

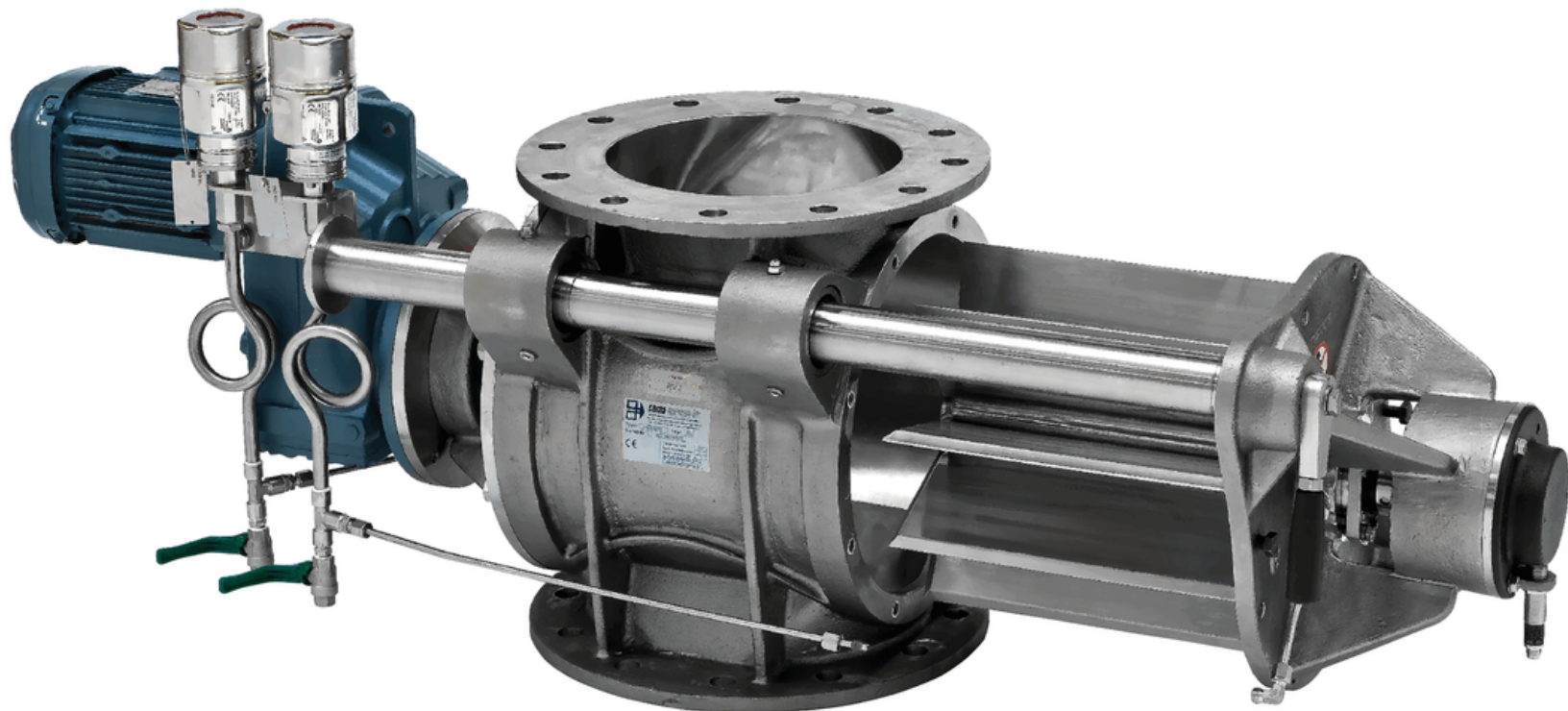


ROTARY VALVE

Also known as rotary airlocks, rotary feeders, etc.



Rotary valves are pneumatic valves that manage and meter the flow of granular bulk or powders.



Reference: tbma.com

Working Principle

- The working principle of rotary valves involves the **controlled rotation** of a **disc or drum** with an internal passage or opening that aligns with the inlet and outlet ports.
- By rotating the valve, the passage can be aligned to allow or block the flow of the product.

Components

- **Housing:** The housing is the main body of the rotary valve and provides a sturdy enclosure for all the internal components.
- **Rotor or Disc:** The rotating component of the rotary valve. The rotor contains a passage or opening that aligns with the inlet and outlet ports to control the fluid flow.
- **Inlet and Outlet Ports:** These are openings in the valve housing where the fluid enters and exits the valve.
- **Drive Mechanism:** In automated rotary valves, there is a drive mechanism that powers the actuator, whether it be an electric motor, pneumatic piston, hydraulic cylinder, or another source of power.
- **End Plates:** End plates are used to close off the ends of the housing and provide additional support to the rotor and bearings. They help to create a contained space within the valve.



Uses in Food industry

1. Metering and Feeding:

- Used to meter and feed bulk food materials helping regulate the precise amount of material flowing into processing equipment or mixing systems.

2. Pneumatic Conveying:

- Serve as airlocks in pneumatic conveying systems, ensuring a continuous and controlled transfer of food materials.

3. Dust and Contaminant Control:

- When handling powders or fine particles, rotary valves help to control dust and airborne contaminants.

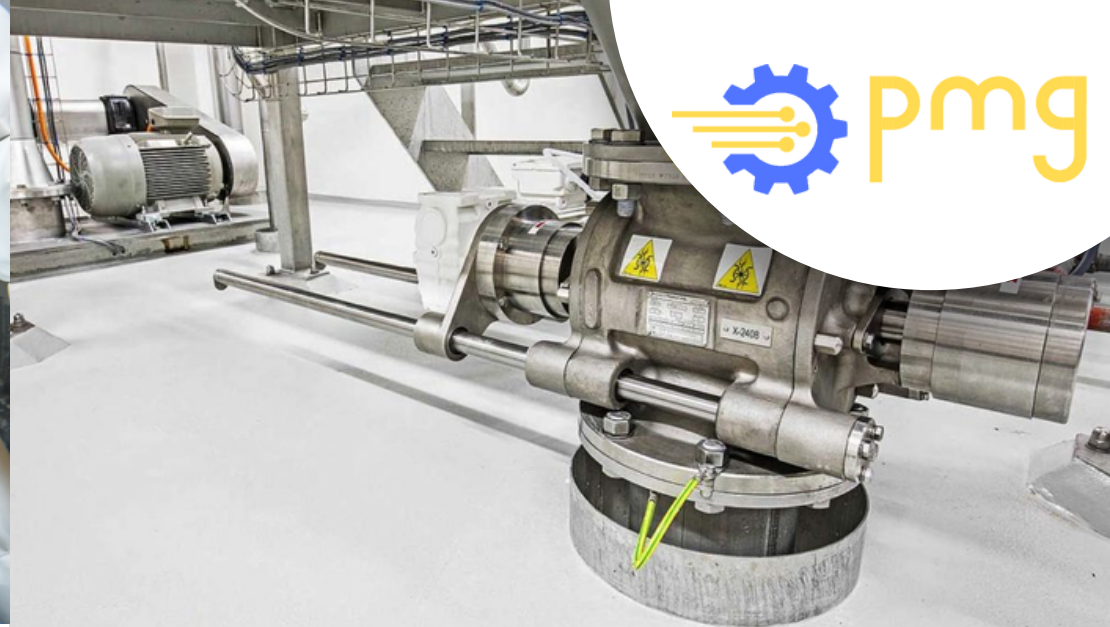
4. Ingredient Mixing:

- Used in mixing and blending systems, allowing precise ingredient dosing.

5. Packaging:

- Utilized to control the flow of granular or powdered food products into packaging machines, ensuring accurate filling.





Specifications + Selection Criteria

1. Material of Construction: :

- Food-grade materials like stainless steel (316L or 304), aluminum, or other approved alloys are commonly used. These materials should be resistant to corrosion, easy to clean, and non-toxic, ensuring they do not contaminate the food product.

2. Operating Pressure and Temperature:

- Rotary valve to be able handle the required pressure and temperature conditions of the food processing system.

3. Material Handling:

- Rotary valve should be suitable for handling the type of food material being processed, whether it's dry powders, granules, or other ingredients.

4. Integration with System:

- Rotary valve should integrates well with the existing food processing system, connecting seamlessly with upstream and downstream equipment.