

JVI Tube Feeder vs. Rotary Air Lock

Rotary Airlocks are often used to meter bulk material from a hopper discharge and seal the hopper from the downstream process. When used with abrasive material, the vanes of the airlock wear quickly and must be replaced often. The wear and replacement of the vanes can create problems. The wear of the vanes may allow pressure loss, creating backpressure in the system. This can impede flow and cause dusting. Additionally, improper adjustment or replacement of the vanes may create excessive vibration. This can cause premature and repeat failure and can stress the supporting structure.

JVI Electromechanical feeders eliminate the problems inherent in rotary airlock valves.

Figure 1 shows the inlet arrangement of a hammermill at a gypsum plant. Original equipment included a rotary air lock to regulate material flow to the mill. Constant maintenance was required on the air lock to repair the seals and hold proper feed rates. Further, vibration of the airlock through the rigid connection at the mill caused repeated failure. An alternate mill feed solution was sought.

Figure 2 shows the new JVI rectangular electromechanical tube feeder installation. The safe, rigid support structure of the feeder prevents “swing” at startup and shutdown. This feeder/mill interface extends the life of the dust-tight seals and provides cleaner surroundings. The JVI tube feeder has no internal moving parts so maintenance issues inherent with rotary airlocks are eliminated. Material feed rate is automatically adjusted via a variable frequency drive (VFD) with input from the differential pressure in the mill. The tube feeder also seals the hopper from the downstream process when a constant head load is maintained.



Figure 1 – Before – Rotary Airlock



Figure 2 – After – JVI RUF Tube Feeder

Every JVI Feeder is application specific and engineered to order.