



MICROFLOW Flow Tuning and Measurement



PROGRESS

Flow tuning, grinding, and test capability excellence

PROGRESS is the next generation of flow tuning and flow measurement system, featuring a flow targeting accuracy to +/-1%. Processing capability is aimed at orifices with diameters between 100–350 µm for parts up to 30mm in diameter and with flow rates up to 5 l/min.

Customers benefit from a self-contained modular construction for each process and configurable hardware to help ensure components meet everchanging stringent government regulations, e.g. CAFÉ in North America, EURO6 and expected EURO7 in Europe, and PRC standards in Asia.

Fuel system manufacturers seeking the best fuel performance require flexible high-flow grinding and high-flow test capabilities to achieve finely tuned orifices in numerous design variations. PROGRESS is the most efficient solution.

FEATURES and BENEFITS

- + **Footprint optimization**
Intelligent design combines fluid grinding, flushing, testing, and part handling modules in a footprint reduced by 25% compared to separate units.
- + **Flexible manufacturing capability**
Modular design enables scalable production to meet varying production needs. Compared to previous generations, and depending on the application, the output can be increased by up to 100%.
- + **Built-in handling and robot-automation ready**
Easily integrates into production line.
- + **Part-handling force control module**
Configurable high-force clamping system for adjusting clamp pressure to better accommodate components and improve tool wear by up to 50%.
- + **Manual or automatic mode**
PROGRESS works as a lab machine or a production workhorse.





TECHNICAL INFORMATION

PROGRESS



MACHINE SPECIFICATIONS

Loading height from floor	1066mm (42")
Overall size	2130mm (84") W x 4320mm (170") L x 2330mm (92") H
Weight	approx. 4490 kg
Part-handling configuration	4–10 stations Single or double part per tool Configurable, high force, 2-stage pneumatic cylinder with booster
Noise	Maximum 75dbA

FLOW TUNING MODULE

Maximum processing pressure	14 MPa
Minimum processing pressure	2 MPa (NOTE: At pressures <10 MPa, flow correlation may diminish.)
Backpressure	Optional
Temperature range	18–35 °C controlled to ±1 °C
Media flow rate	300–34,000 gram/min at 14MPa
Media filtration	74 µm, 42 MPa with dirty filter
Media reservoir	Indicator, 38 liter
Hydraulic system	Capacity 151 liter High Pressure Motor/Pump Dual, 7.5 HP, 80 l/min Circulation Motor/Pump 1 HP, 14 l/min
Grinding media type	Low Viscosity EXTRUDE HONE Brand Only

WATER REQUIREMENTS

3/4" NPT Inlet, 15.2 lpm, 4 bar, 10 °C

PNEUMATICS

Minimum input pressure	4.1 bar
Equipped with automatic pressure release at E-Stop	
Equipped with input pressure switch to ensure incoming pressure is suitable for operation	

FLOW TEST MODULE

Test calibration fluid	VISCOR 1487 (ISO 4113 Compliant)
Test flow rate	0.30–68 l/min
Backpressure	Optional
Temperature range	20–40 °C controlled to ±1 °C
Test fluid system	Capacity, 75 liter High Pressure Motor/Pump, 10 HP, 10 l/min Circulation Motor/Pump 1.5 HP, 32 l/min

FLUSHING MODULE

Fluid type	VISCOR 1487 (ISO 4113 Compliant)
Reverse flush	Optional
Temperature range	20–40 °C controlled to ±1 °C
Test fluid system	Capacity, 246 liter High Pressure Motor/Pump, 5 HP, 11 l/min Circulation Motor/Pump 1.5 HP, 32 l/min

CONTROL MODULE

Programmable Logic Control (PLC)	Allen-Bradley
Interface (HMI)	15" Industrial touchscreen
Software	Allen-Bradley
Remote connectivity	Fast ethernet switch enables remote access to PLC, HMI, and dial-up modem.
Data collection	Production data logging and process data filing.

ELECTRICAL

Input power	200–480 VAC, 3-phase, 50/60 Hz
Input current	50/25A, depending on input voltage
Control and valve voltage	24 VDC

NOTE: Specifications and availability are subject to change without notice.