

# HOT & COLD WATER GENERATOR TO SUPPLY HYDRAULIC TEST BENCHES

## TCW B2 (axial fans) - CCW B2 (centrifugal fans)

### TECHNICAL DESCRIPTION

The **TCW/CCW** group allows the user to supply constantly with hot and cold water the hydraulic test benches for both laboratory and production applications.

The generators are made up of two independent plants used to produce and store hot and cold water and recovery the return mixed water.

The refrigeration circuit uses a silenced airtight SCROLL type compressor that allows a high power efficiency, lower electric consumption and lower noise. SCROOL compressor reduces the risk of valves failure, high frequency failure in other compressor type. The cooling plant consist in a forced air condenser with fans controlled by inverter, an external tank heat exchanger, an air-mixing pump and an expansion device with thermostatic valve with by-pass on hot gas. The heating plant consists of three heating elements and one water circulator.

The **TCW/CCW** group works with closed circuit. The water used on the bench is recovered and sent again to the generator where it is heated/cooled again at the temperatures required for the test.

### ADVANTAGES compared to a traditional supply plant

- **Total recovery of water** used for the tests: consumption is limited to the first filling and topping up needed to compensate losses due to evaporation or drain. It is suggested weekly or monthly replacement of water according to the operating condition.
- **Possibility to use the test bench without supply from waterworks.**
- **High energy saving** when the TCW/CCW is connected to our test benches equipped with a device for the differentiated water recovery. Water coming from the benches is separately conveyed to the tanks inside TCW according to the temperature measured on the drain of the device under test.
- **Constant supply water temperatures** with consequent precise repeatability of tests (in optimal conditions and continuous service stability is higher than  $\pm 0,8$  °C).
- **High usage flexibility:** working temperatures can be modified both upward and downward in short times with gradients higher than 1 °C/min.
- **Reduced starting transitory time:** the plant is operating in one hour with a water starting temperature equal to 25 °C.
- **Constant monitoring of internal tank temperatures.**
- **Easy installation** with no need for buildings, gas suppling and fume discharge. The external hydraulic plant only needs to be supplied from the water network in order to fill the tanks and the discharge collector to void tanks.
- **Autonomous installation:** it is possible to install at 10 m from the test bench.
- **Easy to move:** it has got rotating wheels with emergency brakes.

### STRUCTURAL CHARACTERISTICS

- Supporting structural frame made of metal sheet boxed with removable lateral panels.
- Assembly on rotating wheels provided with parking brakes.
- Stainless steel internal tanks, with very low thermal conductivity insulation for hot and cold water, overflow, drain valves, connections for water supply and recycling.
- SCROLL type airtight compressor with forced air condenser, internal axial fan and air drain in upward direction. Refrigerant fluid R410A.
- Heating plant with three independent electric resistances.
- Electronic digital devices for regulation and control of cold and hot water temperature. PID control on hot tank and ON/OFF control on cold tank, 4 wires Pt100 probes, power outputs with static relay and contactor.



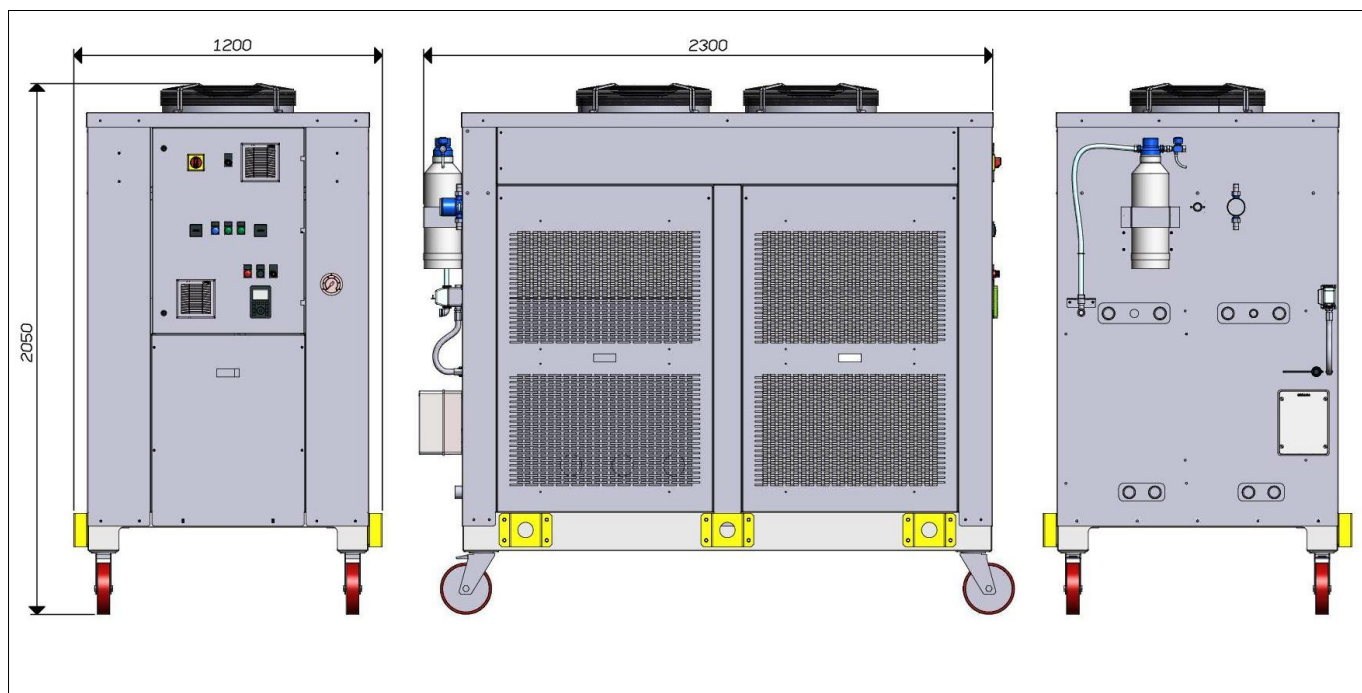
- New PLC with graphical interface for the visualization and managements of tanks level alarms, temperature alarms, cooling and heating plants alarms.
- IP 54 electrical cabinet in frontal position.
- Two operative modalities for the switching on/off of the generator: **“Manual”** or **“Remote”** from the test bench using SWG software. In this modality, it is also possible to set a weekly timer.
- Water supply with our filter for water purification (see detailed specifications).

**TECHNICAL FEATURES** (VERSIONS 2021 - Europe)

	<b>TCW</b>	<b>CCW</b>
Cooling power	23 kW	23 kW
Heating power	24 kW	24 kW
Maximum operating range	hot water 40 ÷ 90 °C cold water 5 ÷ 25 °C	hot water 40 ÷ 90 °C cold water 5 ÷ 25 °C
Recommended operating range	hot water 40 ÷ 90 °C cold water 10 ÷ 25 °C	hot water 40 ÷ 90 °C cold water 10 ÷ 25 °C
Typical stability in dynamic condition at 50% of flow-rate	±0,5 °C	±0,5 °C
Limit ambient temperature	-10 ÷ 45 °C	-10 ÷ 45 °C
Internal tanks	300+300 L	300+300 L
Continuous flow-rate with supply at 15 and 65 °C and 40 °C mixed water temperature.	12+12 L/min	12+12 L/min
Noise level	75 dB	75 dB
Fans flow-rate	10.000 m <sup>3</sup> /h	11.000 m <sup>3</sup> /h
Size	2.300 x 1.200 x (h) 2.050 mm	2.300 x 1.200 x (h) 2.300 mm
Weight	680 kg	720 kg
Electric supply	400 V – 3 Ph – 50 Hz	400 V – 3 Ph – 50 Hz
Internal secondary	24 V AC	24 V AC
Total power	36,0 kW	37,6 kW
Max absorbed current	58,2 A	61,0 A

<b>OTHER ORDERING CODES</b>	<b>POWER SUPPLY</b>
TCWB2NNSBXGS200	460 V – 3 Ph – 60 Hz
TCWB2NXSBXGS200-A	400 V – 3 Ph – 60 Hz
TCWB2NXSBXGS200-B	600 V – 3 Ph – 60 Hz
TCWB2NYSBXGS200	380 V – 3 Ph – 60 Hz
TCWB2NJSBXGS200	380 V – 3 Ph – 50 Hz
TCWB2NRSBXGS200	230 V – 3 Ph – 60 Hz
TCWB2NISBXGS200	200 V – 3 Ph – 60 Hz
TCWB2-OPZ-TRP	Tropicalization for functioning at ambient temperature up to 55 °C

### TCW B2



### CCW B2

