User Manual easyfoam365+
ST-160.2 foam and disinfectant unit. Product No.: 200 160 635

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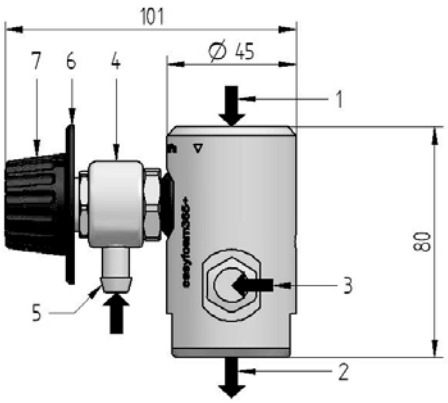

Description

The injector ST-160.2 is used for admixing liquid detergents to the volume flow in the high- and low-pressure range using the Venturi principle. The injector housing and the mounted parts are made of stainless steel.
The injector includes a pair of nozzles. It features a connection for an air valve. For being able to foam the admixed detergents, foam lances with and without air injector can be used. For a good foaming result, the correct injector nozzles and inserts must be selected.

1 Inlet
2 Outlet
3 Compressed air connection
4 Housing dosing valve (rotating)
5 Chemical agent connection
6 Dosing scale
7 Adjusting wheel
→ Flow direction

Safety

Hazard! If these instructions are not complied with, there is a risk of life and limb and property damage!

Read this User Manual thoroughly before using the unit! Keep the User Manual in a safe place for later reference or the subsequent owner!
This User Manual was established using utmost care. However, we do not accept any liability for possible mistakes in this User Manual and their consequences.

Intended Use

The injector is designed for suction of detergents and disinfectants. For details, please refer to Directive 67/548/EEC.
The injector must only be used with fluids of Group I (e.g. water).
All safety instructions and regulations for high-pressure cleaners such as DIN EN 60335-79-2 and DIN EN 1829-1 are to be complied with.
The operator must only use the injector if it is in a proper technical condition, without any structural alterations, as intended, being aware of safety and hazards, and complying with this User Manual. Only adults familiar with the use of high-pressure cleaners are authorised to use the injector.
The injector must not be operated using abrasive materials. In order to avoid damage to the injector, install a fine filter with a recommended mesh size of 50 µm in the water supply to the high-pressure cleaner. Install a suitable suction filter in the chemical agent hose.
Also comply with the operating instructions of the devices and accessories connected to the injector and the regulations applying to the detergents.

Risk of burns and scalds by hot media!

The injector is designed for permanent use at a temperature of up to about 60 °C. In any case, the user has to wear suitable protective equipment such as safety gloves, shoes, and goggles. In general, the applicable local safety regulations are to be complied with.

Formation of aerosol!

An aerosol may be formed by the foam and disinfectant. In order to avoid inhalation, wear a suitable respiratory protection!
Ensure sufficient ventilation!

Specifications

Maximum allowable pressure	350.0 bar / 35.00 MPa
Maximum volume flow	60.0 l/min
Water temperature, permanent	60 °C
Water temperature, temporary	max. 90 °C
Ambient temperature	up to 60 °C
Nozzle size	1.6 / 2.0
Connection inlet	G 1/2 F
Connection outlet	G 1/2 F
Connection compressed air	M14
Connection chemical agent	Ø 9 mm
Weight	1,207 g
Dimensions (W / H / D)	128 x 80 x 163 (with support)
Maximum size of solids	50 µm

IG: Female thread / AG: Male thread / G: Withworth pipe thread acc. to DIN ISO 228, ident. BSP = British Standard Pipe / NPT: National Pipe Thread (American Thread standard) / Kg: kilogram

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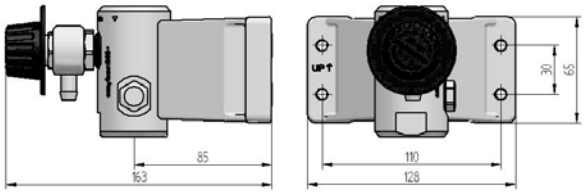
Normative References

- The product is a pressure-retaining equipment according to the Pressure Equipment Directive 2014/68/EU. Due to its parameters of use, it is subject to the scope of Article 4 / Clause 3 of this directive („sound engineering practice“) and thus a declaration of conformity and CE marking are not admissible!
- The product must not be installed in devices which have to comply with the Pressure Equipment Directive 2014/68/EU!
- The component is a standard component in terms of the Machinery Directive 2006/42/EC!

For Your Safety

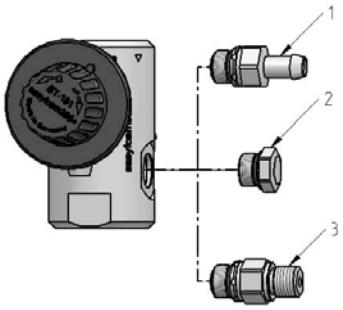
This product is state-of-the-art and complies with the generally accepted safety regulations. However, there is a risk of property damage and injury for the user and other persons due to the high pressures and temperatures. Comply with the present User Manual and the relevant directives for liquid jet equipment by all means. Regarding personal protective equipment, please refer to the German Accident Prevention Regulation UVV „Persönliche Schutzausrüstungen“ (Personal Protective Equipment) (VBG101) currently available as draft). Among other things, personal protective equipment includes protective suits, head protection, safety gloves with firm grip and non-slip boots, metatarsal protection, respiratory protection, ear protection, eye or face protection.

- Do not use the device if people not wearing protective equipment are in the immediate vicinity.
- Before starting work, check the high-pressure system (spray unit, hoses, screwing, etc.) for leakages and damage.
- Immediately stop operation if leakages or malfunctions occur.
- The suction hoses must not show any kinks
- Check the amount to be dosed
- Rinse the cleaned surfaces with clear water
- Read and comply with the safety data sheets of the detergent manufacturers
- Check if the chemical agents used are suitable for the surfaces you want to clean



Modification

Any kind of modification of the injector is not allowed!



1 Air valve basic seal 9 mm : M14 M 200 163 350
2 Dummy plug M14 200 163 345
3 Air valve 1/4“ M : M14 M 200 163 356

Installation

- Switch off the high-pressure generator before performing any installation works on the high-pressure system.
- Protect the high-pressure generator from being switched on accidentally.
- Switch off the water supply.
- Make sure that the system sections and lines to be opened are depressurised.
- Seal the screw connections according to the application using an appropriate sealant such as Teflon tape or liquid sealants (refer to R+M catalogue, Chapter 06, Adhesives and sealing materials)
- Fasten the support firmly to a vertical surface.
- Suspend the injector in the support without any play and tighten the screw on the back.
- Connect the high-pressure hoses to the inlet and outlet
- Pay attention to the markings for the flow direction
- Fasten the suction hoses (9 mm ID) using hose clamps

Compressed air supply (optional)

For foaming with a passive foaming lance, an appropriate fitting can be inserted in the lateral port. Place the container with the chemical agent **under** the injector. (max. suction height 3 m)
(Optional) Connect the compressed air hose.

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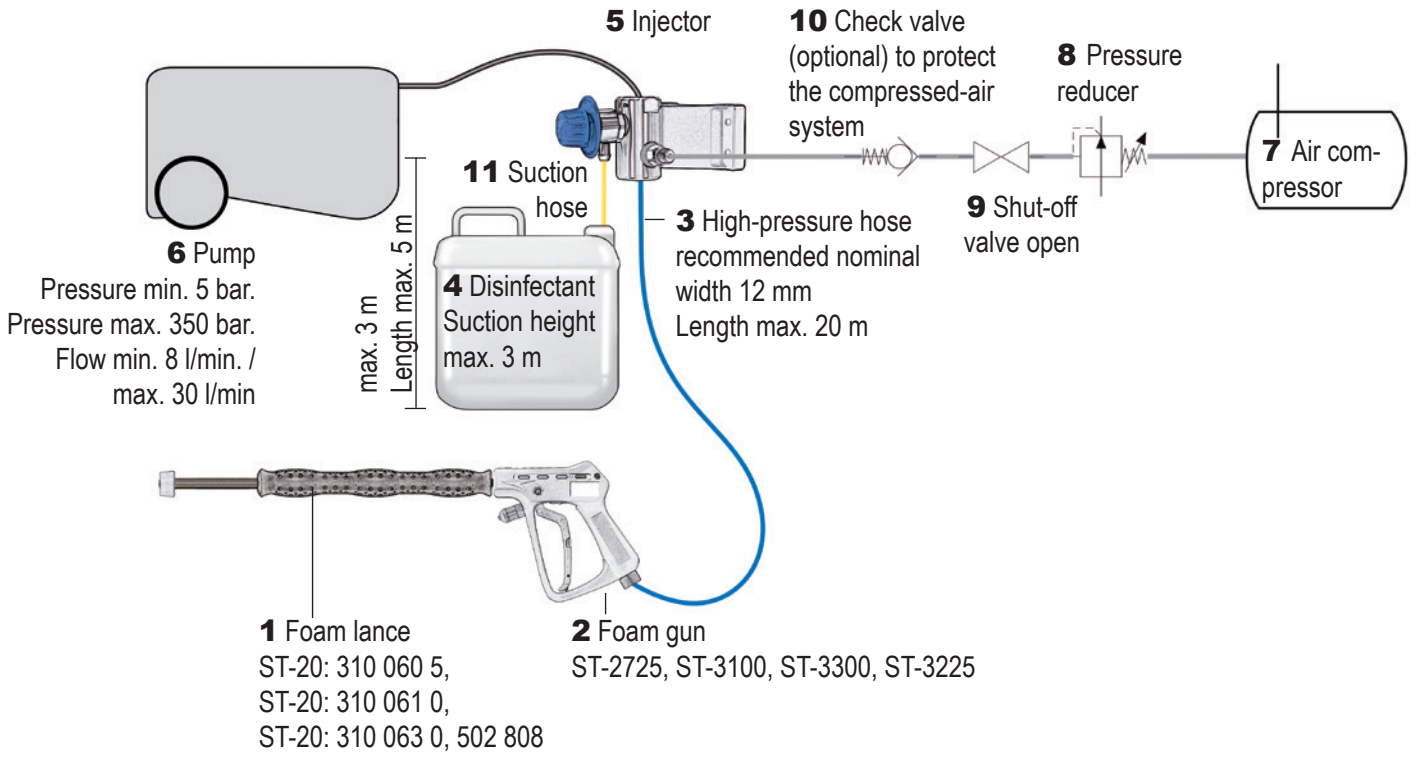
Typical types of connection:

a) passive foamlance

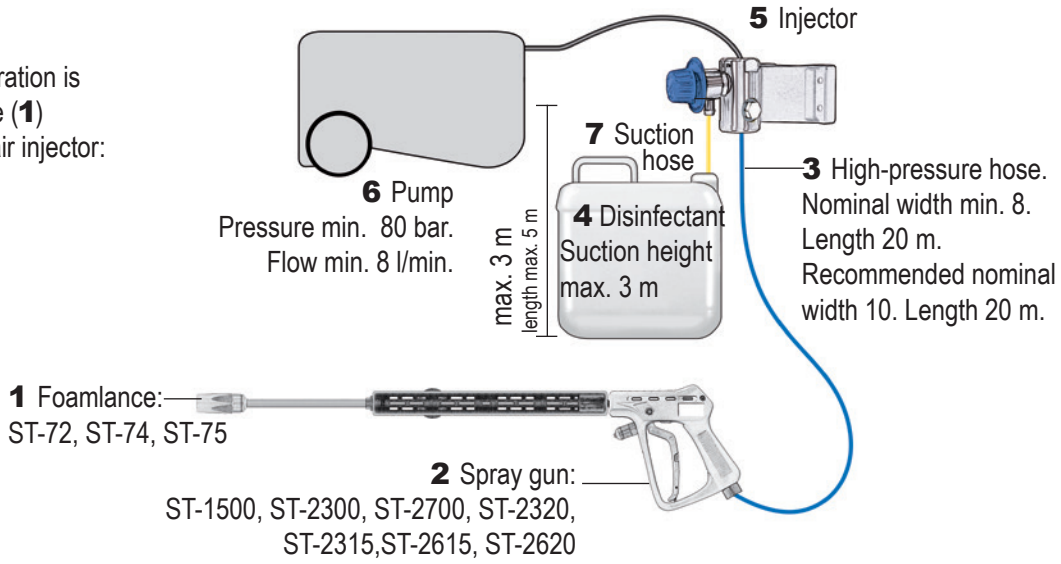
The air for foam generation is generated by the compressed-air generator (**7**)



b) active foam lance

The air for foam generation is sucked in by the lance (**1**)

Setup: Lance with air injector:



Operation

Use the injector in the indicated pressure, volume flow, and temperature range, only. Before starting work, check the values at the high-pressure generator and adjust them if required.
Foam quantity and concentration can be set using dosing inserts.
After studying the safety rules the use of the injector is very simple.

Cleaning

In order to clean the outside, use a lint-free cloth and do not use any aggressive cleaning agents.
Rinse the suction hoses using clear water to rinse the check valve.
After usage and prior to longer interruption of work (more than 1 hour), rinse the injector using clear water.

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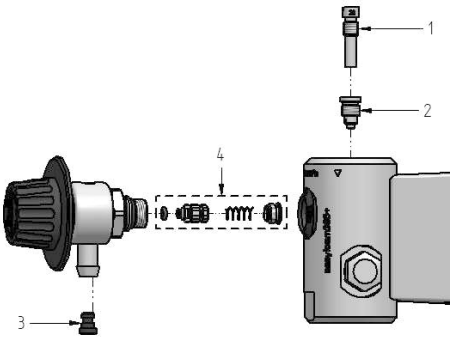

Maintenance

Installation, maintenance, and repair work shall only be effected by persons trained in maintenance and repair works on high-pressure systems. Use spare parts approved by R+M / Suttner, only. Use only high-pressure components (hoses, couplings, etc.) approved for the respective pressure and temperature range.

- Check on an annual basis whether the injector is in a safe state. Have defects eliminated immediately by a skilled person.
- Are labels and markings legible?
- Do the check valves (**4**) close automatically?
- Does the injector show any mechanical damage?
- Check dosing irrespective of chemical agent and application at regular intervals.
- Does the sealant shell show any damage?
- Are the nozzles worn or the O-rings damaged?
- Check the nozzles (**1 2 3**) for dirt and wear.

After 1,000 operating hours or one year and/or after 500 operating hours or 6 months in case of use of hot water (more than 60 °C) and chemical agent: Check the valve parts (O-ring, back-up ring, hose clamps) for damage and replace them completely by a repair kit if applicable.
After 3,000 operating hours or 3 years and/or after 1,500 operating hours or 18 months in case of use of hot water (more than 60 °C) and chemical agent:
Replace valve parts (O-ring, back-up ring, hose clamps) completely by a repair kit.

Replacement

of nozzles: Injector nozzle **(1)** and counter nozzle **(2)**

Operation	**Tool**
Screw out the injector nozzle	Allen key, size 4
Screw out the counter nozzle	Slot-head screwdriver 7 x 1.2
Component	**Tool**
Remove suction hose	Manually
Remove dosing insert	Pliers

Disposal

Please dispose of old devices in an environmentally friendly way. Old devices contain valuable recycling materials which should be forwarded to a recycling facility. Therefore, please dispose of old devices at appropriate collection points.

Transport and Storage

Make sure that the injector is protected from soiling when transported and stored. Protect the injector from frost. The action of frost may damage the injector in a way that a proper operation cannot be ensured any longer.