

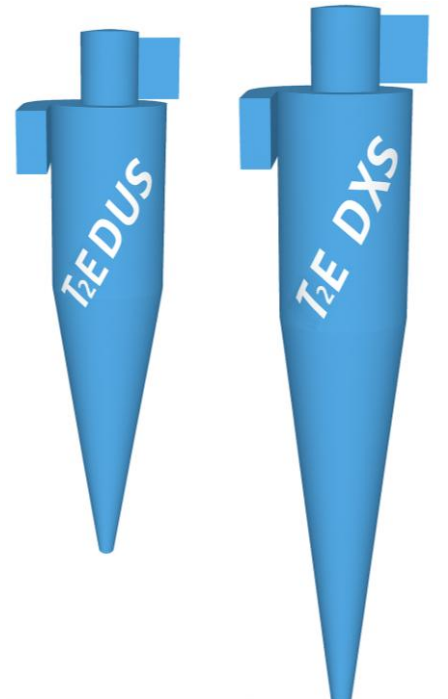
DUSTLESS – ULTRA SEPARATION (DUS)

T2E DUS **cyclones** are high-efficiency **separators**, designed to offer the best balance between performance, robustness and operating cost.

Based on proportions established in the technical literature, they ensure stable internal flow, low pressure loss and simplified integration into exhaust and dust collection systems.

With modular construction and the possibility of manufacturing in carbon steel, stainless steel or special alloys, DUS cyclones stand out for their field-proven reliability and ease of maintenance.

Ideal for processes where high particulate recovery is sought without increasing energy consumption or impacting the layout of the facility. When maximum performance is required, the **T2E DXS - Dustless eXtreme Separation** model is the *premium* version in separation efficiency.

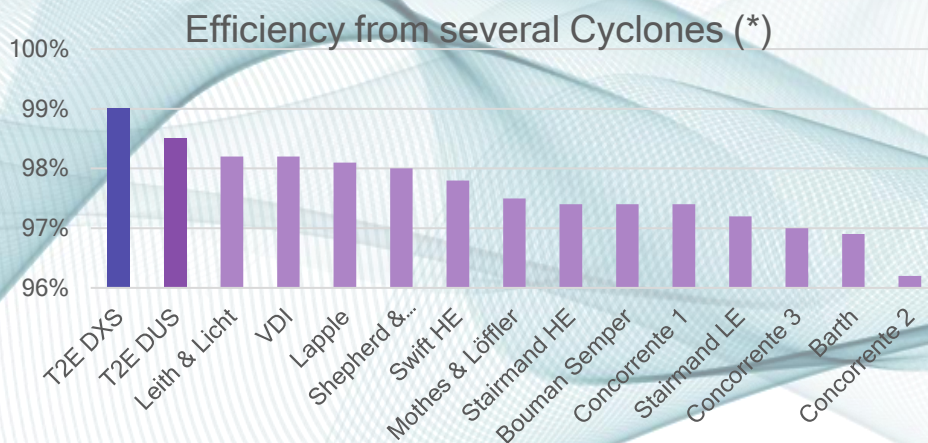
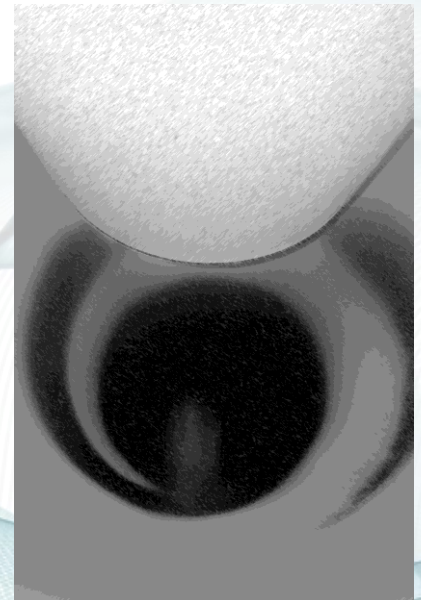


>> Key features

- Standardized geometry with field-validated performance.
- Good collection efficiency with low pressure loss.
- Compact, robust and easy-to-manufacture design.
- High durability and simplified integration into existing systems.
- Available in multiple diameters and construction configurations.

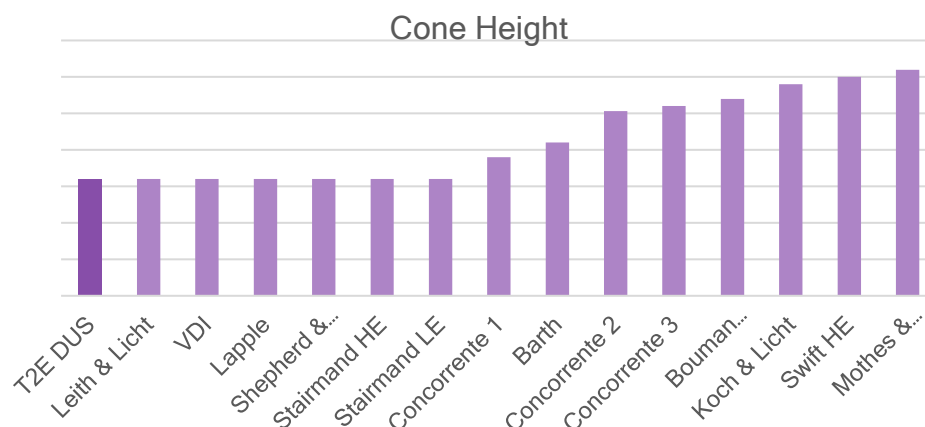
>> Efficiency

- Established project with well-defined powder separation (see photo).
- Efficiency of over > 99%, depending on the type of powder.
- One of the highest efficiencies on the market, even with a high cone Reduced, see comparisons below.



(*) Whereas: 15,000 m³/h of air at 85°C (30 g/kg AS) with particle size distribution: d₅₀: 30µm d₈₅: 50µm and d₁₅: 10µm, with *AirLock* device and pressure loss of 2,000 Pa.

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>> Applications

- Thermal processes and dryers
- Industrial exhaust systems
- Secondary filtration and pre-selection before bagging
- Dust collection in hot air recirculation circuits.

>> Design Features

- Design Temperature: 120oC
- Design vacuum pressure: -500mm AC
- Max Pred: As per table below:

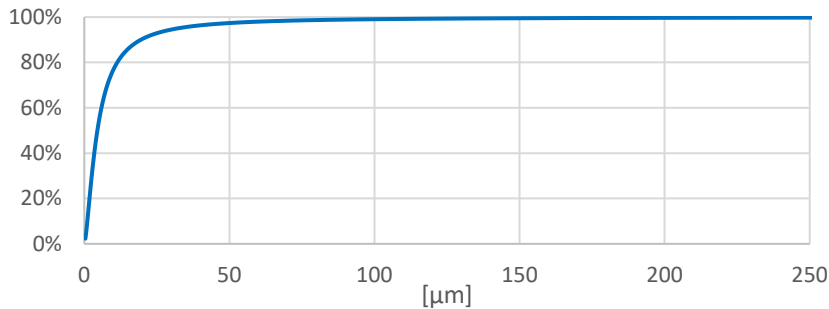
Diam (mm)	Input H (mm)	Inlet L (mm)	Weight (kg)	Weight fund. (kg)	Active Vol. (m3)	Pred,max (bar _g)
300	150	75	64	115	0,05	1
350	175	88	78	141	0,08	1
400	200	100	140	252	0,12	1
450	225	113	164	295	0,17	1
500	250	125	188	338	0,23	1
560	280	140	217	391	0,32	1
630	315	158	251	452	0,46	1
710	355	178	289	521	0,66	1
800	400	200	329	593	0,94	0,5
900	450	225	492	886	1,3	0,5
1.000	500	250	535	964	1,8	0,5
1.120	560	280	571	1.028	2,6	0,5
1.250	625	313	697	1.254	3,6	0,5
1.400	700	350	857	1.542	5,0	0,5
1.600	800	400	1.096	1.973	7,5	0,4
1.800	900	450	1.365	2.457	10,7	0,4
2.000	1.000	500	1.663	2.993	14,7	0,4
2.240	1.120	560	2.058	3.705	20,6	0,4
2.500	1.250	625	2.535	4.563	28,6	0,4
2.800	1.400	700	3.146	5.663	40,2	0,4
3.150	1.575	788	3.942	7.096	57,3	0,4
3.250	1.625	813	4.186	7.535	62,9	0,4
3.350	1.675	838	4.437	7.987	68,9	0,4
3.450	1.725	863	4.696	8.452	75,3	0,4
3.550	1.775	888	4.961	8.931	82,0	0,4
3.650	1.825	913	5.235	9.422	89,1	0,4
3.750	1.875	938	5.515	9.927	96,6	0,4
3.850	1.925	963	5.803	10.445	104,6	0,3
3.950	1.975	988	6.098	10.976	112,9	0,3
4.050	2.025	1.013	6.400	11.520	121,7	0,3
4.150	2.075	1.038	6.710	12.077	131,0	0,3
4.250	2.125	1.063	7.027	12.648	140,7	0,3
4.350	2.175	1.088	7.351	13.232	150,8	0,3

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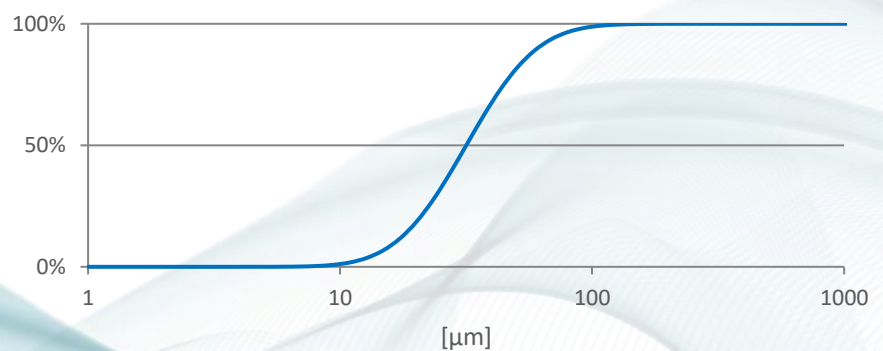
>> Specialized Engineering

- Guarantee of hydraulic performance (empty or dusty).
- Efficiency and pressure drop curves available on request.
- Determination of recovered and lost particulate under specific conditions.

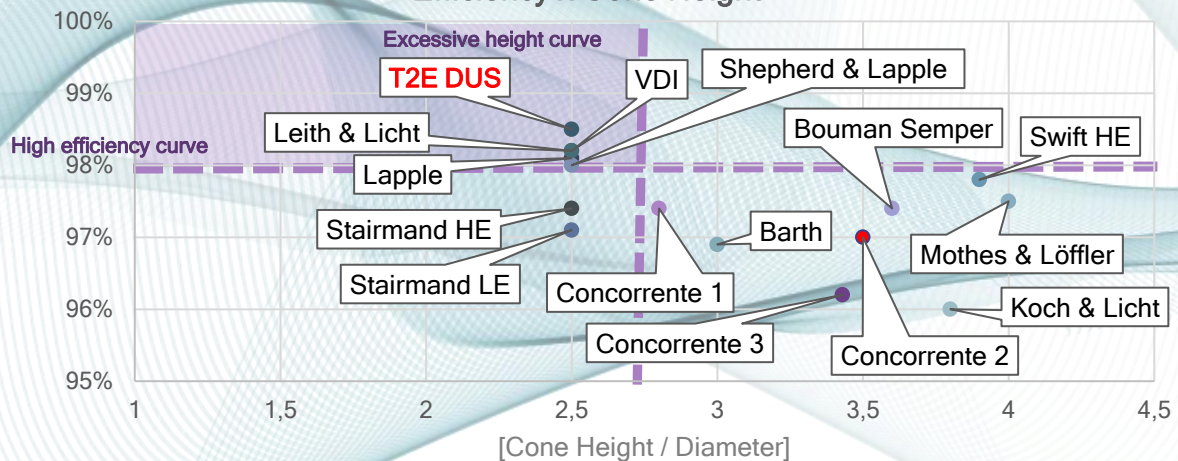
Cyclone Separation Curve



Curva de Granulometria do pó retido



Efficiency x Cone Height



Note: The demonstration above indicates that of the 15 cyclones indicated, only 4 are considered high efficiency (>98% efficiency) and have a height less than 2.7 x D (T2E DUS, Leith & Licht, VDI and Shepherd & Lapple).

DUSTLESS – ULTRA SEPARATION (DUS)

Safety Instruction:

Area Classification:

DUS cyclones must be evaluated for the risk of explosion of combustible dust, according to NFPA 68, NFPA 69, NFPA 652 and ABNT NBR ISO 80079-10-2 standards.

Power and Utilities Shutdown:

Before beginning any maintenance or adjustment procedures, make sure that the equipment involved is turned off and disconnected from the power supply and utilities, whether water, steam, or any other type of fluid involved.

Rotary Valve:

Cyclones usually have an associated rotary valve, attention with this equipment.

Cleaning Routine:

Cyclones can operate under a cleaning routine. Before starting any operation or maintenance, make sure the routine is disabled;

Pressure and Vacuum Check:

Cyclones can operate under pressure. Before beginning any operation or maintenance, check that the internal pressure of the equipment has been completely relieved. Avoid releasing pressure quickly or abruptly, as this can create a risk of injury.

Temperature Check:

Cyclones can operate under high temperature. Before starting any operation or maintenance, wait for the temperature of the equipment to return to temperatures suitable for handling.

Safety Valve:

The equipment may under no circumstances be operated in a condition of temperature/pressure higher than that indicated as the design temperature/pressure. If there is a risk of overpressure on the equipment, whether due to an incorrectly held valve, pump *shutoff* pressure or any other reason, the equipment needs to be protected by safety devices.

Maintenance:

Replacement of all gaskets is necessary in order to avoid leakage of product and/or chemical elements. The standard service life of the gaskets is 1 (one) year. Depending on the type of material being used, the lifespan can be reduced.



During the operation and maintenance of the air ejector, it is mandatory to use appropriate PPE (Personal Protective Equipment), such as:

- Safety helmet;
- Goggles;
- Key money;
- Safety boots;
- Ear protector;
- Among others;