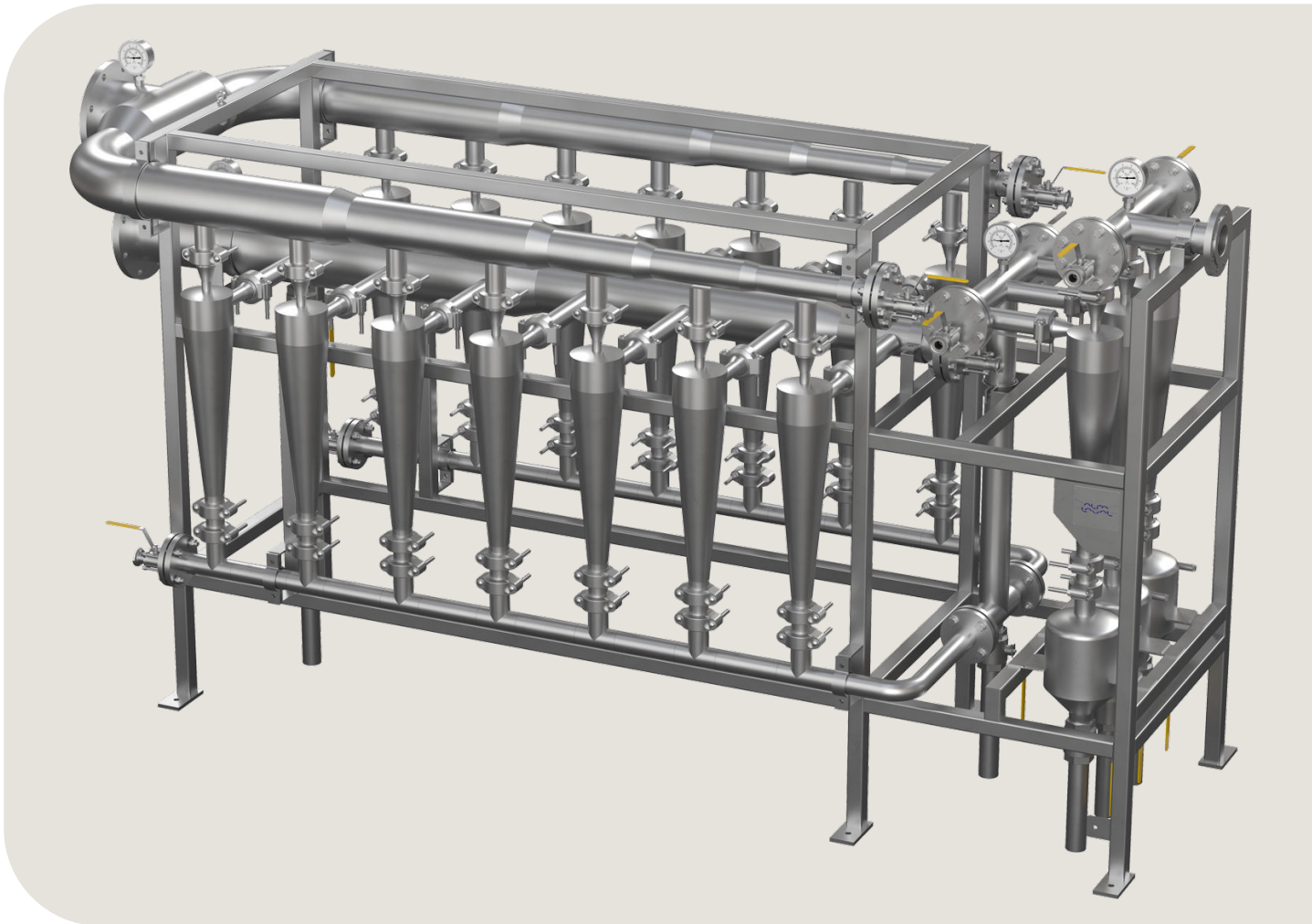


Alfa Laval degritting system for mill starch

Separation of heavy particles



Introduction

The degritting system is installed ahead of the centrifugal section in the wet mill and separates sand and clay from the mill starch. The system, which usually consists of two cyclone stages, reduces abrasion in the centrifuges.

Application

- Corn and potato based starch processing

Benefits

- High mill starch separation efficiency
- No moving parts ensures high reliability
- Purpose-built opening couplings enable quick replacement of individual cyclones
- Small footprint resulting in low floor space requirement.

Working principle

Mill starch, containing traces of sand or clay, is fed tangentially into the first stage cyclones with sufficient velocity to create a

vortex. This forces the slurry into a spiral, and as the rapidly rotating flow spins about the axis of the cone, mill starch is forced inward and out through a central overflow outlet.

The heavier sand and clay is flung outward against the wall of the cone by the centrifugal force of the vortex and exits, under pressure, as the underflow. This is fed to the second stage cyclone(s) in which sand and clay are further separated and collected in a grit pot.

The second stage overflow is fed back to the feed of the degritting system.

The first cyclone stage separates for optimum purity of the mill starch and the second stage concentrates the sand and clay as much as possible, in order to minimise starch losses.

Sand and clay is removed from the grit pot by opening the discharge valve intermittently.

Design

Degritting cyclones are available in welded stainless steel (W). Optionally in duplex stainless steel.

Five types of 150 mm hydrocyclones are available: SCW 150A (AX), SCW 150B (BX), SCW 150CX, SCW 150DX and SCW 150EX. Three types of 75 mm hydrocyclones are available: SCW 75AX, SCW 75BX and SCW 75CX.

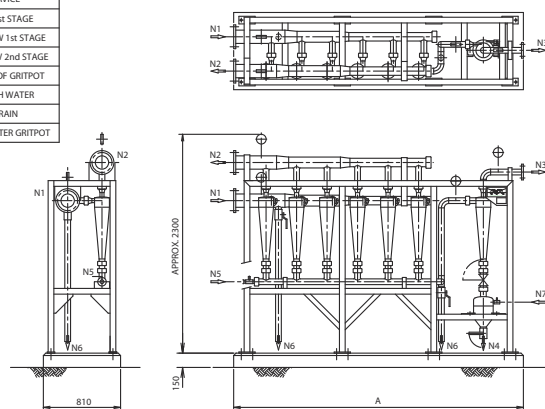
The two-stage millstream degritting system is built as a manifold system. The first stage consists of a number of SCW 150B type hydrocyclones, whereas the second stage typically consists of SCW 75CX or SCW 150A/E type hydrocyclones, depending on the required capacity.

Hydrocyclones are connected to the manifolds by victaulic couplings.

Hydrocyclones	Item number	
	AISI 316	Duplex
SCW 150A	DC00290001	9680238634
SCW 150B	DC00300001	9680238635
SCW 150AX	9680242327	9680247996
SCW 150BX	9680242328	9680247997
SCW 150CX	9680243565	9680249798
SCW 150DX	9680243566	9680247999
SCW 150EX	9680243567	9680247806
SCW 75AX	9680243568	9680247808
SCW 75BX	9680243569	9680248000
SCW 75CX	9680243571	9680248001

Dimensional drawing

NOZZLE LIST	
NOZZLE	SERVICE
N1	FEED 1st STAGE
N2	OVERFLOW 1st STAGE
N3	OVERFLOW 2nd STAGE
N4	DRAIN OF GRITPOT
N5	FLUSH WATER
N6	DRAIN
N7	FLUSH WATER GRITPOT



Grind rate ¹	SCW 150B	SCW 75C	SCW 150A- A	Net weight
			E	kg
75	1	1	-	1300
100	2	1	-	1600
150	3	1	-	1900
200	4	1	-	2200
250	5	1	-	2500
300	6	-	1	3050
400	7	-	1	3375
500	9	-	1	4050

¹ The hydrocyclone configuration in each stage is calculated from the actual feed flow corresponding to a specific grind rate. Capacities are based on a pressure drop of 1 bar per stage.

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