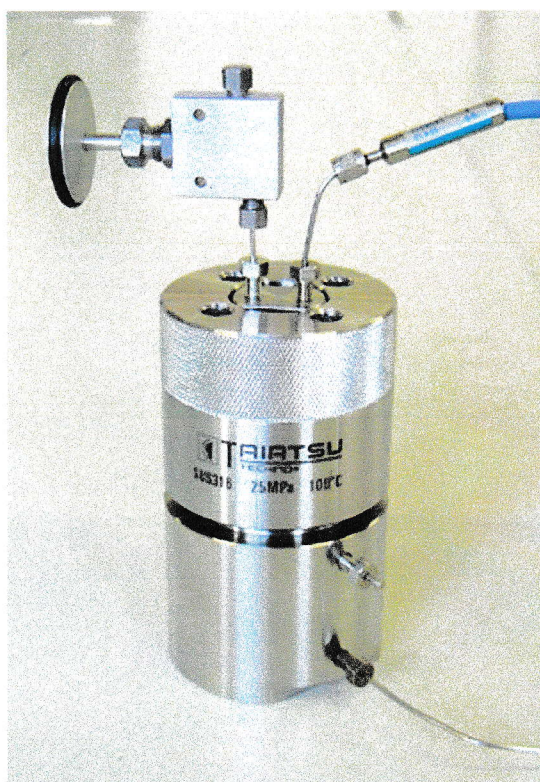
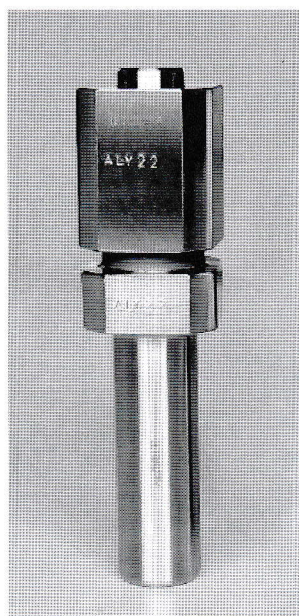


TAIATSU EQUIPMENT
for
SUPER-CRITICAL EXPERIMENT

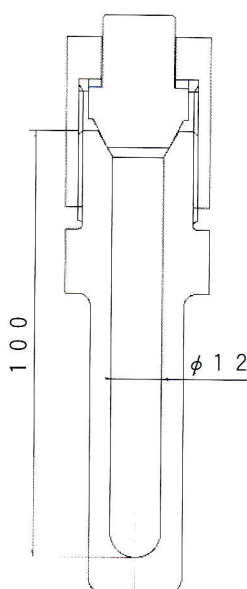
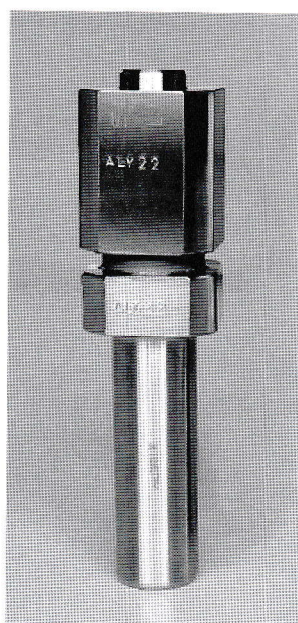


TAIATSU TECHNO CORPORATION
Tokyo, Japan

■ Super-Critical Reaction Cell TSC-0011

The super-critical fluid is said to be the solvent which satisfies high functionality and control with big molecular motion and the high solubility. The water is cheap, incombustible, and harmless, the application range is wide, and it is watched as the clean solvent.

However the activation of super-critical water is high, and it is used by the severe condition under the high temperature and pressure, so reaction cell is required the durability. We have developed the super-critical reaction cell which can be used easily.

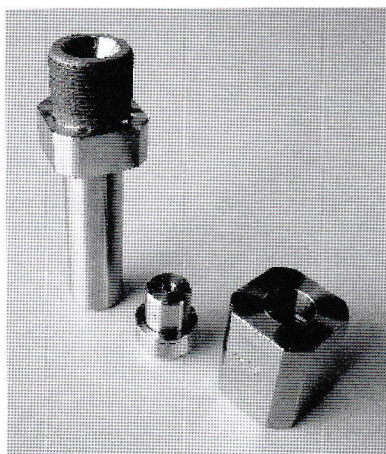


● Features

1. Compact and suitable for a little experiment.
2. Cell uses the special material with high durability.
3. It is able to obtain the high sealing under the condition of high temperature and pressure, and is adopted the easy tightening structure.
4. It is unnecessary to exchange packing because of non-packing structure.
5. It is possible to heat by high-temperature oven because of compact design.
6. When fitting in the specification of oven, it is possible to lead a sensor outside the oven through the lid with nozzle processing and measure the pressure or temperature inside the cell. (Option)

● Main Specifications

Max. working pressure	40MPa
Max. working temperature	450°C
Cell size	12mmID × 100mmL
Cell capacity	Approx. 11mℓ
Material	Alloy-22



● Consists of:

- ① Cell body
- ② Lid (Screw processing for nozzle is not included in standard)
- ③ Cap
- ④ Washer

● Options

1	Screw processing for nozzle on the lid (Female for 1/8")
2	Stoppage joint for nozzle screw on the lid
3	Connection joint for 1/16" or 1/8" tubing
4	Torque wrench for tightening of cell

■ Super-critical CO₂ Gas Experimental Cell TSC-CO₂-02 & TSC-CO₂-08
(Compact Reaction Cell Type)

This is the experimental cell which can be used first and easily to research for a possibility of the super-critical CO₂ gas. Let's try from a little sample first. Even the beginner who uses a pressure cell for first time does not need the special operation and technique. The photo and drawing shows capacity 80mℓ, and moreover there is more cell of small capacity 20mℓ (TSC-CO₂-02). It is possible to install the options (valve, pressure gauge, safety valve, pump, etc.) by customer's request.



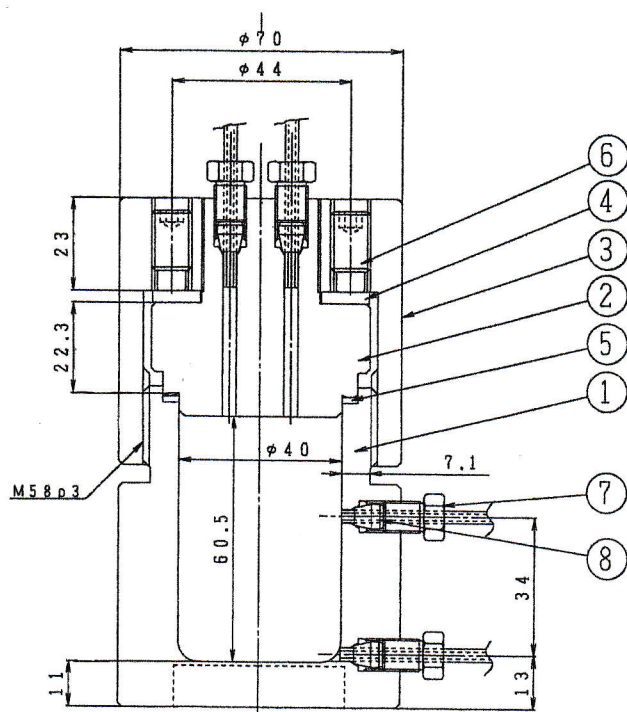
Carbon dioxide washing/processing, reaction and dyeing can be done by easy operation.

● Features

- ① Compact and easy operation
- ② Opening and shutting of lid is easy.
- ③ It is possible to use the magnetic stirrer.
- ④ It is put into the hot water bath as compact.

● Main Specifications

Model	TSC-CO ₂ -02	TSC-CO ₂ -08
Cell capacity	20mℓ	80mℓ
Max.working temperature	100°C	
Max.working pressure	25MPa	
Inlet/Outlet	3 points	4 points
Tubing dia.	1/16"	1/8"
Cell inner dia.	20mmID	40mmID
Weight	approx.2kgs	approx.3kgs



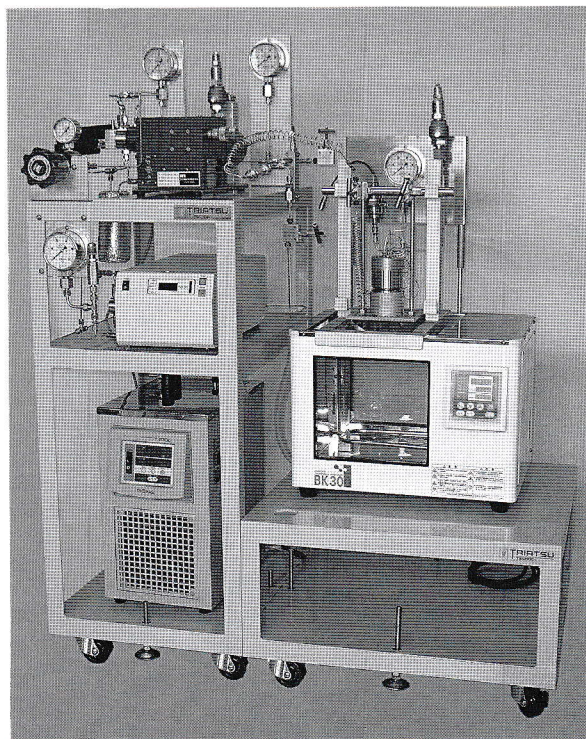
● Configuration & Components TSC-CO₂-08

No.	Part name	Material	Q'ty	Remarks
①	Cell	SUS316	1	80mℓ
②	Lid	SUS316	1	
③	Cap	SUS316	1	
④	Washer	SUS304	1	
⑤	Packing	PTFE	1	φ 48 × φ 40
⑥	Hexagon socket head cap bolt	SUS304	4	
⑦	1/8" nut	SUS316	4	
⑧	1/8" ferrule	SUS316	4	

※This equipment has been developed through Mr. Aizawa, Research Fellow in National Institute of Advanced Industrial Science and Technology AIST (Japan)/Compact Chemistry Process Research Center

■ Super-critical CO₂ Compact Equipment for General-Purpose Experiments TSC-GPT

It is the epochal and compact super-critical laboratory equipment, and is able to use for various experiments of super-critical CO₂. This equipment has been developed through Uchida Laboratory in Shinshu University, Faculty of Engineering (Japan).



● Consists of:

- ① High pressure pump (for CO₂)
- ② Back pressure valve
- ③ Pressure sensor & Indicator
- ④ Compact cell for super-critical CO₂
※It is possible to install even 2 cells.
- ⑤ Reducing valve
- ⑥ Chiller unit
- ⑦ Coolant condenser
- ⑧ Line mixer
- ⑨ Hot water bath

● Applications

- Measurement of physical properties
 - Solubility measurement of a solute to super-critical fluid.
- Separation and refinement
 - Super-critical fluid extraction and super-critical drying.
- Reaction synthesis
 - Organic synthesis, polymer synthesis and an enzyme reaction in the super-critical fluid.
- Material manufacturing
 - Material manufacturing in the super-critical fluid. (thin film production, particle production and dyeing)
 - It is possible to apply to Rapid Expansion of Super-critical Solutions (RESS).
※It is necessary an expansion nozzle additionally. (Option)

● Main Specifications

Max.working pressure	20MPa
Max.working temperature	80°C
Cell capacity	80mL
Material	SUS316
Dimensions (mm)	1100(W) × 600(D) × 1390(H)

● Option

- ① Entrainer supplying unit
(Introduction piping, Liquid feed pump, pressure sensor/indicator, Safety valve)
- ② Expansion nozzle for RESS, TSC-NP type
- ③ Nanoparticle collecting device for RESS, TSC-TNP type

※The specifications may be changed without advanced notice for improvement of the products.

TAIATSU TECHNO CORPORATION

3-27-9 Hon-Komagome, Bunkyo-Ku,
Tokyo 113-0021, Japan.
Tel 03-3827-8211 Fax 03-3827-8218
URL <http://www.taiatsu.co.jp>
E-mail : info@taiatsu.co.jp

Contact to

S.T.CORPORATION.

Toshinao Ishizu
6-76-9 Hirai, Edogawa-Ku,
Tokyo 132-0035, Japan.
Tel 03-6657-5878 Fax 03-6657-5829
E-mail ishizu@hb.tp1.jp