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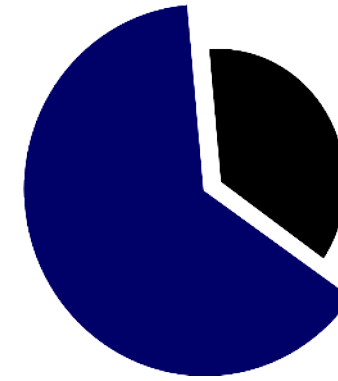
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# VETRO TOOLING



Vetro Tooling has a successful background in the glass trade, not only providing tooling but having its own state-of-the-art workshop and engineering team at its premises, so we can produce bespoke solutions to the specifications of our customers.

Taking our strengths and hardworking ethos we have gained from many years in the glass industry we ventured into the Stone trade a few years ago and have gone from strength to strength. Even against the unstable economy the UK has faced in the last few years, this increase has only shown true that our customer-comes-first mentality works. We continually work closely with our suppliers providing quality tooling to exceed our customers' needs and wants, creating solutions to customers' problems and providing methods to save both time and money.

We know that investing in CNC machinery is a big investment in your company's future and that peace of mind with quality and assistance is of the utmost importance.

What sets us apart from other suppliers is that we have our own workshop, which enables us to manufacture our own wheels made from highest grade Italian diamond. With our vast knowledge in the trade, we aren't just a reseller, we know our stuff!

Over the years we have worked closely with our partners in Italy and produced quality, bespoke tooling which has solved many of the everyday problems our customers face.

We also offer a re-grind or re-spark service to prolong the life of your tools, saving your company money.

Our experienced sales team works closely with our customers and all of them are always on the end of the phone and available to pop into factories to provide solutions for an easier life in the hectic work environment many of us face every day.

**DAVID  
LITHAUER**  
MANAGING DIRECTOR

"OUR AIM IS TO ALWAYS OFFER OUR CUSTOMERS OUTSTANDING QUALITY AND SERVICE TO RIVAL ANYTHING CURRENTLY ON THE MARKET AND WE CONTINUE TO STRIVE FOR THIS."

**WELCOME TO THE WORLD OF  
DENVER  
BE CLEVER**



## HISTORY

Established in 1984 in the Republic of San Marino, today Denver offers the largest range of stone and glass processing machines, including: bridge-saws with 3 / 4 and 5axis, CNC router machines with 3, 4 and 5 interpolated axis, 5 Axes CNC working centers, universal vertical CNC machines, waterjet and Automatic polishing slab machine. The best price-quality rate, a friendly interface, top quality components and absolute respect for human relationships, are the basis on which Denver builds their business and successful experience.

## VISION

DENVER is a company that produces machines for the stone and glass industries.

DENVER is the centre of technological excellence that wants to drive the development of San Marino Tech Valley, inspired by a mentality that has always pursued an excellence deeply rooted in their corporate culture. DENVER is a lifestyle aimed at excellence and constant curiosity, which means growth, progress and solutions that make the history of their market.

We want to convey this sense of excellence to the customer who, by choosing us, becomes part of Denver World, and this for him means to make the difference on the market revolutionizing his way of conceiving the working system and the business. DENVER is the centre of excellence of San Marino Tech Valley not contaminated by the laws of the global mainstream.

**DENVER**

**AQUA  
WATERJET**



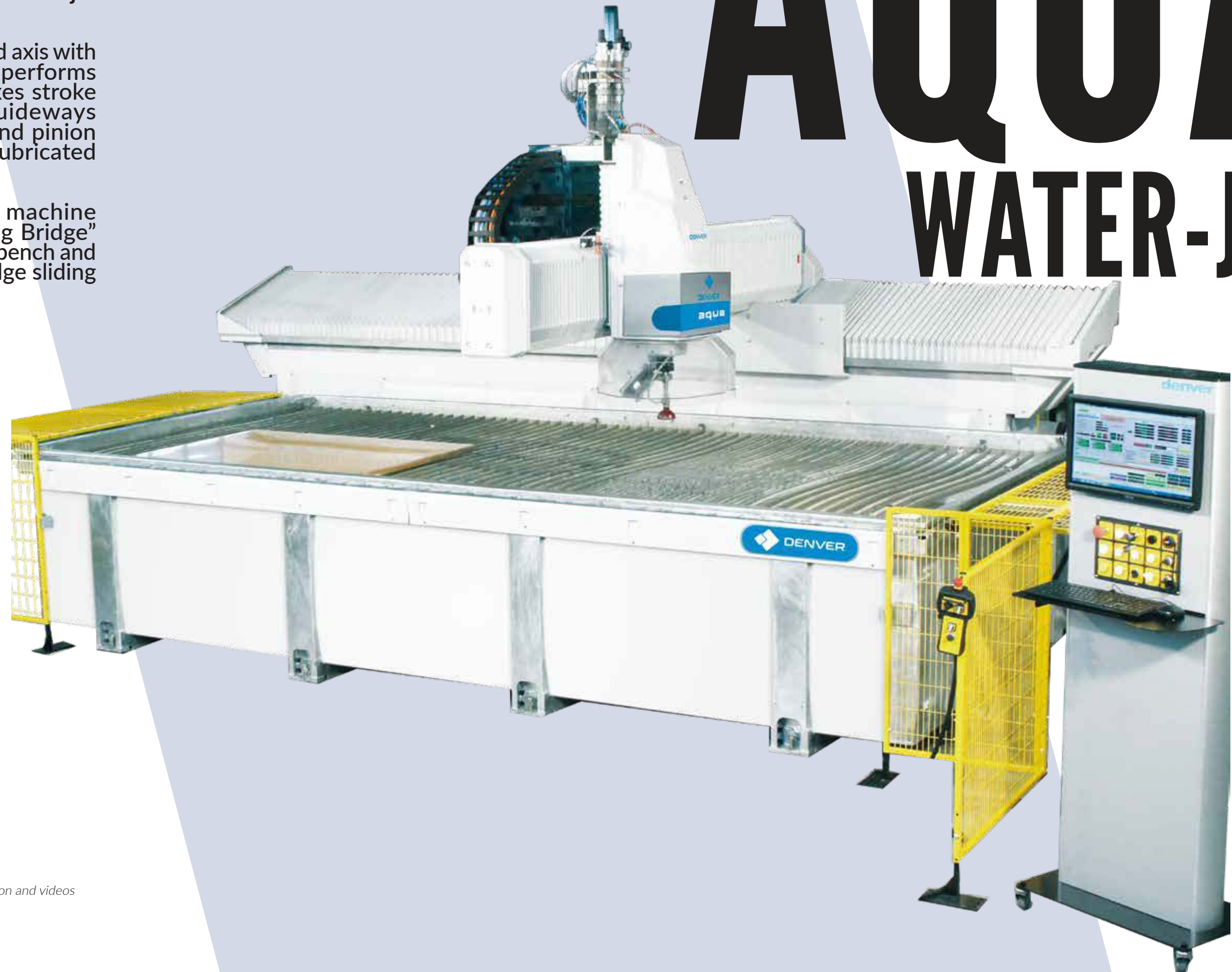
## ABOUT

Aqua is a modern, versatile and high-performance abrasive waterjet cnc.

Featuring 3 interpolated axis with Brushless movement, it performs fast and precise cuts. Axes stroke is on high-precision guideways with helical teeth rack and pinion transmission which are lubricated by a centralized pump.

The Aqua Water-jet machine is designed with a "Flying Bridge" structure: tank with work bench and rear beam with flying bridge sliding on it.

# AQUA WATER-JET



Take a look at our website for more information and videos

The possibility of processing different raw material as molten, curved and moulded glass, steel, marbles and synthetic stones, plexiglass and plastics makes Aqua able to perform various products which can be exploited in different industries:

- Third party processing for alternative markets
- Realize details for the construction industry
- Furniture components production
- Machine or electronics parts construction
- Realize components for the industry
- Production of tailored pieces for prototypes
- Mechanical parts for medical equipment creation
- Gears and similar production
- Production of artifacts for arms industry
- Creation inlay and decoration for coverings and flooring
- Tailor-made details realization for the shipping industry

## STONES



## QUARTZ, CERAMICS & ULTRA COMPACT SLABS

## GLASS



## METAL & PLASTIC MATERIALS



# HYPERTHERM PUMP



Aqua features a high performing and low-maintenance pump fully managed by machine's control panel. Top class technology from a leader manufacturer.

Hyperterm HyPrecision waterjet pumps are built with Next evolution of Advanced Intensifier Technology (AIT) and assisted by the closed-loop proportional control of the cutting pressure. From a new intensifier pumpusage conception, we developed pumps which work harder, last longer and require less service time. AIT is what make Hyperterm HyPrecision waterjet pumps more cost-effective compared to any other waterjet pump.

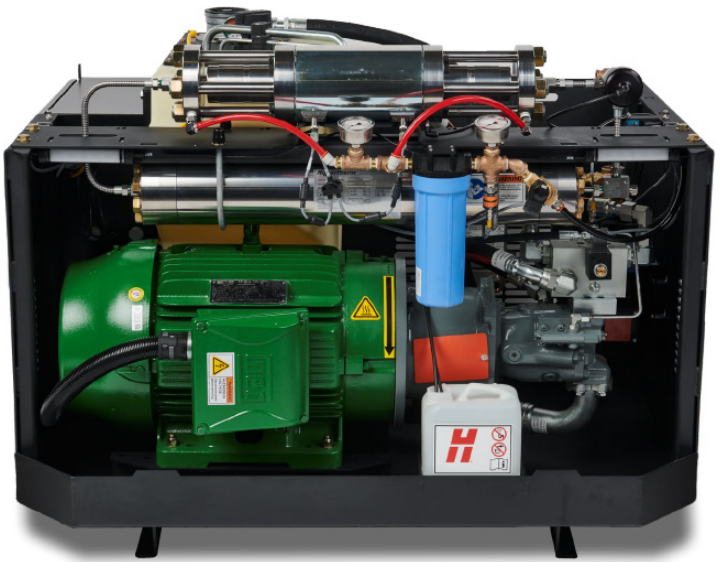
Air cooling with oil and fan radiator, with set up for possible water or chiller cooling system.

**SIMPLE MAINTENANCE** Hydraulic rod seals and plunger bearings are readily accessed from the outside of the hydraulic end cap.

**LONGER LASTING** Hydraulic central section features an advanced piston design which reduce seal water and improve components life.

**EASY ACCESS** Check valve use a screw-less, low-pressure poppet designed to enable quick evaluation of key contact surfaces. This feature also allows for noticeably faster component replacement.

**OPTIMIZED SHIFTING** Advanced electronics provide a smooth, reliable shifting for optimum cutting quality. Shift times are monitored to ensure optimal pump performance.



**SERVICE-FRIENDLY HIGH PRESSURE END** Simplifies high-pressure end removal for quick seal maintenance. At the same time, cylinder's design without threaded increases reliability.

**PROLONGED SEAL LIFE** Large diameter plunger produces more water per stroke with reduced friction, yielding maximum seal life.

**“Why Hypertherm?  
Top class, high performing pump plus  
clear and competitive maintenance  
costs!”**



# BASIC CONFIGURATION



## HEAVILY RIBBED ZINC COATED STEEL FRAME

Strong, normalized, heavily ribbed steel frame, sand-blasted, zinc coated rust-proff primed with two layers ceramic coating. Hot deep galvanized steel tank and bottom steel plate to 8mm with a higher wear resistance.



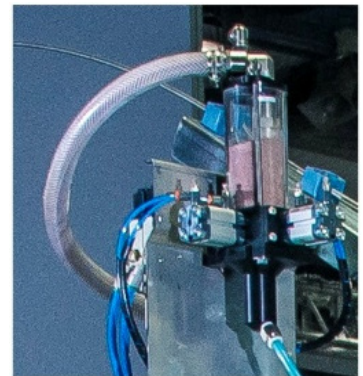
## WORK BENCH

Designed with steel rods of 100mmx3mmx2100mm and centre distance 70mm replaceable separately.



## AUTOMATIC LUBRICATION SYSTEM

All guideways are automatically lubricated by a centralized pump.



## 3 AXES CUTTING HEAD

Cutting head designed to have the best cutting quality. It includes:

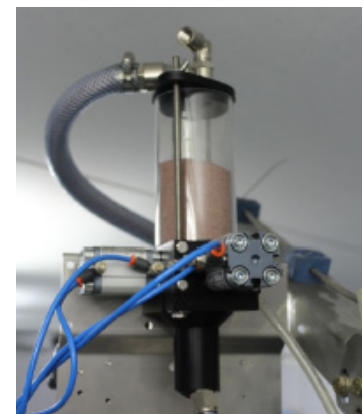
- Mini hopper for abrasive for high and low pressure independent management
- Orifice.
- Focalizer.

Equipped with protective hood to contain mist while processing and to ensure high safety for machine operator.



## SINGLE MINIHOPPER

Single minihopper with double effect onboard the cutting head: Abrasive flow rate is rapidly and consistently adjusted when switching from piercing to cutting. Increased reliability thanks to no use of the adjusting valve.

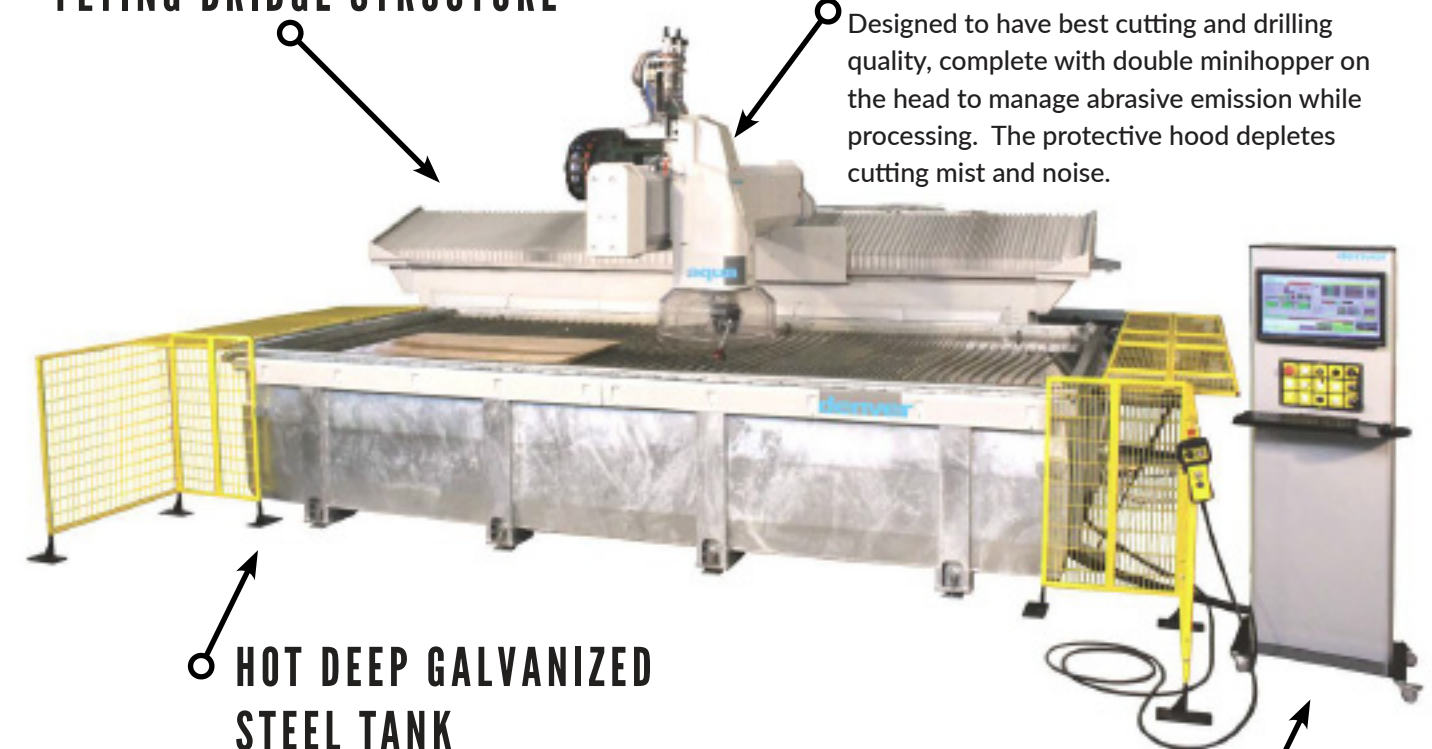


# TECHNICAL FEATURES

## FLYING BRIDGE STRUCTURE

## 3 OR 5 AXES CUTTING HEAD

Designed to have best cutting and drilling quality, complete with double minihopper on the head to manage abrasive emission while processing. The protective hood depletes cutting mist and noise.



## HOT DEEP GALVANIZED STEEL TANK

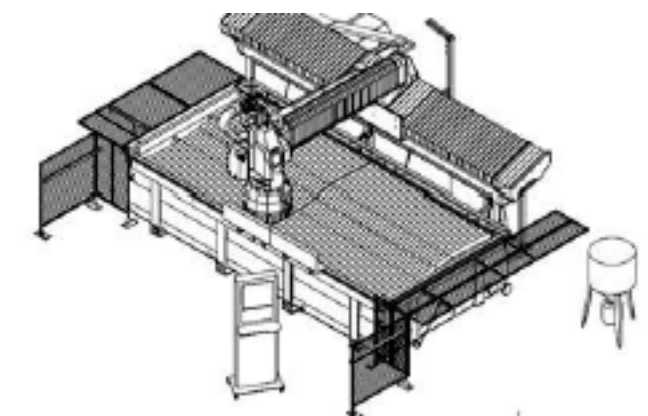
Standard equipment with hot deep galvanized steel tank with bottom steel plate. Working bench design also with steel rods with 70mm centre distance.

## ELECTRICAL CABINET & MOBILE CONSOLE PANEL

## FLYING BRIDGE STRUCTURE

Designed with 2 separated parts, tank/working bench and rear beam. This design offers:

- Superior accessibility on 3 sides for piece loading and unloading
- Guideways completely separated from the tank, preventing thermal expansion which would impair processing precision.



# 3 AXIS AQUA



- Bridge Width-wise Stroke (X Axis): 3000mm with hardened lubricated high-precision guideways with helical teeth rack and pinion transmission protected by bellows. Axis motion powered by brushless motor with adjustable speed up to 48 mt/min.

X stroke: 3000mm



- Head Depth-Wise Stroke (Y Axis): 2000mm with hardened lubricated high-precision guideways with helical teeth rack and pinion transmission protected by bellows. Axis motion powered by brushless motor with adjustable speed up to 48 mt/min.

Y stroke: 2000mm



- Head Vertical Stroke (Z Axis): 250mm with hardened lubricated high-precision guideways protected by bellows. Axis movement with adjustable speed 0-15 mt/min.

Z stroke: 250mm

## TOUCH PROBE

An optional system, perfect for 45° cutting, to adapt cutting parameters to raw material uneven thickness.

## ANTI-COLLISION SYSTEM

Optional device to avoid collision of the head with pieces protruding from the working bench.



## GARNET TANK

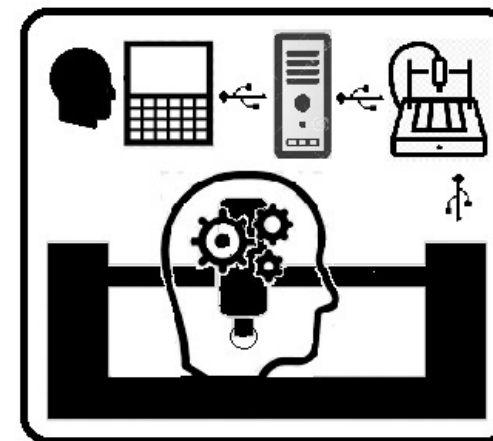
200kg capacity 2 stage garnet tank for non-stop garnet feeding with no need to stop working cycle during refilling,

Standard equipment includes 1.000kg of the highest quality garnet supplied in 25 kg bags.



## ELECTRICAL CABINET & MOBILE CONSOLE PANEL

Electric cabinet integrated in machines frame. Mobile console panel in the right front part of the machine in order to optimize workshop spaces. Remote control to ease and expedite machine set-up for processing.



## HARDWARE

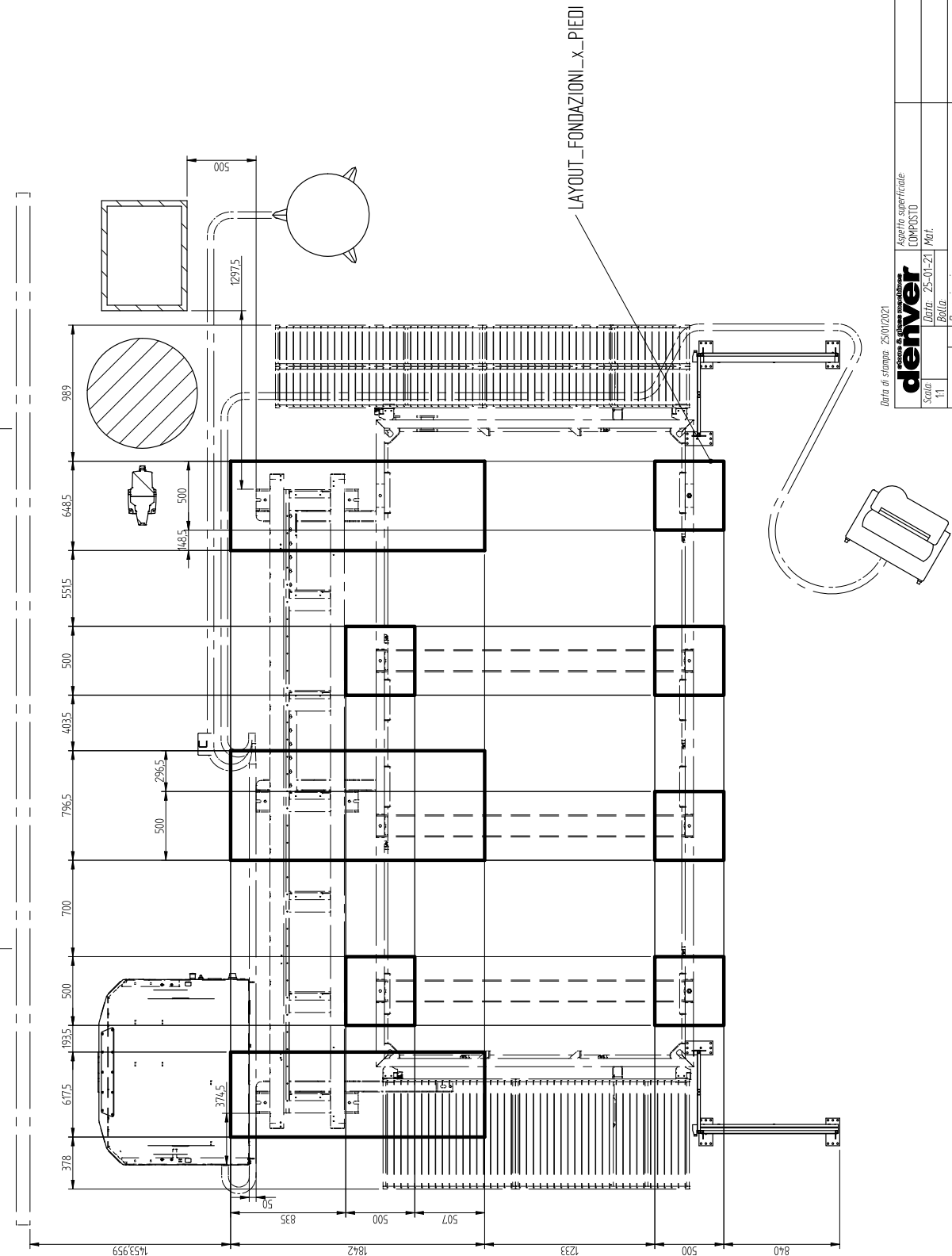
The machine features OSAI Open Series NC unit with Ethercat system and axes digital management technology. PC interface with 64 bit, Windows 10 operative system with USB port, network board, mouse and keyboard. Remotable performing platform with Teleservice connection.

Remote control included.



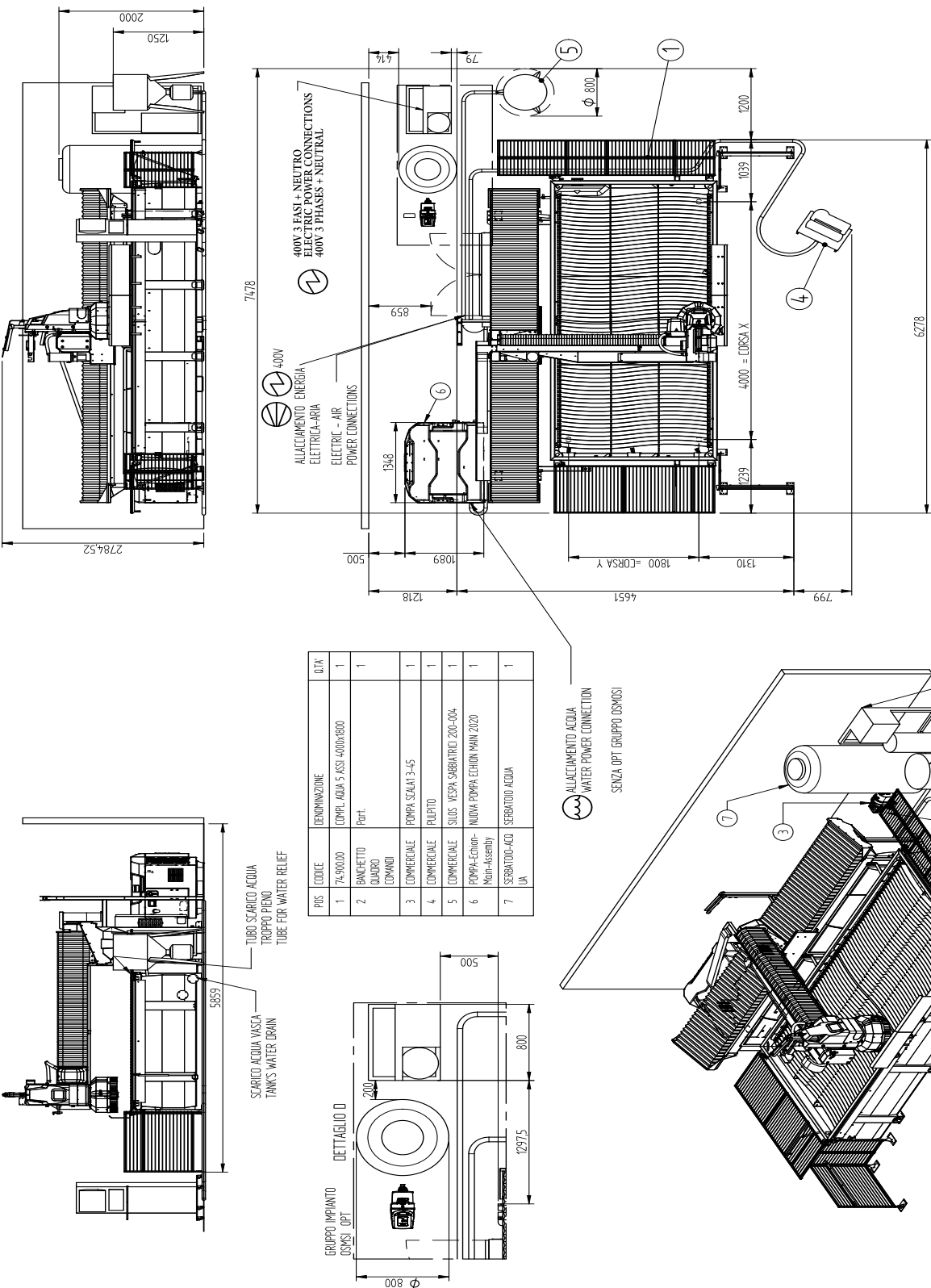
# FLOOR PLAN AQUA WATER-JET

\*Floor plan shows layout of 5 axes 4000x1800 option



Data di stampa: 25/01/2021		Aspetto superficiale	
denver		COMPOSTO	
Scala	1:1	Data	25-01-21
Denominazione	LAYOUT AQUA 5 ASSI 4000x1800		
POMPA POSTERIORE	POMPA POSTERIORE		
Firma	N° 74.900.24_LAYOUT		
AQUA	1	MENGI	
Macchina	Pz	Modifica	

SEZIONE E-C TAVOLA 2 / 3





# BASIC MACHINE DATA

## BASIC MACHINE SPREADSHEET

3 axes machine footprint	mm 5350x5200x2530h Kg 1800 (3968,3 lb)
Tank dimension	3700mm x 2300mm (145,6” x 90,55”) Height above ground 1000mm
Tank weight	Empty: 1039Kg (2290,6 lb) Full of Water: 7900Kg (17417 lb) With 60% of water and 40% of used abrasive Kg. 14,000 (30865 lb)
Tank’s Interior Loading Area	3550mm x 2100mm (139,7” x 82,7”) Height above ground 930mm
Y Stroke - processing depth	2000mm (78,74”) Axis motion powered by brushless motor with adjustable speed up to 32 m/min - 105ft-min
X Stroke - processing width	Axis motion powered by brushless motor with adjustable speed up to 32 m/min -105ft/min.
Z Stroke - processing height	250 mm (9,85”) Axis motion powered by brushless motor with adjustable speed up to 15 m/min - 49,2ft/min.
Cutting head includes	<ul style="list-style-type: none"><li>• Minihopper for abrasive cut</li><li>• Orifice</li><li>• Focalizer</li></ul>
Cutting head precision	+/- 0,05mm (0,0019”)
2 stages garnet tank for non-stop garnet feeding	Capacity kg 200 (440,92 lb)
Dimensions and weight of the garnet tank	800x800x1520mm (31,50”x31,50”x59,85”) Kg.80 (empty) / (176 lb)

*\*Options may affect basic machine's configuration and characteristics*

## PUMP TECHNICAL FEATURES / HIGH PERFORMANCE HYPERTHERM UNIT

Pump power	50Hp
Pump dimension	1090mm x 1350mm (43”x53”) Ht ab.the ground 1010mm (40”) Dry weight 925Kg (2040 lb) Kerb weight 1200Kg (2645 lb)
Jet pressure	4.137 bar (60000 psi)
Pump flow rate	At the cutting head

# BASIC MACHINE DATA

## WATER PARAMETERS FOR THE PUMP

PH	6,0 - 8,0
Silica Concentration (SiO2)	<0,0015% (15 parts per million (ppm))
Water hardness	≤ 0,006% (60 ppm)
Total Dissolved Solid (TDS) concentration	0,005% - 0,015% / 50 - 150 ppm)

## IMPORTANT NOTICE

TDS concentration < 0,005% (50 ppm) can harm the pump parts, in this case please use nonmetallic or stainless steel fittings.

With TDS concentration > 0,015% (150 ppm) we strongly advise to use a reverse osmosis system.

## SERVICE WRENCHES & LITERATURE

- Service wrenches
- Uners Manual
- CE compliance certificate (where requested)



# DDX SOFTWARE



MADE FOR STONE PROCESSING

## POWERFUL STANDARD SOFTWARE

In its standard version AQUA features a powerful CAD-CAM software. If combined with 5 axes head it allows to perform dynamic lag and tapering compensation offering high finishing quality and processing speed.

Among its features:

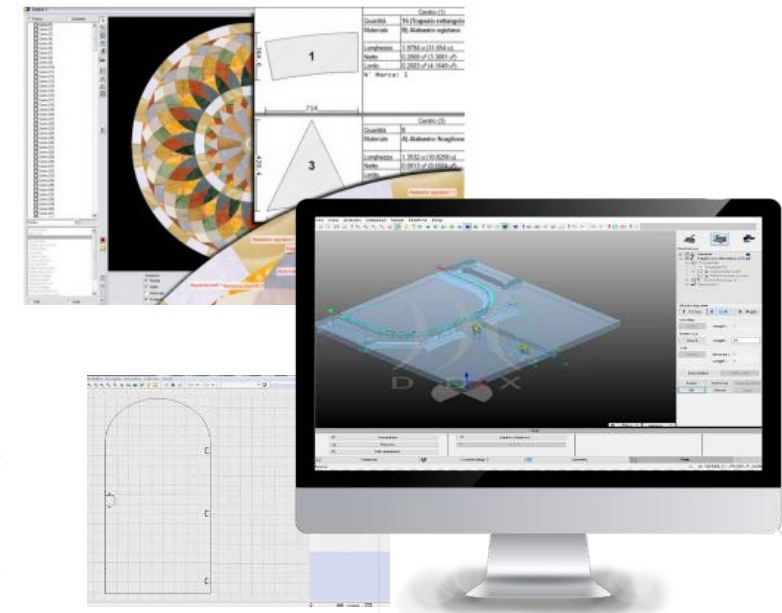
- Table for automatic assessment of the processing speed according to 5 different finishing quality rates, based on the type and thickness of the raw material and to the garnet mesh.
- Table to monitor pump's single component maintenance.
- 2D CAD-CAM single interface environment.
- Import of single and multi-layer DXF file, pdf, images.
- 3-axis cutting machining.
- Tool path simulation.

## OPTIONAL SOFTWARE PACKAGES

Aqua may be equipped with optional software modules to maximise its features according to specific processing needs.

Among these:

- **Software for 5 axes processing** perfect for variable angle tilted cuts and beveling.
- **Software for nesting and work list**, perfect for complex cutting projects where it's important to optimize raw material and to reduce scraps.
- **Software for inlay**, a package designed for artistic processing with 500 ready to use programs.



“CONFIDENCE IN SOFTWARE IS KEY”



IN HOUSE TRAINING





# SERVICE & REPAIRS

# ENGINEERING SERVICE & REPAIRS

## HOW WE DO SUPPORT

Vetro Tooling offers a warranty and support package for all machines sold that far exceeds anyone else's that is currently available. We have a name to uphold of quality and customer satisfaction and we don't plan on losing that. We know what machine down-time can cost a running factory and brake down's are a top priority for us to get you back up and running.

As well as warranty packages on new machine sales our engineers are always on call to carry out services or repairs to CNC machines, Stone or Glass. With years of experience in machines, software and tooling we have every aspect covered.

After speaking to our customers we realised that the time for the engineer at there factory is more than valuable but paying hidden costs is not making anyone happy. We set out to give the customer a black and white charge so there are no nasty

surprises when the invoice lands on your desk.

As we carry an extensive stock of tooling and spare parts this also helps on lead times to have your CNC machines back up and running.

If you are looking at any service or repair work being carried out, just give us a call and we will be more than happy to run through the problems you are facing and get you back up to speed in no time!

