

Information

about

Support frame - medium

for

DCA filter

01-09-2016

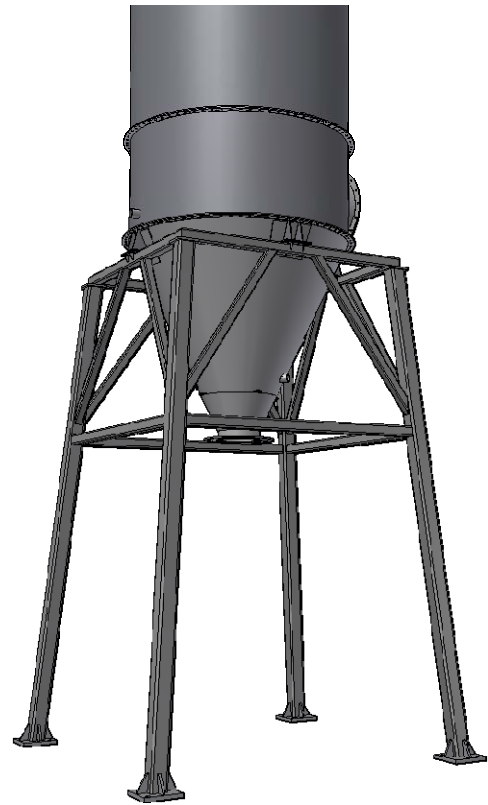
Description

A new medium support frame has been designed for outdoor urban placement.

The support frame is designed with as a new standard solution and can be used for different purposes in the urban environment around a factory or industrial environment. The design is light, simple and durable. This gives a lighter and simpler expression.

The legs are designed with a small slope to obtain a stronger design and a more stable footprint – both visual and mechanical.

These support frames are standard sizes for each filter dimension. The support frame is designed with a respect to a predetermined weight and recoil force from the explosion vent. If a stronger frame is needed this has to be reengineered for the specific purpose and the heavy duty frame can be used.



The design is conducted as iterations between calculations and good engineering praxis.

Specification of the Support Frame

All filters with the medium support frame can be placed in an urban environment (as villages, structures/buildings, suburban terrain and permanent forest) according to Terrain category III (EN1991-1-4) in Northern Europe. The maximum wind speed is 30 m/s with an average speed of less than 18 m/s. This wind load covers the total height of the entire structure for all standard filter sizes.

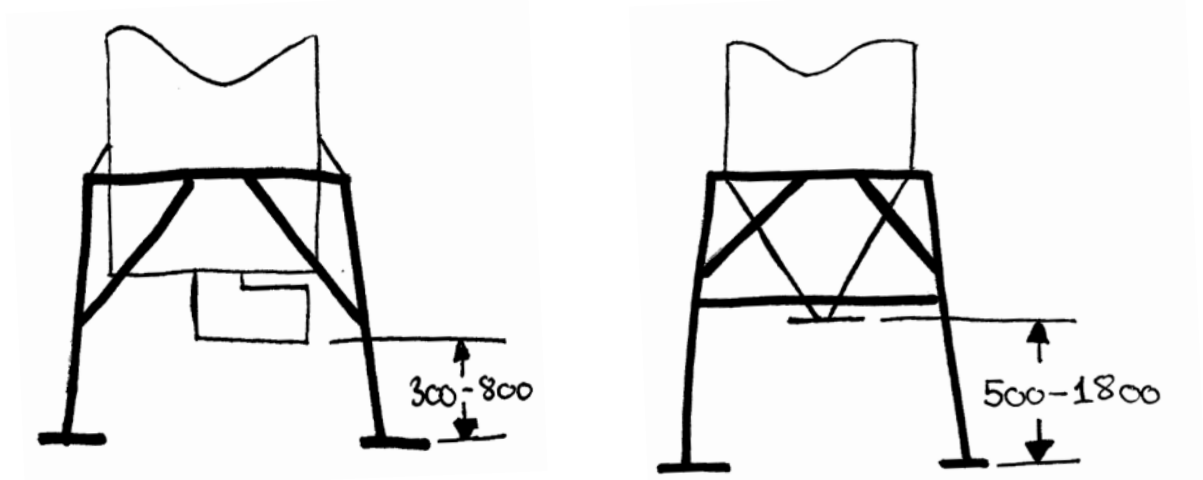
This total weight of the filter includes the vessel, product and additional equipment mounted on the support frame. Remember that a level switch must be incorporated in the filter.

Additionally the recoil force is regarded as a remote force, placed approx. 500 mm above the support frame. The recoil force is incorporated in to the design as the max recoil force for the largest explosion vent for the specific filter size.

All in all, the support frame is designed for filters with explosion vents placed in an outdoor urban environment in Northern Europe.

There are in general two types of support frames; one for scraper bottom and one for cones as shown below. The design is more or less the same design for both support frames.

The height of the support frame can be variant and be adapted to a specific client. There will be no standard height interval - besides the limitations in the height below the filter.



This means that the height for scraper bottoms can be between 300mm to 800mm (from ground to gear).

For cones got a free height (from the ground to the flange) between 500mm to 1800mm.

DWG numbers of Cones	Vessel diameter	Filter Weight Max weight		Recoil Force Max force kN	Total Height Max height mm
		kN	kg		
427642	600	22	2200	25,2	5000
427643	800	25	2500	25,2	6000
427644	960	31	3100	41	7000
427645	1100	37	3700	60	7000
	1200	45	4500	60	7000
427646	1300	55	5500	110	8000
427647	1500	71	7100	110	8000
427648	1800	90	9000	110	8000
427649	2000	112	11200	110	9000
427650	2200	136	13600	190	9000
427651	2400	147	14700	190	9000
427652	2600	183	18300	190	9000
427653	2800	213	21300	190	11000
427654	3000	252	25200	190	11000
427655	3200	295	29500	190	11000

Below is the table with the maximum specifications the filter can have to ensure the correct dimensions of the support frame.