

water-kut X2

The AKS Cutting Systems

“water-kut” X2 is a 5' x 10' or 6'x12' platform CNC Waterjet Cutting System that includes many of the preferred features of the AKS “water-kut” X3 and X4.



The AKS “water-kut” X2 is a CNC x-y programmable waterjet cutting system that can incorporate either traditional 55,000 psi operating high pressure or upgraded to the ultra-high pressure 90,000 psi.



The AKS “water-kut” X2 is designed and built to the same performance and durability standards as all AKS Cutting Systems utilizing over 100 years of AKS superior machine building experience. The AKS “water-kut” X2 offers superior performance in its price range, and optimizes the balance between performance and affordability in the market. The AKS “water-kut” X2 is perfect for first time waterjet buyers who want entry-level investment with premium performance and upgrade capability.

The AKS “water-kut” X2 uses standard all KMT Waterjet High Pressure technology including:

- KMT High Pressure Pump (Intensifier or Direct Drive)
- KMT High Pressure Abrasive Cutting Head and Consumables

The AKS “water-kut” X2 uses standard all MITSUBISHI Controls technology including:

- MITSUBISHI CNC Controller
- MITSUBISHI Smart Motors and Drives for X-Y-Z axes

The AKS “water-kut” X2 includes many standard features with available OPTIONAL upgrades like:

- Automatic Touch Probe
- Submerged Cutting Water Raise/Lower
- Automatic Garnet Removal System (GRS)
- Collision Sensor Bracket
- Laser Pointer
- AKS waterjet “robo-kut” 5-axis Cutting Head
- Closed Loop Water Recycling System (CLS)



AKS "water-kut" X2:

The AKS water-kut X2 is offered in 5'x10' or 6'x12' work envelope and is designed for shops that need a heavy duty, unitized, cost-effective, waterjet cutting table. The "water-kut" X2 comes standard with KMT TRILINE™ waterjet 55,000 psi high pressure direct drive pump for traditional waterjet cutting performance. The "water-kut" X2 can be upgraded to the KMT PRO-3 waterjet 90,000 psi ultra-high pressure intensifier pump.

The AKS "water-kut" X2 offers these unique features & benefits:

- Heavy-Duty "Unitized" One-Piece Frame Machine Tool
- Removable/Replaceable Slat Table System
- Cutting Table 6" Thick Full Plate Load Capacity
- Standard Water Table (optional Submerged Cutting Feature)
- X-axis Dual Synchronized Helical Rack & Pinion Drives on both sides
- Y-axis Single Bridge Helical Rack & Pinion Drive
- Z-axis Programmable Ball Screw (9.8")
- KMT TRILINE™ Direct Drive 55,000 psi high pressure pump
- (Optional KMT PRO-3 Intensifier 90,000 psi ultra-high pressure pump)
- 670 lb. Bulk Abrasive Feeder Hopper
- Adjustable Abrasive Mini-Hopper on Bridge
- Mitsubishi M80W Industrial CNC Controller
- 19" Color Touch Screen Operator Control Console
- Metamation Programming Software Package including CAM & Auto True Shape Nesting
- +/- .003" per 3' Accuracy of Motion
- 1000 ipm travel speed

Cut Virtually Any Material:

- Mild Steel
- Tool Steel
- Stainless Steel
- Aluminum
- Titanium
- Copper
- Brass
- Inconel
- Hastelloy
- Armor Plate
- Alloys
- Composites
- Laminates
- Ceramic
- Stone
- Marble
- Granite
- Plastic
- Rubber
- Foam



The AKS "water-kut" X2 offers these optional accessory items:



Automatic Touch Probe and Collision Sensor Bracket – automatic step touch probe can be programmed at certain distance intervals to engage and insure proper nozzle tip stand-off height control and then adjusted while cutting to compensate if the work piece material is warped or not flat. The collision sensor ring can detect most crashes of the nozzle into tipped-up parts, or other items, via a circular metal ring around the nozzle tip which is pneumatically engaged and easily reset.

Laser Pointer – allows easy operator alignment of the cutting head to the material plate using a red laser crosshairs for precise location finding. The laser pointer is mounted on top of the bridge, above the Z-axis carriage, to insure protection from the harsh abrasive environment below. The nozzle is moved in X- and Y-axes by the operator in manual mode to position the nozzle in the exact location to cut.



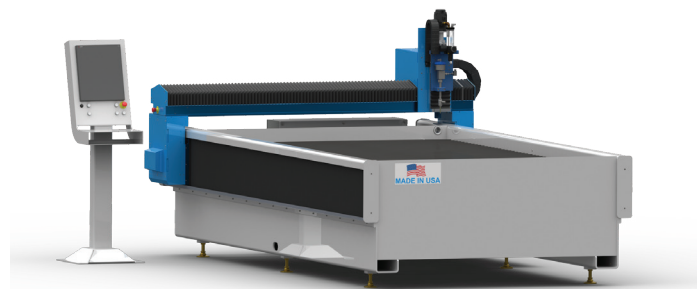
GRS – Garnet Removal System – automatically and continuously removes the used spent abrasive from the main catcher tank without downtime associated with cleanout. The GRS includes a sweeper package inside the tank which pumps the abrasive out of the tank into a settlement tank liner bag which is easily removed to a waste dumpster.

CLS – Closed-Loop Water Filtration & Recycling System – cleans, filters and recycles all discharge water from both cooling and cutting. This meets or exceeds the recommended water quality specification as required by the KMT high pressure intensifier pump. The CLS includes a bag filter vessel, a hurricane filter vessel and a resin bag chemical exchange vessel for three-stage filtration of cutting water, plus it also includes a chiller unit for recycling of cooling water.

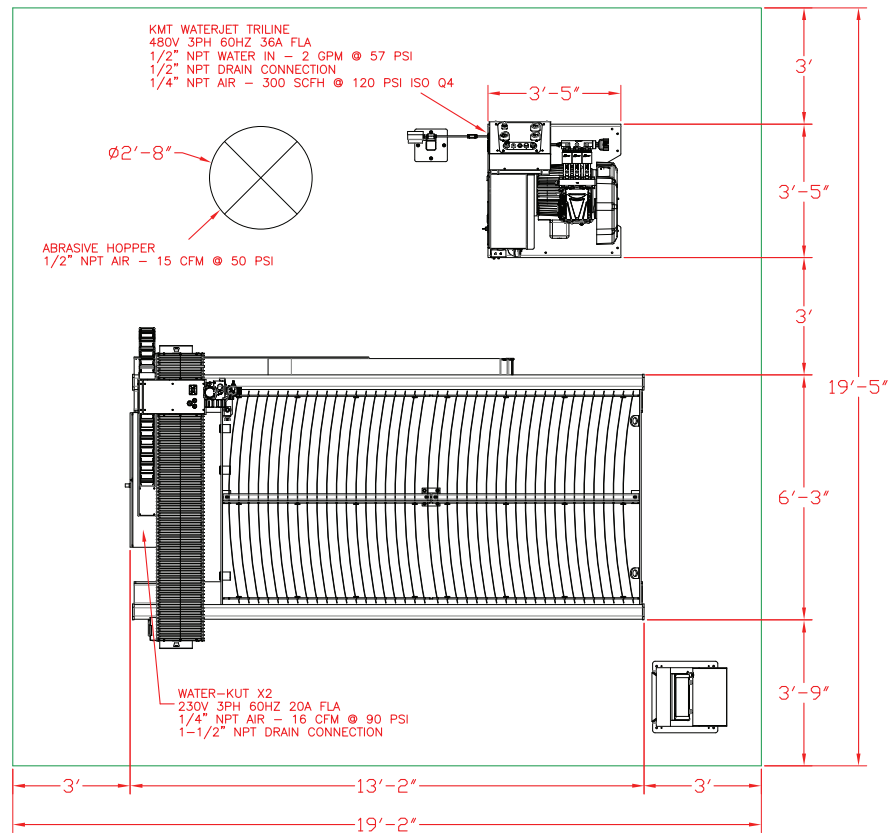


Upgrade to 90,000 psi – waterjet cutting with ultra-high pressures of 90,000 psi offers users the latest technology to maximize cutting speeds. For example, 90,000 psi cutting of 1" aluminum is 15-25ipm while 60,000 psi cutting of 1" aluminum is 5 -10 ipm. With the latest technology from KMT in high pressure seals, cylinders and check valves, operating costs of the 90,000 psi operation have never been lower, and usually cost only a few dollars more per hour than a 60,000 psi operation.

5' x 10' or 6' x 12' Systems Available – the same "water-kut" X2 chassis is offered in either 5' x 10' or 6' x 12' cutting envelope. Standard sizes include the same precision ground helical rack and pinion drive systems for X- & Y-axes and all same features and benefits in both sizes.



RECOMMENDED MACHINE LAYOUT



MITSUBISHI CNC CONTROLLER

The **AKS "water-kut" X3** utilizes the **MITSUBISHI CNC** Controller for a cost-effective, versatile, accurate and precise, solution for users to take their waterjet to the next level by producing more accurate and complex parts. Competitive waterjet machines with PC-based controls can't touch the sophistication, power and capability of the **MITSUBISHI CNC**. The Mitsubishi Controller implements new nanotechnology for finer, faster interpolation with greater power and offers the following benefits:

- Dedicated nano control for highest precision machining and Newest RISC-CPU and high-performance ASIC
- Faster Processing and More RAM Memory with Improved Graphics and Superior NC creation
- Network function adaptable for diverse factory environments including ethernet, USB, etc.
- Full Standard Keyboard with Joystick jogging all 3 axis simultaneously



METAMATION CAD/CAM NESTING SOFTWARE

- Compatible with most drawing formats including .dxf, .dwg, and IGES
- The Auto "True-Shape" Nesting feature allows the user to select types and quantities of parts, optimizing material utilization and reducing waste and time. Auto Nesting includes manual setting and 3 different advanced algorithms for optimum performance
- The Auto "True-Shape" Nesting feature includes nesting multiple parts in specified sheet layout with control of rotation and spacing to maximum utilization and sheet database management. No need for 3rd party offline nesting
- The Estimating feature generates specific machining cycle time estimates and cost estimates prior to the actual cutting process
- Includes technology database tables for the user to easily select the specific material, thickness, and edge quality finish from 5 different quality of cuts. There is also complete independent control of offset and taper for each cut quality. Metamation Metajet is expressly developed for processing parts for waterjet cutting operation.

Metamation
 Leading the Industry in Innovative CAD/CAM Software

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A TRADITION IN EXCELLENCE
 FOR OVER 100 YEARS