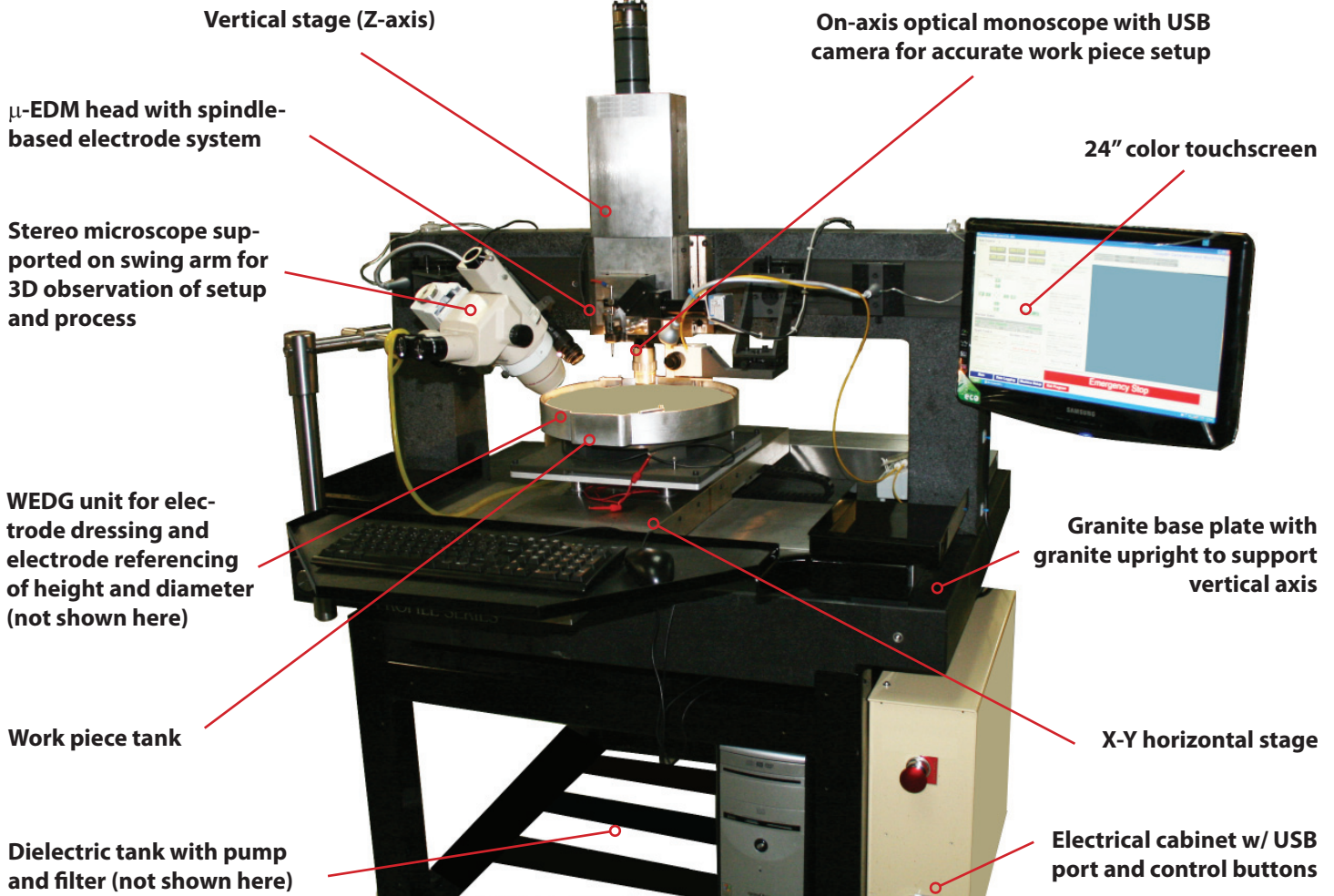


# 3-Axis Micro EDM Machine (VMM01-XXX) \*

Micromachining of small parts



**\* shown is VMM01-375 (375 mm travel in X- and Y-direction with customer-specific round work tank)**

## Standard features (VMM01-200)

- Small overall size (700 x 700 x 600 mm)
- 200 x 200 mm work volume
- Versatile  $\mu$ EDM discharge generator w/ 10 - 135 V discharge voltage (positive and negative work piece polarity), 0.5 - 250 nF discharge capacitance, 1 - 30 kHz discharge frequency
- Collet-based EDM spindle system for accurately rotating electrodes 125 - 1000  $\mu$ m diameter, 100 mm long
- Synthetic dielectric oil
- 24" color touchscreen with USB ports
- Full 3-axis EDM servo control
- G-Code compatible (32,000 lines max)
- Made in the USA

## Optional features

- Stereo microscope supported on a swing arm for 3D observation of the EDM process and work piece setup
- Optical monoscope arranged parallel to EDM system with USB camera for accurate work piece setup. Camera stream and camera controls all integrated in machine operating system.
- Wire-EDM grinder (WEDG) unit mounted to work tank allows dressing and measurement of electrodes on the machine. Uses 0.1 mm EDM wire.
- Advanced user control with 19" color touchscreen, hardware buttons + CNC pendant

## Overall Specs (VMM01-200)

- Size (w x d x h): 700 x 700 x 600 mm (27.6 x 27.6 x 23.6 in)
- Weight: 450 kg (990 lbs)
- Workvolume: 200 x 200 x 100 mm (7.87 x 7.87 x 4.0 in)
- Dielectric tank: 15.0 l (4.0 gal.)
- Dielectric filter size (user selectable): 0.001 - 0.01 mm (0.00004 - 0.0004 in)
- Linear axis resolution (direct linear position readout): 0.0001 mm (0.000004 in)
- Linear overall accuracy: 0.001 mm / 100 mm (0.00004 in / 4 in)
- Max speed: 15 m/min (49.2 ft/min)
- Work piece weight max: 5.5 kg (12.1 lb)
- Work piece clamping system: metric or SAE (customer selectable)
- Supply power: 110 - 130 VAC @ 20 A or 220 - 240 VAC (single phase) @ 10 A, customer selectable

## WEDM Specs

- Discharge voltage: -135 to +135 V (positive and negative work piece polarity)
- Discharge capacitance: 0.1 - 250 nF
- Discharge frequency: 1.0 - 30.0 kHz
- EDM spindle: Ø 6.0 mm (Ø 0.2358 in)
- EDM collets: 0.125 - 1.0 mm (0.005- 0.04 in)
- Electrode length min/max: 10 - 100 mm (0.4 - 4.0 in)
- Electrode speed: 0 - 6000 rpm
- Electrode system bearings: double v-groove with polycrystalline diamond (PCD) lining
- Spindle runout: <0.0005 mm (0.00002 in)
- Dielectric fluid: synthetic EDM oil
- Surface finish (Rmax): 0.0001 mm (0.000004 in)

## Control Specs

- User interface: 24" touchscreen
- G-Code compatible (32,000 lines max)
- Canned cycles for deep hole drilling, electrode referencing, etc.
- Full 3D EDM servo control
- Work piece setup: optics (monoscope)+ EDM electrode
- Full camera control integrated in machine controls

## On-axis Machine Vision Specs (optional)

- Magnification: 5 -20X (customer selectable)
- Working distance: 92 mm (3.62 in)
- Field of view: 3.26 - 0.5 mm (0.13 - 0.02 in)
- Exposure: 0.0001 - 0.25 s
- Gain: 0 - 25.1 db in 45 increments
- Resolution: 1280 x 1024
- Framerate: 28 fps (1280 x 1024 pixel)
- Pixel pitch: 0.0032 x 0.0032 mm (0.00012 x 0.00012 in)

## Stereo Microscope (optional)

- Magnification: 2.5 - 40X with 0.5x auxiliary lens
- Working distance: 166 mm (6.54 in)
- Field of view @ 2.5X: 48 mm (1.89 in)

## WEDG Unit (optional)

- EDM wire: 0.1 mm (0.004 in)
- EDM wire spool capacity: 0.45 kg (1.0 lb)
- Wire guides: universal v-grooves
- Wire speed: 0.3 - 6.6 m/min (0.98 - 21.6 ft/min)
- Wire tension: 0.5 - 4 N (0.11 - 0.89 lbf)
- Electrode grinding accuracy: ± 0.002 mm (± 0.00008 in)

## Control unit (optional)

- User interface: 19" touchscreen + hardware buttons + CNC pendant