

Product catalogue, abrasive cutting



Cutting nozzle assemblies

Abrasive jet cutting system

Abrasive hopper

Abrasive material



Cutting nozzle assemblies

Construction site use

Industrial production use

Special cutting nozzles

Accessories for cutting nozzle assemblies



Abrasive jet cutting system



Abrasive hopper



Abrasive material

Hammelmann application engineering overview

Cutting nozzle assemblies

18.A.1 – 08/10

Materials that are difficult to cut require the use of a water jetting nozzle with an abrasive entrainment chamber.

A high pressure water nozzle inside the assembly creates a water jet. This pressurised water jet travels through the entrainment chamber at high speed to a focussing nozzle dragging the air in the chamber with it and creating a vacuum. Abrasive material is fed into the side of the chamber under air pressure. The abrasive particles are sucked into the air around the water jet and accelerated into the water stream to emit from the focussing nozzle.

Type B 4000 – for construction site use



Operating pressure: 4000 bar
High pressure connection
Pressure ring: M 14 x 1,5 LH (nipple)
Pressure nut: M 26 x 1,5
Flow rate: 10 – 25 l/min

Designed to be mounted on a nozzle carrier (see 18.B).

Application examples: - Concrete cutting
- Steelwork cutting

Code no.

00.00793.0029

Type S 4000 – for industrial production use



Operating pressure: 4000 bar
High pressure connection: M 14 x 1,5 LH
with adapter to M 26 x 1,5
Pressure ring: M 14 x 1,5 LH (nipple)
Pressure nut: M 26 x 1,5
Flow rate: max. 10 l/min

Application: especially for use with a cutting table, i.e. cutting shapes in metals, glass, plastics, ceramics etc..

The entrainment chamber can be removed without the need for tools for pure water jet cutting of softer materials.

Code no.

00.00793.0030

HAMMELMANN®

Special cutting nozzles



Operating pressure: 4000 bar
High pressure connection: M 14 x 1,5 LH
M 26 x 1,5 for M 14 x 1,5 LH (nipple)
Flow rate: 10 – 25 l/min

Application examples:

- Cutting in areas with difficult access, i.e. cutting pipes $\varnothing \geq 65$ mm from inside to out.
- Roughening of motor block cylinder bores.

Code no.

00.00793.0025



Operating pressure: 3000 bar
High pressure connection: M 14 x 1,5 LH
M 26 x 1,5 für M 14 x 1,5 LH (nipple)
Flow rate: 10 – 25 l/min

Application examples:



- Cutting in areas with difficult access, i.e. cutting pipes $\varnothing \geq 49$ mm from inside to out.
- Roughening of motor block cylinder bores.

Code no.

00.00793.0028

Accessories for cutting nozzle assemblies

18.A.3 – 08/10

	For cutting nozzle type		Description	Code no.																															
	B 4000	S 4000																																	
Nozzle insert 	Only for replacement for cutting nozzles with code no. 00.00793.0026 and 00.00793.0027		Op. pressure: 4000 bar Eff. factor: 0,72 Material: Steel / Diamond Orifice diameter: 0,15 – 1,0 mm	00.00775.00xx																															
X	X	<table border="1"> <thead> <tr> <th>Orifice diameter</th> <th>last digit no.</th> <th>Orifice diameter</th> <th>last digit no.</th> </tr> </thead> <tbody> <tr><td>0,20</td><td>.0038</td><td>0,55</td><td>.0045</td></tr> <tr><td>0,25</td><td>.0039</td><td>0,60</td><td>.0046</td></tr> <tr><td>0,30</td><td>.0040</td><td>0,70</td><td>.0047</td></tr> <tr><td>0,35</td><td>.0041</td><td>0,80</td><td>.0048</td></tr> <tr><td>0,40</td><td>.0042</td><td>0,90</td><td>.0049</td></tr> <tr><td>0,45</td><td>.0043</td><td>1,00</td><td>.0050</td></tr> <tr><td>0,50</td><td>.0044</td><td></td><td></td></tr> </tbody> </table>	Orifice diameter		last digit no.	Orifice diameter	last digit no.	0,20	.0038	0,55	.0045	0,25	.0039	0,60	.0046	0,30	.0040	0,70	.0047	0,35	.0041	0,80	.0048	0,40	.0042	0,90	.0049	0,45	.0043	1,00	.0050	0,50	.0044		
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0,45	.0043	1,00	.0050																																
0,50	.0044																																		
Guide piece 	X		Fits in front of the focussing nozzle. Suitable for all. Material: Tungsten carbide	04.00795.0097																															
Focussing nozzles 	X	X	Material: Tungsten carbide Outside orifice: 9,4 mm Length: 75 mm	04.00795.00xx																															
			<table border="1"> <thead> <tr> <th>Focussing orifice</th> <th>Last digits no.</th> </tr> </thead> <tbody> <tr><td>0,5</td><td>.0098</td></tr> <tr><td>0,8</td><td>.0099</td></tr> <tr><td>1,0</td><td>.0092</td></tr> <tr><td>1,5</td><td>.0093</td></tr> <tr><td>2,0</td><td>.0094</td></tr> <tr><td>2,5</td><td>.0095</td></tr> <tr><td>3,0</td><td>.0096</td></tr> </tbody> </table>		Focussing orifice	Last digits no.	0,5	.0098	0,8	.0099	1,0	.0092	1,5	.0093	2,0	.0094	2,5	.0095	3,0	.0096															
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2,5	.0095																																		
3,0	.0096																																		
Nozzle insert Type „P“ or „T“ 	X	X	<u>Type „P“</u> Op. pressure: 3000 bar Eff. factor: 0,7 Material: Steel / Sapphire Orifice diameter: 0,15 – 1,5 mm <u>Type „T“</u> Op. pressure: 3500 bar Eff. factor: 0,72 + 0,92 Material: Steel / Diamond Orifice diameter: 0,15 – 1,0 mm	see chapter 12.J																															

HAMMELMANN®

Abrasive jet cutting system

max. 4000 bar

for the construction and maintenance industries

Mobile abrasive jet cutting unit



The mobile abrasive jet cutting unit can cut plates, slabs and pipes made from a wide variety of materials.

The abrasive entrainment nozzle assembly is mounted on a pneumatically driven carrier trolley which runs on a tensioned guide chain. A constant traverse speed is guaranteed.



Nozzle carrier trolley

Nozzle carrier mounted on rail



Guide rail

To make straight cuts through flat materials the guide chain is attached to a 2m long guide rail.

Pipes of 400mm dia. and above are cut by fitting a chain tensioning trolley to the nozzle carrier trolley.

Lengths of chain can be added or removed to vary the overall length of the cut.

The carrier trolley speed is manually controlled by a pneumatic system. Cutting speed and positioning speed are individually controlled.



Carrier trolley with tensioning trolley

HAMMELMANN[®]

Abrasive jet cutting system

max. 4000 bar

for the construction and maintenance industries

Abrasive hopper

The system pneumatic control is mounted on the abrasive hopper. The hopper has an abrasive volume metering device and is connected to the abrasive entrainment nozzle by a 6m length of hose. This 6m length should never be exceeded.



Abrasive jet cutting system complete, operating pressure max. 4000 bar	Code no.
consists of: <ul style="list-style-type: none"> • Abrasive entrainment nozzle Type B 4000 • Nozzle carrier trolley • Guide rail • Chain tensioning trolley • Chain • Abrasive hopper (approx. 60 litre) • Air hose (7 m long) • Abrasive feed hose (6 m long) • Pneumatic control unit 	09.00671.0002

Abrasive material

18.A.4 – 08/10

Garnet

Type	Grain size [mm]	Application	Code no.
HS 2	0,18 – 0,35	Steel	04.02747.0011
HS 5	0,50 – 1,00	Steel/Concrete	04.02747.0010
HS 7	0,70 – 1,40	Concrete	04.02747.0009



Garnet

Type	Grain size [mm]	Application	Code no.
HS 50	0,250 – 0,350	Steel	04.02747.0006
HS 80	0,200 – 0,250	Steel	04.02747.0005
HS 120	0,100 – 0,200	Steel	04.02747.0004
HP 220	0,075 – 0,100	Steel	04.02747.0007

HAMMELMANN®

Application engineering

Standard



Surface blasting



Tank cleaning



Tube bundle cleaning



Pipe and sewer cleaning



Water hydraulic



Abrasive cutting

