AMM tech
INDUSTRIAL VALVES

Serie 7

Use and Maintenance Manual

Metal-to-Metal butterfly valve for fumes and high temperatures

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1. General Information

Please read carefully this Use and Maintenance Manual supplied together with the valve before starting to carry out any operation whatsoever. Pay careful attention to the recommendations given, observance of which will contribute to maintaining the valve in efficient service in the long term.
This instruction manual gives all the information necessary for use of the valve in environments with areas classified as potentially explosive (99/92/EC); some indications are specific to such applications.

2. Guarantee

Definition: guarantee refers to the maximum period, starting from that on which the valve was put on sale, after which AMMtech S.r.l. can no longer ensure the characteristics of the product. In any case, the guarantee shall be valid only if the maintenance actions given in point 6 are correctly planned and executed, and if the valve is correctly used also as regards temperatures, pressures and fluids, which must be compatible with the materials (point 3.), and if the valve is correctly installed (point 5.)**

***** Put on sale: the first butterfly valve of the 7 SERIES placed on the market by AMMtech S.r.l., for payment or free of charge, for the purposes of sale or use.***

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The valve lifetime is:

1. **Butterfly valve SERIES 7 model AMM700 : 60 months**
2. **Butterfly valve SERIES 7 model AMM701 : 60 months**
3. **Butterfly valve SERIES 7 model AMM703 : 60 months**
4. **Butterfly valve SERIES 7 model AMM704 : 60 months**
5. **Butterfly valve SERIES 7 model AMM705 : 60 months**
6. **Butterfly valve SERIES 7 model AMM708 : 60 months**
7. **Butterfly valve SERIES 7 model AMM715 : 60 months**
8. **Butterfly valve SERIES 7 model AMM730 : 60 months**
9. **Butterfly valve SERIES 7 model AMM731 : 60 months**
10. **Butterfly valve SERIES 7 model AMM780 : 60 months**

3. Instruction for use

Maximum pressure and temperature for use are given below, and are also indicated on the identification plate of the valve:

Limit working condition									
	Model AMM700*	Model AMM701*	Model AMM703*	Model AMM704*	Model AMM705*	Model AMM708*	Model AMM715*	Model AMM730/ AMM731*	Model AMM780*
Maximum working pressure	2 bar	2 bar	2 bar	2 bar	2 bar	2 bar	2 bar	2 bar	2 bar
Maximum working Temperature	+ 300°C	+ 200°C	+ 300°C	+ 600°C	+ 600°C	+600°C	+ 200°C	+ 600°C	+900°C
* Attention: any restriction regarding pressure and temperature will be directly indicated on the valve plate									

AMMtech S.r.l. bases its choice of materials used for the valve on those most suitable for the customer's specific use, unless there is clear documented evidence of the working conditions and above all information regarding fluid, temperature and pressure.

AMMtech S.r.l. accepts no responsibility for damages caused to persons, property, animals or equipment due to incorrect use of the product

*** For the technical specifications and measurements, please see the SERIES 7 " Catalogue edition n°01"**

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A plate is affixed to the valve, giving information on the product and on usage condition limits:

Fac-simile

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1.Name and address of the person responsible for marketing,
2.Valve model,
3.Year of manufacture,
4.Nominal diameter of the valve,
5.Maximum operating temperature (C°),
6.Body material,
7.Sealing material on the beat of the lens,
8.TAG valve (if specified by the customer),
9.CE mark of conformity to the Machinery Directive 2006/42 /EC,
10.⟨Ex⟩ Product classification according to ATEX Directive 2014/34/UE and indication technical dossier for valves belonging to category II (only if the valve belongs to this category)
11.Sealing material shaft,
12.Disc material,
13.Maximum operating pressure (bar),
14.Connection type valve-pipe (WAFER, FLANGED, BUTT WELD),
15.Serial number of the valve

The valves are classified according to the Directive 2014/34/UE ATEX as belonging to the following category:

GROUP II category 3

They can therefore be used in areas classified as 2 Gas and 22 Dust

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The valve must be installed on the system only according to the modalities explained below and to the recommendations of point 7 of this Use and Maintenance Manual:

In order to guarantee correct installation of the Wafer or Flanged valve, it is necessary to check that:

- **the type of flanging (EN-UNI-DIN-ANSI-ISO…) is compatible with the pipes, especially are regards the diameter of the hole, and the number and size of the tie rods;**
- **the internal diameter of the pipe is less than the external diameter of the valve and greater or the same as the internal diameter;**
- **the counter-flanges are provided with washers;**
- **The distance between the pipe flanges corresponds to the valve gauge, or that this condition can be obtained by means of special separators.**

The valve can be mounted according to the positions indicated in our drawing (page 6) namely in any position either on vertical or horizontal piping. In case of mounting on horizontal piping it is advisable to position the valve with a horizontal rotating axis.

Installation with a vertical axis of rotation on a horizontal pipe can only be performed in the presence of clean fluids.

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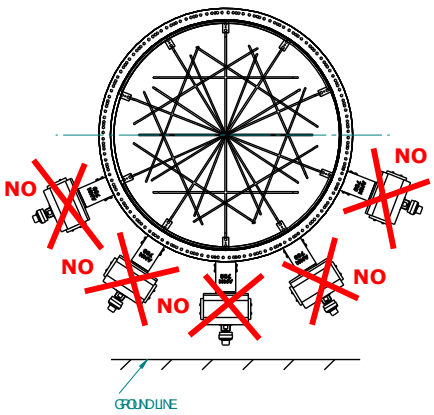
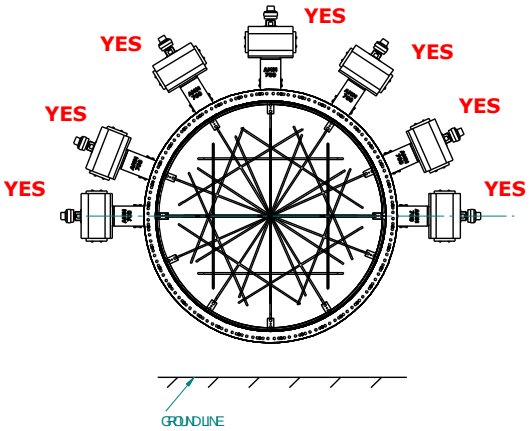
Use and Maintenance Manual

PLEASE NOTE THAT THE SUPPLIED VALVE DOES NOT HAVE TO BE ASSEMBLED AS BELOW INDICATED IN ORDER TO GUARANTEE PERFECT FUNCTIONING



CORRECT VALVE ASSEMBLY



Partially close the disk to center the body between the flanges.
1.Insert the separator between the flanges of the piping
2.Insert the valve between the flanges of the piping and center it in the chosen position (horizontal, vertical or angular)
3. Fit the two lower tie rods (according to WAFER or FLANGED Version and valve DN), partially tightening the nuts to support the valve.
4.Remove the separator (if used), making sure that the valve remains centered.
5.Check that the disk can rotate, thus guaranteeing the opportune tolerances with the pipes.
6. Tighten all cross nuts using a torque wrench. Pay attention that the torque does not exceed the indicated values, because it can cause flange bending.

Tightening screw Torque values of Nuts	
DN	50-300
(Nm)	100

ATTENTION: **Follow the above instructions in the order shown.**

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The following routine maintenance applies to all models :

• Braid packing replacement when tightness is not guaranteed anymore. For the following valve types AMM705, AMM708 and particular applications of valve AMM780, please verify tightening of all braid packing. Tightening of braid packing screws has to abide by the following table. Please use a torque wrench in order to obtain the required to screw tightening values.

Tightening screw Torque values of Braid packing					
DN	50-150	200-350	400–650	700-850	900 >
(Nm)	1	2	3	3,5	4

• Check of shaft tightness has to be carried out regularly at least every six months according to both application and ambient condition. Make sure that tightening of the braid packing screws abides by the above indicated chart.

•In the case of wear or anomalous damage of parts, it is essential to request original spare parts from the constructor.

AMMtech S.r.l. declines all responsibility and guarantee on products repaired or replaced by third parties and/or which have not been given the recommended scheduled maintenance.

• According to EN 13463-1 point 5.2.6., dust deposits that remain at length between the interstices of moving parts can over time become a potential cause of ignition, even if the moving organs have very low rotation speeds. Carry out scheduled cleaning of the valve surfaces; if the environment is particularly dusty, this must be carried out more frequently.

• Check at least every 6 months that there is good conduction between the shaft and the valve body.

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6. Maintenance

- **For valve AMM708 a check of the wear and tear of the bearing supports is recommended which support the disk hinge. The supports in cast iron have a nipple which allows lubrication of the body after a time of operation. According to the number of turns (in our case quarter turn) one can estimate the standard time needed between one greasing operation and the following.**

See TABLE A. The indicated values refers to 8 / 10 day function.

Working Condition			Bearing	Type of grease
clean	dusty	Dusty or damp		
12 month	6 month	3 month	standard	Lithium grease

- **All bearings are normally filled with lithium grease. No greasing is required upon mounting. An excess of grease might cause a spill. Required lubricating amount are indicated in grams in the below chart.**

Grease Quantity									
Bearing	UC 204	UC 205	UC 206	UC 207	UC 208	UC 209	UC 210	UC 211	UC 212
gr	1,7	1,7	3,1	4,2	5,2	6,2	7,4	9,9	12,9

- **The hinge diameter is calculated by multiplying the final two numbers per 5.The relative diameter is 20mm for UC 204**

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The recommendations are intended to prevent incorrect use of the SERIES 7 butterfly valve.

Before installation

a. Check that the product received perfectly satisfies the usage conditions to which it will be subjected;

b. Check on reception that the packaging is intact and that the product has not suffered any damage during transport;

c. In the case of storage, the valves should not be removed from their packaging, and the inner parts should be shielded from light, humidity, sources of heat, and aggressive environmental conditions;

d. Do not use the valve if the conditions do not conform with those declared by the manufacturer;

The valve is supplied with already calibrated braid packing screws. After start-up it is recommended to verify tightness on the shaft. Please intervene when needed following indications detailed at point n. 6

During installation:

e. Follow the instructions given in point 5.;

f. For use in potentially explosive environments, take into account the fluids and the effects that they could have on the surfaces of the valve;

g. Always operate in conditions of safety;

h. Make sure that there are no foreign bodies or dust on the internal parts of the valve and between the faces that connecting with the flanges;

i. Before activating valve opening or closure, make sure that the rotation trajectory of the butterfly valve is clear.

j. In the case of use in potentially explosive environments, make sure that the body of the valve is duly connected to the ground, to guarantee equal potential of its conductor parts;

k. In the case of use in potentially explosive environments, check the existence of conduction between the butterfly and the body of the valve;

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During maintenance:

a. If it is necessary to remove the valve from the system, carry out the operation only after checking that it is not moving and when conditions cannot cause any hazard;

b. Apply the same recommendations made in points e, f, g, h, i, j, and k.

During the first boot:

In the case of valves AMM780 equipped with refractory material within the body, is important that when you first start the working temperature is reached by following the following procedure (or otherwise in agreement with that recommended for the start of the boiler or other components with coatings of refractory material):

1. A temperature gradient of 20 °C / h up to 200 °C
2. Stay at 200 °C for about 2 h
3. Increase of temperature up to 600 °C following a temperature gradient of 50 °C / h
4. Stay at 600 °C for about 3-4 h
5. Heating to a maximum working temperature.

Ammtech S.r.l. will not be responsible for damage to the material refractory due to an achievement of the working temperature not in agreement as recommended.

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Connection to a Pneumatic Actuator:

a. **The butterfly valve can be coupled to electric or pneumatic actuators, also equipped with electric accessories, providing all the components conform to Directive 2014/34/EU ATEX and are equipped with conformation and classification declarations, suitable for the area of installation; the person in charge of coupling must assess whether the risk analysis requested by the aforesaid Directive is necessary for the group obtained (valve+actuator+accessory) .**

b. **Always adhere strictly to the relative use instructions for every component added to the valve;**

c. **In conformity with the standard EN 1127-1:2001, the rotating elements exposed to the potentially explosive atmosphere must exceed a relative speed of 1 m/sec to be considered as elements of ignition. The user must obligatorily check that the installation on his/her own system maintains a safe rotation speed.**

d. **To avoid problems due to the low inertia of the discs, it is suggested to install flow discharge regulators on the solenoid valve.**

e. **To ensure the correct operation of solenoid valves, pneumatic or electro-pneumatic positioners, dry and clean air should be used, otherwise it is recommended to install a reduction filter upstream of those components.**

It is emphasised that the union of an activator and a valve, both supplied with conformity declarations pursuant to 2014/34/EU ATEX DOES NOT give exemption from the obligation of danger and risk assessment of ignition induced by the aforesaid union

In the case of valves supplied by AMMtech S.r.l., complete with activators and accessories, he group does not generate an additional risk and it is therefore unnecessary to mark the group itself.

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