

# AFM FFH 3.25/4



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  $\mu$ " 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 @ 2250 psi

6 inch @ 660 psi

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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**

**AFM FFH 3.25/4**

Machine Dimensions H x W x D (mm / inch)	2375 mm / 93.5" x 915 mm / 36" x 813 mm / 32"
Weight (kg / lbs)	765 kg / 1680 lbs
Max. Opening between Tool Plates	397 mm / 15.6"
Table Top Height	1013 mm / 39.9"
Distance between Clamp Columns	441 mm / 17.38"
Hydraulic Specification (HP, gpm, tank size)	5 HP / 3.75 kw (60 Hz 230 / 460V 1750 rpm   10 Gal Capacity)
Hydraulic Cylinder Size	101.6 mm / 4"
Min./max Hyd. Flow Rate	2 gpm min / 4 gpm max
Media Capacity (cubic inches)	360 in <sup>3</sup>
Media min. / max. PSI	230–2250 psi Max
Media Flow Rate	30 in <sup>3</sup> / 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

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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.

