

HIGH RESOLUTION, ACCURACY AND REPEATABILITY THE KEYS TO HYDRAULIC LEAK TESTING

Background:

Hydraulic valves, pumps and actuators face the most stringent testing of any industrial product. Liquid flow measurement is used as a fine tuning process to monitor the machining and assembly of the hydraulic component to achieve the desired flow characteristics. Subsequently, flow measurement is used again during 100% certification of performance over the part's full range of inputs. Each hydraulic component must pass across a test stand of some kind before it is shipped to the ultimate customer. Inspection through sample testing is not an option for such a high liability product.

Based on a need to test quickly and efficiently, Hydraulic test stand builders are choosing the Max line of piston and gear flow meters for their 1000 pulse per revolution output and 0.1% repeatability. This combination of attributes drastically reduces testing cycles. High pulse counts, in as short a time as possible, gives you a data point with more significant figures and statistical validity. The high number of pulses per unit volume quickly satisfies the leak test criteria. Low resolution flow meters need to pass 0.1 ml before they create any output. A Max Model 213 will produce a pulse for every 0.001 ml and allow you to predict a leakage rate in a fraction of the time. Faster testing cycles increases production throughput without adding additional test stands or personnel. The return on investment is quite high when a component upgrade can forestall a much larger capital expense.

MAX Equipment Specified: The *MAX-213* meter, with its 0.9 ml/revolution displacement is the industry standard for leakage testing and zero-crossing measurement. When combined with the 294 Series of transmitters, the Model 213 can provide 1000 pulses/ml or produce a fully linearized +/- 10 Volt or +/- 20 mA output for bidirectional testing. All of the Max meters have extremely wide operating ranges and typically replace 2 or 3 other meters in a test stand application. The bi-directional output eliminates the need for cross over plumbing greatly simplifying test stand layout, cost and servicing complexity.



Model 213 Meter with Model 294 Transmitter