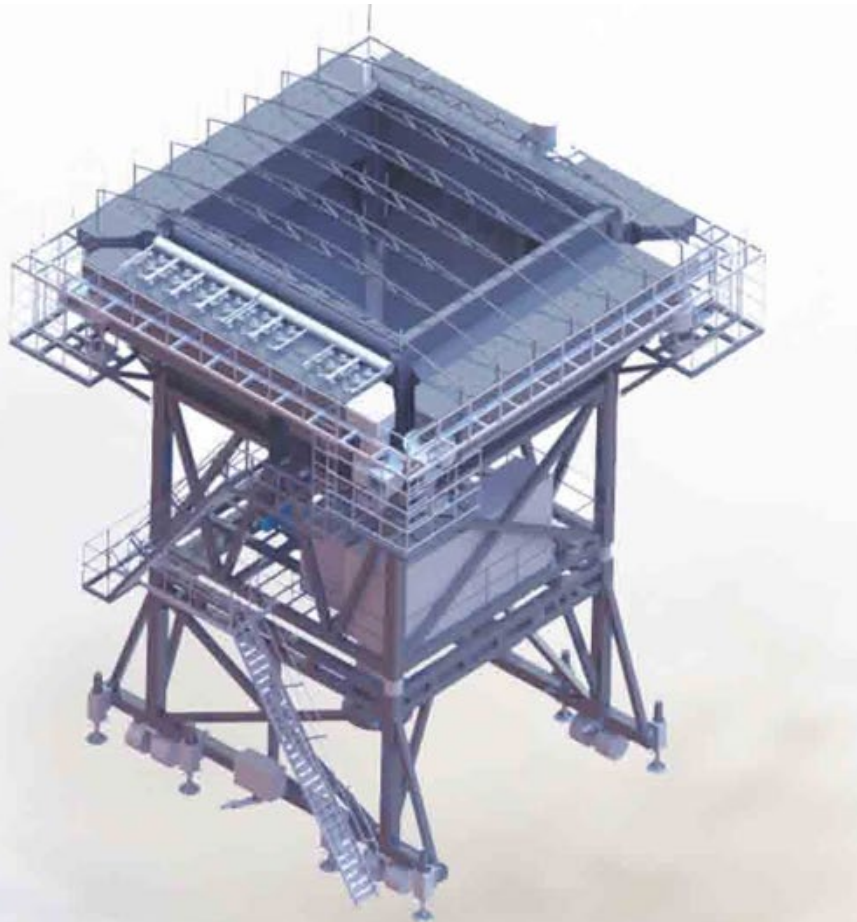


THLE

Updated 2023.10.31

Dust elimination hopper





Why we need dust elimination hopper

Dust elimination hopper

1. Avoid loss of dry bulk.
2. Super high work efficiency Dust filtration system

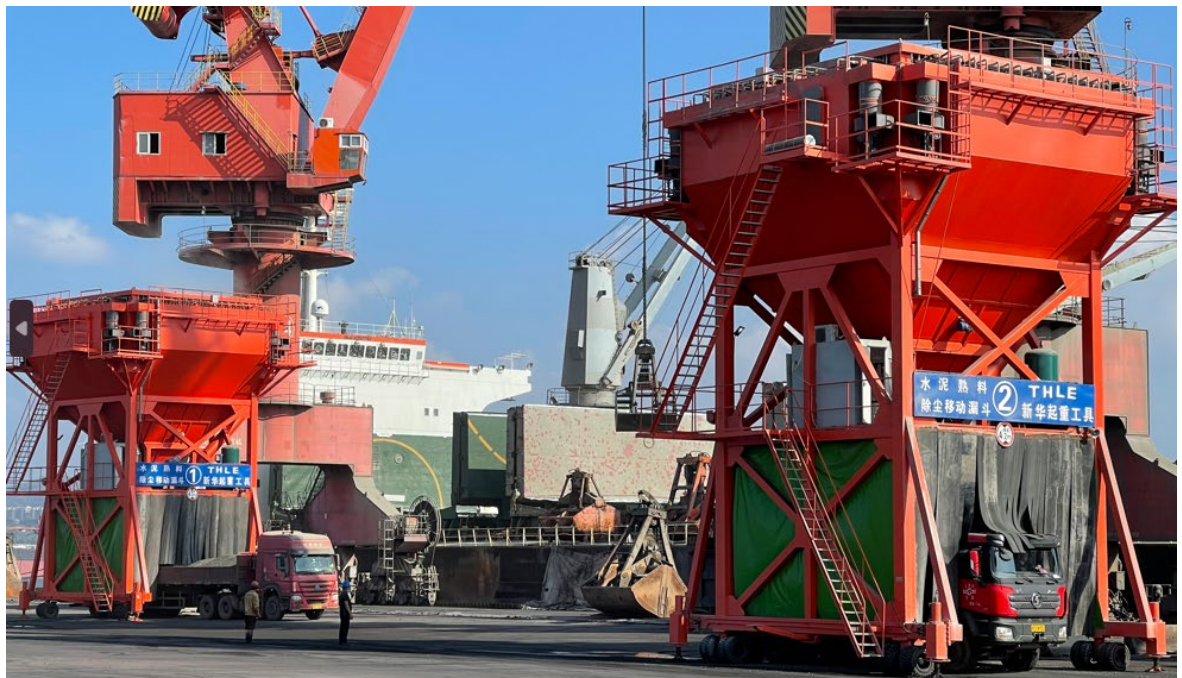


Normal hopper:

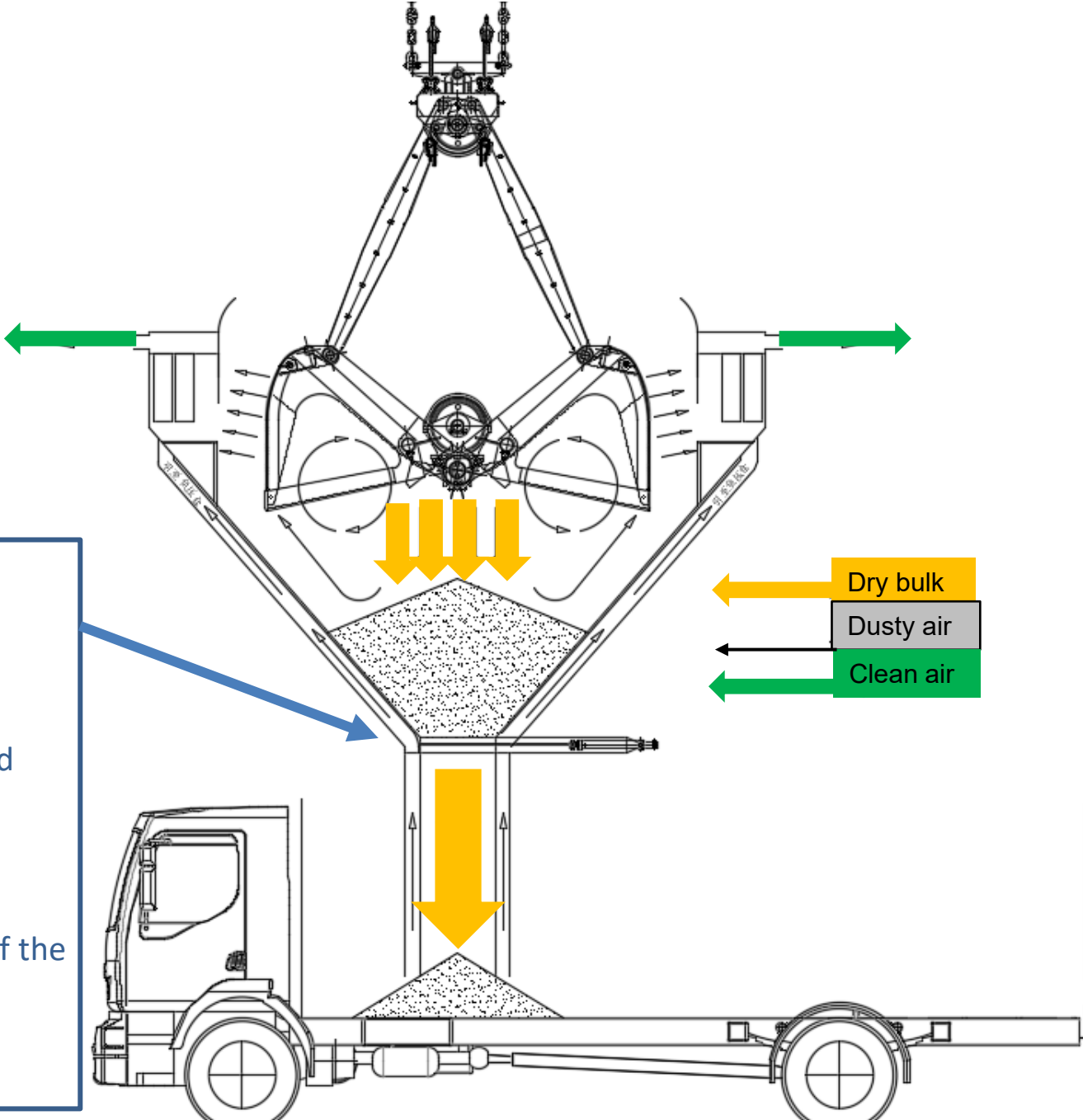
1. Too much dry bulk powder fly to air and gone, Big lost .
2. Seriously pollute the environment and endanger the health of personnel.



Applicable dry bulk | Foodstuff / Dried cassava / Clinker and so on



Principle of operation



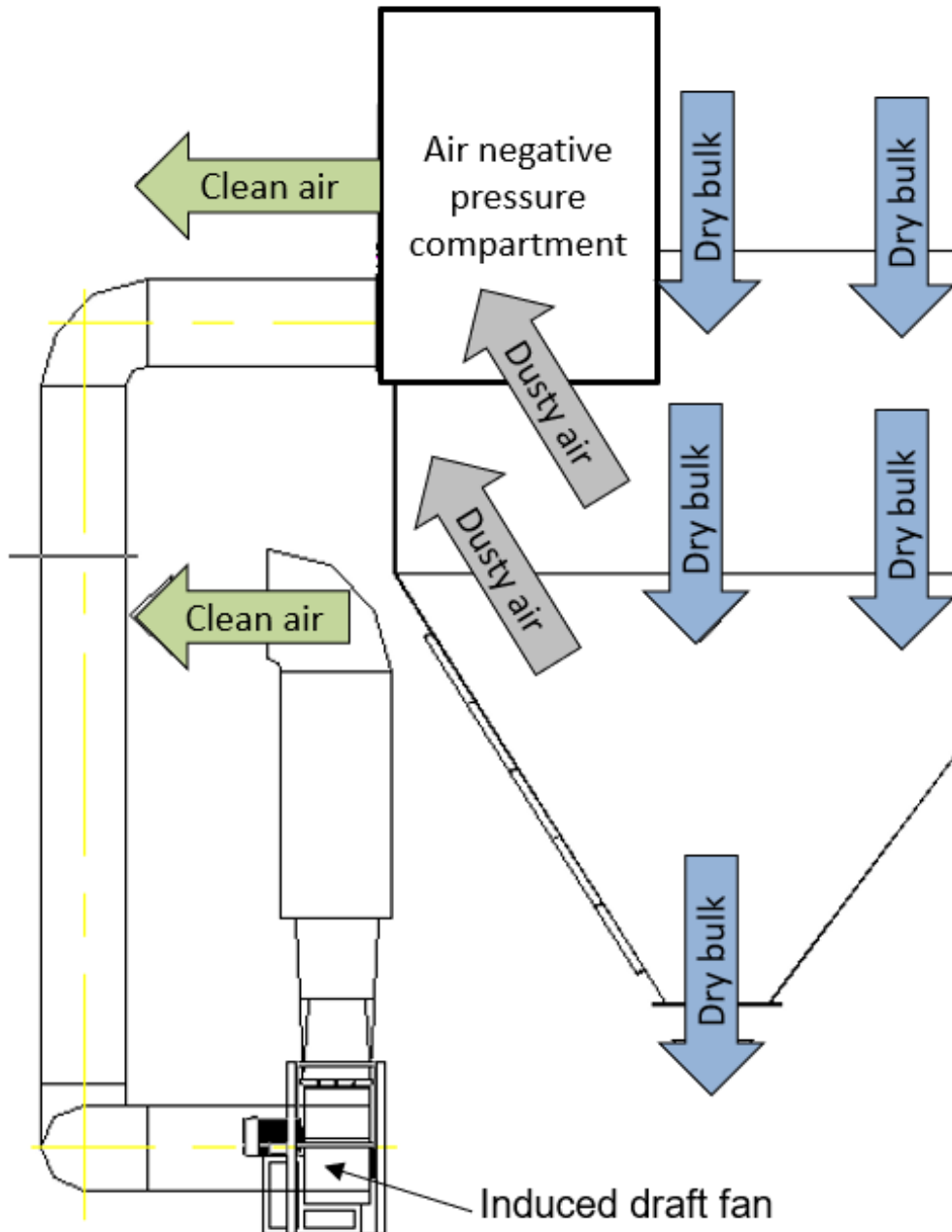
Take the example of unloading foodstuff, Use grab discharge .

The discharging door is equipped with a flow control device,

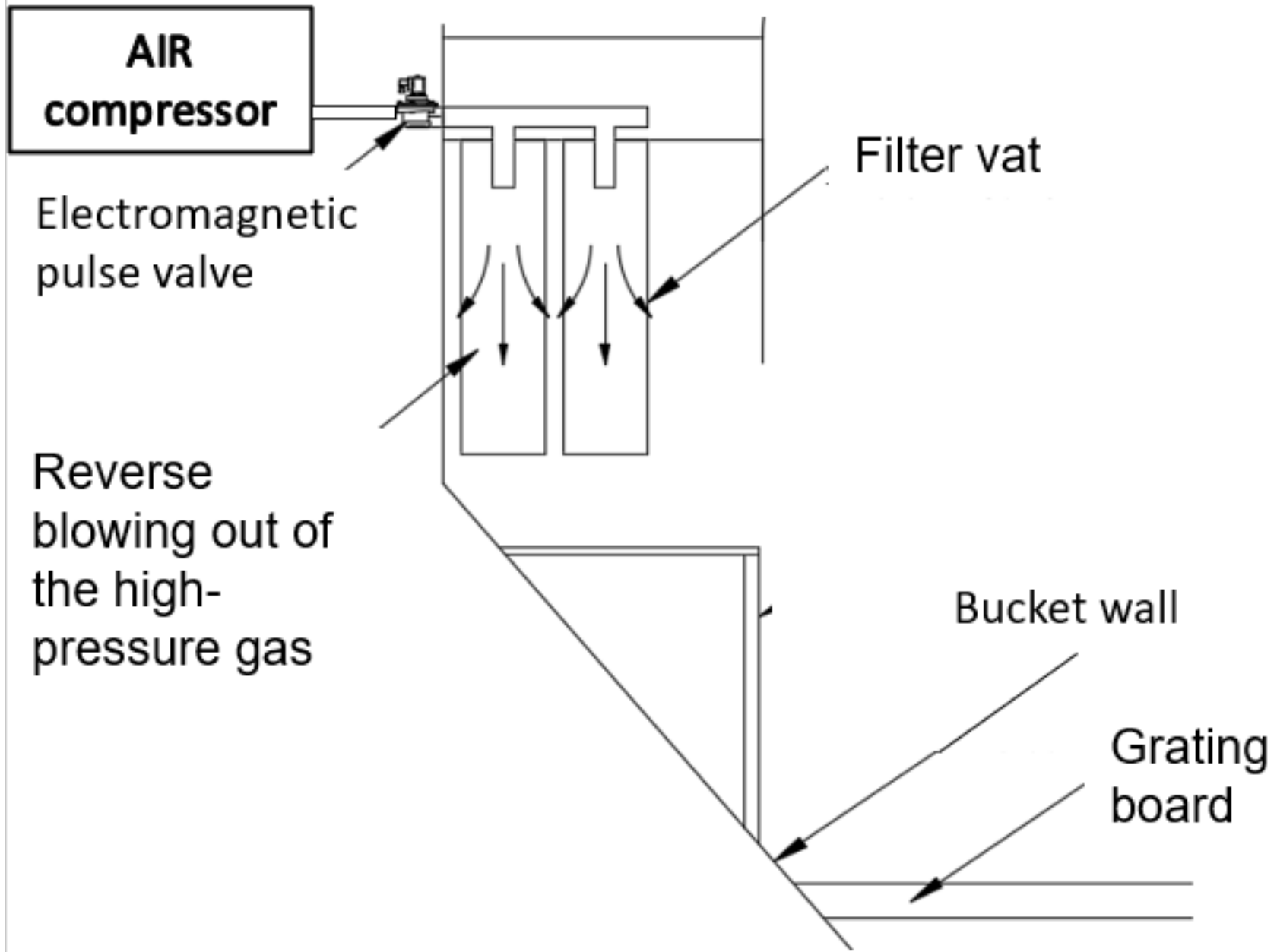
Used to control the outlet size of the door opening.

← Yellow arrow	Dry bulk
← Black arrow	Dusty air
← Green arrow	Clean air

Dust-removal system operational principle

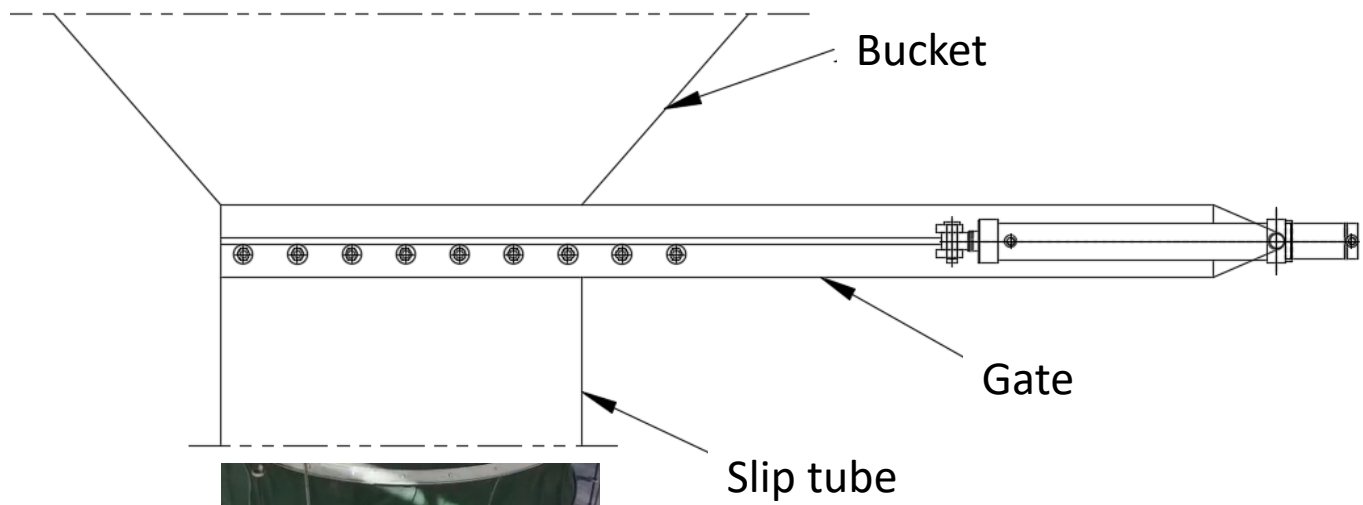


Dust-removal system operational principle

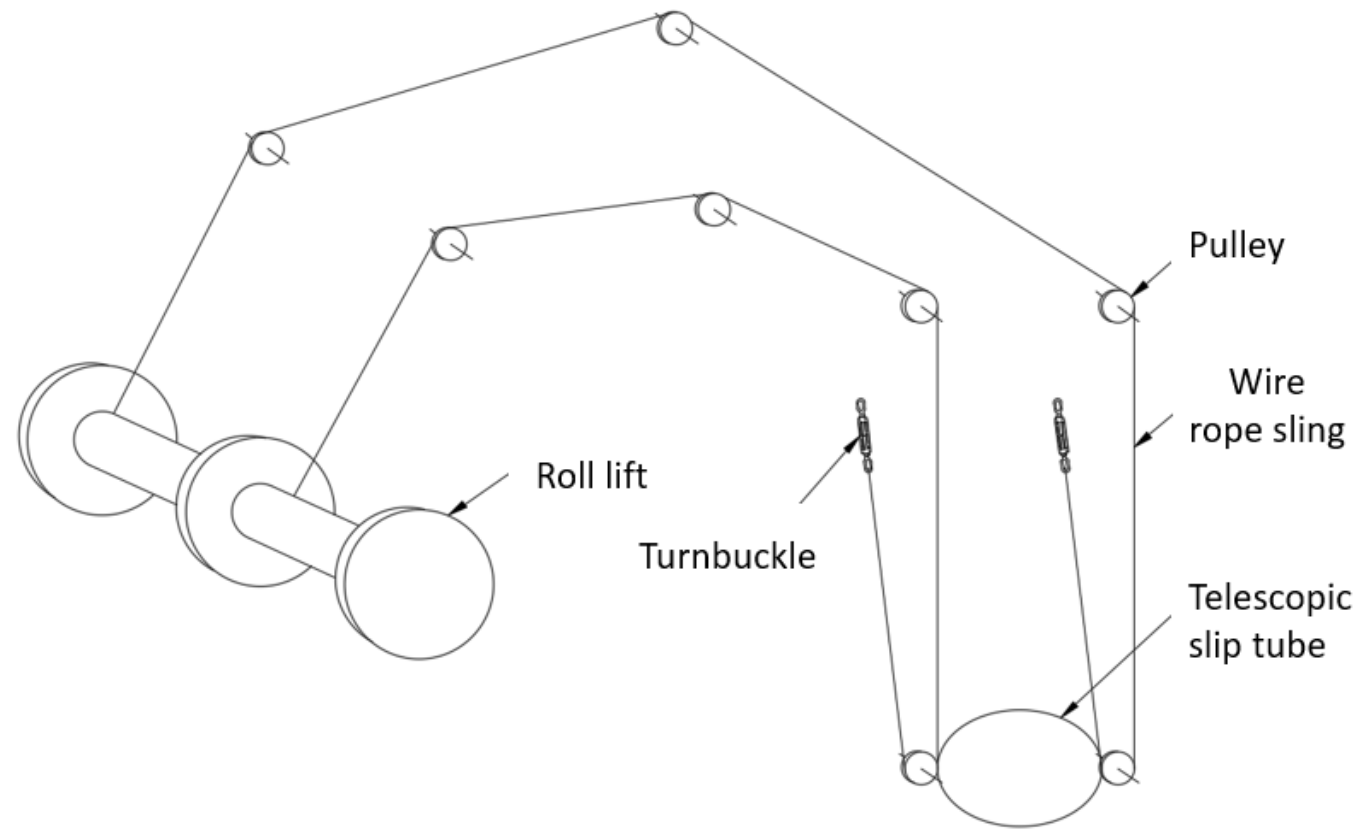


Discharge mechanism

The discharging mechanism adopts electric drive. The access door is set near the discharging door to convenient maintenance, in order to repair the obstruction of the feeding . Using electric slip tube with vacuum device. The telescopic slip tube and the hopper have a certain swing freedom in the direction of the vehicle, Avoid damage or shedding due to slight drag.

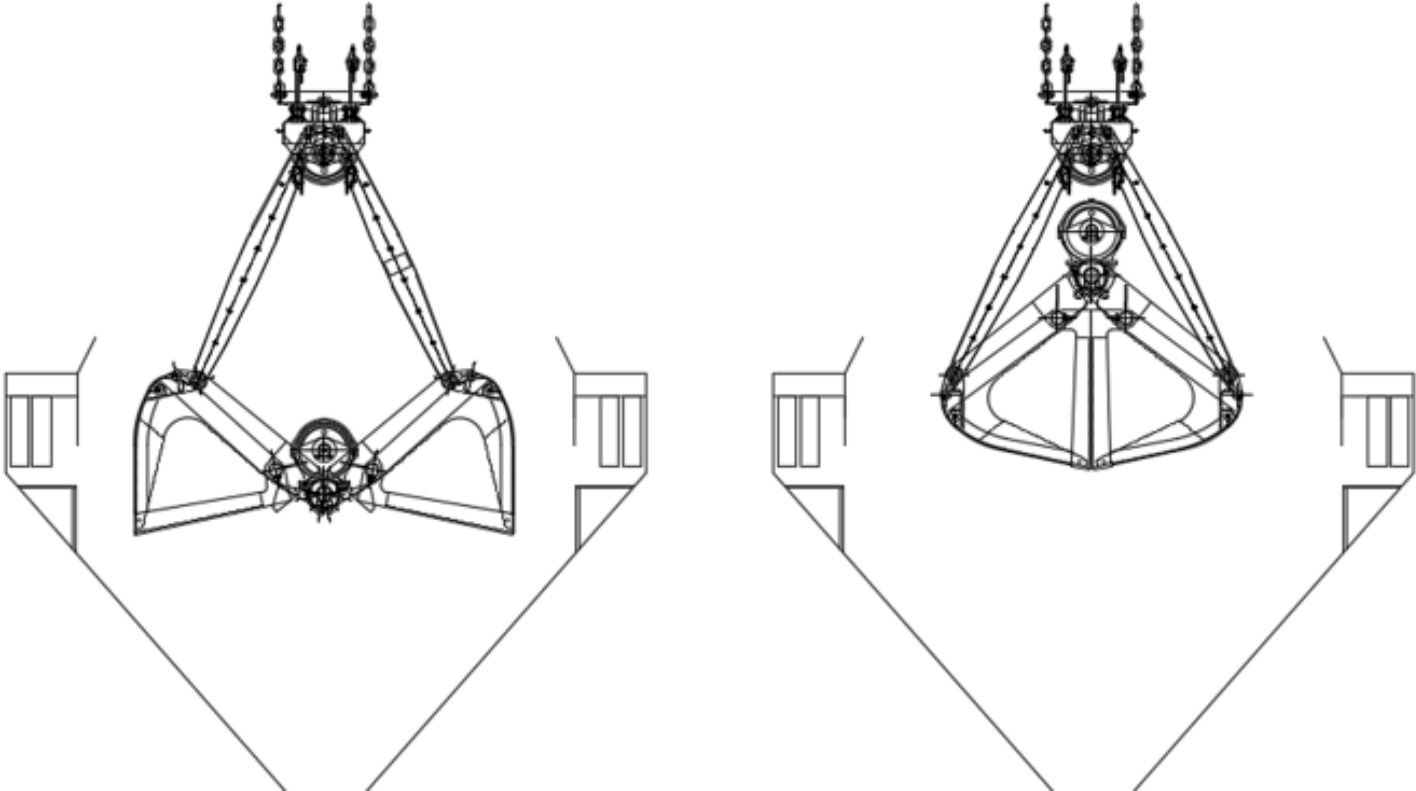


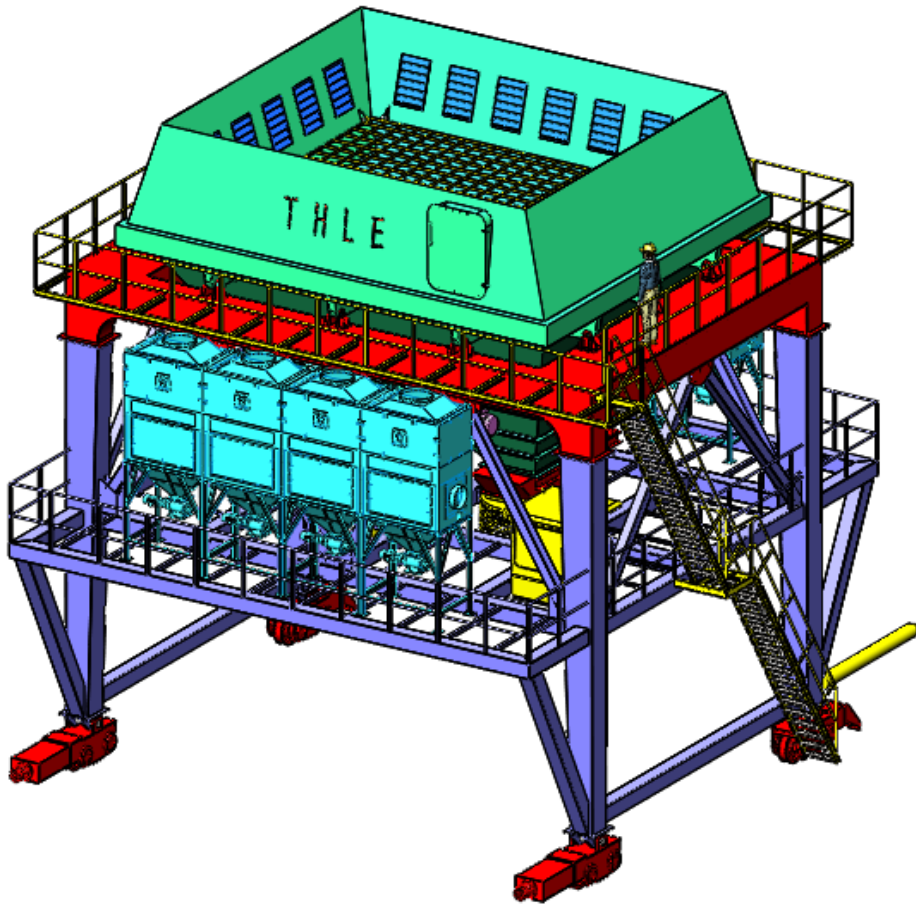
Telescopic slip tube go up and down be driven by wire rope sling and pulley .



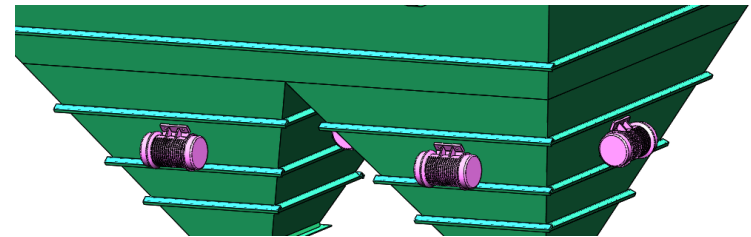
The main component of the hopper

The hopper is composed of main bucket , feeding system, dust suppression system, gantry structure, mobile mechanism, electrical system, etc



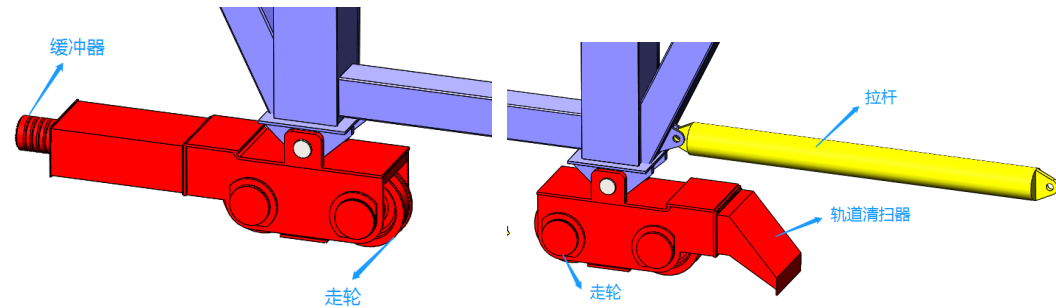


- Vibrating system to speed up dry bulk failing . Prevent cargo from sticking inside hopper bucket.
- Collect dry bulk powder into recovery system, and than fail down to discharging gate again.



Optional configuration

- Dust spray system on top opening.
- Remote control discharging door open & close by cylinder drive.
- Gantry wheel or tyre are also optional .



Driver room and electrical room

The hopper is controlled by PLC and operated by driver in the operation room.

Set the electrical room on the hopper which is used for placing electrical cabinet, transformer, air compressor, freeze dryer, etc.

It has air filtration system (to meet the ambient air requirements of the equipment), which is well sealed and resistant to Marine climate corrosion



Cables

The power supply of the hopper is provided by the crane . (The crane is equipped with a power box, which is set at the crane leg on the land side) , THLE provides the corresponding power cable and control cable between the crane and the hopper. Cables are equipped with cable drum for cable storage during shutdown.



Sample reference	
Discharging work efficiency	≥400t/h
Specific dry bulk	Foodstuff
Volume	≥60m ³
Dry bulk weight	≥40t
Physical dimension	L 10000 X W 10000 X H 14500mm around or customize
Top opening (Grab is closed into the hopper)	≥6500x6500mm
Inner dimension (The grab opens in the hopper)	≥7000x7000mm
Distance between legs	6500mm or customize
Vehicle maximum-through height	≥4400mm
Clearance height when the telescopic slip tube drops to the lowest position (Exclude dust suppression curtain)	≤1.1m
Hopper materials	Main fabrication Q355B/Q235A .Bucket inner plates use wear-resisting plate NM400

Hydraulic pressure station of landing leg:	5.5kw*2 380V/50Hz 25MPa
Total handling of air volume	> 60000 m³/h
Dust removal effect	> 90%
noise	< 90 decibels
total power:	60kw
Deadweight:	Around 65t

Telescopic slip tube diameter :	≥600mm
Filling gate:	≥800X500mm
Filling gate open/close time	Around 12s

THLE Projects reference









Vizag Port Trust



TSPGC



PARADIP INTERNATIONAL CARGO TERMINAL



VALE



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