

Laboratory Fittings and Emergency Showers

General Guidelines

Fitting = Bench mounted, wall/panel mounted and suspended fittings
Valve = Front controlled valves and outlets

All laboratory fittings/valves must be designed for laboratory use. All laboratory fittings/valves must comply with the specifications prescribed by the advisors or architects. The fittings and valves must have good functional qualities, long durability, the possibility of easy cleaning and a high degree of flexibility and tested quality.

All fitting/valves must be supplied by one manufacturer to ensure that end-users only contact one manufacturer in case of replacement or maintenance of the fittings.

To ensure maximum flexibility for end users, the fittings must use a flexible hose.

The manufacturer must have a quality management system - ISO 9001/EN 29001/BS 5750 part 1 or equivalent - and must be certified according to such a system.

The fittings or valves must comply with the following requirements that are appropriate for the media used in the laboratory.

Media

Water and
coolant water

Valve type

The water fittings must have a ceramic headwork with 180 ° open/close function. The outlet must have a removable hose pipe with a loose nut in metal.

Fittings must have a 110 degrees swing limitation that ensures that the spout cannot be turned out of the sink.

All water fittings must have a built-in service valve/ball valve, a check valve. The fittings/valves must be ready for flexible hoses, and must have an 60mm inlet with G1/2" external thread and M16 internal thread.

All water fittings/valves must be approved in accordance to the current standards.

Coolant water fittings/valves must be produced with a rubber cylinder head, where the outlet must have a check valve to ensure flow and backflow.



BROEN-LAB

Drejervaenget 2, 5610 Assens, Denmark
Tel. +45 6376 6376, Fax. +45 6471 2476
lab@broen-lab.com
broen-lab.com

Media

Special vand
(Distilled water,
ion-exchanged
water)

Valve type

Fittings for distilled or special water must be made of brass with PEX or PP pipes to isolate the special water from contact with the brass, otherwise the fitting must be made of stainless steel, if this is a requirement of the advisors or the architect. The headwork must be a membrane headwork. Metal grip.

Burning gasses

Fittings/valves for burning gasses (urban gas, propane, butane, acetylene, etc.) must be fitted with a built-in service valve/ball valve and the cylinder headwork must be ceramic. The fitting must have a safety handle with a "Press-Turn" opening function to avoid accidental opening of the fitting. "Press-Turn" grip must have a "Pop-Up" indicator button that indicates when the fitting is in open position.

The fittings/valves must be ready for flexible hoses, and must have an 60mm inlet with G1/2" external thread and M16 internal thread.

All fittings and valves for burning gasses must have a relevant gas approved

Non-burning
gasses and
vacuum

Fittings for non-burning gasses with gas purity 5.0 (N2, CA) must be produced with a needle headwork with 3 x 360 dg. open/close function to ensure fine adjustment. Packing must be of PVDF.

The fitting must have a built-in ball valve and a metal handle clearly marked according to EN 13792

The fittings/valves must be ready for flexible hoses, and must have an 60mm inlet with G1/2" external thread and M16 internal thread.

Valves and outlets for non-burning gasses must, for safety reasons, be uniquely labeled according to EN 13792.

Fittings for vacuum must have a fast-closing 1.5 x 360 dg. high-flow cylinder headwork

Leak rates

All fittings for non-burning gasses must be leak tested after production.

Gas purity	Assembling and testing	Permissible leak rate for atmosphere
5.0 (99,999%)	Standard seam	< 5x10 ⁻⁵ mbar x 1/s. (HE)



BROEN-LAB

Drejervaenget 2, 5610 Assens, Denmark
Tel. +45 6376 6376, Fax. +45 6471 2476
lab@broen-lab.com
broen-lab.com

Accessories

All valves and fittings must have a built-in service valve/ball valve. The ball valve provides the possibility for seal off, presetting, saving of the media and is also a safety mechanism.

The valve and the fitting must be delivered with installer-friendly fittings parts to secure the fitting and the valve in a completely fixed position.

The fittings/valves must be ready for flexible hoses, and must have an 60mm inlet with G1/2" external thread and M16 internal thread.

Media Indication

Handles on all fittings must be made of metal and have media text. The color of the metal handle must be in accordance with EN 13792. The fittings for burning gasses must have a safety handle with either the "Press-Turn" or "Lift-Turn" opening function to avoid accidental opening of the fitting. "Press-Turn" grip must have a "pop-up" button that indicates when the fitting is in opened.

Outlet in fume cupboards must also have a clear media indication which must be clearly visible and be in accordance with the media from the front controlled valve.

Materials and Surface Treatment

Fittings (valve housing, hose tip, outlet nozzle etc.) must be made of the highest quality brass, where appropriate - depending on the media, other materials such as Stainless Steel and plastic can be used.

All exterior surfaces of valves, outlet nozzles etc. must be made of polyester based powder coding in the RAL color 9023, which is resistant to chemicals and UV effects. Min 50µm surface thickness.

Work Pressure

All fittings/valves must be able to operate below these maximum working pressures

Media/Gas purity	Max. work pressure	After installation (Permitted test pressure without the use of valve)
Water and special water	10 bars (145 psi)	1.0 x Max. work pressure
Burning gasses	7 bars (102 psi)	1.5 x Max. work pressure
Non-burning gasses (2.0) and Vacuum	16 bars (232 psi)	1.5 x Max. work pressure

Leak Rates

All fittings for non-burning gasses must be leak tested after the production:

Gas purity	Assembling and testing	Permissible leak rate for atmosphere
2.0 (99%)	Standard seam	1×10^{-3} mbar x 1/s. (HE)



BROEN-LAB

Drejervaenget 2, 5610 Assens, Denmark
Tel. +45 6376 6376, Fax. +45 6471 2476
lab@broen-lab.com
broen-lab.com

Accessories

All valves and fittings must have a built-in service valve/ball valve. The ball valve provides the possibility for seal off, presetting, saving of the media and is also a safety mechanism.

The valve and the fitting must be delivered with installer-friendly fitting parts to secure the fitting and the valve in a completely fixed position.

The fittings/valves must be ready for flexible hoses, and must have an 60mm inlet with G1/2" external thread and M16 internal thread.

Bench Mounted Eye Shower

The Eye shower must be created in accordance with DS/EN 15154 part 2 and must be provided as a double eye shower in 45° with self-opening protection lids in the signal color red and for desk mounting.

The eye shower was provided with a rubber shower head for an easy removal of scale. Shower head and protection lid must be protected by a rubber mantle. Built in check valve and flow-fix will secure the correct water flow, max 14 l/min. Eye shower must be fixed by a mount.

The product must be able to handle up to 10 bars of static pressure and must work with a minimum work pressure of 1.5 bar. The eye shower connection must be ISO 228/1 – G½" union nut. Minimum distance from wall to shower head must be 150 mm.

For easy handling, the weight of the hand held eye shower must not exceed 0.5 kg

Should be provided with a complete package of signs consisting of a wall mounted triangular sign and a service sign.

Body Shower

Emergency body shower must have a self-draining shower head and be produced in accordance with DS/EN 15154 part 1. The color of the body shower must be the signal color red with a polyester based powder coding, which is resistant to chemicals and impact of UV. Min. 50µm surface thickness.

The supplier of eye showers and body showers must have an affiliated service team that can service the products according to DS/EN 15154 part 1 and 2.

