

AFM FFH 10/6



PRECISION POLISHING, DEBURRING & EDGE RADIUS GENERATION FOR ANY HOLE GEOMETRY



LAPMASTER WOLTERS has invested into further development of the Abrasive Flow Machining (AFM) for Free Form Honing (FFH).

The FFH Process utilizes an abrasive evenly dispersed in a putty-like substance. The abrasive media has the unique ability to take the shape of any hole geometry. This process accomplishes precision polishing, deburring & edge radius generation and is especially designed for work pieces which need a uniform polished surface, regardless of their shape. The more difficult the id shape is, the easier it is for AFM. Common polishing and deburring machines were always limited when facing odd shaped holes, very small holes and cavities or edges. Due to the various types of media that is available, holes as small as 0.008" (0.203 mm) can now be machined effectively. Surface finish generation as low as 4 μ " Ra is possible

and mostly determined by the type & size of abrasive used. Conventional or super-abrasives can be used.

LAPMASTER WOLTERS AFM is available in two machine models/sizes with 6 different modes/cylinder sizes and pressure ranges. Low costs per part, and a very cost effective clamping-retaining tooling. Another striking feature of the AFM is the simple and fast tooling change-over for new parts and its menu driven programmable system. The cycle time depends on the material hardness and pre-AFM surface finish to be removed.

This machine is made for several industries such as Extrusion, Castings, Tool & Die, EDM Shops, Screw Machine Shops, Valve Manufacturers, Gear Grinding Facilities, Hydraulic and Medical Components, Automotive, Aerospace and many more.

FIVE FFH MODELS IN TWO MACHINE SIZES

Available in media cylinder sizes of:

3.25 inch @ 1800 psi

6 inch @ 1500 psi

6 inch @ 1500 psi

8 inch @ 1000 psi

10 inch @ 500 psi

(8 inch shown on left)

HMI



- Dual hand clamping for upper platen
- Touch Screen for operator process updates and operation

DEBURRING, POLISHING OF INTERSECTING HOLES



Shown is media being extruded from the lower media cylinder up and out the intersecting holes. With simple fixturing/tooling, the media will surround the part and travel to the upper cylinder and then back

TECHNICAL DATA

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Machine Dimensions H x W x D (mm / inch)	2700 mm / 106" x 1422 mm / 56" x 1067 mm / 42"
Weight (kg / lbs)	1812 kg / 3987 lbs
Max. Opening between Tool Plates	559 mm / 22"
Table Top Height	1073 mm / 42.25"
Distance between Clamp Columns	812 mm / 32"
Hydraulic Specification (HP, gpm, tank size)	7.5 HP / 5.5 kw (60 Hz 230 / 460 V 1750 rpm 20 Gal Capacity)
Hydraulic Cylinder Size	152.4 mm / 6"
Min./max Hyd. Flow Rate	6.5 gpm min / 12.9 gpm max (10.7 gpm for 50 Hz max)
Media Capacity (cubic inches)	691 in ³
Media min. / max. PSI	230–500 psi Max
Media Flow Rate	50 in ³ / sec

AFM FFH APPLICATION EXAMPLES:



VARIOUS DIES

- Cold Heading
- Compacting
- Trim Dies
- Spline dies, straight and helical
- Forming Dies
- Aluminum Extrusion
- Vinyl Extrusion
- Pultrusion
- Draw Dies



HYDRAULICS

- When a burr free hole and a radius is desired at an specific intersection AFM is one of the accepted practices
- Uniform radii without extensive fixturing is an advantage of AFM has over other processes such as ECD

LAPMASTER WOLTERS

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3 DIMENSIONAL LAP

- The media is a visco elastic material mixed with abrasives and other chemistry that becomes a solid when it meets a restriction in its flow path.
- If the id. shape changes, so does the media becoming a 3 dimensional conformable lap, polishing/deburring tool
- Holes sizes from .008 up to 12 inches in diameter

FFH/AFM OPPORTUNITIES

- Any Shape
- Any Material
- Any Passage

that is not currently being done successfully by conventional honing methods is an application for FFH

INDUSTRIES

AFM FFH is made for several industries such as:

- Extrusion
- Castings
- Tool & Die
- EDM Shops
- Screw Machine Shops
- Valve Manufacturers
- Gear Grinding Facilities
- Hydraulic Components
- Medical Components
- Automotive
- Aerospace

and many more.

