



Cooling screw conveyor double co-rotating synchronized - 20189



Specifications

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•Material:

- The machine parts are manufactured in 1.4401/AISI-316.
- Screw flights are manufactured in 1.4436/duplex steel
- Cooling jacket supported by pins welded to the screw house
- Cooling jacket and inner pipes pressure tested in accordance with the PED directive to 6 barG
- The complete machine manufactured in accordance with ATEX directives
- Complete documentation package delivered with the machine
- BEMA has designed the complete machine and taken care of all approvals with respect to PED and ATEX

Additional Information:

Product type:	Process equipment, Screw conveyor
Transported material:	Bulk material
Applied steel in product:	Stainless steel
Surface treatment:	Stainless steel – acid pickled



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Short Description

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Double cooling screw conveyor manufactured with synchronized screw augers. The machine is driven by 2 gear boxes and a control box is installed in the control panel to ensure synchronization of the gear boxes.

The cooling screw conveyor is transporting bitumen. The material has a sticky behaviour.

Design of double screw conveyor to handle the sticky material

1. The screw augers are designed intermeshing, synchronized and co-rotating
2. The gear boxes can control the co-rotating behaviour to optimize the self cleaning effect
3. The screw flights are designed tapered to brake off solidified parts. For further improvement the screw flights are manufactured with longitudinal holes

See another example of a synchronized and co-rotating screw conveyor

Double synchronized screw conveyors are well suited to be used for sticky material due to the self-cleaning effect. They are also effective in case there is a risk of bridge building in the material.

Cooling design of the double co-rotating screw conveyor

1. Cooling of the house by a cooling jacket
2. Cooling of the inner pipes of the screw rotors

Other example of a screw conveyor with a cooling jacket

Cooling screw conveyors can physical be treated as a standard parallel heat exchanger, where the surface area and the overall heat transfer coefficient determines the cooling rate.

Due to material, the machine is designed in accordance with the ATEX directives and underlying European design standards.

In this application, BEMA has made all design before the manufacturing:

1. Specified design requirements due to the ATEX directives
2. Specified design requirments due to the PED directive for pressure parts
3. Performed static calculation on the cooling jacket and the inner tubes
4. Handled contact to notified bodies
5. Handled contact to 3'rd part inspection

The design department in BEMA has skills and experience in designing cooling screw conveyors and double co-rotating screw conveyors. The shown screw conveyor application will require engineering time and a detailed design specification before it is ready to manufacture.