

MANDÍK®

FIRE VALVE

PVM E-90



These technical specifications state a row of manufactured sizes and models of fire valves (further only valves) PVM. It is valid for production, designing, ordering, delivery, assembly and operation.

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II. GENERAL INFORMATION

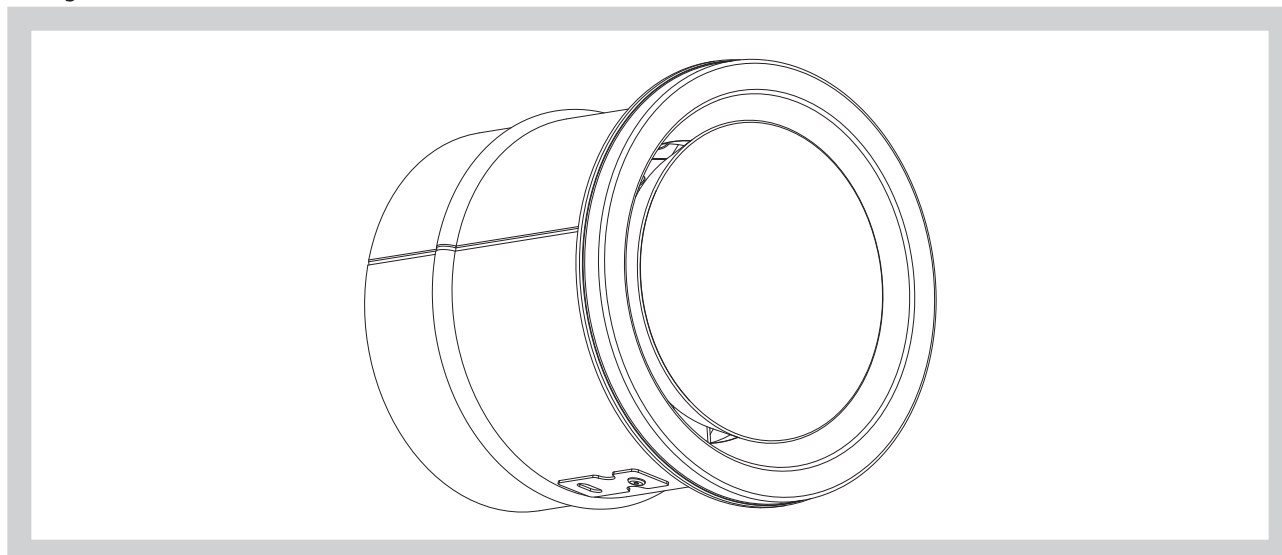
1. Description

- 1.1. Fire valves are devices in ventilation and air-conditioning systems. Fire valves are designed to prevent the spreading the fire and combustion products from one fire segment to another. May be fitted independently or serve for inflow and outflow of air as well. Connected duct has to be
- 1.2. Fire resistance classification of valves is according EN 13501-2 E 90/ EW 90.
- 1.3. Valves are suitable for installation in the solid wall or ceiling constructions or in air-conditioning ducts. Thermal protective fuse actuates the shutting device after the nominal start temperature $73^{\circ}\text{C} \pm 1,5^{\circ}\text{C}$ has been reached. Valve plate is pulled in by shutting spring and is set upped in position "CLOSED". In this position is secured against opening in case of occasional back pressure shock or by fire action.
- 1.4. Stepless airflow volume regulation is performed by turning of valve plate. Valve has to be removed from case and locknut released. Set upped position „s“ will be locked by locknut and valve will be placed in case. Valve is connected by the locking pins to the case.
- 1.5. Valves are designed for macroclimatic areas with mild climate according to EN 60 721-3-3.
- 1.6. Dampers are suitable for systems without abrasive, chemical and adhesive particles.
- 1.7. If is not noticed other way, all dimensions and weight are in millimeters and kilograms.

2. Design

- 2.1. Valves are made in four sizes: 100, 125, 160, 200.

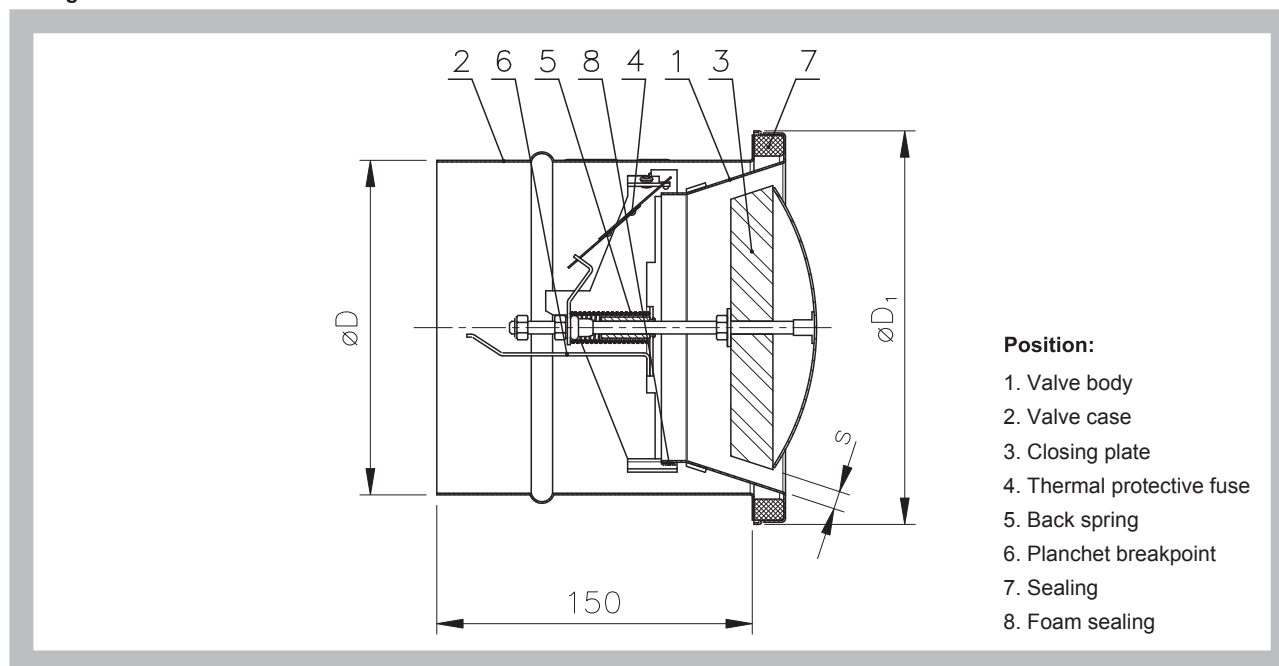
Fig. 1



3. Dimensions, weights

3.1. Dimensions and weights

Fig. 2



Tab. 3.1.1. Dimensions and weights

Size	D	D ₁	s	Weight
100	98	126	from 3 to 12	0,9
125	123	151		1,1
160	158	188		1,5
200	198	227		1,9

4. Placement and Assembly

- 4.1. The fire valve can be install into a solid wall construction made e.g. of normal concrete/masonry, porous concrete gypsum wall construction with minimum thickness 100 mm or into solid ceiling construction made e.g. of normal concrete/porous concrete with minimum thickness 150 mm. The gap between valve case and construction has to be filled by mortar or gypsum. Insulation foam cannot be used for filling the gap between valve case and fire separating construction.

Fig. 3 Independently fitting

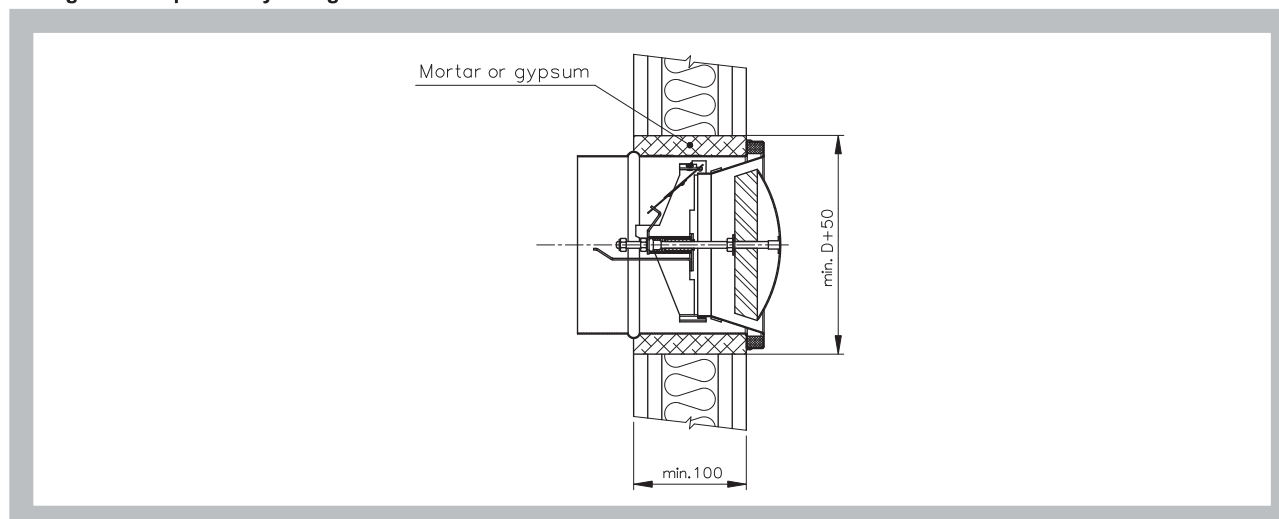
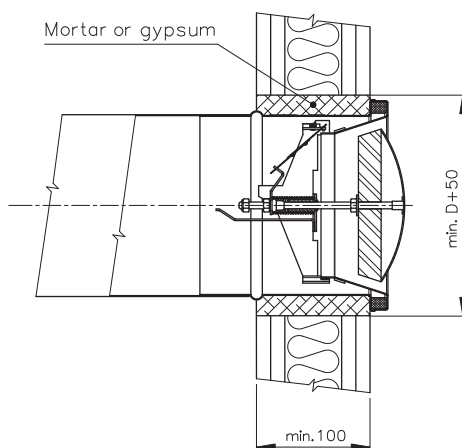


Fig. 4 Connection to air-handling duct



III. TECHNICAL DATA

5. Basic data

- $\dot{V}$ [m³·h⁻¹] airflow volume for one valve
- s [mm] space between valve body and plate (regulation of air-flow volume)
- Δp_c [Pa] total pressure loss for $\rho = 1,2 \text{ kg/m}^3$
- L_{WA} [dB(A)] level of acoustic output corrected with filter A

6. Pressure loss and noise data

Diagram 6.1.1. PVM-E90 size 100

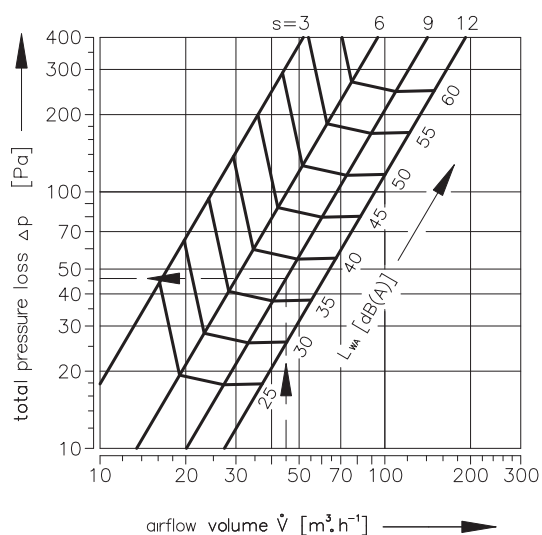


Diagram 6.1.2. PVM-E90 size 125

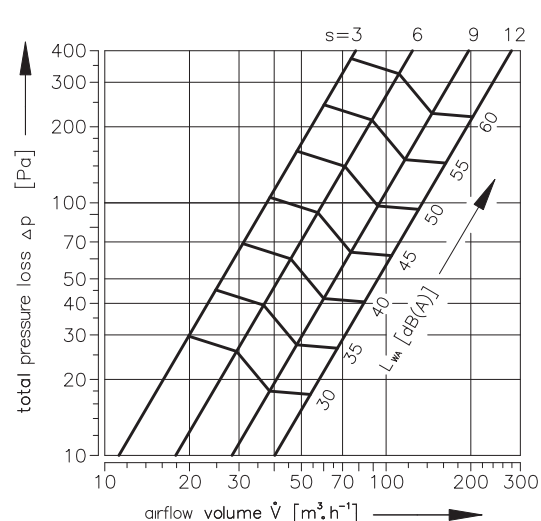


Diagram 6.1.3. PVM-E90 size 160

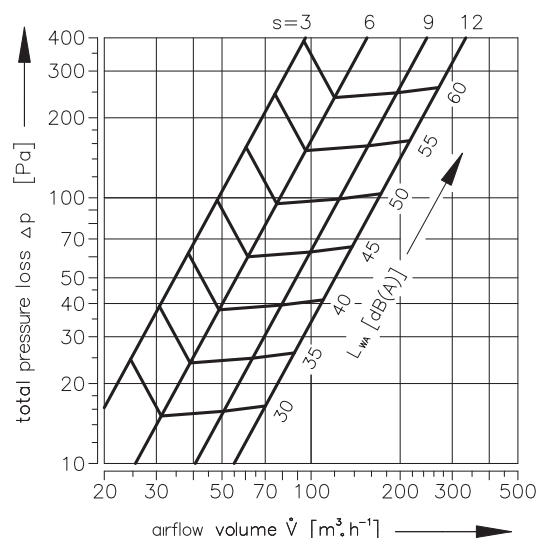


Diagram 6.1.4. PVM-E90 size 200

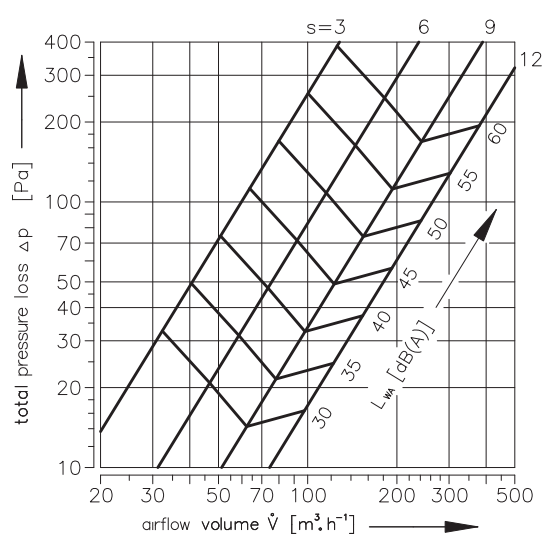


Fig. 5 Example

Giving data: Fire valve PVM - E90 100

$$\dot{V} = 45 \text{ m}^3 \cdot \text{h}^{-1}$$

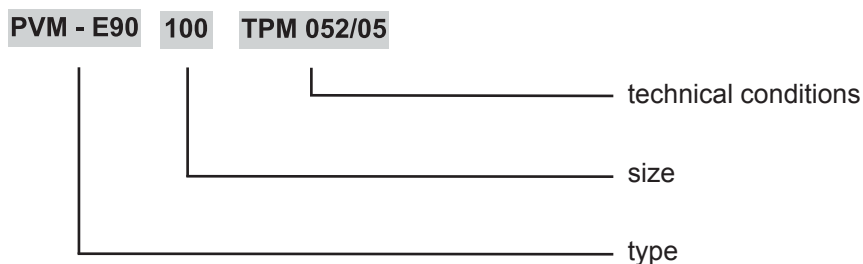
$$s = 9 \text{ mm}$$

Diagram 6.1.1. : $L_{WA} = 37 \text{ dB(A)}$

$$\Delta p_c = 46 \text{ Pa}$$

IV. ORDERING INFORMATION

7. Ordering key



V. PRODUCT DATA

8. Data label

- 8.1. Data label is placed on the valve body and is accessible after body removing from the valve housing.

Fig. 6 Data label

MANDÍK		MANDÍK, a.s. 267 24 Hostomice	Dobříšská 550 Česká republika
FIRE VALVE PVM-E90 TPM 052/05		SIZE:	
CLASSIFICATION:		SERIAL NUMBER:	
Certificate:			

VI. MATERIAL, FINISHING

9. Material and finishing

- 9.1. Valve casing are made of galvanized steel, body and valve plate are coated with RAL 9010. Closing plates of valves are reinforcement with asbestos-free incombustible material. Other steel parts are made of galvanized steel.

VII. INSPECTION, TESTING

10. Inspection, testing

- 10.1. The appliance is constructed and and preset by the manufacturer, its operation is dependent on proper installation and adjustment.

VIII. TRANSPORTATION AND STORAGE

11. Logistic terms

- 11.1. Valves are supplied in cartons. Valves are transported by box freight vehicles without direct weather impact, there must not occur any sharp shocks and ambient temperature must not exceed + 50 °C. Valves must be protected against mechanic damages when transported and manipulated. If is requested another packing way the packaging is non refundable and it is not included in valve price.
- 11.2. Valves are stored indoor in environment without any aggressive vapours, gases or dust. Indoor temperature must be in the range from -5 °C to +40 °C and maximum relative humidity 80 %. Valves must be protected against mechanic damages when transported and manipulated.

VIII. ASSEMBLY, ATTENDANCE, MAINTENANCE AND REVISIONS

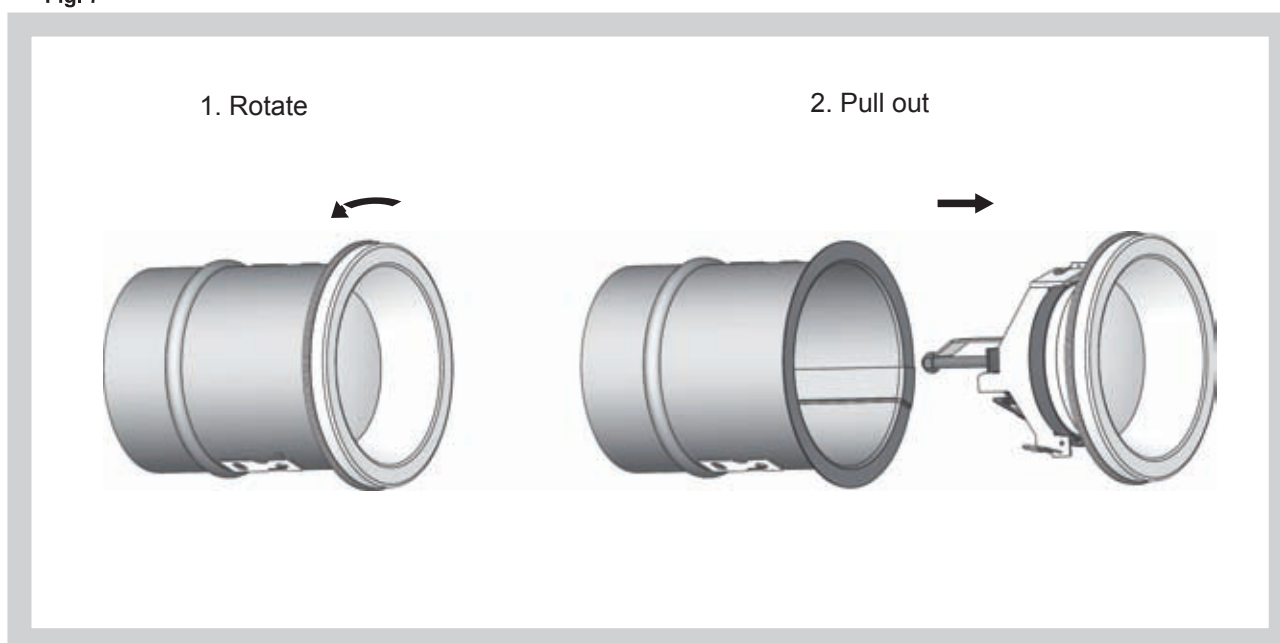
15. Assembly

- 15.1. Assembly, maintenance and damper check can be done only by qualified persons, i.e. "AUTHORIZED PERSONS" that have been trained by the manufacturer.
- 15.1.1. Trainings are done by the firm MANDÍK that makes out a proficiency "CERTIFICATE" which is valid for 5 years. It can be renewed by the "AUTHORIZED PERSONS" themselves, directly at the manufacturer.
- 15.1.2. When the "CERTIFICATE" expires, it becomes invalid and is eliminated from the trainer's registration.
- 15.1.3. Only professional personnel that undertake guarantee for the completed work can be trained.
- 15.2. All effective safety standards and directives must be observed during fire damper assembly.
- 15.3. To ensure reliable fire valve function it is necessary to avoid blocking the closing mechanism and contact surfaces with collected dust, fibre and sticky materials and solvents.

16. Entry into service and revisions

- 16.1.** Before entering the valves into operation after assembly and after sequential revisions, checks and functionality tests must be done. After entering into operation, these revisions must be done according to requirement set by national regulations.
- 16.1.1.** In case that valves are found unable to serve for their function for any cause, it must be clearly marked. The operator is obliged to ensure so that the valve is put into condition in which it is able to function and meanwhile he is obliged to provide the fire protection another appropriate way.
- 16.1.2.** Results of regular checks, imperfections found and all-important facts connected with the valve function must be recorded in the "FIRE BOOK" and immediately reported to the operator.
- 16.2.** Before entering the valves into operation after their assembly and by sequential checks, the following checks must be carried out.
- 16.2.1.** Visual inspection of proper damper integration, thermal protective fuse, closing mechanism and contact surfaces and sealing.
- 16.3.** Closing mechanism function is performed by releasing of thermal protective fuse. The valve plate has to be in correct position and has to be secure against opening.
- 16.3.** Replacement of thermal protective fuse is performed after removing of valve body from valve case.

Fig. 7



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