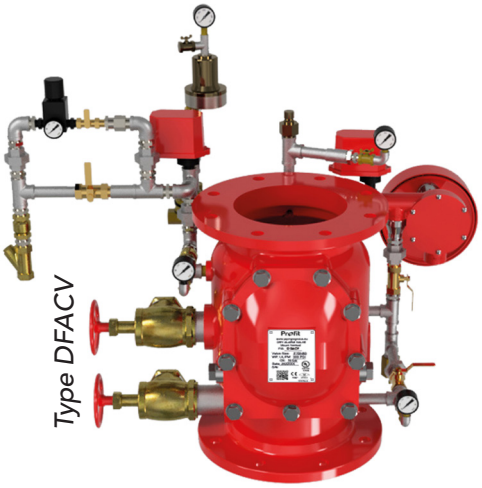
TECHNICAL DATASHEET

DRY ALARM CHECK VALVES | TYPE DFACV & DGACV

FIRE

Size range: 3" - 8"

FM APPROVED



Profit dry pipe valves type DFACV & DGACV are resilient seated alarm valves, ready for installation in low pressure dry pipe sprinkler systems. They are supplied with plug & play trim set + several optional items.

Characteristics

- Indoor use only.
- Suitable for use in vertical piping.
- Available in sizes 3", 4", 6" and 8".
- Installation:
  - DFACV: between flange types EN 1092-PN16.
    (Also available: ANSI B16.1 class 125 / ASME B16.42, class 150).
  - DGACV: grooved ends to AWWAC606 Standard. Installation by use of two mechanical couplings (type GKA / GKS / FITPRO).
- Anti-corrosion protection:
  - Valve: high grade polyester powder coating, meets or exceed AWWA C550 standards.
  - Trim: galvanised accessories & brass products.
- Recommended air pressure, see table below:

Water pressure		Recommended presssure	
psi	bar	psi	bar
30 - 140	2,1 - 9,7	15	1
141 - 250	9,7 - 17,3	21	1,5
251 - 300	17,3 - 20,7	24	1,7

Working pressure (water)

- Minimum 0,21 MPa / 2,1 bar / 30 psi.
- Maximum 2,07 MPa / 20,7 bar / 300 psi.

Working temperature

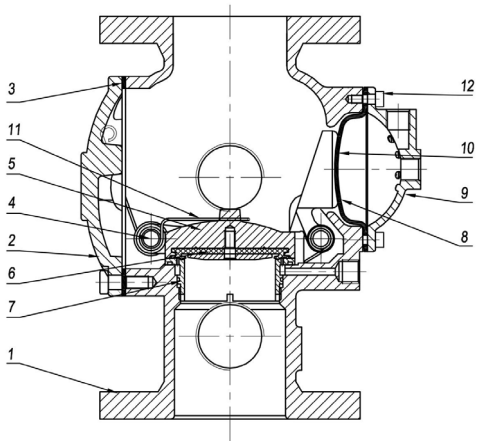
+1°C to +50°C.

Approvals

- UL listed - cat VPZV.
- FM approved to FM standard 1021.
- CE certified (EN12259-3).

Material details & specifications

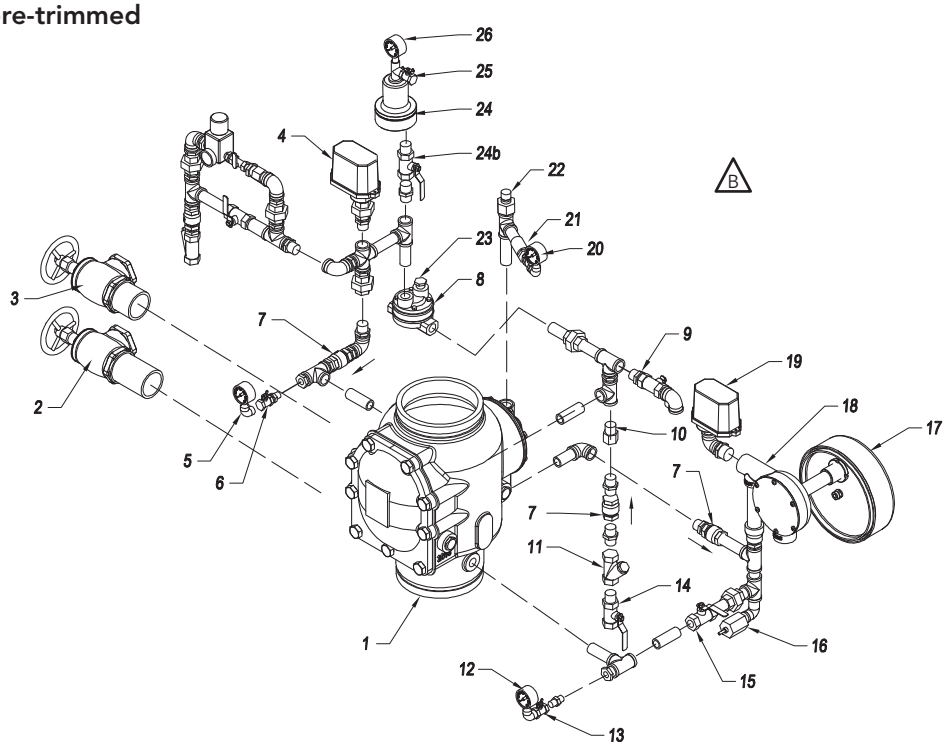
1. Valve



No.	Part name	Material	ASTM specification
1	Body	Ductile iron	A536 gr 65-45-12
2	Cover	Ductile iron	A536 gr 65-45-12
3	Body / cover gasket	Rubber	D2000 EPDM
4	Hinge pin	Stainless steel	A276 Type 304
5	Clapper	Bronze	B148 C95500
6	Clapper seal	Rubber	D2000 EPDM
7	Body seat	Bronze	B62 C83600
8	Diaphragm	Rubber	Peroxide cured EPDM with fabric
9	Diaphragm cover	Ductile iron	A536 gr 65-45-12
10	Latch	Bronze	B148 C95500
11	Spring	Stainless steel	A276 Type 304
12	Bonnet fasteners	Carbon steel	A307 Grade B

2. Trimset: all valves are delivered pre-trimmed

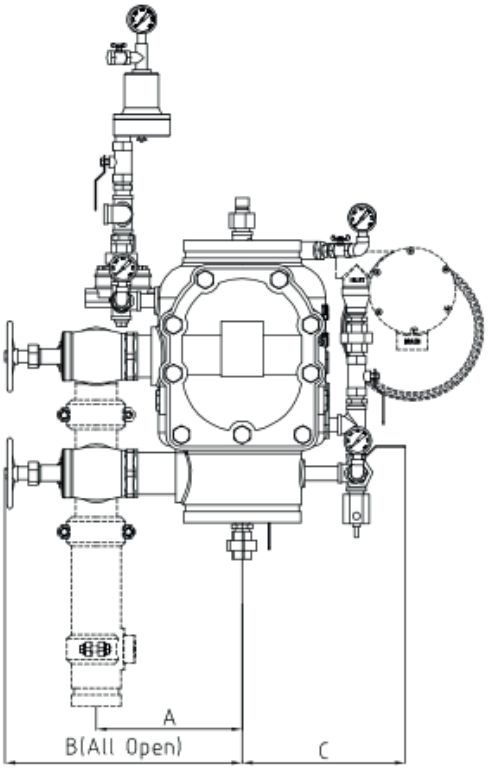
No.	Components
1	Dry pipe valve assembly
2	Water supply main drain valve
3	System main drain valve
5	System pressure gauge (0-300 psi)
6	Gauge valve
7	Check valve
8	Low-pressure actuator assembly
9	Manual opening
10	Restrictor
11	Strainer
12	Water supply pressure gauge (0-300 psi)
13	Gauge valve
14	Diaphragm-charge-line ball valve
15	Alarm test ball valve (normally closed)
16	Automatic drain valve
19	Alarm pressure switch for water
20	Diaphragm-charge-line pressure gauge (0-300 psi)
21	Gauge valve
22	Auto drain valve
23	½ plug

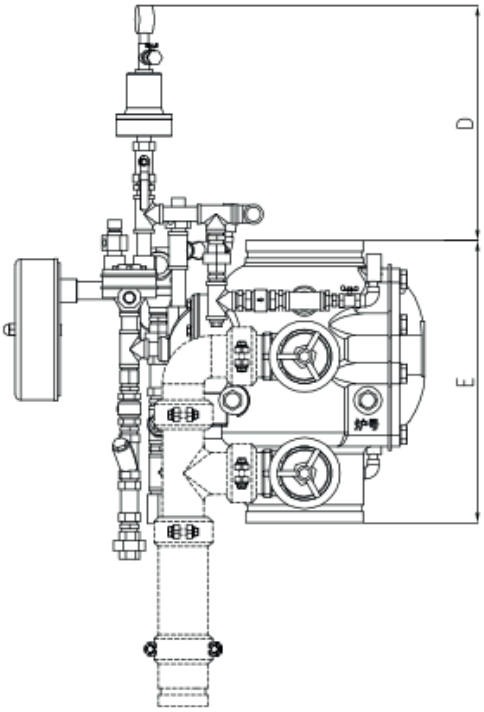


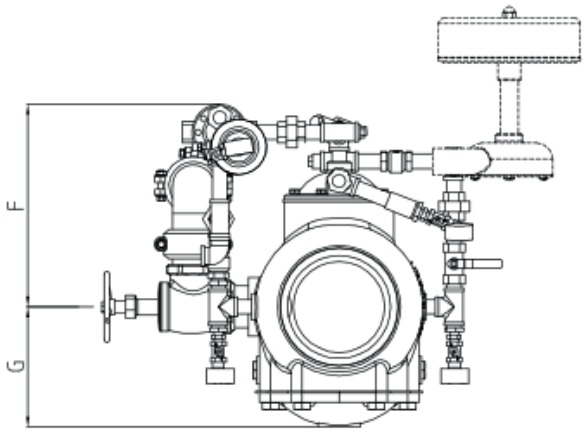
No.	Optional components
4	Alarm pressure switch for air
17	Gong alarm
18	Water motor
24	Dry accelerator
24b	Ball valve
25	Ball valve
26	Air pressure gauge (0-0.4Mpa)

3. Trimset dimensions

	A	B	C	D	E		F	G	WEIGHT KG	
					DFACV	DGACV			DFACV	DGACV
DN80	150	300	210	375	325	310	265	120	37,0	30,8
DN100	180	350	210	375	355	343	265	135	53,0	37,0
DN150	210	375	250	345	431	405	290	175	76,0	60,5
DN200	240	415	275	325	460	445	310	190	88,0	74,0







Optional parts

- Accelerator + trim, type DA/TRIM:

- Accelerator without trim, type DA:

- Air pressure maintenance device, type APDM:

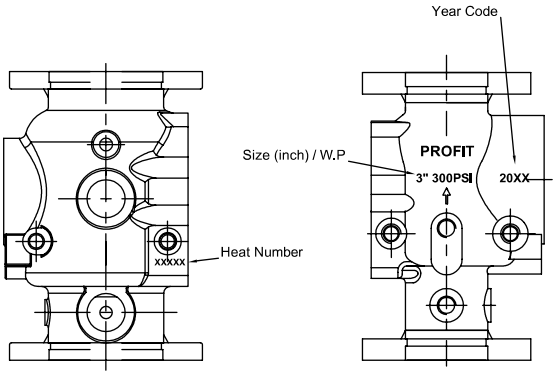
- Water motor gong, type WMG:

- Air supply supervisory switch, type PRS10/1:
  Air compressor supervisory switch, type PRS40/1 or PRS120/1:

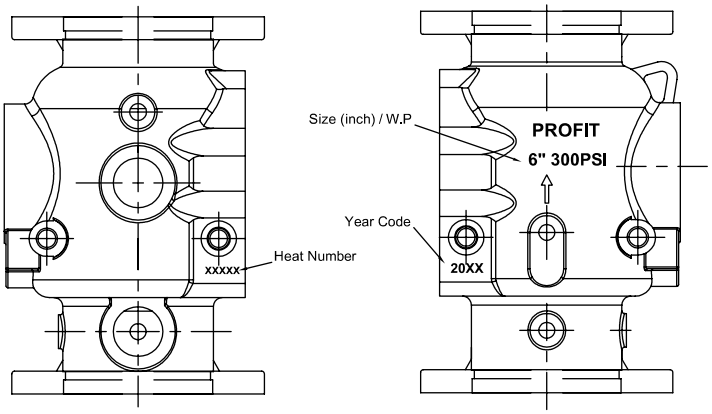
Marking

Body:

Size 3″-4″



Size 6″-8″



Marking plate:

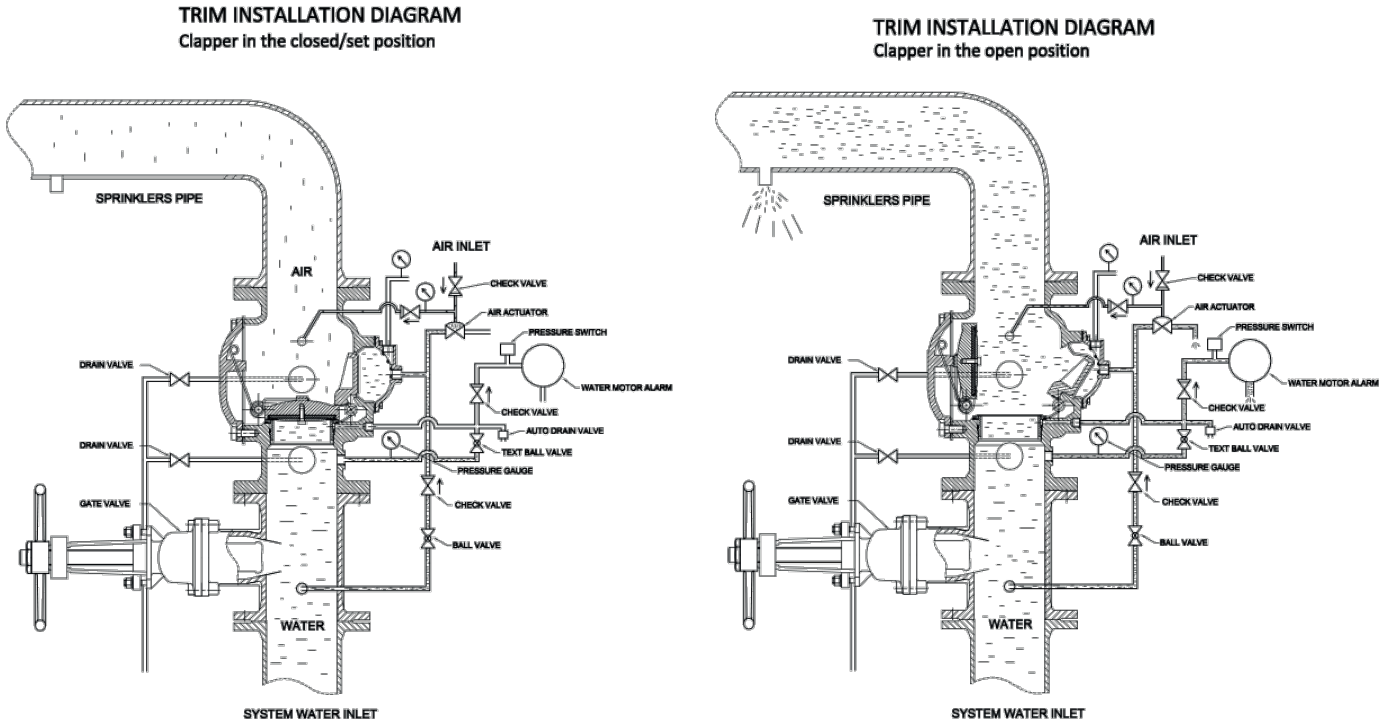
flanged - flanged connection

DFACV

grooved - grooved connection

DGACV

Valve principle and operation



The Profit dry pipe alarm valve is a low pressure valve that can be used in dry sprinkler piping systems. The valve clapper is held in closed position by a hydraulic release mechanism with a rubber diaphragm. The pressure (=system water inlet pressure) in the release mechanism is controlled by an air actuator that is sensitive to sprinkler system pressure loss (in the event of an open sprinkler during a fire). The speed of reaction to pressure loss can be boosted with an (optional) accelerator.

When the clapper is open, there is also a waterflow to a parallel alarm line with pressure switch and / or water motor gong.

Installation, commissioning, testing & maintenance

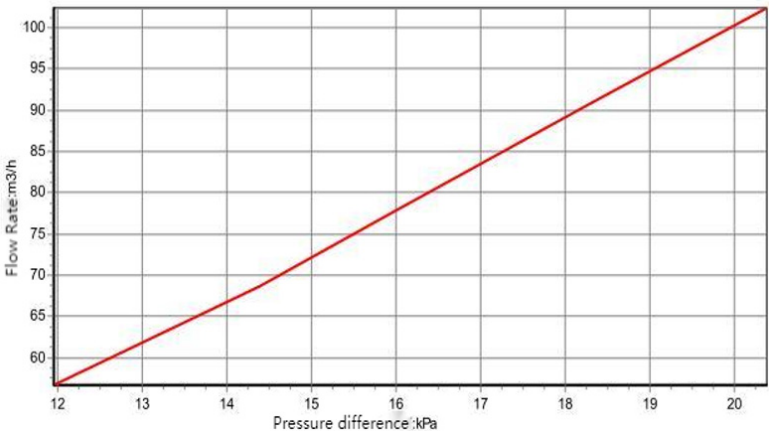
Please check our installation manual.

Storage and handling

- Each valve should be unloaded carefully, it should not be dropped.
  Never lift valves by the stem, operating nut or handwheel.
- Dry pipe alarm valves should be inspected at the time of receipt for damage in shipment.
  The initial inspection should verify compliance with valves specifications.
- Storage: DGACV and DFACV must be stored preferably indoor, in a manner that protects them from the environment and avoid direct sunlight on the rubber parts. when stored outside, protect the valve from weather conditions and avoid accumulation of water, dirt, or debris.

Performances

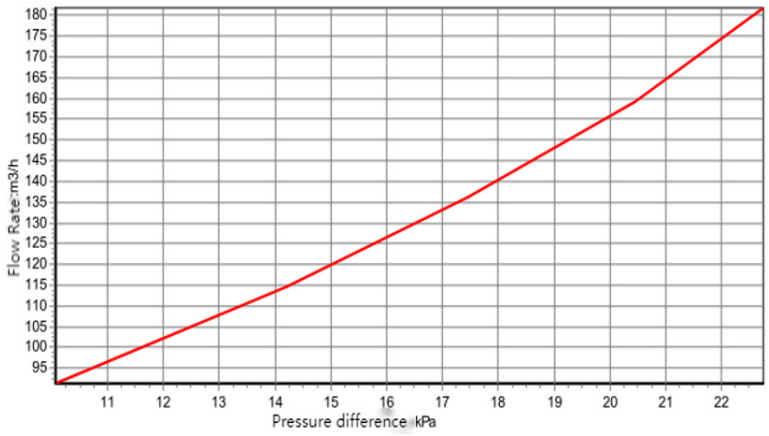
Pressure loss - **DN 80** (fully open valve):



kv-values for **DN 80** (fully open valve):

Flow m³/h	Head loss kpa	Flow velocity m/s	kv
56,72	11,95	3,30	164,14
68,73	14,37	4,00	181,37
78,61	16,11	4,58	195,92
90,91	18,32	5,30	212,49
102,41	20,38	5,97	226,97

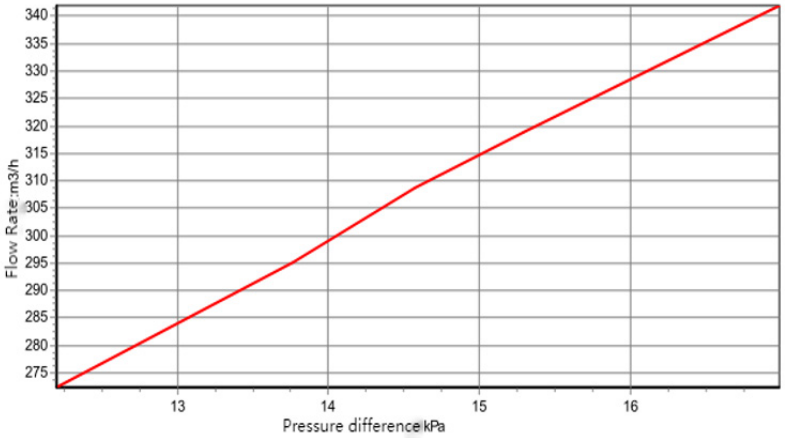
Pressure loss - **DN 100** (fully open valve):



kv-values for **DN 100** (fully open valve):

Flow m³/h	Head loss kpa	Flow velocity m/s	kv
91,37	10,07	3,09	288,02
114,57	14,21	3,88	304,13
136,19	17,47	4,61	326,03
159,08	20,45	5,38	351,98
181,83	22,75	6,15	381,43

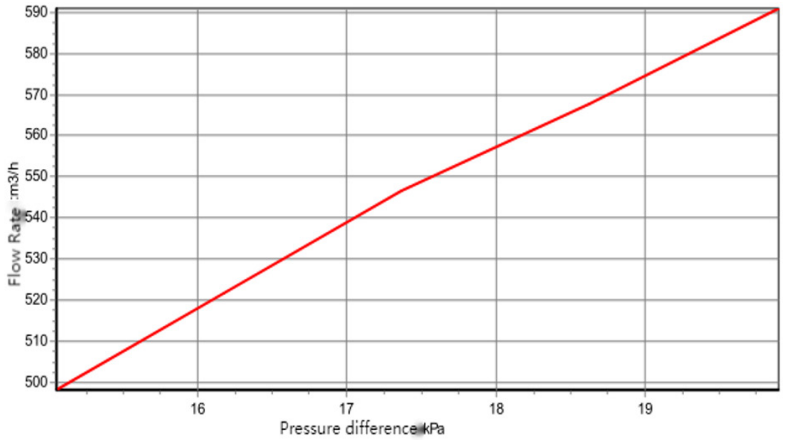
Pressure loss - DN 150 (fully open valve):



kv-values for DN 150 (fully open valve):

Flow m³/h	Head loss kpa	Flow velocity m/s	kv
272,42	12,20	4,06	780,31
295,19	13,77	4,40	795,81
308,78	14,57	4,60	809,25
318,86	15,29	4,75	815,76
341,92	16,99	5,09	830,00

Pressure loss - DN 200 (fully open valve):



kv-values for DN 200 (fully open valve):

Flow m³/h	Head loss kpa	Flow velocity m/s	kv
498,17	15,05	4,29	1284,61
521,88	16,18	4,49	1298,07
546,75	17,37	4,70	1312,63
567,93	18,63	4,89	1316,60
590,97	19,89	5,09	1325,65

GENERAL INFO

- Installers should be trained or experienced to install and understand the product.
- Read and understand all technical datasheets and installation instructions before attempting to install, remove or adjust any Profit piping products.
- Depressurise and drain the sprinkler installation system before attempting to install, remove or adjust any Profit piping products.
- Never work on piping systems that are pressurised and / or filled with water.
- Piping Logistics reserves the right to change specifications, designs and / or standard equipment without notice and without incurring in any obligations.
- Use the necessary Personal Protection Equipment (PPE) to avoid personal injury (helmet, safety shoes and goggles, Profit gloves).

Failure to follow these instructions could result in death or serious injury and property damage.

We advise to always store our products in closed and dry environments, the products do not need any specific maintenance once installed on an aboveground sprinkler installation.

REVISION TABLE

Date	△	Notes
19/02/2024		Initial release
19/02/2024	A	Page 3 - The weight has been added in the 'trimset dimensions' table.
05/11/2025	B	Page 2 - Update of the technical drawing.