

ATEX OPERATING INSTRUCTIONS AND DECLARATION OF CONFORMITY – SOLENOID OPERATED VALVES

Dear Customer!

Thank you for choosing a Hafner valve. To assure the function and for your own safety please read the following operating instructions carefully, before installing the product. If there are any further questions, please do not hesitate to contact us:

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**This document is valid for the non-electric part of the following solenoid-operated valve-types:
Ex ia, Ex e mb, Ex m, Ex d, Ex dm, Ex ec.**

These valves can be used – if they are marked appropriately (please refer below to the declaration of conformity) – in potentially explosive atmospheres. The zones and product categories the valves can be used in are defined and explained in the declaration of conformity part of this document. Use in other areas than mentioned below is not allowed.
The operating instructions are to be used together with the manual of the appropriate solenoid system. The manual of the solenoid system is relevant for the electrical part of the product, this manual for the non-electrical.
The application of the complete equipment is defined by the combined regulations of the non-electrical part (valve) and electrical part (solenoid system).

In General:

Please notice that not following these instructions or any kind of inappropriate engagement leads to the end of any kind of warranty and liability from our side. Please notice the means of use described in these instructions and print on the product itself.

Application and operation of the device must ensue in accordance to general terms of technology.
Please undertake any means to avoid unintended actuation and inappropriate use.

Always take into consideration that pressurised fittings, tubes and systems are not to be opened.

Observe all national and international regulation of relevance.

The solenoid valves are designed for controlling pneumatic actuators with compressed air. The valves are not intended for the use with fluids or gases.

The design of the valves has been designed in accordance with current technical regulations and practices.

The outer materials of the valves are the following: aluminium (EN AW 6082), acid resistant steel (1.4404 / 316L), PA 6,6 GF30%, brass alloy (CuZn39Pb3), stainless steel (A2, A4).

The outer materials of the MAS2 Ex d valves are the following: aluminium (EN AW 6082), acid resistant steel (1.4404 / 316L), brass alloy (CuZn39Pb3), stainless steel (A2, A4).

Installation:

When taking the product out of the packaging take care that no dirt or other particles are coming into the product.

Only use appropriate fittings that do not cause or lead to any dirt in the system. Only use clean fittings and tubing.

The valve can be installed in any desirable position, preferably upwards.

Install the product in a way that regular cleaning is possible. Do not over-bend the air supplies.

Installation is allowed only through educated work-force and under consideration of the relevant operating instructions.

Avoid electrostatic charge of product and attached accessories including tubes and cables. Tubes and bundles of tubing must not have an outer diameter of not more than 20 mm.

Connect conductive metal parts together for potential equation and ground the entire system. The valve has to be connected to the local lightning protection system.

For the electrical installation observe the instruction of the solenoid system.

During the installation of the equipment please comply with the concerned standards, for example: ISO/TR 11688 (noise-reduction), EN 626-1 (emission-reduction).

Close unused ports. Avoid potentially explosive atmosphere inside the valve, pipe exhaust to outside.

Only use the valve with the enclosed coils. Systems for Ex ia, Ex e mb, Ex m, Ex d, Ex dm, Ex ec (for detailed information please refer to the declaration of conformity part of this document) are marked on the valves and on the coils. Mixing of components from different types is not allowed.

Operation:

Only use cleaned and lubricated or cleaned and unlubricated compressed air quality level ISO 8573-1 [7:4:4]. If using lubricated air in an explosive gas atmosphere make sure that it is taken out of this atmosphere by appropriate means. Compressed air must not be drawn from an explosive atmosphere.

The temperature rise of the product is linked to the used media and the temperature rise of the coils.

For the Ex ia, Ex e mb, Ex m, Ex d, Ex dm, Ex ec the temperature of the compressed air must be between -10°C and +50°C. When using the valve below 4°C make sure to use dried air. The environment where the valve is used has to be in a temperature range between -10°C and +50°C. Please take note about the temperature specifications in the manual of the solenoid system. If used below 4°C only use dried air.

Please observe the temperature class printed onto the coil. The valve body generally remains colder than the coils.

Avoid that the valve gets in contact with liquids or corrosive media.

The maximum operating pressure of Ex ec, Ex m, Ex e mb, Ex dm and Ex d systems is 10 bar. The maximum operating pressure of Ex ia systems is 8 bar.

Over-pressurising of the valve might lead to functional failures. For the minimum operating pressure, please refer to the technical datasheet.

Do not bend the product. Do not over-bend hoses. Do not step onto the product. Check regularly if the valve operates perfectly, by switching the valve at least once in a month.

The manual override of the valves is not intended for continuous operation. It is intended for up to 5,000 safe operations.

Periodic maintenance:

Check regularly if the valve and its accessories operate and seal perfectly, by switching the valve at least once in 6 months or in 500.000 switching cycles, and ensure the appropriate air cleanness level. In case of inappropriate operation, please contact HAFNER Pneumatika Kft.

Malfunctioning:

Check the electric and pneumatic connections, operating pressure and voltage.

If the problems are not solved by these means make sure the pressure is taken off the system and dismantle the product from the electrical source. Address authorised and educated personnel.

Warnings:

Repair-work of any means inside the product is only to be made by authorised and educated personnel and with appropriate tools. Any warranty and liability of the manufacturer expires with unauthorised engagement.

Avoid injury! The product, especially the coil might be hot during or shortly after operation.

Only use the product in combination with the approved products of the solenoid system manufacturer, the permission expires when other solenoids are used.

Impacts involving rusty or light metal and their alloys might cause sparks. Do not use tools with corroded surfaces and protect product from falling objects.

Dust on hot surfaces is highly inflammable, please clean regularly. The waste management of the product has to be performed strictly according to the current country's regulations.

	Declaration of conformity Explosion-proof-directive	Archive-No.: 066/04
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The company **HAFNER Pneumatika Kft.**
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Püski út 3.

as the sole responsible part hereby declares that under the provision of directive 2014/34/EU of the European Parliament and the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres in its current form, that the above enlisted products as referred to in this declaration comply with the following standards and normative documents in their valid form:

ISO 80079-36:2016 Explosive atmospheres — Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements
ISO 80079-37:2016 Explosive atmospheres — Part 37: Non-electrical equipment for explosive atmospheres — Non-electrical type of protection constructional safety "c"
The documents are stored as required by the directive 2014/34/EU article 13 (1) b) ii and c) at: IBExU, Institut für Sicherheitstechnik GmbH Freiberg (Sachsen).

The valves are marked, defining the zone they are to be used in. Other use is not allowed!

The mark "h" on the non-electrical part of the equipment (valve) means that the protection is ensured through constructional safety: "c".

Allowed area	Mark on valve
Ex ia Ex e mb Ex m Ex d Ex dm Group II, Category 2, Gas (II 2 G): for Zones 1, 2 Group II, Category 2, Dust (II 2 D): for Zones 21, 22	II 2 G Ex h IIC T6 Gb -10°C ≤ Ta ≤ +50°C II 2 D Ex h IIIC T80°C Db -10°C ≤ Ta ≤ +50°C
Ex ec Group II, Category 3, Gas (II 3 G): for Zone 2 Group II, Category 3, Dust (II 3 D): for Zone 22	II 3 G Ex h IIC T6 Gb -10°C ≤ Ta ≤ +50°C II 3 D Ex h IIIC T80°C Db -10°C ≤ Ta ≤ +50°C

Halászi, 21.06.2023

Gergely Ujváry
General Manager