



DYCOMETAL
Testing Technology



**SPECIAL
SOLUTIONS**

General Brochure



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www.dycometal.com

THE COMPANY

DYCOMETAL EQUIPOS DE CONTROL DE CALIDAD, S.L. . – was founded in 1988, having the compromise from the beginning, to give to their products the warranty of each of them faithfully reproduce all the environmental conditions that nature is able to offer to achieve a better quality of materials

Throughout our history different challenges have been presented us in the construction of special equipments, for various fields of environmental testing, having them successfully thanks to our experience, effort and a specialized engineering Department to offer the customer a solution to every need.

Our R&D Department study each project that we receive, in order to comply the needs of our customers to the maximum.

DYCOMETAL is the leader in the Spanish market, putting at your disposal its experience in test systems for the realization of consulting services. We analyze and propose the different solutions for a specific test, and we manufacture the solution according your requirements



MODIFICATION OF STANDARD CHAMBERS

Sometimes, the standard compact chambers are not suited to introduce the samples to be tested, that is to say, the chamber don't comply with the needs of the customer.

DYCOMETAL offers for each customer a detailed study of the needs, failing to make an adaptation of the standard chamber according with the needs that the client requires. It is possible to manufacture the chamber with different volumes, modifications of the workspace (height, width, or background) adapting with the sample, horizontal configuration, change the cooling group position, special doors, etc. Even the color of the chamber can be modified.

And always guaranteeing the same conditions like the standard chambers.



- Custom internal dimensions.
- Temperature range from -70°C to $+180^{\circ}\text{C}$.
- Humidity range from 10% to 98% RH.
- Higher temperature change rates
- Number of access-ports.
- Special doors.

CUSTOM DESIGNS



Systems developed according to the needs of the client. They are developed when the processes or tests require dimensions or special spaces.

Its development is made under customers specifications and subject under study by the Technical Department of DYCOMETAL.

The developments include those designed for heavy loads, continuous conditioning, special testing, water spray, etc.

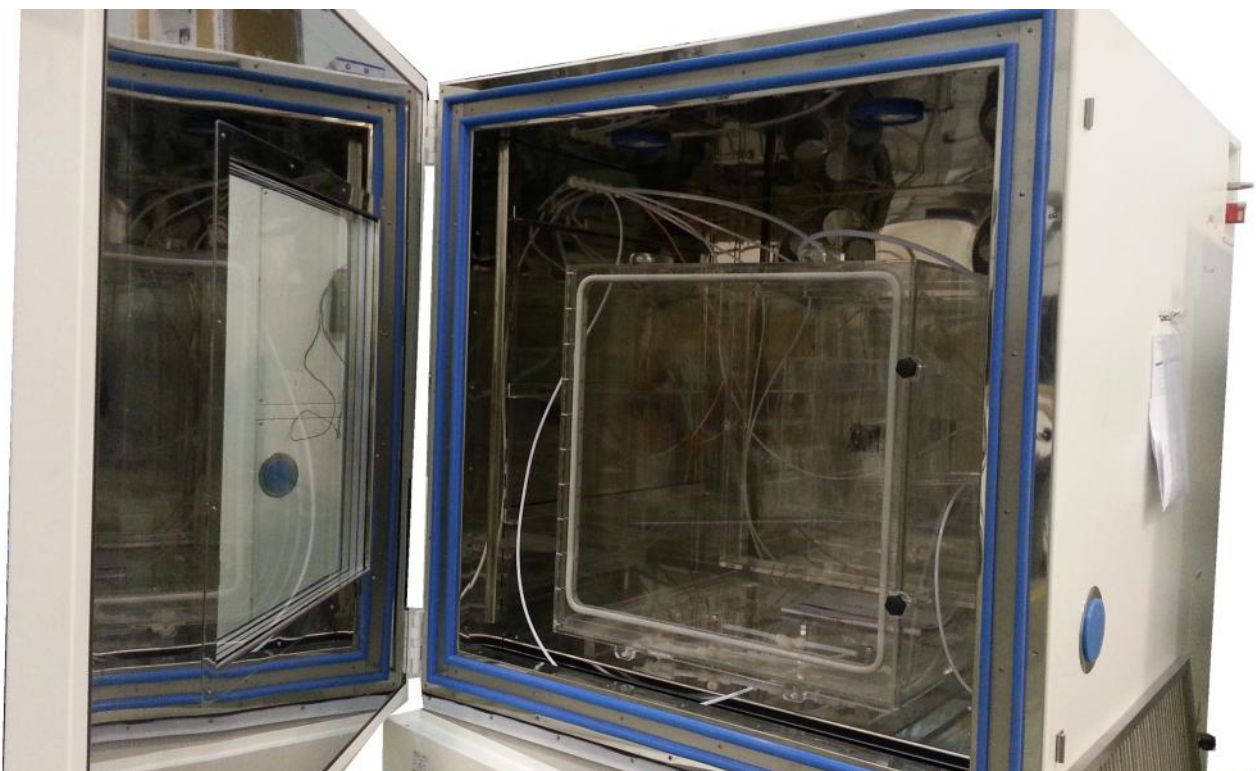


TEST OF CORROSIVE GASES

These chambers have been developed for the study of corrosion on certain materials. Its use is very widespread in the electronics industry with tests like IEC 68-2-42 or IEC 68-2-43.

The possible gases to use in these chambers are as follows: SO₂, H₂S, NO₂ o Cl₂. The chambers must be properly complemented with gas detection systems, sensitive to the low concentration that will be generated inside the chamber.

The inner auxiliary box can be removed, in order to be able to use the climatic chamber to perform temperature and humidity tests, under normal conditions.



TEST OF AIRBAG MODULES



Airbag modules have to be conditioning under different temperatures and after this, they explode for the quality control. This explosion can be done inside or outside of the chamber, so this point affect to the construction of the chamber.

If the explosion is done outside, the airbag will be mounted in a trolley and all the system will be synchronize to control the times between the output and the explosion. If the explosion is done inside of the chamber, then the chamber will have big observation windows in order to realize the study of the test inside.

The chamber settings may vary depending on where you wish to carry out the explosion. If the explosion is outside, the doors can be automated with the extraction of trolley. Doors could be: hinged, sliding, double door, etc.



- Internal, external or both explosion types.
- Sample transport trolley.
- Gas extraction system.
- Compensation of overpressure.
- Custom windows
- Automatized doors

CHAMBER FOR SOLAR SIMULATION

Solar simulation Chambers, reproduce the conditions to which shall be subject the materials in use or storage, under conditions of weather situations.

Its construction is similar to the climatic standard chambers, being able to go the volume from a compact benchtop chamber to large volumes of a modular chamber.

Lighting systems will be according with the standard to be used, from the metal halide, passing by the cold white light of the fluorescent lights, infrared lamps, etc.

The development of these chambers includes large chambers "drive-in" for cars test.



COMBINED WITH VIBRATION SYSTEMS



The development of these chambers is to perform a test of vibration and climate in parallel.

There are many brands or models of electrodynamic and hydraulic shakers, so the chamber must fit perfectly to any system to prevent leaks of the test conditions to outside.

Chambers can be constructed for different degrees of freedom, and the conditions of the test may vary: temperature, temperature and humidity, high temperature gradients,...

Even the external design of the chamber may vary, depending on the requirements of the Customer. The chamber can modify the workspace dimensions, positioning several doors, different access ports, workspace at distance of the cooling group, etc.



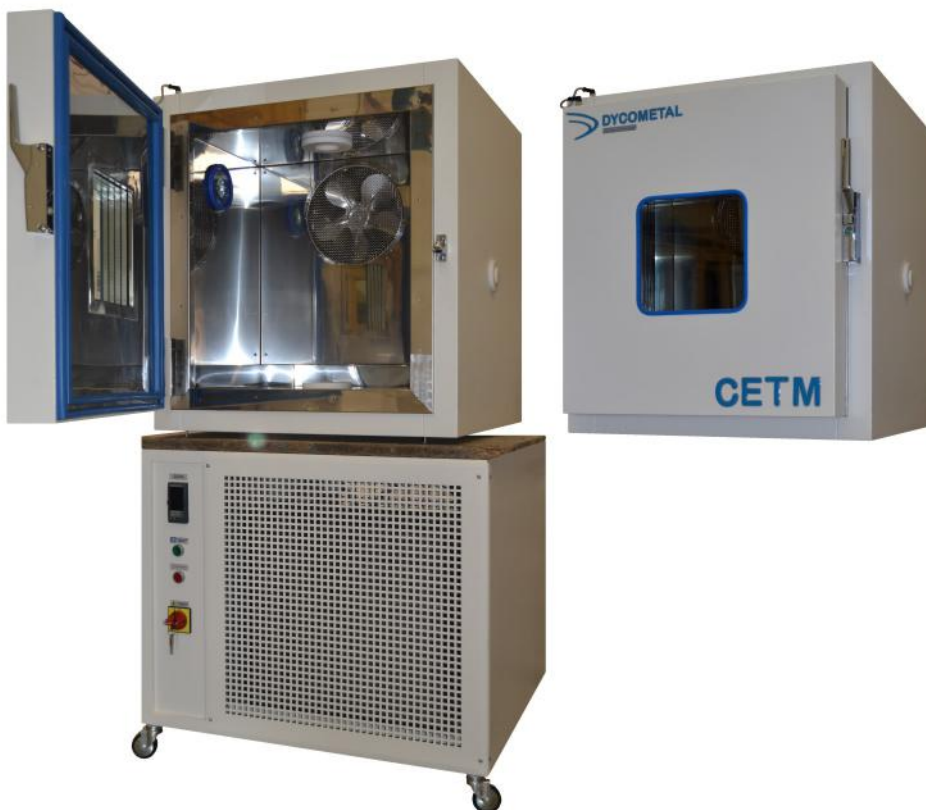
- Combined with any kind of shaker.
- Prepared for vertical, horizontal or both vibration.
- Lifting and movement system, manual or automated.
- In accordance with customer's need.

COMBINED WITH TEST BENCHES

Many mechanical elements require test benches for specific tests like fatigue or wear and tear tests.

On some occasions, these items must be tested under the most adverse conditions to ensure its durability, which makes the design of the chamber completely specific for the test bench in question.

DYCOMETAL manufactures tailored equipment for the needs of the customer: technical groups on top, separated from the workspace, different variables of control, different doors, etc. The chamber will be manufactured depending of the test bench.

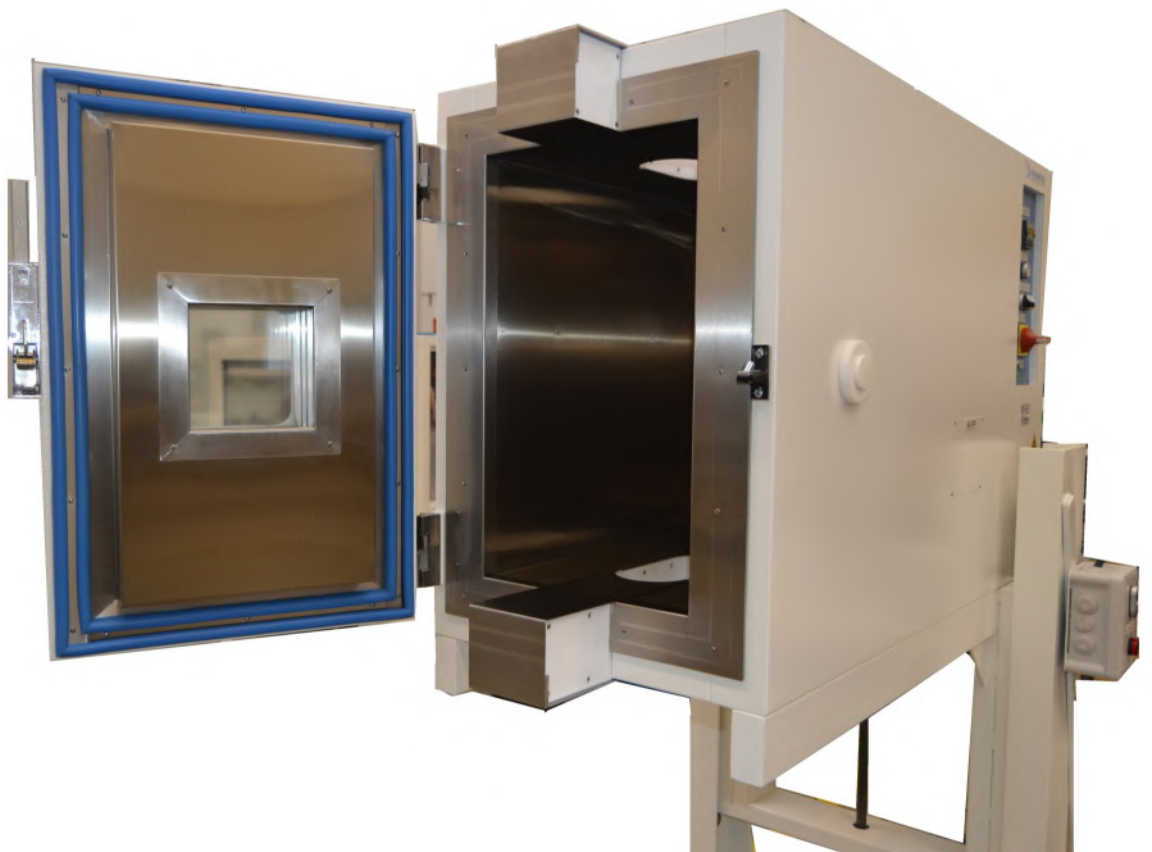


COMBINED WITH TENSILE MACHINES



Tests in universal testing machines enable you to check the strength of the materials. In some tests, its require the conditioning of the samples, so its necessary to introduce between the columns of the universal test machine a chamber which can control the temperature parameters.

These chambers are equipped with extreme gradients: -175°C up to $+250^{\circ}\text{C}$. And its construction depends on the type of universal machine where will test the samples. The chamber should be introduced between the two columns of the tensile test machine. Chambers can come with a structure, adjustable in height, automatically or manually, to allow the adjusting the height of the equipment.



EXTERNAL CONDITIONING UNITS

Sometimes due to geometry, size or the elements that compose the system to be tested, is difficult to introduce the equipment within a standard climatic chamber.

For testing of climate conditioning in inaccessible parts are often used external generators, which have associated an external workspace of small dimensions, that allow conditioning this particular area of the piece.

Generator system can be built to acclimate the box in temperature or temperature and humidity. And tests box is manufactured adapted to the system to be tested.

Compact chambers can be modified so that they function as generator system, using universal port placed in the side and an adaptable system to connect recirculation hoses. The chamber could work like a chamber or like a generator.



- Conditioning in temperature or in temperature and humidity.
- Custom made external box.
- Different thermal gradient options.
- Insulating hoses with different lengths.
- In accordance with customer's need.

WALK-IN CHAMBERS



When you want to perform the test on large piece sizes or on a large volume of samples is necessary the use of chambers for high-volume or walk in chambers.

These chambers can be manufactured in a compact or modular manner depending on the characteristics of temperature necessary for the execution of the test. These equipments are often so large that they cannot be mobile, so its difficult to move the equipment later.

The development of manufacture of DYCOMETAL, allows the manufacture of large volumes of mobile systems, both in compact or modular (MODUBLOC) design and under the conditions of temperature and moisture required by the client, so that they can subsequently be relocated without dismantling the chamber.

Its applications can be diverse such as, for example, automotive, plant growth, electronics, etc.



- Customer customized volumes.
- Configuration of the chamber depending on the existing space.
- Mobile option MODUBLOC.
- Different interior lighting systems for plant growth.
- Interior shelves



TAILOR-MADE, OVENS

Sometimes, the pieces to be tested don't need to be tested under negative temperature only in positive (over the room temperature), so It's not necessary use a climatic chamber.

These parts to be tested may have dimensions and geometries, that for a conventional oven would not serve, so you have to develop customized ovens, higher, wider or even Walk in. On other occasions oven must follow specific rules as the AMS 2750 E, where the oven should have most demanding control of temperature.

DYCOMETAL, specializes in the design of ovens tailored for all kinds of sectors, aerospace, automotive, etc.



- Custom internal dimensions
- Welded or modular Walk-in ovens.
- Different types of air flows.
- Programmable control.
- Additional security systems

CUSTOMIZED CORROSION CHAMBERS



- Walk-in Salt spray chambers.
- Tailored volumes in corrosion chambers.
- Salt spray chamber configured for water condensation test.
- Different finishes resistant to corrosion.
- Prepared for all type of corrosion tests.

There are many types of corrosion tests: salt spray, cyclical corrosion, condensation,... and the equipments for carrying out these tests are more or less standardized, but the adequacy of chambers for large parts or several parts in parallel is sometimes necessary.

DYCOMETAL, throughout its history, has been developing different customized equipments within its corrosion equipment line, according with the Customer need and fulfilling the required standards.

In this way, have been developed equipment such as the walk-in salt spray Chambers, equipment of condensation of moisture in high volumes, etc.



SPECIAL RAIN CHAMBERS

Rain-tight Chambers enable you to check the water resistant for small and large electronic components, IP degree. But when the components are large and heavy, a special development is necessary to be able to test them with reliability according the standard. These samples requires large rain Chambers, type walk in, or open systems, allowing test the pieces with comfort.

Sometimes, rain tests require conditions such as vacuum and spray water.

For studies of complete vehicles, its necessary a rain tunnel.



- Compact chambers with custom volumes.
- Walk-in chambers for large samples.
- Degree of protection from IPX1 to IPX6.
- IPX6K, Rain & Shine, etc.
- Automotive-specific tests:.

SPECIAL DUST CHAMBERS



Within tests for evaluation of tightness of samples, other tests to be performed on electronics components are the powder Chambers, for determination of the degree of protection against solid agents.

Like rain chambers, there are various standards relating to these systems, which can vary some parameters of each test.

Chambers of large volumes will allow test those components which can not be evaluated in the usual volumes.

Our powder chamber designs allow to reach volumes of more than 8,000 litres.



THERMOSTATIC BATHS

The thermostatic baths allow checking the resistance of materials to immersion in a liquid with a specific temperature. This liquid will be determined by the standards to be used and will be at a given temperature, from -20 ° C to +90 ° C.

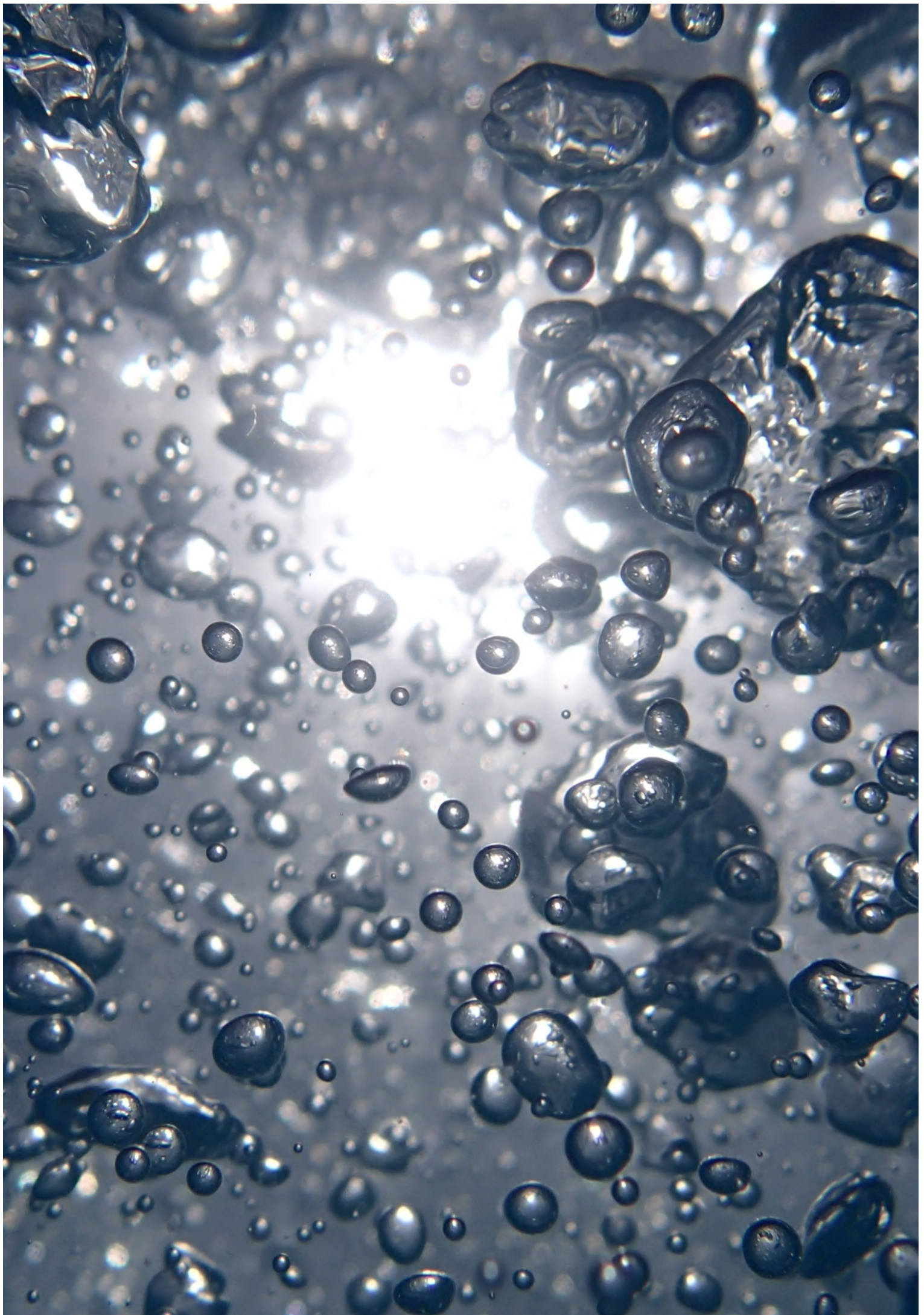
Each thermostatic bath, will be developed according to the regulations and the volume of parts to be measured, therefore it will be tailored from the first development.

These baths can present different liquids in a same equipment, for the realization of thermal shocks, liquid-liquid.

DYCOMETAL offers different developments made to measure according to customer needs.



- Immersion baths with water circulation.
- Immersion baths with circulation in glycol water or glycol.
- Immersion baths with multiple compartments.
- Temperatures from -20 °C to +110 °C.
- Custom designed.





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