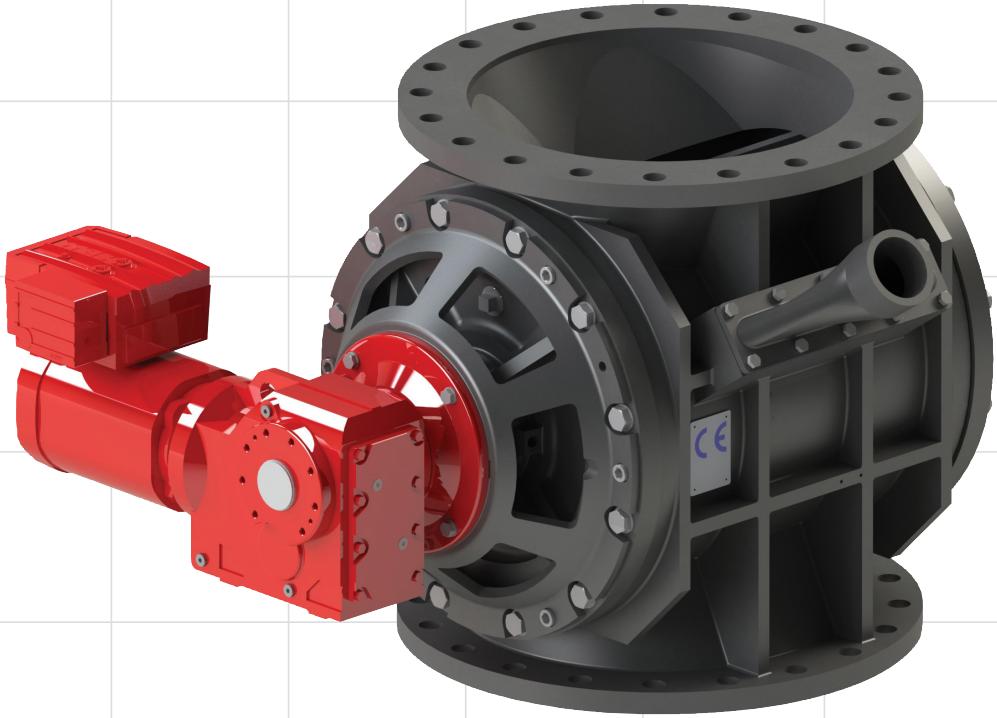
FULLER®

PNEUMATIC CONVEYING

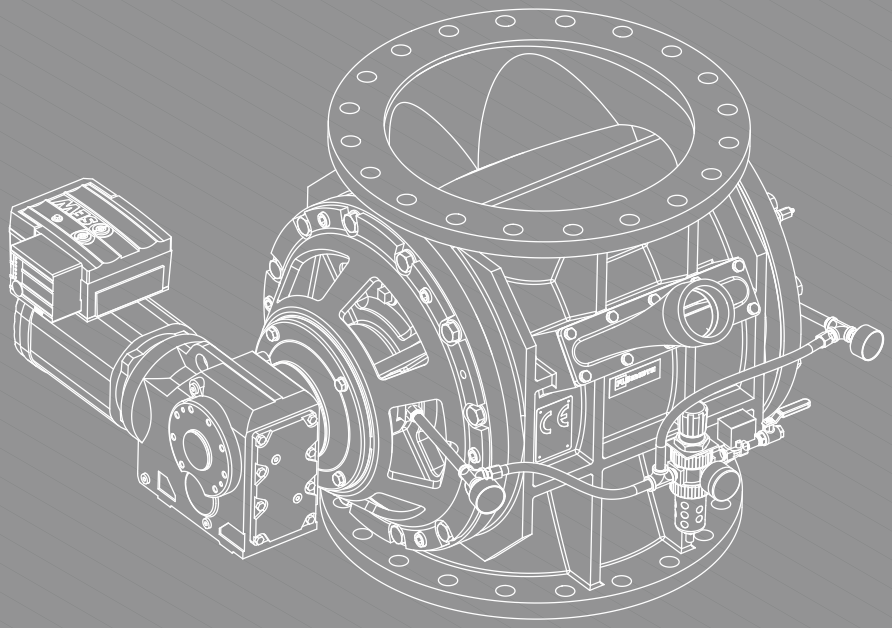
V-SERIES FEEDER / AIRLOCK

LINE CHARGER FOR PNEUMATIC CONVEYING SYSTEMS



ROBUST, VERSATILE AND EFFICIENT

Struggling with costly air leakage and inefficient material flow? Tough conditions in pneumatic conveying operations can cause wear and tear that leads to unscheduled downtime. But it doesn't have to be that way. The V-Series feeder is specially engineered to resist wear, ensuring optimal sealing even under high pressure. Designed to handle dry bulk materials from fine powders up to 19 mm, it's the simple solution to keep your material moving.



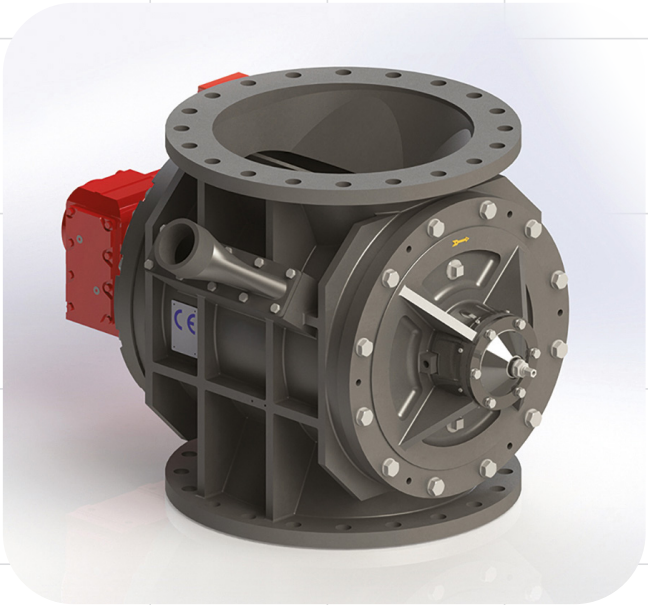
KEY BENEFITS

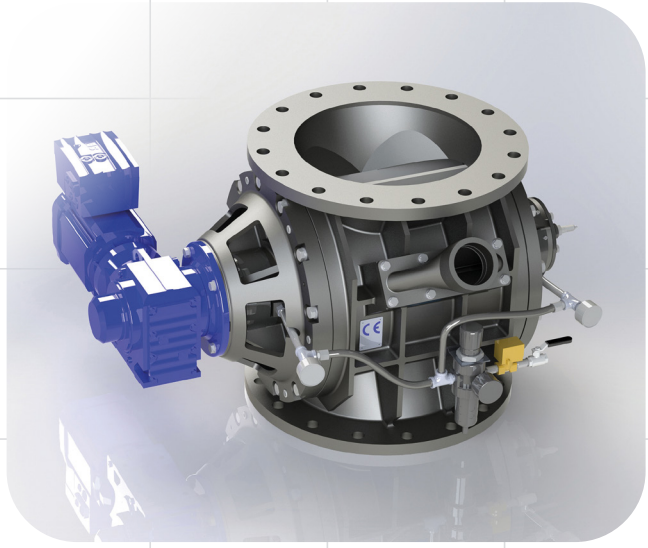
- Prevents costly air leakage
- Reliably handles high-pressure applications
- Extends equipment lifespan
- Safe for hazardous environments
- Simplifies installation and maintenance

HOW THE V-SERIES FEEDER DELIVERS LONG-TERM LOW-COST, LOW-ENERGY CONVEYING

Pneumatic conveying offers clean, efficient material transport, but – historically – energy costs have been a concern. The V-Series rotary airlock addresses this challenge with superior sealing and efficient operation, reducing energy waste even at high-pressure differentials up to 29 psig (2 Bar).

Suitable for both dilute and dense phase systems, the V-Series feeder handles dry, fine powder or granular product in vacuum or pressure conveying systems.





FEATURES AT A GLANCE

Reduces material waste

The 10-vane open or closed end rotor design minimises slip leakage while efficiently feeding through large inlet and outlet openings. An inverted integrally cast plow at the inlet flange deflects granular material, while pressurized air from the pockets is vented through a vent connection, keeping the air out of the inlet flange and maintaining even material flow.

Prevents air leakage

The rotor shaft seals minimise air leakage with mechanical lip-type bronze labyrinth seals. The sealed deep ball bearings provide very tight peripheral and end clearances. Connections for air purge seal protection are provided with single solenoid and pressure regulator.

Robust construction

Built with ductile iron housing and abrasion-resistant plate steel rotor, the V-Series withstands harsh industrial conditions while maintaining precision performance at temperatures up to 400°F (205°C).

Abrasion resistant

Specialist ceramic and tungsten carbide coatings on the rotor and feeder veins with the V-series feeder/airlock allow us to handle more abrasive materials at higher pressures.

Flexible operation

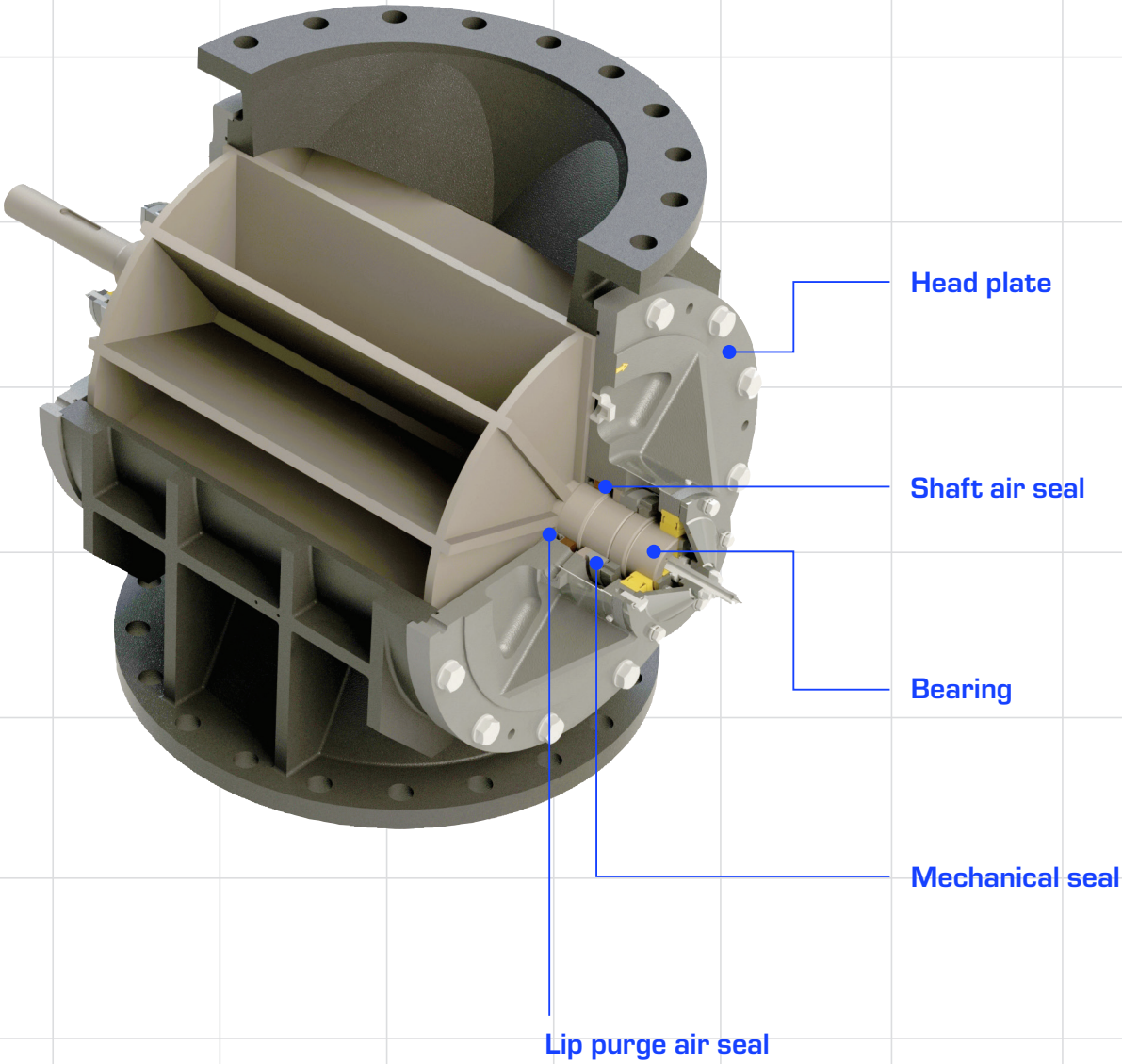
Variable speed drive adjusts from 5 – 30 rpm to optimise material flow, while six available sizes (V200-V600) with rotor volumes from 0.18 to 6.8 ft^3/rev handle diverse application requirements.

Easy integration

Direct-mount gearmotor with integral mounting bracket simplifies installation, while ANSI/DIN flange options and multiple voltage configurations ensure compatibility with existing systems.

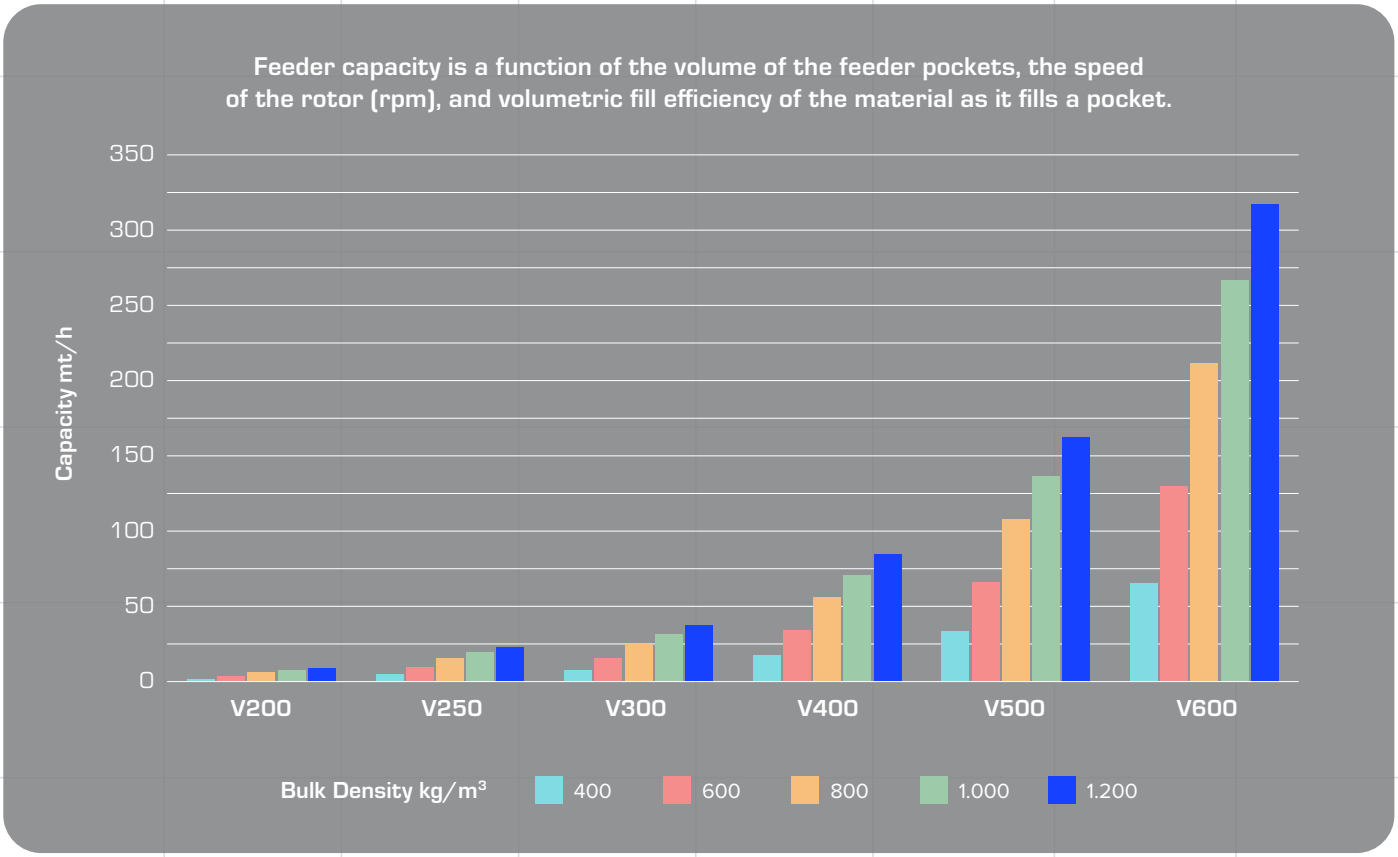
INNOVATIVE SHAFT SEALING DESIGN

OUR SEAL ASSEMBLY FEATURES A UNIQUE SEAL DESIGN CONSISTING OF A LIP SEAL, LABYRINTH SEAL AND MECHANICAL FACE SEAL.



CAPACITY

The variable-speed drive makes it easy to change capacity and allows for material changes.



U.S. units

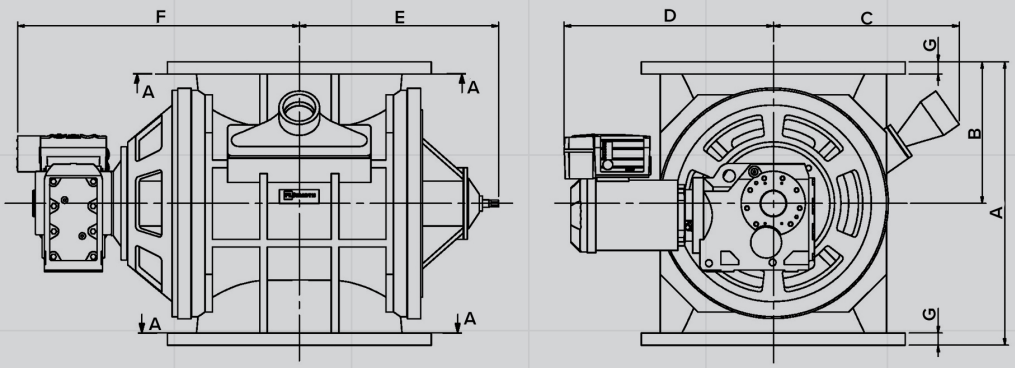
SIZE	CAPACITY OPEN (FT³/REV)	CAPACITY CLOSED (FT³/REV)	WEIGHT WITH DRIVE (LBS)	MOTOR (HP)	VENT SIZE NPT (IN)
V200	0.20	0.18	313	1.0	2
V250	0.50	0.46	472	1.5	2
V300	0.83	0.75	774	1.5	2
V400	1.84	1.66	1085	2	3
V500	3.53	3.23	1779	3	3
V600	6.76	6.31	2630	3	3

Metric units

SIZE	CAPACITY OPEN (M³/REV)	CAPACITY CLOSED (M³/REV)	WEIGHT WITH DRIVE (KG)	MOTOR (HP)	VENT SIZE NPT (MM)
V200	0,006	0,005	142	1,0	50,8
V250	0,014	0,013	214	1,5	50,8
V300	0,024	0,021	351	1,5	50,8
V400	0,052	0,047	492	2	76,2
V500	0,010	0,091	807	3	76,2
V600	0,191	0,179	1193	3	76,2

DIMENSIONS

The large diameter flow channel allows efficient linear operation up to 30 rpm; and the inlet/outlet geometry lets the feeder convey larger particles – dust to 19 mm.



U.S. units (in)

Size	A	B	C	D	E	F	G	H	J ANSI	J DIN	K	L (deg)	M (deg)	# x Ø ANSI	# x Ø DIN
V200	12.992	6.496	11.181	17.677	13.780	19.331	0.87	7.87	11.8	11.6	13.6	22.5	45	8x0.88	8x0.87
V250	16.535	8.268	12.480	17.756	15.276	19.606	0.94	10.2	14.3	13.8	15.7	15	30	12x1	12x0.87
V300	19.685	9.843	14.252	17.756	16.850	21.654	0.94	12	17	15.7	18.9	15	30	12x1	12x0.87
V400	23.622	11.811	17.795	19.252	18.937	26.220	1.1	15.7	21.3	20.3	23.6	11.25	22.5	16x1.13	16x1.02
V500	29.528	14.764	19.409	21.890	20.827	29.409	1.26	20.3	25	24.4	27.6	9	18	20x1.25	20x1.02
V600	35.433	17.717	22.126	21.890	23.819	32.638	1.38	24.2	29.5	28.5	32.1	9	18	20x1.38	20x1.02

Metric units (mm)

Size	A	B	C	D	E	F	G	H	J ANSI	J DIN	K	L (deg)	M (deg)	# x Ø ANSI	# x Ø DIN
V200	330	165	284	449	350	491	22	200	299	295	345	22.5	45	8x22	8x22
V250	420	210	317	451	388	498	24	260	362	350	400	15	30	12x25	12x22
V300	500	250	362	451	428	550	24	305	432	400	480	15	30	12x25	12x22
V400	600	300	452	489	481	666	28	400	540	515	600	11,25	22,5	16x29	16x26
V500	750	375	493	556	529	747	32	515	635	620	700	9	18	20x32	20x26
V600	900	450	562	556	605	829	35	615	749	725	815	9	18	20x32	20x30

PROVEN PERFORMANCE IN REAL-WORLD APPLICATIONS

The V-Series feeder delivers measurable results across diverse pneumatic conveying challenges. From dramatic energy savings in high-capacity operations to space-saving retrofits of existing systems, these case studies demonstrate how superior sealing technology translates into bottom-line benefits for cement industry operators.

1 CASE STUDY

A cement plant using a pneumatic conveying system with screw pump to transport raw meal to the preheater tower had total installed power of 1080 hp. We introduced them to the new V-Series rotary airlock – and achieved a significant power reduction. The V-Series' installed power is just 6 hp (2 x 3 hp) compared to 350 hp for the screw pump, giving an overall reduction in installed power of 32%, equating to a US$160 000 annual reduction in operating costs. That gives the plant an ROI of less than one year for this upgrade.

2 CASE STUDY

A US cement terminal wanted to repurpose old silos for a new product and asked us to replace the old screw pump by keep the existing 12 in. x 24 in. rotary cut-off valve shown in the picture (Figure 1). The role of the airlock was to discharge masonry cement from the silo to a packing bin at a rate of 50 stph in an 8 in. pipeline, measuring 200 ft. long with five 90° elbows.

The system we designed is shown in Figure 2. We successfully installed the new V-Series airlock within the allotted space and achieved the desired capacity. The new system runs at 12 rpm, using the same air supply, which was 1400 sfcm at 18 psig. The Airlock is installed with a variable speed drive set to operate at between 5 and 30 rpm using a VFD drive, giving the terminal operators optimum efficiency.

This installation proves the flexibility of the system, which can be retrofitted into small spaces and replace outdated technology.

UPGRADING OLD SYSTEMS

In the case of the cement terminal, switching from a screw pump to an airlock brought about greater efficiency – and this is often the case for this kind of upgrade. However, it should be noted that in some instances when converting an old screw pump system to a rotary airlock, efficiency can be lost if displaced air needs to be compensated by increasing horsepower to the compressor or blower to an extent that the power savings on the airlock are cancelled out. For this reason, it's essential to check the existing system thoroughly before assuming that an upgrade will result in energy savings.

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