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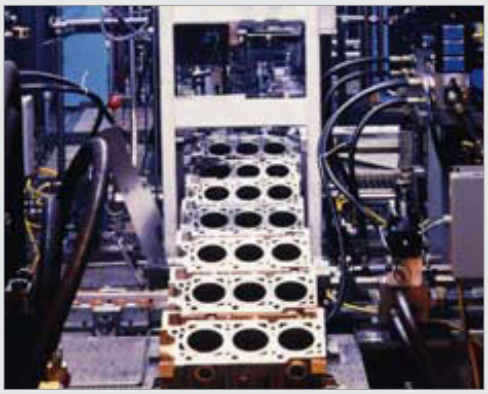
MVH Series

Multi-Spindle Engine Block Transfer Machine



Standard Features

- Modular design with industry proven components
- Multi-spindle configuration
- Electronic stroke control system
- PLC controlled machine functions
- User-friendly operator interface
- Automatic abrasive feed system
- Speeds and feed adjustments from the operator interface
- Machine fault diagnostic software

Description

The MVH Series blockline hone machines are specifically intended for precision cylinder and crankshaft bore finishing operations. Designed with industry standard components, the MVH series machine delivers great productivity, reliability, and maintainability. The use of industry proven components also reduces spare part inventory requirements, and supports simplified preventive maintenance strategies.

The blockline machines are designed as a multi station transfer line to achieve higher production rates, increased work-piece precision, greater stock removal, and/or increased machine flexibility. Based on the number of spindles, production rates can be anywhere for 30 â€“ 160 parts per hour at 100% efficiency. As always, KENRIE engineers will assist in determining the best machine configuration for your requirements.

In the cylinder bore operation, the majority of the stock is removed in the diamond ream process. This is a one-pass operation that feeds a ream tool through the cylinder bore at a rate of speed that provides excellent bore geometry. The remaining stock is removed in the hone stations where each hone tool removes a specific amount of stock based on an in-process gauge reading.

In the crankshaft bore operation, all stock is removed in a single pass process simultaneously. Much like the cylinder bore ream process, the tool passes through the journals at an appropriate rate that provides excellent gore geometry and final surface finish.

All blockline machines include, as standard equipment, a PLC based programmable controller for monitoring and controlling various machine motions and process parameters via user friendly operator interface CRT. Repeatable and reproducible surface finish and cylindrical form is created by a closed loop, air operated abrasive feed system, which is standard on all blockline hone machines.

Optional features include coolant filtration and refrigeration system, variable frequency spindle drive motors, in-process gauging system used on each spindle for bore size control, SPC process control software, and modifications to encompass any customer specified components.

KENRIE can also further enhance your blockline machine by integrating a variety of production automation, like post process gauge and marking systems, and load/unload automation as part of a basic machine design.

Diamond ream and hone tools are designed and optimized for use with each blockline machine. As the manufacturer of all critical items used in each machine sold, KENRIE ensures undivided responsibility for the performance of the entire process, including ream, hone tools, and abrasives.

Guide Specifications

Efficiency Standards for a Typical Blockline Hone and Ream Process

Characteristic	CPK	Rbar	St Dev	Tolerance
Cyl bore size Ø	4.88	2.00µm	0.08µm	± 15.0µm
Cyl bore Cylindricity /O/	2.09	2.35µm	1.50µm	16.0µm max
Crank bore size Ø	3.78	1.55µm	0.08µm	± 10.0µm
Crank bore roundness O	27.0	0.07µm	0.02µm	25.0µm max