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For the pressure and vacuum vent type 945-EL catalogue data sheets as “Dimension sheet”, “Technical data” and “Pressure drop/volume flow charts” are available including the technical data, constructions and dimensions.

1. Use

Pressure and vacuum valve 945-EL complies with standard:

EN ISO 80079-36:2016	Non-electrical equipment for explosive atmospheres Basics methods and requirements
EN ISO 80079-37:2016	Non-electrical equipment for explosive atmospheres Non electrical type of protection constructional safety "c"

The general suitability as pressure and vacuum vent for device group II, category 1/2 or EPL Ga/Gb when used with inflammable gas/air mixtures and vapour/air mixtures of inflammable liquids of explosion group IIB (standard gap width ≥ 0.5 mm) have been verified by tests executed at the Institute for Safety Technology IBExU GmbH Freiberg and the results were confirmed by the issued EU-Type Examination Certificate **IBExU16ATEX1161_X**. The following valve insert settings have to be considered:

- Set-pressure for pressure: 2,5 up to 70 mbar *) *) factory pre-set default
- Set-pressure for vacuum: 2,5 up to 70 mbar *)
- Operating temperature: surface temperature $\leq 80\%$ of ignition temperature medium (please attend data sheet)

On delivery of the devices, the technical parameter of the valve with stating the EU-Type Examination Certificate number are documented in the test certificate in accordance with EN 10204. In the declaration of compliance it is referred to the accordance with the harmonized standard EN ISO 80079 Parts 36 and 37. The maintenance of the basic safety requirements according to directive 2014/34/EU has been confirmed.

2. Construction

The vent consists of a cast iron/stainless steel housing with an outlet flange for process discharge (1), equipped with pressure (11) and vacuum valve inserts. The housing is closed with two covers (3) by the use of screws (6) and sealed by O-rings (7). The valve inserts are guided by guiding sockets screwed into the covers.

For protection against the effects of weather, the vent is equipped with a protective strainer (2). This is clamped/mounted by stud bolts (22) and washers (25).


The valve inserts are pre-set for the customer's specific set-up pressure via weight discs. They can be equipped with FEP sealing foil or with a metallic sealing surface.

The applied materials of the vent have to be resistant under the respective operating conditions against the mechanical and / or chemical effects and corrosion, so that the explosion protection is always maintained.


3. Marking

The information for marking the vent are arranged on the nameplate (page 4/4).

The following data is indicated:

- Name and address of the manufacturer
- Type (including version number)
- Serial number and year of production
- Number of the certificate (EU type examination certificate-no.)
- EN number
- The specific mark for prevention of explosions in connection with the letter “h”, the mark indicating the group/subgroup of devices, the temperature class and EPL category.  II 1/2 G Ex h IIB T1...T6 Ga/Gb
- The CE mark with the number of the indicated inspection authority, which act during production
- Set-up pressure for pressure and vacuum valve
- Volume flow at opening pressure

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Approved By:	V. O' Hara	Date: 13.08.19	

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4. Installation

The arrangement and the installation of the vent into the plant shall be done under observance of the rules applicable to the relevant range of use. Accident prevention instructions must be adhered to. A vertical installation position of the vent has to be kept under any circumstances.

The vent is equipped with a flange connection PN10 Form C or ANSI 150 RF.

For the flanged joints, flat gaskets with a sealing parameter $k_{okD} \leq 25b_D$ are recommended. While joining, be careful that the sealing strips are not damaged and there is no foreign matter or dirt between the flanges, so that no gap to the atmosphere can occur.

The valve has to be included in the equipotential bonding of the vessel or plant.

Process gases and vapours are to be free of particles and are not to be exothermic in nature.

To prevent transportation damage, the valve inserts are blocked with a transportation safeguard, which must be removed as follows:

- Uninstall covers (3) by loosening the screws (6)
- Remove transportation safeguards of the valve inserts
- Check the valve inserts for easy mobility and proper location on the guide bush
- Install the cover (3) and pull screws tight (6)
- When placing the cover, make sure that the guiding socket in the cover is guided properly across the guiding bolt of the top valve insert.

5. Maintenance

The maintenance includes a periodic visual inspection of the vent with regard to contamination and appearance. The intervals for the maintenance works depend on the operating conditions and contaminating the process media is. The interval of maintenance has to be defined by the operating company.

In case of major contamination a flushing with a cleaning agent can be carried out. After cleaning all parts shall be blown dry. During the cleaning works, no mechanical modifications may be done on all elements or the housing or else they has to be replaced by a new one.

All works in connection with repair and replacement of components shall be executed only by trained and authorized, skilled personnel.

Valve seats and valve plates shall be checked for contamination and damages and examined in particular for intactness as well. Damages to the valve seat shall be eliminated by expert grinding and smoothing. Depending on the sealing system, the FEP seal or metallic sealing surface should indicate no damaging, or else they must be replaced by a new one.

Opening and re-installing shall be performed as described under Section 4.

It is recommended to keep a spare parts kit for each seal on hand at all times. In case of replacement of structural units, only original spare parts listed in the spare parts list shall be installed to ensure the required safety standard.

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6. Spare part list

Table : Spare parts for 945-EL 50-50, 50-80, 80-80, 80-100, 150-150, 150-200

Item No.	Description	Qty.	Material	DN50	DN80	DN150
3	cover – complete	2	St NSt	FET15415132 FET15415133	FET15416066 FET15416067	FET15417183 FET15417184
6	screw	4 6 16	NSt	242035000	242035000	222075300
11*	pressure valve insert **– FEP - valvedisk - FEP-seal surface	1	NSt/FEP	FET15415115 812071200 722087800	FET15416010 812071700 722088500	FET15417174/5 812072100 722088700
	pressure valve insert **– metal - valvedisk - metal-seal surface	1	NSt	FET15415116 812071200 FET992784000	FET15416012 993138000 722088500	- - -
11*	vacuum valve insert **– FEP - valvedisk - FEP-seal surface	1	NSt/FEP	FET15415115 812071200 722087800	FET15416010 812071700 722088500	FET15417172 812072100 722088700
	vacuum valve insert **– metal - valvedisk - metal-seal surface	1	NSt	FET15415116 812071200 FET992784000	FET15416012 993138000 722088500	- - -
7*	o-ring	2	NBR FPM EPDM FPM/FEP	812072800 802087800 812072900 812073000	802039700 802039800 802039900 802040000	802078200 802078300 802078400 802078500
2	protective strainer	1	NSt	052099200	052099300	52099500

* Parts shall be available for maintenance works

** Valve inserts without added weights

Material marks

St ... steel	LM ... light metal	FPM ... Viton	FEP .. Fluoride plastic
NSt ... stainless steel	K ... plastic	NBR ... Perbunan(N)	PTFE .. Fluoride plastic
EPDM ... ethylene propylene diene monomer rubber			

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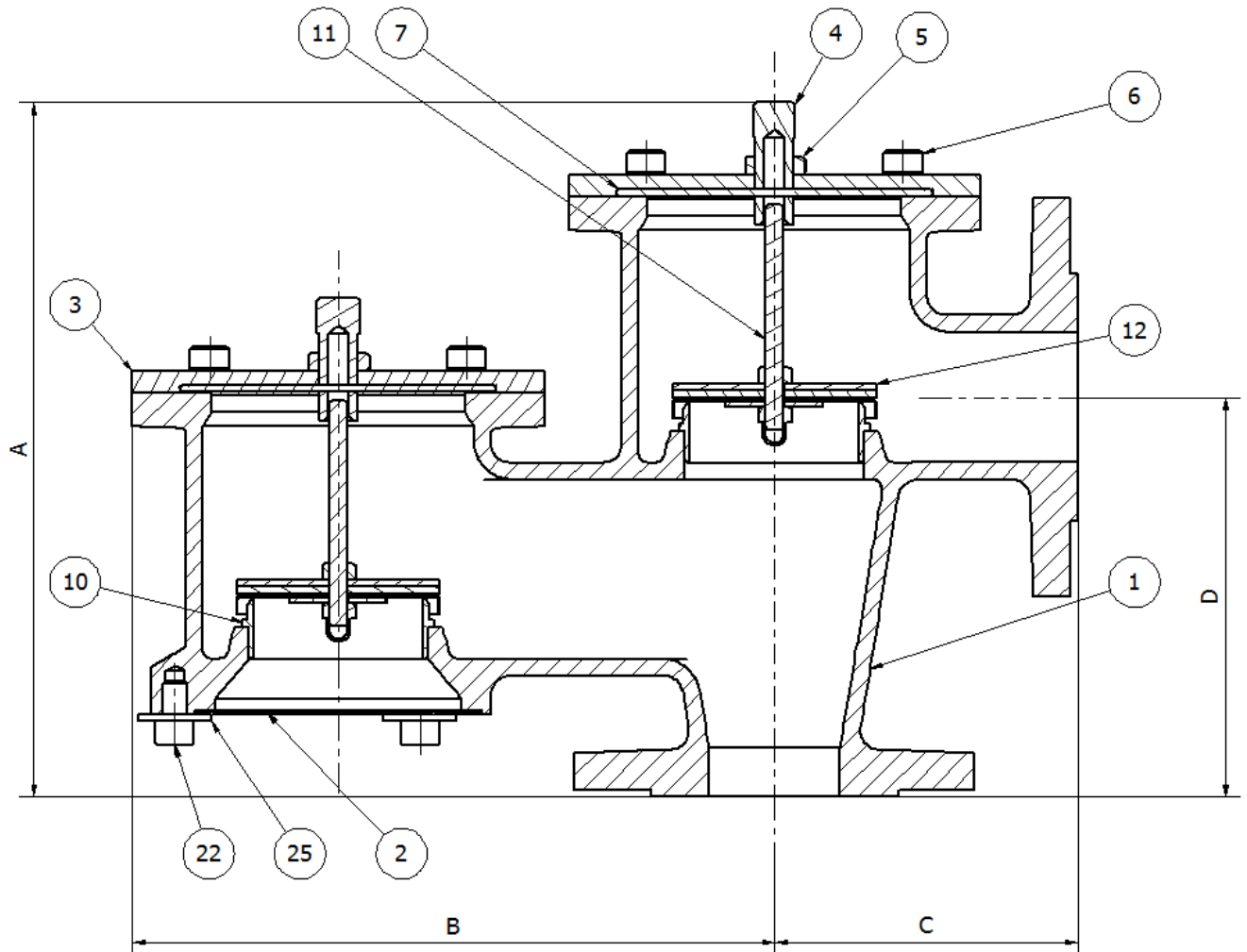


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Assembly drawing



DN	A [mm]	B [mm]	C [mm]	D [mm]
50 - 50 2" - 2"	287	265	125	165
50 - 80 2" - 3"	287	265	140	180
80 - 80 3" - 3"	349	348	160	180
80 - 100 3" - 4"	349	348	160	190
150 - 150 6" - 6"	454	490	214	262
150 - 200 6" - 8"	474	490	239	287

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EN80079-36					
Type					Ex
Cert. No.					CE
Ser. No.			DN		
2460					
Set Pressure	Opening Pressure	Volume Flow Rate *			
Vacuum Pressure		mbar		m³/h	
		mbar		m³/h	
* Air in standard conditions at opening pressure					

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