How to install vibrating bin discharge feeders

To ensure the correct functioning of JOEST vibratory feeders please adhere to the following guidelines:

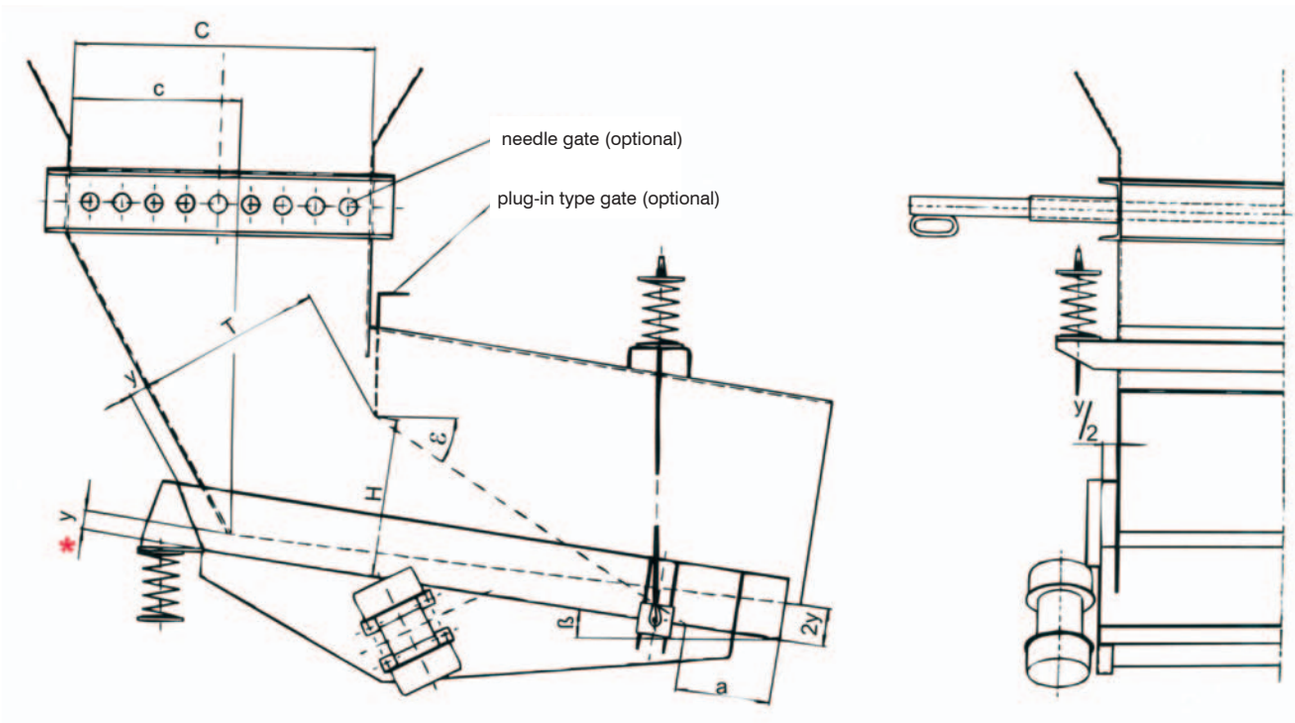
The maximum particle size of the product to be conveyed determines the width of the feeder as well as the dimensions of the bin outlet. The smallest passage should be about three times the maximum particle size.

- Extremely small-sized product such as cement, flour, ash or dust can only be conveyed under certain conditions. Tests might be necessary, to determine the conveyability with feeders for such materials.
- Sticky product such as clay is difficult to convey using standard vibrating feeders.
- The angle of repose [ε] together with the outlet height ['H'] determines the minimum length of the feeder. The dimension ['a'] should be at least 150 mm or twice the maximum particle size. (Whichever is the greater).
- The material head load should be taken partially by the back wall of the bin. The dimension ['c'] should be 60-70% of the bin dimension ['C'].
- The ratio T: H should be 1, extreme values of 0,9 up to 1,1 must not be exceeded.
- As a standard, bin discharge feeders are installed with a downslope of [β] 8°. This declination allows an optimum product flow without causing unnecessary wear or uncontrolled product velocity. Depending on product behaviour, declines of up to 15° and inclines of up to 4° can be accommodated.
- Simple slide gates can be used to adjust and fix the product layer.
- Spile bar gates can be used to shut off a full discharge bin, e.g. in case of maintenance (replacement of wear liners).
- Static chutes must be designed in a way that feeder floor and the static chute walls open positively towards the discharge end along the feeder length to prevent product from jamming.
- Sufficient space 'y' must be provided between vibrating feeder and static elements (see table.*).
- Covers must be arranged parallel with the feeder floor.
- Dust seals between static frame and vibrating feeder should be designed as lip-seals clamped at one side.
- Bin discharge feeders are mounted on helical coil springs or on rubber buffers. Whenever heavy head loads occur, rubber buffers are preferred.
- At the feed end the machine should be foot-mounted on the isolation elements.
- At the discharge end the feeder can be foot-mounted or suspended via ropes or rods.
- The support or suspension springs must be installed in such a way that only static forces effect the longitudinal axis of the springs (avoid transverse actions).
- The static loads and the dynamic residual loads at the mounting points are calculated in our design department. These must be taken into account when the support structure is designed.
- The static load on the vibrating feeder depends on bulk density, material layer and possibly head load. The spring mounts of the feeders shown in our catalogues are designed for partially relieved material head load. Any deviation must be taken into account.
- Whenever different working frequencies are used (e.g. V.S.D's), the complete range of these frequencies has to be considered.
- The installation layout should provide easy access to the unbalanced drives for maintenance. (See over page).

Manufacturing programme

Vibratory trough and tube-type feeders
Dosing feeders
Resonance conveyors
Spiral elevators
Vibratory screens
Shake-out conveyors
Shake-outs
Vibrating tables
Reclaimed sand attrition units
Furnace loaders
Casting coolers
Sand coolers
Electromagnetic vibrators
Dosing drives
Unbalanced vibrating motors
Exciter gearboxes
Electric control and regulating systems
Conveying systems
Screening systems
Dosing systems
Roller screens

Bunker Discharge Geometry



* Number of poles	y min (mm)
2	30
4	40
6	60
8	80

A vibratory through-type feeder with unbalanced drives is depicted above. The minimum clearance ‘y’ is dependant on the poles (frequency) of the drive used (see table).

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Technical data and design not binding. Modifications reserved.

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