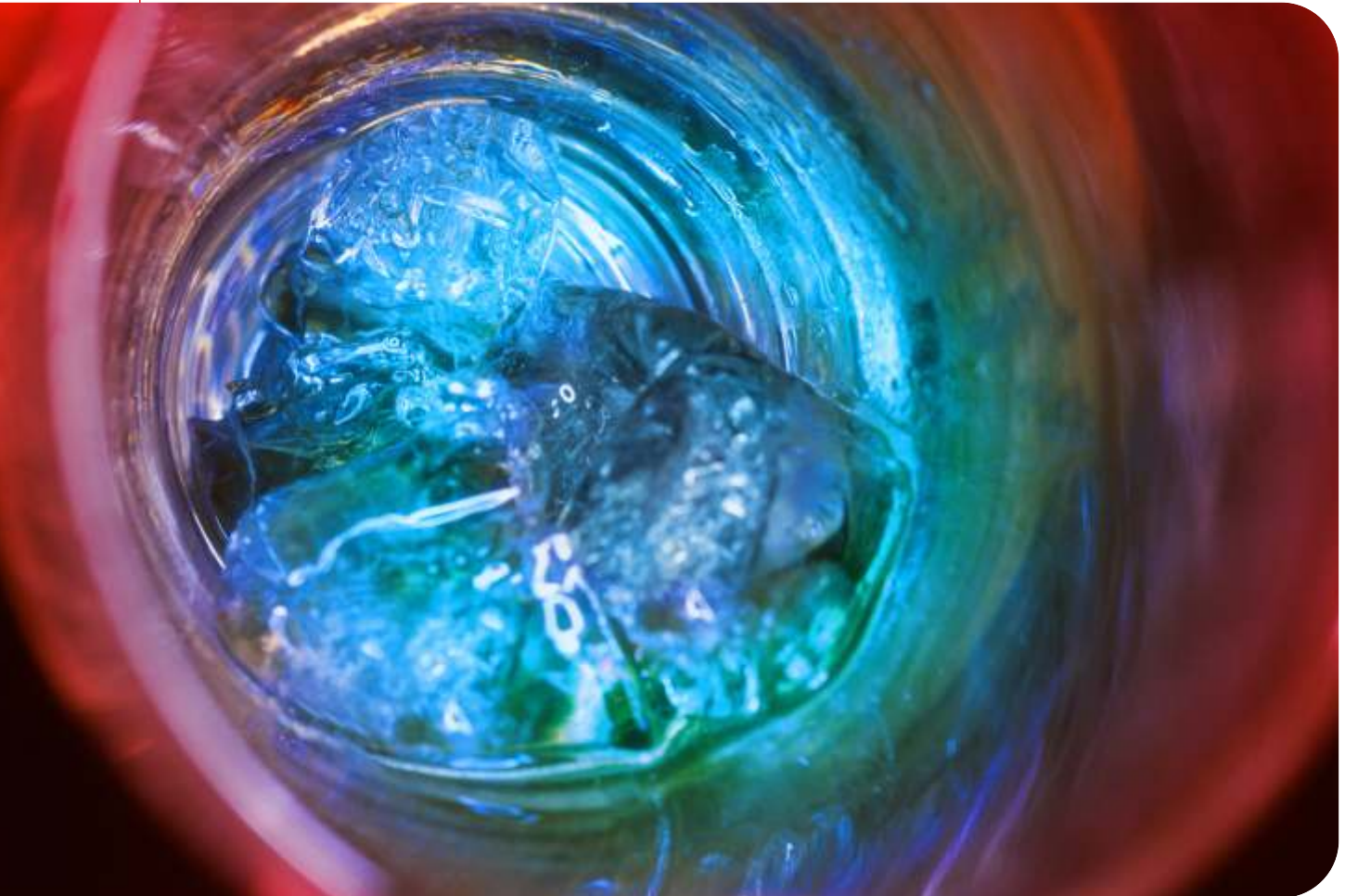


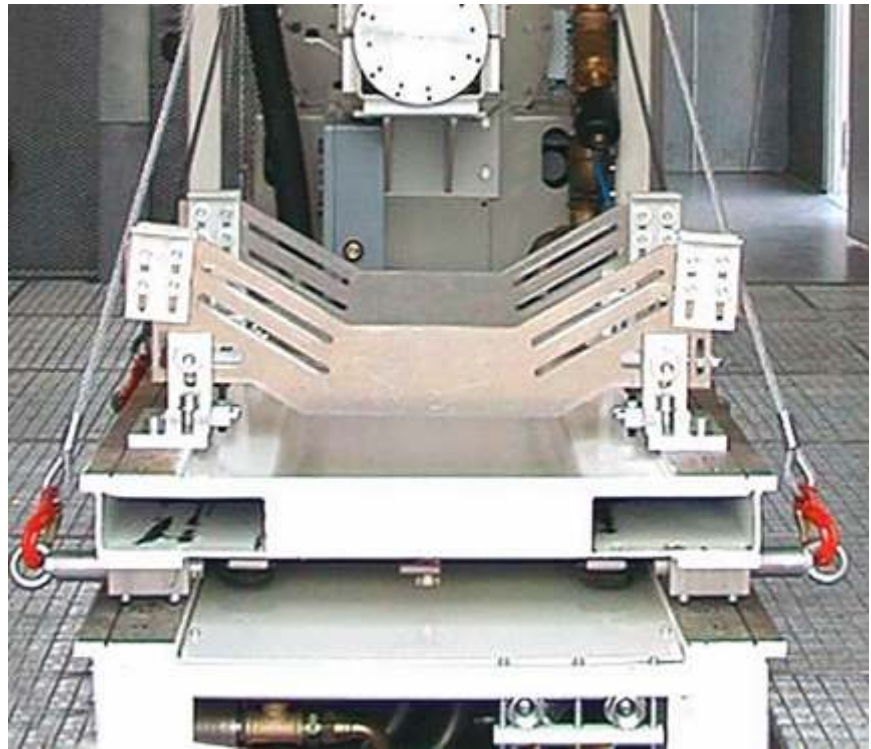
Cooling of test engine



SWEP BPHE's are widely used within test equipment for engine development, where they both serve for realistic engine operation and accuracy in measurement equipment. Here it was introduced to handle the performance test of the W8-engine from Volkswagen. The engine generates a lot of heat during the extreme test procedures leading to high demand on the engine cooling system and the ventilation system of the building. This test system is made by the German company Technogerma Systems GmbH.

The problems for Technogerma was to find an engine water cooling solution and a way to conditioning the testing room. The solution for the engine water cooling had to be very compact to fit in the bottom of the skid in the test rig. Evaluation of performance and emissions do also require stable performance during transients which adds high demand on the cooling capacity.

Huge fans mounted on the top of the building see to that the test room becomes continuously conditioned. The engine cooling issue is solved in an excellent way by a SWEP B45x120. The BPHE both solves the problem from thermodynamical and a space-saving point of view. Furthermore, compared with a direct air cooled solution, a BPHE saves both secondary side ethylene glycol volume and pumping power. These facts benefits both energy efficiency and operating costs.



The engine is cooled by the primary circuit filled by water / ethylene glycol mixture. The secondary ethylene glycol

circuit is then cooling the primary flow, through a B45 x 120. The secondary ethylene glycol flows to a fan on the top

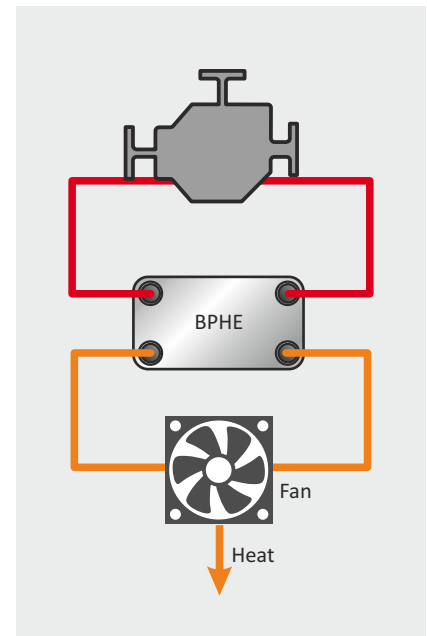
of the roof, where it is cooled by ambient air.

APPLICATION DATA

BPHE type	B45x120
Heat load	181 kW
Ethylene glycol temperatures (in/out primary side)	85 to 75 °C
Ethylene glycol temperatures (in/out secondary side)	65 to 82 °C
B45x120 dimensions	326 x 421 x 524 mm
B45x120 weight	57 kg



The B45x120 is mounted in a groove below the test equipment



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