ATEX

WE CONTROL COMBUSTIBLE DUST

Equipment for environments with potentially explosive dust



Healthy Business

Dustcontrol®





ATEX – Safety in explosive environments



What is ATEX?

ATEX is the EU's regulatory framework for work and equipment in environments where there is a risk of dust explosion. For businesses that handle combustible dust, this means that you must prevent ignition and reduce the consequences if an explosion does occur.

Requirements for both equipment and the workplace?

ATEX requires two things:

1. The equipment - it must have the correct Ex class for the zone classified area in which it is to be used.

2. The workplace - this is about zone classification, signage, procedures and training to create a safe environment.

How does a dust explosion occur?

A dust explosion can occur when five actors come together:

- Combustible dust
- Oxygen
- An ignition source
- Containment
- Dispersion

Many common materials can become explosive in finely divided form, for example: wood, grain, flour, sugar, cotton, pharmaceutical powder, plastics and rubber, aluminum, titanium, magnesium, etc.

Prevent risks with effective extraction?

A well-planned extraction system minimizes the risk of dust explosions by collecting dust, fume, chips and other particles directly at the source and reducing dust accumulation in the premises.

If you need a light and flexible solution, Dustcontrol's range of mobile EX dust collectors is the perfect choice. These are made for general cleaning in places where portable units are most practical. They help you keep clean – and at the same time create a safer working environment.



Dust and the risk of explosions

Dust can be explosive

Almost all types of dust, when dispersed in air in sufficient concentration, can form a flammable mixture. Therefore, a well-designed explosion protection system is essential to reduce the risk of dust explosion.

As a first step, the dust should be tested to determine its properties – how it will behave in the event of an ignition. These tests form the basis for the design of the explosion protection in the extraction system.

Important properties to test

Each dust product should be tested for:
- Kst – dust deflagration index
- Pmax – maximum explosion pressure
- (dP/dt)max – maximum pressure increase
- MEC – minimum flammable concentration
- MIE – minimum ignition energy
- AIT – autoignition temperature

As the particle size becomes smaller, the Kst value, Pmax and (dP/dt)max often increase. At the same time, the MEC – less concentration is required to create an explosive mixture, the MIE – less energy is required to ignite the powder, the AIT – sometimes even the autoignition temperature.

In other words: finer powder often means a greater risk of explosion.

Explanation of words

Pmax – The maximum pressure that occurs inside a closed container when a dust explosion occurs.

dP/dtmax – How quickly the pressure rises during a dust explosion.

Kst – Dust deflagration index. How powerful a dust explosion can be. It measures how quickly the pressure rises during an explosion and makes it possible to compare how dangerous different types of dust are.

Minimum Explosive Concentration (MEC) – How little dust is needed in the air for an explosion to occur.

Minimum Ignition Energy (MIE) – How little energy is needed to ignite a dust cloud.

Autoignition Temperature (AIT) – The lowest temperature at which a material can start to burn on its own – without a spark, flame or other ignition source.

Limited Oxygen Concentration (LOC) – How little oxygen is needed for a dust explosion to spread.

Electrostatic Charging Tendency (ECT) – How easily a material can build up and release static electricity.

Pred – The pressure that actually occurs after the explosion protection system is activated.

Pre-conditions for a dust explosion

Ignition source

For dust to ignite, an energy source is required. This can be something as small as a static discharge, or a larger source such as an open flame, electrical fault or heating, for example when dust collects on a hot surface.

Combustible material

The size of the dust particles is of great importance, smaller particles are more flammable and spread more easily in the air. The concentration of dust is also of great importance and must be within a given range for an explosion to occur.

Oxygen

Combustion requires oxygen. Usually, the oxygen content in the air is sufficient to create an explosive environment.

Mixture

The dust must be airborne. Even dust that is not normally airborne can become airborne in connection with another explosion or external influence.

Containment

If the explosion occurs in a containment, this can result in a rapid increase in pressure.







Risk assessment

A dust explosion can have devastating consequences – both for people and for material values.

According to the User Directive 1999/92/EC, the employer has the ultimate responsibility for ensuring that the workplace is safe and that the personnel have the right training. The employer must also, in accordance with the applicable regulations, draw up an explosion protection document.

The document must contain risk analyses, zone and classification plans, a list of flammable liquids, gases and dusts, and procedures for safe handling in areas with an explosive atmosphere.

When classified, an area is divided into different zones, depending on the risk of an explosive dust-air mixture occurring.

Zone 20

Location where an explosive atmosphere in the form of a cloud in combustible dust in the air occurs for extended periods of time, often recurring or continuously.

Zone 21

Location where explosive atmosphere in the form of a cloud of combustible dust can sometimes form in the air during operation.

Zone 22

Location where explosive atmospheres in the form of a cloud of combustible dust are unlikely to form in the air during normal operation, or if one occurs, is nevertheless short-lived.

Stationary Filter Units

Design

The ATEX directive and harmonized standards provide clear guidance throughout the chain – from calculations and design to user instructions, validation and certification. All to ensure effective protection against dust explosions.

Suction accessories

Since all parts of the system are grounded and equi-potentially bonded, you should use ESD-certified suction accessories. This prevents static electricity from building up and discharging, which reduces the risk of sparks and ignition sources.

Filter units

Our ATEX filter units are grounded, have antistatic filters and bursting doors that release gases before the pressure becomes dangerous. The design is reinforced to withstand explosion pressure, but a protective zone must always be established around the valve.

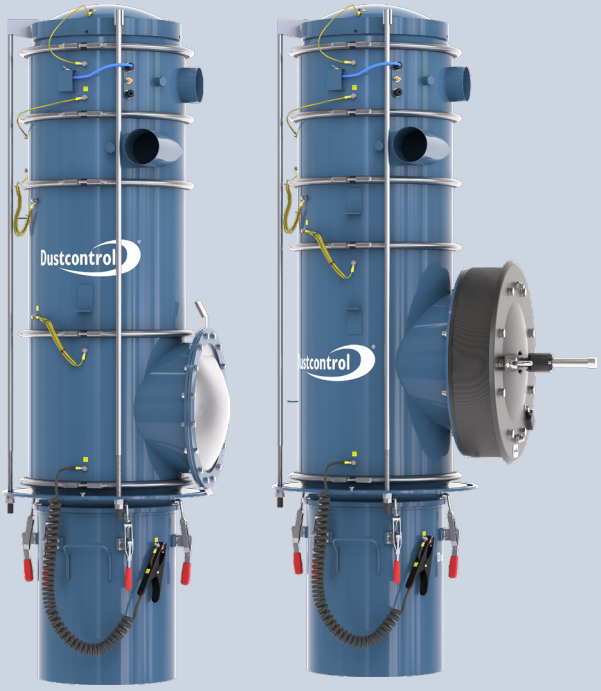
S 11000 EX / S 21000 EX / S 34000 EX are high-vacuum dust collectors for potentially flammable dust.

The system is developed to meet the different needs of local exhaust ventilation and to cope with the challenges and rapid changes in today's industry. The filter units can be placed in areas classified as zone 22 according to Directive 1999/92/EC.

S 11000 EX EVN 420 / S 21000 EX EVN 420 / S 34000 EX EVN 420 are also equipped with a resettable type of blast door with flame protection function.

Stationary Filter Units

Ex CE II3D



S 11000 EX
110301

S 11000 EX EVN 420
110303

S 11000 EX

Technical data S 11000 EX

H x W x D [mm]	2225x675x650
Weight [kg]	85
Inner diameter Ø [mm]	477
Inlet Ø [mm]	108
Outlet Ø [mm]	108
Flow max [m^3/h]	1000
Soiled side air volume [l]	251
Filter Material	429206 x 1
Total Filter Area [m^2]	8.4
Degree of separation EN 60335 [%]	>99.9
Collection container [l]	60
Max temperature filter [°C]	130
Q-pipe	Optional*
P_{red} [bar]	0.5
Filter cleaning with reverse air pulse	
Compressed air [l/s] / [bar]	4 / 4
Connection, hose [mm]	6/8
El connection	24 V DC,12 W

*For flameless venting select 110303

Stationary Filter Units

II3D



S 21000 EX
119201

S 21000 EX EVN 420
119202

II3D



S 34000 EX
105901

S34000 EX EVN 480

S 34000 EX EVN 420
105902

S 21000 EX

Technical data S 21000 EX

H x W x D [mm]	3000x1000x950
Weight [kg]	170
Inner diameter Ø [mm]	596
Inlet Ø [mm]	Optional*
Outlet Ø [mm]	250/160
Flow max [m^3/h]	1500
Soiled side air volume [l]	464
Filter Material	428402 x 1
Total Filter Area [m^2]	12
Degree of separation EN 60335 [%]	>99.9
Collection container [l]	60
Max temperature filter [°C]	130
Q-pipe	Optional**
P_{red} [bar]	0,5
Filter cleaning with reverse air pulse	
Compressed air [l/s] / [bar]	4 / 4
Connection, hose [mm]	6/8
El connection	24 V DC,12 W

*Note that the dirt volume in the filter changes depending on the size of the inlet.

**For flameless venting select 110303

S 34000 EX

Technical data S 34000 EX

H x W x D [mm]	3250x1250x1325
Weight [kg]	330
Inner diameter Ø [mm]	1046
Inlet Ø [mm]	Optional
Outlet Ø [mm]	250/160
Flow max [m^3/h]	4000
Soiled side air volume [l]	1312
Filter Material	429206 x 4
Total Filter Area [m^2]	34
Degree of separation EN 60335 [%]	>99.9
Collection container [l]	60
Max temperature filter [°C]	130
Q-pipe	optional
P_{red} [bar]	0.5
Filter cleaning with reverse air pulse	
Compressed air [l/s] / [bar]	4
Connection, hose [mm]	6/8
El connection	24 V DC,12 W

*Note that the dirt volume in the filter changes depending on the size of the inlet.

**For flameless venting select 110303


Explosion Relief Valve
steute

We have all accessories you need for a safe work environment

DC Reach EX – High-Level Cleaning

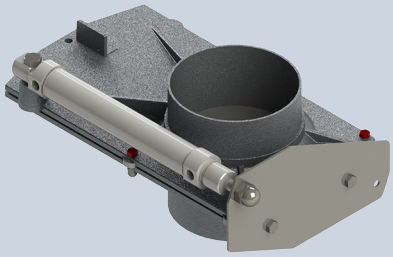
This system consists of a pipe system with straight pipe parts and bends that are connected as desired. Along with this, there are several suction nozzles to meet the customer's unique needs.

In addition to the standard version of DC Reach, there is also DC Reach ATEX for customers who need equipment suitable for an ATEX environment. All these components are certified and meet the Atex-directive 2014/34/EU: ISO 80079-36:2016, ISO 80079-37 and are NFPA certified.



EX Nozzles Shuttervalves & Hoses



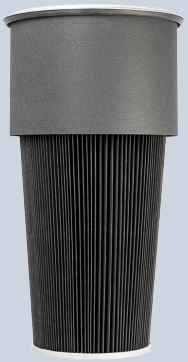




EX Containers, Bags & Filters







Go to our web for more info about our ATEX Solutions: https://dustcontrol.com/atex/

Mobile Dust Extractors

Design

The EX series is specially designed for industries where there is a risk of explosion and also high demands on clean production, e.g. the wood, food and electronics industries. The machines meet the requirements of the ATEX directive (2014/34/EU) in Zone 22. These machines are equipped with steel containers, earthed parts and antistatic accessories.

Dust extractors

The DC 1800 and 2800 H EX are suitable for general cleaning and spot extraction. The DC 1800 H EX is small and light and therefore ideal where there is a need for a portable but still sufficiently powerful dust extractor. The machines are equipped with a brushless motor (for spark-free operation) and certified according to the IP54 standard (non-conductive dust).

One-phase Dust Extractors

DC 1800 H EX
DC 2800 H EX



DC 2800 H EX

DC 1800 H EX

1-phase IP54

II 3D Ex tc IIIB T5 Dc IP54 10°C <=ta <=30°C

Supplied with (Part No) DC1800 / DC 2800 H EX

Suction hose ATEX, Ø38, 5 m/ 20 in (2027)
Coupling socket (2115E)
Coupling socket 50/38 (2108E)
Floor nozzle (7235E)
Suction pipe Ø38 mm/1.5" (7257)
Plastic bag (42951)
Fine filter, polyester (42028-01)
HEPA H13 filter (42027)
HEPA H14 filter (42926)

Part No DC 1800 H EX

124000	230V, 50/60 Hz, EU
124001	230V, 50/60 Hz, UK
124002	115V, 50/60 Hz, UK
124003	115V, 50/60 Hz, US/CAN
124010	230V /50/60Hz, H14, EU

Part No DC 2800 H EX

124100	230V /50/60Hz, EU
124101	230V /50/60Hz, UK
124103	115V /50/60Hz, US/CAN

Technical data DC1800 / DC 2800 H EX

HxWxD DC 1800 [mm]	840x400x400
HxWxD DC 2800 [mm]	1200x440x600
Weight DC 1800 [kg]	16.5
Weight DC 2800 [kg]	24.5
Inlet DC 1800 Ø [mm]	50
Inlet DC 2800 Ø [mm]	50
Dust collector DC 1800 [l]	20
Dust collector DC 2900 [l]	40
Flow max, open inlet DC 1800 [m^3/h]	200
Flow max, open inlet DC 2800 [m^3/h]	200
Negative pressure, max. DC 1800 [kPa]	27
Negative pressure, max. DC 2800 [kPa]	27
Power rating DC 1800 [W]	1500
Power rating DC 2800 [W]	1500
Fine filter, polyester, area [m^2]	1.5
Degree of separation, fine filter [%]	99.9
Filter area, HEPA filter [m^2]	0.85
Filter classification, EN 1822-1	HEPA H13
Filtration efficiency, machine, EN 60335-2-69, Appendix A-A, Class H [%]	99.995
Sound level [dB(A)]	70

Stainless Steel

One-phase Dust Extractors

Stainless steel

DC 1800 H EX and DC 2800 H EX are also available in stainless steel.The stainless steel design makes it possible to use alkaline detergents, which makes cleaning easier and ensures a hygienic operating environment.

Suction accessories

By using ESD-certified suction accessories, the charging and discharging of so-called static electricity is prevented. This reduces the risk of sparks and ignition sources. Dustcontrol has a large selection.

DC 1800 H EX SS
DC 2800 H EX SS

Supplied with (Part No) DC1800 / DC 2800 H EX SS

Suction hose ATEX, Ø38, 5 m/ 20 in (2027)
Coupling socket (2115E)
Coupling socket 50/38 (2108E)
Floor nozzle (7235E)
Suction pipe Ø38 mm/1.5" (7257)
Plastic bag (42951)
Fine filter, polyester (42028-01)
HEPA H13 filter (42027)



DC 1800 H EX SS



DC 2800 H EX SS

Technical data DC1800 / DC 2800 H EX SS

HxWxD DC 1800 [mm]	840x400x400
HxWxD DC 2800 [mm]	1200x440x600
Weight DC 1800 [kg]	16.5
Weight DC 2800 [kg]	24.5
Inlet DC 1800 Ø [mm]	50
Inlet DC 2800 Ø [mm]	50
Dust collector DC 1800 [l]	20
Dust collector DC 2900 [l]	40
Flow max, open inlet DC 1800 [m^3/h]	200
Flow max, open inlet DC 2800 [m^3/h]	200
Negative pressure, max. DC 1800 [kPa]	27
Negative pressure, max. DC 2800 [kPa]	27
Power rating DC 1800 [W]	1500
Power rating DC 2800 [W]	1500
Fine filter, polyester, area [m^2]	1.5
Degree of separation, fine filter [%]	99.9
Filter area, HEPA filter [m^2]	0.85
Filter classification, EN 1822-1	HEPA H13
Filtration efficiency, machine, EN 60335-2-69, Appendix A-A, Class H [%]	99.995
Sound level [dB(A)]	70

Part No DC 1800 H EX SS

124004 230V /50/60Hz, EU
124005 115V /60Hz, US/CAN
124011 230V /50/60Hz, UK

Part No DC 2800 H EX SS

124104 115V /60Hz, US/CAN
124105 230V /50Hz, EU

1-phase IP54

II 3D Ex tc IIIB T5 Dc IP54 10°C <=ta <=30°C

3-phase Dust Extractor

DC Tromb Turbo EX

The DC H Tromb Turbo H EX for ATEX zone 22 is a medium-sized dust collector from the Tromb family. Equipped with a powerful three-phase turbo motor, it is suitable for long hoses (up to 20 meters) and heavy cleaning (38 mm accessories). It is certified to IP65 standard and for zone 22 according to the ATEX directive.



Part No	DC Tromb Turbo EX
173700	2.2 kW 400V /50Hz
173702	4hp 460V /60Hz, US/CAN

3-phase IP65

II 3D T4 IP65, 10<=t_a<=40°C

Supplied with (Part No)

Suction hose Ø38/50 (2027 (2m), 2028 (5 m))
Coupling socket (2107E)
Coupling socket (2131)
Floor nozzle (7236E)
Suction pipe (Ø38 mm /1.5") (7257)
Plastic bag, conductive (5 pcs) (42285)
Antistatic Fine filter, polyester (44017-1)
HEPA H13-filter (44016)

Technical data

HxWxD [mm]	1390 x 600 x 840
Weight [kg]	88
Inlet Ø [mm]	50
Dust collector [l]	40
Flow max, open inlet [m³/h]	260
Negative pressure, max. [kPa]	28
Power rating [kW]	2.2
Fine filter, polyester, area [m²]	2.5
Degree of separation, fine filter [%]	99.9
Filter area, HEPA filter [m²]	2,2
Filter classification, EN 1822-1	HEPA H13
Filtration efficiency, machine, EN 60335-2-69, Appendix A-A, Class H [%]	99.995
Sound level [dB(A)]	72

3-phase Dust Extractor

DC 5800 Turbo EX

The DC 5800 H Turbo EX is designed for large handheld power tools and heavy-duty cleaning. The unit is robust and durable in design for maximum operational reliability, combined with a direct-drive turbo pump for continuous operation. It is certified to IP65 standard



Part No	DC 5800 Turbo EX
119312	4 kW 400V /50Hz
119313	10 hp 460V /60Hz

3-phase IP65

Supplied with (Part No)

Suction hose ATEX, Ø50 mm, 7.5 m (2028)
Floor nozzle (7238E)
Suction pipe, Ø50 mm/2" (7265)
Fine filter, antistatic (429206)
HEPA H13 filter (42869)
Plastic bag (5psc) (42111)

Technical data

HxWxD [mm/in]	1942x780x1160/76x31x46
Weight [kg/lb]	170/375
Collection container [l/gal]	40/10.5
Flow max, fan, EU [m³/h]	470
Negative pressure, max, EU [kPa]	28
Power [kW]	4
Sound level [dB(A)]	75

II 3D T4 IP65, 10<=t_a<=40°C



Compressed Air Driven Dust Extractors

DC Tromb TR EX

The DC TROMB TR H EX is a compressed air powered dust collector for use in areas where electricity is not available or practical. Based on the Tromb chassis, the DC TROMB TR H EX is a machine with a high suction capacity and robust construction, while being compact and easy to manoeuvre. It is perfect for spot extraction formost types of hand-held tools and for industrial cleaning (38 mm and 50 mm systems). It is perfect for spot extraction for most types of hand-held toolsand for industrial cleaning (38 mm and 50 mm systems).

Part No DC Tromb TR EX 177100

Supplied with (Part No)

Plastic Bag, Round Bottom, ESD (42384)
Finefilter Tromb, ESD (44017-1)
HEPA Filter Tromb (44016)
Potential equalization cable (45201)

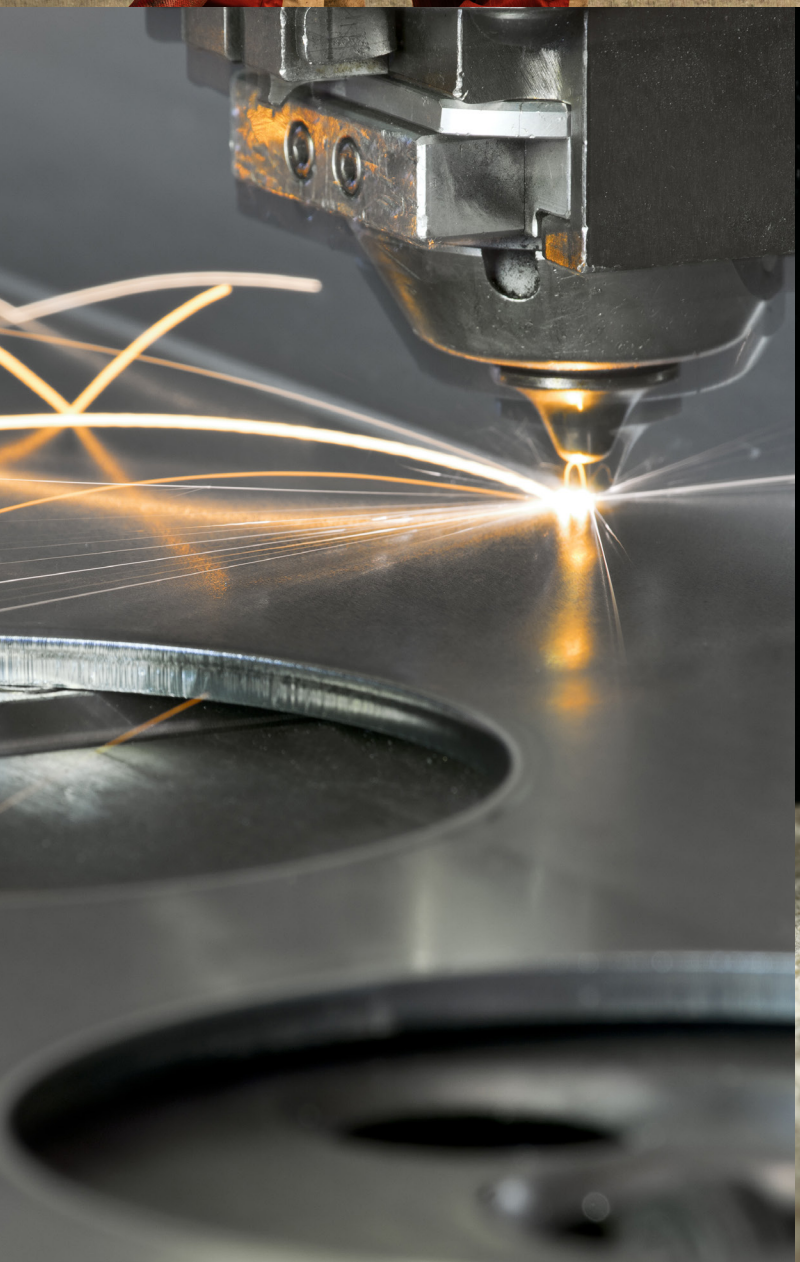
II3D



Technical data

HxWxD [mm/in]	1415 x 600 x 780 / 55 x 23 x 31
Weight [kg/lb]	53 / 117
nlet [mm/in]	Ø76 / 3
Hose l max rec'd (Ø2" /50 mm)	15'-50'/5-15m
Collection container [l/gal]	40/10.6
Flow max (EU) [m3 / h] /	330 (6 bar) 300 (4 bar rec)
(US / CAN) [CFM]	194 (6 bar) 177 (4 bar rec)
CA consumption [l/s]	28 (6 bar) 21 (4 bar, rec)
Air Connection	1" ball valve
Negative pressure, max [kPa/inwg]	30/120
Fine Filter area [ft²/m²]	1.85 / 20
HEPA Filter area [ft²/m²]	2.2 / 23.7
Fine Filter efficiency	
- EN 60335-2-69, Class M	99 %
HEPA Filter efficiency	
- EN 60335-2-69, Class H	99.995 %
- EN 1822-1	HEPA H13
Sound level [dB(A)]	70

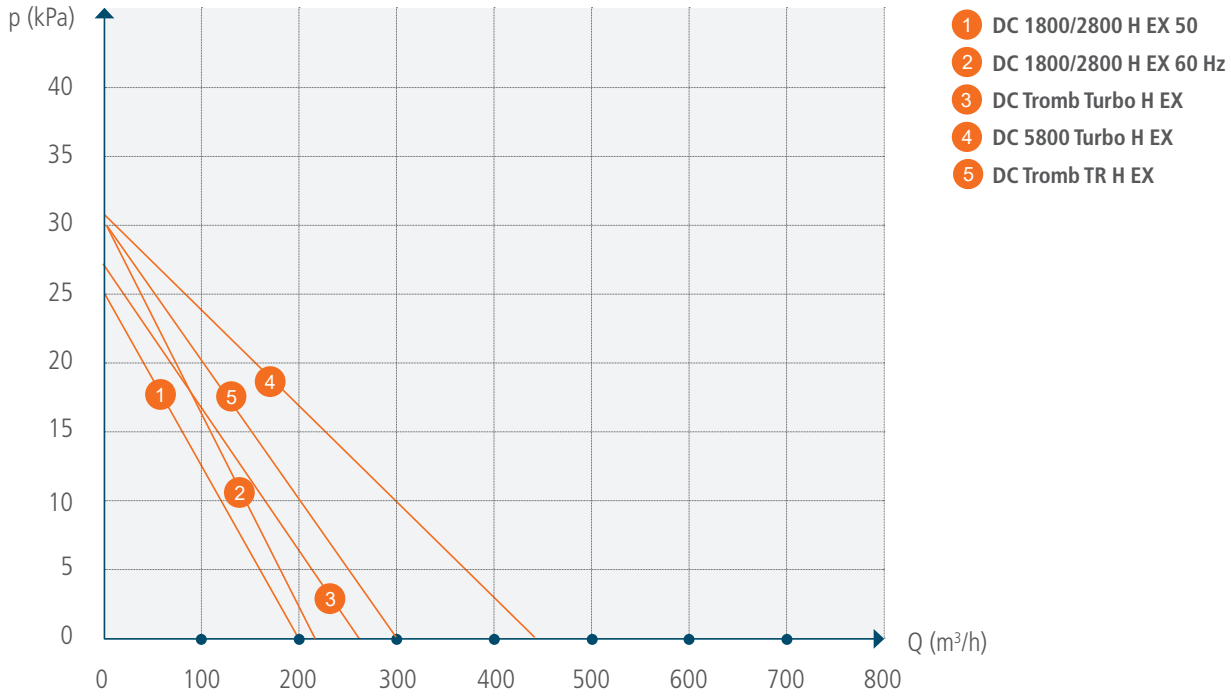






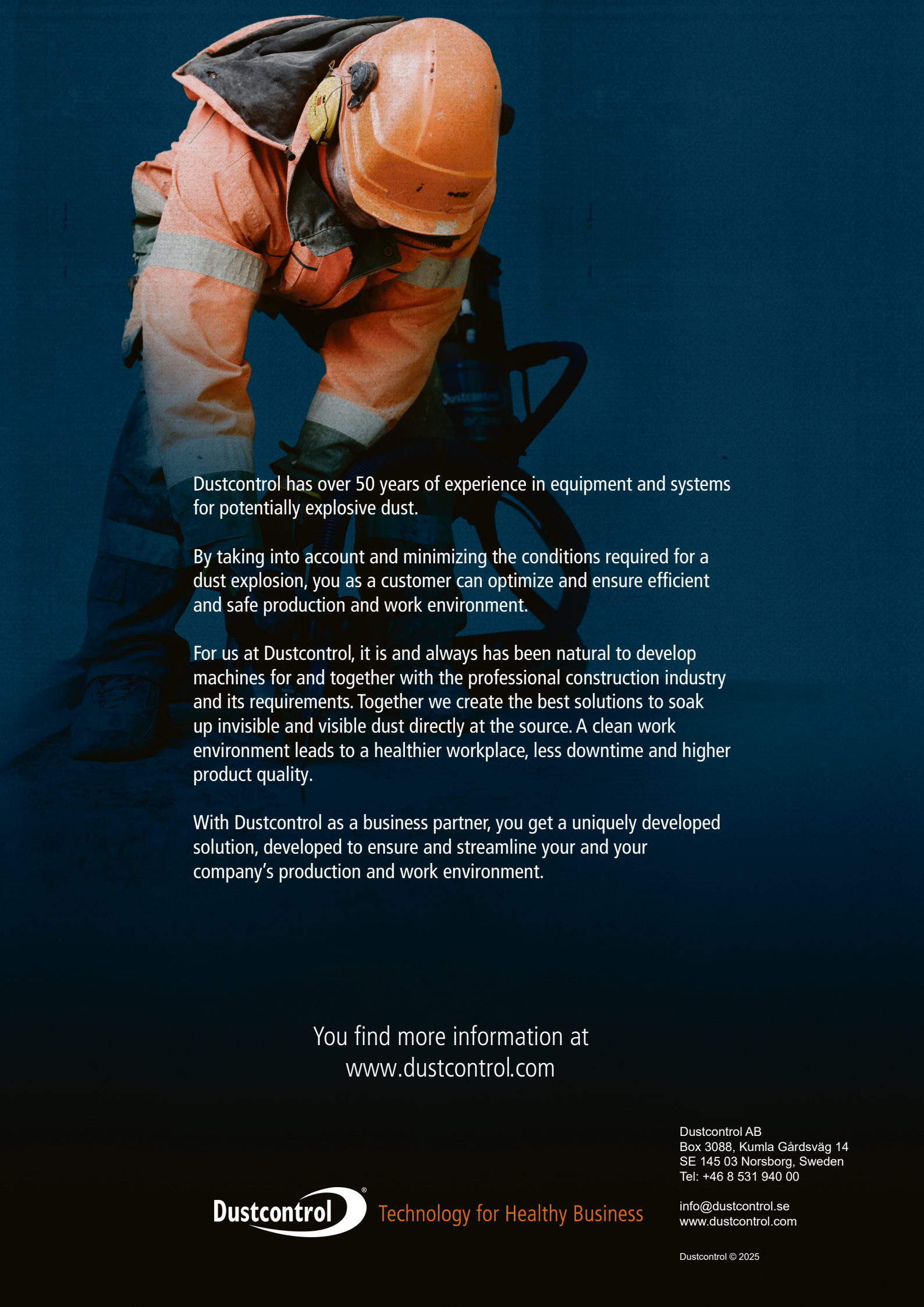
Guide to the right Mobile EX-machine

Capacity air flow EX-Line



TECHNICAL DATA	DC 1800 H EX	DC 2800 H EX	DC Tromb Turbo EX	DC 5800 Turbo EX
HxWxD [mm]	840x400x400	1200x440x600	1390 x 600 x 840	1942x780x1160
Weight [kg]	16.5	24.5	88	170
Inlet Ø [mm]	50	50	50	76
Dust collector [l]	20	40	40	40
Flow max, open inlet [m³/h]	200	200	260	470
Negative pressure, max. [kPa]	27	27	28	28
Power rating [W]	1500	1500	2200	4000
Fine filter, polyester, area [m²]	1.5	1.5	2.5	5
Degree of separation, fine filter	99.9	99.9	99.9	99.9
Filter area, HEPA filter [m²]	0.85	0.85	2.2	2.7
Filter classification, EN 1822-1	HEPA H13	HEPA H13	HEPA H13	HEPA H13
Filtration efficiency, machine, EN 60335-2-69, Appendix A-A, Class H [%]	99.995	99.995	99.995	99.995
Sound level [dB(A)]	70	70	72	<75
Zone	22	22	22	22

Go to our web for more info about our ATEX Solutions: https://dustcontrol.com/atex/



Dustcontrol has over 50 years of experience in equipment and systems for potentially explosive dust.

By taking into account and minimizing the conditions required for a dust explosion, you as a customer can optimize and ensure efficient and safe production and work environment.

For us at Dustcontrol, it is and always has been natural to develop machines for and together with the professional construction industry and its requirements. Together we create the best solutions to soak up invisible and visible dust directly at the source. A clean work environment leads to a healthier workplace, less downtime and higher product quality.

With Dustcontrol as a business partner, you get a uniquely developed solution, developed to ensure and streamline your and your company's production and work environment.

You find more information at
www.dustcontrol.com

Dustcontrol® Technology for Healthy Business

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