BOSS PRODUCTS LLC ®

ENGINEERED INDUSTRIAL SAFETY SOLUTIONS

BOSS PRODUCTS LLC ®

Transitioning the World to a Safer Working Environment

Our History and Commitment to support our valued customer

BOSS PRODUCTS was founded in 2012 with a singular vision to assemble a complete offering of integrated energy saving, fire and explosion protection components for industrial filtration and process industries. We are committed to provide the highest quality products available, along with the technical support that is necessary to assist our growing select distribution and OEM customers. We proudly offer **THE LARGEST GROUPING OF NFPA COMPLIANT, FM, UL APPROVED & CERTIFIED PRODUCTS** available anywhere in the world. **BOSS PRODUCTS** began with a simple goal to deliver quality, competitively priced products from an "in stock" inventory.
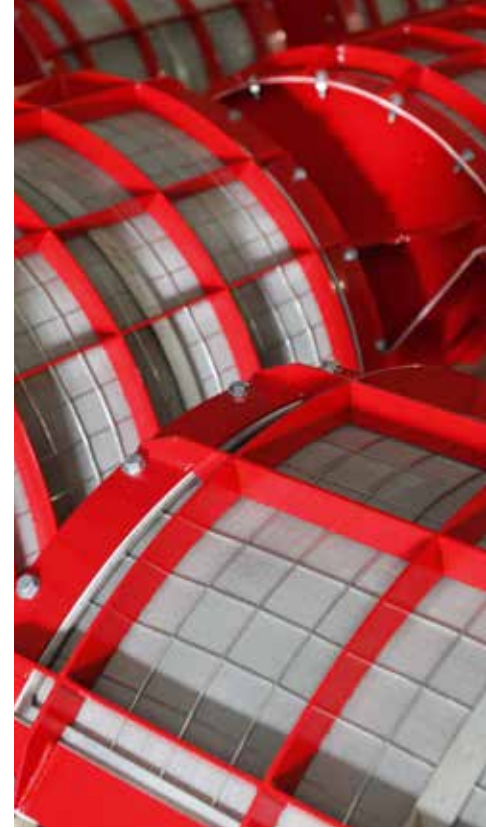
BOSS PRODUCTS remains dedicated to expand its engineering, technical support and customer advocacy capabilities. We recognize that our customers appreciate a supplier that is committed to providing the before and after sale service that makes their job easier.

BOSS PRODUCTS moved operations to San Antonio, Texas in the spring of 2018. This transition from Washington State has given us the opportunity to establish a state of the art distribution, manufacturing and training facility. We invite our distribution family to visit **BOSS PRODUCTS** to show you some real Texas hospitality. Our mission is to become your distribution's single source for **ENERGY SAVING "SAFETY SMART" CONTROL SYSTEMS & FIRE AND EXPLOSION PROTECTION COMPONENTS**.

We continue to expand our in-house electronics manufacturing capability, building UL certified control panels for our **EcoMAXX®** brand and **OEM** manufacturers.

BOSS PRODUCTS is committed to a 2021 reintroduction of our **EcoBOSS® Energy Management Control Systems**. We recognize our responsibility to contribute to safety in the workplace and energy conservation.

w w w . b o s s p r o d u c t s a m e r i c a . c o m
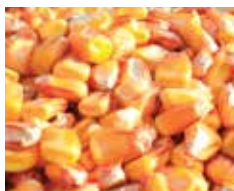
| Agriculture & Grain | Food and Beverage | Metal Working | Pharmaceutical | Wood Processing |

EV-VL VD VDHV p21
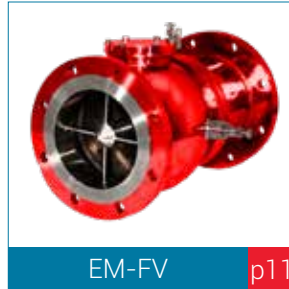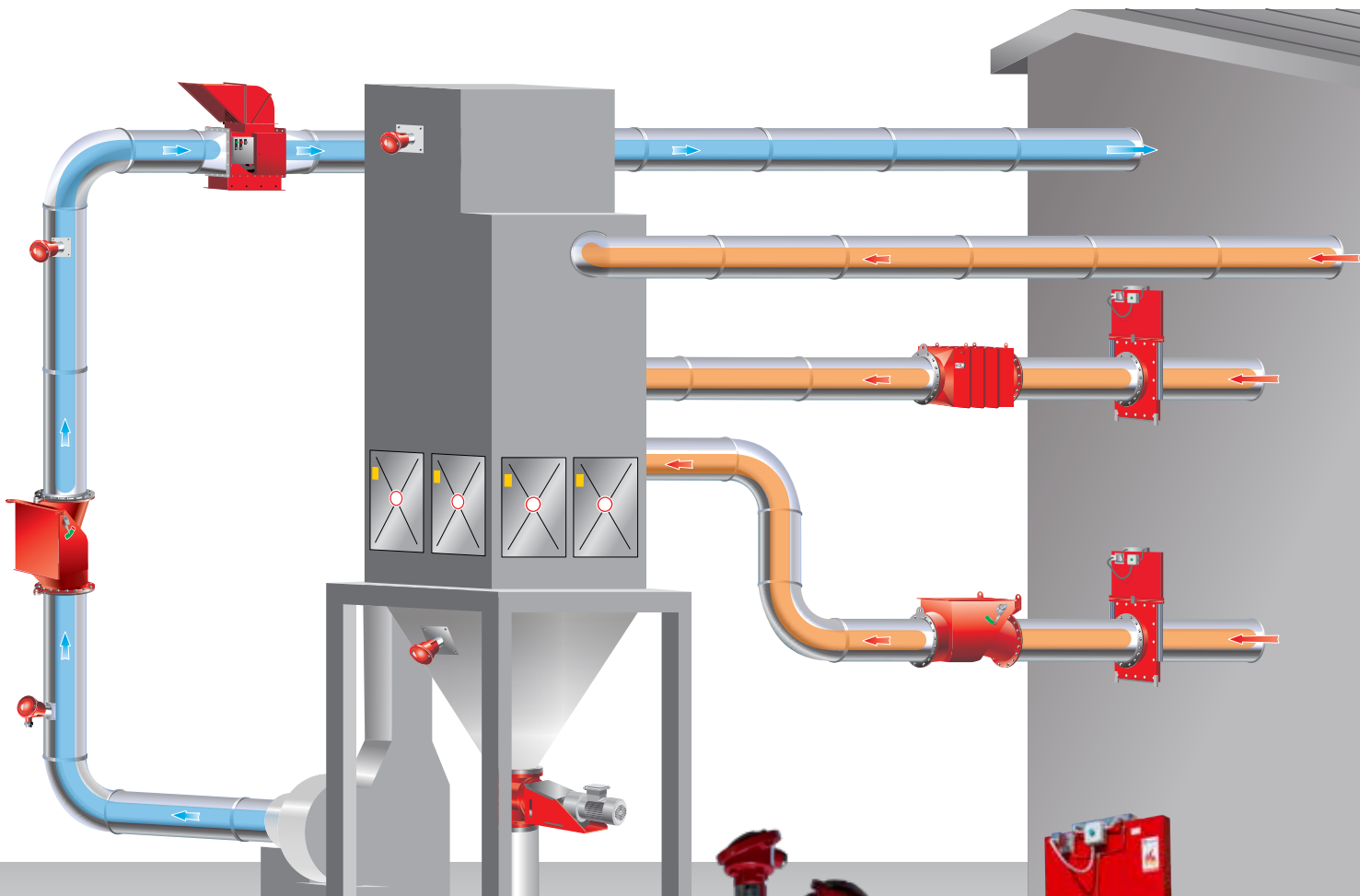
EMVDL-RVEX p15

RS-PCUSP1L p37

EV-VQ p31

RS-PCU1610SD p37
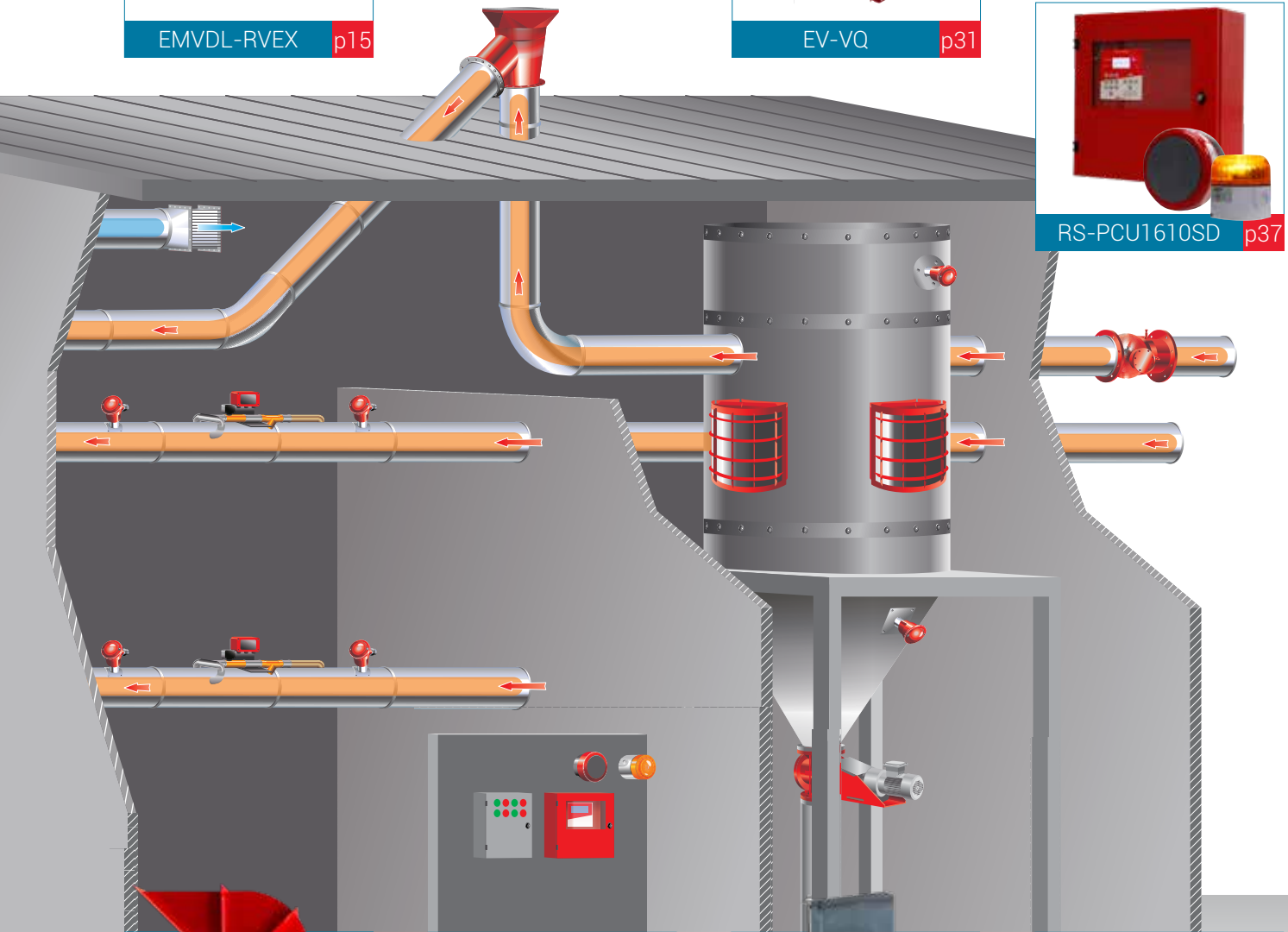
Heavy Duty High Speed AbortGate p35

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Contents

Management strategies for fire typically focus on the elimination/control of one of the **three key elements necessary for a fire** — the three key elements are often represented by the fire triangle. Managing one or more of the elements in the triangle can decrease the risk of a fire.

Management strategies for dust explosions typically consider 5 key elements - **fuel, heat, and oxygen, dispersion of dust and confinement of dust**. As with management strategies for fire, management strategies for explosions require the elimination/control of one or more of the elements in the explosion pentagon.
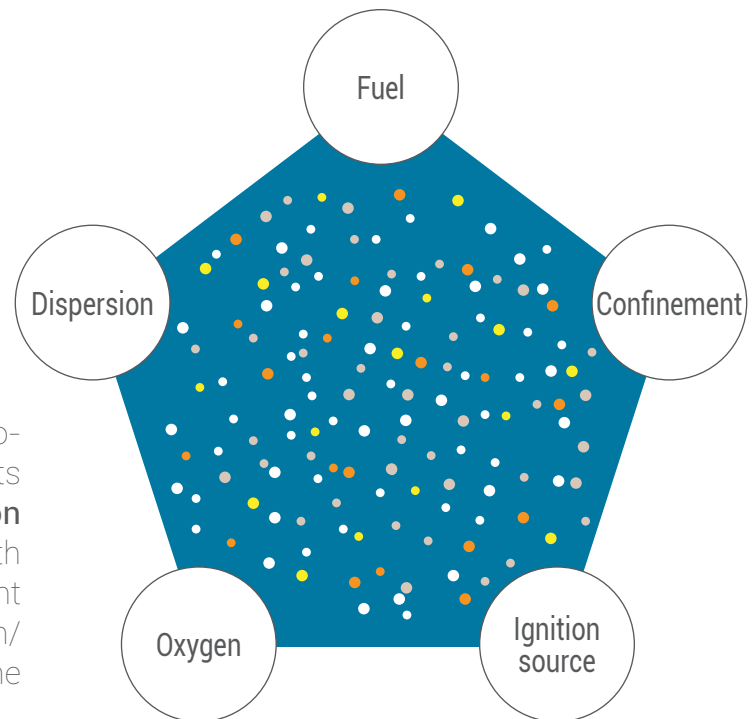
BOSS PRODUCTS engineers have decades of experience in the design and installation of multi-application industrial dust collecting, bulk handling & process systems. Today's NFPA regulatory guidelines governing fire & explosion protection installations are more specific and well defined than ever before.

Boss Products' strategies for Fire and Explosion mitigation include : **Prevention, Isolation, Diversion, and Venting**.

Boss Products has developed and brought to market a family of SAFETY SMART solutions to work as individual components or as a seamless plantwide solution to meet most needs.

CERTIFICATIONS
NFPA
ATEX
UL
EU Certificate
INERIS
Factory Mutual

FM APPROVED · Ex · C E · NFPA

Explosion Isolation Valve VIGIFLAP

APPLICATIONS

The **VIGILEX® VIGIFLAP®** is an explosion isolation valve designed to prevent propagation of overpressure or flame front caused by an explosion downstream in vessels such as dust collectors, cyclones, and filters.

The valve is held open either by air flow or proprietary locking mechanism. As a result, the **VIGIFLAP** valve can be used as an explosion isolation device for both the inlet and oulet of a vessel.

The **Explosion Isolation Valve VIGIFLAP** complies with **NFPA** guidelines and is an **ATEX Certified** device for the containment of explosion.
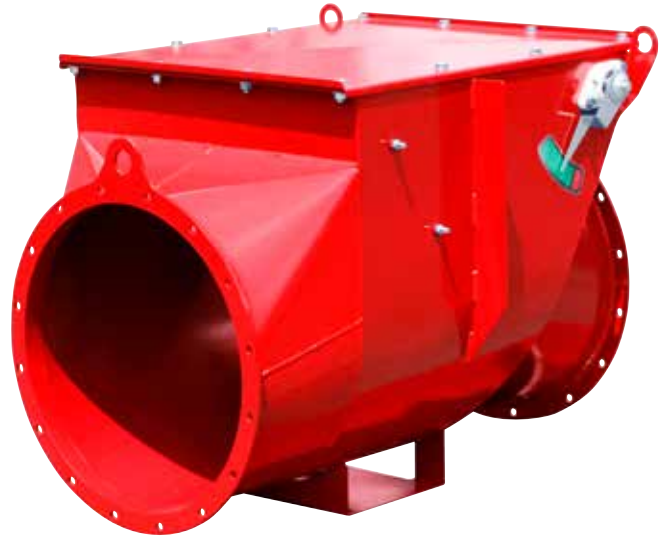
CERTIFICATIONS & STANDARDS
EN 16447
NFPA 69

STANDARD FEATURES
- **Body :** painted steel
- **100% stainless steel AISI 304**
- **Diameters :** ø6" to ø52" / ø160 mm to ø1320 mm
- **Gasket :** EPDM (Silicone FDA 392°F/180°C option)
- **Pressure drop :** Lower pressure drop with round domed flap

OPTIONAL FEATURES
The EV-VF is 100% NFPA 69 compliant with the following optional features :

- **Body :** Galvanized steel
- **Body :** Stainless steel
- **Frame silicone FDA :** 392°F/200 ºC

- Dust level sensor to prevent dust accumulation
- Connection box installed on the body, according to the ATEX zone (opposite side of the locking mechanism)

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DIMENSIONS

DIMENSIONS				
DN [inch]	DN [mm]	Door gasket	Body gasket	Body
ø 6	ø 160	EPDM	EPDM	Mild steel
ø 7	ø 180	EPDM	EPDM	Mild steel
ø 8	ø 200	EPDM	EPDM	Mild steel
ø 10	ø 250	EPDM	EPDM	Mild steel
ø 12	ø 300	EPDM	EPDM	Mild steel
ø 14	ø 350	EPDM	EPDM	Mild steel
ø 16	ø 400	EPDM	EPDM	Mild steel
ø 18	ø 450	EPDM	EPDM	Mild steel
ø 20	ø 500	EPDM	EPDM	Mild steel
ø 22	ø 550	EPDM	EPDM	Mild steel
ø 24	ø 600	EPDM	EPDM	Mild steel
ø 26	ø 650	EPDM	EPDM	Mild steel
ø 28	ø 700	EPDM	EPDM	Mild steel
ø 30	ø 750	EPDM	EPDM	Mild steel
ø 32	ø 800	EPDM	EPDM	Mild steel
ø 34	ø 850	EPDM	EPDM	Mild steel
ø 36	ø 900	EPDM	EPDM	Mild steel
ø 38	ø 950	EPDM	EPDM	Mild steel
ø 40	ø 1000	EPDM	EPDM	Mild steel
ø 42	ø 1050	EPDM	EPDM	Mild steel
ø 44	ø 1100	EPDM	EPDM	Mild steel
ø 46	ø 1150	EPDM	EPDM	Mild steel
ø 48	ø 1200	EPDM	EPDM	Mild steel
ø 50	ø 1250	EPDM	EPDM	Mild steel
ø 52	ø 1300	EPDM	EPDM	Mild steel

* Units in inches rounded to the closest whole number

MINIMUM INTERNAL DUST ACCUMULATION

The VigiFlap's unique inlet & outlet "Straight Through" design ensures very low static resistance and reduces dust accumulation.

FREE FLOW DESIGN

VIGILEX®

Explosion Isolation Valve VIGIFLAP

INSTALLATION

The **VIGIFLAP Valve** has been tested and certified with the process pipe installed on up & downstream sides of the valve, simulating **REAL WORLD CONDITIONS**.

360°

The VIGIFLAP Explosion Isolation Valve has been tested and certified for installation in ANY POSITION
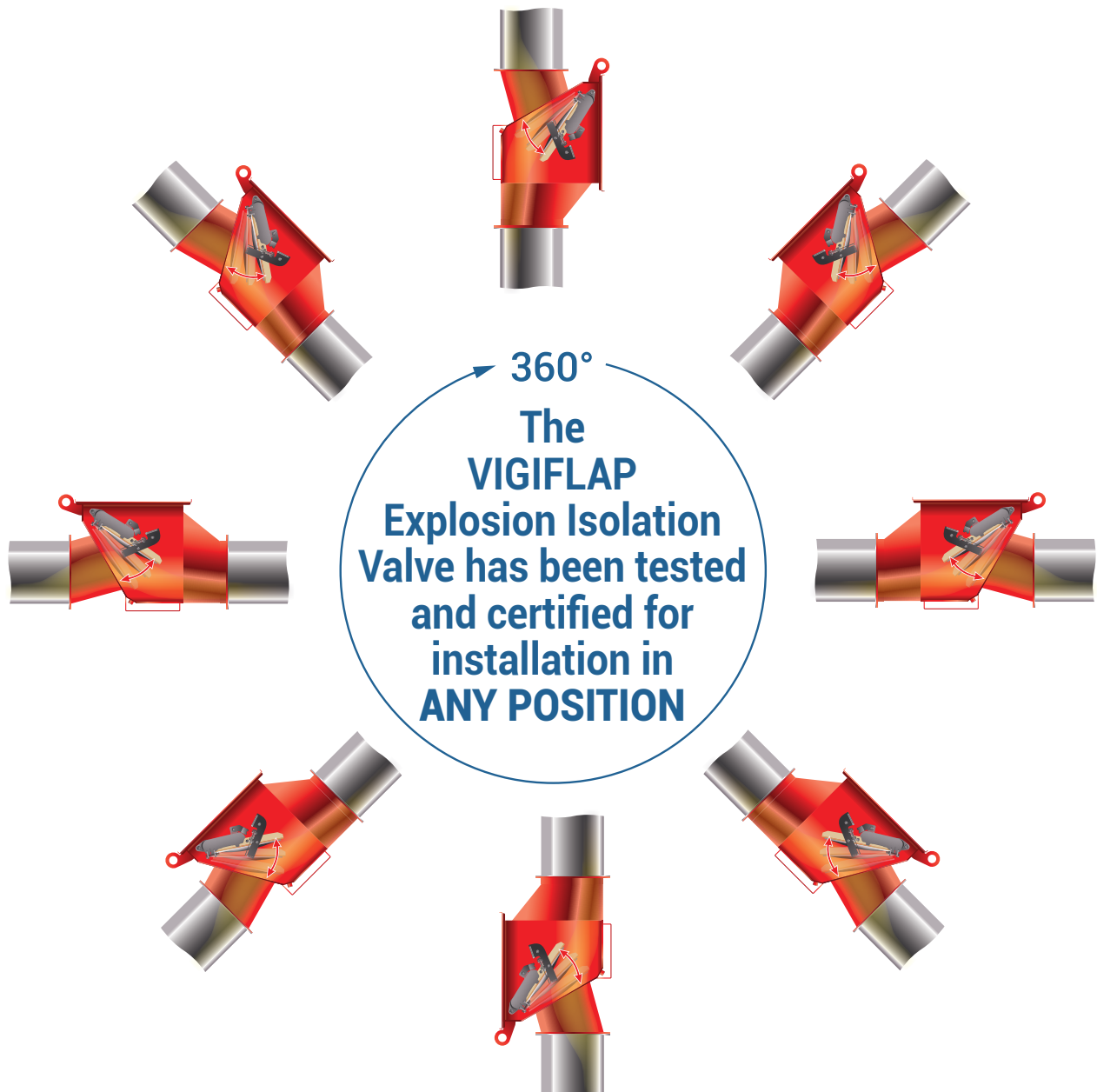
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PRESSURE DROP CURVES

PRESSURE DROP / In Flow Process (Dirty Air)

inch H$_2$O

(Graph: In Flow Process)

- Y-axis: 5,0 — 4,0 — 3,0 — 2,0 — 1,0 — 0
- X-axis (feet/min): 3000 — 3500 — 4000 — 4500 — 5000 — 5500

PRESSURE DROP / Reverse Process (Clean Air)

inch H$_2$O

(Graph: Reverse Process)

- Y-axis: 5,0 — 4,0 — 3,0 — 2,0 — 1,0 — 0
- X-axis (feet/min): 3000 — 3500 — 4000 — 4500 — 5000 — 5500

inch H$_2$O

- Y-axis (right): 5,0 — 4,0 — 3,0 — 2,0 — 1,0 — 0

Legend:
— Ø 6"/10"/14"   — Ø 7"   — Ø 8"   — Ø 12"/24"   — Ø 16"/30"   — Ø 18"/22"/28"   — Ø 20"/26"   — Ø 32"
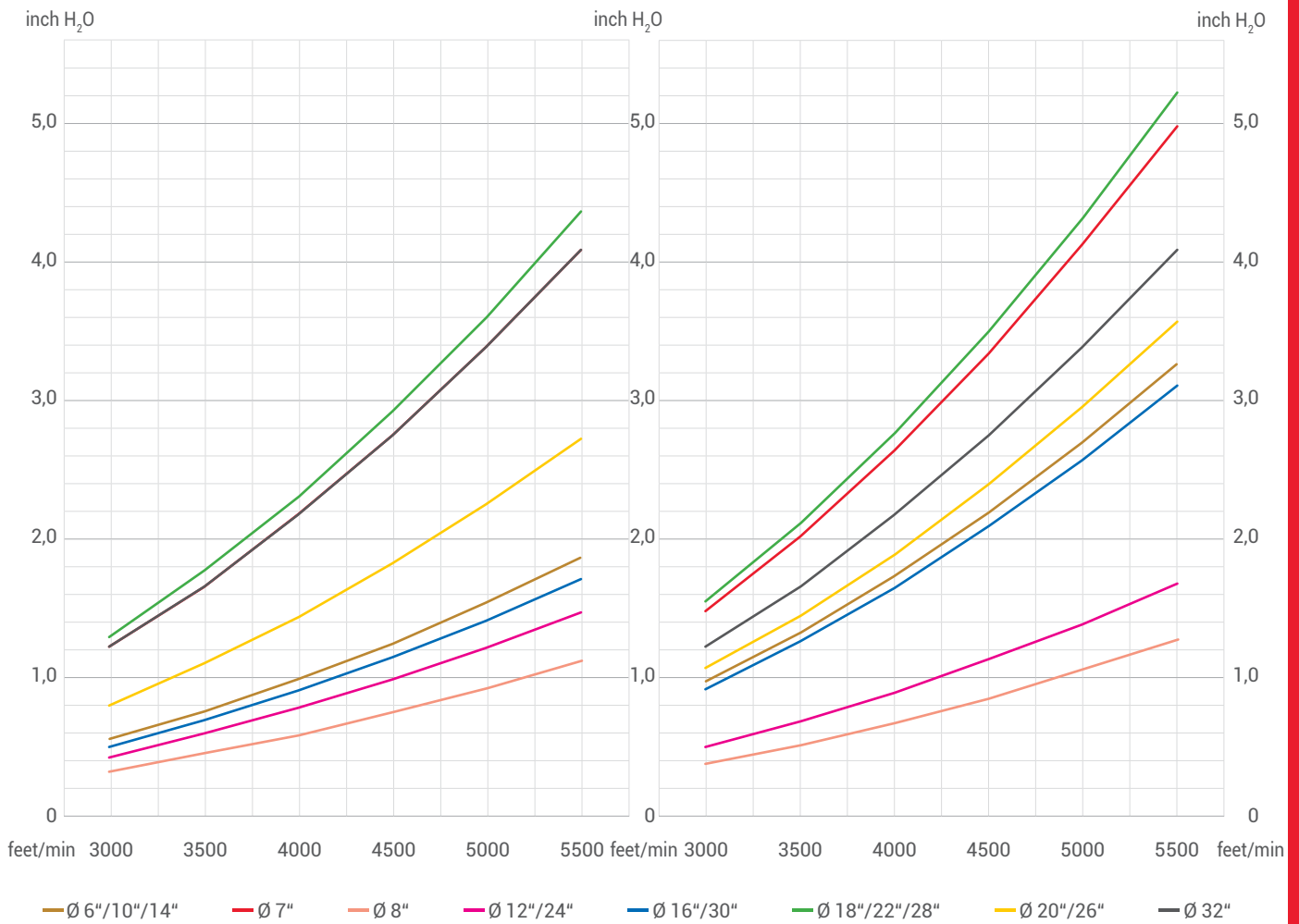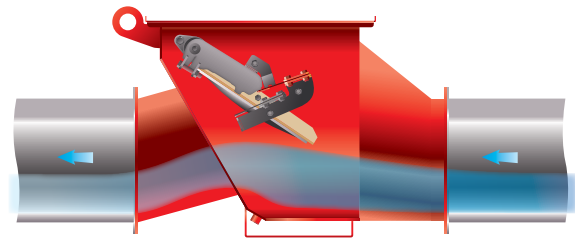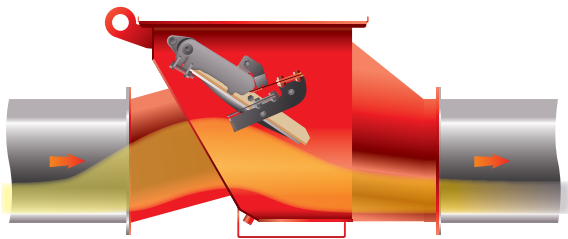
Explosion Isolation Valve VIGIFLAP

PROCESS FLOW POSITIONS

PROCESS FLOW

FLOW POSITIONS :

1 Flap is held open by process flow

Installation with floating flap

or
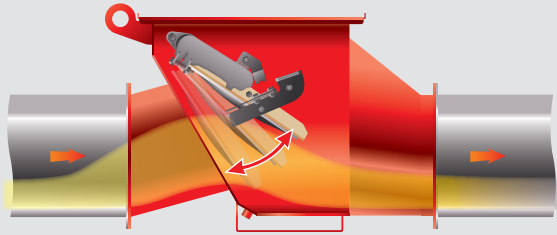
2 Flap locked in open position

Locked open flap for dirty airside

or

Locked open flap for clean airside

Installation with flap locked open
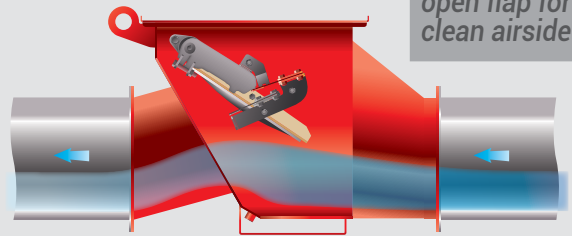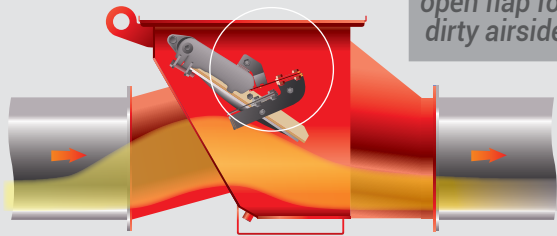
EXAMPLE DURING AN EXPLOSION EVENT

Explosion isolation is achieved by flap closure independent of being in free floating or locked open position
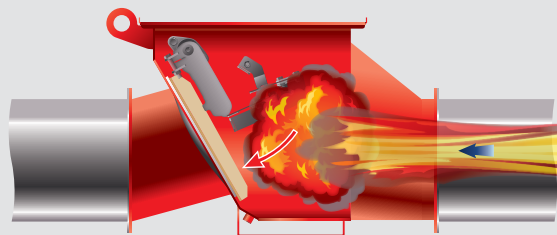
Manual locking mechanism reset is required

TECHNICAL INFORMATION

KST MAX	ST3 > 250 bar.m/s	AMBIENT TEMPERATURE	-4ºF… +140ºF -20ºC… +60ºC	FLUX	Overpressure or vacuum
PMAX	145 psi ≤ 10 bar	SPEED FLOW	2950-6890 fpm 15m/s… 30m/s	INTERIOR	ATEX zone 20
MESG	1/16" 1.5 mm (ex: sulfur)	DUST CONCENTRATION	No limit	OPERATING TEMPERATURE	EPDM gasket : -30º C + 70º C
DUST	Any kind of dust	POSITION OF THE DEVICE	Vertical / Horizontal		Silicone gasket : -10º C + 180º C

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INSTALLATION EXAMPLES

THE EXPLOSION ISOLATION VALVE VIGIFLAP IS DESIGNED FOR USE ON THE INLET AND OUTLET SIDES OF A FILTER OR VESSEL

PROCESS FLOW (The VIGIFLAP is always set in the open locked position when installed on the clean air or positive pressure side of a filter

Dirty air side

Clean air side

Flap locked open

Flap floating or locked open

Flap locked open
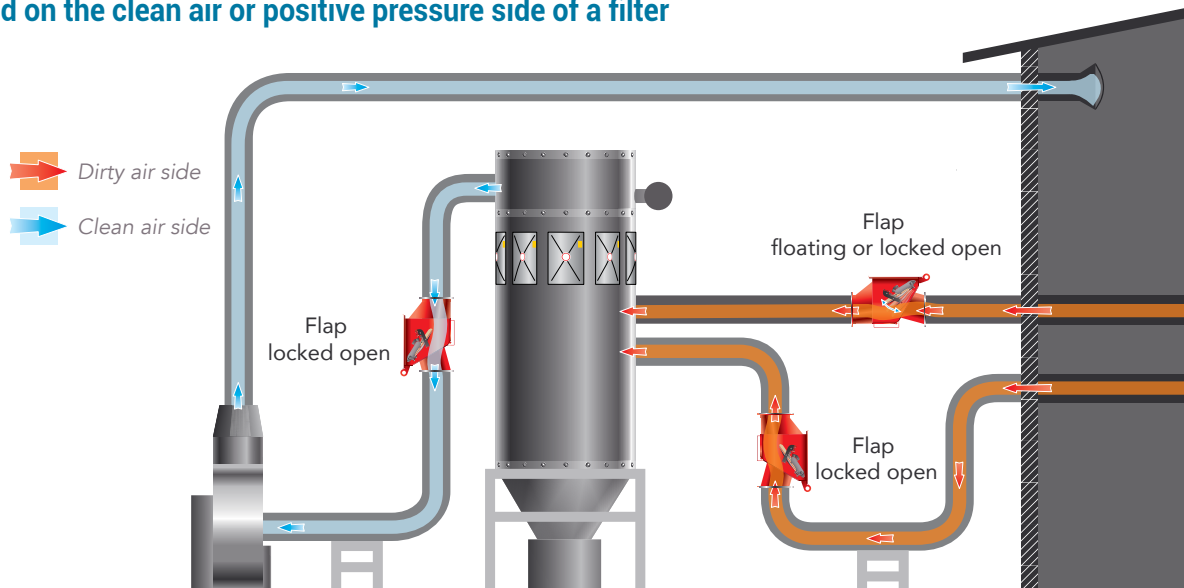
DEFLAGRATION EXPLOSIVE EVENT

EXPLOSION

Flap locked

Flap locked

Flap locked

Flap locked
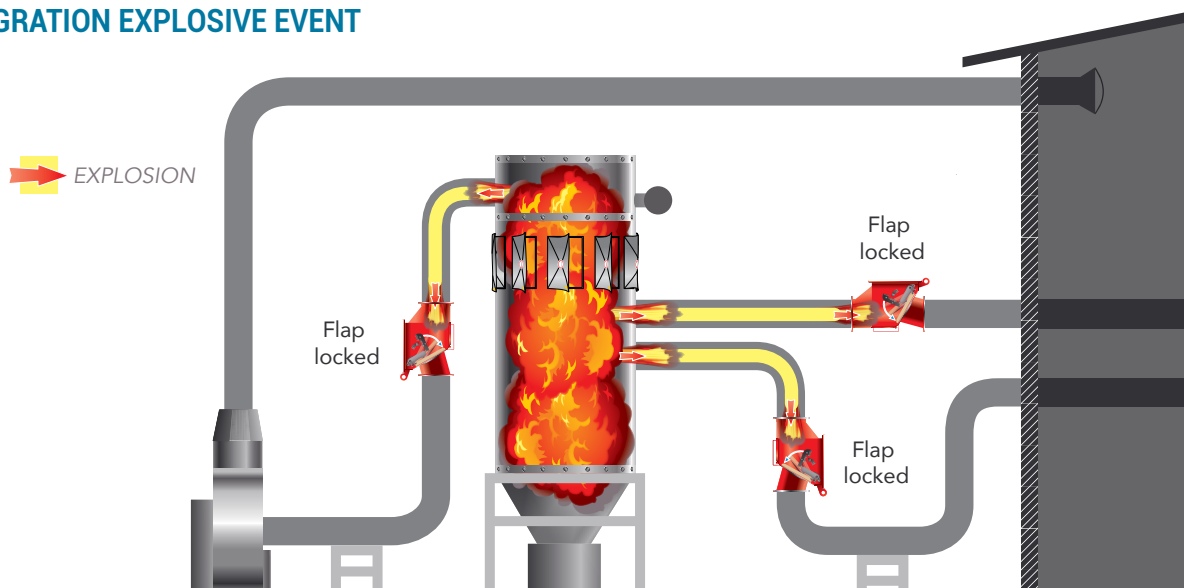
No Return Valve Combo/Metal

APPLICATIONS

Specifications

- ATEX Certified; NFPA 69 Compliant
- Heavy Duty Welded Steel Construction
- Epoxy Powder Coated Safety Red Finish
- Flanged Inlet and Outlet with Co-Flanges
- Grounding Lugs
- Locking Mechanism

NRV Combo Rated for:

- Class ST 3 Applications
- Kst max: 325 bar m/s
- Pred max: 1.0 bar (4"-7") 0.6 bar (8"- 36") 0.5 bar (40"- 48")
- Certification EN 16447

NRV Metal Rated for:

- Metallic and organic dusts
- Class ST 3 Applications
- Kst max: 400 bar m/s
- Pred max: 1.0 bar (8"-16") 0.6 bar (22")
- Certification EN 16447
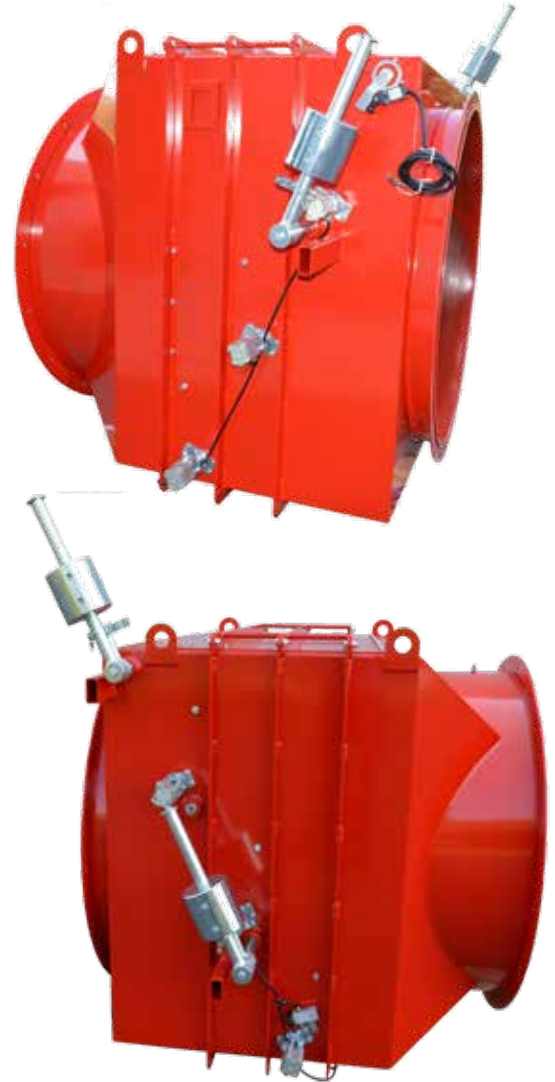
CERTIFICATIONS & STANDARDS
EN 16447
NFPA 69

NRV (Options Required for NFPA compliance)

- Microswitch mounted on **NRV** locking mechanism for automatic shutdown on an event. **ATEX Zone 21 and 22** are available on request.

- Adjustable Sensitivity Dust Level Sensor (capacitive) mounted on bottom of **NRV** for automatic shutdown when **0.15-0.20"** of dust has accumulated on bottom of NRV.

- **CP04 – UL** labeled intrinsically safe control panel with "System OK" and "System Fault" indicator lights. Complies with **NFPA 69** and **OSHA**. **UL698A (INTRINSIC SAFETY) UL508A for USA and cUL508A for Canada**

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DIMENSIONS

Dimensions : 4"-28" (1 flap)

Dimensions : 32"-36" (2 flaps)

Dimensions : 40"-48" (3 flaps)
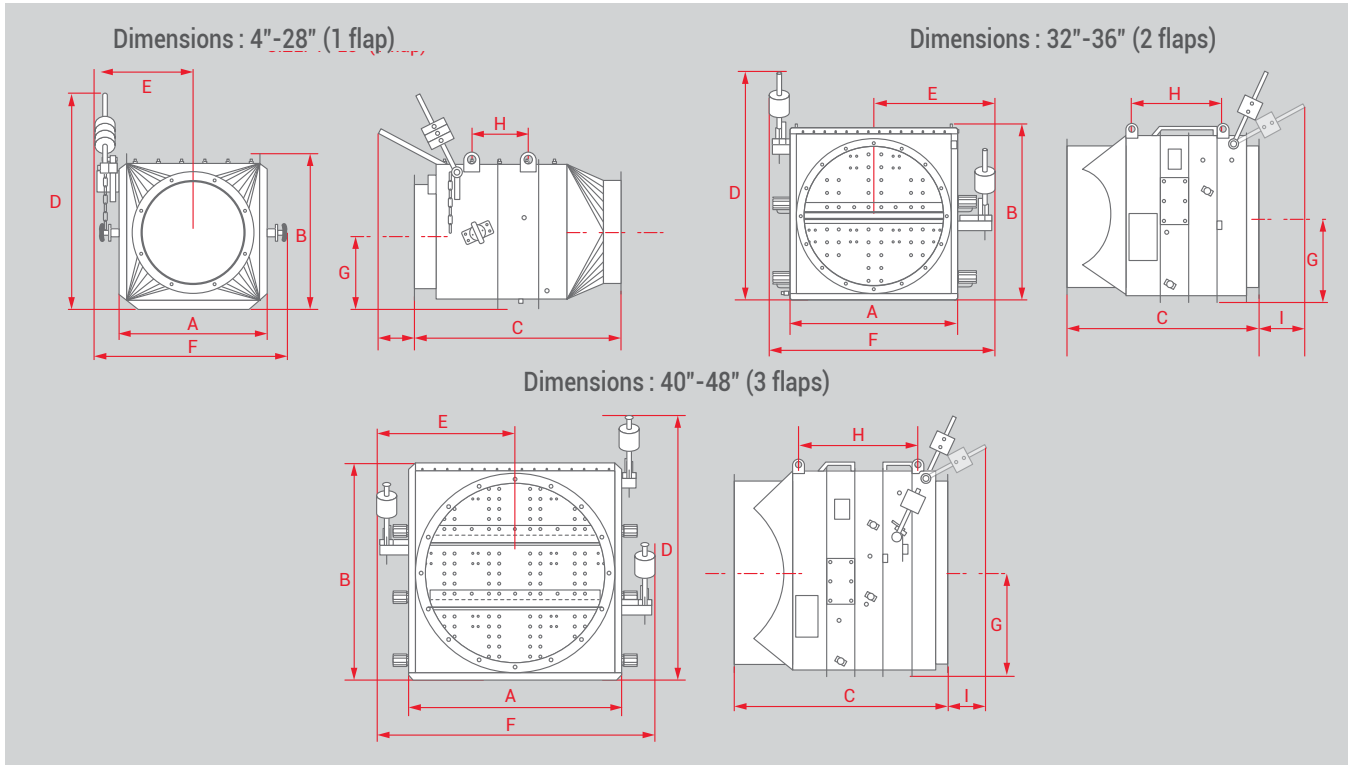
NO RETURN VALVE COMBO/METAL (NRVC/M) DIMENSIONS (SIZES 4" - 48")										
Ø	A	B	C	D	E	F	G	H	I	LBS
NRVC SIZES 4" - 7" RATED FOR : Class ST3 Applications — Kst max 325 bar m/s — Pred max 1.0 bar — Certification EN 16447										
100mm/4"	5.9	7.3	16.3	-	6.7	13.4	3.0	-	-	22
125mm/5"	6.9	8.3	17.3	-	7.1	14.2	3.5	-	-	24
160mm/6"	8.3	9.6	18.7	-	7.9	15.7	4.1	-	-	29
180mm/7"	9.1	10.4	19.5	-	8.3	16.5	4.5	-	-	31
NRVM SIZES 8" - 16", and 22" RATED FOR : Class ST3 Applications — Kst max 400 bar m/s — Pred max 1.0 bar — Certification EN 16447										
200mm/8"	14.2	14.2	22.6	23.2	10.6	20.1	5.5	-	4.9	68
250mm/10"	16.1	16.1	24.6	25.2	11.6	22.0	6.5	-	4.9	84
300mm/12"	18.1	18.1	26.6	27.1	12.6	24.0	7.5	-	4.9	106
350mm/14"	20.1	20.9	28.5	29.1	13.6	26.0	8.5	7.7	4.9	128
400mm/16"	22.0	22.8	30.5	31.1	14.6	28.0	9.5	9.1	4.9	150
550mm/22"	28.0	28.7	37.0	41.9	18.3	34.6	13.6	13.4	10.0	254
NRVC SIZES 18" - 48" RATED FOR : Class ST3 Applications — Kst max 325 bar m/s — Pred max 0.60 bar — Certification EN 16447										
450mm/18"	24.0	24.8	32.5	38.2	16.3	30.7	11.6	13.4	10.0	194
500mm/20"	26.0	26.8	34.4	40.0	17.3	32.7	12.6	13.4	10.0	220
600mm/24"	29.9	30.7	38.4	43.9	19.3	36.6	14.6	17.1	10.0	287
650mm/26"	31.9	32.7	40.9	45.9	20.3	38.6	15.6	17.1	10.0	342
700mm/28"	33.9	34.6	42.3	47.8	21.2	40.6	16.5	17.1	10.0	388
800mm/32"	38.6	40.4	44.5	52.4	28.0	52.2	19.1	22.0	10.4	639
900mm/36"	42.5	44.5	48.4	56.3	29.9	56.1	21.1	26.2	10.2	739
1000mm/40"	46.4	48.2	47.8	60.0	31.9	63.6	23.0	24.0	10.2	893
1100mm/44"	50.4	52.2	51.0	64.0	33.9	67.5	25.0	28.3	10.2	1058
1200mm/48"	54.3	56.1	54.1	68.0	35.8	71.5	27.0	31.3	10.2	1179

Float Valve EM-FV

APPLICATIONS

The **Float Valve EM-FV** is designed as an explosion isolation device in air streams with low to low moderate dust concentrations. The maximum allowed recommended particle size is approximately **500 microns**. A regular inspection and maintenance schedule is required to ensure that dust deposits that could interfere with the valve's function are not accumulating.

CERTIFICATIONS & STANDARDS
EN 15089
NFPA 69

TECHNICAL INFORMATION

ORGANIC DUST	St1 ≤ 200 bar.m/s St2 ≤ 300 bar.m/s	MAXIMUM EXPLOSION OVERPRESSURE	160 psi 11 bar	STAINLESS STEEL	-4 °F to +482 °F -20 °C to +250 °C >250 °C / 482 °F on request
GAS	kg ≤ 100 bar.m/s	HUMIDITY	10 – 90% R.H. (non-condensing)	PROCESS PRESSURE	12 psi ≤ pR ≤ 16 psi 800 mbar ≤ pR ≤ 1100 mbar
HYBRID MIXTURE IIA AND ETHANOL	120% LEL	OPERATING TEMPERATURES	Aluminum -4 °F to + 248 °F -20 °C to +90 °C	FLOW SPEED IN THE EXPLOSION DIRECTION	1970 - 5905 fpm 10 - 30 m/s
HYBRID MIXTURE IIA+IIB	80% LEL / 120% LEL	STEEL	-4 °F to + 194 °F -20 °C to +120 °C	CONTRARY TO THE EXPLOSION DIRECTION	6890 fpm max. 35 m/s

FLOAT VALVE ACTUATION

Explosion

Valve closed

Explosion

Valve closed

or

Directions of flow
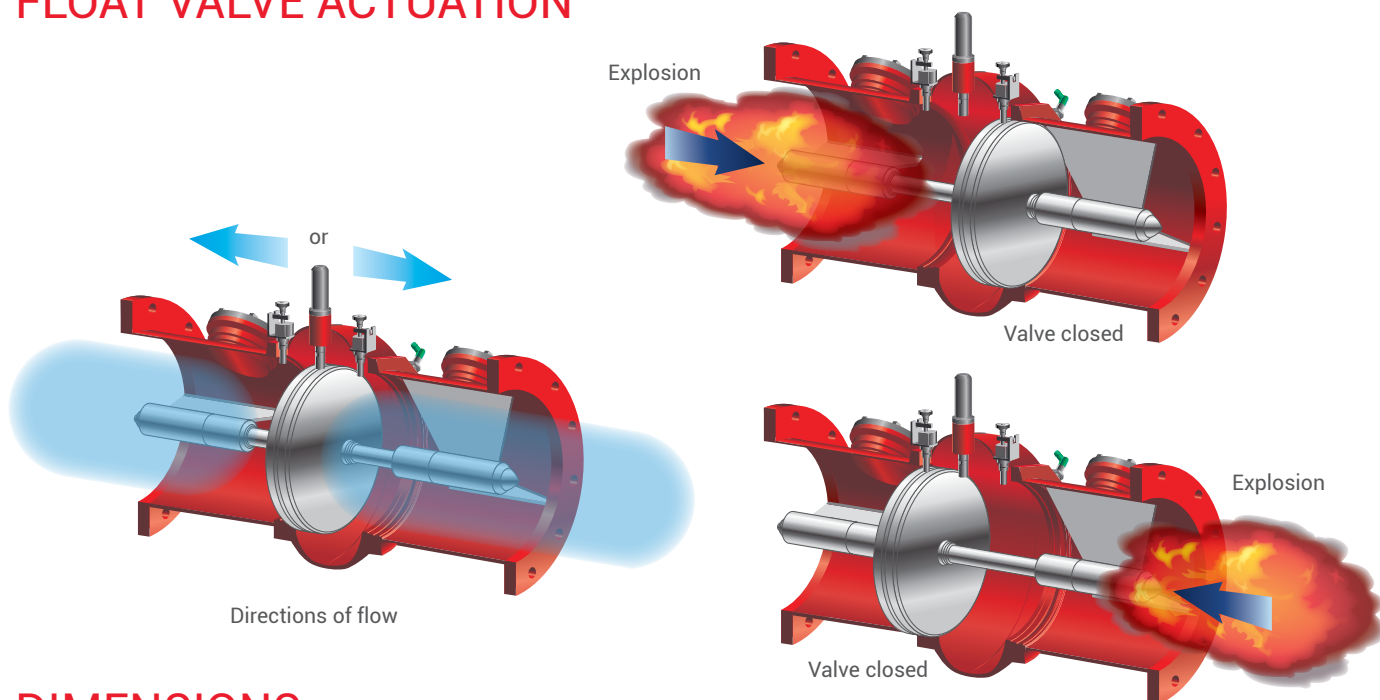
DIMENSIONS

TECHNICAL DATA												
MODEL DIAMETER	DN	50	80	100	150	200	250	300	400	500
	Inch	2"	3"	4"	6"	8"	10"	12"	16"	20"
Min. explosion pressure	psi/mbar	0.70/50								
Max. explosion pressure at 68ºF / 20ºC	psig/bar abs	191/12 (increased operating temperature results in reduced strength)								
Air speed in direction of explosion	fpm / m/s	1970 - 5905 / 10 - 30								
Air speed in the direction against the explosion	fpm / m/s	6890 / 35								
Organic dusts	max. Kst	bar*m*s⁻¹	300								
	min. installation distance	ft/m	7/2	7/2	7/2	7/2	10/3	10/3	10/3	10/3	10/3
	max. installation distance	ft/m	40/12	40/12	40/12	40/12	40/12	40/12	40/12	40/12	40/12
Gas < vapors, gas group IIB	max. Kst	bar*m*s⁻¹	300								
	min. installation distance	ft/m	7/2	7/2	7/2	7/2	10/3	10/3	10/3	10/3	10/3
	max. installation distance	ft/m	26/8	26/8	26/8	26/8	8 26/8	26/8	26/8	26/8	26/8
Hybrid mixtures (Proportion of gas below the LEL)	max. Kst	bar*m*s⁻¹	300								
	min. installation distance	ft/m	7/2	7/2	7/2	7/2	10/3	10/3	10/3	10/3	10/3
	max. installation distance	ft/m	40/12	40/12	40/12	40/12	40/12	40/12	40/12	40/12	40/12

Dimensions are rounded to the closest whole number

BOSS PRODUCTS LLC

Explosion Diverter

APPLICATIONS

The **VIGILEX® Explosion Diverter** valve with an explosion panel is the ideal addition to any exterior process flow duct system where there is potential for hazardous explosive overpressure or multiple explosive events. This device helps reduce the potential for system damage caused by high overpressure and rapid flame front expansion.

CERTIFICATIONS & STANDARDS
EN 14491
EN 14797
NFPA 69

STANDARD FEATURES
■ Flat explosion vent panel VL or domed explosion vent panel VD

OPTIONAL FEATURES
■ Stainless steel construction

DIMENSIONS

Number of panels	ø [in/mm]	H1	H2	D1	D2	L1	L2	T	Panel dimensions
CHARACTERISTICS OF THE EXPLOSION DEFLECTION DEVICE									
x1	8/200	6/150	22/555	8/200	16/410	16/410	16/410	27/685	**VD 16"x16"** - 410x410mm
	10/250	7/175	24/600	10/250	20/490	20/490	20/490	31/781	**VD 19"x19"** - 490x490mm
	12/300	8/200	28/700	12/300	24/610	24/610	24/610	35/875	**VD 24"x24"** - 610x610mm
	14/350	9/225	32/800	14/350	26/645	26/645	26/645	39/975	**VD 25"x25"** - 645x645mm
	16/400	10/250	36/900	16/400	31/780	31/780	31/780	43/1070	**VD 31"x31"** - 780x780mm
x2	18/450	11/275	40/1000	18/450	34/850	37/920	37/920	47/1165	**VD 17"x35"** - 457x890mm (Qty. 2)
	20/500	12/300	44/1100	20/500	37/920	37/920	37/920	50/1260	**VD 17"x35"** - 457x890mm (Qty. 2)
	22/550	13/325	48/1200	22/550	39/980	39/980	39/980	54/1355	**VD 17"x35"** - 457x890mm (Qty. 2)
	24/600	14/350	52/1300	24/600	43/1070	41/1020	41/1020	58/1455	**VD 23"x36"** - 586x920mm (Qty. 2)
	26/650	15/375	56/1400	26/650	47/1180	47/1180	47/1180	62/1550	**VD 23"x36"** - 586x920mm (Qty. 2)
x4	28/700	16/400	60/1500	28/700	50/1250	55/1375	55/1375	66/1645	**VD 24"x24"** - 610x610mm (Qty. 4)
	30/750	17/425	64/1600	30/750	54/1350	58/1455	58/1455	70/1740	**VD 24"x24"** - 610x610mm (Qty. 4)
	32/800	18/450	68/1700	32/800	57/1430	58/1455	58/1455	73/1835	**VD 25"x25"** - 645x645mm (Qty. 4)
	34/850	19/475	72/1800	34/850	61/1520	64/1605	64/1605	77/1930	**VD 23"x36"** - 586x920mm (Qty. 4)
	36/900	20/500	76/1900	36/900	64/1600	64/1605	64/1605	81/2030	**VD 23"x36"** - 586x920mm (Qty. 4)
x6	38/950	21/525	80/2000	38/950	68/1700	71/1785	71/1785	85/2125	**VD 17"x35"** - 457x890mm (Qty. 6)
	40/1000	22/550	84/2100	40/1000	71/1780	71/1785	71/1785	89/2220	**VD 22"x34"** - 530x850mm (Qty. 6)

Dimensions are rounded up to the closest whole number
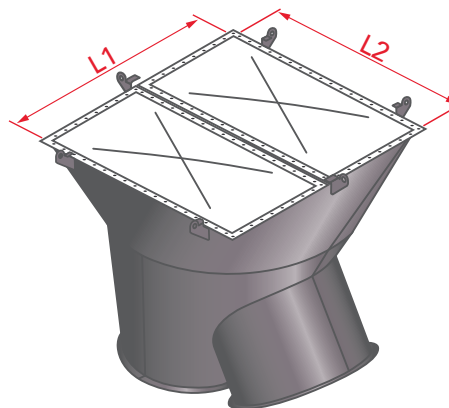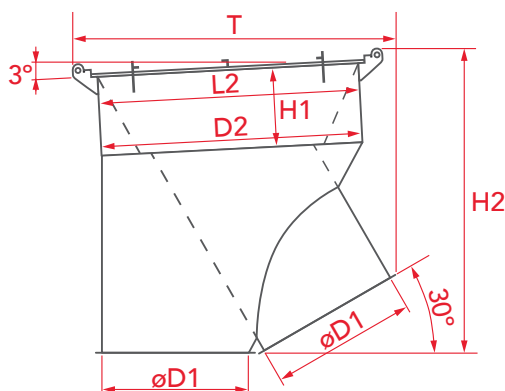
TECHNICAL INFORMATION

MODEL	KST MAX	Pred. Max	PMAX	DUST
EV-VDIV	*St2 ≤ 300 bar.m/s*	*12 psi 0.8 bar*	*174 psi ≤ 12 bar*	*Any kind of dust*

Certified Rotary Valve EMVDL-RVEX-HT

APPLICATIONS

- Passive explosive isolation. **ATEX EN 15089 / NFPA 69**
- Differential pressures **up to 40" WG**
- Rotary airlock for dust collectors and cyclones
- Feeder valve for screw conveyors, scales, dryers and coolers

CERTIFICATIONS & STANDARDS
EN 15089
CE 0588 ⟨Ex⟩ II ID/ c T4 ⟨Ex⟩ D FSA 15 ATEX 1661/1662 X*
NFPA 69 compliant
Flex tip design certified to prevent flame passage
NFPA 69 12.2.4.3.6 compliant

STANDARD FEATURES
- Explosion & Flame Proof design rated up to **25 psi / 1.7 bar**
- Cast iron body with flanged round inlet/outlet
- **NFPA 69** Compliant with **8 blade rotor**, polyurethane flex-tips
- External oil / bronze bearings with felt shaft seal
- **15 RPM** direct drive gearmotor with flex coupling, **USA Mfg**

OPTIONAL FEATURES
- Motors for hazardous locations and extreme temperature
- **30 RPM** gearmotor with EM variable speed control package
- Special construction such as stainless steel, chromium or nickel plating, quick disassembly
- Insulation box, speed monitors, flange gasket, injector fittings and product scrapers
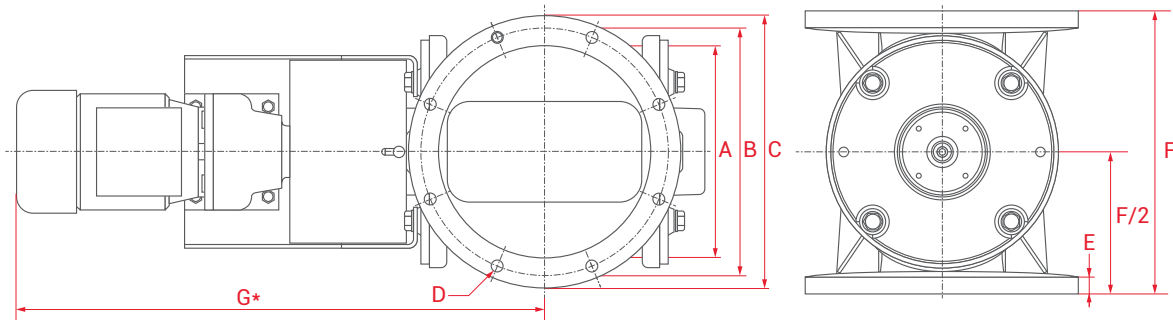
DIMENSIONS*										
MODEL	15 RPM HP	30 RPM HP	CAPACITY FT³ (LTR)	Ø A	Ø B	Ø C	D	E	F*	G
EMVDL RVEX-HT250	0.33	0.75	0.24 (7)/rev	10" (250 mm)	12" (290 mm)	13" (320 mm)	8 x Ø12 mm	0.79" (20 mm)	13" (330 mm)	24" (620 mm)
EMVDL RVEX-HT350	0.50	1.00	0.70 (20)/rev	14" (340 mm)	15" (390 mm)	17" (420 mm)	8 x Ø12 mm	0.79" (20 mm)	16" (400 mm)	26" (670 mm)
EMVDL RVEX-HT450	1.00	2.00	1.23 (35)/rev	17" (420 mm)	19" (490 mm)	21" (525 mm)	8 x Ø12 mm	0.79" (20 mm)	20" (500 mm)	33" (850 mm)

SQUARE TO ROUND TRANSITIONS*						
SQUARE TRANSITION (Nominal Size Inches)	6X6	8X8	10X10	12X12	14X14	16X16
Model : EMVDL-RVEX	HT250	HT250	HT250	HT350	HT350	HT450
Transition Height	2.84" (72 mm)	2.80" (71 mm)	2.80" (71 mm)	2.80" (71 mm)	2.80" (71 mm)	3.43" (87 mm)
Overall Height (Dim F + Transition Height)	16" (402 mm)	16" (401 mm)	16" (401 mm)	19" (471 mm)	19" (471 mm)	23" (587 mm)
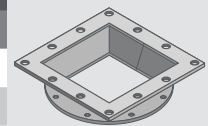
* Length varies dependent on motor selection — Units in inches rounded to the closest whole number

Certified Rotary Valve EMVDL-RVEX-HTS

PRODUCT CODES: 58100, 58101, 58102, 58103 & 58131

APPLICATIONS

- Passive explosion isolation, **ATEX EN 15089 / NFPA 69**
- Rotor selections for dry, corrosive & sticky material
- Tested for high vacuum applications **up to 160" WG**
- Ideal for dust collectors, cyclones, silos, hoppers & specialized process applications

CERTIFICATIONS & STANDARDS
EN 15089
CE 0588 ⟨Ex⟩ II ID/ c T4 ⟨Ex⟩ D FSA 15 ATEX 1661/1662 X*
NFPA 69 compliant
Flex tip design certified to prevent flame passage
NFPA 69 12.2.4.3.6 compliant

STANDARD FEATURES
- Explosion & Flame Proof design rated up to **36 psi / 2.5 bar** (**25 psi / 1.7 bar** with polyurethane flex tip rotor)
- Cast iron body with flanged inlet and outlet
- **NFPA** Compliant with **8 blade polyurethane** flex tip rotor
- **NFPA** Compliant with **8 blade steel** or **S/S** construction
- Dust tight ball bearings & shaft seal with adjustable packing
- **15 RPM** direct drive gearmotor w/flex coupling, **IP65, USA mfg**

OPTIONAL FEATURES
- Motors for hazardous locations and extreme temperature
- **30 RPM** gearmotor with EM variable speed control package
- Square to round flange adapter incl. gasket and mounting bolts
- **S/S** construction, quick disassembly, and specialized coatings
- Insulation box, speed monitor, injector fittings and scrapers
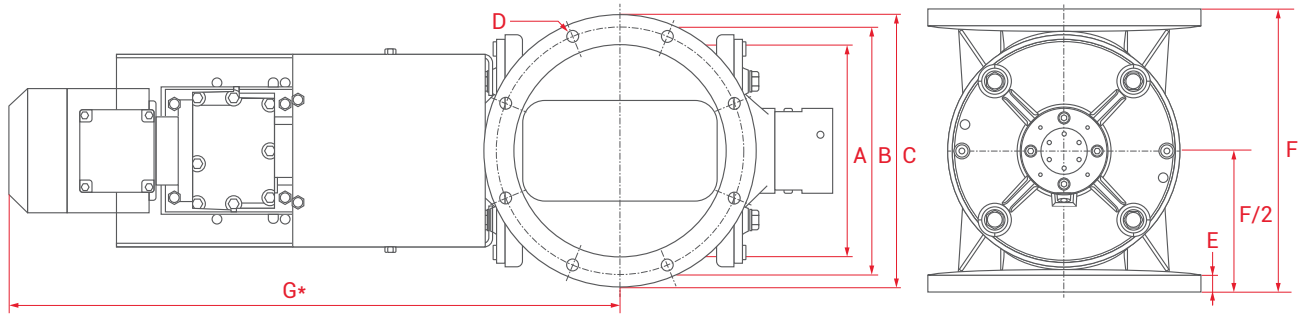
DIMENSIONS*									
MODEL	15 RPM HP	30 RPM HP	CAPACITY FT³ (LTR)	Ø A	Ø B	Ø C	D	E	F*	G
EMVDL RVEX-HTS250	0.33	0.75	0.24 (7)/rev	10" (250 mm)	12" (290 mm)	13" (320 mm)	8 x Ø12 mm	0.79" (20 mm)	13" (330 mm)	28" (710 mm)
EMVDL RVEX-HTS350	0.50	1.00	0.70 (20)/rev	14" (340 mm)	15" (390 mm)	17" (420 mm)	8 x Ø12 mm	0.79" (20 mm)	16" (400 mm)	33" (830 mm)

SQUARE TO ROUND TRANSITIONS*					
SQUARE TRANSITION (Nominal Size Inches)	6X6	8X8	10X10	12X12	14X14
Model : EMVDL-RVEX	HTS250	HTS250	HTS250	HTS350	HTS350
Transition Height	2.84" (72 mm)	2.80" (71 mm)	2.80" (71 mm)	2.80" (71 mm)	2.80" (71 mm)
Overall Height (Dim F + Transition Height)	16" (402 mm)	16" (401 mm)	16" (401 mm)	19" (471 mm)	19" (471 mm)
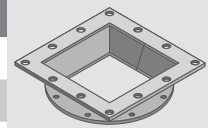
* Length varies dependent on motor selection — Units in inches rounded to the closest whole number

Certified Rotary Valve EMVDL-RVEX-MD

APPLICATIONS

- Passive explosion isolation requiring rotor access for frequent cleaning
- Differential pressures **up to 400" WG**
- Heavy Duty design, ideal for high vacuum applications
- Recommended for pneumatic conveying of process material and dust feeder valve for screw conveyors, scales, classifiers dryers and coolers

CERTIFICATIONS & STANDARDS
EN 15089
CE 0588 ⟨Ex⟩ II ID/ c T4 ⟨Ex⟩ D FSA 15 ATEX 1661/1662 X*
NFPA 69 compliant
Flex tip design certified to prevent flame passage
NFPA 69 12.2.4.3.6 compliant

STANDARD FEATURES
- Explosion & Flame Proof design to **36 psi / 2.5 bar** (**25 psi / 1.7 bar** with polyurethane flex tip rotor)
- Cast iron housing with round inlet and outlet
- Direct Drive **15 RPM**, **IP65 gearmotor** w/flex coupling
- Removable 8 vane polyurethane, steel or S/S rotor
- Adjustable Gland Pack bearings for shaft sealing
- High fill ratio with very low leakage & product damage

OPTIONAL FEATURES
- Motors for hazardous locations and extreme temperature
- **30 RPM** gearmotor with EM variable speed control package
- Special construction, stainless steel, chromium/nickel plating
- Insulation box, speed monitors, flange gasket, injector fittings and product scrapers
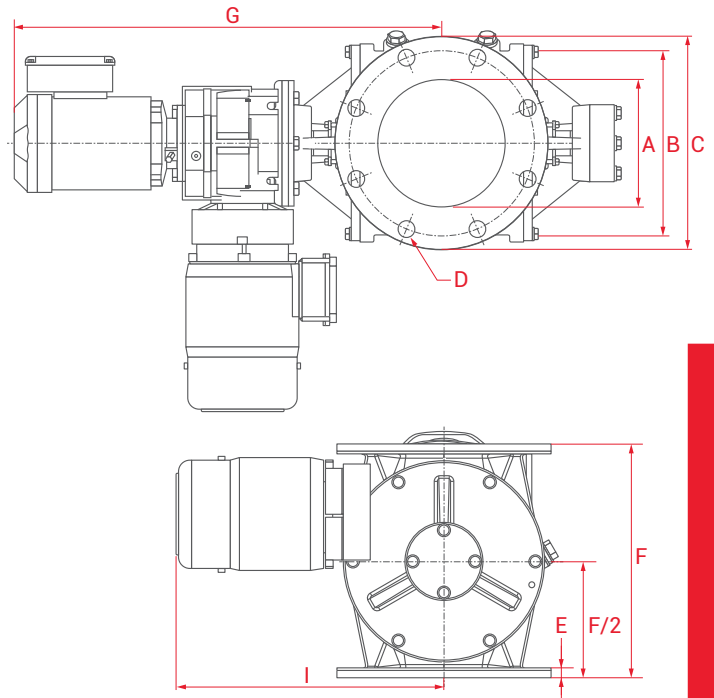
DIMENSIONS *											
MODEL	15 RPM HP	30 RPM HP	CAPACITY FT³ (LTR)	Ø A	Ø B	Ø C	D	E	F	G	H	I
EMVDL RVEX-MD150	0.50	0.75	0.10 (3)/rev	6" (150 mm)	9" (240 mm)	11" (285 mm)	8 x Ø23 mm	0.51" (13 mm)	10" (260 mm)		13" (330 mm)	14" (355 mm)
EMVDL RVEX-MD200	0.75	1.50	0.39 (11)/rev	8" (200 mm)	12" (300 mm)	13" (340 mm)	8 x Ø23 mm	0.51" (13 mm)	15" (370 mm)		16" (400 mm)	21" (525 mm)
EMVDL RVEX-MD250	1.00	1.00	0.74 (21)/rev	10" (250 mm)	14" (350 mm)	16" (395 mm)	12 x Ø23 mm	0.67" (17 mm)	17" (425 mm)	30" (770 mm)		
EMVDL RVEX-MD300	1.50	3.00	1.30 (37)/rev	12" (300 mm)	16" (400 mm)	18" (445 mm)	12 x Ø23 mm	0.79" (20 mm)	20" (500 mm)	33" (840 mm)		

Columns G, H and I depend on drive

* Units in inches rounded to the closest whole number

Certified Rotary Valve EMVDL-RVEX-BS

PRODUCT CODE: 58500

APPLICATIONS

- Passive explosion and flame isolation
- Differential pressures **up to 28″ WG**
- Ideal for wood applications w/flex-tip rotor
- Rotary airlock for dust collectors and cyclones

CERTIFICATIONS & STANDARDS
ATEX 1D/2D T4 safety system
CE 0588 Ⓔ II 1D/2D T4 (Device Inside/Outside) Ⓔ D (Protective system) FSA 15 ATEX 1658 X
NFPA 69 compliant
Flex tip design certified to prevent flame passage
NFPA 69 12.2.4.3.6 compliant

STANDARD FEATURES
- Explosion and flame isolation **up to 7 psi / 0.5 bar**
- **8 vane flex-tip NFPA 69** compliant rotor, Ex/flame proof
- **15 RPM, IP65** direct drive gear motor with flex coupling
- Inlet/ discharge size **20" X 20," 20" X 30" & 20" X 40"**
- Requires system integrated control panel for ATEX certification

OPTIONAL FEATURES
- Motors for hazardous locations and extreme temperature
- **30 RPM** gear motor with EM variable speed control package
- EM system integration package required for ATEX certification
- Stainless steel construction, Insulation box, speed monitor, flange gasket
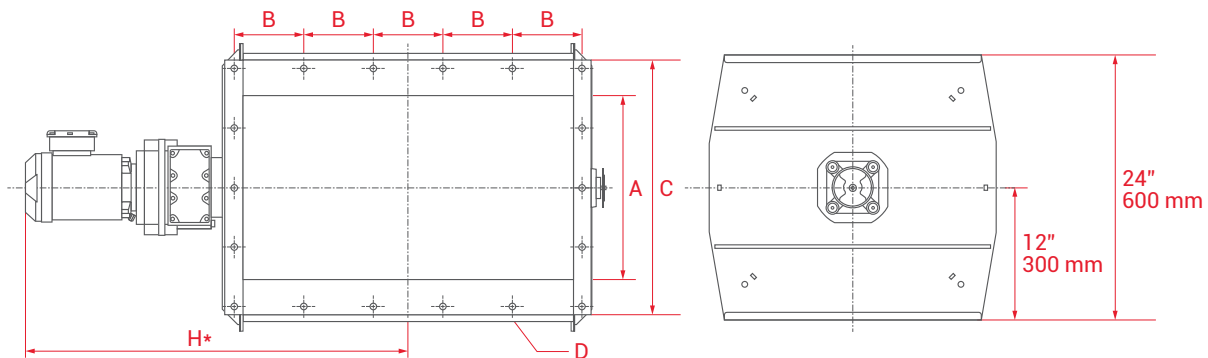
DIMENSIONS *								
MODEL	15 RPM HP	30 RPM HP	CAPACITY FT³ (LTR)	A	B	C	D	H
EMVDL RVEX-BS500	1.00	2.00	4.41 (125)/rev	20" x 20" (500 x 500 mm)	0.16" x 5.30" (4 x 135 mm)	23" x 23" (580 x 580 mm)	16 x Ø 10.5 mm	30" (742 mm)
EMVDL RVEX-BS750	1.00	2.00	6.64 (188)/rev	20" x 30" (500 x 750 mm)	0.20" x 6.22" (5 x 158 mm)	23" x 33" (580 x 830 mm)	18 x Ø 10.5 mm	34" (867 mm)
EMVDL RVEX-BS1000	1.50	3.00	8.83 (250)/rev	20" x 40" (500 x 1000 mm)	0.31" x 5.12" (8 x 130 mm)	23" x 43" (580 x 1080 mm)	24 x Ø 10.5 mm	40" (997 mm)

Available as EMVDL-RVEX-BS, Rotary valve with explosion detector and control — Available as EMVDL-RV-BS, Rotary valve only
* Length varies dependent on motor selection — Units in inches rounded to the closest whole number

Explosion Tested Drum Kit

APPLICATIONS

The **NFPA compliant Raptor Drum™ Explosion Tested Drum Kit** acts as an extension of the dust collector. It is an innovative solution for explosion isolation. No need for wiring, maintenance, motor, starter, wipers, chains.

Slide Gate

Bonding Wire

Tool Free Sliding Coupler

Lever Lock Ring

55 gal Drum 34.5 in

Heavy Duty 55gal Drum

20 gal Drum 21.5 in

Drum Dolly

STANDARD FEATURES
- Standard sizes : 10" -18", 55 galon or 20 gallon drum

SIMPLE AND PROVEN
- Explosion Tested to 7psi
- NFPA 69/654 Compliant
- Bonded to a Grounded Collector
- No Moving Parts
- No Flex Hose
- Tool Free
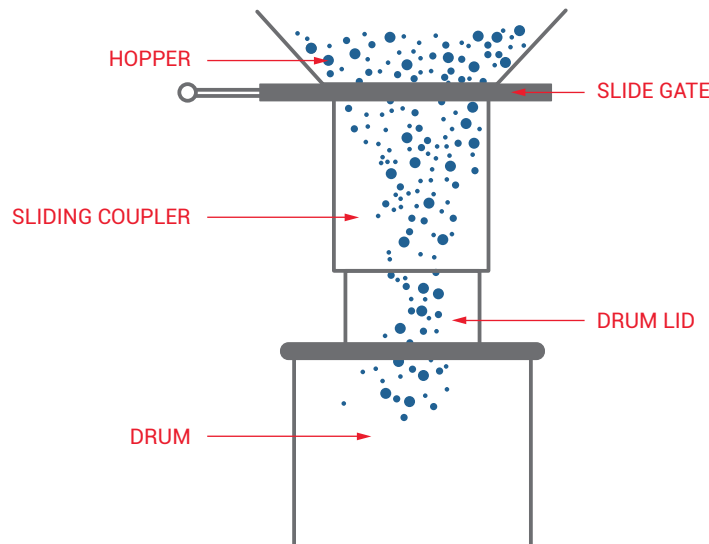
BOSS PRODUCTS LLC

DIMENSIONS

55 GAL RAPTOR DRUM KIT / 10" SLIDE GATE

ø9 $\frac{7}{8}$ "

3@4"=12"

3/8-16 STUDS

3@4" =12"

37 $\frac{3}{16}$ "

SCALE DETAIL 1/3

26"

14"

ø $\frac{5}{8}$ "

FOR GROUNDING

54 $\frac{1}{16}$ "

ø23 $\frac{1}{2}$ "

Sizes 12",14", 16", 18" also available

HOW RAPTOR DRUM WORKS

HOPPER

SLIDE GATE

SLIDING COUPLER

DRUM LID

DRUM

VIGIL*EX*®

Flat Explosion Vent Panel VL

APPLICATIONS

Vacuum resistance : 0.7 psi / 20" w.g.

The **Flat Explosion Vent Panel VL** is suitable for all applications with low vacuum operating pressures. Typical applications include dust collectors, conveyors, cyclones, elevators, and silos.

The **Flat Explosion Vent Panel VL** is specifically designed to satisfy low pressure explosion venting requirements. It is designed with an integral gasketed flange that covers the breaking points, ensuring strong mechanical durability. A wide variety of standard and custom sizes and bolt patterns are available.

Standard burst pressure is **1.45 psi / 0.1 bar**. Application specific burst pressures between **1.45 psi up to 7 psi** are available for special orders.

CERTIFICATIONS & STANDARDS

Ex II GD

EN 14491 - EN 14994 - EN 14797 - EN 1127.1

EU Certificate : INERIS 15ATEX0001X

NFPA 68 - NFPA 69
EN 16447

Production quality assurance notification :
INERIS 08ATEXQ406

STANDARD FEATURES

- Single Flat Panel **304 stainless steel**
- Full frame **black EPDM gasket -40°F +176°F (-40°C +80°C)**
- Integral **304L stainless steel** flange

OPTIONAL FEATURES

- **Stainless steel 316L construction**
- Full frame **white silicone FDA gasket -76°F +392°F (-60°C +200 °C)**
- High temperature graphite gasket **-328°F +932°F (-200°C +500°C)**
- Integral **316L stainless steel flange** with gasket

ACCESSORIES FOR VL

- Burst Sensor
- Thermal insulation
- Weather protection
- Duct discharge compatible
- Vacuum safety grid

BOSS PRODUCTS LLC

DIMENSIONS

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
4 x 11	110 x 290	7 x 14	174 x 354	0.312	0.029
6 x 24	150 x 600	9 x 27	230 x 680	0.953	0.088
* 7 x 19	170 x 470	10 x 22	250 x 550	0.845	0.078
9 x 17	220 x 420	12 x 20	300 x 500	0.979	0.091
9 x 9	229 x 229	12 x 12	310 x 310	0.554	0.051
9 x 12	229 x 305	12 x 15	310 x 386	0.743	0.069
10 x 24	247 x 610	13 x 27	327 x 690	1.598	0.148
* 11 x 18	270 x 458	14 x 21	350 x 538	1.313	0.122
* 12 x 20	300 x 500	15 x 23	380 x 580	1.593	0.148
12 x 24	300 x 600	14 x 26	366 x 666	1.727	0.160
* 12 x 18	305 x 457	15 x 21	386 x 538	1.491	0.138
* 12 x 24	305 x 610	15 x 27	386 x 690	1.986	0.184
12 x 30	319 x 765	16 x 33	405 x 850	2.669	0.248
13 x 15	340 x 385	16 x 18	404 x 449	1.345	0.125
13 x 17	340 x 440	16 x 20	404 x 504	1.539	0.143
14 x 26	350 x 650	17 x 29	430 x 730	2.427	0.225
15 x 25	375 x 655	18 x 29	460 x 740	2.632	0.244
15 x 24	390 x 620	19 x 28	470 x 700	2.578	0.239
16 x 16	410 x 410	19 x 19	480 x 480	1.787	0.166
16 x 20	420 x 520	20 x 20	500 x 600	2.330	0.216
16 x 36	420 x 920	20 x 39	500 x 1000	4.128	0.383
* 18 x 35	457 x 890	21 x 38	537 x 970	4.348	0.404
18 x 24	470 x 610	22 x 27	550 x 690	3.062	0.284
19 x 27	480 x 680	23 x 31	580 x 780	3.509	0.326
19 x 19	490 x 490	22 x 22	570 x 570	2.562	0.238
* 19 x 23	490 x 590	22 x 26	570 x 670	3.084	0.286

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
20 x 20	520 x 520	24 x 24	600 x 600	2.884	0.268
20 x 24	520 x 620	24 x 28	600 x 700	3.444	0.320
20 x 40	520 x 1020	24 x 39	600 x 1000	5.672	0.527
23 x 46	580 x 1180	26 x 50	670 x 1270	7.324	0.680
* 23 x 36	586 x 920	26 x 39	666 x 1000	5.769	0.536
* 24 x 24	610 x 610	27 x 27	690 x 690	3.977	0.369
24 x 36	610 x 920	27 x 39	690 x 1000	6,230	0,561
24 x 44	610 x 1118	27 x 47	690 x 1198	7.303	0.678
25 x 25	645 x 645	29 x 29	740 x 740	4.445	0.413
25 x 44	645 x 1130	29 x 48	735 x1220	7.803	0.725
26 x 26	653 x 653	29 x 29	740 x 740	4.585	0.426
27 x 27	680 x 680	31 x 31	780 x 780	4.946	0.459
28 x 40	720 x 1020	31 x 43	800 x 1100	7.857	0.730
30 x 31	780 x 780	35 x 35	880 x 880	6.544	0.608
30 x 46	780 x 1180	35 x 50	880 x 1280	9.859	0.916
31 x 40	800 x 1000	35 x 43	890 x 1090	8.567	0.796
35 x 35	880 x 880	39 x 39	980 x 980	8.287	0.770
* 36 x 44	915 x 1118	39 x 47	996 x 1198	10.978	1.020
* 36 x 36	920 x 920	39 x 39	1000 x 1000	9.068	0.842
39 x 39	980 x 980	43 x 43	1080 x 1080	10.332	0.960
40 x 40	1000 x 1000	42 x 42	1056 x 1056	10.418	0.968
40 x 40	1020 x 1020	43 x 43	1100 x 1100	11.150	1.036
42 x 42	1080 x 1080	46 x 46	1180 x 1180	12.485	1.160
* 44 x 44	1130 x 1130	48 x 48	1220 x 1220	13.690	1.272
46 x 46	1180 x 1180	50 x 50	1280 x 1280	14.934	1.387
40 x 79	1000 x 2000	43 x 82	1080 x 2080	21.461	1.994

Sizes are accurate in mm and rounded to the closest whole number in inches
* *Sizes permanently in stock*   Other sizes available

ROUND DIMENSIONS

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
8	Ø 200	11	Ø 268	0.334	0.031
10	Ø 250	13	Ø 341	0.517	0.048
12	Ø 300	15	Ø 390	0.748	0.069
14	Ø 350	17	Ø 424	1.001	0.093
16	Ø 400	19	Ø 473	1.324	0.123
18	Ø 450	21	Ø 545	1.701	0.158
20	Ø 500	23	Ø 574	2.083	0.193

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
* 24	Ø 610	27	Ø 676	3.003	0.279
28	Ø 700	31	Ø 790	4.122	0.383
* 30	Ø 762	33	Ø 842	4.736	0.440
31	Ø 800	35	Ø 880	5.381	0.500
* 36	Ø 914	39	Ø 990	7.065	0.656
39	Ø 990	42	Ø 1070	8.290	0.770

Sizes are accurate in mm and rounded to the closest whole number in inches
* *Sizes permanently in stock*   Other sizes available

Custom sizes and shapes available

VIGIL**EX**®

Domed Explosion Vent Panel VD

APPLICATIONS

Vacuum resistance : 3 psi / 83" w.g.

The **Domed Explosion Vent Panel VD** is specifically designed for high negative pressure applications and installations where high psi pulse cleaning mechanisms could cause metal fatigue over time. The dome design is optimal for Hi-Vac filter systems where explosion relief venting is required. Typical applications included dust collector filters, cyclones, and high pressure vessels.

The **Domed Explosion Vent Panel VD** is pressure tested and certified in compliance with a variety of test standards. It is ideal for **OEM** and retrofit applications. It is easy to install with premium gaskets and integral flanges.

Standard burst pressure is **1.45 psi / 0.1 bar**. Application specific burst pressures between **1.45 psi up to 7 psi** are available for special orders.

CERTIFICATIONS & STANDARDS

Ex II GD

EN 14491 - EN 14994 - EN 14797 - EN 1127.1

EU Certificate : INERIS 15ATEX0001X

NFPA 68 - NFPA 69

Production quality assurance notification :
INERIS 08ATEXQ406

OPTIONAL FEATURES

- **Stainless steel 316L construction**
- Full frame **white silicone FDA gasket -76 F+392 F (-60 C+200 C)**
- High temperature graphite gasket **-328 F+932 F (-200 C+500 C)**
- Integral **316L stainless steel flange** with gasket

STANDARD FEATURES

- Single domed **304 stainless steel**
- Full frame Gasket, **black EPDM rated -40 F+176 F (-40 C+80 C)**
- **Integral 304L stainless steel** flange with gasket

ACCESSORIES FOR VD

- Burst Sensor
- Thermal insulation
- Weather protection
- Duct discharge compatible
- Vacuum safety grid

BOSS *PRODUCTS LLC*

DIMENSIONS

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
6 x 24	150 x 600	9 X 27	230 x 680	0.953	0.088
* 7 x 19	170 x 470	10 x 22	250 x 550	0.845	0.078
8 x 11	205 x 290	11 X 15	285 x 370	0.624	0.058
9 x 17	220 x 420	12 X 20	300 x 500	0.979	0.091
9 x 9	229 x 229	12 X 12	310 x 310	0.554	0.051
9 x 12	229 x 305	12 X 15	310 x 386	0.743	0.069
10 x 24	247 x 610	13 X 27	327 x 690	1.598	0.148
* 11 x 18	270 x 458	14 X 21	350 x 538	1.313	0.122
* 12 x 20	300 x 500	15 X 23	380 x 580	1.593	0.148
* 12 x 18	305 x 457	15 X 21	386 x 538	1.491	0.138
* 12 x 24	305 x 610	15 X 27	386 x 690	1.986	0.185
13 x 15	340 x 385	16 X 18	404 x 449	1.345	0.125
13 x 17	340 x 440	16 X 20	404 x 504	1.539	0.143
* 14 x 26	350 x 650	17 X 29	430 x 730	2.427	0.226
15 x 26	375 x 655	18 X 29	460 x 740	2.632	0.244
16 x 16	410 x 410	19 X 19	480 x 480	1.787	0.166
20 x 28	457 x 890	21 X 38	537 x 970	4.348	0.404

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
18 x 24	470 x 610	22 X 27	550 x 690	3.062	0.284
18 x 35	470 x 880	22 x 39	550 x 1000	4.595	0.413
19 x 19	490 x 490	22 X 22	570 x 570	2.562	0.238
* 19 x 23	490 x 590	22 X 26	570 x 670	3.084	0.287
21 x 26	525 x 668	25 X 30	630 x 765	3.659	0.340
* 23 x 36	586 x 920	26 X 39	666 x 1000	5.770	0.536
* 24 x 24	610 x 610	27 X 27	690 x 690	3.977	0.370
24 x 36	610 x 920	27 x 30	690 x 765	6,040	0,561
24 x 44	610 x 1118	27 X 47	690 x 1198	7.303	0.678
25 x 25	645 x 645	29 X 29	735 x 735	4.445	0.413
25 x 44	645 x 1130	29 X 48	735 x 1220	12.547	0.413
26 x 26	653 x 653	29 X 29	740 x 740	4.585	0.426
* 36 x 44	915 x 1118	39 X 47	996 x 1198	10.978	1.020
* 36 x 36	920 x 920	39 X 39	1000 x 1000	9.068	1.842
36 x 54	920 x 1380	39 X 57	1000 x 1460	13.368	1.242
39 x 39	980 x 980	43 X 43	1080 x 1080	10.332	1.960
40 x 40	1020 x 1020	43 X 43	1100 x 1100	11.150	1.036

Sizes are accurate in mm and rounded to the closest whole number in inches
* *Sizes permanently in stock*   Other sizes available

ROUND DIMENSIONS

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
8	Ø 200	11	Ø 268	0.334	0.031
10	Ø 250	13	Ø 341	0.517	0.048
12	Ø 300	15	Ø 390	0.748	0.069
14	Ø 350	17	Ø 424	1.001	0.093
16	Ø 400	19	Ø 473	1.324	0.123
18	Ø 450	21	Ø 545	1.701	0.158
20	Ø 500	23	Ø 574	2.083	0.193

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
* 24	Ø 610	27	Ø 676	3.003	0.279
28	Ø 700	31	Ø 790	4.122	0.383
* 30	Ø 762	33	Ø 842	4.736	0.440
31	Ø 800	35	Ø 880	5.381	0.500
* 36	Ø 914	39	Ø 990	7.065	0.656
39	Ø 990	42	Ø 1070	8.290	0.770

Sizes are accurate in mm and rounded to the closest whole number in inches
* *Sizes permanently in stock*   Other sizes available

Custom sizes and shapes available

VIGIL**EX**®

Sanitary Flat Explosion Vent Panel VLSAN

Vacuum resistance : 0.7 psi / 20" w.g.

APPLICATIONS

The **Sanitary Flat Explosion Vent Panel VLSAN** is designed specifically for hygienic applications in food and pharmaceutical industries. Dedicated to protect systems with low vacuum or working pressure **(up to 50 % of static burst pressure)** such as spray dryers.

The high technology design of this vent panel avoids contaminants.

The standard burst pressure is **0.1 bar (max. 0.5 bar) at 22 °C (72 °F)**.

EHEDG
EUROPEAN HYGIENIC ENGINEERING & DESIGN GROUP

CERTIFICATIONS & STANDARDS
Ex II GD

EN 14491 - EN 14994 - EN 14797 - EN 1127.1

EU Certificate : INERIS 15ATEX0001X

EHEDG Certificate : C1900020

Production quality assurance notification :
INERIS 08ATEXQ406

CERTIFIED
EHEDG
TYPE EL
CLASS I
MAY 2020

STANDARD FEATURES
- Single flat **316 stainless steel**
- Full frame Gasket, **black EPDM rated +14 F+482 F (-10 C+250 C)**
  - *FDA*
  - *1935/2004CE*
- **Integral 304L stainless steel** flange
- Clean design
- Bacteriological barrier

ACCESSORIES FOR VL-SANITARY
- Burst Sensor
- Weather protection
- Duct discharge compatible

BOSS PRODUCTS LLC

DIMENSIONS

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft^2	m^2
24 x 24	610 x 610	27 X 27	690 x 690	3.977	0.370
23 x 36	586 x 920	26 X 39	666 x 1000	5.770	0.536
31 x 35	780 x 880	39 X 35	990 x 890	5.770	0.536
36 x 36	920 x 920	39 X 39	1000 x 1000	9.068	1.842
40 x 40	1020 x 1020	43 X 43	1100 x 1100	11.150	1.036

Sizes are accurate in mm and rounded to the closest whole number in inches

* *Sizes permanently in stock*   Other sizes available

VIGIL**EX**®

High Vacuum Domed Explosion Vent Panel VD-HV

Vacuum resistance : 3-9 psi / 83-250" w.g.

APPLICATIONS

The **High Vacuum Domed Explosion Vent Panel VD-HV** is specifically engineered to be an ideal solution for applications where negative operating pressures exceed **3 psi** or operational metal fatigue is anticipated. Some high energy pulse-jet filter cleaning mechanisms, and systems operating under extreme high pressure, have been known to significantly shorten the life of standard explosion panels.

The **High Vacuum Domed Explosion Vent Panel VD-HV** is pressure tested and certified under a variety of test standards. It is ideal for **OEM** and retrofit extreme duty applications. It is easy to install with premium gaskets and integral flanges.

Standard burst pressure is **1.45 psi / 0.1 bar**. Application specific burst pressures between **1.45 psi up to 7 psi** are available for special orders.

CERTIFICATIONS & STANDARDS
Ex II GD

EN 14491 - EN 14994 - EN 14797 - EN 1127.1

EU Certificate : INERIS 15ATEX0001X

NFPA 68 - NFPA 69

Production quality assurance notification :
INERIS 08ATEXQ406

STANDARD FEATURES
- Mechanically Reinforced single **dome 304L stainless steel**
- Full frame Gasket, **black EPDM rated -40°F+176°F (-40°C +80°C)**
- **Integral 304L stainless steel** flange

OPTIONAL FEATURES
- **Stainless steel 316L construction**
- Full frame **white silicone FDA gasket -76°F +392°F (-60°C +200°C)**
- High temperature graphite gasket **-328°F +932°F (-200°C +500°C)**
- Integral **316L stainless steel flange** with gasket

ACCESSORIES FOR VD HV
- Burst Sensor
- Thermal insulation
- Weather protection
- Duct discharge compatible
- Vacuum safety grid

BOSS PRODUCTS LLC

DIMENSIONS : RECTANGULAR & SQUARE

	INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
	Inches	mm.	Inches	mm.	ft²	m²
	6 x 24	150 x 600	9 X 27	230 x 680	0.953	0.088
*	7 x 19	170 x 470	10 x 22	250 x 550	0.845	0.078
	8 x 11	205 x 290	11 X 15	285 x 370	0.624	0.058
	9 x 17	220 x 420	12 X 20	300 x 500	0.979	0.091
	9 x 9	229 x 229	12 X 12	310 x 310	0.554	0.051
	9 x 12	229 x 305	12 X 15	310 x 386	0.743	0.069
	10 x 24	247 x 610	13 X 27	327 x 690	1.598	0.148
*	11 x 18	270 x 458	14 X 21	350 x 538	1.313	0.122
*	12 x 20	300 x 500	15 X 23	380 x 580	1.593	0.148
	12 x 18	305 x 457	15 X 21	386 x 538	1.491	0.138
*	12 x 24	305 x 610	15 X 27	386 x 690	1.986	0.185
	13 x 15	340 x 385	16 X 18	404 x 449	1.345	0.125
	13 x 17	340 x 440	16 X 20	404 x 504	1.,539	0.143
*	14 x 26	350 x 650	17 X 29	430 x 730	2.427	0.226

	INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
	Inches	mm.	Inches	mm.	ft²	m²
	15 x 26	375 x 655	18 X 29	460 x 740	2.632	0.244
	16 x 16	410 x 410	19 X 19	480 x 480	1.787	0.166
	20 x 28	457 x 890	21 X 38	537 x 970	4.348	0.404
	18 x 24	470 x 610	22 X 27	550 x 690	3.062	0.284
	19 x 19	490 x 490	22 X 22	570 x 570	2.562	0.238
*	19 x 23	490 x 590	22 X 26	570 x 670	3.084	0.287
	21 x 26	525 x 668	25 X 30	630 x 765	3.659	0.340
*	23 x 36	586 x 920	26 X 39	666 x 1000	5.770	0.536
*	24 x 24	610 x 610	27 X 27	690 x 690	3.977	0.370
	24 x 44	610 x 1118	27 X 47	690 x 1198	7.303	0.678
	25 x 25	645 x 645	29 X 29	735 x 735	4.445	0.413
	25 x 44	645 x 1130	29 X 48	735 x 1220	12.547	0.413
	26 x 26	653 x 653	29 X 29	740 x 740	4.585	0.426

Sizes are accurate in mm and rounded to the closest whole number in inches
* *Sizes permanently in stock*   Other sizes available

DIMENSIONS : ROUND

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
Inches	mm.	Inches	mm.	ft²	m²
8	Ø 200	11	Ø 268	0.334	0.031
10	Ø 250	13	Ø 341	0.517	0.048
12	Ø 300	15	Ø 390	0.748	0.069
14	Ø 350	17	Ø 424	1.001	0.093
16	Ø 400	19	Ø 473	1.324	0.123
18	Ø 450	21	Ø 545	1.701	0.158
20	Ø 500	23	Ø 574	2.083	0.193

INTERNAL DIMENSION		EXTERNAL DIMENSION		AREA	
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28	Ø 700	31	Ø 790	4.122	0.383
30	Ø 750	33	Ø 842	4.736	0.440
31	Ø 800	35	Ø 880	5.381	0.500
36	Ø 914	39	Ø 990	7.065	0.656
39	Ø 990	42	Ø 1070	8.290	0.770

Sizes are accurate in mm and rounded to the closest whole number in inches
Other sizes available

Custom sizes and shapes available

VIGIL**EX**®

Explosion Vent Deflector VIGISPACE VS

APPLICATIONS

When an outdoor explosion occurs, explosion vents open and release the explosion flame and pressure wave into the environment.

The Explosion Vent Deflector VIGISPACE limits the opening angle of the explosion vent and guides the explosion pressure wave, flames and heat into defined areas.

By decreasing the size of dangerous areas, the VIGISPACE helps to reduce the safety zone to a minimum and increases usable operating space while providing optimum protection against explosions.

CERTIFICATIONS & STANDARDS
Ex II GD

EN 14491 - EN 14797 - EN 1127.1

Production quality assurance notification :
INERIS 08ATEXQ406

NFPA & ATEX Certified

STANDARD FEATURES
- Steel construction with safety red finish
- For use with **EV-VL/VLSIL** and **EV-VD/VDSIL**
- **60% efficient**
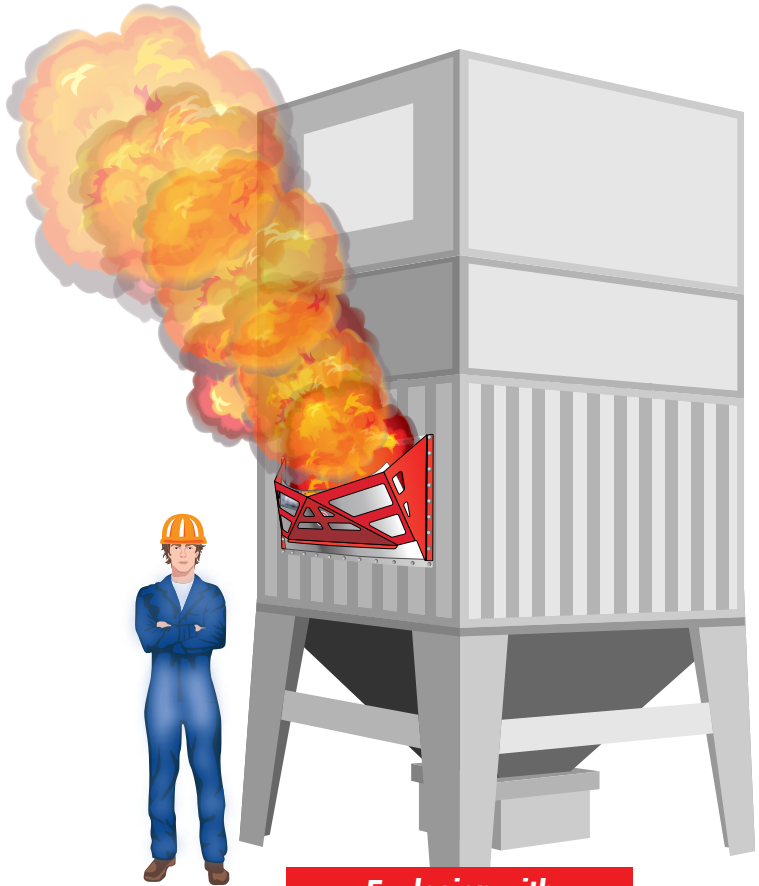
OPTIONAL FEATURES
- **Stainless steel material 304L**

BOSS *PRODUCTS* LLC

APPLICATIONS

Explosion without VIGISPACE

Explosion with VIGISPACE

TECHNICAL INFORMATION
KST max : 200 bar m/s, Pmax: 12 bar max, Pred max, 0.5 bar, Pstat max, 0.1 bar

VIGIL**EX**®

Flameless Explosion Vent VIGIFLAM VQ®

APPLICATIONS

The **Flameless Explosion Vent VIGIFLAM VQ®** is a rectangular explosion device that combines a standard explosion panel with added protection to prevent flame from entering the environment.

The **Flameless Explosion Vent VIGIFLAM VQ®** is certified for indoor and outdoor applications. It eliminates the need for costly heavy duty piping that is required for exterior venting when a vessel is installed within the workspace. The integral standard **Explosion Vent Panel** bursts during the initial explosion phase. Immediately thereafter, the flame and burnt dust exit the vessel and is contained by the **VIGIFLAM VQ®** flame arrestor.

All **Flameless Explosion Vents** are designed with the ability to replace the explosion panel without removing the flame arrestor assembly.

Boss Products® technical engineering staff is dedicated to ensuring optimum design & product selection for every application.

CERTIFICATIONS & STANDARDS

Ex II GD - Ex II 2 D

EC Certificate : INERIS 14 ATEX 0049 X

NFPA 68 - NFPA 69

Production quality assurance notification :
INERIS 08ATEXQ406

certified for :
- Organic dust
- Fiber dust
- **Gas**

STANDARD FEATURES

- **Mild steel** construction **epoxy coated red**
- **Stainless steel** mesh

OPTIONAL FEATURES

- Silicone gasket
- **UL 698A Intrinsic** control panel
- All stainless steel construction
- Dust cover

BOSS *PRODUCTS* LLC

DIMENSIONS

EV-VQ SPECIFICATIONS							
ECOMAXX® VIGILEX VQ			IN COMBINATION WITH VENT PANEL			BOLT SPECS	
in[mm]			Nominal Size in[mm]		Nominal Square ft²[m²]	Qty	Size
VQ	7 x 19	[170 x 470]	7 x 19	[170 x 470]	0.845	[0.0785]	20	M10 x 30
VQ	11 x 18	[270 x 458]	11 x 18	[270 x 458]	1.315	[0.1220]	22	M10 x 30
VQ	12 x 20	[300 x 500]	12 x 20	[300 x 500]	1.595	[0.1480]	24	M10 x 30
VQ	12 x 24	[305 x 610]	12 x 24	[305 x 610]	1.980	[0.1840]	26	M10 x 30
VQ	14 x 26	[350 x 650]	14 x 26	[350 x 650]	2.425	[0.2250]	26	M10 x 30
VQ	19 x 23	[490 x 590]	19 x 23	[490 x 590]	3.084	[0.2865]	32	M10 x 30
VQ	24 x 24	[610 x 610]	24 x 24	[610 x 610]	3.975	[0.3695]	32	M10 x 30
VQ	18 x 35	[457 x 890]	18 x 35	[457 x 890]	4.349	[0.4040]	34	M10 x 30
VQ	23 x 36	[586 x 920]	23 x 36	[586 x 920]	5.770	[0.5360]	42	M10 x 30
VQ	25 x 44	[645 x 1130]	25 x 44	[645 x 1130]	7.804	[0.7250]	34	M10 x 30
VQ	36 x 36	[920 x 920]	36 x 36	[920 x 920]	9.068	[0.8425]	50	M10 x 30
VQ	44 x 44	[1130 x 1130]	44 x 44	[1130 x 1130]	13.696	[1.2720]	58	M10 x 30

ADVANTAGES

Access door

Inspection * window

TECHNICAL INFORMATION

EV-VQ	Kst max = 500	Pmax ≤ 145 psi / 10 bar	Pred ≤ 7 psi / 0.5 bar	Pstat = 1.45 to 3 psi / 0.1 to 0.5 bar

Pred < 1.85 for VQ 920x920 and 1130x1130

VIGIL**EX**®

Curved Flameless Explosion VIGIFLAM VQ-R®

APPLICATIONS

The **Curved Flameless Explosion Vent VIGIFLAM VQ-R®** is similar to the standard **VIGIFLAM VQ®**, but is available with an application specific curved flange to accommodate mounting on cylindrical vessels, without the need for expensive flange adapters. This design feature reduces accumulation of dust/material in a fabricated transition in front of the flameless vent's integral explosion panel.
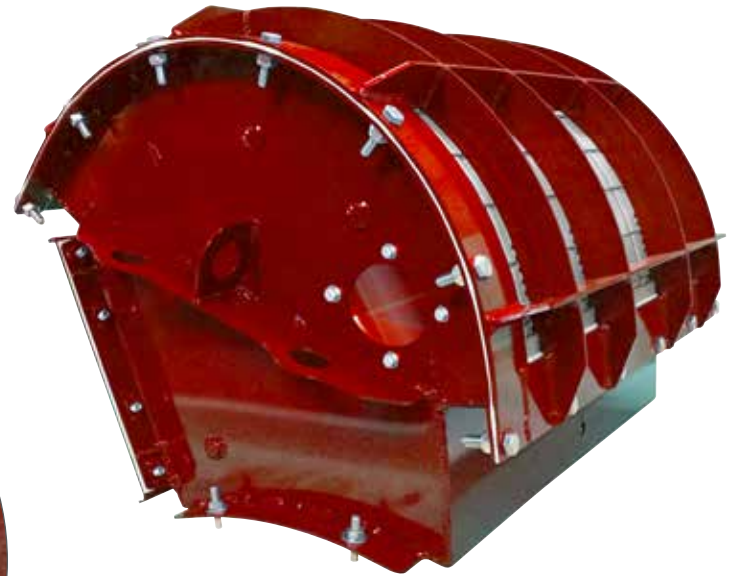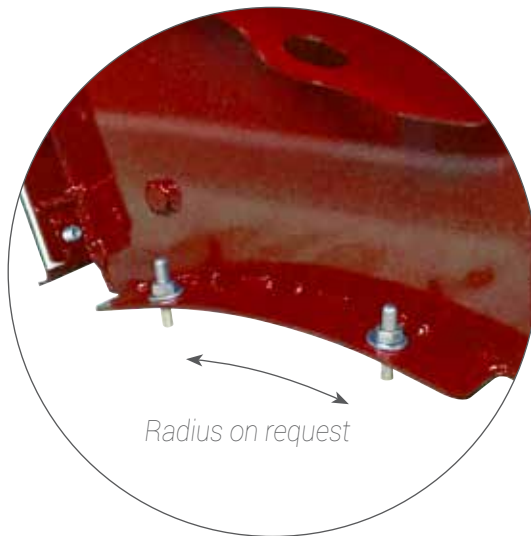
Radius on request

STANDARD FEATURES

- R Style Vent Panel with **EPDM gasket**
- **Mild steel** construction **epoxy coated red**.
- **Stainless steel** mesh flame arrestor
- Burst sensor
- **Mounting radius per design application**
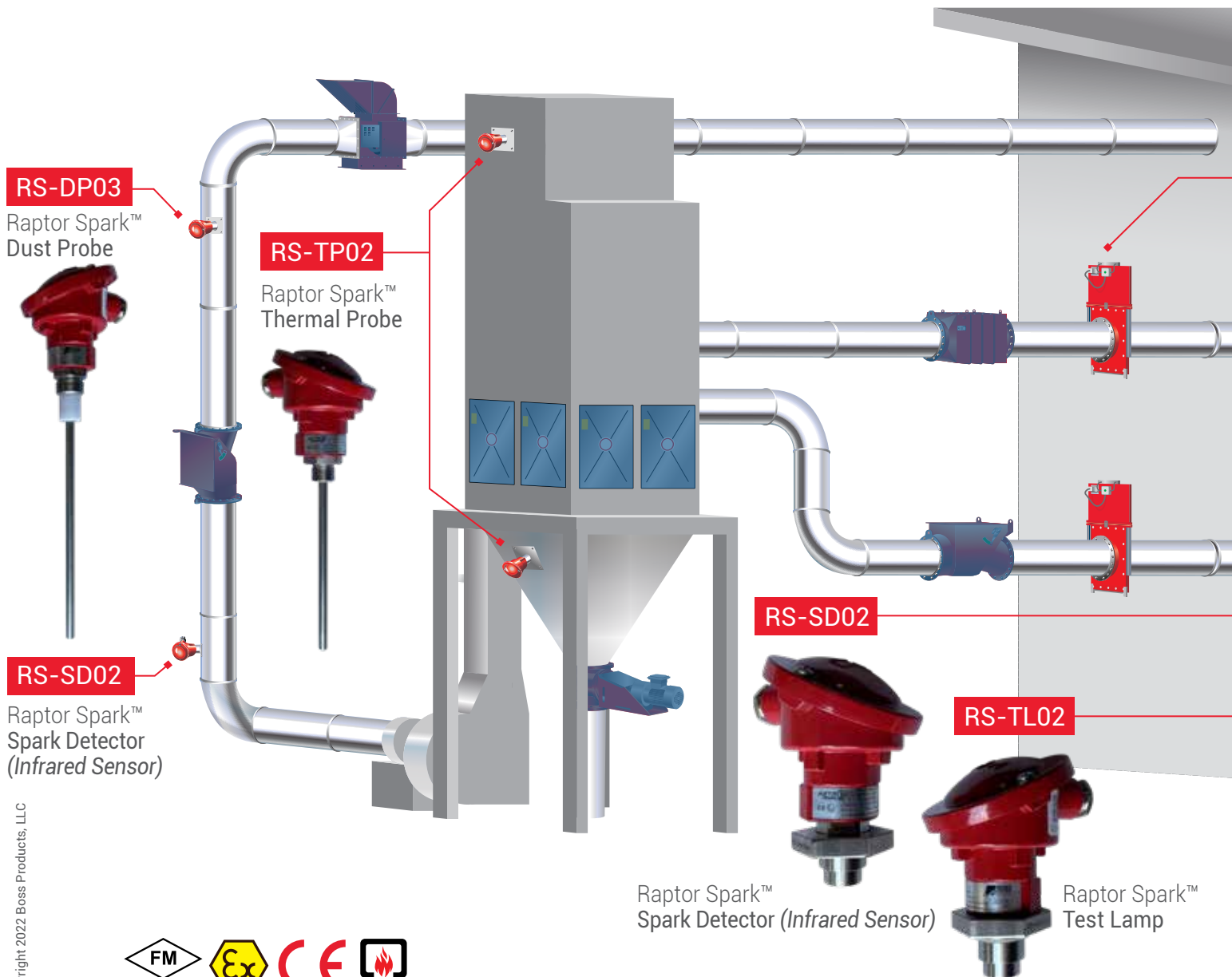
OPTIONAL FEATURES

- **Silicone** gasket
- **All stainless steel** construction
- **UL 698A Intrinsic** control panel
- Dust cover

Dust cover

BOSS PRODUCTS LLC

FLAMELESS STAINLESS STEEL EV-VQ

The **Flameless Stainless Steel VIGIFLAM VQ®** is a rectangular flameless device with a standard **VIGILEX** bursting panel. It is a perfect option for food or pharmaceutical facilities or high moisture atmospheres.

The **Flameless Stainless Steel VIGIFLAM VQ®** provides effective low pressure resistance, eliminating the spread of flame and glowing particles.

STANDARD FEATURES

- **R Style Vent Panel** with **EPDM gasket**
- **Mild steel** construction **epoxy coated red**.
- **Stainless steel** mesh flame arrestor
- Burst sensor
- **Mounting radius per design application**

OPTIONAL FEATURES

- Dust cover

Spark Detection and Extinguishing System

APPLICATIONS

The **Raptor Spark™ Detection** and **Extinguishing System** is an **FM APPROVED safety device** that is designed to detect and extinguish sparks and glowing embers that are traveling through a duct system. The hazard is detected by infrared sensors and extinguished with water spray nozzles within milliseconds of detection.

The **Raptor Spark™ Detection** control module has the capacity to receive hazard alert signals from multiple components (Dust Probes & Thermal Probes) and monitor multiple duct-zones and vessels. The **Raptor Spark™ Detection and Extinguishing System** is an essential Fire Protection, Fire Isolation and Diversion device that

RS-DP03
Raptor Spark™
Dust Probe

RS-TP02
Raptor Spark™
Thermal Probe

RS-SD02
Raptor Spark™
Spark Detector
(Infrared Sensor)

RS-SD02

RS-TL02

Raptor Spark™
Spark Detector *(Infrared Sensor)*

Raptor Spark™
Test Lamp

is commonly installed with **EcoMAXX® High Speed Abort Gates**, **FireBreak Shutters**, **EcoMAXX®/VigilEX Explosion Vents** and explosion certified **EcoMAXX®/** **VDL Rotary Valves**. Typical automatic functions include hazard detection, system shut-down, isolation/abort, and extinguish and/or suppression.
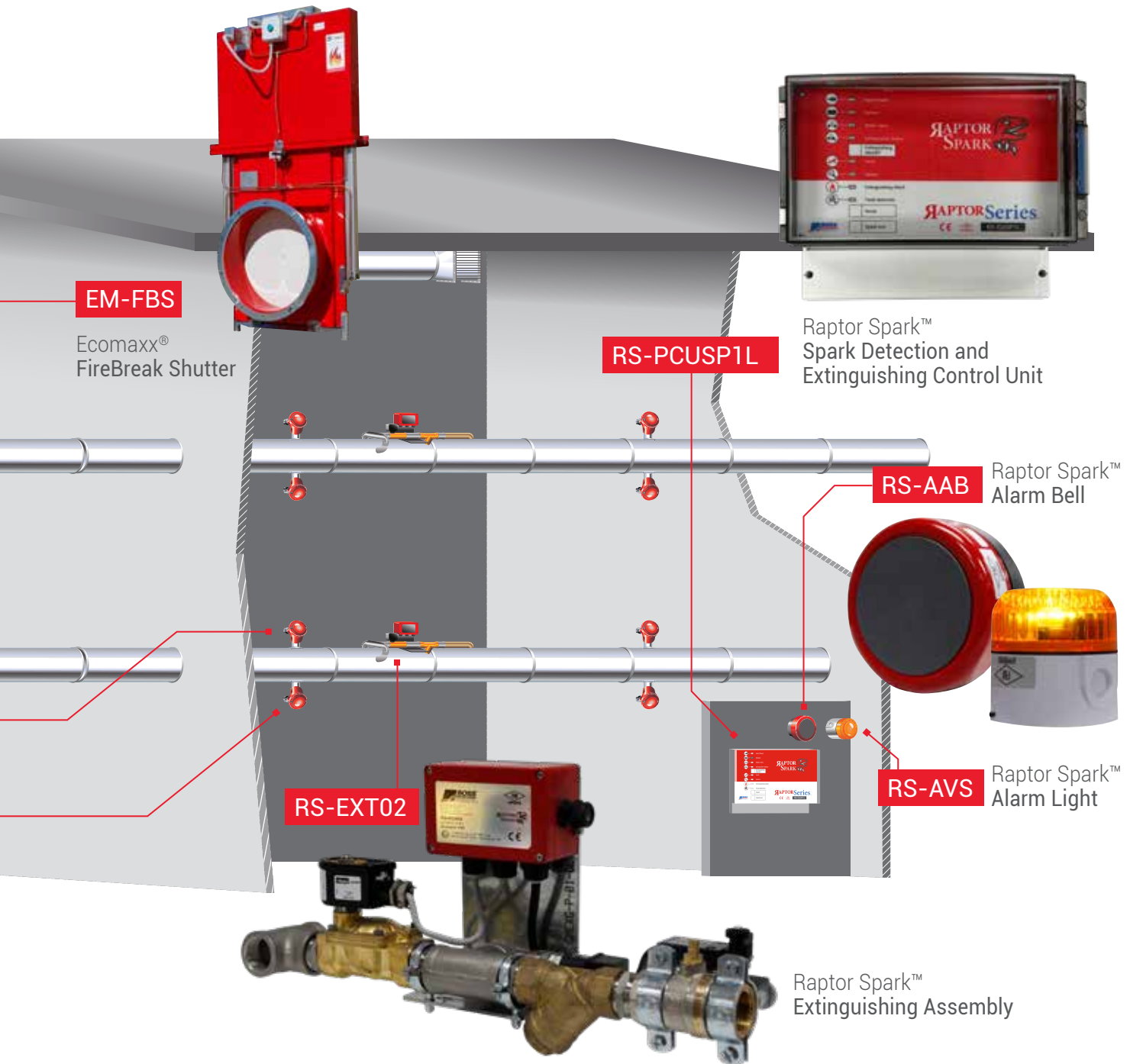
EM-FBS

Ecomaxx®
FireBreak Shutter

RS-PCUSP1L

Raptor Spark™
Spark Detection and Extinguishing Control Unit

RS-AAB

Raptor Spark™
Alarm Bell

RS-EXT02

RS-AVS

Raptor Spark™
Alarm Light

Raptor Spark™
Extinguishing Assembly

Spark Detection and Extinguishing System

APPLICATIONS

Raptor Spark™ Detection & Extinguishing Control Unit RS-PCUSP1L

The **Raptor Spark Detection & Extinguishing Control Unit (RS-PCUSP1L)** is designed to minimize the risk of fire and explosion in dust filtration and pneumatic conveying systems. This control unit communicates with a variety of components to monitor and protect up to six individual zones. **The Control Units, RS-PCU1610SD & RS-PCUSP1L, are FM Approved**.

Raptor Spark™ Extinguishing Assembly RS-EXT02

The **Extinguishing Assembly (RS-EXT02)** is designed to work in conjunction with the **RS-PCUSP1L control unit** and **RS-SD02 Spark Detectors**. When the control module gets a signal that a hazard has been detected, the extinguishing assembly is activated. A water spray is initiated inside the piping system to extinguish sparks or glowing embers that could cause fire or explosion. **The Extinguishing Assembly (RS-EXT02) is FM Approved and ATEX Certified**.

Raptor Spark™ Dust Probe RS-DP03

The **Dust Probe (RS-DP03)** is a charge displacement probe that uses the principle of the displacement of the electric charge in the electrode. It signals the **RS-PCUSP1L Control Unit** when there is an increase in the concentration of dust levels which could potentially indicate the rupture or ineffective operation of dust filters and/or dust bags. **The Dust Probe (RS-DP03) is FM Approved and ATEX Certified**.

Raptor Spark™ Thermal Probe RS-TP02

The **Thermal Probe (RS-TP02)** is designed to work either as a thermovelocimetric output (rapid raise in temperature in a short amount of time), or as a thermostatic output (fixed temperature threshold) to alarm the **RS-PCUSP1L Control Unit** of potential fire hazards in the ductwork, dust collector units, hoppers, cyclones and etc. The **Thermal Probe (RS-TP02)** is **FM Approved and ATEX Certified**.

Raptor Spark™ Spark Detector RS-SD02

The **Spark Detector (RS-SD02)** is designed to work with the **RS-PCUSP1L Control Unit**. The **Spark Detector** uses advanced technology and circuit, sensitive to infrared light to detect sparks, flames, and incandescent material that passes in front of its optical element. The **Spark Detector (RS-SD02)** is **FM Approved and ATEX Certified**.

Raptor Spark™ Test Lamp RS-TL02

The **Test Lamp (RS-TL02)** is designed to work in association with the **Spark Detectors (RS-SD02)**. The **Test Lamp** provides a function check to ensure the cleanliness of the **Spark Detector** lenses by emitting high infrared radiation into ducting or pneumatic conveying lines across from the spark detectors to simulate a spark or glowing ember in the line. The **Test Lamp (RS-TL02)** is **FM Approved and ATEX Certified**.

EcoMAXX® Firebreak Shutter EM-FBS-00

The **FireBreak Shutter** is engineered to isolate fires and fire hazards in process ventilation and dust collection applications. The **Fire Break Shutter** can be activated by the **EM-FCS-CU1610 Control Unit** or **RS-PCUSP1L** via **Spark Detection** or sensing activation by **Thermal Probe**.

CERTIFICATIONS & STANDARDS
Models P and MA
ATEX EN 1366-2, EN 13501
CSI 1643FR, REI 120-RE 120
CE

STANDARD FEATURES

- Output for Pre-Alarm
- **4-20mA** proportional output
- **IP65** Enclosure
- Output for Alarm
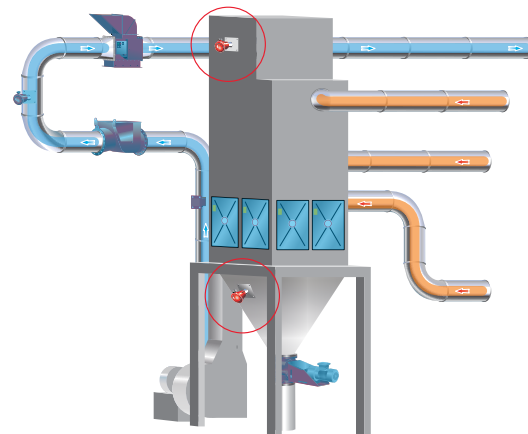- Bus **RS485**

OPTIONAL FEATURES

- Magnetic
- Pneumatic
- Fusible Link

Thermal Probe RS-TP02

APPLICATIONS

The **Thermal Probe RS-TP02** monitors the temperature rise within a vessel using thermostatic technology. The **Thermal Probe** is complete with an alarm function which signals upon rapid temperature rise based on fixed threshold set points to monitor the temperature in enclosures. It is designed to be used specifically for fire protection in dust collection systems.

The probes are equipped with a **6"/150 mm long steel stylus** that can be placed within the area to be monitored (eg, silos, cyclones, filter units) while the electronic circuit and electrical cable connections remain outside the vessel. These probes have cast aluminum enclosures with IP65 protection. The internal circuit and the measuring sensor (within the stylus) are immersed in a resin bi-component which allows the probe to be installed in difficult places, such as dusty environments. **The Thermal Probe is suitable for ATEX zone 22**.

CERTIFICATIONS & STANDARDS
ATEX Zone 22
CE
FM Approved

FM APPROVED   Ex   CE   NFPA

STANDARD FEATURES
- Output for Pre-Alarm
- Output for Alarm
- **4-20mA** proportional output
- Bus **RS485**
- **IP65** Enclosure

BOSS PRODUCTS LLC

Dust Probe (Broken Bag Detector) RS-DP03

PRODUCT CODE: 57502

APPLICATIONS

The **Dust Probe RS-DP03** is a microprocessor based instrument that is designed to detect and measure dust emissions caused by leaks in filtration media. Design characteristics include pre-calibrated digital optically isolated outputs and a set of **LED indicators**.

OPERATING PRINCIPLE

The **dust probe** uses the principle of the displacement of the electric charge in the electrode, induced by the electrical charges, carried by dust immersed in a gaseous fluid.

The amount of electric charge dynamically induced on the electrode is proportional to the amount of dust present in the gaseous fluid. An increase in the concentration of dust, causes a proportional increase of the signal that reaches the microprocessor.

Applying sophisticated mathematical algorithms, the individual powder particles are counted so as to be able to calculate their concentration.

The computed values can be stored internally in order to be drafted in the future, or sent via **RS485 serial transmission**, or **PWM 4/20 mA** to an **external control unit** for further analysis.

CERTIFICATIONS & STANDARDS

ATEX Zone 22
CE
FM Approved

FM APPROVED Ex CE NFPA
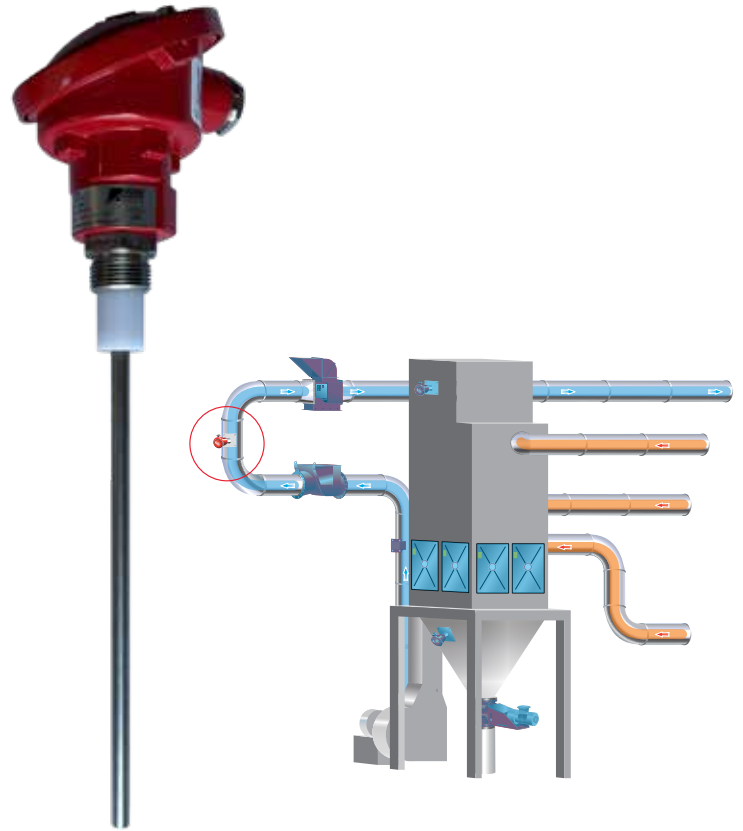
STANDARD FEATURES

- **Electrode length :** 10" / 250 mm
- **Enclosure dimensions :** 3 1/4"x3" x 2 5/16" / 80 x 75 x 58 mm
- **Material :** stainless steel **5/16" / ø 8 mm**
- **Sensitivity :** $10x10^{-8}$ oz/cu.ft — 0.1 mg/mc
- **Outputs :** 2 programmable open collector
- **Interfaces :** 1 serial (RS485)
- **Protection :** ATEX II 3D EEx IP65 T 185º F / 85º C

CODE	RESOLUTION	SET1	SET2	OUT 4/20mA	END OF SCALE 20mA	AUTOACQUISITION	RS485
57502-020000	$10x10^{-8}$ oz/cu.ft 0,1 mg/m³	$5x10^{-6}$ oz/cu.ft 5 mg/m³	$10x10^{-6}$ oz/cu.ft 10 mg/m³	NO	$10x10^{-6}$ / $5x10^{-5}$ oz/cu.ft 10/50 mg/m³	YES	YES
57502-010000	$10x10^{-8}$ oz/cu.ft 0,1 mg/m³	$5x10^{-6}$ oz/cu.ft 5 mg/m³	$10x10^{-6}$ oz/cu.ft 10 mg/m³	YES	$10x10^{-6}$ / $5x10^{-5}$ oz/cu.ft 10/50 mg/m³	NO	YES

Water Pressure Booster Pump RS-CPR

APPLICATIONS

The **Raptor Spark™ Water Pressure Booster Pump RS-CPR** was designed to regulate water pressure going into the extinguishing unit. It is the best solution for facilities that have over or under pressure water lines available for installation of the **Spark Detection and Extinguishing System**.

Intlet water

Outlet water

Inlet air

STANDARD FEATURES

- System comes in an epoxy powder coated steel enclosure and includes :
  - **(1) 3/8"** water inlet connection with 1-way valve
  - **(1) water reservoir tank** with level sensor and pressure gauge
  - **(1) 1" water outlet connection**,
  - **(1) 3/8" compressed air inlet connection** with **1-way valve** (minimum pressure required is 116 PSI / 8 bar), compressed air reservoir tank, air tank pressure switch, regulator, solenoids, and cable grips.

OPTIONAL FEATURES

- Standard sizes : **15 L, 30 L, 40 L**

ACCESSORIES FOR WATER PRESSURE BOOSTER PUMP RS-CPR

- RS-PWE (Packaged Water Extinguishing Group Assembly Kit)

PRODUCT'S CATEGORY SUITABLE TO THE INSTALLATION'S ZONE

The distance between the water station must **not exceed 23 ft.**
The choice of model capacity is based on the number of nozzles.

COMPONENTS

1 - Air tank manometer
2 - Outler adjusting pressure water flux
3 - Air tank pressostat
4 - Water pressure manometer
5 - Air solenoid
6 - Airway out solenoid
7 - Water level sensor
8 - Air tank
9 - Water tank
10 - Water non return valve 3/8"
11 - Air non return valve 3/8"
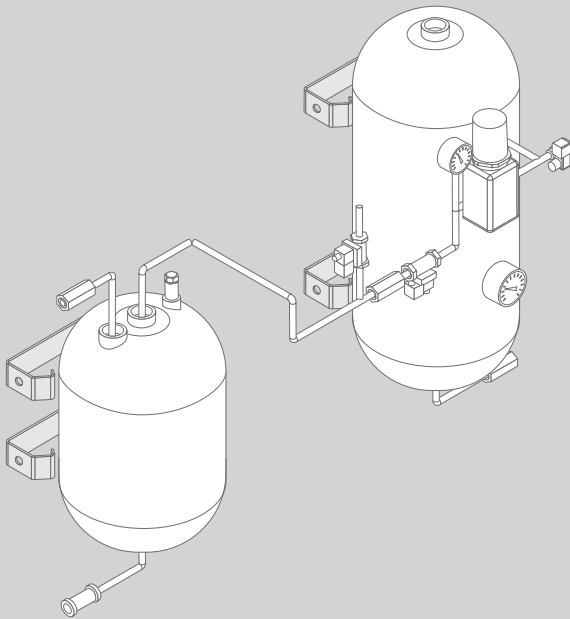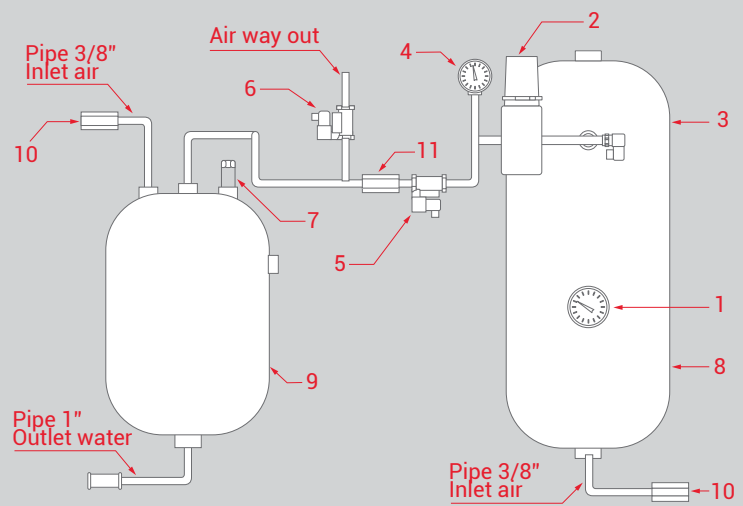
Raptor Shield™ (Spark Trap)

APPLICATIONS

The **Raptor Shield™ (Spark Trap)** was designed with maximum cooling technology that ensures maximum reduction in sparks or burning embers. This devise has no moving parts for extremely low maintenance. The spark arrestor is designed to be directly connected to any typical duct connection.

The **Raptor Shield™ (Spark Trap)** is a critical part of fire prevention in a dust collection system. They help block sparks before they can start a fire. They are a very low-maintenance and highly effective method that helps block sparks from getting past.

Impingement Blades

Screen Trap
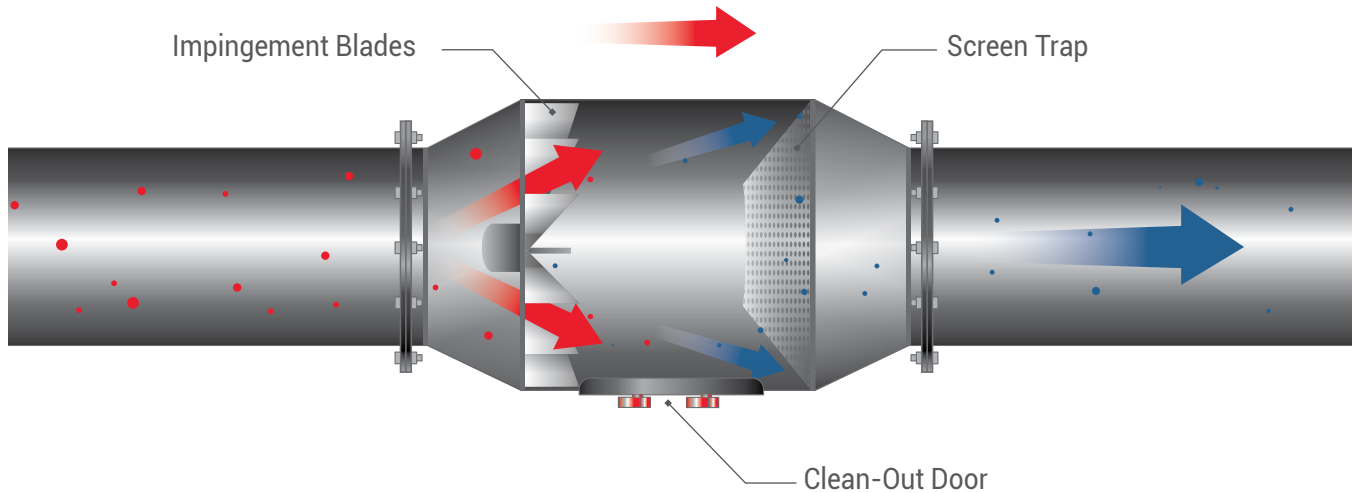
Clean-Out Door

CERTIFICATIONS & STANDARDS
NFPA Compliant

NFPA

STANDARD FEATURES

- Standard sizes : 6" -50" (more on request)
- Heavy duty construction
- Clean-out door
- No maintenance
- Can be installed in horizontal or vertical configuration
- Flanged ends

BOSS PRODUCTS LLC

APPLICATION AND GUIDELINES

LOCATION - One duct diameter between inlet of spark arrestor and spark source. There must be a minimum of **10 duct diameters** between the outlet of the spark arrestor and dust collector or separator.
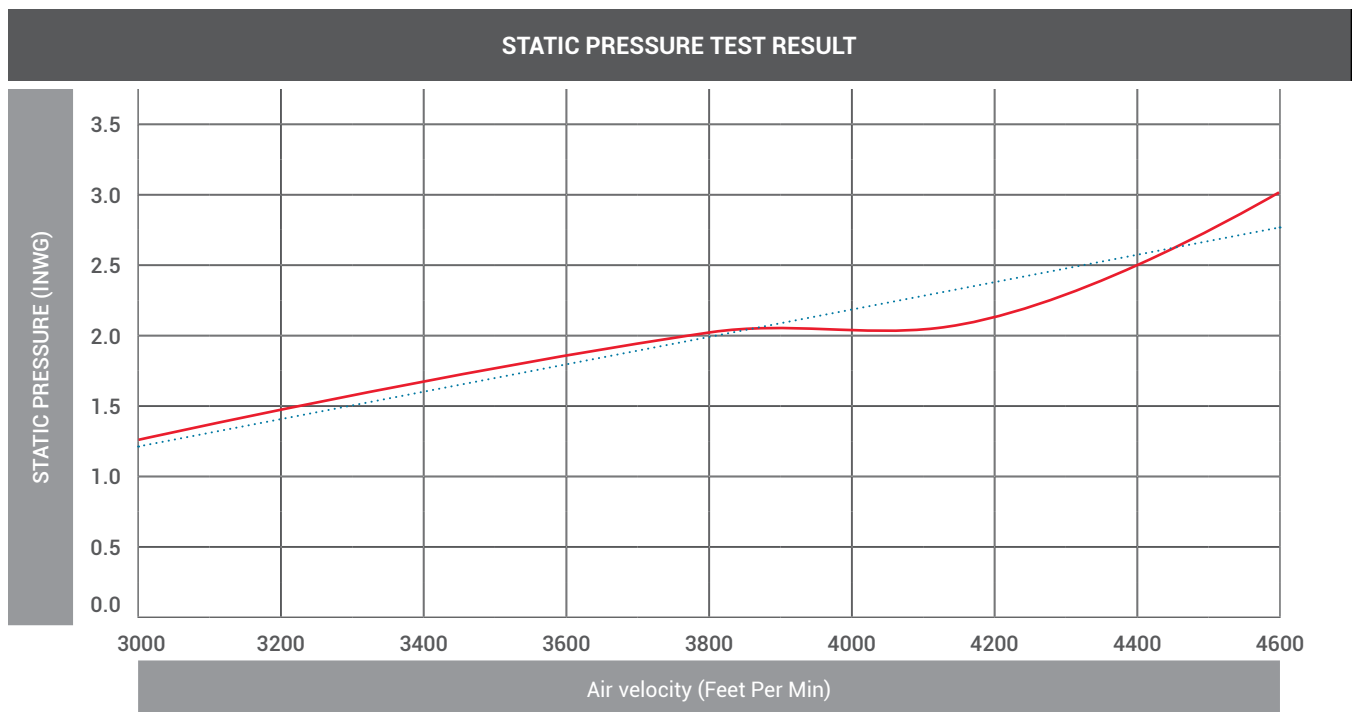
FLOW - Best practice is using the spark arrestor in duct velocities greater than **400 fpm** but not exceeding **5000 fpm**.

TEMPERATURE - Performance is dependent upon the conveying velocity being at lower temperature than the spark ember itself. Therefore, it should be used in operations with temperatures below ignition point of the suspended particulates and in no case higher than **200 degrees**.

PERFORMANCE

The **Raptor Shield™ (Spark Trap)** is designed and applied as a preventative mesure to reduce lifecycle and rate of hazardous sparks within the properly applied system. The **Raptor Shield™ (Spark Trap)** is not designed to extinguish actual fires or stop mitigation of explosion.

STATIC PRESSURE TEST RESULT

Chart — STATIC PRESSURE (INWG) vs Air velocity (Feet Per Min), ranging 3000 to 4600 on x-axis and 0.0 to 3.5 on y-axis.

BOSS PRODUCTS LLC

CO$_2$ Fire Suppression System

APPLICATIONS

The **Raptor Breath™ CO$_2$ Fire Suppression System** has the capability to provide protection from class A, B, and C fires in dust collecting vessels up to **900ft³**.

STANDARD FEATURES

- The package comes fully assembled in an environmentally rated enclosure that is suitable for outdoor installations that only requires hoses to be mounted onto the dust collector for operation
- This system utilizes 50 lbs. **CO² tanks** to be activated by **thermal probes** which will detect a fire in the vessel, **firebreak shutters** on the inlet and outlet prevent any of the gas from escaping in a detect, isolate, and suppress process

OPTIONAL FEATURES

- **Standard sizes : 300ft³, 600ft³, 900ft³**

DIMENSIONS

- **300ft³: 72" H x 48" W x 20" D**
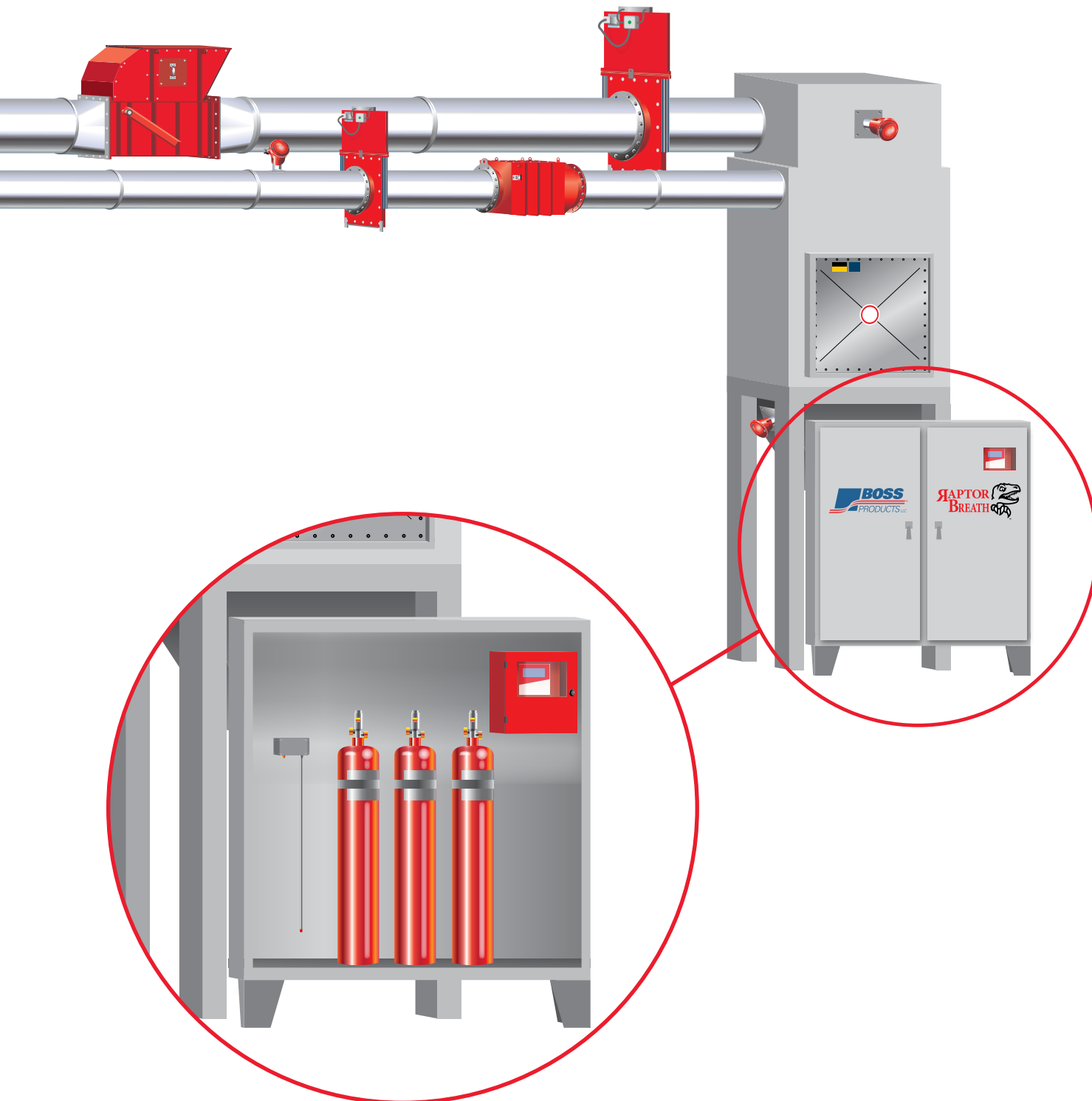- **600ft³ to 900ft³: 72" H x 72" W x 20" D**

ACCESSORIES FOR CO² FIRE SUPPRESSION SYSTEM

- Distribution Hoses and connections
- RS-TP02 (Thermal Probes)
- EM-FBS (Fire Break Shutters)
- Audible and Visual Alarms

INSTALLATION INFORMATION

RAPTOR GATE™

Heavy Duty High Speed Abort Gate

APPLICATIONS

The **Raptor Gate™ Heavy Duty High Speed Abort Gate** is an important part of any duct spark or leak detection system.

It can be located prior to the inlet of a dust collection system to prevent a flame or burning ember from entering the dust collection system. This method is used if your spark detection equipment is not adequate or not an option.

Fire, smoke, spark, or broken filter sensors can activate it in the event of a filter failure or fire.

The **Raptor Gate™ Heavy Duty High Speed Abort Gate** can be placed on the return air side of the dust collector to redirect contaminated air to safe location. It is just another way to keep personnel and dust collection equipment protected.

CERTIFICATIONS & STANDARDS
NFPA 652 & 654 Compliant when used in conjunction with FM Approved Spark Detection System.

STANDARD FEATURES
- Heavy duty and spring loaded with thicker walls and sturdier construction than the **High Speed Abort Gate EM-HSAG02**.
- Complete with hydraulic gate operation, indicator lights to monitor the system, manual test button, terminals to interlock with **Raptor Spark** detection system for activation, flanged inlet and outlet, and weather hood with bird screen.
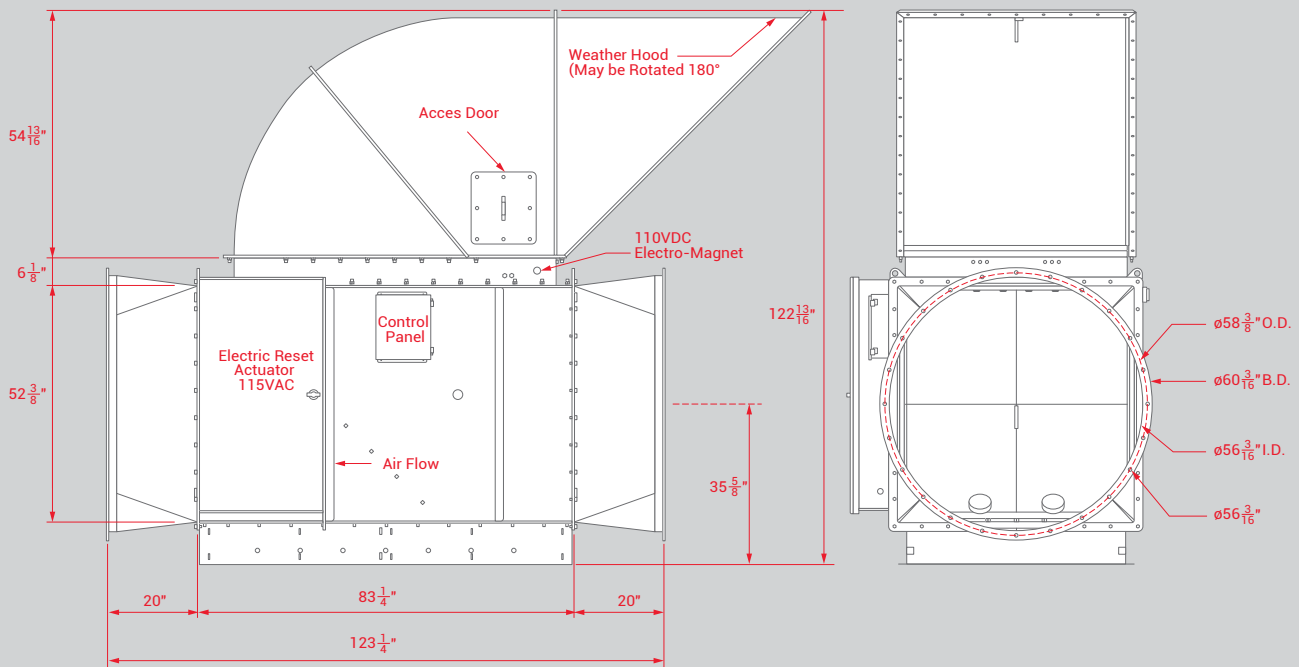- Available in sizes 4" to 60"

OPTIONAL FEATURES
- **120V AC Control Panel.**

TECHNICAL INFORMATION

HEAVY DUTY HIGH SPEED ABORT GATE 18
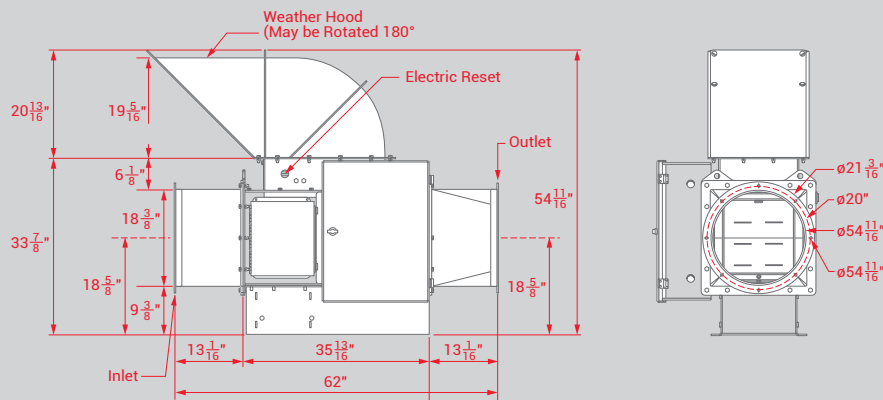
HEAVY DUTY HIGH SPEED ABORT GATE 56

FireBreak Shutter EM-FBS

APPLICATIONS

The **FireBreak Shutter EM-FBS** is engineered to isolate fires and fire hazards in process ventilation and dust collecting applications. The **FireBreak Shutter** is installed in multiple applications ranging from wood dust, metal dust, oil mist and/or any other process that has a fire hazard. Preventative (active) and reactive (passive) solutions are available.

AVAILABLE MODELS

- **EM-FBS00G** – Gravity closure with manual reset
- **EM-FBS00F** – Gravity closure with manual reset. Fusible link activation.
- **EM-FBS00M** – Gravity closure using magnetic release with a pneumatic reset.
- **EM-FBS00P & EM-FBS00PH** – Pneumatic closure & reset, designed for vertical and horizontal positions.

COMMON APPLICATIONS :

- Secondary protection in a **Spark Detection** and **Extinguishing System**
- Detect and isolation systems without suppression
- Dust collector/vessel isolation when used with a **Fire Suppression System**
- Production area/work zone isolation for high-risk processes

STANDARD FEATURES

- 4 models/styles available from sizes **8" to 48"** diameter
- Heavy-duty welded steel construction
- Flanged inlet and outlet with co-flanges
- Self-cleaning design
- Integral gasketing for positive seal
- Epoxy powder coated safety red finish
- ATEX certified*

  * *Model FBS-00M is provided as non-ATEX CE listed standard. ATEX version is available upon request.*

CERTIFICATIONS & STANDARDS

EN 15650
EN 1366-2
EN 13501-3

OPTIONAL FEATURES

- Thermal Probes for rapid temperature rise activation
- Microswitch for system shut down
- Compressed air reservoir tank
- Fire Suppression System
- Spark Detection and Extinguishing System

DIMENSIONS

* MANUAL RESET EM-FBS00G & EM-FBS00F *				
	A	B	C	weight lbs
Ø 8"	30"	14"	21"	24
Ø 10"	34"	16"	24"	30
Ø 12"	38"	18"	27"	38
Ø 14"	42"	20"	30"	44
Ø 16"	46"	22"	33"	50
Ø 18"	50"	24"	36"	60
Ø 20"	54"	26"	39"	68
Ø 22"	58"	28"	42"	80
Ø 24"	62"	30"	45"	90
Ø 26"	66"	32"	48"	102
Ø 28"	70"	34"	51"	112
Ø 30"	73"	36"	54"	140

NOTE : All EM-FBS (firebreak shutters) come with flanged ends & co-flanges.

Units in inches rounded to the closest whole number

| * MAGNETIC & PNEUMATIC EM-FBS00M, EM-FBS00P & EM-FBS00PH					
	A	B	C	D	weight lbs
Ø 8"	37"	22"	13"	24"	48
Ø 10"	39"	24"	13"	29"	55
Ø 12"	41"	26"	13"	30"	60
Ø 14"	46"	28"	13"	35"	68
Ø 16"	48"	30"	13"	36"	75
Ø 18"	58"	32"	13"	44"	88
Ø 20"	60"	35"	13"	45"	95
Ø 22"	66"	37"	13"	50"	110
Ø 24"	68"	40"	13"	51"	130
Ø 26"	74"	42"	13"	56"	150
Ø 28"	76"	44"	13"	57"	180
Ø **30"	82"	46"	13"	62"	205
Ø 32"	87"	47"	21"	64"	230
Ø 34"	93"	49"	21"	69"	255
Ø 36"	95"	51"	21"	70"	285
Ø 38"	101"	53"	21"	75"	305
Ø 40"	103"	56"	21"	76"	320
Ø 42"	109"	58"	21"	80"	345
Ø 44"	111"	60"	21"	81"	370
Ø 46"	117"	62"	21"	86"	395
Ø 48"	119"	64"	21"	87"	420

NOTE : ** EM-FBS00M magnetic model available to 30" diameter.

Units in inches rounded to the closest whole number

Manual Reset
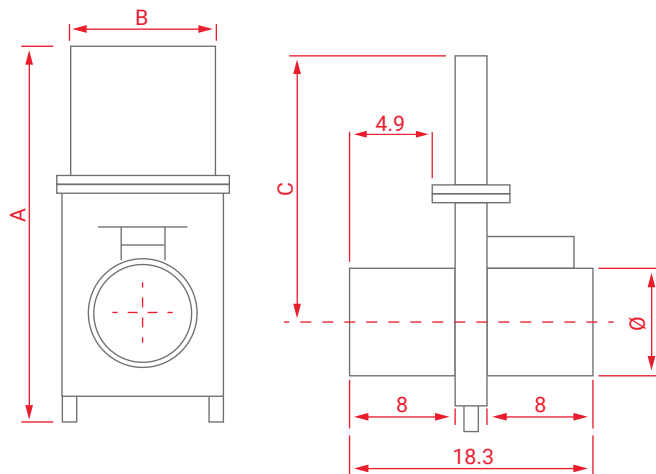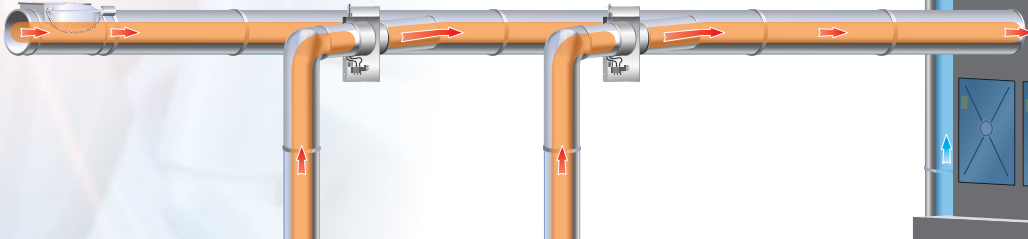

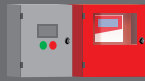## Magnetic & Pneumatic
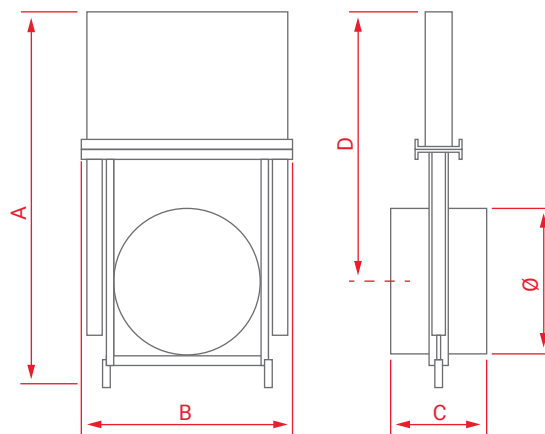
EB-ABG
ECOBOSS®
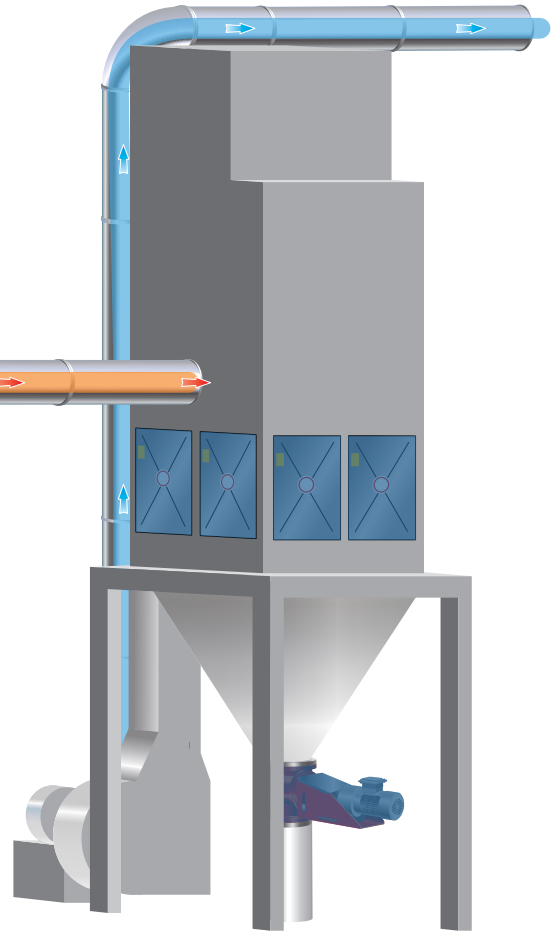Automatic blast gates

EB-BDHD
ECOBOSS® Heavy duty barometric dampers

EB-PBU
ECOBOSS®
Power box ultimate

EB-SVD
ECOBOSS® Stand alone variable speed drive

Modern manufacturing requires reliable and energy efficient automation solutions to be competitive in today's Global Marketplace. The **EcoBOSS®** product line of control and automation solutions has evolved over decades of experience in the filtration and process ventilation industry. **EcoBOSS®** combines **Industrial Safety Solutions** and **Energy Conservation Technology** into an advanced package that is ready to take industry well into the 21st century.

Boss Products operates its own in-house **UL 508A/UL698A & CVL Certified** electronics manufacturing facility. All **Boss Products** operations are **ISO 9001:2015 Certified**. Operations include electronics manufacturing of **EcoMAXX®** standard and specialty control panels, custom automation control panels and contract **OEM** controls manufacturing.

Energy management control systems for industrial dust collection & ventilation

APPLICATIONS

How EcoBOSS® can work for you :

EcoBOSS® Energy Management Control Systems deliver up to 80% reduction in kW consumption for typical industrial ventilation systems.

Boss Products engineers have spent years of research & testing to verify that the key to significant energy savings is to **regulate fan performance capacity to deliver the suction volume based on spindle run time**.
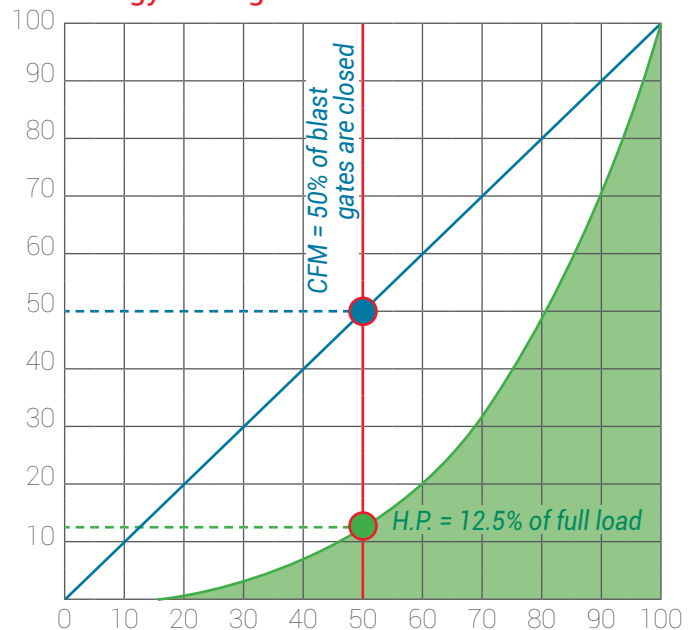
Typical industrial ventilation systems are designed to operate at full capacity. Extensive observation and case studies have shown that **actual spindle run time** rarely approaches 50% of full capacity during 90% of an average monthly production cycle !

EcoBOSS® Energy Management Control Systems have been designed to take full advantage of the Fan Affinity Law which clearly illustrates how an **EcoBOSS®** installation **will work for you**.

Advanced technology, systems engineering and modern components have been combined to create the **EcoBOSS® Energy Management Controls**. Three levels of **EcoBOSS®** controls have been developed & field tested to optimize the function of industrial ventilation control applications.

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CERTIFICATIONS & STANDARDS

c(UL)us **LISTED**

(UL) UL 508A / 698 A Registered Firm

Energy savings - HorsePower vs. % CFM

CFM = 50% of blast gates are closed

H.P. = 12.5% of full load

Air volume (CFM 50%)
Power (H.P. %)

When a fan's airflow is reduced by 50% the kW consumption is reduced to 12.5% of full load.

ECOBOSS® LOOP BOX - EB-LB

Regulates fan speed dependent on varying filter pressure and resistance conditions to deliver optimum CFM. Remote start capable and designed to reduce energy consumption based on equipment utilization and spindle run time demand.

ECOBOSS® POWER BOX - EB-PB

Regulates fan speed dependent on varying filter pressure and resistance conditions to deliver optimum CFM. Integrated logic controller sequencing auxiliary motors and operates automatic gates based on real time equipment utilization (spindle run time) through a simple integrated network system. Remote start capable and designed to reduce energy consumption based on equipment utilization and spindle run time demand.

ECOBOSS® POWER BOX ULTIMATE - EB-PBU

Advanced technology Energy Saving Control System with external color touch screen programming for operation interface and expanded system capacity for larger systems. It regulates fan speed dependent on varying filter pressure and resistance conditions to deliver optimum CFM. A powerful logic controller operates automatic gates based on real time equipment utilization (spindle run time) through a simple integrated network and can sequence control of discharge valves, transfer fans, dirty filter alarms, fire extinguishing and/or suppression, explosion isolation, clean air abort return and variable pulse filter cleaning systems.

ECOBOSS® STAND-ALONE VARIABLE SPEED DRIVE - EB-SVD

Critical component for all **EcoBOSS®** energy saving control systems. It drives the primary fan motor speed based on constant communication and feedback from an **EcoBOSS®** control panel for the most efficient operation. Proven technology and programming ensures optimum fan performance based on real time production conditions and safety requirements.

ECOBOSS® POWER SUPPLY PANELS - EB-MPK

Stand-alone solution to power Automatic Blast Gate and sensor. It automatically starts and stops the exhaust fan. Models available with adjustable delay timer and manual override.

OEM Control Panels EB-OEM

Boss Products owns and operates a fully staffed and state-of-the-art electrical control panel manufacturing center. We are a fully accredited **UL 508A** and **UL 698A** Panel Shop distributing to the USA and Canada Markets.

In addition to producing our own control panels, we provide quality control panel solutions for our **OEM**

customers, solution providers, integrators, and other specialty groups for various industries. We specialize in design, manufacturing, support services and always offer competitive pricing for small or large projects.

INDUSTRIAL VENTILATION AND DUST COLLECTION APPLICATIONS

The staff at **Boss Products** are experts in the field of industrial ventilation and dust collection. Many of our staff members have spent most of their careers working in this field. We understand the equipment, the

processes, and their unique challenges. We have the experience and application knowledge that makes us uniquely qualified to ensure your system controls are operating effectively and trouble-free.

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CERTIFICATIONS & STANDARDS

UL 508A / 698 A
Registered Firm

PRODUCTION CAPABILITIES

- Build to design or design and build
- Control panel manufacturing and listing
- Testing and quality control
- Control panel repair, maintenance and modifications
- Engineering and design
- CAD files and prints
- Application consulting

- Relay logic, AC & DC
- Drives, motor starters, PLC, HMI and PC based systems
- Custom programming
- Technical support, training, and commissioning services
- Private labeling

PRODUCTION SOLUTIONS

- Motor starter panels with integrated filter cleaning controls, automatic startup/shutdown sequencing of auxiliary devices
- NFPA compliance interlocks for combustible dust producing machinery.
- Compliant interlocks of multiple ambient air cleaner and/or centralized push pull collector motors to work in tandem
- Filter, velocity and pressure monitoring systems with data logging, alarm and messaging

- Closed loop trailer loading systems with automatic switching, alarm, and messaging
- Vehicle exhaust control panels with or without damper control and automatic fan activation
- Automatic arc sensing in welding processes for damper and fan motor control
- Many Many MORE !

Automatic Blast Gates EB-ABG

APPLICATIONS

EcoBOSS® 100% Positive Seal Pneumatic Blast Gates are an essential energy saving component for all dust collection and air handling systems.

**AUTOMATIC BLAST GATES EB-ABG00 Sizes 4" - 12"**

DIMENSIONS

HEAVY DUTY AUTOMATIC BLAST GATES * EB-ABG00HD Size 14" - 32"							
ø	A	A1	B	B1	H	C	# of Cylinders
14"	18	24	31	44	11	47	2
16"	20	25	31	46	11	49	2
18"	22	27	35	52	11	55	2
20"	24	30	35	54	11	57	2
22"	26	32	39	60	11	65	2
24"	28	34	39	62	11	65	2
26"	30	36	43	68	11	71	2
28"	32	38	43	70	11	73	2
30"	34	41	47	76	11	79	2
32"	36	43	47	78	11	81	2

Units in inches rounded to the closest whole number

AUTOMATIC BLAST GATES EB-ABG00 Sizes 4" - 12" *				
ø	A	B	C	# of Cylinders
4"	7	11	16	1
5"	8	13	18	1
6"	9	15	21	1
8"	11	19	28	2
10"	13	23	33	2
12"	15	27	39	2

Units in inches rounded to the closest whole number

Protective Case (Optional)
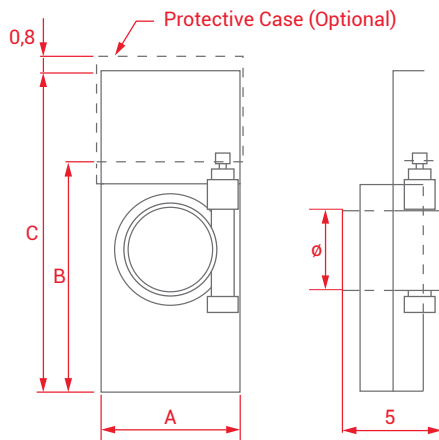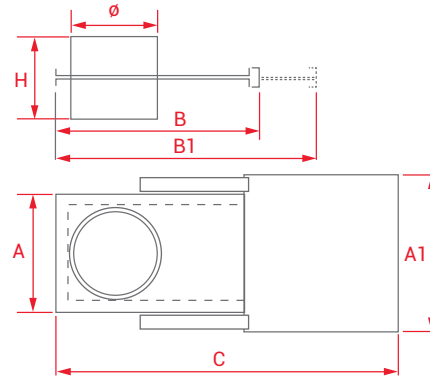
STANDARD FEATURES

- Heavy duty galvanized steel construction
- **24 VDC, 24 VAC** or **110 VAC** solenoid with LED indicator light
- **Sizes 4" – 12"** come standard with **90º** flared ends for use with optional quick connection clamps and adapters
- **Sizes 14" – 32" HD** Gates come standard with flanged ends and co-flanges
- Polyethylene gasket for **100 %** positive seal on sizes **4"– 12"**. Larger HD Gates utilize brass for ease of movement and feature rubber and felt gasket. All HD Gates are self cleaning

OPTIONAL FEATURES

- **EB-ABG-PC00** – Protective Case Sizes **4" - 12"**, standard on all larger HD Gates
- **EB-MPK** –Transformer panels with plug for use with low voltage sensors on stand-alone applications
- Pneumatic Distribution & Wiring Solutions
- Comprehensive **EcoBOSS®** Energy Saving Control Systems

Heavy Duty Barometric Dampers EB-BDHD

APPLICATIONS

EcoBOSS® Heavy Duty Barometric Dampers are designed to automatically bleed in air to avoid fan instability and maintain suitable conveying velocities in duct lines.

DIMENSIONS

HEAVY DUTY BAROMETRIC DAMPERS	
Ø	Length
6"	17"
8"	19"
10"	21"
12"	23"
14"	25"
16"	27"
18"	29"
20"	31"
22"	33"
24"	35"

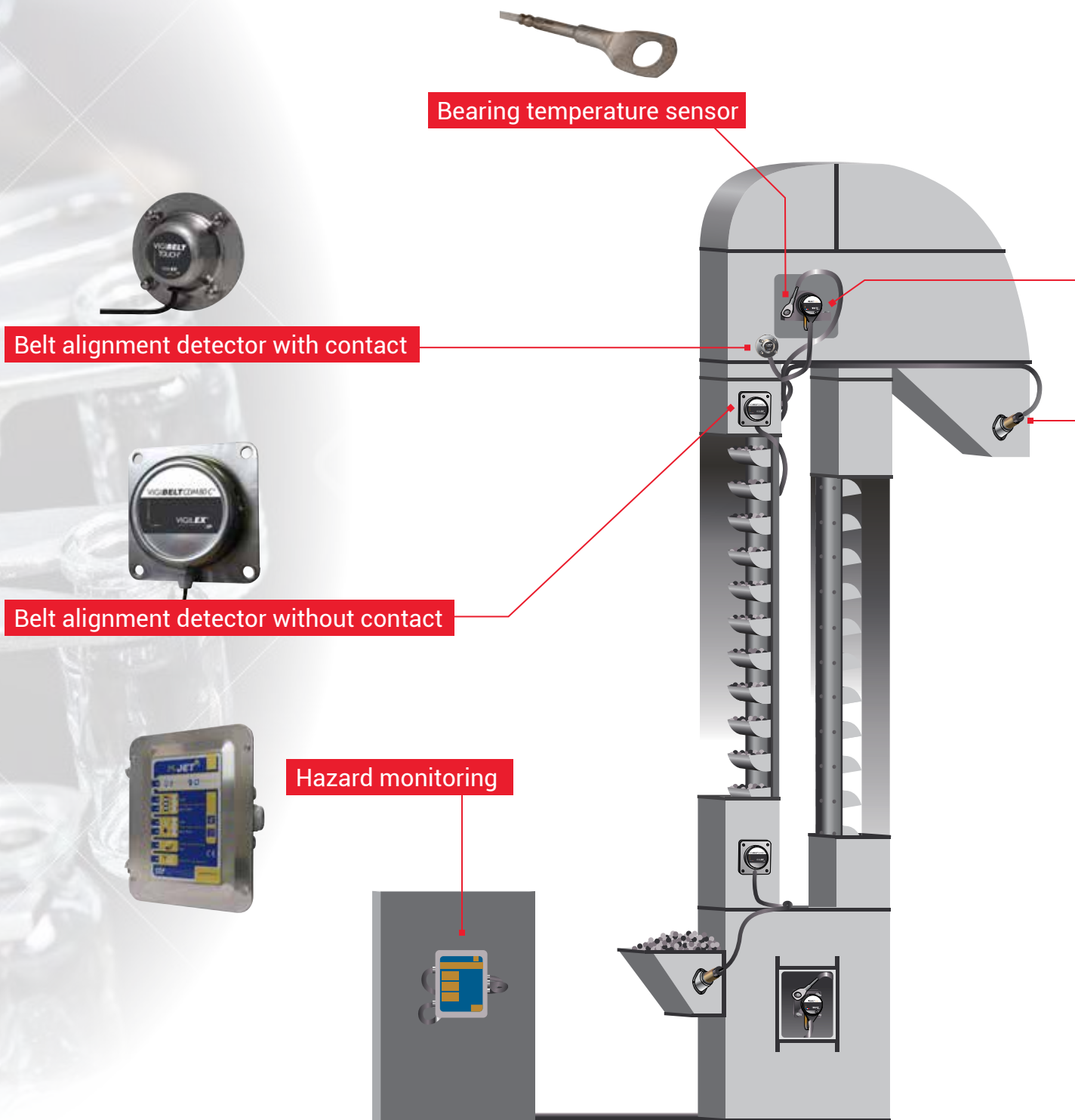** Units in inches rounded to the closest whole number*

Length
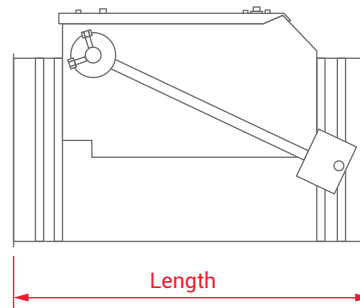
STANDARD FEATURES

- Heavy duty galvanized steel construction
- Heavy duty adjustable counterweight with safety chain
- Removable inspection door
- **Sizes 6" through 18"** :
    90º flared ends for use with optional quick connection clamps and adaptors
- Sizes **20"** and larger :
    Flanged ends with co-flanges

OPTIONAL FEATURES

- Pneumatic model with velocity sensor
- **Sainless steel AISI 304** and **316** construction

Bearing temperature sensor

Belt alignment detector with contact

Belt alignment detector without contact

Hazard monitoring

Rotation under speed swich

Level & choke sensor

The **M-JET SYSTEM** is a modern and dynamic safety monitoring system. We have designed a complete system to ensure the protection and safety of your personnel and equipment.

The **M-JET SYSTEM** includes a complete range of hazard monitoring and safety equipment sensors, and is designed to protect up to **120 individual conveyors**. This capacity offers the most economical conveyor system hazard monitoring system available.

M-JET has the capability to accurately monitor, manage and analyze productivity, operating conditions and hot-spots that could lead to additional equipment damage, costly repairs and explosion hazard. Real-Time electronic data is instantly **available 24/7** and can be accessed anywhere in the world via laptop, tablet or mobile phone.

M-JET SYSTEMS

The world's most advanced hazard monitoring system

THE SMART WAY TO MANAGE YOUR SAFETY SYSTEM

The **M-JET Safety Monitoring System** ensures complete control and real time data that is necessary to avoid unneeded maintenance and explosion hazard. **Data Reports** include dangers associated with speed control, misalignment, level & choke control, bearing and motor temperatures. **M-JET SYSTEMS** is specifically designed as an early warning system to alert facilities to potential sources of explosion ignition

Think Safety Smart. Think M-Jet to protect your employees and your facility.

THE SMART WAY TO MANAGE YOUR CONVEYOR SYSTEMS :
- Under speed due to belt slip on the pulley. To check comparing with the nominal speed.
- Bearing temperature using sensor PT100 or NTC.
- Belt misalignment using sensors with or without contact.
- Material jam in conveyor entry or exit using capacitive sensor.
- Chain elongation measured by inductive sensor and targets.
- Motor power measurement with specific electrical consumption.
- Shaft position measured by sensor 4-20mA.

THE OPERATING CONTROL OF THE SYSTEM IS ACHIEVED BY OUTPUT RELAYS :
- Directly on the power relay of the motor.
- By the global PLC of the facilities.

VERIFYING THE CONVEYOR OPERATION CAN BE ACHIEVED BY :
- On computer screen by internal website (directly with laptop or by Network LAN).
- By message on the email box (events and maintenance operation plan).

BOSS PRODUCTS LLC

M-JET SYSTEMS ELECTRONIC CONNECTIVITY VIA INTERNET OR FACILITY NETWORK :

- Remote monitoring up to 120 conveyors from the same display unit
- Unified viewing of data in real time
- Graphic display of historical data
- Viewing of alarms
- Alarm notification by sending email
- Support tools to manage preventive maintenance

VIGILEX® SAFETY PROTECTION Stif

M-JET SYSTEMS®

Type ⌄	Name ⌄	Place ⌄	Status ⌄	Speed ⌄	Cpt/Day ⌄	Cpt/General ⌄
	EL02	Place 2	Alarm	-	8h	1850h
	TB01	Place 1	Pre-Alarm	1,8m/s	7h	1575h
	EL01	Place 1	Ok	2,4m/s	5h	1125h
	EL03	Place 3	Ok	2,8m/s	3h	925h
	EL04	Place 4	Inactif	-	-	125h

Elevator EL02 — Place STIF USA — 25 mach 2018 15h31   **Status : Alarm**

| Dashboard | Temperature graph | Alarm graph | Alarm analysis | Maintenance | Param. M-JET.COM |

UNDER SPEED
Speed	000	rpm
Under speed	10	%
No.2		-
No.1		Ok

MISALIGNMENT
No.4		Ok
No.3		Ok
No.2		Alarm
No.1		Ok

TEMPERATURE
T° Max		80°C
No.4		65°C
No.3		68°C
No.2		58°C
No.1		56°C
T° Max		90°C
motor		73°C

LEVEL & CHOKE
| No.2 | | Ok |
| No.1 | | Ok |

ELEVATOR STOPPED
EL02
Alarm
Misalignment No.2

Access to graphics

jetmonitoringsystem.com
is available on all your mobile devices

Run time

Temperatures

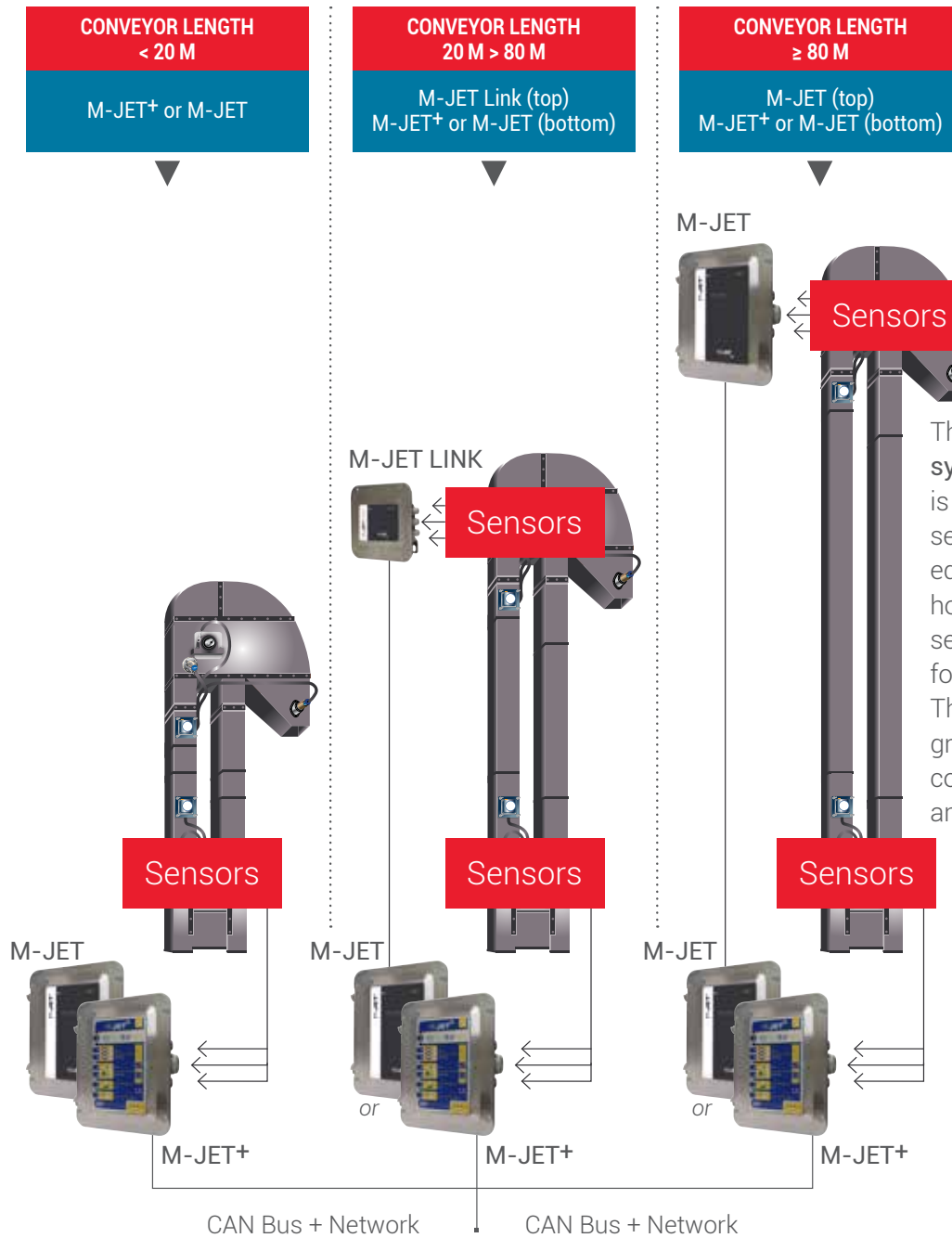Number of alarms

Ratio of alarms by type
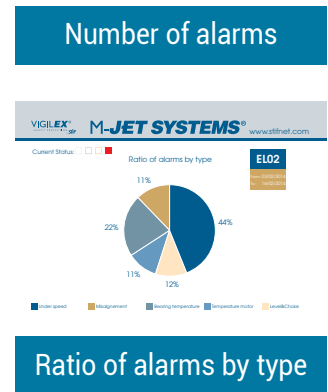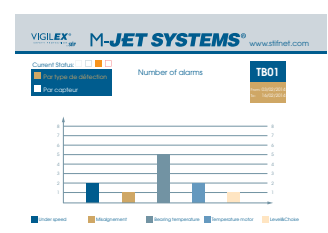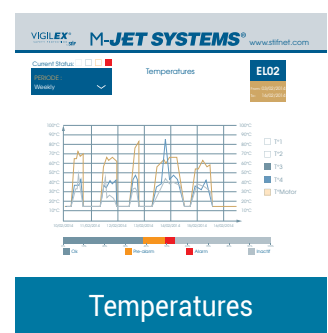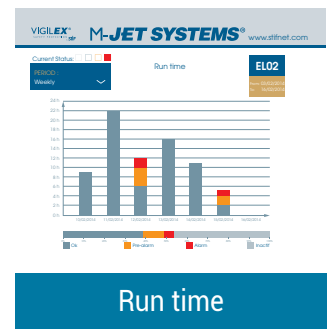
HISTORIC DATA ANALYSIS :
ONLY BY COMPUTER,
DIRECTLY WITH LAPTOP OR BY NETWORK LAN

- History of defects: **M-JET SYSTEMS can save 10,000 events**.
- History of setting modification: Save the **10,000 last setting modifications**.
- History of daily running time of the equipment :
  - **M-JET SYSTEMS** saves production time during the last 4,000 days of use.
  - **M-JET SYSTEMS** records temperatures 24 times per day during the last 365 days of use.
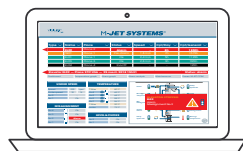- All the history can be downloaded in csv format.

M-JET SYSTEMS

CONVEYOR LENGTH < 20 M
M-JET+ or M-JET

CONVEYOR LENGTH 20 M > 80 M
M-JET Link (top) M-JET+ or M-JET (bottom)

CONVEYOR LENGTH ≥ 80 M
M-JET (top) M-JET+ or M-JET (bottom)

M-JET

Sensors

The **M-JET hazard monitoring system** analyzes data that is transmitted from multiple sensors installed on the conveyor equipment. When wear points and hot spots are detected an alert is sent signaling the need for necessary maintenance. This early warning capability greatly reduces the need for costly equipment replacement and explosion hazard potential.
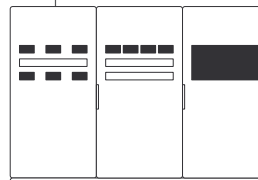
M-JET LINK

Sensors

Sensors

Sensors

Sensors

M-JET

M-JET

M-JET

or

or

M-JET+

M-JET+

M-JET+

CAN Bus + Network   CAN Bus + Network

M-**JET SYSTEMS**®

CAN Bus or Network

Desk computer
Laptop
Mobile phone
Tablet

PLC
Automotion

BOSS *PRODUCTS LLC*

CONNECTION BOX

M-JET LINK
Connection Box

HAZARD MONITORING

M-JET
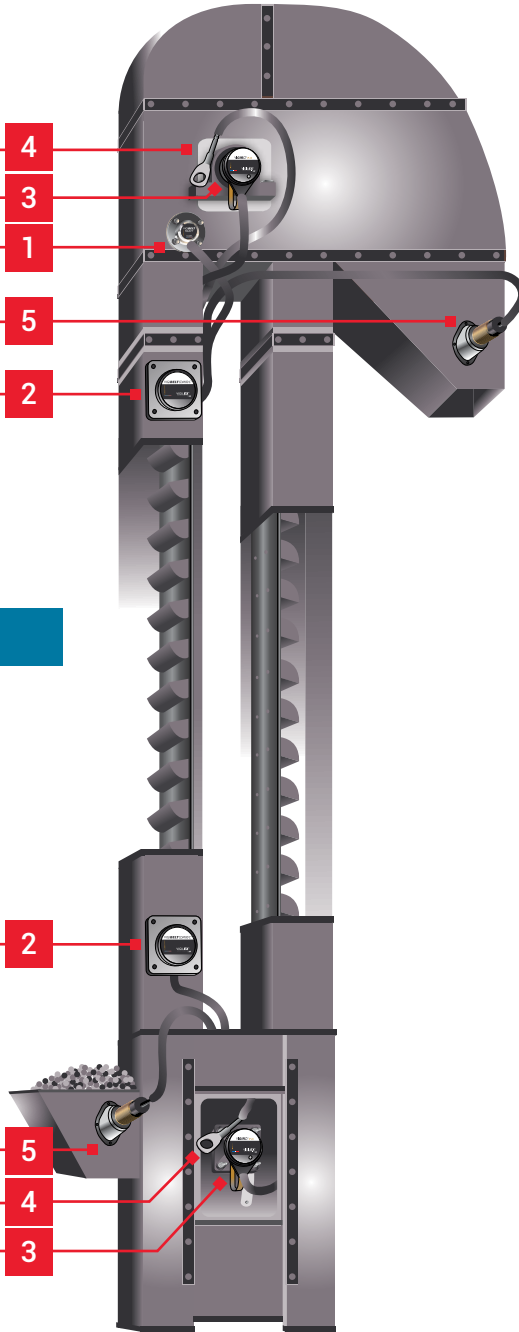Hazard Monitoring
without display

Or

M-JET⁺
Hazard monitoring
with display

Or

SENSOR COMPONENTS

BELT ALIGNMENT SENSORS

1 **Vigibelt Touch**
Belt alignment detector
by contact

2 **Vigibelt CDM 80 C**
Belt alignment detector
without contact

SPEED SENSOR

3 **Vigiro IP26**
Speed
rotation sensor

TEMPERATURE

4 **Vigitherm GST 100**
Bearing Temperature sensor

LEVEL & CHOKE

5 **Vigimat DNC 30**
Level & choke sensor

BOSS PRODUCTS LLC

Transitioning the World to a Safer Working Environment

EcoBOSS **EcoMAXX** **EcoMAXX VIGILEX** **EcoMAXX VDL Products**

ISO 9001 : 2015 Certified Company, Certificate #12373

RAPTOR Series™

RAPTOR Spark **RAPTOR Breath** **RAPTOR Drum** **RAPTOR Gate** **RAPTOR Shield**

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