

HONSBERG

Member of GHM GROUP

Higher machine efficiency with dynamic flow measurement



Flow meter / monitor / indicator
OMNI-HD2K



BENEFITS.

- reduced downtimes and maintenance work with a viscosity-stabilised design from 30 – 330 mm²/s
- illuminated local LCD display
- significant improvement of workpiece clamping with dynamic flow monitoring
- prevention of incorrect workpiece clamping
- increase of machine operating time

Flow meter for CNC machines

The requirements placed on us

Workpiece clamping in modern CNC machine tools takes place automatically with the use of integrated hydraulic units. They deliver a defined oil volume via an oil pressure line to the clamping device under the control of the PLC. Clamping pressures of up to 240 bar are applied.

Until now, pressure sensors used for control of the clamping device via the oil pressure delivered incorrect measurements due to an arising backup pressure. As a result, measurements of the pressure sensors were not proportional to the clamping and release cycles of the clamping device. This led to clamping errors, machining cycles had to be interrupted and time-consuming workpiece clamping corrections were needed.

Our solution

In addition to static pressure measurement, our Center of Competence in Honsberg recommends dynamic flow measurement. The piston inline system HD2K, integrated in the main delivery line of the hydraulic unit, detects the flow situation of the hydraulic oil in the oil pressure line. The clamping process is not ended as long as oil in the pressure line flows to the clamping device. Once the flow stops, a message is sent to the PLC that the specified clamping pressure has been reached. A check of the release takes place inversely according to the same principle.

The operator can check the current flow status in the oil pressure line on the LCD display at any time with the local OMNI electronics. Two electronic switching signals are adjustable via the adjusting ring of the OMNI local electronics. The switching signals are integrated in the machine PLC and control the pump function of the hydraulic unit.

The benefits

- Higher pressure requirements in additional applications are fulfilled with configuration of the flow monitor element for a pressure stage of 500 bar.
- Reduced downtimes and maintenance work with a viscosity-stabilised design from 30 – 330 mm²/s.
- Illuminated local LCD display enables permanent visual checking of the correct flow rate. As a result, "fluctuations" can be recognised in time and downtimes of the machine are avoided.
- Precise analog output and two adjustable limit value contacts as an interface to the PLC.



Simple programming with magnet ring.

Focus on the customer – purchase decision

Integration of the OMNI-HD2K flow monitor enables a significant improvement of workpiece clamping with dynamic flow monitoring. As a result, the effective machine operating time is significantly increased and potential machining errors due to incorrect workpiece clamping are avoided.

Result: Improved machine efficiency and reduced production unit costs.



Flow transmitter / switch OMNI-F