AFM • Abrasive Flow Machining

VECTOR™

Precision Deburring and Polishing System

The Kennametal Extrude Hone™ VECTOR Abrasive Flow Machining (AFM) system is an extremely flexible machine. It is capable of polishing large extrusion and forming dies, deburring, and polishing precision parts in small- to medium-batch quantities.

A wide selection of available media cylinder diameters offer a broad choice of pressure ranges to meet specific production requirements. The VECTOR features an ergonomic and robust design that is easy to maintain and will deliver years of reliable service. A large work envelope accommodates large components and tooling.

A standard feature on the VECTOR is an easy-to-use touch screen operator interface – monitoring and saving all major processing data. A standard 10 hp hydraulic power unit delivers a generous range of process pressures. The AUTOFLOW Advanced Control is also standard with all VECTOR models.

Features and Benefits

- **AUTOFLOW™ advanced control standard**
  For maximum process control. State-of-the-art control system stores and monitors all major process data.
- **Media temperature management options**
  Controlling the temperature of the abrasive media gives a more consistent machining rate.
- **Individually configurable AFM system**
  Various options create a tailor-made system.
- **Fast setup and change of media**
  Generously dimensioned work envelope for large workpieces and rapid tool change.
- **All process data at a glance**
  Touch screen interface for easy operation and setup.
- **Maintain consistent processing**
  Media temperature management components such as cooling cuffs are standard along with air- and water-cooled heat exchangers for power unit.

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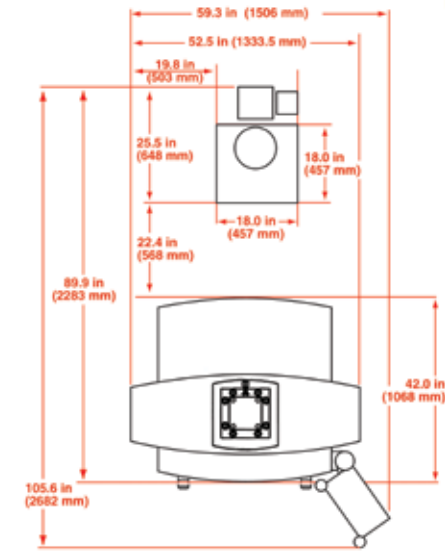

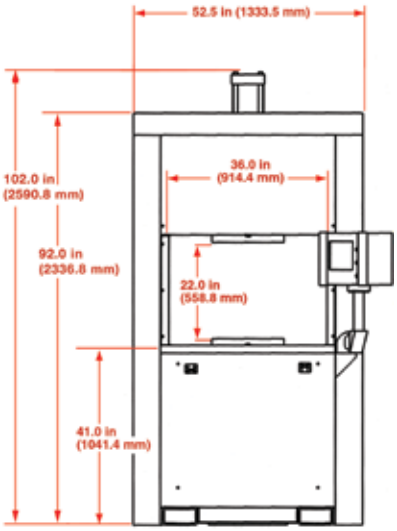

Machine Specifications

The standard VECTOR Abrasive Flow Machine consists of a machine with touch screen HMI and a hydraulic power unit.

Height fully open	102" (2590mm)
Height closed	92" (2335mm)
Width	52.5" (1335mm)
Depth	42" (1070mm)
Tabletop height	41" (1040mm)
Working distance between clamp columns	36" (915mm)
Estimated weight	4,300 lbs (1.955 kg)

Media Delivery

Media delivery is reciprocating between the top and bottom assemblies. Both assemblies consist of media cylinders, pistons, seals, and caps.

Hydraulic Specifications

Main components of the hydraulic system are a hydraulic power unit, two media hydraulic cylinders, and two clamp cylinders with an air/oil pump assist.

Standard Power Unit

Reservoir	20 gal (75,7 l)
Pump capacity @ 1,750 RPM	5 GPM (18,9 L/min)
Pressure	350–2500 psi (24,1–172,4 bar)

Clamp Cylinders
(clamping is powered hydraulically)

Bore diameter	5" (127mm)
Stroke	20" (508mm)
Maximum opening	22" (558,8mm)
Minimum opening	2" (50,8mm)

Electrical Specifications

The machine is controlled by a PLC.
The operator interface terminal is a touch screen. Standard functions include remote media pressure adjustment, automatic and manual mode, displacement counter, cycle counter, and cycle timer. The machine process parameters are preset via the operator interface terminal and can also be monitored on the terminal once the automatic cycle has been initiated.

Electrical

Voltage	230/460 VAC, 3 phase, 60 Hz 400 VAC, 3 phase, 50 Hz
Motor	7,5 kW
Peak amperage	15/7.5 amps
Standard PLC	Allen Bradley/Siemens

Controls

AUTOFLOW Controls are now standard with all VECTOR machines; 10" touch screen HMI.

Fluid Connection Specifications

Hydraulic	
Ports	NPT
Hose/tube	37° JIC
Water	
Ports	NPT
Hose/tube	NPT and/or Push Lok
Pneumatic	
Ports	NPT
Hose/tube	Push Lock

Accessories/Options

- Manually operated tooling slide cart.
- Light curtains.

System Configurations

	media cylinder diameter	hydraulic cylinder diameter	media stroke length	media capacity	hydraulic flow rate	media flow rate	media pressure min/max	expansion diameter max*
VECTOR 100	4" (100mm)	6" (150mm)	12.5" (320mm)	157 cu. in. (2,6 l)	5 GPM (18,9 L/min)	2.2 GPM (8,3 L/min)	500/4000 psi (34/276 bar)	N/A
VECTOR 150	6" (150mm)	6" (150mm)	12.5" (320mm)	353 cu. in. (5,8 l)	5 GPM (18,9 L/min)	5 GPM (19 L/min)	350/2400 psi (24/163 bar)	6.5" (165mm)
VECTOR 200	8" (200mm)	6" (150mm)	12.5" (320mm)	628 cu. in. (10,3 l)	5 GPM (18,9 L/min)	8.8 GPM (33,3 L/min)	200/1440 psi (13.6/98 bar)	8.7" (221mm)
VECTOR 250	10" (255mm)	6" (150mm)	12.5" (320mm)	981 cu. in. (16,1 l)	5 GPM (18,9 L/min)	14 GPM (53 L/min)	125/960 psi (8.5/65 bar)	10.9" (277mm)

*Maximum expansion diameter at maximum media pressure.

NOTE: Specifications and availability are subject to change without notice.

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Kennametal Extrude Hone™
235 Industry Boulevard
Irwin, PA 15642
USA
Tel.: 724 863 5900
Fax: 724 863 8759
extrudehone.sales@
kennametal.com

Kennametal Extrude Hone K.K.
3-137-2 Shinwa Misato-shi
Saitama 341-0034
Japan
Tel: +81 48 954 0811
Fax: +81 48 954 0818
K-JP.extrudehone@
kennametal.com

Kennametal Extrude Hone Shanghai Co., Ltd.
1508 Chen Qiao Road
Fengpu
Fengxian District, Shanghai
201401
P.R. China
Tel: +86 21 3718 0618
Fax: +86 21 3718 0688

www.kennametal.com