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Emergency Showers & Eye Washes

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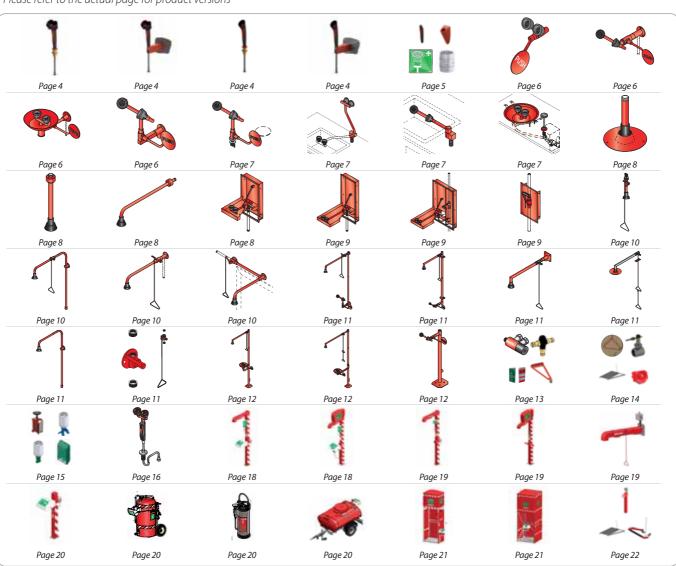
Heated Emergency Showers & Eye Washes



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PRODUCT OVERVIEW

- Please refer to the actual page for product versions



Premium

Our extensive knowledge allows us to continually develop and optimize our products so that they meet our customer needs and specifications. Safety, functionality and quality are an integral part of product design and flexibility.

BROEN - A SAFE CHOICE

- Quality since 1948
- Complete product range
- Compliance with international standards
- Proven functionality world-wide
- Spare parts available for a guaranteed 10-year period

CUSTOMER STATEMENTS



IN THE SERVICE INDUSTRIES



"For more than four years Falck has had an excellent cooperation with BROEN LAB, Our customers must be able to rely on Falck to quarantee the best solutions and consequently we only provide service for emergency showers that comply with the requirements of Danish Standard 15154 Parts I and II.

BROEN LAB products are extremely easy to install and they are also clearly marked and easily serviced. Quite simply, they provide a better and safer solution for all parties.

Michael Hansen, Product Manager



IN INDUSTRY

Carlsberg Denmark



Jens Hansen, Coordinating Work Environment Representative





of the maintenance and service of installations at Akademiska Hus at Medicinberget in Gothenburg. This includes a number of laboratories which again means a considerable number of emergency shower systems supplied by BROEN LAB

We check the emergency showers regularly and are very content with BROEN LAB's reliable design and construction which make them easy to inspect and test."

Anders Bergvall, Project Manager VVS-Teknik Mölndal



IN THE EDUCATIONAL SECTOR



"At DTU we teach more than 7,000 students within very different fields - from the metal industry to microbiology - and within each specific field unique safety aspects must be considered. Therefore it is essential for us that we have a cooperation partner who supplies a quality product and who can also advice and guide us on the specific risk profile of each classroom."

Bjarne Andersen, HVAC Manager at DTU Campus Service

nne pharmaplan° in the medical industry



"As an international advisor it is important for us to have a partner that complies with both national and international norms and standards - and who can document this by an independent third party certification. At the same it is important to have a partner that can offer customized solutions support ing the architectonic expression of the project instead of colliding with it. Even though we are talking about emergency equipment, beautiful design is a plus."

Henrik Als Nielsen. Engineer, Ventilation & Building Utilities, NNE Pharmaplan

BROEN has developed new hand-held eye showers, which comply to EN15154-2 and ANSI Z358.1 norms and also offer many improved features.



TECHNICAL SPECIFICATIONS

Min. working pressure: 1.5 bar Max. working pressure: 10 bar Min. temperature: 5°C Max. temperature: 80°C

MATERIALS WITH MEDIA CONTACT

Plastics: PA, POM, TPE Metals: SS, AISI 316 Rubber: EPDM

Materials not in media contact: PP, PA, SEBS

SAFETY

- Improved trigger lock
- Improved activation of the shower



OPERATION

- Stay-open dust cap
- Light weight
- Well-balanced construction
- Better spray pattern

RELIABILITY

- Easy-to-clean spray head
- Anti-limescale design and material choice
- Improved functionality
- Longer lifetime





Eye Shower with Two 45° Heads

No. 27 10 009 10 05 011

Weight: Approx. 0.5 kg

Table mounted eye shower with two 45° angled heads, incl. 1.5m inlet hose.
Trigger operated including a built-in check valve and FLOWFIX for regulation of water flow (14 l/min).





Eye Shower with Two 45° Heads

No. 27 10 009 10 03 011

Weight: Approx. 0.5 kg

Wall mounted eye shower with two 45° angled heads, incl. 1.5m inlet hose.
Trigger operated including a built-in check valve and FLOWFIX for regulation of water flow (14 I/min).





Eye Shower with a Single 45° Head

No. 27 10 003 10 05 011

Weight: Approx. 0.5 kg

Table mounted eye shower with a single 45° head, incl. 1.5m inlet hose. Trigger operated including a built-in check valve and FLOWFIX for regulation of water flow (7 l/min).





Eye Shower with a Single 45° Head

No. 27 10 003 10 03 011

Weight: Approx. 0.5 kg

Wall mounted eye shower with a single 45° head, incl. 1.5m inlet hose. Trigger operated including a built-in check valve and FLOWFIX for regulation of water flow (7 l/min).





Other configurations are possible - please refer to ordering information on page 5.

Shower for General Purpose Rinsing

No. 27 10 001 10 00 001

Weight: Approx. 0.1 kg

Shower for general purpose rinsing. Trigger operated including a built-in check valve. Without FLOWFIX for regulation.

Also available as straight model.

Eye Shower with a Single 45° Head

No. 27 10 003 10 00 001

Weight: Approx. 0.2 kg

Eye shower with a single head. Trigger operated including a built-in check valve and FLOWFIX for regulation of water flow (7 l/min).

Also available as straight model.

Signs and Instructions (YY):

Complete set with signs and instructions

Eye Shower with Two 45° Heads

No. 27 10 009 10 00 001

Weight: Approx. 0.2 kg

Eye shower with two angled heads. Trigger operated including a built-in check valve and FLOWFIX for regulation of water flow (14 l/min).

Also available as straight model.



ACCESSORIES FOR HAND-HELD EYE SHOWERS

Mounting Accessories (YY):

No. 17 760.300

Table base (M30x1.5, 60mm)



No. 17 760.310

45° Wall base



No. 17 760.320 Wall bracket



Bracket for modular body shower



No. 96M0339

No. 17 001.970

for eye shower

Sign for eye shower (sticker)



Hoses and hose accessories (ZZ):

No. 93H40431500

1.5m Silicone hose with a Stainless Steel braiding for hand-held eye showers.



Length 2m: No. 93H40432000 (other lengths on request).

No. 17 701,750

Counter weight/stop for hose



ORDERING INFORMATION

For ordering a complete hand-held eye shower including accessories, please follow the following structure:

27 10 XXX 10 YY ZZ

Serial number

001 - Rinsing model, 45°

003 - Eye Shower, single, 45°

004 - Rinsing model, straight

006 - Eye shower, single, straight

009 - Eye shower, double, 45°

012 - Eye shower, double, straight

Country code

10 - International

Accessories

00 - None

01 - 17 001.970

02 - 96M0339

03 - 17 001.970 + Wall bracket

04 - 17 001.970 + 45° Wall Base

05 - 17 001.970 + Table base

06 - 96M0339 + Wall bracket

07 - 96M0339 + 45° Wall Base

08 - 96M0339 + Table base

09 - 96M0339 + Bracket for modular body shower

For more information and technical datasheets please contact your BROEN sales representative.

Hose length + Hose accessory

00 - None

01 - 1.5m with G1/2 union nut

02 - 1.5m with G1/2 union nut + stop

03 - 2m with G1/2 union nut

04 - 2m with G1/2 union nut + stop

WWW.BROEN.COM

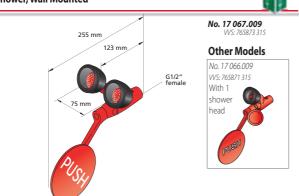
The European Standard EN15154 advise that the water temperature delivered by emergency equipment should be "tepid".

Consequently, BROEN recommends the installation of a Thermostatic Mixing Valve (TMV) with safety shower equipment.

Please refer to page 14 for further information.



Eye Shower, Wall Mounted



Weight: Approx. 1 kg

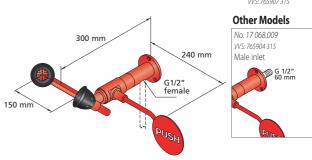
Eye shower, wall mounted with two heads in brass with chemical resistant BROEN Polycoat and with built-in BALLOFIX® ball valve for regulation of water amount.

Min. working pressure 1.5 bar

Min. working pressure: 1.5 bar.

Eye Shower, Wall Mounted





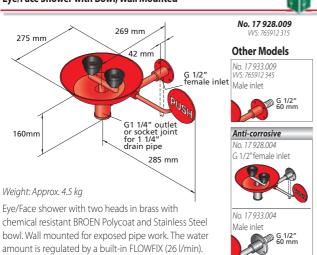
Weight: Approx. 2 kg

Eye shower, wall mounted for exposed pipe work in brass with chemical resistant BROEN Polycoat with built-in FLOWFIX for water regulation (26 l/min).

Min. working pressure: 1.5 bar.

Eye/Face Shower with Bowl, Wall Mounted

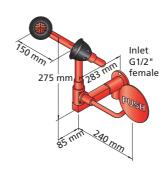




Eye Shower, Wall Mounted



No. 17 250,009



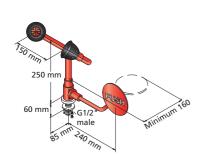
Weight: Approx. 4.5 kg

Eye shower, wall mounted in brass with chemical resistant BROEN Polycoat. The water is regulated with a built-in FLOWFIX (26 I/min). Min. working pressure: 1.5 bar.

Eye Shower, Table Mounted



No. 17 200.009



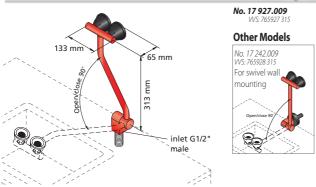


Weight: Approx. 2 kg

Eye shower, table mounted with two heads in brass with chemical resistant BROEN . Water is regulated with a built-in FLOWFIX (26 l/min). Min. working pressure: 1.5 bar.

Eye Shower, Table Mounted, Swing Down

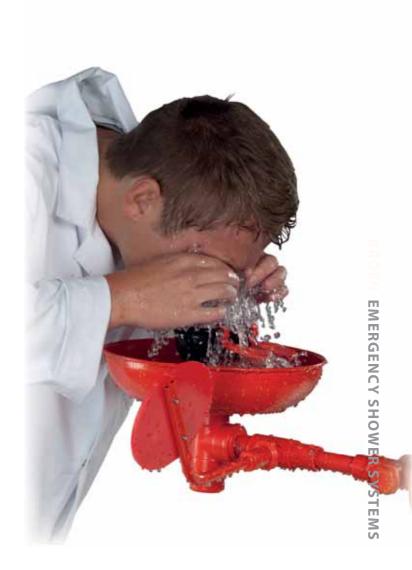




Weight: Approx. 4.5 kg

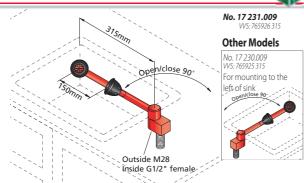
Eye shower, table mounted, swing down in brass with chemical resistant BROEN Polycoat for mounting on back side of the sink. The water amount is regulated with built-in FLOWFIX (26 l/min).

Min. working pressure: 2 bar.



Eye Shower, Table Mounted, Swivel Joint





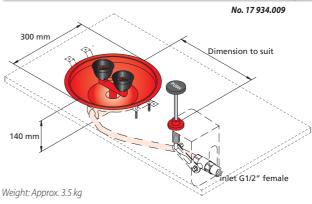
Weight: Approx. 4 kg

Eye shower, table mounted, swivel joint in brass with chemical resistant BROEN Polycoat for mounting on the right side of sink. The water amount is regulated with the built-in FLOWFIX (26 I/min).

Min. working pressure: 1.5 bar.

Eye/Face Shower with Bowl, Recessed





Eye/face shower with two heads in brass with chemical resistant BROEN Polycoat and Stainless Steel bowl for recessed mounting on table top, with push-down control. The water amount is regulated with built-in FLOWFIX (26 l/min). Min. working pressure: 1.5 bar.

SPECIAL FEATURES

GENERAL:

- Choose BROEN Polycoated surface or Stainless Steel.
- Cabinet and cabinet door in Stainless Steel AISI 304.
- Disability-Friendly models comply with ANSI A117.1-2003.
- Easy to mount and install.
- Cabinet can also be surface mounted (except 17 155.009).

Choose among different body shower outlets by ordering recessed units and outlets separately to fit your exact needs of installation and application.

E.g.: 17 154.009 + 17 110.009

BODY SHOWER:

- Strong integrated handle for operating body shower.
- Free choice of combination between ceiling or wall mounted body shower outlet.
- · Easy to mount and install.
- Premounted valve for body shower.

Body Shower Outlet, Ceiling Mounted, Concealed No. 17 100.009 Ws: 766178 305 Other Models Anti-corrosive No. 17 100.004 Ws: 766178 300

Weight: Approx. 1 kg

Body shower outlet, ceiling mounted, concealed in Stainless Steel with self-draining shower head. Inlet G 1 $^{\prime\prime}$ male.

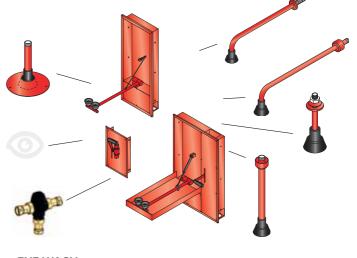
2300 mm Max to finished floor

Min. working pressure: 1.5 bar.

Weight: Approx. 1.5 kg

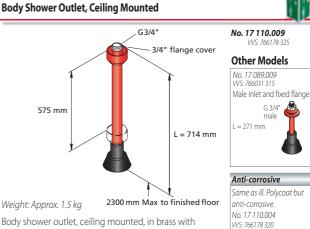
Body shower outlet, wall mounted, in brass with chemical resistant BROEN Polycoat with self-draining shower head. Inlet G 3/4" male. With adjustable flange.

Min. working pressure: 1.5 bar.



EYE WASH:

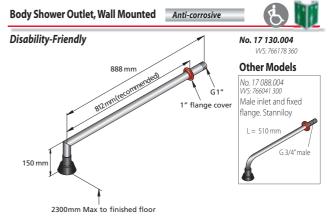
- Cabinet and cabinet door in Stainless Steel AISI 304.
- Integrated drain (on models with door).
- Cabinet door catches the water and prevents it from splashing on the floor.
- Filter BALLOFIX® ensures clean shower heads.



Body shower outlet, ceiling mounted, in brass with chemical resistant BROEN Polycoat with self-draining shower head. Fits different ceiling heights by adjusting the flange. Inlet G 3/4" male.

Min. working pressure: 1.5 bar.

Male inlet and fixed flange No. 17 089.004 VVS: 766031 300



Weight: Approx. 1.5 kg

Wall mounted body shower outlet in Stainless Steel AISI 304, with self-draining shower head. Inlet G 1" male. With adjustable flange.

Dimensions comply with the requirements of ANSI A117.1-2003.

Min. working pressure: 1.5 bar.

Eye Shower, Wall Recessed



Eye Shower, Wall Recessed

Disability-Friendly





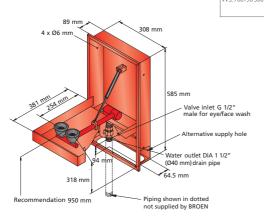
No. 17 152.009

Other Models

No. 17 150.009

Other Models

Anti-corrosive Same as ill. Polycoat but anti-corrosive cabinet. No. 17 160.009 WS: 766156 300



Valve inlet G 1/2 Alternative supply hole Water outlet DIA 1 1/2 Max. 333 Piping shown in dotted not supplied by BROEN

No. 17 151.009 WS: 766157 305 Without cabinet door

Anti-corrosive

Same as ill. Polycoat but anti-corrosive cabinet. No. 17 162.009 WS: 766157 320

Without cabinet door No. 17 161.009 VVS: 766157 300

Weight: Approx. 8 kg

Eye shower, wall recessed with cabinet with chemical resistant BROEN Polycoat, two outlet heads and built-in FLOWFIX (14 I/min).

Cabinet door activates the eye wash and catches the water.

Min. working pressure: 2 bar.

Weight: Approx. 10 kg

Eye shower, wall recessed, disability-friendly with cabinet with chemical resistant BROEN Polycoat, two outlet heads and built-in FLOWFIX (14 I/min). Cabinet door activates the eye wash and catches the water. Min. working pressure: 2 bar.

Eye and Body Shower, Wall Recessed





Body Shower, Wall Recessed, Hand Activator



Disability-Friendly

Other Models

No. 17 154.009

No. 17 153.009 VVS: 766177 305 Without cabinet doo

Anti-corrosive

Same as ill. Polycoat but anti-corrosive cabinet No. 17 164.009 VVS: 766177 320

Water outlet DIA 1 1/2

male inlet for body shower

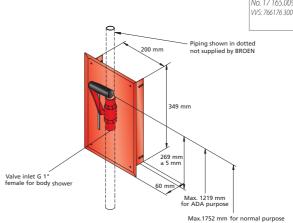
Without cabinet door No. 17 163.009 VVS: 766177 300

No. 17 155.009

Other Models

Anti-corrosive

Same as ill. Polycoat but anti-corrosive cabinet. No. 17 165.009



Weight: Approx. 16 kg

Eye shower, with 1" valve for body shower, wall recessed, disability-friendly with cabinet with chemical resistant BROEN Polycoat, two outlet heads and built-in FLOW-FIX (14 I/min). Cabinet door activates the eye wash and catches the water. Integrated hand activating 1" valve for body shower with various options for shower outlet. Min. working pressure: 2 bar.

Weight: Approx. 2.5 kg

Wall recessed cabinet with chemical resistant BROEN Polycoat and hand activator for body shower with various options for shower outlet. 1" valve for 3/4" or 1" pipe.

Min. working pressure: 1 bar.

Body Shower, Ceiling Mounted G 1/2" male 60 mm

No. 17 080.009 Weight: Approx. 2 kg 248 mn Body shower, ceiling mounted with self-draining head. In brass with chemical resistant BROEN Polycoat. Min. working pres-



Weight: Approx. 2.5 kg Body Shower, ceiling mounted with self-draining 800 mm head and adjustable flange. In Stainless Steel and Stanniloy. Min. working pressure: 1 bar.

No. 17 081.009

No. 17 082.009

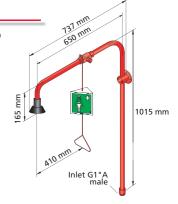
No. 17 976.004

Body Shower, Wall Mounted

No. 17 973.009

Weight: Approx. 5.5 kg

Body shower, wall mounted with selfdraining shower head. In brass with chemical resistant BROEN Polycoat. Min. working pressure: 1 bar.



Body Shower, Wall Mounted

600 mm 490 m G 1/2" 800 mm 150 mm

sure: 1 bar.

Weight: Approx. 3 kg

Body shower, wall mounted with self-draining shower head In brass with chemical resistant BROEN Polycoat.

Min. working pressure: 1 bar.



Body shower, wall mounted, modular in SS & Stanniloy with self-draining shower head for flexible wall mounting with pull rod. Min. working pressure: 1 bar.

No. 17 970.004

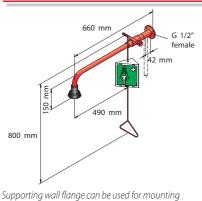
Other Models

Anti-corrosive - Modular



Supporting wall flange can be used for mounting (see page 14)

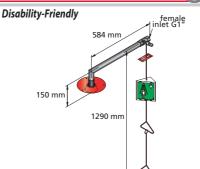
Body Shower for Exposed Pipework, Wall Mounted



Weight: Approx. 3 kg

Body shower for exposed pipework with self-draining head. In brass with chemical resistant BROEN Polycoat. Min. working pressure: 1 bar.

Concealed Pipework



Anti-corrosive - Modular

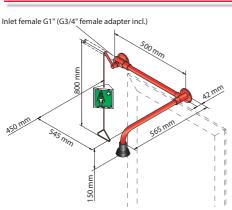
No. 17 971.004

Weight: 2.5 kg

Body shower, concealed, modular in SS with selfdraining shower head for recessed flexible wall mounting. With extended pull rod for disabled people. Min. working pressure: 1 bar.

Body Shower, Wall Mounted above Door

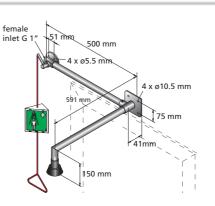
(see page 14)



No. 17 087.009 WS: 765992 315

Weight: Approx. 4.5 kg Body shower, wall mounted above door for exposed pipework with self-draining head. In brass with chemical resistant BROEN Polycoat. Valve to be mounted left or right of door. Min. working pressure: 1 bar.

Anti-corrosive - Modular

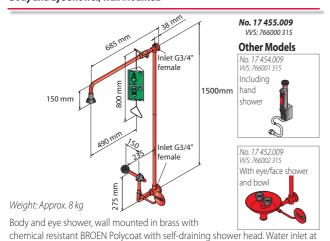


No. 17 972.004

Weight: Approx. 6.5 kg Body shower, wall mounted above door for exposed pipework with self-draining head In Stainless Steel and Stanniloy. Valve to be mounted left or right of door.

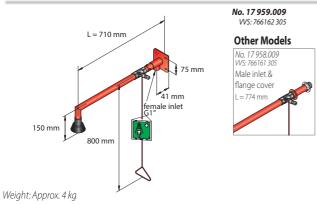
Min. working pressure: 1 bar.

Body and Eye Shower, Wall Mounted



the top or bottom. Eye shower has built-in FLOWFIX (26 I/min).

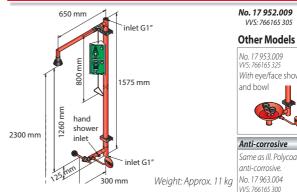
Min. working pressure: 1.5 bar.



Body shower, wall mounted, modular. In brass and SS with chemical resistant red BROEN Polycoat with self-draining shower head for flexible wall mounting with pull rod

Min. working pressure: 1 bar.

Body and Eye Shower, Wall Mounted, Modular



Body and eye shower, wall mounted, modular. In brass and SS with chemical resistant red BROEN Polycoat. Body shower has self-draining shower head. Water inlet at the top or bottom. Eye shower has built-in FLOWFIX (26 I/min)

Min. working pressure: 1.5 bar.

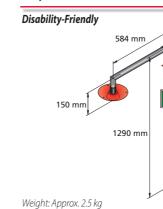
No. 17 952.009 VVS: 766165 305



Same as ill. Polycoat but anti-corrosive No. 17 963.004

With eye/face shower and bowl No. 17 964.004

Body Shower, Wall mounted, Modular



Body Shower, Concealed, Modular

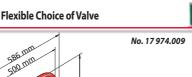
No. 17 960.009 VVS: 766163 305

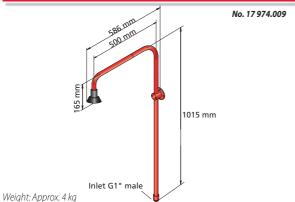
Body shower, concealed, modular. In SS and Chrome/Nickel plated brass with chemical resistant red BROEN Polycoat and self-draining shower head. For recessed flexible wall mounting. With extended pull rod for disabled people.

female inlet G1"

SHOWERS WITH FLEXIBLE CHOICE OF VALVE

Body Shower Outlet for Flexible Choice of Valve





Body shower outlet for flexible choice of valve in brass and chemical resistant

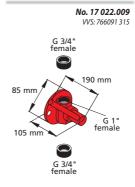
Min. working pressure: 1 bar.

BROEN Polycoat.

Please refer to page 8 for more outlets for flexible choice of valve.

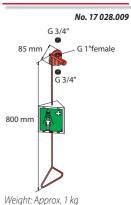
BALLOFIX® ball valve

Min. working pressure: 1 bar.



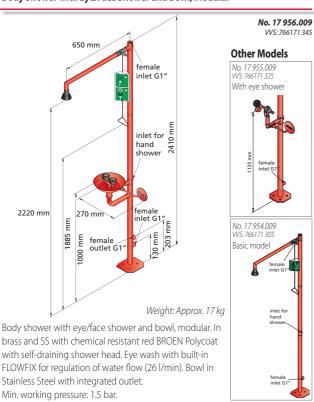
Weight: Approx. 1 kg Manually hand operated of 1" BALLOFIX° ball valve for 3/4" pipe work.

BALLOFIX° ball valve w./rod

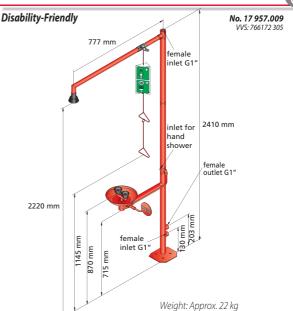


Manually rod operated 1"BALLOFIX" ball valve for 3/4" pipe work.

Body Shower with Eye/Face Shower and Bowl, Modular

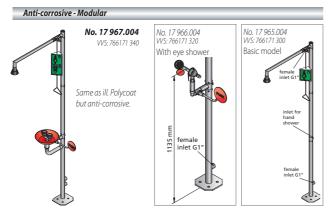


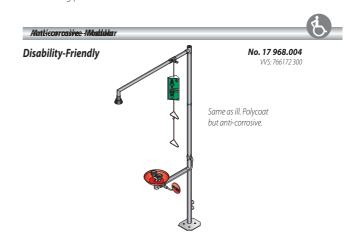
Body Shower with Eye/Face Shower and Bowl, Modular



Body shower with eye/face shower and bowl, modular. In brass and SS with chemical resistant red BROEN Polycoat with self-draining shower head. Eye wash with built-in FLOWFIX for regulation of water flow (26 l/min). Bowl in Stainless Steel with integrated outlet.

Min. working pressure: 1.5 bar.

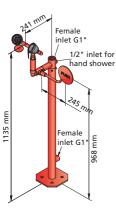




Eye Shower, Free Standing, Modular





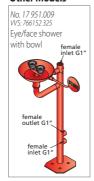


Weight: Approx. 7.5 kg Eye shower, free standing, modular in brass and SS with chemical resistant red BROEN Polycoat. Built-in FLOWFIX for regulation of water flow (26 l/min). Min. working pressure: 1.5 bar.

Other Models

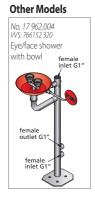
No. 17 950.009

VVS: 766152 305





No. 17 961.004 VVS: 766152 300



Thermostatic Mixing Valves for Eye and Body Showers

BROEN TMVs for eye and body showers are thermostatic mixing valves designed for delivering tepid water (20-25°C) for eye/hand or body showers.

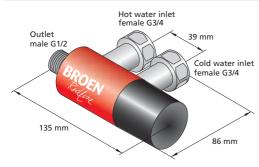
The solution is designed for the operation of one eye/hand shower respectively one body shower.

The mixed temperature is adjusted to tepid water from factory but can easily be adjusted on site by installer or operator.

The TMV incorporates in one body the following features:

- Fail-safe on hot side: If the cold water is interrupted the built-in anti-scalding device will automatically cease the flow of hot water. **AUTOMATIC OPERATION**
- Fail-safe on cold side: If the hot water is interrupted the built-in intentional leak will allow cold water to flow at a sufficient flowrate to ensure operation. THIS WORKS AUTOMATICALLY AS WELL
- · Including check valves on both hot and cold supply

Thermostatic Mixing Valves for Eye Shower



Weight: Approx. 1.5 kg

No. 17 140.009: (WS: 766095 315)

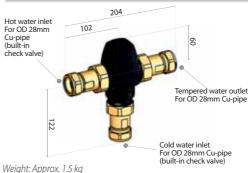
Thermostatic mixing valve for eye shower.

Min. working pressure: 1 bar.

No. 26 140.059:

Lockable cap for 17 140.009.

Thermostatic Mixing Valves for Body Shower



No. 17 459.009*: (WS: 766094 315)

Thermostatic mixing valve for body shower.

Min. working pressure: 1.5 bar.

No. 17 460.009*: Model with G1" inlet/outlet connections

*Please note: Reduced temperature stability at low flow rates!

Signs for Eye and Body Showers

Nr. 17 001.920

(Weight: Approx. 0.23 kg)

Sign (pull rod mounted) and instruction card for Body and Eye Shower







Nr. 17 002.27

(Weight: Approx. 0.03 kg) Instruction and Service Sign

Body Shower

Nr. 17 002.28

(Weight: Approx. 0.03 kg)

Body and Eye Shower



Nr. 96M0042

Nr. 96M0043

(Weight: Approx. 0.01 kg)

Sign for eye shower

(Weight: Approx. 0.01 kg) Sign for body shower

(sticker)

(sticker)



Nr. 17 001.910

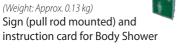
Nr. 17 002.010

(Weight: Approx. 0.15 kg)

Sign (wall mounted) and

instruction card for Body and

Sign (pull rod mounted) and





(Weight: Approx. 0.03 kg) Instruction and Service Sign

Instruction and Service Sign



Nr. 17 002.29

Eye Shower fountain



Nr. 17 002.30

(Weight: Approx. 0.03 kg) Instruction and Service Sign -



Eye Shower - Hand-Held



Nr. 17 002.31

(Weight: Approx. 0.03 kg) Instruction and Service Sign Body Shower with Hand-Held Eye Shower



Wall bracket for body showers



No. 17 001.079

Wall bracket for support of wall mounted body showers (size 1/2"). Other sizes on request

Eye Shower

Sign (wall mounted) and instruction card for Eye Shower



Nr. 17 002.000

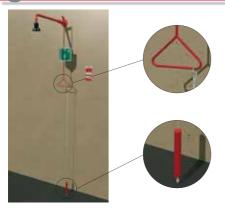
(Weight: Approx. 0.08 kg) Sign (wall mounted) and instruction card for Body Shower







Cable



No. 17 901.64

A cable may be installed as a supplement to the pull rod solution i.e. the cable enables the user to activate the shower at floor level.

Foot Panel for Operation of Free Standing Body Shower



Weight: Approx. 23 kg

No. 17 919.009 (WS: 766179300) - **Stainless Steel No. 17 834.009 - Galvanized Steel**

Foot panel for operation of body showers. Possible to combine with 17 909.909 if mounted 180° opposite.

Delivered with all mounting accessories

Alarm for Emergency Shower



No. 17 851.95

Signal and light alarm for emergency showers.

- 112dB(A) output
- IP66 protection
- 32 alarm tones

Working temperature: -20°C to 70°C Power supply: 230VAC, 50/60Hz

For operation in Non Ex Proof areas.

Flow switch



14/11/11	
Weight: Approx. 0,5 kg	7

Item no.	Material	Size*	PN, bar	
96P0062	brass	G3/4	25	
96P0063	brass	G 1 1/4	25	
96P0066	SS	G3/4	25	
96P0068	SS	G 1 1/4	25	

* Please note that size of the flow switch should be a size bigger than the inlet of the emergency shower

- Good reliability
- Low presure loss
- Dirt resistant
- Hermetic separation of electrical and hydraulic components
- Stress free fixation of switch unit by plastic cap

When there is a stream of water in the connection piping to the emergency shower the paddle in the flow switch is triggering an electrical reed switch. This switch can be connected to any type of warning system, such as an alarm central, a horn, a light or similar.

Foot Treadle for Operation of Eye Showers



Weight: Approx. 1 kg

No. 17 909.909 (VVS: 766771 310)

Foot treadle in aluminium and SS for operation of eye showers. Possible to combine with 17 919.009 if mounted 180° opposite. Delivered with all mounting accessories.

Inlet hoses for Emergency Showers



No. 17 701.72 (Male ISO 7/1-R1" - Female G1 union nut connection) No. 17 701.73 (Male ISO 7/1-R1" - OD28mm connection) No. 17 701.74 (Male G3/4 - Female G1 union nut connection)

Material: Silicone Braiding: Stainless Steel Inside diameter: Ø25mm Outside diameter: Ø34mm Max.working pressure: 10 bar Max.working temperature: 90°C

Test Trolley for Emergency Showers

No. 17 851.92 - model with integrated pump No. 17 851.93 - model without pump

Test trolley with or without integrated pump. Drainage hose is included. Capacity: 90 l Can be used for heated and unheated emergency showers.

Weight: Approx. 22 kg



Test Funnel for Emergency Showers

No. 17 001.08

Test funnel for testing of emergency showers in PE (Polyethylene) with 2.2m hose.





EYE WASH BOTTLES

Duo Eye Wash Bottle, 500ml pH Neutral

No. P7 17 003 10 00 000

DUO 500ml pH neutral.

Sterile 4.9 % Phosphate buffer solution.

For neutralizing acids and alkalis. Complete with an eye device for washing both eyes at the same time.

Durability 3 years.

Full box with 6 units available.



Eye Wash Bottle (single eye), 200ml pH Neutral

No. P7 17 004 10 00 000

200ml pH neutral.

A small, handy bottle containing 4.9% sterile phosphate buffer solution that neutralizes the eye's fluid after accidents involving acids or alkali.

The bottle is provided with an ergonomic eye cup, a dust cap and clear instructions on the label.

Eye Wash Bottle (single eye), 500ml Sterile Solution

Durability 3 years.

Full box with 10 units available.



Duo Eye Wash Bottle, 500ml Sterile Solution

No. P7 17 002 10 00 000

DUO 500ml Sterile.

Bottle containing a 0.9% sterile sodium chloride solution. Complete with an eye device for washing both eyes at the same time.

Durability 3 years.

Full box with 12 units available.



No. P7 17 001 10 00 000

500ml Sterile.

Bottle containing a 0.9% sterile sodium chloride solution

The bottle is provided with an ergonomic eye cup, a dust cap and clear instructions on the label.

Durability 3 years.

Full box with 12 units available.



Eye Wash Station

No. P7 33 001 10 00 402

Dust-proof wall mounted eye wash station in ABS plastic for two 500ml eye wash bottles + one 200ml eye wash bottle.

Especially suitable for dirty and dusty production areas and mobile work places.



Eye Wash Station (classic model)

No. P7 33 002 10 00 402

Dust-proof wall mounted eye wash station in polystyrene for two 500ml eye wash bottles. Especially suitable for dirty and dusty production areas and mobile work places.



Wall Mount for Eye Washes (Duo or single eye)

No. P7 53 001 10 00 409Wall mount for pH neutral

solutions (blue)

No. P7 53 001 10 00 402 Wall mount for sterile solutions (green)





Wall Mount for Eye Washes (single eye)

No. P7 53 002 10 00 409Wall mount for pH neutral

solutions (blue)

No. P7 53 002 10 00 402 Wall mount for sterile solutions (green)





Shower for General Purpose without FLOWFIX, Hand-Held

No. 17 701.500

VVS: 765955 345

Weight: Approx. 0.5 kg Shower for general purpose, hand-held in Polyarylamide, reinforced with glassfibres. Trigger operated without FLOWFIX regulator.



No. 17 701,000 VVS: 765955 315

Weight: Approx. 0.5 kg Including table mounting accessories



No. 17 711.000 VVS: 765942 315

Weight: Approx. 0.5 kg Including bracket for wall mounting.





Anti-corrosive

No. 17 741.504

Same as model above but in SS and stanilloy.



Anti-corrosive

No. 17 741.204 Same as model above but in SS and stanilloy.



Anti-corrosive

No. 17 741.104 Same as model above but in SS and stanilloy.





Eye Shower with One Straight Head, Hand-Held

No. 17 702.500

VVS: 765956 345

Weight: Approx. 0.5 kg hand-held eye shower in

Polyarylamide, reinforced with glassfibres. Trigger operated including a built-in FLOWFIX for regulation of water flow (8 l/min).



No. 17 702.000

VVS: 765956 315

Weight: Approx. 0.5 kg Including table mounting accessories



No. 17712.000 VVS: 765944 315

Weight: Approx. 0.5 kg Including bracket for wall mounting.



No. 17 732.009 VVS: 766101 305

Weight: Approx. 0.5 kg Including bracket for modular body shows



Anti-corrosive

No. 17 742.504 Same as model above but in SS and stanilloy.



Anti-corrosive

No. 17 742.204 Same as model above but in SS and stanilloy



Anti-corrosive

No. 17 742.104 / VVS: 765944 300 Same as model above but in SS and stanilloy.





Eye Shower with One Angled Head, Hand-Held

No. 17 713.500

Weight: Approx. 1 kg

Eye shower with one angled head, hand-held. In Polyarylamide, reinforced with glassfibres. Trigger operated including a built-in FLOWFIX for regulation of G 1/2' male water flow (8 l/min).



No. 17 717.000

VVS: 765954 315

Weight: Approx. 1 kg Including table mounting accessories



No. 17713.000

VVS: 765946 315

Weight: Approx. 1 kg Including bracket for wall mounting.



No. 17 733.009

VVS: 766102 305

Weight: Approx. 1 kg Including bracket for modular body showers



Anti-corrosive

No. 17 743.504

Same as model above but in SS and stanilloy.



Anti-corrosive

No. 17 743.204

Same as model above but in SS and stanilloy.



Anti-corrosive

No. 17 743.104 Same as model above but in SS and stanilloy.



Anti-corrosive

No. 17 743.004 / VVS: 766102 300 Same as model above but in SS and stanilloy.



Eye Shower with Two Angled Heads, Hand-Held

No. 17 715.500

Weight: Approx. 1.5 kg

Eye shower with two angled heads, hand-held. In Polyarylamide, reinforced with glassfibres. Tric ger operated with BALLOFIX® included for regulation of water. Mir inlet pressure, dynamic: G 1/2 male 1.5 bar / 22 psi flow.

No. 17 714.000

VVS: 765957 315

Weight: Approx. 1.5 kg Including table mounting accessories



No. 17715.000 VVS: 765908 315

Weight: Approx. 1.5 kg Including bracket for wall mounting.



No. 17 734.009

VVS: 766103 305

Weight: Approx.1.5 kg Including bracket for modular body showers



Anti-corrosive

No. 17 744.504

Same as model above but in SS and stanilloy.



Anti-corrosive

No. 17 744.204 Same as model above but in SS and stanilloy.



Anti-corrosive

No. 17 744.104 Same as model above but in SS and stanilloy.

Anti-corrosive

No. 17 744.004 / VVS: 766103 300 Same as model above but in SS and stanilloy.



Min. working pressure: 1.5 bar for all Eye Showers on this page.

INTRODUCTION

Thousands of industrial accidents happen every year in spite of precautionary safety measures, accidents that are caused by human exposure to heat (fire, boiling water and oil, steam, etc.), to corrosive agents (fluid acids and caustics) and/or to influence by dust and corrosive aerosols (metal, dirt, fluids).



These accidents cause the injured person acute pain, disablement and may even lead to loss of life. However, experience shows that the consequences and human suffering following such accidents can be considerably limited if water is applied directly to the affected areas instantly after the exposure.

It is a fact of life that the risk lurks in many places: in the laboratory, in the kitchen, in the warehouse, in the chemical plant, in the workshop or generally speaking in any place where heat, corrosion or dust can cause serious human injury. For these reasons we strongly recommend the installation of adequate emergency shower systems as a means of limiting these risks.

Location and Operation of Emergency Showers

As a basic rule the shower must be located as close to the workplace as possible so that the general first aid instructions of flushing the affected area immediately after the accident has occurred can be followed.

Please note that if strong acids or caustics are involved immediate action is demanded. When installing the emergency shower system please also be aware that it must be easy to locate and access at all times for potential users.

BROEN Emergency Showers can be recognized by their red and white stripes on body and eye showers, red pull rods and luminescent signs and symbols for the clear identification of emergency shower.



Selecting the Right Shower

There are many different conditions that determine the type of emergency shower to be installed. It is important that the chosen unit is designed and tested according to the existing standard as well as suits the specific application and location - *and environment!*



Tank showers - see page 21

In this section you can find a wide range of BROEN Emergency Showers that can be installed outside and be used in areas where outside temperatures go as low as -35°C.



Frost protected outdoor combination safety showers, trace tape heated and pre-insulated. Delivered with eye/facewash fountain and additional eyebath diffuser on flexible hose to treat unconsciuos or disabled personnel.

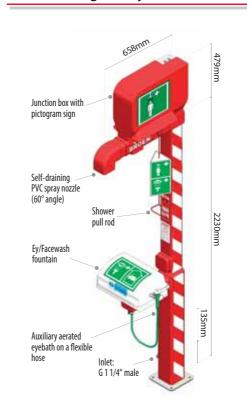
Available in Galvanized or Stainless Steel.

Heated Body Shower

- Free Standing with Eye Wash Fountain

Self-draining PVC spray nozzle (60° angle) Eye/Facewash fountain Junction box Inlet: G 11/4" male

Heated Body Shower - Free Standing with Eye Wash Fountain



TECHNICAL SPECIFICATIONS

Min. working pressure: 2 Bar Min. working temperature: -20°C Water Flow: 115 l/min.

Supply voltage: 230 VAC, 50/60 Hz

Heated underground extension pipe (ordered separately, see page 22 for more information)

TECHNICAL SPECIFICATIONS

Min. working pressure: 2 Bar Min. working temperature: -35°C

Water Flow: 115 l/min.

Supply voltage: 230VAC, 50/60Hz

Heated underground extension pipe (ordered separately, see page 22 for more information)

-35°C

ORDERING INFORMATION

BROEN item no.	Material	Ex-proof*	Min. working temperature	Eye wash fountain	Mounting	Heated underground extension pipe
H7 41 002 10 00 321	Galvanized Steel	Yes	-20°C	Yes	Floor	Available
H7 41 002 10 00 221	Stainless Steel	Yes	-20°C	Yes	Floor	Available
H7 41 001 10 00 341	Galvanized Steel	Yes	-35°C	Yes	Floor	Available
H7 41 001 10 00 241	Stainless Steel	Yes	-35°C	Yes	Floor	Available
H7 41 001 10 00 331	Galvanized Steel	No	-35°C	Yes	Floor	Available
H7 41 001 10 00 231	Stainless Steel	No	-35°C	Yes	Floor	Available

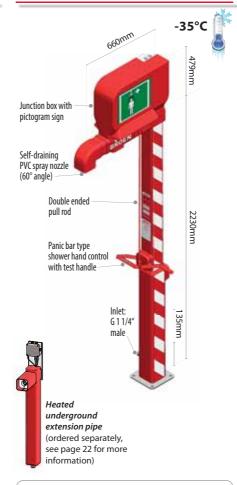
^{*}Ex-proof zone 1 and zone 2.

Frost protected outdoor combination safety showers, trace tape heated and pre-insulated. Available in Galvanized or Stainless Steel.

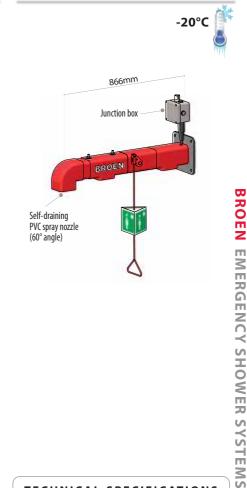
Heated Body Shower - Free Standing

-20°C 659mm Self-draining PVC spray nozzle (60° angle) Shower pull rod Junction box Inlet: G 1 1/4" male Heated underground extension pipe (ordered separately, see page 22 for more information)

Heated Body Shower - Free Standing



Heated Body Shower - Wall Mounted



TECHNICAL SPECIFICATIONS

Min. working pressure: 2 Bar Min. working temperature: -20°C

Water Flow: 115 l/min.

Supply voltage: 230VAC, 50/60Hz

TECHNICAL SPECIFICATIONS

Min. working pressure: 2 Bar Min. working temperature: -35°C

Water Flow: 115 l/min.

Supply voltage: 230VAC, 50/60Hz

TECHNICAL SPECIFICATIONS

Min. working pressure: 2 Bar Min. working temperature: -20°C

Water Flow: 115 l/min.

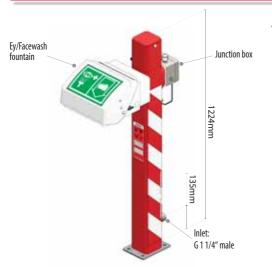
Supply voltage: 230VAC, 50/60Hz

ORDERING INFORMATION

BROEN item no.	Material	Ex-proof*	Min. working temperature	Eye wash fountain	Mounting	Heated underground extension pipe
H7 21 002 10 00 321	Galvanized Steel	Yes	-20°C	No	Floor	Available
H7 21 002 10 00 221	Stainless Steel	Yes	-20°C	No	Floor	Available
H7 21 001 10 00 341	Galvanized Steel	Yes	-35°C	No	Floor	Available
H7 21 001 10 00 241	Stainless Steel	Yes	-35°C	No	Floor	Available
H7 21 001 10 00 331	Galvanized Steel	No	-35°C	No	Floor	Available
H7 21 001 10 00 231	Stainless Steel	No	-35°C	No	Floor	Available
H7 23 001 10 00 321	Galvanized Steel	Yes	-20°C	-	Wall	-
H7 23 001 10 00 221	Stainless Steel	Yes	-20°C	-	Wall	-

^{*}Ex-proof zone 1 and zone 2.

Heated Eye Wash Fountain, Pedestal Mounted



-20°C

Outdoor pedestal mounted emergency eye/facewash fountain, trace tape heated and pre-insulated. Delivered with "unbreakable" integral lid, aerated diffusers, flow regulator and self-adhesive sign.

Available in Galvanized or Stainless Steel.

TECHNICAL SPECIFICATIONS

Min. working pressure: 2 Bar Min. working temperature: -20°C

Water Flow: 20 l/min.

Supply voltage: 230VAC, 50/60Hz



ORDERING INFORMATION

BROEN item no.	Material	Ex-proof*	Min. working temperature	Mounting	Heated underground extension pipe
H7 31 001 10 00 321	Galvanized Steel	Yes	-20°C	Floor	Available
H7 31 001 10 00 221	Stainless Steel	Yes	-20°C	Floor	Available

^{*}Ex-proof zone 1 and zone 2.

MOBILE & PORTABLE EMERGENCY SHOWERS

Mobile Emergency Safety Shower is designed as a quick response, first-aid device for use where a plumbed-in unit is not available and must therefore be backed up by a method of further decontamination.

Mobile Self Contained Emergency Safety Shower



Portable Emergency Eye, Face and Body Shower (Unheated)



No. H7170011000303

Mobile Self Contained 1200 L Shower and Eyewash incl. Pump

No. H7470031000331

TECHNICAL SPECIFICATIONS

Capacity: 114 l

Min. working temperature: -10°C

Water Flow: 40 l/min.

Supply voltage: 230VAC, 50/60Hz

TECHNICAL SPECIFICATIONS

Capacity: 15 l

Min. working temperature: +1°C

Water Flow: 8 I/min.

Material: Stainless Steel cylinder



BROEN item no.	Material	Ex-proof*	Min. working temperature
H7 47 002 10 00 311	Galvanized & SS	no	-10°C
H7 47 002 10 00 321	Galvanized & SS	Yes	-10°C
H7 47 002 10 00 301	Galvanized & SS	no	+1°C (unheated)

^{*}Ex-proof zone 1 and zone 2.



TECHNICAL SPECIFICATIONS

Capacity: 1200 l

Min. working temperature: -10°C

Water Flow: 75 I/min.

Supply voltage: 230VAC, 50/60Hz

Material:

- Galvanized mild steel trailer
- Red polyethylene tank

A range of heavy duty emergency tank showers, for use when warm water is required, or a constant supply of water cannot be guaranteed.

These units are essential where there is a problem with insufficient water pressure or inadequate flow rate. This improved range incorporates models to suit a wide range of situations.

Body Shower with Eye Wash Fountain & 350 I tank



Body Shower with Eye Wash Fountain & 1200 I tank



Standard Configuration

- 350 or 1200 I tank in medium density polythene
- Support legs and frame in galvanized or Stainless Steel
- Rear and side GRP panelling
- Visual level indicator
- Body shower
- Eye/facewash fountain
- Shower control panic bar
- Foot panel for body shower

TECHNICAL SPECIFICATIONS

Min. working temperature: -35°C

Water Flow: 75 l/min.

Supply voltage: 230VAC, 50/60Hz

*750l tank shower is available on request

Tank showers are available in three sizes:

The **350 liter** model supplies a guaranteed flow of warm water for several minutes.

With the mains supply permanently connected, the **750* liter** model will deliver warm water for 15 minutes, recommended by ANSI Z 358.1 and EN15154-1&2 standards.

The **1200 liter** models will meet the mentioned standards even without an external supply connected.

Available in Galvanized or Stainless Steel.

For areas with high outside temperatures models with chillers can be supplied.

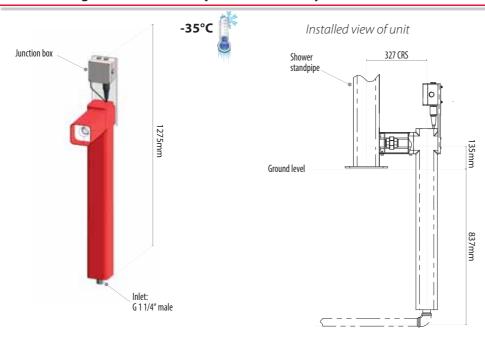
Unheated models are also available.

ORDERING INFORMATION

BROEN item no.	Material	Ex-proof*	Min. working temperature	Eye wash fountain	Tank volume
H7 61 001 10 01 341	Galvanized Steel	Yes	-35°C	Yes	350 l
H7 61 001 10 01 241	Stainless Steel	Yes	-35°C	Yes	350 l
H7 61 001 10 01 331	Galvanized Steel	No	-35°C	Yes	350 l
H7 61 001 10 01 231	Stainless Steel	No	-35°C	Yes	350 l
H7 61 003 10 01 341	Galvanized Steel	Yes	-35°C	Yes	1200 l
H7 61 003 10 01 241	Stainless Steel	Yes	-35°C	Yes	1200 l
H7 61 003 10 01 331	Galvanized Steel	No	-35°C	Yes	1200 l
H7 61 003 10 012 31	Stainless Steel	No	-35°C	Yes	1200 l

^{*}Ex-proof zone 1 and zone 2.

Heated Underground Extension Pipe for Heated Body Showers



Heated underground extension pipe, trace tape heated and pre-insulated.

To be used for connecting to an underground supply.

Available in Galvanized or Stainless Steel.

TECHNICAL SPECIFICATIONS

Min. working temperature: -35°C Supply voltage: 230VAC, 50/60Hz

ORDERING INFORMATION

BROEN item no.	Material	Ex-proof*	Min. working temperature	Mounting
H7 51 001 10 00 321	Galvanized Steel	Yes	-35°C	Underground
H7 51 001 10 00 221	Stainless Steel	Yes	-35°C	Underground

^{*}Ex-proof zone 1 and zone 2.

Foot Panel for Operation of Heated Eye Wash



Weight: Approx. 23 kg

No. 17 803.009 (WS: 766198 803) - Stainless Steel version No. 17 833.009 - Galvanized Steel version

Foot panel or treadle for operation of **heated body shower** is also available - contact your BROEN sales representative for further information.

Foot Treadle for Operation of Heated Eye Wash



No. 17 804.009 (WS: 766198 804) - **Stainless Steel version** For heated eye washes operational down to -20°C

No. 17 805.009 - Stainless Steel version
For heated eye washes operational down to -35°C

Emergency Showers Are Important

Thousands of industrial accidents happen every year in spite of precautionary safety measures, accidents that are caused by human exposure to heat (fire, boiling water and oil, steam, etc.), to corrosive agents (fluid acids and caustics) and/or to influence by dust and corrosive aerosols (metal, dirt, fluids).

These accidents cause the injured person acute pain, disablement and may even lead to loss of life.

However, experience shows that the consequences and human suffering following such accidents can be considerably limited if water is applied directly to the affected areas instantly after the exposure.

It is a fact of life that the risk lurks in many places: in the laboratory, in the kitchen, in the warehouse, in the chemical plant, in the workshop or generally speaking in any place where heat, corrosion or dust can cause serious human injury.

For these reasons we strongly recommend the installation of adequate emergency shower systems as a means of limiting these risks.

Location and Operation of Emergency Showers

As a basic rule the shower must be located as close to the workplace as possible so that the general first aid instructions of flushing the affected area immediately after the accident has occurred can be followed.

Please note that if strong acids or caustics are involved immediate action is demanded.

When installing the emergency shower system please also be aware that it must be easy to locate and access at all times for potential users.

The BROEN REDLINE showers can be recognized by their red body shower pull rods and red eye shower push handles. In addition the internationally adapted graphic symbols for the clear identification of emergency shower installations are always included in BROEN solutions.

Further information and guidelines can be found in the EN 15154 part 1& 2:2006 - European standard for Emergency safety showers

Operation

All BROEN emergency shower systems are designed and engineered to secure easy operation. This allows for "one-action" activation of the shower system ensuring immediate and continued flushing without any need for further action.

This easy operation also allows the injured person to use both hands to keep his eyes open for effective flushing, to undress under the shower or just to help exposing the affected area for better and more expedient treatment.

On the eye shower the nozzles are protected by rubber cups to keep the injured person from hurting himself unintentionally. The nozzles are also protected against dust and dirt by the caps which are removed automatically by the initial jet of water.

Water Pressure and Temperature

Emergency showers shall be connected to a cold water system with at least drinking water quality which ensures clean and fresh water. In addition we recommend the water temperature to be kept within the range of 15° to 25° Celsius in order to provide the best immediate effect, reasonable human comfort and at the same time avoid hypothermia.

All eye showers are delivered with FLOWFIX water regulating devices ensuring constant adequate water flow regardless of high water pressure.

The illustrations will inform you of the capacities of the showers.

Threading

In general the BROEN Emergency Showers are equipped with threadings as follows:

E.g. G 1/2": In accordance to ISO 228/1.

E.g. NPT 1/2": In accordance to ANSI-B1.20.1.

Maintenance and Information

When installing emergency shower systems, the relevant safety advisor must provide instructions on operation and maintenance!

As basic information the potential user must be advised of:

- The location of the emergency shower system
- · How to operate it and
- How to behave in case of an emergency

BROEN recommends users to check installed emergency shower systems once a week.

IN CASE OF AN EMERGENCY

In the event of accidents caused by human exposure to heat, corrosive agents and/or to influence of dust and corrosive aerosols:

- Start flushing immediately the seconds count.
- Remove contaminated clothing which is not stuck to the skin.
- Continue flushing.
- In case of an eye injury keep the eyelid open when continuing flushing.
- Call for an ambulance. Ask the doctor for advice.
- Continue flushing in the ambulance.
- Keep the flushing in the emergency room and during transport to the special ward.

In case of blistering do inform the doctor and the hospital about the substance in question and about possible countermeasures.

RAPID ACTION CAN BE OF VITAL IMPORTANCE.

PERSONAL WASH UNIT

The first seconds following an eye injury are often critical to keeping eye injury to a minimum. A personal wash unit may be kept in the immediate vicinity of employees working in a potentially hazardous area.

The main purpose of these units is to supply immediate flushing. With this accomplished, the injured individual should then proceed to a plumbed or selfcontained eyewash and flush the eyes for the required 15-minute period.

REFERENCE: A1 PERSONAL WASH UNIT, ANSI Z358.1-2004

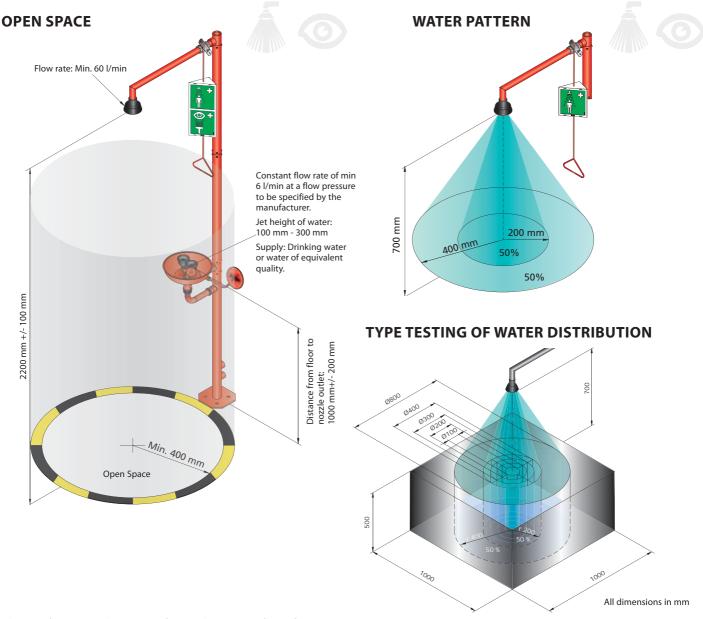
INTERNATIONAL STANDARDS

EN-NORM 15154 - 1&2

(European Committee for Standardization)

MAIN REQUIREMENTS

- The water supplied by the body shower shall be of constant flow rate in accordance with national regulations at a flow pressure to be specified by the manufacturer. The flow pressure shall be specified and measured where the shower is connected to the water system. The body shower shall be capable of delivering this supply for a minimum of 15 minutes. Note: When no national or local regulations apply, a constant flow rate of min. 60 l/min is suitable.
- It shall only be possible to make adjustments with a tool to the
 direction of spray or the water distribution of a shower head.
 The shower head shall be self-draining between the valve
 and the outlet. The shower head shall be removable for
 maintenance but only by use of a tool.
- At a distance 700 mm below the shower head, (50+-10) % of the volume of water delivered shall fall in a circle with a radius of 200 mm; the water level in the individual compartments in this circle shall not deviate by more than 30 % from the mean value. At this measuring level, the area reached by minimum 95 % of the water shall be limited to a circle with a radius of 400 mm. The velocity of the water spray shall be low enough to be non-injurious to the user.
- The shower head shall be designed to be installed so that its lower edge is (2200 +/- 100) mm above the level on which the user stands.
- The valve shall not close automatically once it has been opened. The direction of operating the valve actuator shall be clearly visible and unmistakable.



INTERNATIONAL STANDARDS

ANSI NORM Z 358.1-2004

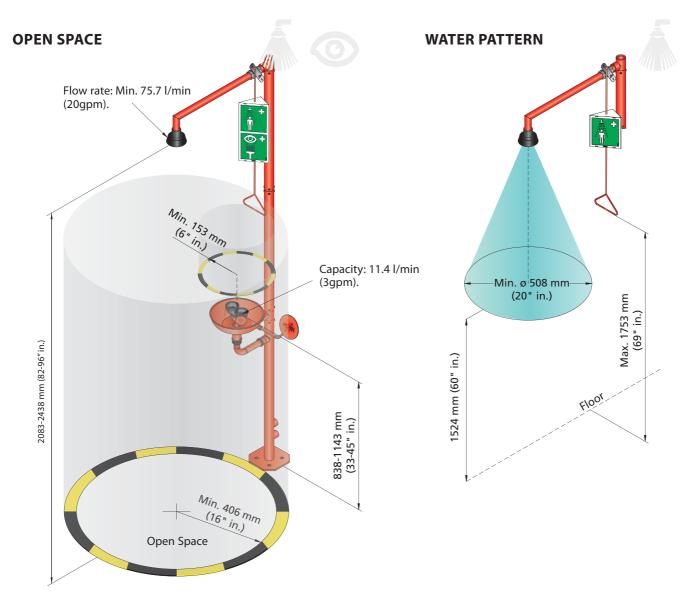
(American National Standard Institute)

MAIN REQUIREMENTS

- Emergency eyewash and showers must be located in such a way that they can be reached by the user within maximum 10 seconds and available for immediate use (ref.: 4.5.2 + Safety considerations B5).
- Eye/face showers must be able to deliver at least 11.4 l. water per minute continuously for at least 15 minutes (ref.: 6.1.6).
- The handle of pull rod must be located at a maximum height of 175.3 cm above the floor (ref.: 4.2).
- The valve must go from "off" to "on" position within 1 second or less and be able to remain open without further action. (ref.: 4.2).
- The body shower must be capable of delivering flushing fluid at a minimum of 75.7 liters per minute continuously for a minimum of 15 minutes (ref.: 4.1.4).

- The diameter of the water spray pattern must be minimum 50.8 cm measured at 152.4 cm above the floor (ref.: 4.1.5).
- The face of the showerhead shall be located within a range of 208.3 cm to 243.8 cm from the floor (ref.: 4.4.1).
- The eye/face showers flushing fluid nozzles must be located within a range of 83.8 cm to 114.3 cm above the floor (ref.: 5.4.4).
- The shower must be activated at least once a week (ref.: 4.6.2).
- Tepid water is required in all showers (ref.: 4.5.6 + Safety considerations B5).

Reference: ANSI Z 358.1-2004



An eye shower is the only allowable exception from the rule that no obstructions are allowed in the "open space".

Please refer to www.broen.com for a 3rd party certificate for ANSI Z358.1 - 2004

SPECIFICATION OF MATERIALS

Shower outlet Brass/PP or PPO Stand pipe Stainless steel (AISI 304)

or brass

Rubber cups **FPDM Dust caps POM**

Bowl Stainless steel (AISI 304) **SELF-DRAINING SHOWER HEAD**

BROEN has developed a new self-draining shower head for the Redline series, that complies to both the EN15154 standard part 1 and to ANSI Z358.1 - 2004 standard.

BROEN has 3rd party certificate for EN 15154 and ANSI Z358.1 - 2004 The self-draining shower head requires for optimal function min. 1 bar (14.5 psi) and max. 10 bar (145 psi) dynamic water pressure.



Available in chemical resistant "BROEN Polycoat" (polyester powder coating) or "Stanniloy" plating (a highly anti-corrosive treatment based on a tin/nickel alloy).

MIN. WORKING PRESSURE (DYNAMIC/FLOW PRESSURE)

See individual products.

FEATURES & BENEFITS

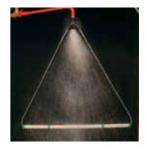
Self-draining, anti lime scale - prevents bacteria build-up and reduces maintenance

Complies to both EN & ANSI Standards

Chemical resistant PPO plastics

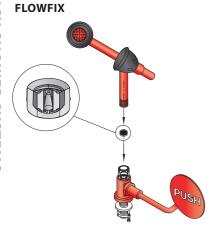
Soft water spread

Available for 1/2", 3/4" and 1" pipes



MAX. WORKING PRESSURE (STATICAL)

kPa kN/m² bar psi 1000 1000 10 145



FLOWFIX is a feature that is built into most of BROEN's eye baths and hand/eye showers. Flowfix is a water regulating device, that controls the water flow at a preset rate regardless of water pressure.

CALCULATING THE FLOWRATE AND DYNAMIC PRESSURE DROP

Any calculation can be done using the following formulas:

$$K_v = \ \frac{q_{_V \, [m^3/h]}}{\sqrt{\Delta P_{[bar]}}} \qquad \text{or} \quad q_v = K_v \times \sqrt{\Delta P} \qquad \text{or} \quad \Delta P = \left(\frac{q_v}{K_v}\right)^2$$

Where

 $K_v = \text{flowrate } [m^3/h] \text{ or } [l/\text{sec}] \text{ at 1 bar pressure drop}$

 $q_v = flowrate [m^3/h] or [l/sec]$

 ΔP = pressure drop [bar]

1) Please note that eye showers with built-in FLOWFIX have a fixed flowrate

Examples:

What pressure drop is needed in order to achieve 75 l/min = 1.25 l/sec through a body shower with 1/2" inlet?

$$\Delta P = \left(\frac{q_v}{K_v}\right)^2 = \left(\frac{1.25 \text{ [I/sec]}}{1.08 \text{ [I/sec]}}\right)^2 = 1.34 \text{ [bar]}$$

What flowrate can be expected through a free standing body shower with top inlet at a pressure drop of 1.5 bar?

$$q_v = K_v \times \sqrt{\Delta P} = 1.10 \text{ [l/sec] } x \sqrt{1.5} \text{ [bar]} = 1.35 \text{ l/sec} = 80.8 \text{ l/min.}$$

SYMBOLS:



Eye shower



Body shower

K_v VALUES

Type		Eye shower without FLOWFIX ¹⁾	Body shower 1/2" pipe or inlet	Body shower 3/4" pipe or inlet	Body shower 1" pipe or inlet	Free standing- body shower, top inlet	Free standing- body shower, bottom inlet	Thermostatic mixing valve 17 140.009	Thermostatic mixing valve 17 459.009
K _v -	m³/h	0.75	3.89	4.3	5.31	3.97	2.99	1.25	5.20
value	l/sec	0.21	1.08	1.19	1.48	1.10	0.83	0.35	1.44



For disabled people as well

NOTES	

BROEN LAB develops, manufactures and delivers a complete range of fittings for professional laboratories. Our know-how and our quality products ensure the precise flow of water, gases and air, from source to user.

BROEN LAB solutions are used by professional users in many kinds of laboratories, from the education and health sectors to industry in general. Our products are already an integrated part of many workplaces. From fittings for purified water, nitrogen, vacuum and compressed air, to the control and regulation of pure gases in critical applications such as a gas chromatography and spectrometry.

Our extensive knowledge allows us to continually develop and optimize our products so that they meet customer needs and specifications. Safety, functionality and quality are an integral part of product design and flexibility. Our insight and understanding of working environments and safety in laboratories allow us to develop custom solutions for projects around the world. Use us to plan your project so we can advise you on laboratory layout and design.

HEAD OFFICE

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BROEN LAB GROUP ISO 9001 certification

In September 1991 BROEN LAB GROUP was certified according to ISO 9001 as one of the first Danish companies. The certification was carried out by Bureau Veritas, Denmark, for our Danish site at Assens.

The quality management system af BROEN LAB GROUP now complies with detailed specifications laid down by the internationally acknowledged EN ISO 9001:2008. This certification will further contribute to BROEN LAB GROUP's reputation for quality and reliability.

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