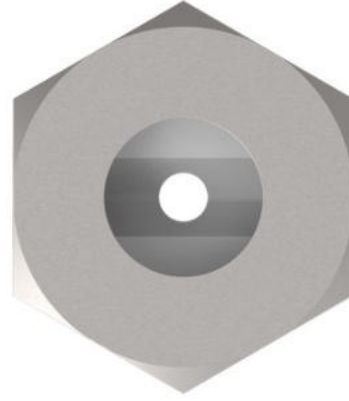
# Fan Jet Inserts



22.08F | Ø inch (0.04) (0.06)



22.10F | Ø inch (0.04) (0.06) (0.07) (0.09) (0.10) (0.11)



22.025F | Ø inch (0.04) (0.06) (0.07) (0.09) (0.10) (0.11)



# Round Jet Inserts



22.025 | Ø 0,01 - 0,04 inch



22.025 | Ø 0,04 - 0,12 inch



22.025 | Ø 0,13 - 0,16 inch



22.04 | Ø 0,01 - 0,06 inch



22.06 | Ø 0,01 - 0,12 inch



22.08 | Ø 0,04 - 0,13 inch



22.10 | Ø 0,04 - 0,16 inch



**Round jet**



22.025		Ceramic insert Ø 0.4 - 0.16 inch	G 1/4"	0.022	7,250
22.04		Ceramic insert Ø 0,01 - 0,06 inch	M4	0.022	22,000
22.06		Ceramic insert Ø 0,01 - 0.2 inch	M6	0.022	14,500
22.08		Ceramic insert Ø 0,04 - 0.13 inch	M8	0.022	22,000
22.10		Ceramic insert Ø 0,04 - 0,15 inch	M10 x 1	0.022	21,750

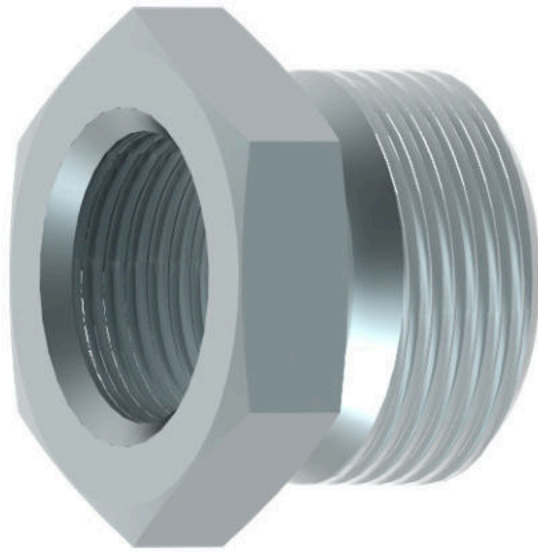
**Fan jet**



22.08F		Ceramic insert fan jet	M8	30°	0.022	7,250
22.10F		Ceramic insert fan jet	M10 x 1	30°	0.022	7,250
22.025F		Ceramic insert fan jet	G 1/4"	30°	0.033	7,250











## Bushings and extensions

enz® expansions (extensions) and reductions of various thread sizes are all made of stainless steel.



**Bushings**











				
19.M050F025N		Reduction bushing M 1/2" F 1/4" NPT	m 1/2 - f 1/4	0.11
19.M075F050		Reduction bushing M 3/4" F 1/2"	m 3/4 - f 1/2	0.26
19.M100F050		Reduction bushing M 1" F 1/2"	m 1 - f 1/2	0.22
19.M100F062		Reduction bushing M 1" F 5/8"	m 1 - f 5/8	0.28
19.M100F075		Reduction bushing M 1" F 3/4"	m 1 - f 3/4	0.34
19.M125F100		Reduction bushing M 1 1/4" F 1"	m 1 1/4 - f 1	0.34
19.M150F100		Reduction bushing M 1 1/2" F 1"	m 1 1/2 - f 1	0.4
19.M150F125		Reduction bushing M 1 1/2" F 1 1/4"	m 1 1/2 - f 1 1/4	0.4

**Extensions**



				
19.M050F062		Extension bushing M 1/2" F 5/8"	m 1/2 - f 5/8	0.29
19.M050F075		Extension bushing M 1/2" F 3/4"	m 1/2 - f 3/4	0.29

				
19.M050F100		Extension bushing M 1/2" F 1"	m 1/2 - f 1	0.49
19.M075F100		Extension bushing M 3/4" F 1"	m 3/4 - f 1	0.52
19.M100F125		Extension bushing M 1" F 1 1/4"	m 1 - f 1 1/4	1.2
19.M100F150		Extension bushing M 1" F 1 1/2"	m 1 - f 1 1/2	1.3
19.M100F40		Extension bushing M 1" F M40x2"	m 1 - f M40x2	0.78
19.M125F150		Extension bushing M 1 1/4" F 1 1/2"	m 1 1/4 - f 1 1/2	1.3



## Swivel joints











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





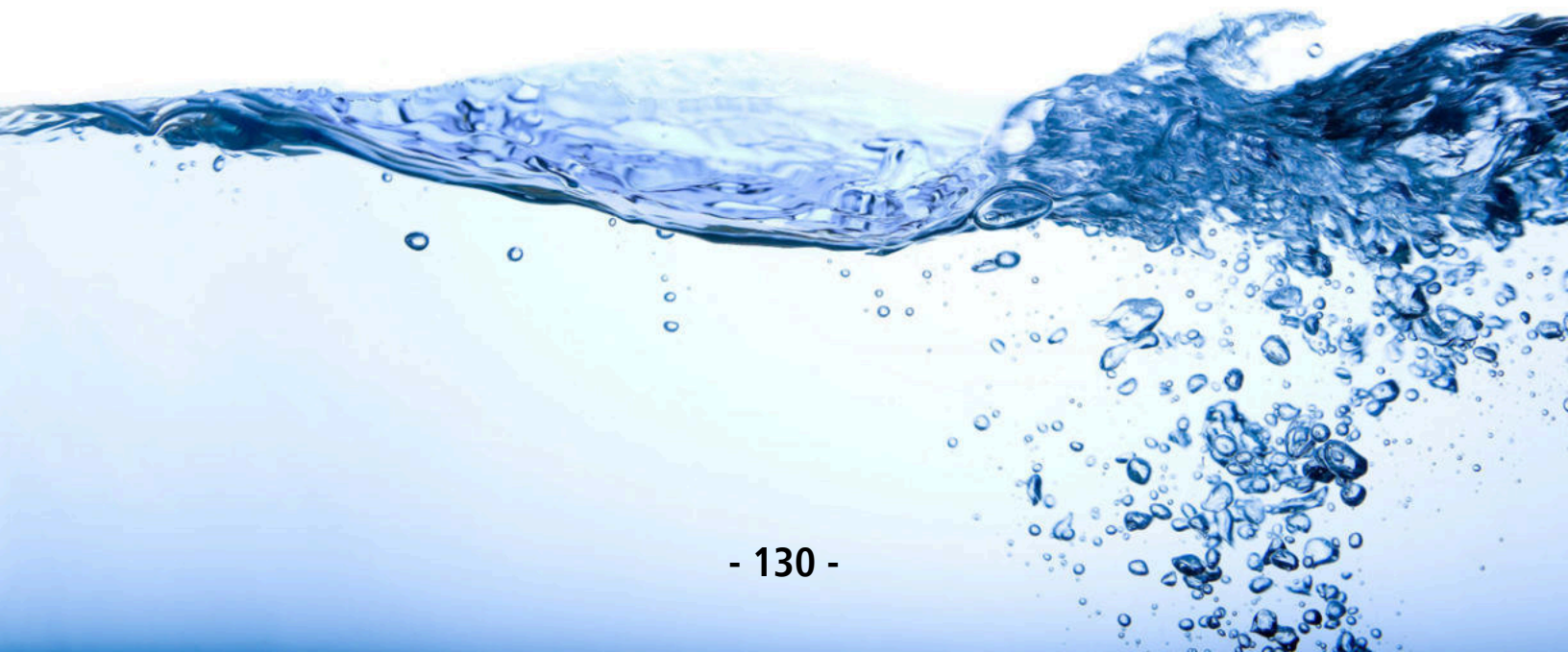
**Swivel joints 1/2" - 1 1/4"**



							 max
24.050		Swivel joint	1/2" m - 1/2" f	-	1.65 x 3.15	1.17	3,600
24.075		Swivel joint	3/4" m - 3/4" f	-	2.32 x 2.91	2.70	3,600
24.100		Swivel joint	1" m - 1" f	-	2.95 x 3.15	4.85	3,600
24.125		Swivel joint	1 1/4" m - 1 1/4" f	-	2.36 x 4.76	3.02	3,600
24.150		Swivel joint	1 1/2" m - 1 1/2" f	-	3.31 x 3.78	5.95	3,600

## Spray guns

Enz has multiple range of spray guns in its program. The jet can change from a pointed to flat jet, where you can trigger the flow very slowly or you can use a maximum flow. This can accommodate water temperatures of up to 150 °C.



Spray guns
















18.42		Spray gun with swivel SG-42	3/8"	2.6	46.5 x 7.9 x 1.8	3.97	-	4,350
18.43		Spray gun with swivel SG-43	1/2"	2.6	43.3 x 7.9 x 1.8	4.63	ok	5,000
18.44		Spray gun with swivel SG-44	1/2"	2.6	42.1 x 7.9 x 1.8	4.19	-	2,900
18.45		Spray gun without swivel SG-45	1/2"	2.6	30.7	5.07	-	3,600
18.41		Spray gun with swivel SG-41	1/2"	2.6	37.4 x 7.9 x 1.8	2.65	-	4,350

Accessories for spray guns



22S025N17		Steel insert Ø 1.7mm	AG 1/4" NPT	0.07	
22S025N27		Steel insert Ø 2.7mm	AG 1/4" NPT	0.07	
22S025N17F40		Steel insert fan jet Ø 1.7mm	AG 1/4" NPT	0.07	
22S025N13		Steel insert Ø 1.3mm	1/4" NPT	0.07	
22S025N21		Steel insert Ø 2.1mm	1/4" NPT	0.07	
0018.4543		Nozzle for lance Vario Ø 3.0mm		0.3	
0018.4542		Nozzle for lance Vario Ø 2.0mm		0.3	
08.0501		Pistol nozzle with round jet	1/2"		8,700
08.0502		Pistol nozzle with flat jet	1/2"		8,700

					
08.0751		Pistol nozzle with round jet	3/4"		5,000
08.0752		Pistol nozzle with flat jet	3/4"		5,000
08.1001		Pistol nozzle with round jet	1"		3,600
08.1002		Pistol nozzle with flat jet	1"		3,600
0018.438		Shoulder support for SG-43   13.4-19.7"		1.5	
0018.429		Repair kit to spray gun SG-41 SG-42 SG-44			
08.0551		Lance head drilled Ø 5 mm - 1/2 "	1/2"		5,000
0018.4599		Repair kit to spray gun SG-45			
0018.439		Repair kit to spray gun SG-43			
0018.050		Swivel joint for spray gun	1/2"		8,700

## Hose protection and accessories

enz® hose protection provides optimum protection for the hose's rubber or plastic coating against environmental influences. In addition to protective plastic hoses, enz® also sells rigid and flexible flex guides. Compared to traditional deflection slides and the plastic hose protection that cause heavy wear on the hoses, the rollers on the enz® flex guides last five times longer. These flex guides are also available in a flexible variant so that you do not always have to detach the nozzle.



**Hose protection**




















91M		Steel-Banane small	5.1+	11.81 x 14.57	5.6
91		Steel-Banane middle	6.7+	13.78 x 17.72	9.46
91A		Steel-Banane big	6.7+	23.62 x 26.38	11.88
91.05B		Flex guide for hoses with fix hanger	6.7+	18.23 x 5.2 x 8.98	15.43
91.07B		Flex guide for hoses with fix hanger	6.7+	22.8 x 5.2 x 10	20.28
91.05M		Flex guide	4.3+	3.15 x 11.81	4.28
91.05		Flex guide for hoses with brackets	8.3+	18.23 x 5.2 x 8.98	15.43
91.07		Flex guide for hoses with brackets	8.3+	22.8 x 5.2 x 10	20.28
92		High vac. protective plastic hose	5.9+	3.1#4.0 x 35.5	5.5
92A		High vac. protective plastic hose	3.5+	2.0#2.5 x 35.5	3.0

**Accessories for hose protection**



0090.02		Extension with locking spring		39.37	4.5
0090.03		Quick-Lock complete			4.68
0090.10		Locking sprong for extension			

			
0090.40		Shaft to plastic wheel Ø 20 x 122	
0090.90		Plastic wheel red	
0091.0504		Towing eyelet	
0091.0515		Adapter for flex guide hoses	
0091.0514M		Plastic protection	
0091.0504M		Towing eyelet	
0091.0505M		Roll	
93.7		Rope clip for upper deflection device	0.02
91.0515		Flex guide for hoses 91.05	
91.0715		Flex guide for hoses 91.07	
0091.05700		Roller alu with bearing	
0091.05703		Plastic protection for flex guide	
90		Deflection device for lower edge	157.48
93		Deflection device 18 - 34 inch	17.72 - 31.50



## Nozzle extension and accessories

The enz® Nozzle extension are based on a pipe-in-pipe solution and are designed in such a way that the threads cannot be screwed in with too much force. This has no impact on the water output. In many countries, it is actually mandatory to use Nozzle extension in order to prevent serious accidents during work.



**Nozzle extension and accessories**



97.050-100		Safetyliner complete 1/2" - 1/2"	1/2"	max. 7.8	1.06 x 4.57	0.70	ok	5,000
97.050-150		Safetyliner complete 1/2" - 1/2"	1/2"	max. 11.7	1.06 x 6.52	0.9	ok	5,000
97.075-100		Safetyliner 3/4" - 3/4"	3/4"	max. 7.8	1.37 x 4.65	1.0	ok	5,000
97.075-200		Safetyliner 3/4" - 3/4"	3/4"	max. 15.6	1.37 x 8.55	1.6	ok	5,000
97.100-150		Safetyliner 1" - 1"	1"	max. 11.7	1.8 x 6.76	2.1	ok	5,000
97.100-200		Safetyliner 1" - 1"	1"	max. 15.6	1.8 x 8.71	2.6	ok	5,000
97.100-300		Safetyliner 1" - 1"	1"	max. 23.4	1.8 x 12.61	3.5	ok	5,000
97.125-150		Safetyliner 1 1/4" - 1 1/4"	1 1/4"	max. 11.7	2.08 x 6.84	1.2	ok	5,000
97.125-200		Safetyliner 1 1/4" - 1 1/4"	1 1/4"	max. 15.6	2.08 x 8.79	3.5	ok	5,000
97.125-300		Safetyliner 1 1/4" - 1 1/4"	1 1/4"	max. 23.4	2.08 x 12.7	4.7	ok	5,000

**Threaded ring**



0097.0503		Threaded ring 1/2"	1/2"	1.18 x 0.39	0.066	5076

## High pressure hoses and accessories

enz® high pressure hoses were developed for high and ultra high pressure applications. They combine outstanding handling and a long service life with the highest level of safety. When working with short nozzles, short fittings are important in order to pass through all the bends, while enz® reels allow you to work in a tidy and efficient manner within buildings.



High pressure hoses



C173		HP Hose	1/8" m - 1/4" f	3/16" x 11yard Ø In 0.19" Ø Out 0.35"	2.29	3,600
C175		HP hose	1/8" m - 1/4" f	3/16" x 22yards Ø In 0.19" Ø Out 0.35"	4.54	3,600
C174		HP hose	1/8" m - 1/4" f	3/16" x 16yard Ø In 0.19" Ø Out 0.35"	3.39	3,600
C176-30		HP hose	1/4" m - 1/2" f	1/4" x 33yards Ø In 0.24" Ø Out 0.47"	11.46	3,600
C176-20		HP hose	1/4" m - 1/2" f	1/4" x 22yards Ø In 0.24" Ø Out 0.47"	7.93	3,600
C177-30		HP hose	1/4" m - 1/2" f	5/16" x 33yards Ø In 0.31" Ø Out 0.55"	12.56	3,600

Accessories for high pressure hoses

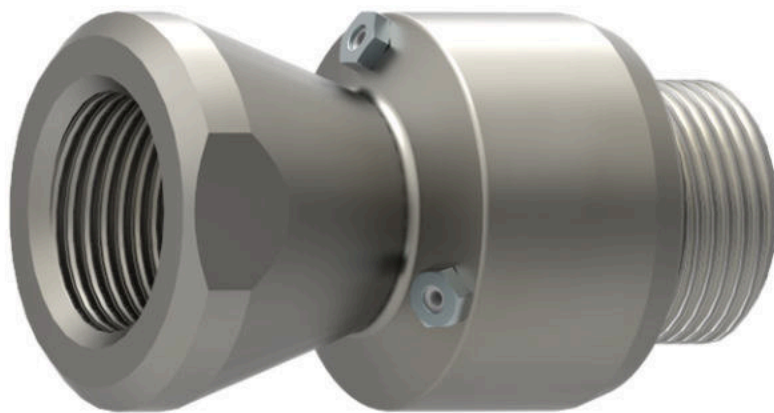


A-22MF-08BM KAE		Hand adapter IG M22x1.5-AG 1/2"		0.33
A-22MF-04BM KAE		Hand adapter IG M22x1.5-AG 1/4"		0.22
C330		Hose Reel for Hose 1/4" and 1/8"	1/2"	9.7

				
C331		Closure cap	1/4"	0.22
C332		Closure cap	1/8"	0.22

## Pull part for high pressure hoses


The pulling part pulls the high pressure hose with cleaning tool into the sewer. It also enables the combination of several high-pressure hoses. This allows cleaning work to be carried out over long distances. On steep slopes, the pulling part can also be used as an additional push nozzle.





**Pull part for high pressure hoses**

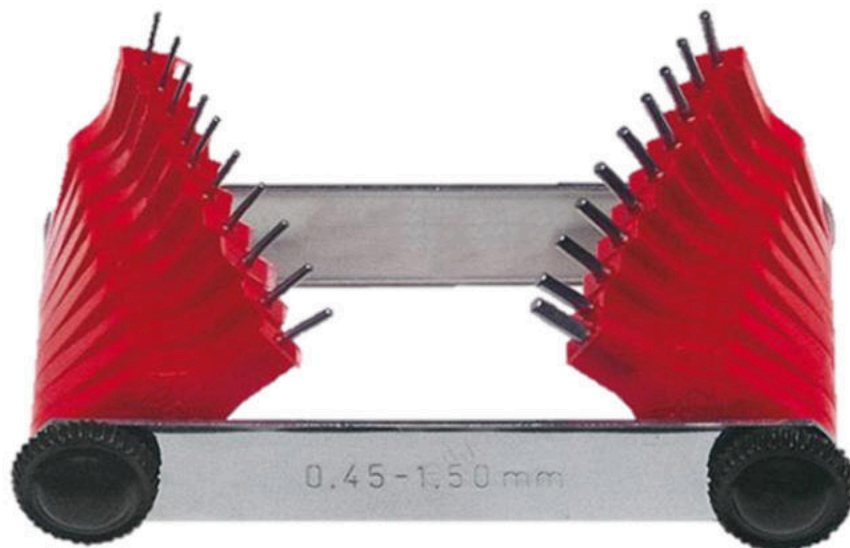


							 max
30.050Z		Pull part	1/2"	1.38	1.18 x 2.05	.	5,075
30.125Z		Pull part	1 1/4" - 1 1/4"	2.56	2.36 x 3.54		3,625
30.125100Z		Pull part	1 1/4" - 1"	2.56	2.36 x 3.74		3,625

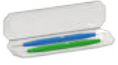



















## Maintenance

Regular maintenance and cleaning the nozzles daily prevents interruptions in operations and extends the service life of the nozzles. enz® sells various tools and products that come in handy when doing so. Reamers should never be used for cleaning.



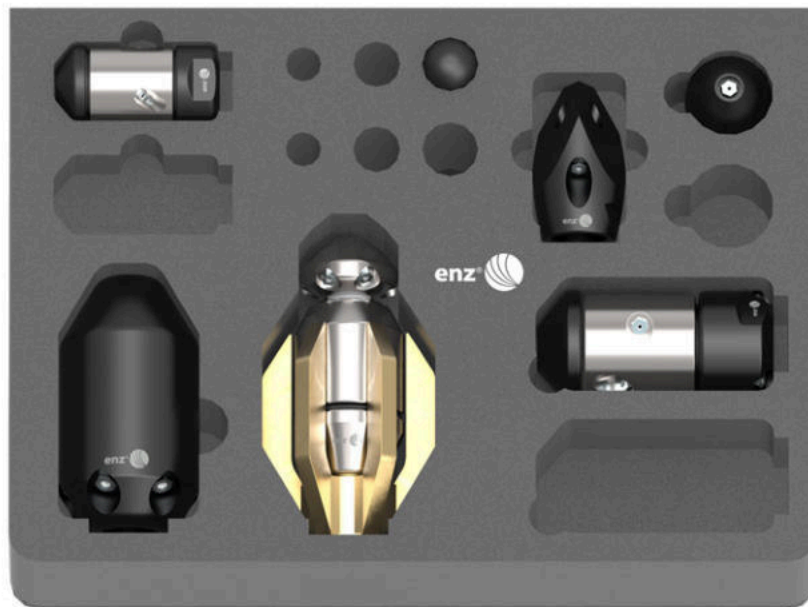
Maintenance tools & nozzle care



		
C101		Socket wrench 0.2 inch 0.11
C149		Socket wrench 0.2 inch 0.15
C261		Socket wrench 3.5 mm 0.11
C260		Socket wrench Futuro 0.28 inch 0.15
C104		Socket wrench 0.2 inch 0.15
C131		Socket wrench cross handle 0.4 inch 0.05
C160		Socket wrench cross handle 0.3 inch 0.11
C205		Nozzle Maintenance Set 0.96
C200		Nozzle gauge 0.66
C201		Nozzle gauge 0.44
C202		Set Nozzle Cleaning-Tool 0.06
C191		Oil Spray Bio, 500 ml
C109		Loctite 638 - 50 ml
C192		Loctite 243 - 50 ml 0.15
C227		Loctite 270 - 50 ml












## Toolboxes

Enz gives you the option to have a nozzle tool kit box for every jetter and water jetting truck. It's very flexible with the different types of nozzles and you can also add your logo on the lid. This option of organization can reduce the risk of lost or misplaced nozzles.

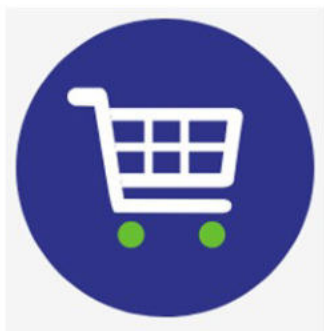


**Toolboxes 1/8" - 1 1/4"**



					
09.000012B		Box for 1/8" nozzles	1/8"	4.7 x 4.6x 1.6	0.23
09.000025B		Box for 1/4" nozzles	1/4"	4.7 x 4.6x 1.6	0.23
09.000038E		Case for 1/4" or 3/8" nozzles	1/4", 3/8"	10 x 8.3 x 2.4	0.78
09.000050F		Case for 1/2" nozzles	1/2"	10.04 x 8.26 x 2.36	1.32
09.001		Tool Case 1/2"	1/2"	11.81 x 10.83 x 4.13	1.10
09.003		Tool Case 3/4"	3/4"	15.35 x 11.81 x 7.28	4.19
09.004		Tool Case 1"	1"	19.49 x 16.14 x 7.09	6.17
09.005		Tool Case 1 1/4"	1 1/4"	19.67 x 16.54 x 6.89	6.17

For more information  
[www.enz.com](http://www.enz.com)



## Article

402.200iA/B/C

## Pump Datas

Flow rate 300.0 l/min  
Pressure 100.0 bar

## Hose system

Without hose

## Calculated values

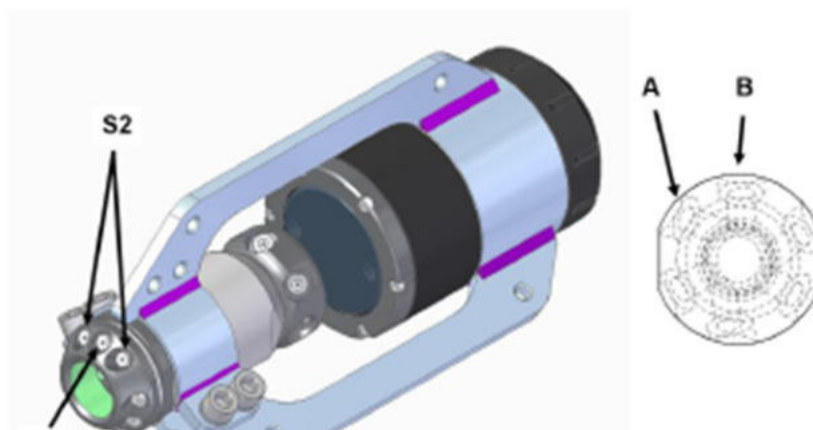
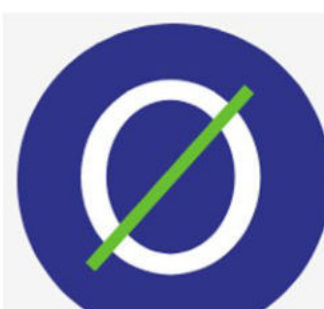
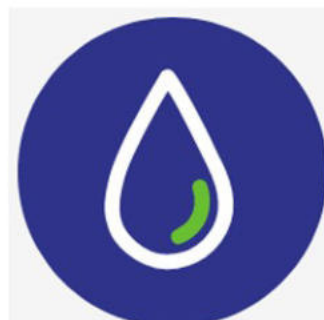
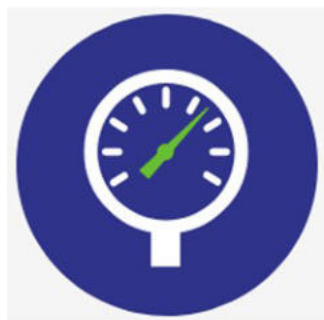
Flow rate 297.5 l/min  
Final pressure 100.0 bar  
Pressure loss 0.0 bar  
Traction approx. 57 kg  
Excess 2.5 l/min

## Equipment

A = 3 x 2.0 mm  
B = 3 x 1.2 mm  
S1 = 3 x 1.7 mm  
S2 = 6 x 1.9 mm

## Advice(s)

All rotating tools must be tested!







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