

Polex Environmental Engineering Pty Ltd  
ACN 121 129 842

**Polex™ Reverse Pulse Modular Bag Filter Dust Collectors**

**Description**

The Polex Reverse-Pulse Modular Bag Filter Dust Collector series is of a robust and efficient range of dust collectors. These units are ideally suited to continuous operation since the filters are continuously cleaned while in operation.

**Operating Principle**

Polluted air enters through the side panels (beneath the filters) or the hopper(s) and is directed upwards through the array of cylindrical bag filters. The larger dust particles drop out into the hopper while the lighter and finer particles continue into the array of filters. The cleaned air then enters the clean-air chamber where an array of blow-tubes are positioned. The tubes blast compressed air into the filters to help release the dust. The cleaned air is then discharged to atmosphere or through discharge ductwork.

**Modular Design**

Polex dust collectors have been designed with common components in mind. The interchangeability of components for different sized dust collectors minimises stock levels required and allows for fast delivery of assembled dust collectors. Components are stocked for all models and assembled to order.

Each Polex dust collector module is 1090 mm deep x 1090 mm wide. Polex dust collectors are 100% modular and can therefore be easily extended as the airflow requirements through the system increase without having to replace the entire dust collector.

**Capacity**

Dust collector filter capacities vary from 15 m<sup>2</sup> to 1000 m<sup>2</sup>. Airflow capacities vary from as low as 1000 m<sup>3</sup>/h for a single module up to 210,000 m<sup>3</sup>/h for a 40 module system.

- **Reverse-pulse cleaning**
- **Heavy duty support structures**
- **Modules can be added as airflow requirements increase**
- **Standard modules with 15, 20 and 25 m<sup>2</sup> filter area**
- **Up to 210,000 m<sup>3</sup>/h airflow capacity**
- **From 15 m<sup>2</sup> to 1000 m<sup>2</sup> filter area**



Single Module Dust Collector Model 1-1

**Size Summary**

Series	Depth (mm)	Length (mm)	Height (mm)	Filter area (m <sup>2</sup> )	Airflow (m <sup>3</sup> /h) *
One Module	1090	1090 to 10900	4993 to 5543	15 to 250	2250 to 52500
Two Module	2180	2180 to 10900	7213 to 7763	60 to 500	9000 to 105000
Three Module	3270	3270 to 10900	7213 to 7763	135 to 750	20250 to 157500
Four Module	4360	4360 to 10900	7213 to 7763	240 to 1000	36000 to 210000

\* Air to cloth ratio 2.5:1 m<sup>3</sup>/min/m<sup>2</sup> cloth area for minimum airflow. Air to cloth ratio 3.5:1 m<sup>3</sup>/min/m<sup>2</sup> cloth area for maximum airflow

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## Polex™ Reverse Pulse Modular Bag Filter Dust Collectors

### **Construction**

Polex modular dust collectors are constructed from bolt-together folded Galvanised sheetmetal panels and are available in 1.5 mm and 3 mm thickness as standard. The material thickness of Polex's dust collector panels has been optimised to minimise cost whilst maintaining strength. Painted 5 mm panels are also available on request. Panels can also be fabricated in Stainless Steel for highly corrosive environments. All panels are connected with high tensile fasteners for strength and corrosion protection.

Polex dust collector legs are fabricated from heavy Square Hollow Section (SHS) steel as standard, making them suitable for heavy duty industrial sites. All Polex dust collectors are structurally certified to withstand high wind loadings. The dust collector legs are hot dip Galvanised as standard for long lasting corrosion protection. Standard support structures accommodate hoppers with bins, rotary valves and screw feeders. The foot print for every leg is 100% symmetrical making it easy to mark out cast-in anchor positions in concrete and trouble free installation.

Polex dust collectors have been designed with smooth internal surfaces to minimise dust hang-up in the filter chamber and hopper. To enable this feature, the folds on the panels are on the outside. To minimise corrosion on the outwardly facing folds, notches are provided on all panels to permit effective drainage.

### **Filters**

Polex bag filters are made from heavy duty Polyester Needlefelt (550 g/m<sup>2</sup> filter weight). Antistatic media is supplied as standard. Polex cartridge filters are made from either a Cellulose Polyester Blend or Spun Bonded Polyester media. The spacing between filters has been selected for effective and reliable dust release. Optimal filter spacing makes Polex dust collectors ideal for dusts that have a tendency for bridging such as stringy and fibrous materials.

### **Cleaning System**

Compressed airtanks for pulse cleaning are hot dip Galvanised for long lasting corrosion protection. Every airtank is pressure tested and certified to AS 1210-1997. Pulse valves are supplied as 45 mm as standard for high capacity pulsing. Pulse valve coils are supplied as 24 VDC for safety during service.

### **Dust Inlets**

Dust collector dust inlets are positioned either in the hopper(s) or through a 490 x 490 mm opening(s) in the filter chamber (beneath the level of the filters). Inlet plenums are also available for abrasive dusts. Inlet chambers can be incorporated into the filter chamber by leaving one module free of filters. Standard cut-outs in the panels can accommodate a standard 490 x 490 mm explosion vent. Welded studs are included on the panels with cut-outs to easily replace the explosive vents if they are ruptured. The panels with cut-outs can be used for either an explosion vent or a dust inlet.

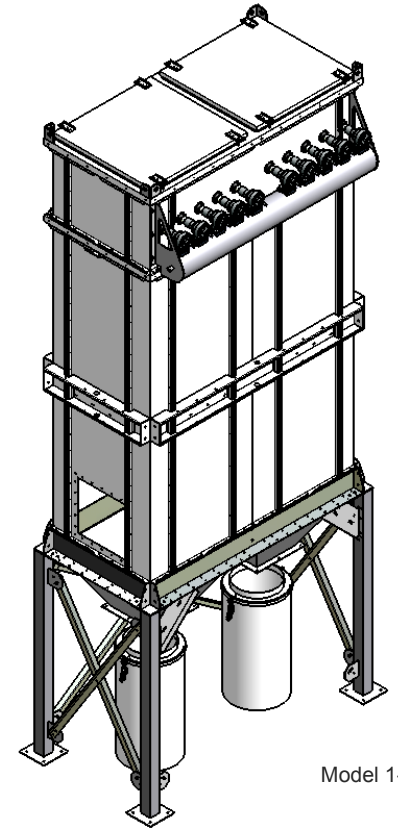
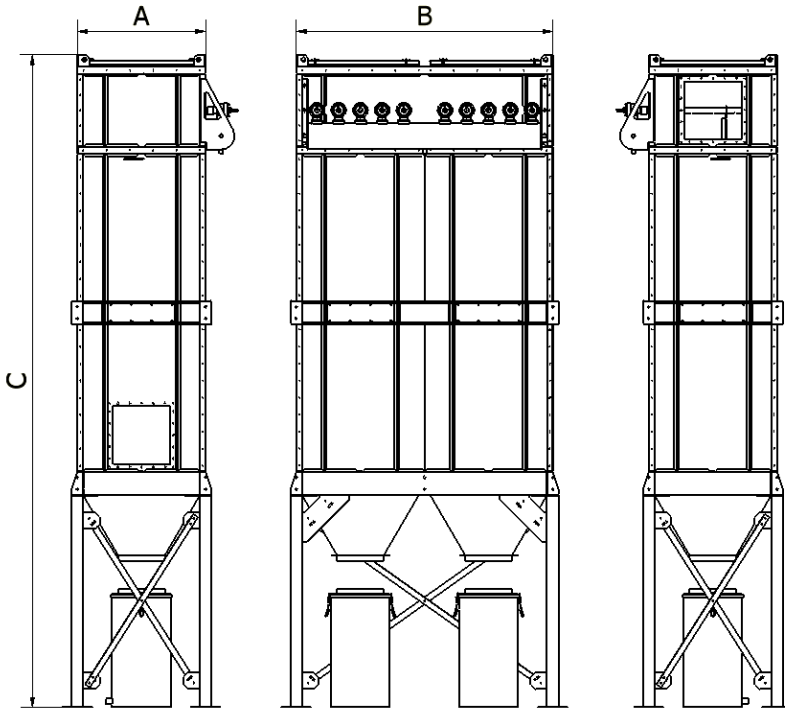
### **Transportation**

All Polex dust collector sub-assemblies fit within standard shipping containers and can be transported within road limits for trucks. Lifting lugs are supplied as standard where necessary for lifting sub assemblies. Polex dust collectors can be supplied as flat-pack or assembled. All flat-pack components are packed in wooden crates for international shipments.

### **Accessories**

Various dust collector accessories are available from Polex such as screw feeders, ladders and access platforms, rotary valves, emission monitoring equipment, bin level sensors, explosion vents, fans, silencers, electrical control panels and ducting.

## One Module Series

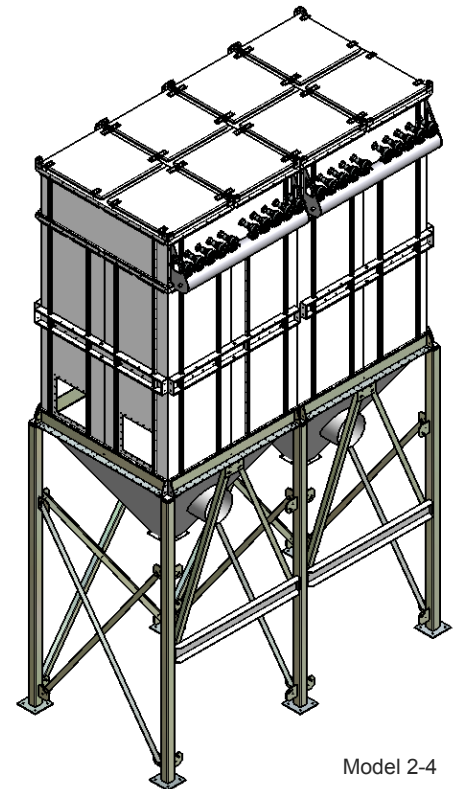
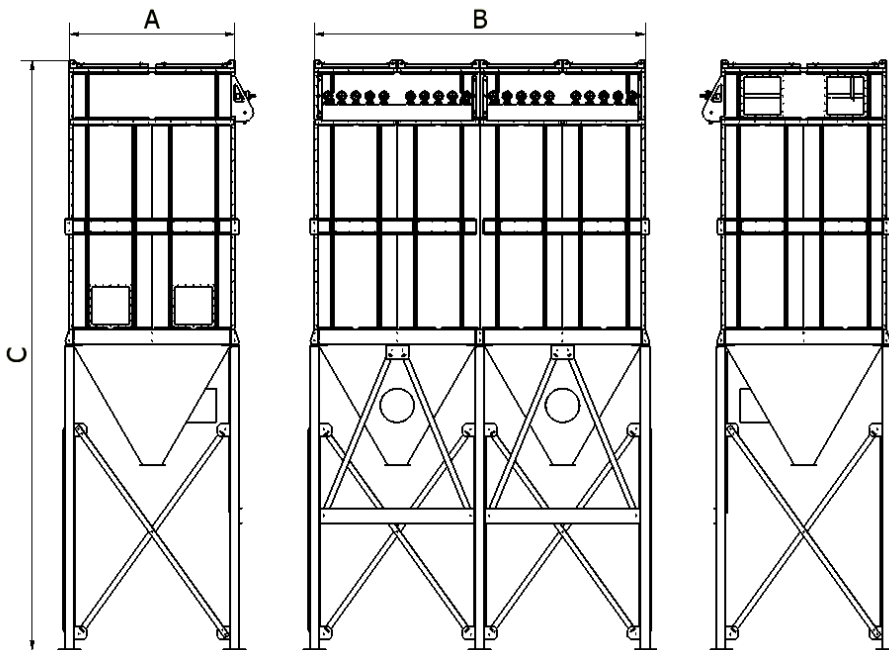


Model 1-2

### Notes

1. Airtank on Model 1-2 is on short side of dust collector. Models 1-3 and up have airtank on long side only.
2. Standard hopper discharge sizes are 250 x 250 mm and 400 x 400 mm.
3. Shorter or longer legs available on request.

## Two Module Series



Model 2-4

### Notes

1. Standard hopper discharge sizes are 250 x 250 mm and 400 x 400 mm.
2. Shorter or longer legs available on request.

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## One Module Series

Model	Width A (mm)	Length B (mm)	Height C (mm)	Inlet Position	Module quantity	Filter Length (mm)	Filter area (m <sup>2</sup> )	Airflow (m <sup>3</sup> /h) for fine dust *	Airflow (m <sup>3</sup> /h) for coarse dust **
1-1	1090	1090	4993	Filter Chamber	1	1562	15	2250	3150
			4993	Hopper	1	2092	20	3000	4200
			5543	Filter Chamber	1	2092	20	3000	4200
			5543	Hopper	1	2623	25	3750	5250
1-2	1090	2180	4993	Filter Chamber	2	1562	30	4500	6300
			4993	Hopper	2	2092	40	6000	8400
			5543	Filter Chamber	2	2092	40	6000	8400
			5543	Hopper	2	2623	50	7500	10500
1-3	1090	3270	4993	Filter Chamber	3	1562	45	6750	9450
			4993	Hopper	3	2092	60	9000	12600
			5543	Filter Chamber	3	2092	60	9000	12600
			5543	Hopper	3	2623	75	11250	15750
1-4	1090	4360	4993	Filter Chamber	4	1562	60	9000	12600
			4993	Hopper	4	2092	80	12000	16800
			5543	Filter Chamber	4	2092	80	12000	16800
			5543	Hopper	4	2623	100	15000	21000
1-5	1090	5450	4993	Filter Chamber	5	1562	75	11250	15750
			4993	Hopper	5	2092	100	15000	21000
			5543	Filter Chamber	5	2092	100	15000	21000
			5543	Hopper	5	2623	125	18750	26250
1-6	1090	6540	4993	Filter Chamber	6	1562	90	13500	18900
			4993	Hopper	6	2092	120	18000	25200
			5543	Filter Chamber	6	2092	120	18000	25200
			5543	Hopper	6	2623	150	22500	31500
1-7	1090	7630	4993	Filter Chamber	7	1562	105	15750	22050
			4993	Hopper	7	2092	140	21000	29400
			5543	Filter Chamber	7	2092	140	21000	29400
			5543	Hopper	7	2623	175	26250	36750
1-8	1090	8720	4993	Filter Chamber	8	1562	120	18000	25200
			4993	Hopper	8	2092	160	24000	33600
			5543	Filter Chamber	8	2092	160	24000	33600
			5543	Hopper	8	2623	200	30000	42000
1-9	1090	9810	4993	Filter Chamber	9	1562	135	20250	28350
			4993	Hopper	9	2092	180	27000	37800
			5543	Filter Chamber	9	2092	180	27000	37800
			5543	Hopper	9	2623	225	33750	47250
1-10	1090	10900	4993	Filter Chamber	10	1562	150	22500	31500
			4993	Hopper	10	2092	200	30000	42000
			5543	Filter Chamber	10	2092	200	30000	42000
			5543	Hopper	10	2623	250	37500	52500

\* Fine dust air to cloth ratio 2.5:1 m<sup>3</sup>/min/m<sup>2</sup> cloth area, \*\* Coarse dust air to cloth ratio 3.5:1 m<sup>3</sup>/min/m<sup>2</sup> cloth area

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## Two Module Series

Model	Width A (mm)	Length B (mm)	Height C (mm)	Inlet Position	Module quantity	Filter Length (mm)	Filter area (m <sup>2</sup> )	Airflow (m <sup>3</sup> /h) for fine dust *	Airflow (m <sup>3</sup> /h) for coarse dust **
2-2	2180	2180	7213	Filter Chamber	1	1562	60	9000	12600
			7213	Hopper	1	2092	80	12000	16800
			7763	Filter Chamber	1	2092	80	1200	16800
			7763	Hopper	1	2623	100	15000	21000
2-3	2180	3270	7213	Filter Chamber	2	1562	90	13500	18900
			7213	Hopper	2	2092	120	18000	25200
			7763	Filter Chamber	2	2092	120	18000	25200
			7763	Hopper	2	2623	150	22500	31500
2-4	2180	4360	7213	Filter Chamber	3	1562	120	18000	25200
			7213	Hopper	3	2092	160	24000	33600
			7763	Filter Chamber	3	2092	160	24000	33600
			7763	Hopper	3	2623	200	30000	42000
2-5	2180	5450	7213	Filter Chamber	4	1562	150	22500	31500
			7213	Hopper	4	2092	200	30000	42000
			7763	Filter Chamber	4	2092	200	30000	42000
			7763	Hopper	4	2623	250	37500	52500
2-6	2180	6540	7213	Filter Chamber	5	1562	180	27000	37800
			7213	Hopper	5	2092	240	36000	50400
			7763	Filter Chamber	5	2092	240	36000	50400
			7763	Hopper	5	2623	300	45000	63000
2-7	2180	7630	7213	Filter Chamber	6	1562	210	31500	44100
			7213	Hopper	6	2092	280	42000	58800
			7763	Filter Chamber	6	2092	280	42000	58800
			7763	Hopper	6	2623	350	52500	73500
2-8	2180	8720	7213	Filter Chamber	7	1562	240	36000	50400
			7213	Hopper	7	2092	320	48000	67200
			7763	Filter Chamber	7	2092	320	48000	67200
			7763	Hopper	7	2623	400	60000	84000
2-9	2180	9810	7213	Filter Chamber	8	1562	270	40500	56700
			7213	Hopper	8	2092	360	54000	75600
			7763	Filter Chamber	8	2092	360	54000	75600
			7763	Hopper	8	2623	450	67500	94500
2-10	2180	10900	7213	Filter Chamber	9	1562	300	45000	63000
			7213	Hopper	9	2092	400	60000	84000
			7763	Filter Chamber	9	2092	400	60000	84000
			7763	Hopper	9	2623	500	75000	105000

\* Fine dust air to cloth ratio 2.5:1 m<sup>3</sup>/min/m<sup>2</sup> cloth area, \*\* Coarse dust air to cloth ratio 3.5:1 m<sup>3</sup>/min/m<sup>2</sup> cloth area

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## Three Module Series

Model	Width A (mm)	Length B (mm)	Height C (mm)	Inlet Position	Module quantity	Filter Length (mm)	Filter area (m <sup>2</sup> )	Airflow (m <sup>3</sup> /h) for fine dust *	Airflow (m <sup>3</sup> /h) for coarse dust **
3-3	2180	2180	7213	Filter Chamber	1	1562	135	20250	28350
			7213	Hopper	1	2092	180	27000	37800
			7763	Filter Chamber	1	2092	180	27000	37800
			7763	Hopper	1	2623	225	33750	47250
3-4	2180	3270	7213	Filter Chamber	2	1562	180	27000	37800
			7213	Hopper	2	2092	240	36000	50400
			7763	Filter Chamber	2	2092	240	36000	50400
			7763	Hopper	2	2623	300	45000	63000
3-5	2180	4360	7213	Filter Chamber	3	1562	225	33750	47250
			7213	Hopper	3	2092	300	45000	63000
			7763	Filter Chamber	3	2092	300	45000	63000
			7763	Hopper	3	2623	375	56250	78750
3-6	2180	5450	7213	Filter Chamber	4	1562	270	40500	56700
			7213	Hopper	4	2092	360	54000	75600
			7763	Filter Chamber	4	2092	360	54000	75600
			7763	Hopper	4	2623	450	67500	94500
3-7	2180	6540	7213	Filter Chamber	5	1562	315	47262	66160
			7213	Hopper	5	2092	420	63000	88200
			7763	Filter Chamber	5	2092	420	63000	88200
			7763	Hopper	5	2623	525	78750	110250
3-8	2180	7630	7213	Filter Chamber	6	1562	360	54000	75620
			7213	Hopper	6	2092	480	72000	100800
			7763	Filter Chamber	6	2092	480	72000	100800
			7763	Hopper	6	2623	600	90000	126000
3-9	2180	8720	7213	Filter Chamber	7	1562	405	60750	85070
			7213	Hopper	7	2092	540	81000	113400
			7763	Filter Chamber	7	2092	540	81000	113400
			7763	Hopper	7	2623	675	101250	141750
3-10	2180	9810	7213	Filter Chamber	8	1562	450	67500	94525
			7213	Hopper	8	2092	600	90000	126000
			7763	Filter Chamber	8	2092	600	90000	126000
			7763	Hopper	8	2623	750	112500	157500

\* Fine dust air to cloth ratio 2.5:1 m<sup>3</sup>/min/m<sup>2</sup> cloth area, \*\* Coarse dust air to cloth ratio 3.5:1 m<sup>3</sup>/min/m<sup>2</sup> cloth area

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## Four Module Series

Model	Width A (mm)	Length B (mm)	Height C (mm)	Inlet Position	Module quantity	Filter Length (mm)	Filter area (m <sup>2</sup> )	Airflow (m <sup>3</sup> /h) for fine dust *	Airflow (m <sup>3</sup> /h) for coarse dust **
4-4	4360	4360	7213	Filter Chamber	1	1562	240	36000	50400
			7213	Hopper	1	2092	320	48000	67200
			7763	Filter Chamber	1	2092	320	48000	67200
			7763	Hopper	1	2623	400	60000	84000
4-5	4360	5450	7213	Filter Chamber	2	1562	300	45000	63000
			7213	Hopper	2	2092	400	60000	84000
			7763	Filter Chamber	2	2092	400	60000	84000
			7763	Hopper	2	2623	500	75000	105000
4-6	4360	6540	7213	Filter Chamber	3	1562	360	54000	75620
			7213	Hopper	3	2092	480	72000	100800
			7763	Filter Chamber	3	2092	480	72000	100800
			7763	Hopper	3	2623	600	90000	126000
4-7	4360	7630	7213	Filter Chamber	4	1562	420	63000	88220
			7213	Hopper	4	2092	560	84000	117600
			7763	Filter Chamber	4	2092	560	84000	117600
			7763	Hopper	4	2623	700	105000	147000
4-8	4360	8720	7213	Filter Chamber	5	1562	480	72000	100820
			7213	Hopper	5	2092	640	96000	134400
			7763	Filter Chamber	5	2092	640	96000	134400
			7763	Hopper	5	2623	800	120000	168000
4-9	4360	9810	7213	Filter Chamber	6	1562	540	81000	113500
			7213	Hopper	6	2092	720	108000	151200
			7763	Filter Chamber	6	2092	720	108000	151200
			7763	Hopper	6	2623	900	135000	189000
4-10	4360	10900	7213	Filter Chamber	7	1562	600	90000	126000
			7213	Hopper	7	2092	800	120000	168000
			7763	Filter Chamber	7	2092	800	120000	168000
			7763	Hopper	7	2623	1000	150000	210000

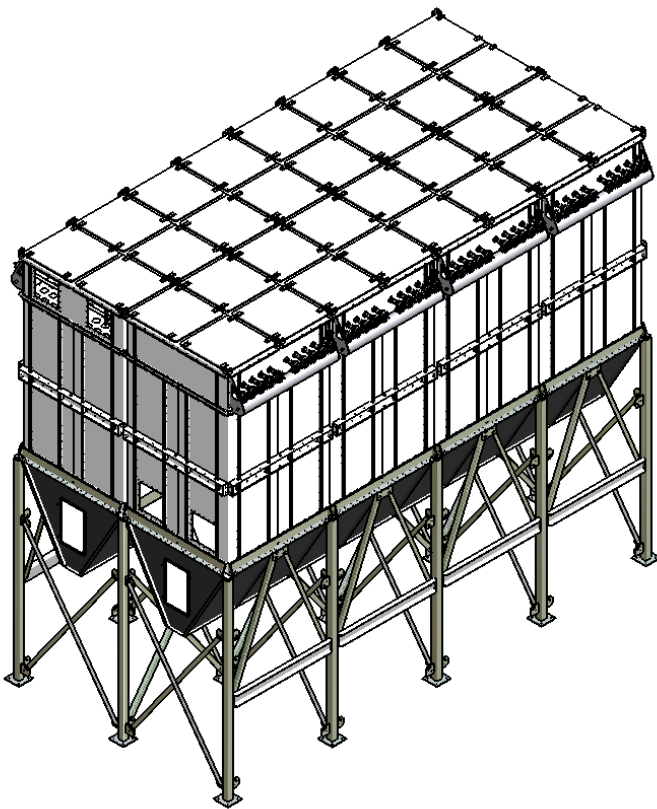
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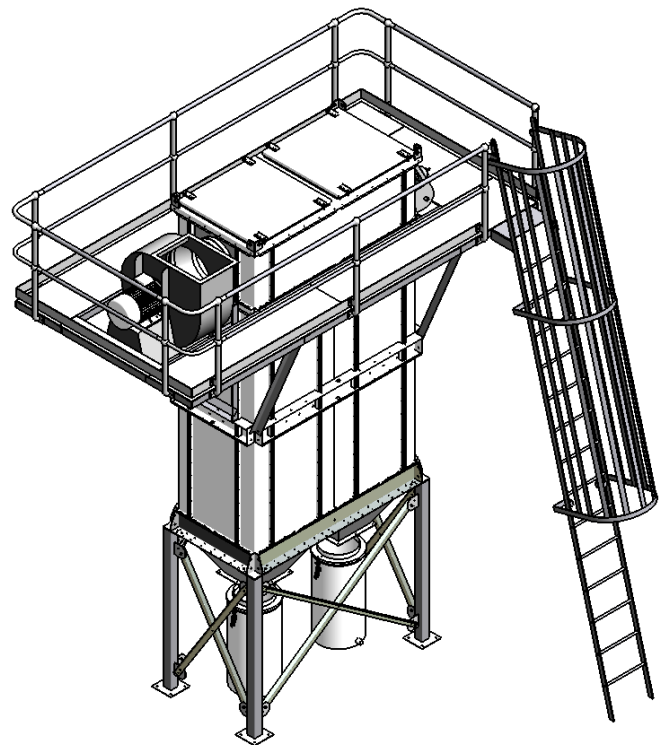
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**Options**

3 mm thick dust collector panels	Stainless steel construction	Powdercoated finish
Access ladders & platforms	Rotary valves	Centrifugal fans
Cyclone pre-separators	Screw feeders	Explosion vents
Rotary separators	Inclined plate separators	Ducting
Silencers	Acoustic fan enclosures	Emission monitoring equipment
Electric & pneumatic dampers	Electric control panels	Replacement filters
Bin level sensors	Vacuum relief valves	Various bin sizes



**Hopper for screw feeders**  
Hoppers to suit screw feeders available (Model 4-8 shown complete with 800 m<sup>2</sup> filter area and hoppers to suit two screw feeders)



**Access Platforms**  
Access platform and ladders to change filters and service pulse valves (Model 1-2 shown complete with 50 m<sup>2</sup> filter area and hoppers to suit two x 185 L bins)