Xstream
8.8 / 10.10 / 15.15

Operating Manual

Web cleaning system

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1. General

Legend

! **Warning**

This symbol is placed in front of passages that must be observed.
Not complying can lead to harm to persons or can result in property damage.

ⓘ **Notice**

This symbol indicates passages that contain important information.

K **Italics**

To help find information, important terms and key words are written in the left column in italics.

Main terms and abbreviations

Ionisation	Static discharge unit
Electrode	Discharge rod
Control Unit	Controller and operator unit
Nozzle	Vacuum nozzle
AB	Working width
SB	Substrate width

2. Safety instructions

Safety standard

The Xstream is CE conform and was developed and manufactured in compliance with the relevant safety standards and regulations.

The sound pressure level at the system can exceed 85db (A). In this case, noise abatement measures are required for the operating personnel. Wear hearing protection!

Usage as intended

The Xstream was conceived as a surface cleaning system for moving webs and sheets. It dedusts and cleans soiled substrates without contact. Optionally, before the suction step, you can use a permanently installed brush to mechanically loosen lightly clinging particles from the substrate through mechanical contact.

Protection of the machines and devices is not ensured if the device is not used in accordance with its intended usage. Interventions in and modifications to the devices, except those explicitly described in the instructions, are not permitted.

Carry out erection and installation of the Xstream cleaning system in compliance with the required standards and safety regulations necessary for a conformity declaration for the entire machine.

If the installation is not carried out in accordance with the regulations, the manufacture of the Xstream cleaning system assumes no liability whatsoever.

Application areas

Substrates of the following materials - independent of their material thicknesses - can be cleaned by the Xstream at speeds of up to 2500 m/min:

Paper / Cardboard / Pasteboard
Foil / Film
Tissue / Fleece / Textiles
Wood / Metal

Organizational measures

ⓘ General

Keep these operating instructions in a safe place. They should always be easily accessible.

! Safety regulations

Comply with the locally valid legal stipulations. Comply with the insuring company's stipulations.

! Transport and mounting fixture

Lift and transport the device on the intended and marked load carrying points and secure it against shifting by itself. If the prescribed method cannot be complied with for constructional reasons, the person or office charged with safe transport or lifting bears the responsibility.

! Authorized specialists

Installation, start-up operation and service of the devices may be carried out by authorized specialists only. Work on the electrical equipment may only be carried out by qualified electricians.
Accessibility must be ensured for maintenance and set-up work. The operator is to take appropriate measures (protective devices or similar).

! ATTENTION

After disconnecting the power supply, switching off the control via the master switch or switching the compressed air off, web feeding and glue cycles are prohibited. In this case, the modules must be manually swiveled off and secured against being swiveled back on.
Disregarding this can lead to a collision with the cleaning module during a glue cycle or during web feeds.

! CAUTION Danger of electric shock

Always disconnect the mains supply for all repair and maintenance work. While carrying out this work, **always** make sure the device is protected against reconnection and restarting.

! WARNING Pneumatic components

Never put your hands between the nozzle and the web-guiding roll or in the opening of the Xstream unit's axial linear guides. Always disconnect the electrical and pneumatic energy supply before performing any repairs or maintenance work. While carrying out this work, always make sure the device is protected against reconnection and restarting.

! WARNING Contact during normal operation

Contact between the substrate web-edges or guide rollers and unprotected parts of the body can lead to cuts, gashes and abrasions.

3. Storing, shipping and packing

! When packing the unit for transport or storage, ensure it is shock-proof and protected against humidity. The original packing provides optimal protection. Make sure you comply with the permitted ambient conditions stated in the technical specifications.

Unpacking

Make sure the package contents are not damaged! In case of any damage, inform the carrier and Gema Switzerland GmbH.
Check the scope of delivery based on your order and the delivery note:

- Shipment quantity
- Device type and version according to the identification plate
- Accessories
- Operating instructions.

If you have any questions, please contact Gema Switzerland GmbH or the sales office responsible for your area.
Observe the locally valid regulations concerning disposal of the packing material.

4. Device and system operation

Vacuum blower **ENCLOSURE 1**

The pressure required in the cleaning modules is generated via a vacuum blower. The vacuum blower can be installed both on the dust-side before the filter as well as on the cleaned gas side after the filter. **Please comply with the operating instructions from the blower manufacturer in ENCLOSURE 1.**

Electrostatic discharge system **ENCLOSURE 2**

The ionisation system is installed before carrying out the actual cleaning procedure. Its function is to electrostatically neutralise the substrate. That prevents an additional clinging of particles due to static charges and their forces. **Please comply with the operating instructions from the ionisation manufacturer in ENCLOSURE 2.**

Filter system **ENCLOSURE 3**

The particles sucked up from the substrate surface are transported into a filter through a drainage system. The filter can be subject to maintenance depending on the version. **Please comply with the operating instructions from the blower manufacturer in ENCLOSURE 3.**

Control system **ENCLOSURE 4**

Optionally, the entire Xstream web cleaning system can be monitored and controlled by a PLC controller. Both the vacuum blower plus the ionisation system and filter unit are connected to this controller. Depending on the controller version, the following system functions are monitored and controlled:

Start signal	Recognition for automatic operation
Display	All functions for operating staff
Under pressure	Monitoring
Ionisation	Performance monitoring
Ionisation	Enabling
Vacuum blower	Performance monitoring
Vacuum blower	Enablement
Cleaning module	Swing substrate on and off
Cleaning module	Monitoring the position
Filter unit	Monitoring
Filter unit	Automatic reconditioning
Splice detection	and swinging off during glue cycle

Please comply with the operating instructions from the controller manufacturer in ENCLOSURE 4.

5. Start-up operation

Before carrying out machine start-up operation, check the following points:

- Module is correctly levelled (nozzle clearance), 1.5 mm aligned to the roller axis
- Suitable compressed air supply with the pneumatic module connected
- Supply-voltage voltage values
- The rotary direction of the motor
- Electrical connections have been made correctly
- Safety devices are mounted and functioning properly
- Ionisation electrodes are mounted parallel to the substrate with a clearance of 20 – 30 mm
- Ionisation electrodes are connected to the ionisation generator
- Ionisation system supply voltage is connected
- High-performance brushes are correctly mounted and press slightly onto the substrate
- Regulating valve on the blower is open and locked
- Filter direction has been checked and is correct
- Master switch is unlocked and set to ON
- Activation through START SIGNAL has been applied
- Splice signal for pneumatic module was correctly triggered
- Swivel down delay time is adjusted correctly (0 sec. = factory setting)
- Swivel down duration is set correctly (10 sec. = factory setting)

Attention:

After the first 2 operating hours, depending on the blower version, the belts in the blower motor must be inspected, (blower without inverter only)

After tensioning, align the belt pulleys parallel to each other!

6. Technical data:

Manufacturer	**Gema Switzerland GmbH** Mövenstrasse 17 9015 St.Gallen Switzerland
Type	Xstream 8.8, 10.10, 15.15
Weight	~ 2 kg / 100 mm AB per cleaning module
Voltage	24 V DC / 110/230/400 V AC
Frequency	50/60 Hz
Air volume	5.93 m³/h / cm AB
Operating noise	< 85 db(A)
Min. working width	50 mm
Max. working width	3,000 mm
Underpressure	This value is application dependent. Please contact your project manager at Gema Switzerland GmbH regarding this.
Operating temperature	0 °C to 45 °C
Storage temperature	0 °C to 45 °C
Humidity:	5 % to 85 %

7. Maintenance instructions

General maintenance instructions

Normally, the Xstream cleaning module does not require any servicing by the operator. The sleeve bearings and pneumatic components need to be checked semi-annually and replaced as necessary.

The cleaning module nozzle must be regularly checked. Clean the nozzle if soiled. Replace if damaged.

The high-performance brush is subject to continual wear and tear depending on the constitution and material of the substrate. Replace the high-performance brushes as soon as a brush length of 10 mm is undercut.
Please refer to the spare-parts list for the ordering number.

- ► Maintaining the vacuum blower see **ENCLOSURE 1**
- ► Maintaining the ionization system see **ENCLOSURE 2**
- ► Maintaining the filter system see **ENCLOSURE 3**

! Retension the blower drive belts

Depending on the blower type, the blower's drive belts must be monitored and, if necessary, replaced **after 2-3 operating hours**.

ⓘ ***After tensioning, align the belt pulleys parallel to each other!***

To have a correctly working and functional blower, the belt tension should be checked every 3 months.

8. Technical Service

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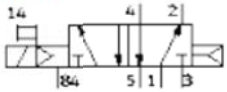
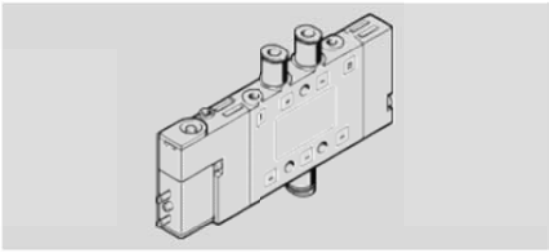
9. Attachments - Pneumatic

Data sheet: Solenoid valve CPE14-M1BH-5L-QS-6 – 196911

Function

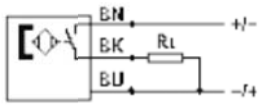


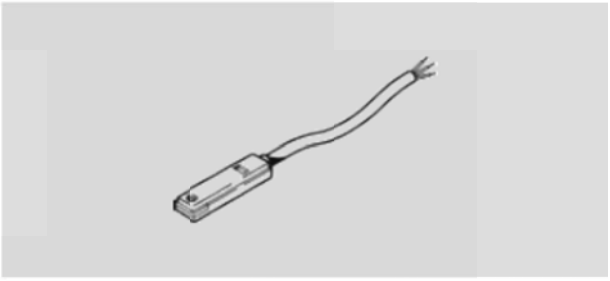


Feature	values
Valve function	5/2 monostable
Type of actuation	electrical
Width	14 mm
Standard nominal flow rate	400 l/min
Operating pressure	3 - 8 bar
Design structure	Piston slide
Type of reset	Air spring
Protection class	IP65 with plug socket to IEC 60529
Authorisation	Germanischer Lloyd c UL us - Recognized (OL)
Nominal size	6 mm
Exhaust-air function	throttleable
Sealing principle	soft
Assembly position	Any
Manual override	with accessories, detenting Pushing
Type of piloting	Piloted
Pilot air supply	Internal
Flow direction	reversible
Valve position identification	Inscription label holder
Switching time off	32 ms
Switching time on	24 ms
Duty cycle	100% with holding current reduction
Characteristic coil data	24V DC: 1,28W
Permissible voltage fluctuation	-15 % / +10 %
Operating medium	filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated
Corrosion resistance classification CRC	2
Medium temperature	-5 - 50 °C
Ambient temperature	-5 - 50 °C
Electrical connection	2-pin
Mounting type	with through hole
Pilot exhaust port 82	M3
Pilot exhaust port 84	M3
Pilot air port 12	M3
Pilot air port 14	M3
Pneumatic connection, port 1	QS-6
Pneumatic connection, port 2	QS-6
Pneumatic connection, port 3	QS-6
Pneumatic connection, port 4	QS-6
Pneumatic connection, port 5	QS-6
Materials note	Conforms to RoHS
Materials information for seals	NBR
Materials information, housing	Aluminium die cast

Data sheet: Proximity Sensor SME-8-K5-LED-24 – 175404

Function

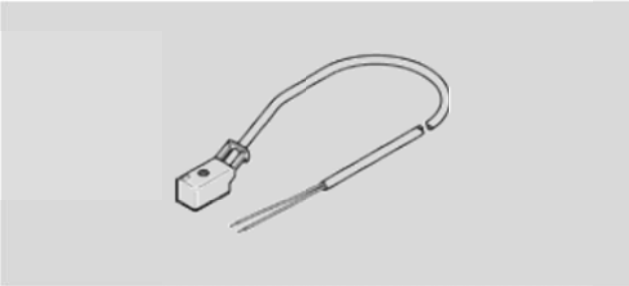




Feature	values
Design	for T-slot
Conforms to standard	EN 60947-5-2
Authorisation	C-Tick
CE mark (see declaration of conformity)	to EU directive for EMC
Materials note	Free of copper and PTFE Conforms to RoHS
Measuring principle	Reed magnetic
Ambient temperature	-40 - 70 °C
Switch output	with contact, bipolar
Switching element function	Normally open contact
Reproducibility of switching value	+/- 0,1 mm
Switch-on time	<= 0.5 ms
Switch-off time	0.03 ms
Max. switching frequency	800 Hz
Max. output current	500 mA
Max. contact rating AC	10 VA
Max. contact rating DC	10 W
Voltage drop	0 V
Short circuit strength	No
Overload withstand capability	Not available
Operating voltage range AC	12 - 30 V
Operating voltage range DC	12 - 30 V
Polarity protected	No
Electrical connection	Cable 3-core
Connector exit direction	axial
Cable length	5 m
Materials information, cable sheaths	PUR
Mounting type	Insertable into slot lengthwise Clamped in T-slot
Tightening torque	0.2 Nm
Product weight	60 g
Materials information, housing	Epoxy resin PC PET High alloy steel, non-corrosive
Operating status display	Yellow LED
Ambient temperature	-5 - 70 °C
Protection class	IP65 IP67
Insulation voltage	50 V
Surge strength	0.8 kV
Degree of contamination	3

Data sheet: Plug socket with cable KMYZ-9-24-5-LED-PUR-B – 193689

Function



Feature	values
Assembly position	Any
Switching position indicator	LED
Nominal operating voltage DC	24 V
CE mark (see declaration of conformity)	to EU directive for EMC
Protection class	IP65
Ambient temperature	-10 - 50 °C
Tightening torque	0.25 Nm
Product weight	90 g
Electrical connection	Angled socket / cable Square design/open end 2-pin / 2-wire
Cable structure	2 x 0,25 mm²
Cable diameter	3.4 mm
Cable length	5 m
Protective earth connection	Not available
Mounting type	On solenoid valve with M2 central screw
Materials note	Conforms to RoHS
Materials information, housing	PA
Materials information, cable sheaths	PUR
Material information for crimp connectors	Bronze