Dense Phase Pump (DPP) Vessel

- **Designs for light, moderately heavy and heavy duty applications**
- **Configurable design with optional control valves and line adapters**
- **Fully assembled and tested to minimize installation requirements**
- **Able to transfer a wide range of materials at high rates and long distances**
- **Unique conveying methods to decrease air consumption and increase efficiency**

Application

Dense phase pneumatic conveying systems operate at low air velocities and elevated pressures. Materials are pulsed through the convey lines and are ideal systems for handling:

- Products with high bulk densities
- Abrasive products
- Friable products
- Blended products
- High Tonnage systems
- Long distance systems

Operating principles

The basic method for Dense Phase Pump (DPP) conveying is a simple batch process. The vessel is filled with material and then discharged into the convey line by means of a compressed air source. The pressure will then rise while conveying and dissipate once a majority of the material reaches its destination. The supply air is then turned off and the vessel is refilled.

The DPP-CD Pump method goes through all the same steps as the basic method, but accomplishes refill without depressurizing the convey line or stopping material flow to the destination. This method can use a single or dual vessel arrangement to create a semi-continuous flow.

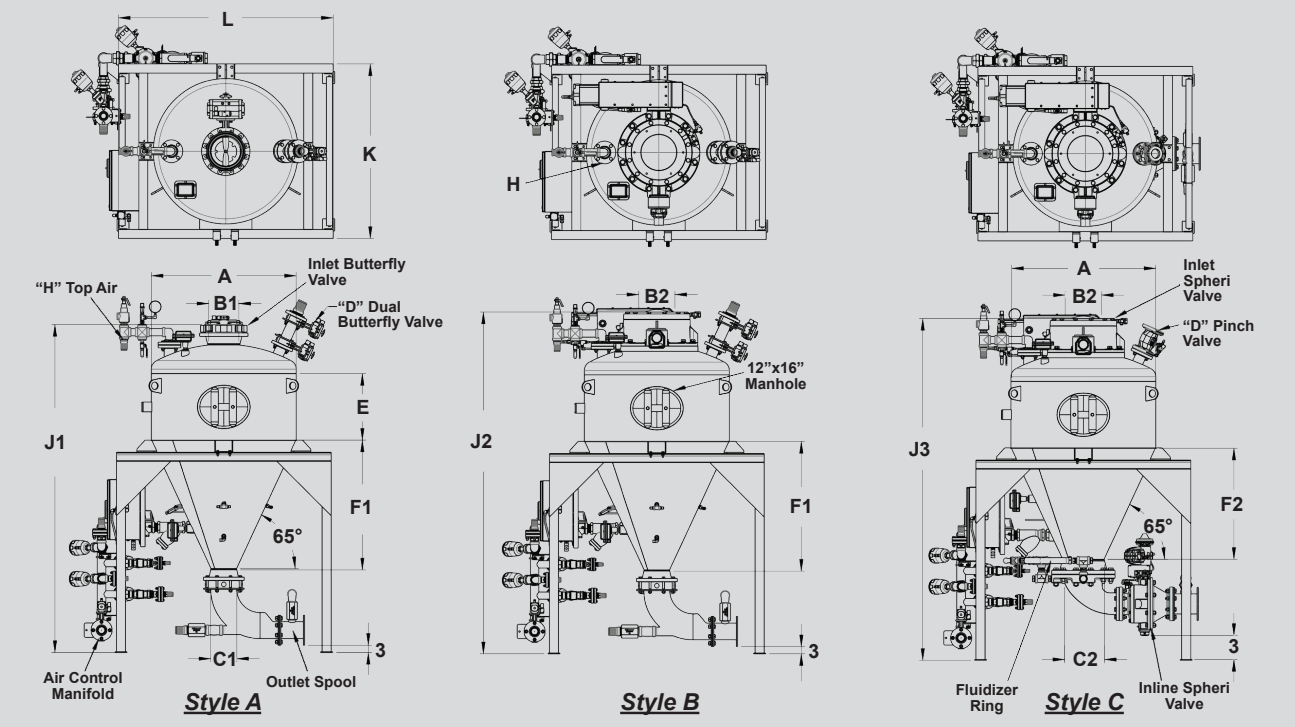
The DPP-PD Pump method discharges material with a boost by pre-pressurizing the pump full of material and then opening the discharge valve. This conveying method exploits the characteristics of fluidizable materials reducing airflow, line sizes, and power consumption.

The DPP-D Pump method constantly monitors the convey pressure, while the discharge valve is used to control the material flow keeping the pressure in a given range. These systems typically use a dedicated air source at lower pressures to convey challenging materials with a variable size range making them difficult to convey in typical dense phase flow.

The DPP Vessel is available in three different arrangements:

- **Style A -** a light duty design including a BFV or knife gate on the inlet and discharge of the unit with weld neck flanges.
- **Style B -** a moderately heavy duty design with a bulkhead Spheri® Valve on the inlet and BFV or knife gate on the discharge.
- **Style C -** a heavy duty design with a bulkhead Spheri® Valve on the inlet and Spheri® Valve mounted horizontally on the discharge.

Dimensions



Model	Dimensions (inches)															Volume of "A&B" (CF)	Volume of "C" (CF)	Approx. Ship Weight (lbs.)
	A	B1	B2	C1	C2	D	E	F1	F2	H	J1	J2	J3	K	L			
4CF-DPP	28	6	8	4	10	2	2	25.7	19.3	2	59	61	57	35.0	41.5	4.3	4.1	1300
8CF-DPP	36	8	8	5	10	2.5	2	33.2	27.9	2.5	71	72	68	49.5	59.0	8.7	8.6	1700
12CF-DPP	36	8	8	5	10	2.5	8	33.2	27.9	2.5	77	78	70	45.0	53.5	12.3	12.1	2000
12CF-DPP	36	--	8	--	14	2.5	8	--	23.6	2.5	77	78	74	45.0	53.5	--	11.8	--
20CF-DPP	36	8	8	6	14	2.5	22	32.2	23.6	2.5	92	93	88	49.5	62.0	20.5	19.6	2600
30CF-DPP	42	10	12	6	14	2.5	23	38.6	30.0	2.5	100	105	101	55.0	71.5	30.4	30.0	3500
40CF-DPP	48	10	12	8	14	3	22	42.9	36.5	3	109	113	108	60.0	71.5	40.9	40.6	4200
50CF-DPP	48	--	12	--	14	3	31	--	36.5	3	122	125	112	60.0	71.5	--	50.0	--
50CF-DPP	48	12	12	10	18	3	31	40.7	32.2	3	122	125	116	60.0	71.5	50.3	49.5	5400
75CF-DPP	54	12	12	10	18	3	38	47.2	38.6	3	134	128	119	68.5	81.0	75.8	75.0	6000
75CF-DPP	54	--	12	--	20	3	38	--	36.5	3	134	128	122	68.5	81.0	--	74.6	--
100CF-DPP	54	12	12	12	20	3	58	45.0	36.5	3	160	164	154	68.5	81.0	102.2	101.2	7000
100CF-DPP	54	--	12	--	24	3	58	--	32.2	3	160	164	158	68.5	81.0	--	100.2	--
150CF-DPP	60	--	16	--	20	4	72	--	42.9	4	181	187	174	77.0	91.5	--	151.6	--
150CF-DPP	60	14	16	12	24	4	72	51.5	38.6	4	181	187	177	77.0	91.5	152.6	150.7	8500

Other options available upon request

Materials of construction	CS, 304, 304L, 316, & 316L	
Finishes	CG24, 80, 120 welds	Standard plate finish
Gasket material	Silicone	
Internal pressure	90 PSI	
Maximum design temperature	212 °F, carbon	150 °F, stainless
Minimum design temperature	(-20 °F)	
Construction code	ASME BPVC, SEC VIII, DIV I	
Hydrotest type	UG-99b(34)	
Joint efficiency (shell/head)	70%	

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