

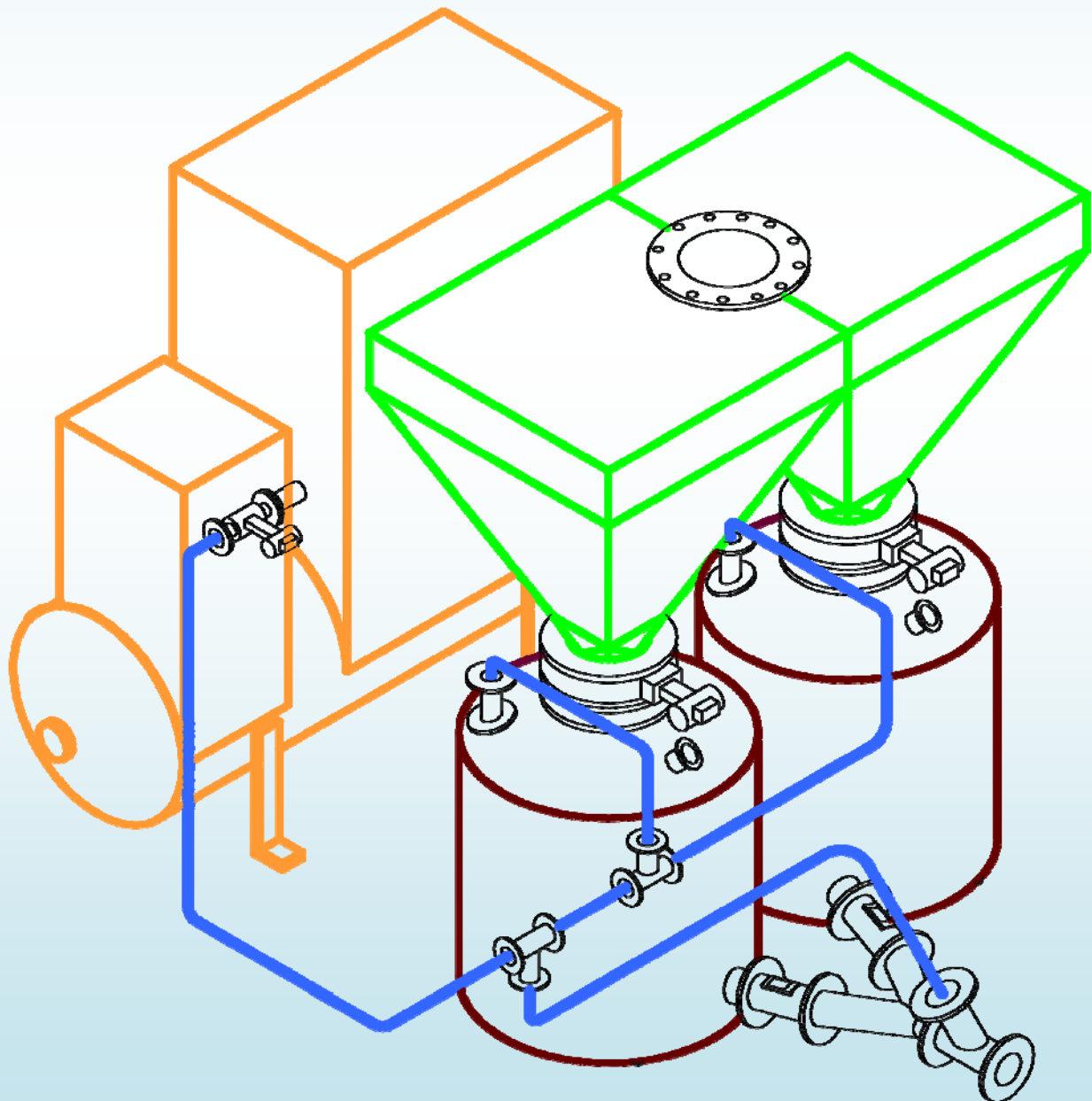


SCORPIO
ENGINEERING

TURNKEY BULK MATERIAL HANDLING SYSTEM

introduces

the powder **PUMP**



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The powderPUMP is a new innovation in dense phase pneumatic transport allowing customers to choose standard models such that they can transport dry bulk materials within the plant without the need to purchase and assemble individual system components. The unit consists of a steel frame sized such that two units can fit into one standard 20ft container. The steel frame houses two dense phase pneumatic transfer vessels, an oil free screw compressor, instrumentation, valves, controls and pneumatic pinch valves at the outlet. The system is engineered to cycle between the two dense phase transporters so that continuous conveying is possible. The customer places the equipment where he has the material for conveying. The conveying pipeline is then connected to the flange of the powderPUMP. The inlet flange mounted on top, flush with the steel frame level, receives product from any one of the following customer equipment:

- ◆ Overhead Silo
- ◆ Inclined Screw Conveyor
- ◆ Inclined Aero-mechanical Conveyor
- ◆ Inclined Spiral Conveyor
- ◆ Big Bag Unloader
- ◆ Any other feed method

Key Features

- ◆ Designed to handle wide variety of Materials - Bulk density starting from 25 lbs/ft³ to 75 lbs/ft³
- ◆ Conveying capacities from 1.75 TPH* to 5 TPH*
- ◆ Pre-designed for upto 300 feet of total conveying distances.
- ◆ Available in Stainless Steel and Carbon Steel constructions.
- ◆ Pre-fitted with either High and Low Level Sensors (standard) or Load Cells based weighing system to suit your process requirement.
- ◆ The powderPUMP comes equipped with all the necessary fittings and instrumentation.
- ◆ Intelligent Logic control with 2 transporter systems improves the efficiency by reducing the total conveying time by allowing filling and fluidizing one vessel while conveying through the second vessel and vice-versa.
- ◆ Multiple options to choose the inlet valve from standard leak-proof Butterfly Valve, Pinch Valve, Swing Gate Valve or Inflatable Seal type Dome Valve. All available with standard pneumatically operated solenoid controls or motorized controls.
- ◆ Dozens of exclusive accessories available to complete the system including, Feed Hoppers, Storage Silos, standard MS ERW or Stainless Steel Conveying Piping, Long Radius Bends, Line Diverters for multiple discharge outlets, Air Boosters, Bag Filter or Bin Vent Filter, Target Box, Discharge Hoppers and Silos. All designed for the material being handled and conveying capacity.
- ◆ The powderPUMP is made to fit with a variety of import methods like Storage Silos, Aero-mechanical or Spiral Conveyors, Screw Feeders, Jumbo Bag Unloader etc.
- ◆ Complete Design and Engineering Support to help you in selecting the right model and accessories for your project.
- ◆ After-Sales support** including supervision of Erection & Commissioning of the system.
- ◆ 18 months Warranty against manufacturing defects.

Control Sequence:

The valves on the inlet pipe of the unit are interlocked with the customer input equipment. Once the customer's feed equipment is connected, the system can be set to automatic. Product fills the first dense phase vessel till high level is reached at which time compressed air from the onboard compressor system fills the vessel to a pre-set pressure. At this point, the outlet Pinch Valve opens while simultaneously compressed air is distributed between the pressure vessel and the discharge air knife downstream of the pinch valve. Product is conveyed at low velocity and with minimum air quantity through the conveying pipeline to the destination point. Simultaneously the other pressure vessel which is empty from the previous cycle fills up to high level. When the first pressure vessel is empty, this vessel again fills and discharges product as above. The tandem operation of both pressure vessels thus provides uniform and continuous discharge from the powderPUMP. The entire system is controlled by a PLC based control panel which has manual override facility.

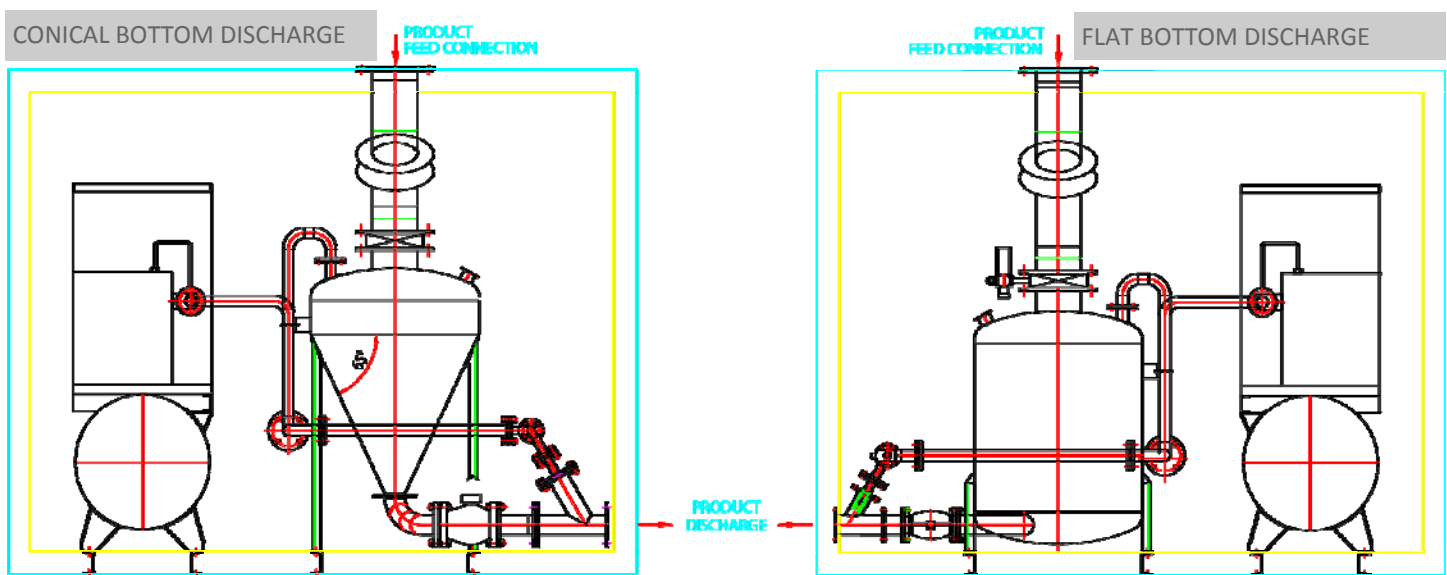
* TPH -> Tons per Hour -> 1 Ton is 1 US Ton // ** Supervision of Erection and Commissioning will be charged extra

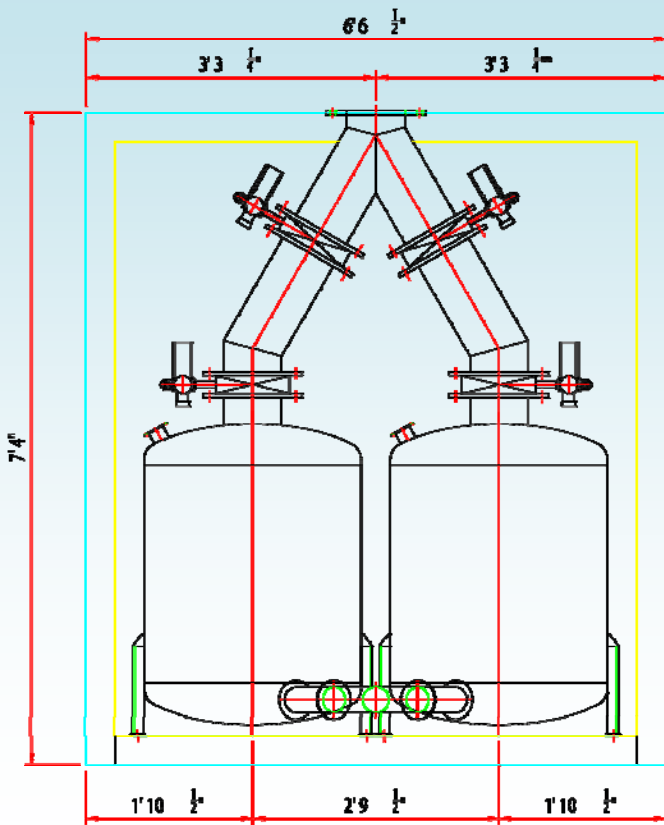
Performance Chart & Layout

Bulk Density of the Material	Conveying Capacity	Recommended Conveying Line Size	Power (Maximum)	Maximum Conveying Distance		
				Horizontal (in Ft.)	Vertical (in Ft.)	Max. Bends
Lbs. / Ft ³	Lbs. / Hr.	In Inches	kW / HP			
25	3500	1 1/4	5.5 kW/7.5 HP	150	150	4
30	4000	1 1/4	5.5 kW/7.5 HP	150	150	4
35	4800	1 1/2	7.5 kW/10 HP	150	150	4
40	5500	1 1/2	7.5 kW/10 HP	150	150	4
45	6200	2	7.5 kW/10 HP	150	150	4
50	6900	2	11 kW/15 HP	150	150	4
55	7600	2	11 kW/15 HP	150	150	4
60	8500	2 1/2	11 kW/15 HP	150	150	4
65	9000	2 1/2	15 kW/20 HP	150	150	4
70	9700	2 1/2	15 kW/20 HP	150	150	4
75	10000	2 1/2	15 kW/20 HP	150	150	4

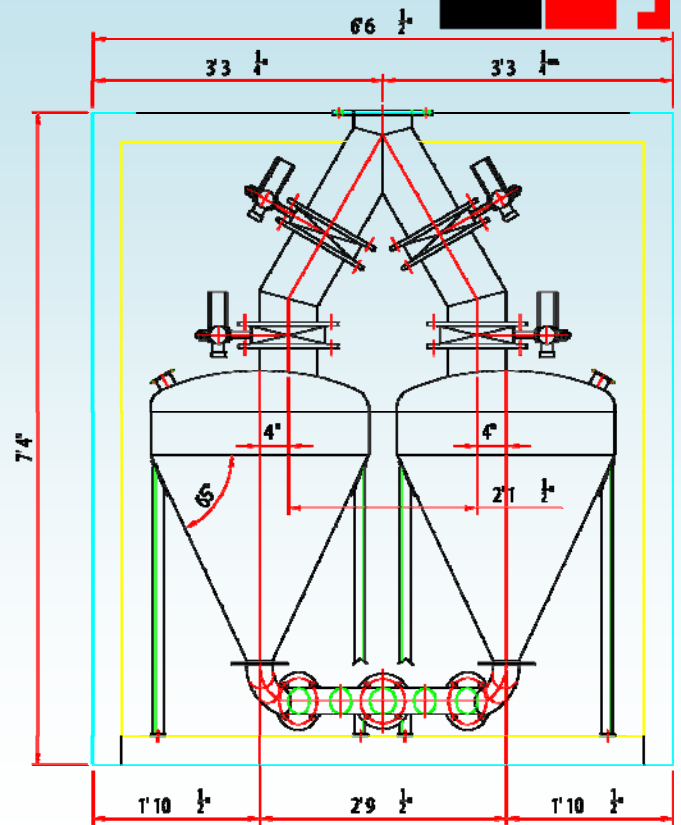
∅ 1 Ton (US) = 2000 Lbs. // 1 cu. ft. = 7.48 Gallons (US) // Performance Chart for Dry and Free Flowing Materials // Max. Particle Size: 1/4" (6 mm)

∅ The standard unit has steel pressure vessels built to ASME Sec VIII Div1 pressure vessel code.





FLAT BOTTOM DISCHARGE



CONICAL BOTTOM DISCHARGE

