

ProX DMP 320

# VACUUM SOLUTIONS FOR 3D PRINTING



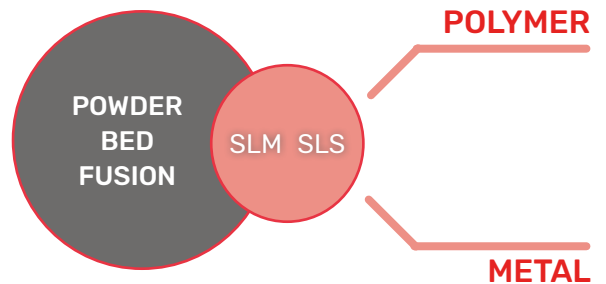
# 3D PRINTING - EVOLVING TECHNOLOGIES

In traditional machine tool production the standard process is usually subtractive (subtraction of material through milling, drilling, grinding, and so on). Today, a new technology has integrated and partly replaced traditional subtractive production: 3D Printing Additive Manufacturing is a process that enables to create a finished part by aggregating raw materials, including polymers, metals and other powders.

## Powder Bed Fusion technology (PBF)

**Selective Laser Sintering (SLS)** and **Selective Laser Melting (SLM)** technologies require dedicated solutions of powder collection to guarantee safety and efficiency during the production process, cleaning and maintenance of 3D printers, and quality of the finished product.

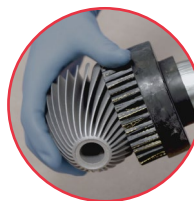
Regardless of the materials, which can be either hazardous and highly explosive metal powders such as aluminium, titanium, chrome-nickel, stainless steel, inconel, or polymeric plastic powders and inert powders such as stone, ceramic or concrete, Delfin has designed over the years dedicated systems and solutions to manage the powders with several advantages and benefits.



## WHY USE AN INDUSTRIAL VACUUM?



Maintenance of the 3D Printer and removal of residual powders from the building chamber



Deep cleaning of finished products



Cleaning of production environment

## ADDITIONAL BENEFITS OF DELFIN VACUUM SOLUTIONS



**AVOID CROSS CONTAMINATION OF POWDERS**



**RECLAIMING OF POWDERS**



**WORKERS SAFETY AND PREVENTION OF THE RISK OF EXPLOSION**



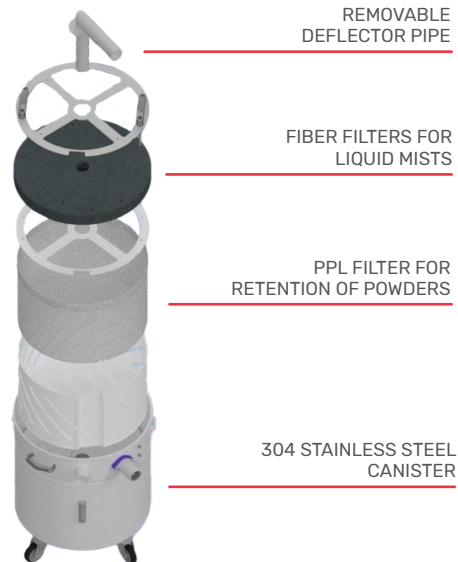
# INERT SOLUTIONS FOR REACTIVE METAL POWDERS

Inert EX technology enables to vacuum the potentially explosive powders directly into an inert liquid (oil or other, depending on the type of powder). This eliminates the risk of an explosion inside the machine by removing one of the explosion factors, even in presence of sources of ignition.

## INERT CANISTER

A PPL filter retains the vacuumed powder in the inert bath while three other fibre filters retain the mist generated from the vacuuming. The system consists of a series of modular elements that ensure ease of use in assembly, disassembly and powders disposal, without the use of tools.

Our solutions are dust ignition proof certified by notified testing labs as compliant with regulations for prevention of explosion and handling explosive powders. Both inner design and external structure, are marked according to the most update international explosion proof standards.



RANGE



TECHNICAL DATA	ZFR EV AP Z22 K2 INERT	ZFR 75 INERT	MTL 451 ATEX 22 INERT	SEP.EX-001
Power/Voltage	2,2 Kw / 400 V - 50Hz 3~	3 Kw / 400 V - 50Hz 3~	1,1 kW / 230 V - 50 Hz 1~	-
Max air flow	1300 m <sup>3</sup> /h	370 m <sup>3</sup> /h	215 m <sup>3</sup> /h	-
Max waterlift	280 mmH <sub>2</sub> O	2600/2000 mmH <sub>2</sub> O	2250 mmH <sub>2</sub> O	-
Primary Filter	Star Hydro - Oleophobic M	Star Hydro - Oleophobic M	Star Hydro - Oleophobic M	Star - Polyester ANT L
Canister	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 304
Dust capacity Liquid capacity	100 lt	100 lt	13 lt 27 lt	13 lt 27 lt
Dimensions	78x85x246h cm	79x66x170h cm	76x66x170h cm	50x60x112h cm



Available with ATEX certification for zone 22 and inner part zone 20

## SOLUTIONS FOR NON REACTIVE POWDER (POLYMER AND METALS)

Our industrial vacuum cleaners enable the recovery of polymer powders driving up savings and limiting maintenance costs. Moreover, Delfin dust collectors are the ideal solution for localized extraction directly on board of process 3D machinery.



**MTL 300 BL ATEX 22**

### SAFETY

Designed and certified for operating in areas with the presence of combustible powders, according to the risk category and type of substance.

### DURABILITY

- Brushless motor ensure long life time (over to 10,000 hours) and totally maintenance-free.
- 100% steel construction.

### FILTRATION

The vacuums includes certified antistatic class M (series) and (optional) HEPA filters. This guarantees the release of clean air into the environment.

# RANGE



TECHNICAL DATA	MTL 300 BL ATEX 22*	ZFR EV AP 560 K4 Z22	451 BL ATEX 22*
Power	1,1 kW	4 kW	1,1 Kw
Voltage	230 V - 50 Hz 1~	400 V - 50 Hz 3~	230 V - 50 Hz 1~
Max air flow	215 m <sup>3</sup> /h	1800 m <sup>3</sup> /h	215 m <sup>3</sup> /h
Max waterlift	2250 mmH <sub>2</sub> O	300 mmH <sub>2</sub> O	2250 mmH <sub>2</sub> O
Primary filter	Star - Polyester ANT M	Star - Polyester ANT M	Star - Polyester ANT M
Collection capacity Container	40 lt - Integrated	100 lt - Detachable	45 lt - Detachable
Dimensions	44x42x78h cm	78x85x214h cm	58x63x130h cm

\* also available as Z22/20 Internal / EX 1/3D



Available with ATEX certification for zone 22 and inner part zone 20

# ADDITIONAL SOLUTIONS AND ACCESSORIES

## SEPARATORS

To work with even more efficiency and flexibility, it is possible to use the vacuum with one or more separators, with the following benefits:

- ✔ Prevention of the risk of mixing different materials, thanks to a dedicated collection unit for each type of powder.
- ✔ Easy handling, recovery or disposal of the collected powders.
- ✔ Primary filter protection and improvement of suction performance and motor life over time.

POLYMER AND  
NON REACTIVE  
METALS



**ESD.SEP-0467      ESD.SEP-0509**

CHROME, STAINLESS STEEL, INCONEL, COPPER

- Reduces the amount of powder reaching the vacuum and increases the life time of filter and motor
- Avoids cross contamination when vacuuming different powders



**ES.EX-001**

ALUMINUM, TITANIUM

- Inertization of reactive metal powders
- Easy disposal of material

REACTIVE  
METAL

## ACCESSORIES



BRUSH



RUBBER LANCE



CONICAL RUBBER  
NOZZLE



CONICAL RUBBER  
TIP NOZZLE



SCRAPING NOZZLE



FLAT NOZZLE



CONICAL 90° RUBBER  
TIP NOZZLE



EXTRACTION ARM FOR  
AIRBORNE DUST

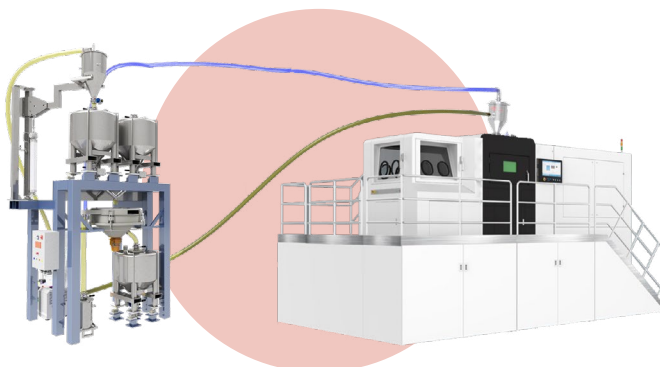


FLOOR WAND AND  
FLOOR CLEANING NOZZLE



CONDUCTIVE POLYURETHAN  
AND PVC HOSES

## PNEUMATIC CONVEYORS



Among the RANGES OF SOLUTIONS DESIGNED by Delfin are the pneumatic conveying systems, that allow the loading of powders on 3D printers. We offer pneumatic conveyors powered by both electrical supply and compressed air supply, in ATEX and/or inert atmosphere. Customized solutions can also be engineered for integration on 3D printers, including inert gas solutions for reactive metal powders

- AUTOMATIC LOADING OF PRINTER
- MATERIAL OR RECOVERY
- AUTOMATIC TRANSFER AND RECOVERY
- CUSTOMIZED SYSTEMS FOR LARGE CAPACITIES WITH DOSING UNITS

Delfin is a global leader in the manufacturing of industrial vacuum equipment, ranging from portable vacuums for industrial cleaning, to central vacuum systems and engineered solutions, to pneumatic conveying systems. Our mission is to create value by designing innovative solutions that improve efficiency, safety, and productivity. Our aim is to use our expertise to help our customers to achieve their goals.



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