

TIGER-VAC · II 2GD EX D IIA T3 GB / EX T IIIC T200°C DB IP6X -- LCIE 03 ATEX 6297 -- EN 17348 DT

# Tiger-Vac EXP1-20 DT (PRS-HEC) RE HEPA



The Tiger-Vac EXP1-20 DT (PRS-HEC) RE HEPA is a mobile ATEX combined vacuum certified II 2GD to EN 17348 DT -- category 2 for both gas (external Zone 1) and dust (external Zone 21). The model differs from the standard EXP1-20 by having a PRS-HEC pre-separator (Pre-Separator with High Efficiency Cyclone) fitted ahead of the main filter. The cyclone removes >90 % of incoming dust by pure centrifugal action, so the detachable tank collects the bulk of the dust without loading the HEPA filter -- significantly extending filter service life, reducing filter cost and especially effective on coarser process and production dust. A 1 kW TEFC motor (Ex d IIA T3 Gb) delivers 224 m<sup>3</sup>/h at 1550 mmH<sub>2</sub>O vacuum. A HEPA H14 final filter (211027B, EN 1822-5 99.995 % at MPPS) ensures even the finest particles are captured before exhaust. The unit has an RE exhaust system with sound-dampening muffler and ships with static-dissipative (SD) accessories. Housing is AISI 304 stainless steel, IP6X rated.

## APPLICATIONS

- Mobile dust removal in Zone 1/21 where dust and flammable vapours occur simultaneously
- Production environments with coarser dust that would overload HEPA (metal grinding, wood processing, mineral powders)
- Chemical process and pharma industry with mixed particle and vapour emissions
- Periodic cleaning tasks where short cord deployment is beneficial (15 m cord included)
- ATEX zones where a detachable tank (DT) is preferred for quick emptying and batch handling

# Technical specifications

<b>ATEX marking</b>	II 2GD Ex d IIA T3 Gb / Ex t IIIC T200°C Db IP6X -- LCIE 03 ATEX 6297 -- EN 17348 DT
<b>Internal / external zone</b>	-- / 21
<b>Motor type</b>	1-faset TEFC-motor, eksplosionssikret (Ex d IIA T3 Gb / Ex t IIIC T200°C Db IP6X), 1 kW / 4,5 A
<b>Airflow</b>	224 m <sup>3</sup> /h
<b>Vacuum</b>	152 mbar (1550 mmH <sub>2</sub> O)
<b>Container</b>	25 L
<b>Sound pressure</b>	78 dB(A)
<b>Filter class</b>	H class
<b>Filter type</b>	HEPA H14 (EN 1822-5, 99,995 % @ 0,3 µm MPPS), part 211027B
<b>Primary filter</b>	PTFE SD hovedfilter-samling (218627)
<b>Cleaning system</b>	Manuel -- hovedfilter tilgængeligt fra toppen; forseparator-cyklon reducerer belastning
<b>Collection system</b>	Detachable container
<b>Material</b>	AISI 304 rustfri stål
<b>IP class</b>	IP6X
<b>Power</b>	1.0 kW
<b>Current</b>	4.5 A
<b>Voltage</b>	230 V / 50 Hz / 1~
<b>Inlet</b>	Diameter 38 mm
<b>Dimensions (L x W x H)</b>	1120 x 560 x 1350 mm
<b>Weight</b>	98 kg

# Questions and answers

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## What is the PRS-HEC cyclone, and why does it matter?

PRS-HEC stands for Pre-Separator with High Efficiency Cyclone -- a centrifugal pre-separator fitted ahead of the main filter. Dust enters the cyclone chamber tangentially and is forced into a downward spiral. Heavy particles are thrown against the container wall and fall into the detachable tank, while cleaned air passes to the HEPA filter and exhaust. More than 90 % of incoming dust is collected in the tank without reaching the filter. The benefit is threefold: significantly longer HEPA service life (less frequent filter changes), lower operating cost, and much better performance with coarser dust -- e.g. metal chips, mineral powder or wood dust. On a standard vacuum without pre-separator the HEPA filter would clog quickly and vacuum drop.

## What does II 2GD mean, and where may the unit be used?

II 2GD means the unit is ATEX category 2 both for gas (G) and dust (D) externally. Specifically, the EXP1-20 DT (PRS-HEC) RE HEPA may be placed in Zone 1 (where explosive gas atmospheres are likely to occur under normal operation) and in Zone 21 (where explosive dust atmospheres are likely to occur under normal operation). It does NOT carry internal Zone 0/20 certification -- i.e. the interior of the vacuum is not intended to contain explosive atmospheres for extended periods. For internal Zone 20 use choose a II 1/2GD rated model such as CD-230V EX MRPFT HEPA or the CD-36L EX DT MRP/MFS 1/2GD variants.

## When should I choose EXP1-20 DT (PRS-HEC) over EXP1-20 without PRS-HEC?

Choose the PRS-HEC version if you mostly collect coarse or medium-coarse dust (above about 20 microns) in larger quantities -- e.g. metal grinding, wood processing, mineral powder, granulates. The cyclone reduces load on the HEPA filter so service intervals shift from days to weeks, extending real service times significantly. For very fine dust (below 5 microns, e.g. toner or alumina) the PRS-HEC cyclone offers less benefit because the finest particles follow the air stream and still reach the HEPA -- here the standard EXP1-20 without pre-separator is usually more economical since it is lighter and cheaper. Neither variant is suitable for liquid recovery -- choose a wet/dry model such as EXP1-40L FR-P WET/DRY.

## How is the tank emptied in practice?

The 25 L detachable tank (DT) can be lifted off the carriage after suction is shut down and pressure has equalised. The procedure: switch off, wait 30-60 seconds until valves are back in equilibrium, release the clamps securing the tank to the filter head, and wheel the tank out on its own casters. The tank can then be rolled to a waste bin or sealing bag. An extra recovery tank (part 223001-ASM1) can be added so an empty can be swapped for a full without downtime -- useful in continuous production. Note: for toxic or active pharmaceutical dust, a static-dissipative conductive poly-liner bag must be used and sealed before disposal (available separately from Tiger-Vac).

# Contact and advisory

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