

Basic Line Injector

Application

One of the primary keys to operation of a dense phase conveying system is the ability to inject compressed air at strategic points along the convey line. These injection points assist in forming slow moving “slugs” of material and drastically reduce the potential for convey line plugging, abrasion, degradation and segregation, especially with difficult materials. The Basic Line Injector is a component used in Omniveyor™ Basic dense phase pressure vessel conveying systems.

Design

Designed and built to exacting specifications complete with FDA-complaint internal components as a standard. It also has a built-in check valve to prevent material from backing up into the air head so there's no need for extra parts.



Dimensions of Basic Line Injector

INJECTOR STEM IS OPEN						
bar(g) [psi(g)]	1/2	1	1 1/2	2	3	4
AIR FLOW in m³/hr [SCFM]						
1.38 [20]	0.37 [0.21]	2.21 [1.3]	2.55 [1.5]	2.58 [1.52]	3.48 [2.05]	3.57 [2.1]
2.07 [30]	2.88 [1.7]	7.99 [4.12]	9.26 [5.45]	11.38 [6.7]	14 [8.25]	15.29 [9]
2.76 [40]	3.82 [2.25]	9.65 [5.68]	14.78 [8.7]	18.94 [11.15]	23.53 [13.85]	25.15 [14.8]
3.45 [50]	4.67 [2.75]	11.6 [6.83]	18.71 [11.01]	25.23 [14.85]	31.35 [18.45]	33.98 [20]
4.14 [60]	5.44 [3.2]	13.63 [8.02]	21.87 [12.87]	29.65 [17.45]	38.57 [22.7]	42.31 [24.9]
4.83 [70]	6.27 [3.69]	15.85 [9.33]	25.15 [14.8]	33.47 [19.7]	43.49 [25.6]	45.36 [26.7]
5.52 [80]	7.08 [4.17]	17.58 [10.35]	27.95 [16.45]	37.29 [21.95]	44.51 [26.2]	45.36 [26.7]
6.21 [90]	7.83 [4.61]	19.23 [11.32]	30.43 [17.91]	37.38 [22]	44.51 [26.2]	45.36 [26.7]
6.89 [100]	8.78 [5.17]	21.58 [12.7]	31.94 [18.8]	37.38 [22]	44.51 [26.2]	45.36 [26.7]
7.58 [110]	9.51 [5.6]	22.09 [13]	31.94 [18.8]	37.38 [22]	44.51 [26.2]	45.36 [26.7]

Options

- Available in aluminum and stainless steel
- Basic line injector installation kits come with: air tubing, fitting, pipe coupling for the convey line as well as the air injection header

Air Injection Module (AIM)

Application

One of the primary keys to operation of a dense phase conveying system is the ability to inject compressed air at strategic points along the convey line. These injection points assist in forming slow moving “slugs” of material and drastically reduce the potential for convey line plugging, abrasion, degradation and segregation, especially with difficult materials. The Air Injection Module is a component used in Omniveyor™ AIM dense phase pressure vessel conveying systems.

Design

The Coperion K-Tron AIM compressed air control design employs the most advanced technology available on the market. Coperion K-Tron has developed a precision compressed air flow and pressure control system WITH feedback. All air injection points can be adjusted and monitored from one location without physically touching any given air injection point along the entire convey line.

The main components of an Air Injection Module are:

Flow Transmitter:

Provides compressed air flow feedback to control system.

Proportional Flow Control Valve:

Provides compressed air flow control to a compressed air injection point or series of injection points. This valve uses a PID loop to achieve optimal conveying characteristics.

Non-Return Valve:

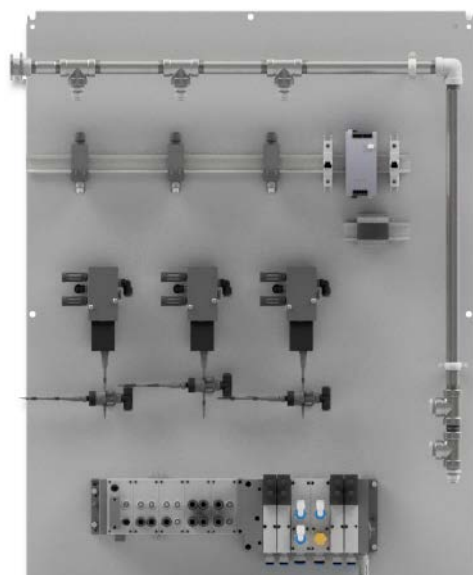
This device is provided as a precaution to prevent the conveyed material from entering the Air Injection Module.

Pressure Transmitter:

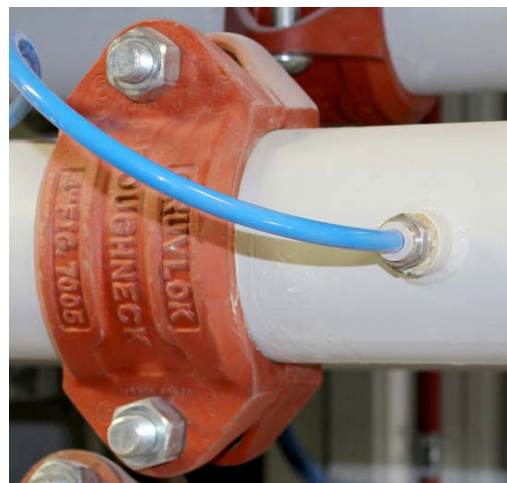
The pressure transmitter monitors the pressure at various points in the convey line and ensures the pressure at each compressed air injection point is controlled, ensuring flow in the correct direction and monitoring operation of each compressed air injection point or series of injection points.

Flow & Pressure Control Block:

Provides feedback and remote control capability of each individual compressed air injection point so that the system is optimized for a range of materials and conditions. Includes Ethernet communications block to transfer information back to the dense phase system supervisory control system.



Internal view of an AIM panel controlling 6 individual air injection points



Example of single air injection point on convey line (blue tubing)