

LEAK TESTING · ENGINE COOLANT PUMPS · UP TO 20 BAR

Leak Test Stand for Water Pumps

Automated pressure leak testing of coolant pumps up to 200 kg for large diesel and gas engines in marine, rail, power-generation and industrial drives — a self-contained unit with crane-loaded test chamber, drive, media conditioning and data logging.



20 bar

Max. test pressure

200 kg

Max. test piece weight

3 lines

Coriolis flow metering

**< 75
dB(A)**

Sound-insulated drive

Built for the coolant pumps of large engines

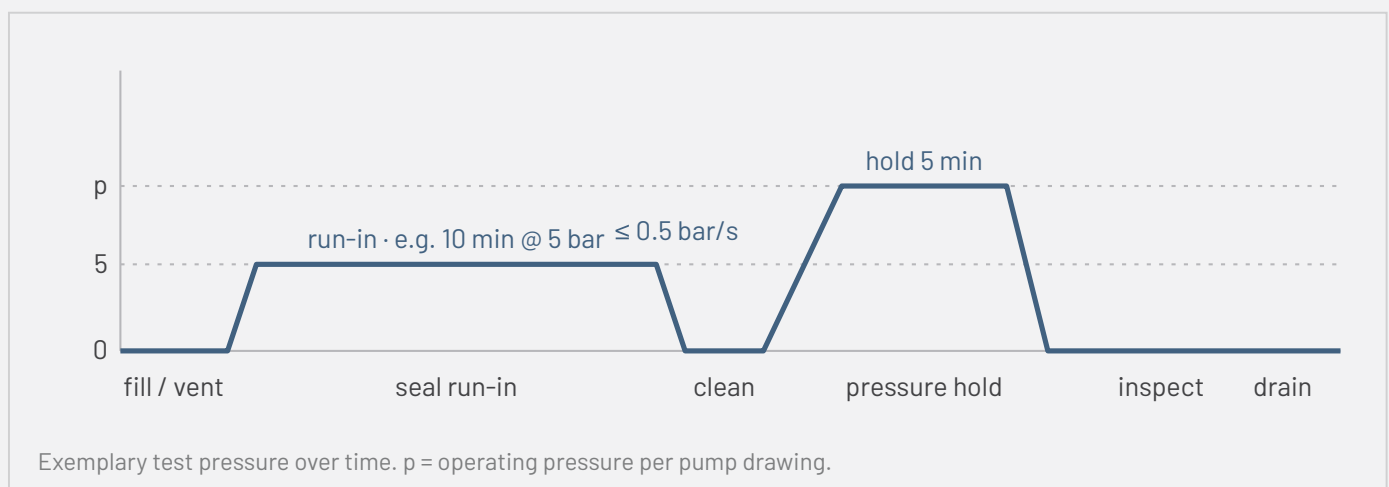
Coolant pumps for large diesel and gas engines differ in size, drive, interfaces and design. Before engine assembly, every pump has to prove its seal tight under realistic operating conditions. The stand tests one pump at a time, with a dedicated adapter block per pump family.

The pump is flanged to its adapter block and driven through a flexible coupling at a programmed speed, generating the test pressure itself. Its bearing is supplied with lube oil via the adapter. Speed, run-in and hold times are defined per pump type in the test program.

Test sequence

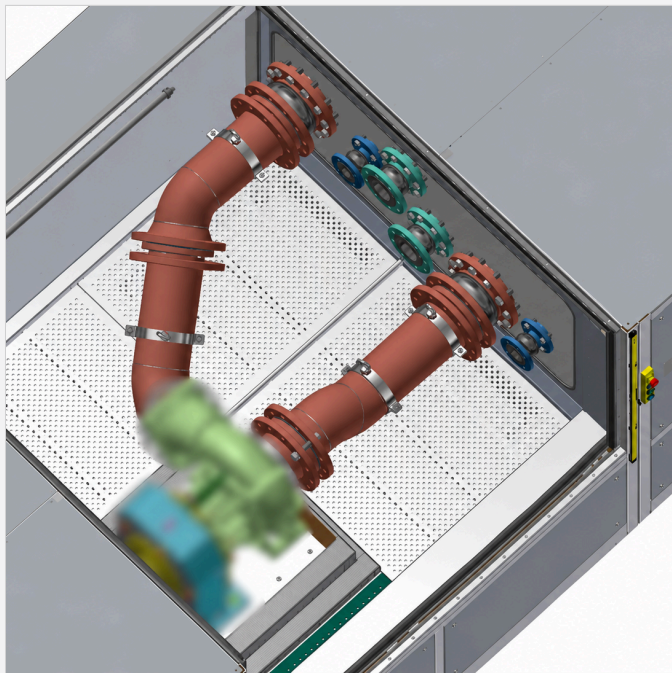
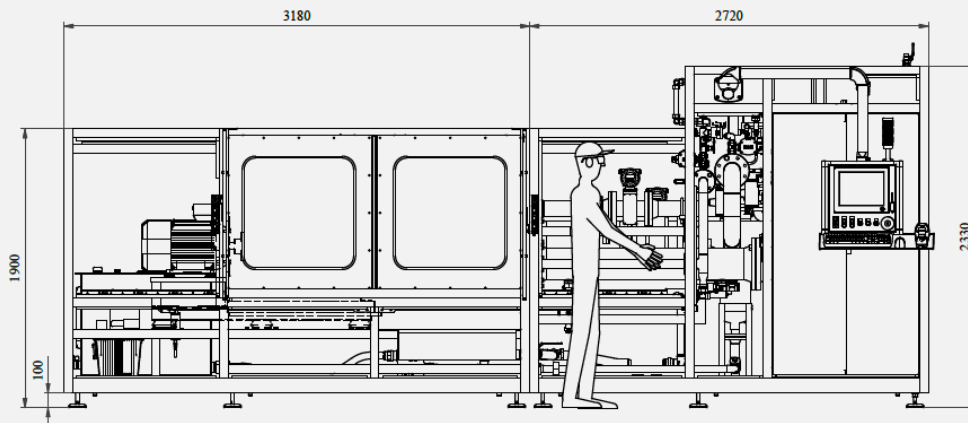
01 Load Crane loads the pump onto the linear slide, which moves it to the drive coupling.	02 Identify Hand scanner reads the DMC code and calls up the stored test program.	03 Close Automatic lift door closes; the electric interlock is confirmed before start.	04 Fill & vent The test circuit is filled with water emulsion and vented automatically.
05 Seal run-in Pump runs at its specific speed, e.g. 10 min at 5 bar rel. Run-in leakage is wiped off.	06 Pressure hold Operating pressure held for 5 min. Pressure ramps ≤ 0.5 bar/s.	07 Inspect After standstill the operator checks for leakage – visually or via measuring vessel.	08 Drain & save Circuit drained; result, pressures and flow stored with the serial number.

Pressure profile



One compact, self-contained unit

A welded base frame carries the test chamber, drive unit, media conditioning and an integrated control cabinet. Openings are closed by cassette panels; the motor compartment is sound-insulated.



TEST CHAMBER

Open for crane loading

Stainless steel chamber with sealed drip tray. Automatic aluminium lift doors with Makrolon windows clear the whole chamber for the crane. Linear test slide adapts the pump to motor and coupling.

MEASUREMENT

Three pressure lines

Three independent lines, each with its own Coriolis flow meter, cover the full range of delivery rates. Pressure transducers, accuracy class 0.5 %.

MEDIA CONDITIONING

Always clean medium

Clean and dirty tank, band pre-filter, switchable double filter and bypass filtration. Levels and filters are monitored.

CONTROL

PLC and touch PC

Siemens S7-300 with Profibus, industrial touch PC, in-house software with recipe management, plain-text fault messages, USB and network.

SAFETY

Pressure-free when open

Doors locked during the test and monitored by a safety switch. Any fault or emergency stop depressurises the system.

Technical data

TEST SYSTEM

Test type	Leak test, visual assessment
Test pressure	0 – 20 bar
Piping rated to	25 bar
Pressure ramps	≤ 0.5 bar/s
Transducer accuracy	Class 0.5 %
Pressure lines	3, one active, each with Coriolis meter
Test medium	Water with 3 % anti-corrosion oil emulsion
Tank volume	approx. 1,000 l
Medium temperature	Room temp. (option: 90 °C)
Test piece weight	up to 200 kg
Test piece connection	Universal fitting

MACHINE & SUPPLY

W × D × H	approx. 3,100 × 2,500 × 2,500 mm
Weight	approx. 5,000 kg, empty
Finish	RAL 7035 textured; stainless chamber
Sound level	< 75 dB(A)
Connected load	approx. 15 kW
Supply voltage	230/400 V +6/-10 %, 48-52 Hz
Control voltage	24 V DC
Compressed air	6 bar
Electrical design	EN 60204-1
Ambient	4-40 °C, 75 % RH annual mean
Water quality	pH 7-8.5 · 6-15 °dH · Cl ⁻ < 100 mg/l

Scope of supply

- Complete, function-tested system ex works
- Joint acceptance test and operator training at our plant
- Documentation: manual, electrical, hydraulic and pneumatic diagrams, parts lists, acceptance reports
- Connection for DMC hand scanner

Options

- Medium heating to 90 °C incl. insulation
- Warranty extension to 24 months
- On-site commissioning and training
- Tool drawer, retrofittable



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