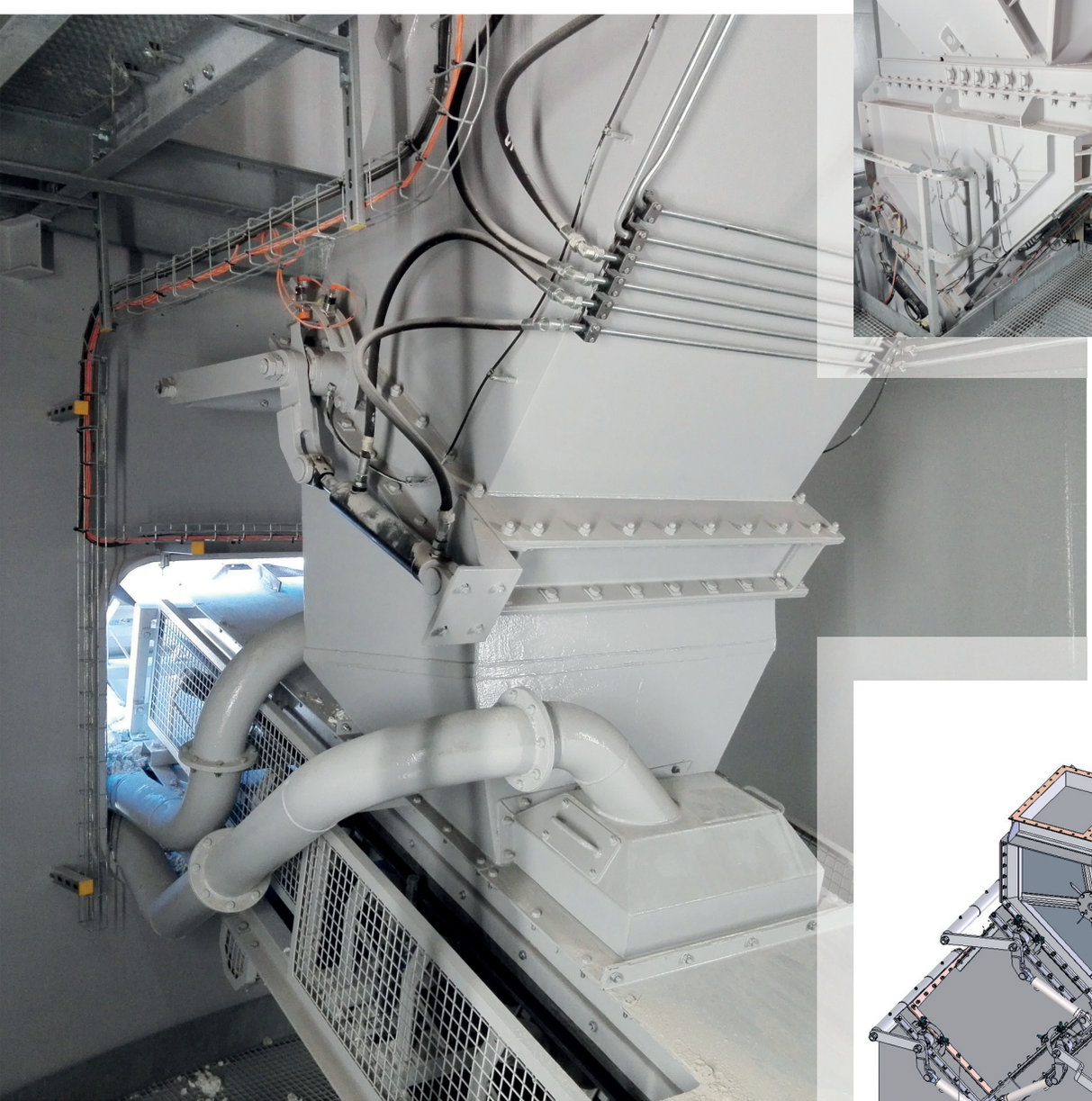
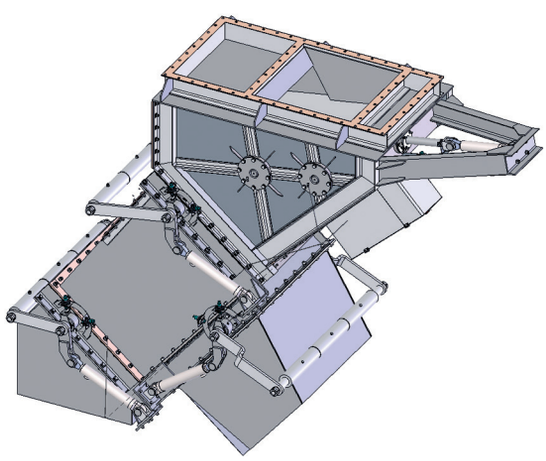
LIME SLUICE SYSTEM





Application

Sluice system is a device that performs two important functions in a lime production plant. In the lime kiln equipped with a process air blowing system, it maintains an overpressure inside the process chamber of the kiln. As a result, all the air distributed into the kiln is fed into the calcination process. In all types of lime kilns the sluice system is used for precise dosing quicklime to the downstream equipment. In case of connection directly to the lime slaker, it separates the atmosphere in the kiln from the atmosphere created in the milk of lime production process.

Design and operating principles

Sluice system is made of an outer casing which of a loading chamber, an intermediate chamber and a discharge chamber. In addition, it is equipped with a lime feeder and, depending on the design, two or three flaps. Hydraulic cylinders coupled with a hydraulic unit are mounted on both the lime feeder and flaps.

In order to maintain tightness, the working cycle is carried out in such a way that one of the flaps (upper or lower) always remain closed. The portion of material is dosed into the intermediate chamber with the use of a lime feeder. After opening the bottom flap a gravitational lime discharge takes place.

Thanks to the possibility of setting the lime feeder moving distance, opening time of individual flaps and intervals between working cycles, it is possible to precisely control the amount of lime to be discharged to the downstream equipment.

The control of the sluice system is performed with the use of limit switches transmitting information to the controller, which is responsible for communication with the hydraulic unit. The complete device is equipped with an automatic lubrication system for all hydraulic cylinders.

Variants

- Sluice system 2NM - equipped with an upper flap and a lower flap used for quicklime distribution to one collection point,
- Sluice system 3NM - with an upper flap and two lower flaps. The device has additional functionality that allows to dose quicklime to two independent lime collection points (e.g. a deposit storage in case of stopping the main quicklime processing system).

Technical data

NUMBER OF SLIDING FLAPS	–	2 (2NM), 3 (3NM)
EFFICIENCY	t/d	up to 200
THE NOMINAL WEIGHT OF THE LIME PORTION OF ONE STROKE	kg	10 – 40
THE DURATION OF ONE CYCLE	s	15 – 60
NUMBER OF FEEDER STROKES IN ONE CYCLE	–	1 – 5
THE STROKE LENGTH OF LIME FEEDER	mm	100 – 250
MAX. THE TEMPERATURE OF THE LIME	°C	100
WORKING PRESSURE IN THE HYDRAULIC SYSTEM	bar	60 – 90

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