

WHY

Better ergonomics, shorter construction time and increased efficiency for proven endurance temperature test chest

HOW

Re-design of the existing test cabinet
Optimisation of the production process

WHAT

Temperature test chamber WTS-1200/40-120/1-S for endurance tests on pressure generating units of brakes

WHY - The challenge.

Continental Teves AG is a leading international automotive supplier. One focus is the development of brake systems. For endurance temperature tests on the pressure generation unit of brakes, Continental Teves has been using test cabinets developed by Weiss Technik worldwide for many years.

Since the existing design required deep stooping during operation, the ergonomics of the test equipment needed to be improved. In order to have more planning flexibility, the delivery time was to be significantly reduced at the same time. In addition, the economic efficiency of the systems was to be increased.



HOW - The idea.

In order to improve the working ergonomics of the test chamber, the design is fundamentally revised. The test chamber is mounted on a metal frame and can be comfortably loaded while standing. To increase efficiency, the test capacity will be increased so that six test specimens can be tested simultaneously.

In order to shorten the construction time by about one third, a modular system concept is being developed. This allows work steps that were previously carried out one after the other to be carried out in parallel.



After the test chamber has been manufactured at Weiss Technik, it is delivered to the partner company Manfred Merklinger GmbH so that they can assemble the mechanics around the test chamber. In parallel, Weiss Technik manufactures the temperature control unit and delivers it to the customer, where both components are combined with the control unit.

WHAT - The solution.

The modular temperature test chamber WTS-1200/40-120/1-S consists of a test chamber with a capacity of approx. 1,100 l, a temperature control unit and a rack as well as the control unit. The rack accommodates the complete refrigeration equipment to the left of the chest, and a 19" rack to the right of the chest provides space for the control unit. The brakes, whose pressure-generating unit is tested in the test room, are mounted under the test room, which is placed at chest height. The motor-driven lid opens upwards.

The temperature range of the unit is from -52 °C to +120 °C. The refrigerants used are the chlorine-free R-452 A (preliminary stage) and the environmentally friendly R-469 A / WT 69 (main stage) with a GWP of less than 2500. The system is controlled, monitored and regulated via the SIMPAC system.



Selected Product: Temperature chamber WTS-1200/40-120/1-S



Technical features:

- Accommodation of the pressure generation unit in the rear wall
- Feed-throughs for brake pressure lines to the bottom
- Various external interfaces
- 32-bit control, monitoring and regulation system SIMPAC
- Environmentally friendly refrigerant (GWP less than 2,500)
- Lid with self-locking drive and dead man's handle
- ATEX safety measures for zone 2
 - Surface temperature limitation of radiators
 - Ground fault circuit interrupter for radiators
 - Intrinsically safe measuring circuit