

## **General Installation, Operation and Maintenance Instructions for the Directional Control Valves of the HAFNER Pneumatika Kft.**

Dear customer!

Congratulations to purchasing a pneumatic control valve made by HAFNER Pneumatika Kft. To ensure the function of the product as well as your own safety please read carefully the manual before starting the installation of the product. In case of any further questions, please do not hesitate to contact:

Phone: +36-96-573-012

E-Mail: [ertekesites@hafner-pneumatika.com](mailto:ertekesites@hafner-pneumatika.com)

Internet: <http://www.hafner-pneumatika.com>

You find the required environmental conditions as well as the Hafner liability-policy following the following link:

<http://www.hafner-pneumatika.com/dokumentumok/pdf/hafner-warranty-terms.pdf>

Declaration of conformity is to be found under: <http://www.hafner-pneumatika.com/dokumentumok/pdf/hafner-manufacturers-declaration-of-conformity.pdf>)

### **In general**

In case of not following the manual as well as usage or improper repair of the valve any liability or responsibility is neglected by Hafner Pneumatika Kft. This includes the liability of products as well as of accessory-items. Make sure to obey the hints given in this manual as well as the required environmental conditions published in sales literature as well as on the internet and on labels printed onto the products.

When selecting, installing or operating the product, please obey the general rules of technology. Make sure to avoid unintended activation as well as any kind of improper invasion.

Do not open / disconnect pressurized tubes or pipe-work.

The intended use of the valves is the control of pneumatic actuators with compressed air. The use of fluids or other (especially not neutral) gases is not part of the intended use of the product.

Please obey all national as well as international regulations and laws that might be applicable.

### **Installation**

When opening the packaging and throughout installation please make sure that no dirt gets inside the valve.

Use only fittings that do not pollute the inside of the product.

Before as well as throughout installation make sure that the inside of the pipe-work is free of dust, dirt and pollution.

Any mounting position is allowed. Please make sure to have access for cleaning throughout operation of the product. Do not bend pipes sharply.

Before operating the product make sure that the entire machine / piece of equipment is in line with the regulations of EMV-directive = machine directives.

Installation is to be carried out by qualified personal only. Make sure to obey all relevant regulations

Avoid electro-static charge of surrounding equipment especially tubes. Tubes as well as bundles of tubes must not have a diameter of more than 20 mm.

Please connect all conductive metallic parts including all accessory items with ground. During electric installation please obey the safety-instructions and installation manuals of the solenoid manufacturers.

Please make sure to connect the valve as given by the ISO-symbol on the valve. In case the arrow is only in one direction the valve has to be connected as displayed. The result of improper connection of the valve can be malfunction or damage of the valve as well as other equipment.

The connections do carry a numbering system on the body of the valve. In general:

- |                 |   |                                     |
|-----------------|---|-------------------------------------|
| Port 1          | - | Pressure supply                     |
| Ports 2 (and 4) | - | Are to be connected to the actuator |
| Port 3 (and 5)  | - | Exhaust                             |

For details please refer to the data-sheet of the relevant product.

Valves with an interface affording to NAMUR carry ports 2 and 4 on one side of the valve. They can be mounted directly onto the actuator by using the screws that are part of the delivery. Seals are also enclosed. Valves for manifold plates can be assembled directly onto the plates.

Manual overrides that are a standard feature of solenoid valves have to be in the "off-position". On spring-return manual overrides that is the outer position. For manual overrides to be turned, the slot for the screw-driver has to point to 0. The intended use of the manual override is for periodical check-ups, installation and repair-works not for general actuation of the valve.

## **Operation**

The pressure range of the relevant product is displayed in the technical specification of the valve:

<http://www.hafner-pneumatik.de/pneumatic-valves>

Attention! Over-pressurizing the valve can damage the valve.

Medium: filtered lubricated or filtered an unlubricated compressed air. Other media are not the intended use.

Purity classes of compressed air: The minimum requirement according to ISO 8573-1:2010 is [7:4:4] for particles:water:oil. In specific applications (e.g. low temperature) higher purity might be required.

In case of using lubricated air, you might want to make sure to capture and dispose appropriately. Make sure that the lubricator does not run dry. Temperature of the valve depends on environmental temperature, media-temperature and temperature of the solenoid. Generally, the valves are made for an environment as well as media of a temperature-range from -10°C to + 50°C. Low-temperature valves (TT-version): -50°C to + 50°C.

If the valve is operated below 4°C the dew-point of the media needs to be 15°C less than the environment in order to avoid condensate. Air needs to be dried appropriately.

Environmental conditions: Standard industrial environment, consisting of "normal" atmosphere is required. Excessive pollution might have negative impact onto the product. Avoid heavily corrosive gases or liquids to get in contact with the product.

Avoid bending of as well as forceful impacts onto the product, avoid sharp bending of the pipes and electric wires.

In case of a solenoid valve the actual voltage can be +/-10° of the nominal voltage.

Solenoids for explosion hazardous environment: Please refer to the temperature classes of the solenoid for surface temperature.

Valve-bodies stay cooler than solenoids.

The electric signal (in accordance to ISO 12238:2001) is around 50 msec at 6 bar and 20°C. For detailed information, please contact the manufacturer.

Allowed Leakage of the product at 6 bar:	internal leakage:	4 cm <sup>3</sup> /min
	external leakage:	2 cm <sup>3</sup> / min

Low temperature valves (TT) can have an internal leakage below -40°C of up to 10 cm<sup>3</sup>/min.

The noise emission of AC-coils can be up to 45 dB.

**Debugging:**

In case of not-working (or not working correctly):

- Is the valve connected correctly? (See above the numbering of the ports. Furthermore, if the arrows in the ISO-symbol on the valve are facing only in one direction, the valve can be connected only according to that.)
- Do all the inlet ports get the necessary pressure? (See the MEH-type valves with the external pilot feed.)
- In case of electrical pilot, does the magnet coil get the high (and long) enough voltage signal?
- Is the manual override in the correct (off / 0) position? (The manual override has to be in closed (0) position for the valve to be able to function correctly.)
- Is the valve used with the correct manifold plate?
- Was the matching valve picked for the given application? Does the given valve type fulfil the expected requirements?

In case of not-working, or leakage:

- If there is non-allowed (internal or external) leakage experienced: is it sure that the valve leaks? Does the system have at all connectors the necessary sealing? Is the actuator (for example the pneumatic cylinder) perfect?
- Is the manual override in the correct (off / 0) position? (The manual override has to be in closed (0) position for the valve to be able to function correctly.)
- Is the correct pressure applied to the valve (Not too high / low?)
- If the valve was disassembled, was it correctly assembled again?
- In case of electrical pilot, does the magnet coil get the high (and long) enough voltage signal?
- Was the matching valve picked for the given application? Does the given valve type fulfil the expected requirements?

**Maintenance:**

Check the appropriate function of the product on a regular basis. Switch the valve minimum one time per month in order to maintain function.

In case of a fault please check pneumatic and electric connection, voltage as well as operating pressure. Is the manual-override in 0-position? In case the fault is still there, disconnect pressure as well as electric energy and ask HAFNER Pneumatika for assistance.

**HAFNER Pneumatika Kft.**

**H-9228 Halászi**

**Püski út 3.**



### **Warnings**

Opening and repair-work inside the valve is to be executed only by authorized personal and with appropriate tools. Disobeying this leads to a loss of any liability.

Valve, especially the solenoid can become very warm through operation. Do not touch, avoid injuries!

Only use the corresponding solenoid-systems that have been selected by the manufacturer. When using unapproved solenoid systems any liability of the manufacturer ends.

Hits of corroded or light metal can lead to sparks. Do not use tools with corroded surface, protect the product against falling objects.

Clean regularly: Dust-layers on the product can be inflammable.

After use scrap the product in accordance to national regulations.

Halászi, 10. September 2018

Gergely Ujváry

General Manager