

DUO64 SPECIFICATIONS



Table Size:	35.8" x 25.98" (910mm x 660mm)
X:	25.6" (650mm)
Y:	15.75" (400mm)
Z:	16.5" (420mm)
Tank Size:	42.12" x 33.66" (1070 mm x 855 mm)
Available Wire Size:	0.004", 0.006", 0.008", 0.010", 0.012"
Drop Tank:	
Maximum Workpiece Weight:	2645 lbs (1200Kg)
Maximum Workpiece Size:	35.83" x 25.98" x 15.75"

The DUO64 CNC Wire EDM machine is the latest in technological innovation from Makino. Combining speed and precision, the DUO64 offers several unique technologies, including a dual spark generator, dual flushing pumps for independent control of upper and lower flushing pressure, and a dual wire guide option that covers the widest range of applications of any WEDM today. (The DUO64 is the big brother to the DUO43, incorporating all of the same time and money conserving features as the DUO43 in a larger package. This machine was designed with larger and taller work pieces in mind.)

The unique DUO Spark generator uses advanced transistor pulse circuitry with multiple ON and OFF times for generating and precisely controlling spark activity to efficiently erode metal while preventing time consuming wire breaks during the cut. Much of the design of this generator has been patented by Makino.

Still standard is Makino's tested and proven Split V Guide system, with the added option of the recently developed PICO Precision Guide system for threading small holes. Split V Guides are ideal for most WEDM work, from punch and die to molds to medical and aerospace parts. They are self-cleaning, clog free, and require about 5 minutes of maintenance a week. These wire guides are guaranteed for a life of 12,000 hours. For more specific and demanding small diameter hole, and precise variable land and taper applications, the Makino PICO Precision wire guides offer a specialized solution. This guide system assures reliable, repeatable performance during automatic threading of holes smaller than .025" diameter. PICO Precision wire guides also excel in threading these small holes when they are in a pitch matrix of .060" or less, center to center. PICO Precision wire guides have proven themselves to provide flawless AWT operation in the most demanding applications such as small perforating dies and medical parts. DUO64 can be ordered with either Split Precision or PICO Precision wire guides, based on the applications the machine will see.

One of the most beneficial aspects of the DUO64 is the machine's low wire consumption. With a documented 30-60% lower wire consumption rate, the DUO64 will save about \$12,000 a year in wire cost. This is based on 2000 hours of machining per year using .010" diameter plain brass wire. Because of the mechanical precision built into the machine, coupled with an advanced wire transport and tensioning system, the wire unspooling rate is substantially reduced, with no adverse effects on accuracy or finish. The DUO64 can also use coated wires for additional speed, and Makino offers a H.E.A.T. wire designed specifically for machines that are equipped with High Energy Applied Technology from Makino.

The DUO64 has an improved Automatic Wire Threader that has a thread time of 10 seconds or less. With a choice of wire guide systems, the DUO64 will provide fast, reliable, and repeatable Automatic Wire Threading in almost any application.

Additional Information

Expanded Technology Library

The DUO64 has a reworked and expanded set of technologies to cover a wide range of general and specialized applications. New high speed settings combine the previous 1.2 and 1.6 high speed settings into one table, eliminating confusion as to what technology to use in a given application. New High Wire Tension Technology has been developed for better shape accuracy, especially in corner geometry, and for 0.010" & 0.012" diameter wires, there will be a broader selection of settings for work piece thicknesses up to 12 inches. There are 2 new technology sets for .012" diameter wire, one for Economy and one for Precision. The .012" Economy set allows the speed available from .012" wire combined with the low wire consumption of .010" wire technology. The new .012" Precision technology will allow reduced cycle times in rough cutting, without a loss of accuracy or finish. Proven WireWizard technologies such as BellyWizard, SurfaceWizard, and H.E.A.T. are incorporated into these new and improved technology libraries.

New Machine Tool Design

The DUO64 has been designed for easier and faster construction and installation, and has a 20% smaller footprint than its predecessor. Besides conserving shop floor space, the DUO64 is built into a single platform for the machine tool, clean and dirty tanks, and electronics. The only items not built into the single platform are the used wire bin, the chiller, and the D.I. resin bottle. The chiller is smaller than previous models and provides increased chilling capacity with tighter temperature control. Even though the DUO64 has a smaller footprint than its predecessor, the axis strokes remain unchanged. Filters are contained in a separate cabinet on the machine, above the water tanks. With a pneumatic water purge system, unsubmerged filters, and quick disconnects, changing filters on the DUO64 is quick, convenient and easy. Other convenience items include a water level site glass on the dirty water tank, adjustable operator control panel with built-in USB port and 15" color LCD monitor, track ball mouse, air operated access door, easily accessible grease ports for ball screws and linear motion guides on all axes, and the most powerful remote LCD hand box available.

Machining Performance

With improvements to the machine design and technology libraries, the DUO64 will provide an increase of 20% in overall machining capability compared to earlier machines. Positioning accuracy and repeatability are rated at ± 0.00006 " (full stroke) in tool steel plate of 1.6 inch thickness. Roundness accuracy of ± 0.0002 " is achievable in 1.6 inch thick plate steel with a hole diameter of 0.8 inch. Shape precision is also rated at ± 0.0002 " in 1.6 inch steel plate. Optimum measured roughness of 18 μ inch Ra in steel and 15 μ inch Ra in Tungsten Carbide is achievable.

10 Year Ball Screw Warranty

Because Makino builds mechanical accuracy into every machine tool we offer, and we are so confident in our designs, the DUO64 has a 10 year or 20,000 hour warranty on X and Y ball screws.

Support

Makino's Applications, Engineering, and Field Service personnel work with customers to deliver an exceptional machine tool, with full share-key and turn-key services designed to fulfill any customer needs, no matter how complex. Whether the need is for a simple rotary table interface, or a complete package of automation interface, tooling, fixturing, programming, and customized burn conditions, Makino will be able to install and support machines and processes for any WEDM need in any industry. Contact Makino for more information.