

APPLICATION CASE STUDIES

RH SERIES

ROBUST, VERSATILE AND HIGHLY EFFICIENT

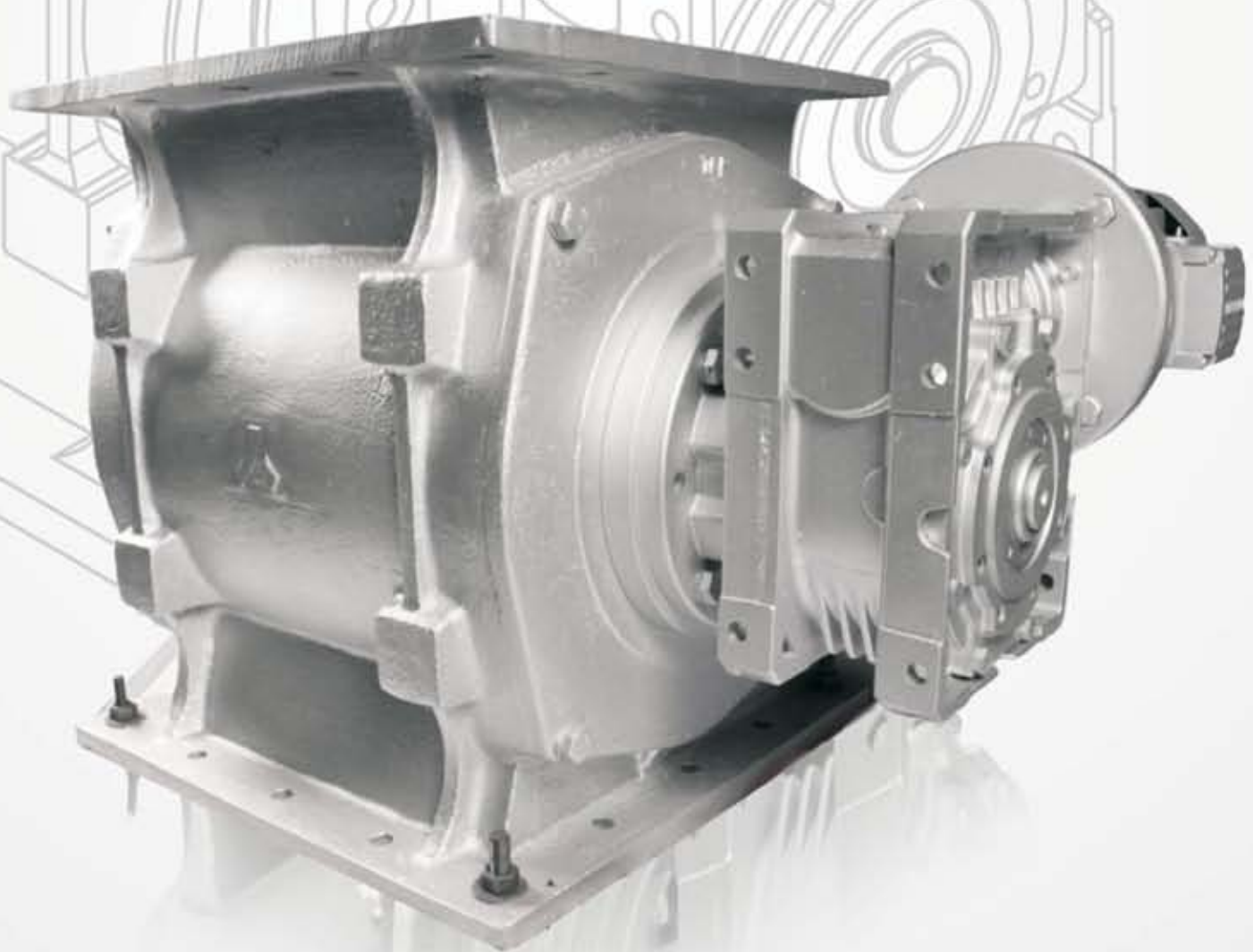


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CLICK HERE to build the valve to suit your application



Biomass Feed Handling

Waste to Energy Torrefaction



**Lumpy
Feedstock**

**Critical
Gas Seal**

**Regular Valve
Tripping**

Particle Size

Irregular

Abrasiveness

Medium

Material

Wood Chip

Pressure

20KPa

Client

A unique torrefaction technology provider that has been supplying their thermal treatment process to the market for over a quarter of a century. They have over 150 operating installations that process solid food waste, biomass and industrial minerals.

Anval were asked to look at their existing valve setup that was tripping and hindering the plant process and provide a long term solution to that could deal with the varying nature of the feedstock.



Downtime

Decrease in downtime caused by irregular feed material blocking or tripping the valve

Plant Performance

Increased reactor performance through proper feeding and airlocking

Air locking

Higher airlocking performance through the use of flexible tipped rotor blades to maintain very low clearance levels

Plant Safety

Improved plant safety record by eliminating occurrence of hazardous gas leakage



RH SERIES

Ball Mill Feeder

Aluminium Powder Processing

Particle Size

40 - 600 Microns

Abrasiveness

High

Material

Pyro Aluminium

Pressure

10KPa

Temperature

Ambient

**Frequent
Material Leakage**

**Critical
Gas Seal**

**Regular Valve
Jamming**

**Hazardous
Material**

Client

Our client is a leading producer of Aluminum powders and pigments. They are offering wide range of products such as Atomized Aluminum Powder, Pyrotechnic powder, Aluminum Pastes (Leafing & NonLeafing), Pigment powders and Lightweight Concrete powder.



Anval were approached to provide solution for fine powder leakage through Shaft, Bearing failure due to fine material entry and improper air locking across the ball mill and recycling system in hazards and potential explosive working environment.

Downtime

With our Airpurging and labyrinth seal design, rotary valve failure drastically reduced



Plant Performance



Increased plant performance through proper feeding and airlocking

Process Efficiency



Material wastage almost reduced to zero and in turn improved the airlocking efficiency

Plant Safety



The brass tipped rotor eliminates the risk of potential explosion due to static electricity and sparks



Cyclone Spray Dryer

Polymer Resin Processing

Particle Size

<100 Microns

Abrasiveness

Medium

Material

Polymer Resin

Pressure

10KPa

Temperature

Ambient

**Frequent
Material Leakage**

**Critical
Shaft Sealing**

**Regular Valve
Jamming**

**Becomes Sticky
With Moisture**

Client

Our client is one of India's leading specialty chemicals companies through its various businesses including Pigments and Plastics.

Anval were approached to provide solution for frequent valve jamming and corresponding motor failure due to sticky chemical. Each and everytime, the client has to shut down the system, dismantle the valve and clean the rotor and the body. This was leading to heavy downtime and material wastage. The material becomes sticky and turn into hard solid when it contacts with moisture.



Downtime

With the use of low land tipped rotor design and close clearance rotor jamming and moisture entry eliminated

Anval supplied RH Series Rotary Valve with low land tipped rotor to tackle their problems.



Process Efficiency

Material wastage almost reduced to zero and in turn improved the airlocking efficiency



RH SERIES

Universal Grinding

Spice Processing

Particle Size

<4 mm

Abrasiveness

Medium

Material

Spice Granules

Pressure

5KPa

Temperature

Ambient



Inconsistent
Grinding

Varied Particle
Size

High Material
Rejection

Client

Our client is the world's largest provider of powder and particle processing equipments. Their products and technologies are used in numerous process stages including comminution, mixing, drying, agglomeration, classification, weighing and metering.

Anval were approached to provide solution for the material overload or accumulation issues which further leads to inconsistencies in grinding.

Anval's RH Series designed with reduced pocket rotor to deliver non oscillating flow of materials for accurate metering. The drive system selected for proper metering speed reduced overload current drawn by the motor of comminution system.

Downtime



With the use of reduced pocket rotor design, delivers accurate flow rate and avoids material accumulation

Process Efficiency



Material wastage almost reduced to zero and in turn improved the efficiency

Rejection Rate



Uniform material flow to the grinding system avoided inconsistent grinding

OPEX



Drastic reduction in valve related OPEX as the highly durable RH requires little attention once installed



Refractory Bricks Making

Batch Mixing Process

Particle Size
<4 mm

Abrasiveness
High

Material

Refractory Silica

Pressure

Atmospheric

Temperature

Ambient



Abrasive Material

Weighing Accuracy

Regular Valve Jamming

Client

Our client is emerging player in design and manufacture of customized Weighing, Filling, Packaging and Powder Handling equipments for various Industries like Food, Chemicals, Minerals & Fertilizers.

Anval were approached to provide metering solution for accurate Weighing, Filling and Packaging for their batch mixing system. The process requires to maintain 50gms accuracy on every pockets. Client have the production target to achieve 30Kg in 30 seconds and could not accomplish the task due to frequent jamming of hard particles.

Process Accuracy



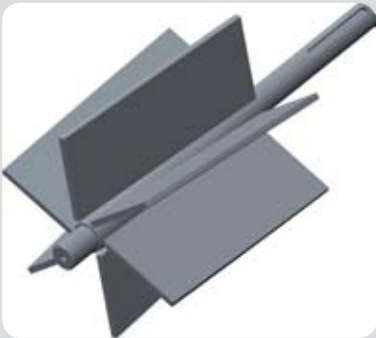
Material wastage almost reduced to zero and in turn improved the airlocking efficiency



Downtime



With the use of deflector plate and skewed rotor design, plant downtime is considerably reduced



Skewed Rotor

Plant Performance



Increased plant performance through proper feeding and airlocking

Packing Time



System designed with variable speed compatibility to achieve the required packing time of 30 seconds

RH SERIES

Weigh Feeding System

Clinker Feeding into Weighing System

Process Efficiency



RH Valve usage helped to avoid material accumulation and improved the process efficiency

Airlocking



Effective airlock, reduces wear & tear thus increases life of the valve by 2 times

Flow Efficiency



Increased overall material flow performance and efficiency of the valve

Plant Output



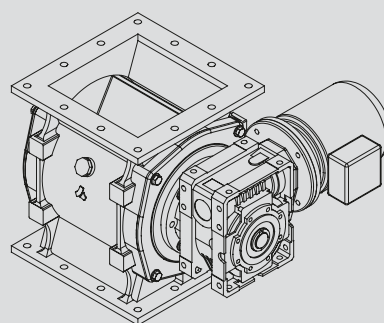
Significantly decreasing inlet system leakage, leading to higher overall plant output

Air Seal Critical

Severe Leakage Issues

Frequent Material Blockage

Material Buildup and Clogging



Client

Our client is the leading manufacturer of cement and ready mixed concrete with a countrywide network of factories and sales offices.

The company has been a trendsetter and important benchmark for the cement industry in many areas of cement and concrete technology.

Anval were approached to provide solution for their rotary airlock failure, due to the heavy leakage, material flushing, and high power consumption in conveying the irregular and lumpy clinker material.

Abrasiveness

Very High

Material

Clinker

Pressure

20KPa

Particle Size

<25 mm



Anval suggested to replace their existing rotary valve with RH Series to handle the abrasive clinker with tipped rotor and a deflector plate. This helps to avoid material buildup and clogging in the vanes and the inlet pipe. RH Series cast iron components are manufactured with superior wear resistance property to avoid leakage with constant material flow.

