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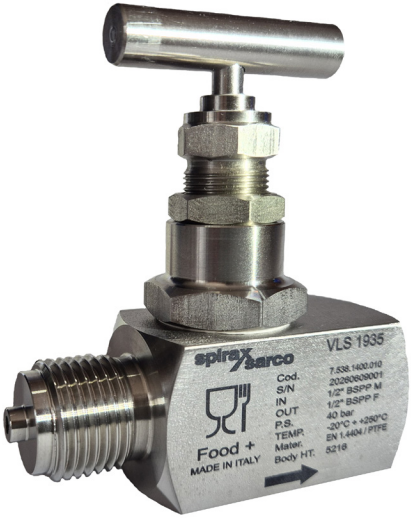
CMGT Issue 1

VLS 1935 Food+
Needle Valve
Installation and Maintenance Instructions



1. Safety information

Safe operation of these products can only be guaranteed if they are properly installed, commissioned, used and maintained by qualified personnel (see Section 11 of this document) in accordance with the operating instructions. The General Installation and Safety Instructions for the construction of piping and installations, as well as the appropriate use of safety equipment and appliances, must also be adhered to.

1.1 Intended use

With reference to the installation and maintenance instructions, the rating plate of the appliance and the Technical Specification, check that the product is suitable for the intended use/application. The devices fall within the following categories of the Pressure Equipment Directive 2014/68/EU.

Type	PN	DN	Gas Group 2	Liquids Group 2
VLS 1935	40	½" BSPP/NPT	SEP	SEP

i) The devices are specifically designed for use on steam, air, water, diathermic oil and/or other non-hazardous fluids that are included in Group 2 of the above-mentioned Pressure Equipment Directive. Use of the products on other Group 2 fluids is possible but, if contemplated, Spirax Sarco should be contacted to confirm the suitability of the product for the application in question.

ii) Check the suitability of the material, pressure and temperature and their minimum and maximum values. If the maximum operating conditions of the product are lower than those of the system in which it is to be used, or if a malfunction of the product can give rise to dangerous overpressure or overtemperature, be sure to include a safety device in the system to prevent the limits from being exceeded.

iii) Determine the correct installation position and fluid flow direction.

iv) The above-mentioned equipment is not designed to cope with external stresses that may be induced by the systems in which it is installed. It is the responsibility of the installer to take these efforts into account and to take appropriate precautions to minimise them.

v) Remove protective covers from all connections before installation.

vi) This product is intended to be connected into a system that can operate an EC1935 compliant process.
To minimise the risk of non-intentionally added substances in the system, it is essential that an appropriate CIP (cleaning in place) cycle is carried out by the end user prior to first use in a food contact application.
A list of the materials that could come directly or indirectly into contact with foodstuffs can be found in the Declaration of Compliance available for this product.

1.2 Access

Provide safe access and, if necessary, a safe working platform (with suitable protection) before starting to work on the product.

1.3 Lighting

Ensure adequate lighting, particularly where detailed or complex work is required.

1.4 Hazardous liquids or gases in the pipeline

Take into account the contents of the pipe or any fluids it may have previously contained. Pay attention to: flammable materials, substances hazardous to health, temperature extremes.

1.5 Dangerous environmental situations

Take into account: explosion hazard areas, lack of oxygen (e.g. tanks, wells), hazardous gases, temperature limits, high temperature surfaces, fire hazard (e.g. during welding), excessive noise, moving machinery.

1.6 The system

Consider the possible effects on the entire labour system envisaged. Would the intended action (e.g. closing shut-off valves, electrical isolation) put other parts of the system or personnel at risk? Dangers may include intercepting vents or protective devices or rendering commands or alarms ineffective. Ensure that shut-off valves are opened and closed gradually to avoid sudden changes to the system.

1.7 Pressure systems

Ensure that the pressure is safely isolated and discharged to atmospheric pressure. Consider double insulation (double blocking and venting) and blocking or labelling of closed valves. Do not assume that a system is depressurised even if the pressure gauge indicates zero.

1.8 Temperature

Wait until the temperature normalises after tapping to avoid risk of burns.

1.9 Tools and consumable parts

Before starting work, ensure the availability of suitable tools and/or consumables. Use only genuine Spirax Sarco spare parts.

1.10 Protective clothing

Consider whether you and/or others need protective clothing against the dangers of, for example, chemicals, high/low temperature, radiation, noise, falling objects and risks to eyes and face.

1.11 Work permit

All work must be carried out or supervised by competent personnel. Installation and operating personnel must be instructed in the correct use of the product by following the Installation and Maintenance Instructions.

Where a formal 'work permit' system is in place, one will have to adapt. Where such a system does not exist, it is recommended that a supervisor is aware of the progress of the work and that, when necessary, an assistant is appointed whose main responsibility is safety. If necessary, affix the 'danger warning' sign.

1.12 Handling

The manual handling of large and/or heavy products can present a risk of injury. Lifting, pushing, pulling, carrying or supporting a load with body strength can cause damage, particularly to the back. Please assess the risks taking into account the task, the individual, the load and the working environment and use the appropriate handling method according to the circumstances of the work to be performed.

1.13 Other risks

During normal use, the outer surface of the product can be very hot. If some products are used under limit conditions, their surface temperature can reach 250°C. Many products are not self-draining. Take this into account when dismantling or removing the appliance from the system (refer to 'Maintenance Instructions').

1.14 Freezing

Provision must be made to protect products that are not self-draining from frost damage in environments where they can be exposed to temperatures below freezing point.

1.15 Disposal

Unless otherwise defined in the Installation and Maintenance Instructions, this product is recyclable, and no ecological risk is considered to exist from its disposal, provided that appropriate precautions are taken.

1.16 Return of products

Customers and dealers are reminded that, according to the EC Health, Safety and Environment Act, when returning products to Spirax Sarco, they must provide information on hazards and precautions to be taken due to residual contamination or mechanical damage that may present a risk to health, safety and the environment. This information must be provided in written form, including Health and Safety Data Sheets concerning each substance identified as hazardous or potentially hazardous.

2. General product information

2.1 Description

VLS 1935 needle valves separate the process medium from the measuring instrument such as a pressure gauge, pressure switch or pressure transmitter. By closing this valve, the instrument can be safely disassembled for operations such as recalibration or replacement. Thanks to the pin that does not rotate during its vertical movement, wear on the sealing elements is reduced. This feature is particularly important in the case of frequent valve manoeuvres, significantly increasing valve life. In addition, the burst-tight design of the valves increases safety especially in applications with high operating pressures. These valves are used for separating measuring instruments from the process by means of closing, venting and pressure compensation functions. They are designed for use in applications with clean liquid and gaseous fluids that are not highly viscous or crystallising. The product must only be used with fluids that are not to be regarded as harmful to the parts in contact with the fluid throughout the operating range of the instrument. Any change in the state of matter or decomposition of unstable fluids is prohibited. The product may only be used for applications within its technical performance limits (e.g. max. ambient temperature, material compatibility,...).

Performance limits see Section 2.3.

In case of misuse or operation of the product outside the technical specifications, the instrument must be taken out of service immediately and inspected by an authorised service technician. These valves do not have their own potential source of ignition. The operator is responsible for safe use in hazardous areas in accordance with recognised technological standards. For the reasons mentioned above, these valves are not marked and do not have their own certification. The product was designed and manufactured exclusively for its intended use and may only be used for this purpose. The manufacturer is not liable for claims of any kind when the instrument is used outside its intended purpose.

Note: This product is intended to be connected into a system that can operate an EC1935 compliant process. To minimise the risk of non-intentionally added substances in the system, it is essential that an appropriate CIP (cleaning in place) cycle is carried out by the end user prior to first use in a food contact application. A list of the materials that could come directly or indirectly into contact with foodstuffs can be found in the declaration of conformity available for this product.

2.2 Materials

Model	Material	Diameters	Connections	PN
VLS 1935	AISI 316L	½"	UNI-ISO 7/1 gas BSPP	40

2.3 Pressure/temperature limits

Design conditions of the body		PN40
PMA	Maximum permissible pressure	40 bar
TMA	Maximum permissible temperature	250 °C
PMO	Maximum operating pressure with saturated steam	12 bar
TMO	Maximum operating temperature with saturated steam	200 °C
Minimum operating temperature		-20 °C
Kv		0.2

3. Installation

Before starting installation work, please refer to the 'Safety Instructions' in Chapter 1.

3.1 Generalities

Proceed to unpack the valve and remove the connection guards by doing take care that no dirt filters into the valve.
It will then be visually checked that the construction is intact and has not been damaged due to transport and storage; if not, do not proceed with assembly. Check again that the nameplate data are compatible with the requirements of the system.
Ensure that there is no pressure in the system and that the pipes are clean, have been thoroughly blown and are free of foreign bodies that could cause irreversible damage to the seal between seat and plug when closing. Damage caused by particles or dirt is not covered by warranty.

3.2 Assembly

Valves can be installed on the pipe in any position, but the preferred position must be with the handwheel facing upwards.
The flow direction indicated by the arrow on the valve body must always be observed. It must be ensured that the inlet and outlet pipes are properly supported and aligned and that their expansion cannot transmit stresses to the valve, which is not designed to withstand them. Valves must be adequately secured when positioning and welding pipes. The tightening of threaded valves must not place any additional strain on the structure, and the material used in the joints must be compatible and tolerated by the requirements and specifications of the system.
Protect the valve stem when painting the system.
Before putting the system into operation, and in any case after any maintenance work, the pipes must be thoroughly flushed and blown while keeping the valves fully open to remove any foreign bodies that may be present.

3.3 Hydraulic test

When carrying out hydraulic tests of the system, care must be taken not to exceed the stated test pressure for any reason

4. Commissioning

After installation or any maintenance, check that the system is fully operational; test all alarms or protective devices.

To start the system, slowly increase the pressure, avoiding sudden changes in both pressure and temperature; at the same time, check for leaks at pipe connections or in the valve construction, until full working pressure is reached. This process is dangerous and must be carried out with all precautions.

If leaks occur, immediately relieve the pressure and proceed again installation by replacing the seals.

The manoeuvring handwheel is proportionate to the effort required to manoeuvre the valve: under no circumstances should additional levers be used for operation and manoeuvring.

Food+

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A list of the materials that could come directly or indirectly into contact with foodstuffs can be found in the Declaration of Conformity supplied with this product.

Do not operate equipment under conditions in excess of those specified on the name-plate.
Warning: Failure to operate within the design pressure and temperature limits (as specified on the name-plate) may result in damage and potential injury to adjacent personnel.

5. Operation

The products described below are equipped with integrated bonnets for closing and removing measuring instruments pressure and to compensate for process pressures.

To close the valve, turn the handle to the right until it stops. To open the valve, turn the handle to the left until it stops. Approximately 4 rotations from open to closed and vice versa are required.

The flow can be controlled by not opening/closing the valve completely.

Please note that the handle may have a slight play and rotate freely up to an quarter turn without pressure. This is due to the construction design.

- The valve, the handle in particular, must not be subjected to any kind of external load (e.g. using it as a climbing aid, object holder).
- The handle must be operated by hand; the use of tools is not permitted.
- The torque to reach the valve stop must only be tightened by hand.
- Ensure that all product valves are closed before opening the main valve of the process line.

6. Maintenance

Note: Before undertaking any maintenance work, please consult the 'Safety Information' in Chapter 1.

Maintenance work on the valve must be carried out by specialised, suitably equipped personnel with original spare parts.
Before the valve is removed from the system, the relevant part of the pipeline must also be adequately supported.

6.1 When to carry out maintenance

It pays to check the valve after a certain period of time, in order to solve small problems that could be dangerous in the future. This time period depends on the characteristics and use of the system (type of fluid, temperature, pressure, etc.) and must be defined by the person responsible for maintaining the system.

6.2 Basic controls

The following points must be checked in order to ensure safe and durable use of the valves installed.
Visual inspection of the body: visual check that no irregularities have arisen or that no damage has occurred or no corrosion or erosion has occurred.

6.3 Adjustment of seals

This adjustment is necessary if a leak is detected at the valve stem, directly below the handle, or if no torque or resistance is detected when turning the handle during operation.

1. Loosen the lock nut.
2. Increase the packing compression through the packing nut.
3. Secure the gland nut with the lock nut.

If the sealing problem persists after adjustment of the gaskets, the gasket must be returned for repair.

Service

For technical assistance, please contact our Technical Service Department. office or agency nearest to you or contact them directly:

Spirax Sarco S.r.l. - Service
Via per Cinisello, 18 - 20834 Nova Milanese (MB) - Italy
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E-mail: support@it.spiraxsarco.com

Loss of warranty

A proven partial or total failure to comply with these rules will result in the loss of all warranty claims.

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