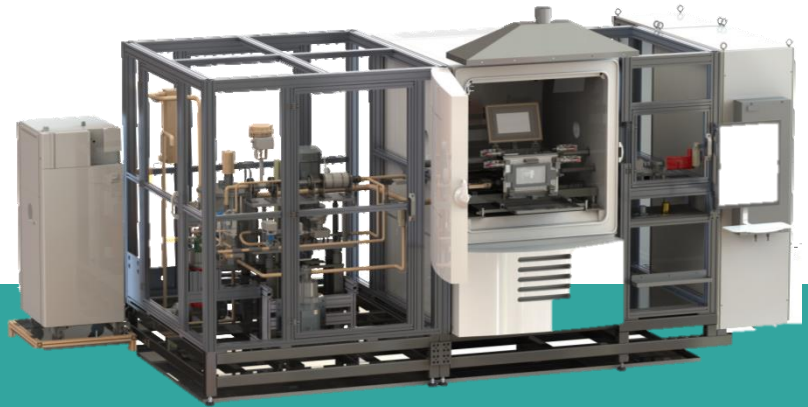
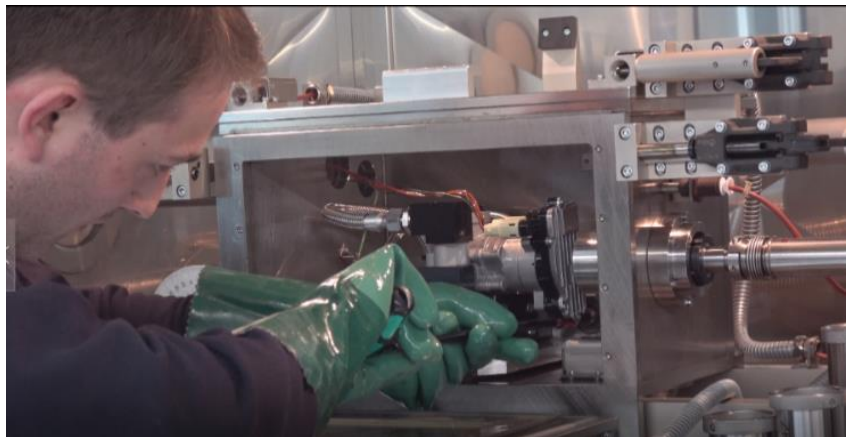


Pump test bench for laboratory



- Test bench for laboratory tests to record specific characteristic data of oil-flow pumps during the simulation of a wide range of operating conditions.
- Measuring principle:
 - Test piece is integrated in the oil circuit
 - Application of parameters (pressure, temperature, speed)
 - Recording of measured data (volumetric flow, leakage, pressure loss, torque, temperature, motor current...)
- Creation of freely combinable test sequences for an individual hydraulic functional test
- Changing device for different types of oil pumps
- Optional: Drive system for pumps without own motor
- Temperature test chamber for a wide temperature range
Powerful process thermostat for fast temperature changes



Technical Data

Test pieces

Oil pumps for engine lubrication in vehicles:
Pumps with motor and motor control unit
Pumps with motor
Pumps (for external drive)

Measurement data

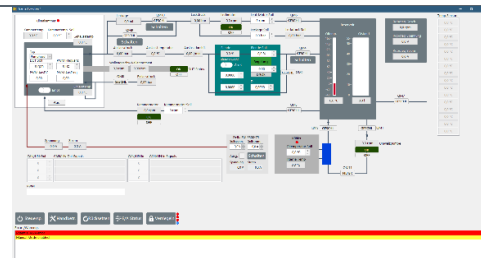
Pump output volumetric flow	0...20 l/min	$\leq \pm 0.25\%$ of measured value	
Leakage volumetric flow	0...100 ml/min	$\leq \pm 0.25\%$	
Pump output pressure	0...50 bar	$\leq \pm 0.25\%$ of limit value	
Pump suction pressure	0...-1 bar	$\leq \pm 0.25\%$ of limit value	
Pump output temperature	-40...150°C	± 1	
Additional temperature meas. inputs	16		
Voltage	DUT Voltage	0...80 V	$\pm 0.125\%$
Current	DUT Current	0...100 A	$\pm 0.1\%$
Current	DUT Sleep Current	max. 250 μ A	
Frequency	DUT PWM	10...400 Hz	
Torque	0...5 Nm	$\pm 0.3\%$	(for externally driven test pieces only)
Speed	...		--
Rotation angle	...		--

Adjustable parameters

Temperature	-40...150°C	$\pm 1^\circ\text{C}$ (test chamber)
Pressure (leak test)	0 ... 50 bar	
Speed	0 ... 5000 min ⁻¹	
Test pieces control via	CAN, LIN, PWM, BLDC 3 phases	

Measuring data processing and machine control

Hardware	Industrial panel PC
Operating system	Windows
Measuring software / control software	LabView real-time program on CompactRIO
Storage	for DIAdem and Excel



Dimensions

Width	6.1 m
Depth	4.3 m
Height	2.5 m

Components

Test chamber volume	10 l
Oil container volume	55 l
Temperature test chamber	TempEvent by Vötsch/Weiss
Process thermostat	Unistat temperature control unit by Huber