

Pure Water Cutting Head Assembly AQUALINE I

Reliability Proven in Three Shift Operation



Automotive applications are among the most demanding of subcontracting jobs in the industry. Demands put on waterjet components are certainly not an exception, but a confirmation of this rule. Production units usually run 3 x 8-hour shifts throughout the complete week highlighting a need for extremely high reliability and speed.

Any production stop is equivalent to expensive delays and shut-downs of processes further down the production flow stream.

Wide Range of Different Applications

Pure water cutting applications usually work with significantly higher cutting speeds compared to those of abrasive cutting. The typical applications of this nature are found in the Automotive and Aerospace Industries, as well as miscellaneous plastic and composite paneling. Gaskets, foams and food are also sizeable application areas for pure waterjets.

Reliability under extreme conditions

Our AQUALINE I pure water cutting head has gained an industry-wide reputation for being amongst the quickest and the most reliable pure water cutting heads under extreme working conditions, through fastest reaction times and high component lifetimes and quality.

Applicable in 1D to Multiple Axis Systems

The AQUALINE I cutting head is widely used in robotic "3D-Cutting Boxes" as well as multidimensional cutting machines.

High Performance Nozzle Valve

The multiple cutting cycles found in these industries place huge requirements on the on/off cycle speed and reliability of the cutting valve. The KMT WATERJET AQUALINE I provides the industry's top quality leading solution in this area. Depending on the application, normally closed (N/C) and normally open (N/O) cutting valves are available. The nozzle valve opens in less than 50 ms depending on the operating pressure.

Compact Design for Flexible Use

The AQUALINE I head weighs only 1.8 kg (3.9 lbs) guaranteeing high flexibility and making multihead and 3-D applications easy. It can be equipped with both sapphire and diamond orifices, whatever fits the individual process needs best.

Back-up Solutions

The compact design allows it to be adapted to multiple cutting nozzles on a 1- or 2-D cutting machine to increase production throughput. The compactness also creates the possibility of installing a second set of cutting heads as a backup or redundant solution. In practice, oftentimes more than 12 cutting heads are hooked up to a single cutting system.

Key Focus on Maintenance Friendliness

Leak holes protect the nozzle body, nozzle tube and nozzle nut from damages and indicate clearly which connection has to be tightened or which seal has to be replaced. The unique design allows for replacing the seal in under 5 min.

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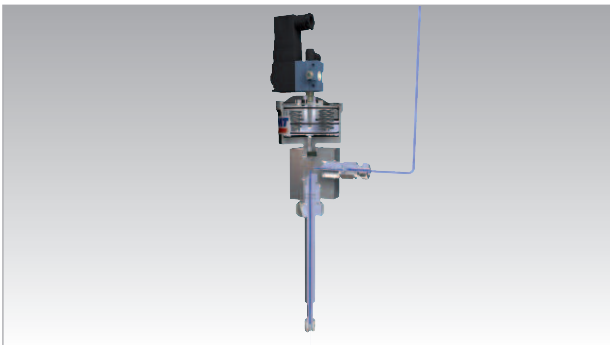


Technical Data

Length	50 mm
Width	50 mm
Height (with 8" Nozzle Tube)	490 mm
Weight	1,8 kg
HP Connection	3/8" UNF
Mounting Screws (2x)	1/4" x 7/8"

Cycle Times at 3.450 bar

N/C Valve open	< 50 ms
N/C Valve close	< 160 ms
N/O Valve close	< 50 ms
N/O Valve open	< 115 ms

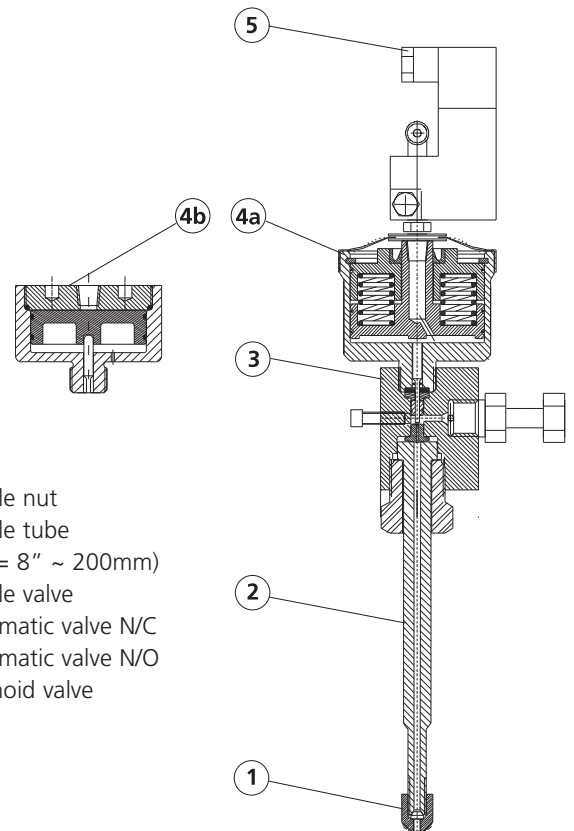


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Material	Thickness	Cutting Speed
Rubber	2	27.000
	10	11.500
	20	2.200
Synthetic material	2	22.500
	5	8.900
	10	3.400
Foamed material	10	27.500
	100	5.500
Units	mm	mm/min

at 4.136 bar; orifice sizes: 0,10 mm–0,25 mm;
surface quality: medium – fine



- 1 Nozzle nut
- 2 Nozzle tube
(Std = 8" ~ 200mm)
- 3 Nozzle valve
- 4a Pneumatic valve N/C
- 4b Pneumatic valve N/O
- 5 Solenoid valve



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