



Test Benches

From “Below Zero” to “Trans-Critical” – R744 (CO₂) Compressor Test Bench

Continental Engineering Services (CES) developed and built a fully custom made R744 system and component test bench.

CES is specialized in system integration and vehicle testing. We are providing all project phases: from initial concept, hardware- and software development, specification and procurement, up to assembly and commissioning. The test bench represents a basic refrigerant circuit extended with customer specific requirements including:

- › compressor
- › heat exchangers
- › electric expansion valve
- › automated oil separation system
- › conditioning device
- › measuring system

A custom graphical user interface enables a proper control system, managing the challenges of a R744 refrigerant circuit including high-side pressure control (COP optimum), heat pump- and trans-critical operations.

Performance Data:

- › Temperature Range -50°C up to 200°C
- › Pressure Range up to 160 bar
- › Cooling/heating capacity up to 16kW for coolant conditioning
- › Comprehensive safety concept

