

AIR-OPERATED HYDRAULICS

Hydraulic System Operation

M.W. Watermark filter presses can be equipped with air-operated hydraulics. For press sizes 630mm through 1,000mm, air hydraulics are standard equipment. For added operator and equipment protection, the hydraulics are enclosed within the leg of the filter press that supports the hydraulic cylinder. When switched to the "Close" position, compressed air is used to pressurize an oil reservoir that pushes the filter plate stack closed. When switched to the "Clamp" position, an air-operated hydraulic pump is used to clamp the press closed for filtration. When the cycle is complete, the hydraulics are switched to the "Open" position, releasing the pressure within the hydraulic cylinder. Compressed air is then used to retract the cylinder to open the filter press for cake discharge. The air hydraulic control switches and gauges can be mounted in either the left or right hand side of the leg of the filter press to suit the installation.



Hydraulic Controls

Hydraulic System Design

M.W. Watermark uses a proprietary hydraulic block design and high volume / low ratio hydraulic pump.

The manifold block design has many short-term and long-term benefits.

- The system is more compact and has considerably fewer fittings and components, lowering the risk of potential leaks.
- The manifold block is easier to service.
- The filter press opens and closes more quickly.

The high volume / low ratio hydraulic pump also has multiple benefits.

- The higher volume pump results in reduced clamping times.
- The lower pressure ratio reduces sensitivity to variations in compressed air inlet pressures.
- The included filter regulator on the air inlet further reduces the potential for hydraulic pressure variations.



**Manifold Block Hydraulics
(Inside Cabinet)**

Hydraulic Cylinder Clamp Pressures

In order to provide the maximum service life and safety factor, M.W. Watermark air-hydraulic systems utilize hydraulic clamp pressures that are below 4,000 psi.

For example, because the bore of the hydraulic cylinder is larger than competitors' cylinders, the 630mm M.W. Watermark filter press requires a clamping pressure of 3,500 psi.

Size (mm)	Clamp Pressure (psi)
630	3,500
800	3,700
1,000	3,200



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Air-Operated Hydraulic Pump dB Ratings

Sound pressure levels are a common concern for operators. Competitors' hydraulic pumps commonly reach 95 dB or higher when operating. M.W. Watermark uses a hydraulic pump that, when in operation, has been measured under 85 dB with the hydraulic cabinet door closed. This may reduce or eliminate the need for operator hearing protection.