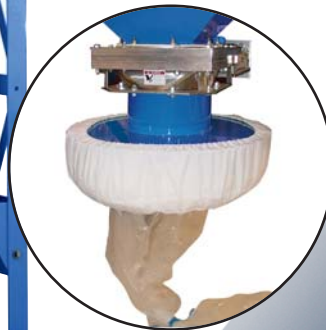


# Downflo® Containment Systems



With Triple-Sealed™  
Bag-In/Bag-Out  
for filters and hopper discharge



# Downflo® Containment System

## Setting High Standards

The demands made on filtration equipment are continually rising. Cleaner air and worker exposure are major concerns. The Donaldson® Torit® Downflo® Containment System (DCS) filters and contains dusts of low, intermediate, and potent toxicity.

The DCS is an innovative filtration system with patented Ultra-Web® nanofiber technology. Based on award-winning Downflo Oval technology, the DCS is designed to reduce exposure to harmful contaminants. Triple-Sealed™ Bag-In/Bag-Out (BIBO) for filter changes and Triple-Sealed™ dust discharge liners make this series extremely effective for high containment.

*Fully Surrogate Tested*  
to  $\leq 0.5\mu\text{g}/\text{m}^3$

### DCS Offers:

- **Triple-Sealed™ Bag-In/Bag-Out**
- **Triple-Sealed Continuous Liner**
- **CE and ATEX Compliant Explosion Protection**
- **Ledgeless, easy clean interior**
- **Reduced exposure**
- **Minimum product retention**
- **Longer filter life**
- **10-year warranty**



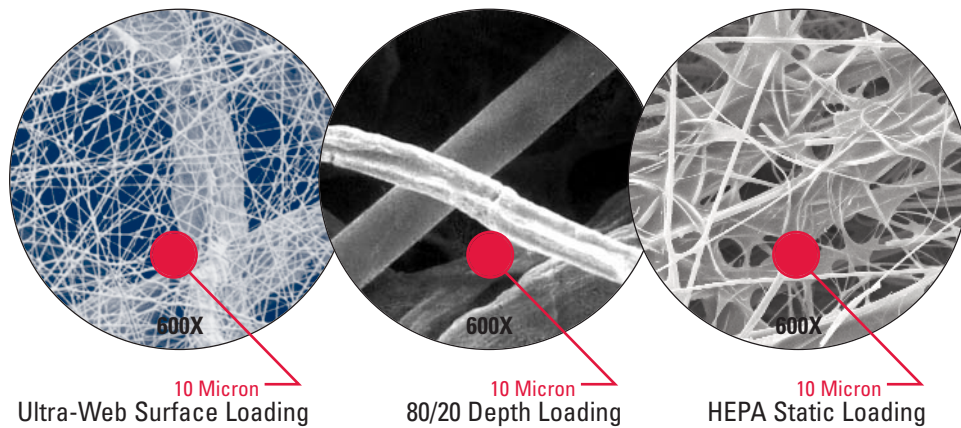
DCS 2-2

# Downflo<sup>®</sup> Containment System

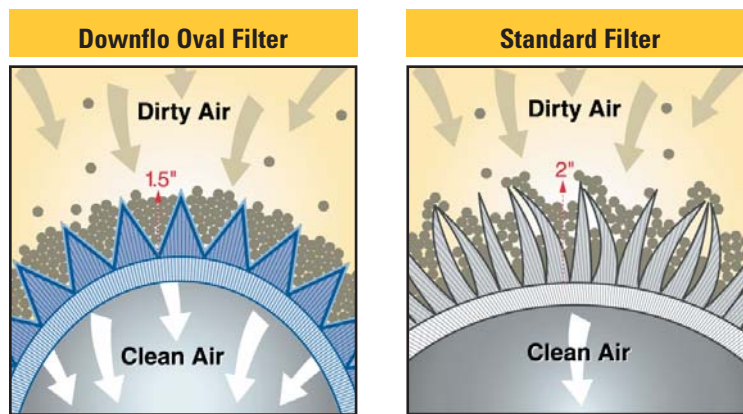
## Longer Filter Life and Reduced Exposure

DCS oval-shaped, wide pleat cartridge filters in conjunction with patented Ultra-Web nanofiber filter media last longer, require fewer changeouts, and reduce exposure to harmful contaminants. Genuine Torit-Built oval filters are distinctly different in three ways:

**Advantage # 1** - Oval filters are made with patented Ultra-Web nanofiber technology, which is scientifically proven to have advantages in efficiency, pressure drop and surface loading.



**Advantage # 2** - Oval filters feature shorter, wider, stiffer pleats, which help minimize dust entrapment and simplify filter cleaning compared to conventional filter design.



**Advantage # 3** - Twice-the-life oval Ultra-Web cartridge filters are built to last! Rely on the proven and patented technology at the heart of the DCS.

- Ultra-Web captures even submicron particles, rates MERV 13
- Dust particles affix to the surface of the nanofiber web
- Surface loading promotes filter cleaning
- Prolongs second-stage HEPA filter life

# Downflo<sup>®</sup> Containment System

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## Increased Safety During Filter Change

Triple-Sealed Bag-In/Bag-Out (BIBO) system for primary filters and HEPA filters is specifically designed for dust containment. Our installed triple-sealed BIBO features two O-rings and one band clamp to form a positive seal. BIBO bags are made of proprietary Armorflex<sup>®</sup>\* 104 film and include a special sleeve pocket for the porthole cover. Bags are static dissipative, FDA and EU compliant, highly flexible and puncture resistant.

## Triple-Sealed Bag-In/Bag-Out Features



- BIBO shelf attaches with no tools.



- The triple-sealed BIBO mechanism ensures continuous containment.



- Removed covers placed in a bag pocket and out of the way.



- Traditional twist, turn, and tie off procedure for bag.



- BIBO stored inside collar.



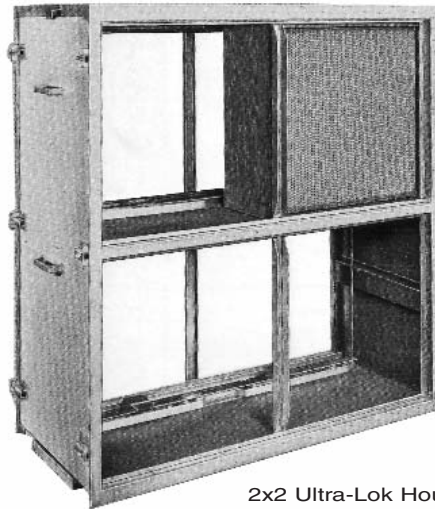
- Breather filter aids containment during BIBO process.

\* Armorflex is a registered trademark of ILC Dover.

# Downflo<sup>®</sup> Containment System

## HEPA Filtration for High Containment

The Donaldson Torit Ultra-Lok™ Afterfilter Housing System provides a sturdy housing for HEPA afterfilters. It's modular construction is specifically designed to integrate with Downflo Containment Systems. It is a police system to ensure high dust containment.



2x2 Ultra-Lok Housing  
with HEPA filter  
in the upper right corner

Donaldson Torit partners with experts\* when it comes to GEL SEAL Filter Containment Housings for processes where harmful particulate or gases must be prevented from entering the atmosphere.



BF Series



Bag-In/Bag-Out  
Arrangements

\* Flanders/CSC® Containment Housings.

# Downflo® Containment System

## Clean & Reliable Dust Discharging

*Available for Contaminant-Free Docking, Undocking  
and Compound Transfer*

### Triple-Sealed Dust Discharge



- Continuous liner  
–or– one bag at a time
- Tough ArmorFlex\* 104 bags
- Lower cost option
- Only from Donaldson Torit

- Flexible containment system
- Demonstrated reliable performance
- 100% pressure tested and inspected
- Certified to OEL 3

### DoverPac®\*



### Contaminant Transfer Chamber (CTC)



- Reliable high containment
- DPTE®\* Rapid Transfer Port System
- Round or oval glove ports
- Roller and clear action valves
- Maintenance without breaking containment
- Surrogate tested to OEL 3b
- Highly **CUSTOMIZABLE**

\* ArmorFlex 104 and DoverPac are registered trademarks of ILC Dover. DPTE is a registered trademark of La Calhène.

# Downflo<sup>®</sup> Containment System

## Addressing Safety Concerns

Many potent dusts can also be combustible and explosive. Donaldson Torit partners with fire and explosion protection experts to provide solutions for critical processes where hazardous particulate must be contained.

### Explosion Venting

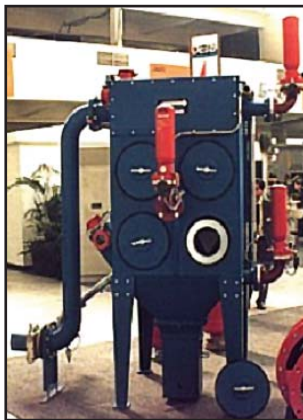
Explosion venting provides overpressure protection from potential industrial explosion hazards by providing a planned pathway for the expanding gases to escape. Fike CV Composite Explosion Vents are the standard choice for DCS.



- Composite membrane vent
- Layer of Teflon<sup>®</sup>\* (to prevent leakage) between two layers of stainless steel
- Lightweight and specifically designed with scoring to burst in either direction at the same burst pressure

### Explosion Suppression

Explosion Suppression systems are designed to detect and chemically suppress an explosion in its earliest (incipient) stages to prevent development of destructive pressures.



- Downflo Dust Collector with Fike Suppression System



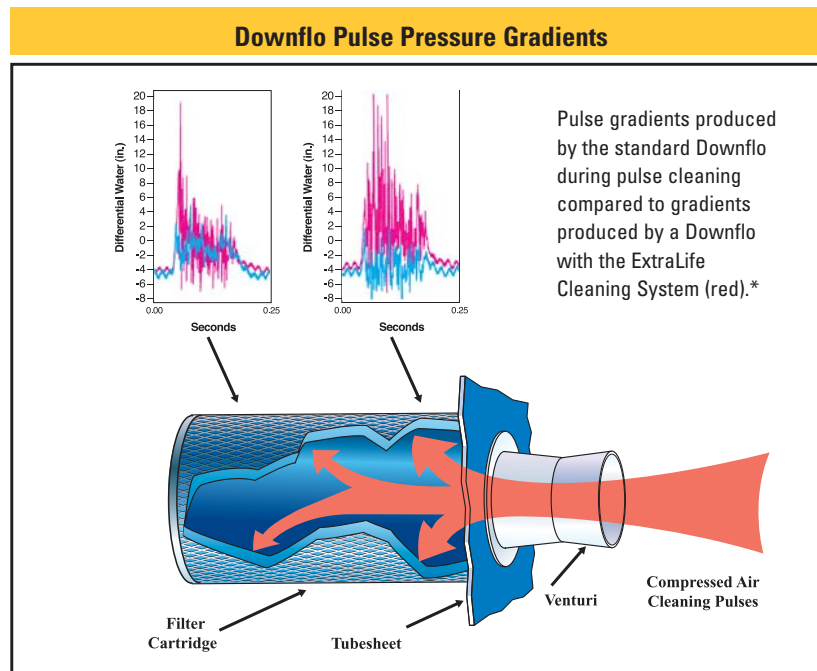
\* Teflon is a registered trademark of E.I. Dupont de Nemours & Co., Inc.

# Downflo<sup>®</sup> Containment System

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## Outperforms All Other Containment Systems

**Effective filter cleaning** is the key to long filter life. DCS includes the patented and quieter ExtraLife™ Filter Cleaning System, a proprietary, computer-modeled pulse cleaning technology designed to easily “pulse-off” dust from the surface of the filters, improving filtration efficiency and prolonging filter life.



\* The red lines in the illustration show the increased pressure at the front of the Downflo filter generated by the ExtraLife system. The blue line shows the pulse signature of a standard cartridge collector.

## Fully Tested and Certified

Manufactured under stringent quality assurance procedures, DCS is subjected to thorough inspections and tests before leaving the factory. Individual testing, rigid quality control and modern assembly methods are used to ensure conformance to specifications.

### Factory Acceptance Testing

- Tested and certified to a Donaldson Company or customer specific FAT procedure
- FAT procedure performed on major components
- Includes dimensional checks on connection points

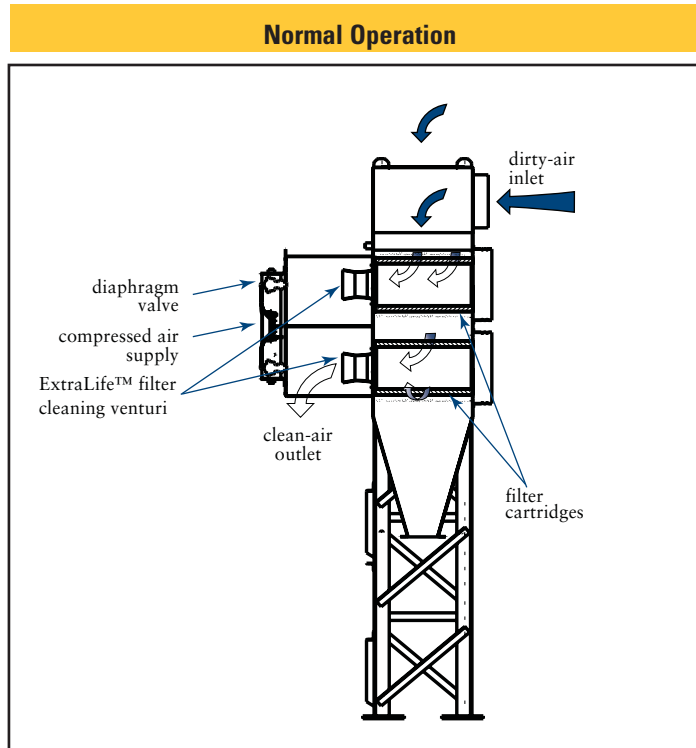
### Surrogate Testing

- Independent functional testing with process surrogate
- In accordance with Occupational Exposure Limits
- Certified to area airborne concentrations of  $0.5 \mu\text{g}/\text{m}^3$



# Downflo<sup>®</sup> Containment System

## Operations

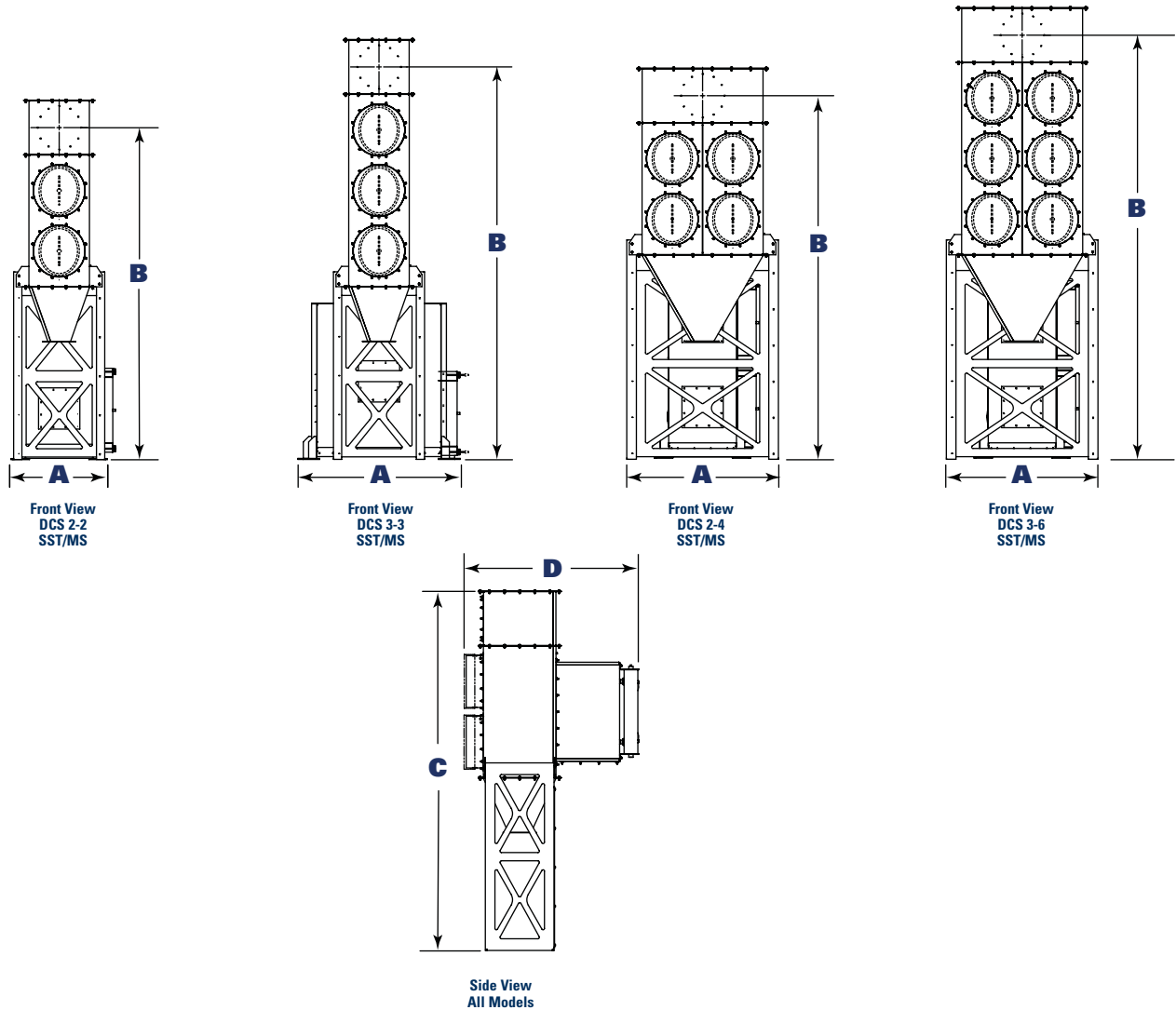


## Operating Conditions

Models DCS 2-2, 3-3, 2-4, 3-6, 2-8			
<b>Surrogate Test Results</b>	≤0.5 µg/m <sup>3</sup>	<b>Standard Venting P-Red Rating</b>	0.2 bar Class ST2 Kst <300
<b>Ultra-Web Filter Efficiency</b>	MERV 13	<b>Seismic Spectral Acceleration</b>	1.5
<b>HEPA Filter Efficiency</b>	99.97% @ 0.5 µm DOP MERV 17	<b>Compressed Air Required</b>	50 (ma. 60) psig
<b>Housing Construction</b>		<b>Electrical Power</b>	120 VAC
<b>Mild Stainless (MS)</b>	10 gauge	<b>Valves/Controls</b>	50/60 Hz
<b>Standard Operational Housing Rating ("H<sub>2</sub>O)</b>	-35 "wg	<b>Max. Operating Temperature</b>	150°F
		<b>Horsepower</b>	Provided through Donaldson Torit Fan Program
		<b>Sound Level</b> <b>External Static Pressure</b>	

# Downflo<sup>®</sup> Containment System

## Dimensions and Specifications



Model*	Nominal Airflow Range** (cfm)	No. of Filters	Ultra-Web Filter Area (ft <sup>2</sup> )	No. of Valves	Shipping Weight (lbs)	Dimensions (inches)			
						A	B CTC DoverPac	C CTC DoverPac	D
DCS 2-2 MS	200-2200	2	380	2	1365	35.0	149.5	149.5	62.4
DCS 2-4 MS	400-4500	4	760	4	1925	52.3	153.6	164.9	62.4
DCS 3-3 MS	300-3400	3	570	3	1710	59.0	160.2	171.5	62.4
DCS 3-6 MS	600-6800	6	1140	6	2275	52.3	175.6	186.9	62.4

\* The first number indicates number of filter rows, and the second number indicates the number of cartridges

\*\* Based on clean filters.

# Downflo® Containment System

## Standard Features & Equipment Options

### DCS 2-2, 2-4, 3-3, 3-6

	Standard	Optional
<b>Collector Design</b>		
Surrogate Tested Design	X	
Mild Steel Construction	X	
Reinforced Construction NFPA 68, 2002 Class ST2 Kst <300	X	
ExtraLife Pulse Cleaning System	X	
Completely Ledgeless Interior	X	
All Hardware Located Externally	X	
60° Ledgeless Hopper	X	
Leg Support Structure	X	
High Front Inlet	X	
Triple-Sealed Bag-In/Bag-Out	X	
Sprinkler Coupling	X	
Factory Acceptance Testing (FAT)		X
Custom Reinforced Construction		X
Stainless Steel Construction		X
HEPA BIBO Chamber Under Negative		X
Quick-Release Sprinkler Head		X
Fan Package		X
Chamber and Exhaust Silencers		X
Dampers		X
<b>Explosion Protection</b>		
Composite Explosion Relief Panels		X
Suppression System		X
<b>Cartridge &amp; Panel Filters</b>		
Ultra-Web® Nanofiber (MERV 13)*	X	
Ultra-Web SB (MERV 15)		X
Ultra-Web Nanofiber NL - no liner (MERV 13)		X
Fibra-Web® Nanofiber (MERV 14)		X
Torit-Tex™ Membrane (MERV 16)		X
HEPA Filters 24" x 24" x 11.5" (MERV 17)	X	
ULPA Filters 24" x 24" x 11.5" (MERV 20)		X

	Standard	Optional
<b>Material &amp; Surface Finish</b>		
Blue Acrylic Urethane Finish Over Alkyd Primer	X	
Acrylic Urethane Finish Over Alkyd Primer With Color Specified		X
Hostile Environment Acrylic Urethane Finish Over Epoxy Primer		X
Custom Materials and Finishes		X
<b>Weld Finishes</b>		
Welds Controlled But Not Ground	X	
Custom Weld Finishes		X
<b>Hopper Discharge</b>		
Triple-Sealed Continuous Liner		X
ILC DoverPac 50 ft. Continuous Liner		X
Contaminant Transfer Chamber (CTC)		X
Customer Specified Discharge		X
<b>Electrical Controls, Gauges, and Enclosures</b>		
Control Box NEMA Type 4 with Timer	X	
Delta P Control NEMA Type 4 with Timer		X
Solenoid Enclosure NEMA/UL Type 4	X	
Solenoid Enclosure NEMA/UL Type 7 & 9		X
Magnehelic® Gauge	X	
Photohelic® Gauge		X
Delta P Control (no timer)		X
Custom Control Panels		X
<b>Warranty</b>		
10-Year Warranty	X	

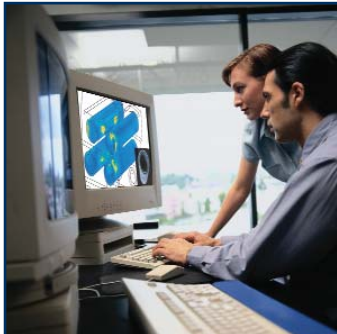
U.S. Patents 6,387,162; 6,488,746; 6,364,921; 6,368,388; 6,090,173; 5,562,746; other patents pending  
 Information contained in this document is subject to change without notice.

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\* The Minimum Efficiency Reporting Value (MERV) of this filter cartridge has been determined through independent laboratory testing using ASHRAE 52.2 (1999) test standards. The MERV rating was determined at a face velocity of 118 feet per minute and loading up to four inches water gauge. Actual efficiency of any filter cartridge will vary according to the specific application parameters. Dust concentration, airflow, particle characteristics, and pulse cleaning methods all affect filtration efficiency.

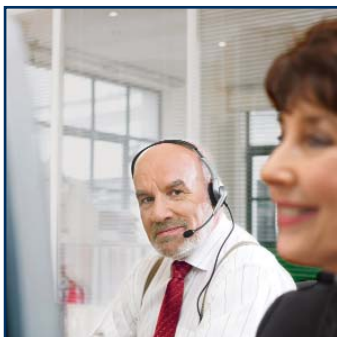
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## Better Technology



- 550 engineers worldwide
- More than 500 patents
- Broad range of innovative collectors and filters
- 100's of media formulations

## Experience & Service



- Technical expertise and support
- Ready-to-ship filters and parts within 24 hours
- 1,000,000+ dust, fume, & mist collectors installed

## Global Support



- Facilities in 35 countries
- 37 manufacturing plants and 11 distribution centers
- Sales offices worldwide



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