

FC.RBV.11 High Performance Blast Valves

•FC-RBV-11-OW
Wall surface mounted

•FC-RBV-11-IW
Casted in the wall

•FC-RBV-11-D
Duct connected

PATENTED

The innovative tortoiseshell design to ensure high performance of blast resistance

Modular design for various matrixes by specific application

Unique tiny blade design enables rapid response to blast waves to assure approximately 100% impulse block rate



Double acting for enhanced protection

Excellent corrosion resistance enables long term maintenance-free



ATEX Certified for Zone 1 & 2,
Zone 21 & 22

FC-RBV-11 high performance blast valves are specifically developed for those applications where protection from extremely high pressure and dual side protection are required. Its state of art design assures it provides the high impulse block rate against blast waves, which makes it one of the best safety solutions in the world.

FC-RBV-11 high performance blast valves could serve wide range applications, including civil defense, OGP, nuclear power, chemical, etc.

[Product features and benefits]

- > **High performance of blast resistance**
Innovative tortoiseshell design to ensure high performance of blast resistance against blast waves with peak pressure more than 13 bar reflected by long duration and multiple blast impacts and maintain all functions after blasts.
- > **High performance of impulse block rate**
Unique tiny blade design enables rapid response to blast waves to assure approximately 100% impulse block rate.
- > **Automatic-reset**
Being able to retrieve ventilation function automatically after the blast.
- > **Double acting**
Being able to provide protection from both positive pressure and negative pressure.
- > **Excellent corrosion resistance**
Being made of chemical-resistant materials ensures long term maintenance-free.
- > **ATEX certified**
Safely work in explosive atmospheres.

[Order Numbers]

ATO PN: FCRBV11-[A]-[B]-[C]-[D]-[E]-[F]-[G]

A	B	C	D	E	F	G
Application	Mounting type	Block treatment (Casted aluminum alloy)	Blade treatment (Aluminum alloy)	Material of frame	Column number	Row number
H-Hardened shelter I-Industry	OW-Wall surface mounted IW-Casted in the wall D-Duct connected	1-Hard anodizing 2-Anodizing 3-Powder coated 4-None	1-Hard anodizing 2-Anodizing	1-Stainless Steel 316 2-Stainless Steel 304 3-Hot galvanized steel 4-Epoxy/PU coated steel	01 02 ...	01 02 ...

[Product Specifications]

Designed peak pressure: >13 bar reflected

Designed blast duration: >70 ms

Impulse block rate: >99.8% (13 bar peak pressure reflected / 70 ms)

Designed operating temperature: -30 °C to 300 °C

High temperature resistance: >40 mins at 300 °C

Air flow rate of single block: Intake 620 m³/h at 100Pa

Exhaust 600 m³/h at 100Pa

Certification: Product is type tested by VTT, Finland

ATEX Type:  Based on standards EN1127-1:2019 and EN ISO 80079-36:2016 under ATEX directive 2014/34/EU (Gas), Zone 1 & 2, IIC, T6...T2.
(Dust), Zone 21 & 22, IIIC, T70°C~T285°C.

Figure 1 is a line graph titled "Exhaust/Intake" showing the relationship between Air flow rate (m³/h) on the x-axis and Pressure drop (Pa) on the y-axis. The x-axis ranges from 0 to 1400 m³/h with major grid lines every 200 units and minor grid lines every 100 units. The y-axis ranges from 20 to 500 Pa with major grid lines every 100 units and minor grid lines every 50 units. Two linear curves are plotted, both starting at approximately 20 Pa at 0 m³/h. The upper curve reaches 500 Pa at 1400 m³/h, and the lower curve reaches approximately 480 Pa at 1400 m³/h.

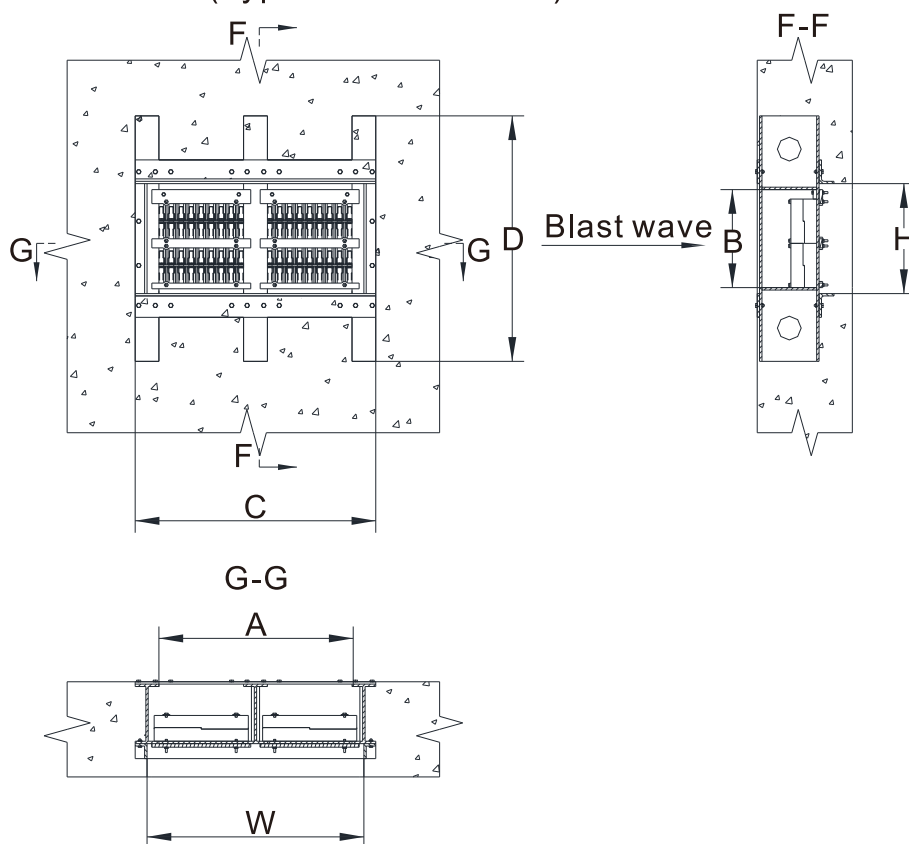
Air flow rate (m³/h)	Pressure drop (Pa) - Upper Curve	Pressure drop (Pa) - Lower Curve
0	20	20
200	60	55
400	100	90
600	140	125
800	180	160
1000	220	195
1200	260	230
1400	300	265

[Installation types and sizes]

Figure 1: Schematic diagram of the experimental setup. The top part shows a top view of the specimen with dimensions: 20, 190, 50, 110, 20, 200, 50, A, C, B, D, and a hole of diameter $\Phi 12$. The bottom part shows a side view of the specimen with dimensions W and H, and a cross-section of the specimen showing internal structure and a 'Blast wave' direction.

Type	Concrete Wall (mm)		A (mm)	B (mm)	C (mm)	D (mm)	100 Pa (m ³ /h)	200 Pa (m ³ /h)	300 Pa (m ³ /h)
	W	H							
FC-RBV-11-OW-1x1	366	156	426	216	646	436	600	850	1,040
FC-RBV-11-OW-1x2	366	350	426	410	646	630	1,200	1,700	2,080
FC-RBV-11-OW-1x3	366	544	426	604	646	824	1,800	2,550	3,120
FC-RBV-11-OW-1x4	366	738	426	798	646	1,018	2,400	3,400	4,160
FC-RBV-11-OW-1x5	366	932	426	992	646	1,212	3,000	4,250	5,200
FC-RBV-11-OW-1x6	366	1,126	426	1,186	646	1,406	3,600	5,100	6,240
FC-RBV-11-OW-1x7	366	1,320	426	1,380	646	1,600	4,200	5,950	7,280
FC-RBV-11-OW-1x8	366	1,514	426	1,574	646	1,794	4,800	6,800	8,320
FC-RBV-11-OW-1x9	366	1,708	426	1,768	646	1,988	5,400	7,650	9,360
FC-RBV-11-OW-1x10	366	1,902	426	1,962	646	2,182	6,000	8,500	10,400
FC-RBV-11-OW-2x2	770	350	830	410	1,050	630	2,400	3,400	4,160
FC-RBV-11-OW-2x3	770	544	830	604	1,050	824	3,600	5,100	6,240
FC-RBV-11-OW-2x4	770	738	830	798	1,050	1,018	4,800	6,800	8,320
FC-RBV-11-OW-2x5	770	932	830	992	1,050	1,212	6,000	8,500	10,400
FC-RBV-11-OW-2x6	770	1,126	830	1,186	1,050	1,406	7,200	10,200	12,480
FC-RBV-11-OW-2x7	770	1,320	830	1,380	1,050	1,600	8,400	11,900	14,560
FC-RBV-11-OW-2x8	770	1,514	830	1,574	1,050	1,794	9,600	13,600	16,640
FC-RBV-11-OW-2x9	770	1,708	830	1,768	1,050	1,988	10,800	15,300	18,720
FC-RBV-11-OW-2x10	770	1,902	830	1,962	1,050	2,182	12,000	17,000	20,800
FC-RBV-11-OW-3x3	1,174	544	1,234	604	1,454	824	5,400	7,650	9,360
FC-RBV-11-OW-3x4	1,174	738	1,234	798	1,454	1,018	7,200	10,200	12,480
FC-RBV-11-OW-3x5	1,174	932	1,234	992	1,454	1,212	9,000	12,750	15,600
FC-RBV-11-OW-3x6	1,174	1,126	1,234	1,186	1,454	1,406	10,800	15,300	18,720
FC-RBV-11-OW-3x7	1,174	1,320	1,234	1,380	1,454	1,600	12,600	17,850	21,840
FC-RBV-11-OW-3x8	1,174	1,514	1,234	1,574	1,454	1,794	14,400	20,400	24,960
FC-RBV-11-OW-3x9	1,174	1,708	1,234	1,768	1,454	1,988	16,200	22,950	28,080
FC-RBV-11-OW-3x10	1,174	1,902	1,234	1,962	1,454	2,182	18,000	25,500	31,200

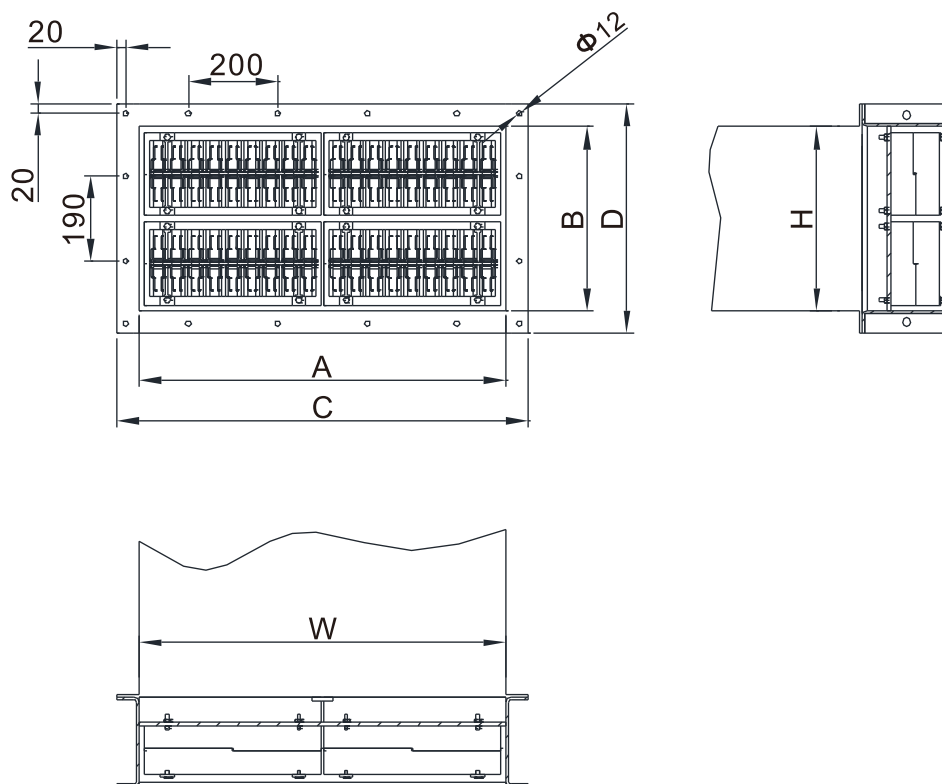
ii. Casted in the wall (Type FC-RBV-11-IW)



Type	Concrete Wall (mm)		A (mm)	B (mm)	C (mm)	D (mm)	100 Pa (m ³ /h)	200 Pa (m ³ /h)	300 Pa (m ³ /h)
	W	H							
FC-RBV-11-IW-1x1	452	280	362	230	552	830	600	850	1,040
FC-RBV-11-IW-1x2	452	470	362	420	552	1,020	1,200	1,700	2,080
FC-RBV-11-IW-1x3	452	660	362	610	552	1,210	1,800	2,550	3,120
FC-RBV-11-IW-1x4	452	850	362	800	552	1,400	2,400	3,400	4,160
FC-RBV-11-IW-1x5	452	1,040	362	990	552	1,590	3,000	4,250	5,200
FC-RBV-11-IW-1x6	452	1,230	362	1,180	552	1,780	3,600	5,100	6,240
FC-RBV-11-IW-1x7	452	1,420	362	1,370	552	1,970	4,200	5,950	7,280
FC-RBV-11-IW-1x8	452	1,610	362	1,560	552	2,160	4,800	6,800	8,320
FC-RBV-11-IW-1x9	452	1,800	362	1,750	552	2,350	5,400	7,650	9,360
FC-RBV-11-IW-1x10	452	1,990	362	1,940	552	2,540	6,000	8,500	10,400
FC-RBV-11-IW-2x1	904	280	814	230	1,004	830	1,200	1,700	2,080
FC-RBV-11-IW-2x2	904	470	814	420	1,004	1,020	2,400	3,400	4,160
FC-RBV-11-IW-2x3	904	660	814	610	1,004	1,210	3,600	5,100	6,240
FC-RBV-11-IW-2x4	904	850	814	800	1,004	1,400	4,800	6,800	8,320

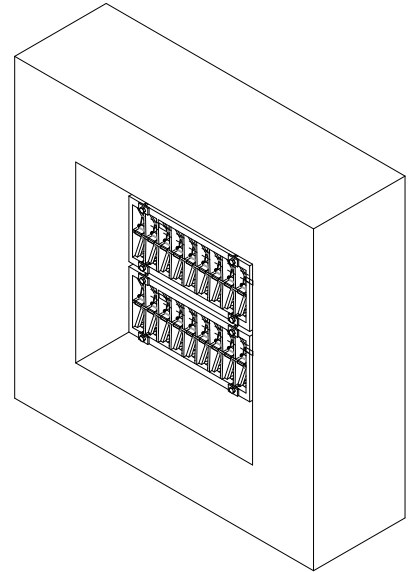
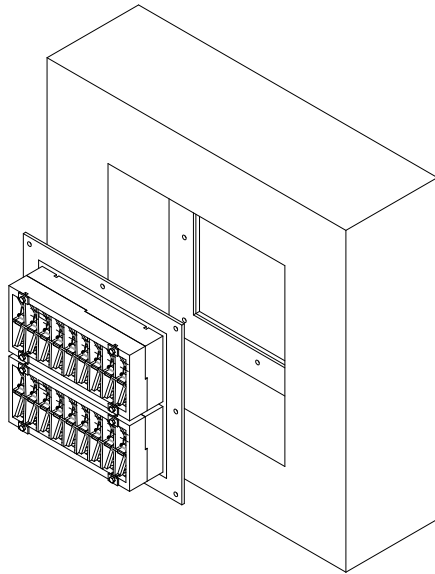
Type	Concrete Wall (mm)		A (mm)	B (mm)	C (mm)	D (mm)	100 Pa (m ³ /h)	200 Pa (m ³ /h)	300 Pa (m ³ /h)
	W	H							
FC-RBV-11-IW-2x5	904	1,040	814	990	1,004	1,590	6,000	8,500	10,400
FC-RBV-11-IW-2x6	904	1,230	814	1,180	1,004	1,780	7,200	10,200	12,480
FC-RBV-11-IW-2x7	904	1,420	814	1,370	1,004	1,970	8,400	11,900	14,560
FC-RBV-11-IW-2x8	904	1,610	814	1,560	1,004	2,160	9,600	13,600	16,640
FC-RBV-11-IW-2x9	904	1,800	814	1,750	1,004	2,350	10,800	15,300	18,720
FC-RBV-11-IW-2x10	904	1,990	814	1,940	1,004	2,540	12,000	17,000	20,800
FC-RBV-11-IW-3x1	1,356	280	1,266	230	1,456	830	1,800	2,550	3,120
FC-RBV-11-IW-3x2	1,356	470	1,266	420	1,456	1,020	3,600	5,100	6,240
FC-RBV-11-IW-3x3	1,356	660	1,266	610	1,456	1,210	5,400	7,650	9,360
FC-RBV-11-IW-3x4	1,356	850	1,266	800	1,456	1,400	7,200	10,200	12,480
FC-RBV-11-IW-3x5	1,356	1,040	1,266	990	1,456	1,590	9,000	12,750	15,600
FC-RBV-11-IW-3x6	1,356	1,230	1,266	1,180	1,456	1,780	10,800	15,300	18,720
FC-RBV-11-IW-3x7	1,356	1,420	1,266	1,370	1,456	1,970	12,600	17,850	21,840
FC-RBV-11-IW-3x8	1,356	1,610	1,266	1,560	1,456	2,160	14,400	20,400	24,960
FC-RBV-11-IW-3x9	1,356	1,800	1,266	1,750	1,456	2,350	16,200	22,950	28,080
FC-RBV-11-IW-3x10	1,356	1,990	1,266	1,940	1,456	2,540	18,000	25,500	31,200

iii. Duct connected (Type FC-RBV-11-D)

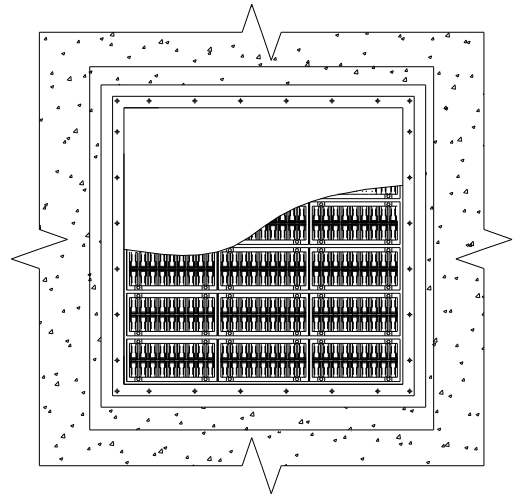
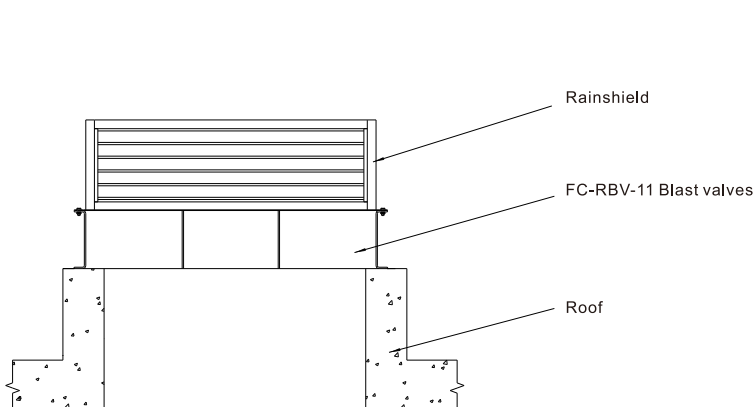


Type	Duct (mm)		A (mm)	B (mm)	C (mm)	D (mm)	100 Pa (m ³ /h)	200 Pa (m ³ /h)	300 Pa (m ³ /h)
	W	H							
FC-RBV-11-D-1x1	426	216	426	216	526	316	600	850	1,040
FC-RBV-11-D-1x2	426	410	426	410	526	510	1,200	1,700	2,080
FC-RBV-11-D-1x3	426	604	426	604	526	704	1,800	2,550	3,120
FC-RBV-11-D-1x4	426	798	426	798	526	898	2,400	3,400	4,160
FC-RBV-11-D-1x5	426	992	426	992	526	1,092	3,000	4,250	5,200
FC-RBV-11-D-1x6	426	1,186	426	1,186	526	1,286	3,600	5,100	6,240
FC-RBV-11-D-1x7	426	1,380	426	1,380	526	1,480	4,200	5,950	7,280
FC-RBV-11-D-1x8	426	1,574	426	1,574	526	1,674	4,800	6,800	8,320
FC-RBV-11-D-1x9	426	1,768	426	1,768	526	1,868	5,400	7,650	9,360
FC-RBV-11-D-1x10	426	1,962	426	1,962	526	2,062	6,000	8,500	10,400
FC-RBV-11-D-2x1	830	216	830	216	930	316	1,200	1,700	2,080
FC-RBV-11-D-2x2	830	410	830	410	930	510	2,400	3,400	4,160
FC-RBV-11-D-2x3	830	604	830	604	930	704	3,600	5,100	6,240
FC-RBV-11-D-2x4	830	798	830	798	930	898	4,800	6,800	8,320
FC-RBV-11-D-2x5	830	992	830	992	930	1,092	6,000	8,500	10,400
FC-RBV-11-D-2x6	830	1,186	830	1,186	930	1,286	7,200	10,200	12,480
FC-RBV-11-D-2x7	830	1,380	830	1,380	930	1,480	8,400	11,900	14,560
FC-RBV-11-D-2x8	830	1,574	830	1,574	930	1,674	9,600	13,600	16,640
FC-RBV-11-D-2x9	830	1,768	830	1,768	930	1,868	10,800	15,300	18,720
FC-RBV-11-D-2x10	830	1,962	830	1,962	930	2,062	12,000	17,000	20,800
FC-RBV-11-D-3x1	1,234	216	1,234	216	1,334	316	1,800	2,550	3,120
FC-RBV-11-D-3x2	1,234	410	1,234	410	1,334	510	3,600	5,100	6,240
FC-RBV-11-D-3x3	1,234	604	1,234	604	1,334	704	5,400	7,650	9,360
FC-RBV-11-D-3x4	1,234	798	1,234	798	1,334	898	7,200	10,200	12,480
FC-RBV-11-D-3x5	1,234	992	1,234	992	1,334	1,092	9,000	12,750	15,600
FC-RBV-11-D-3x6	1,234	1,186	1,234	1,186	1,334	1,286	10,800	15,300	18,720
FC-RBV-11-D-3x7	1,234	1,380	1,234	1,380	1,334	1,480	12,600	17,850	21,840
FC-RBV-11-D-3x8	1,234	1,574	1,234	1,574	1,334	1,674	14,400	20,400	24,960
FC-RBV-11-D-3x9	1,234	1,768	1,234	1,768	1,334	1,868	16,200	22,950	28,080
FC-RBV-11-D-3x10	1,234	1,962	1,234	1,962	1,334	2,062	18,000	25,500	31,200

iv. Steel plate embedded in the wall



v. Roof mounting (Type FC-RBV-11-OW)



Please contact FUCARE distributor or FUCARE sales representatives for more information.

FuCare
Innovations for better protection

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