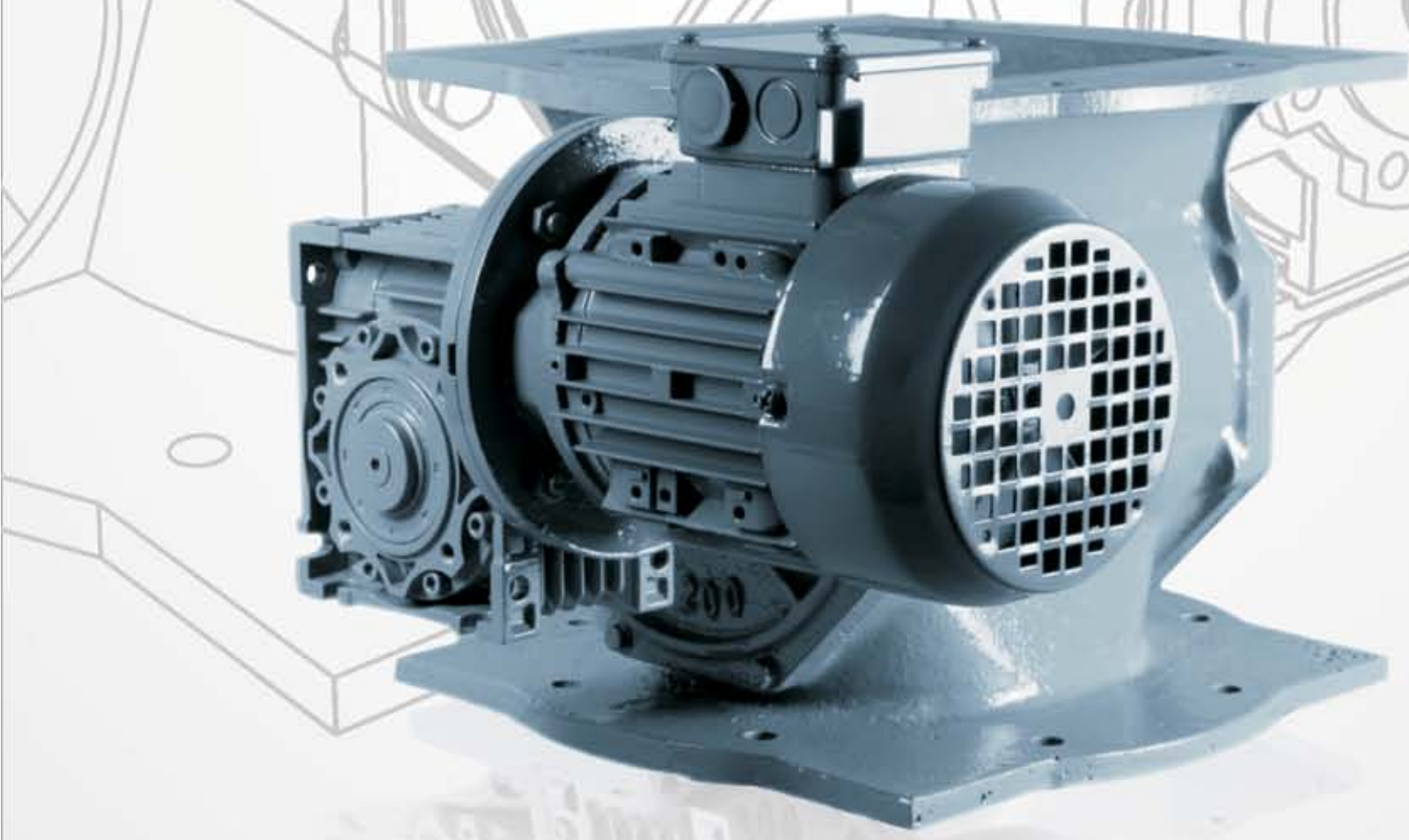
APPLICATION CASE STUDIES

RL SERIES

SIMPLE, STABLE & ECONOMICAL AIRLOCKS



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CLICK HERE to build the valve to suit your application

RL SERIES

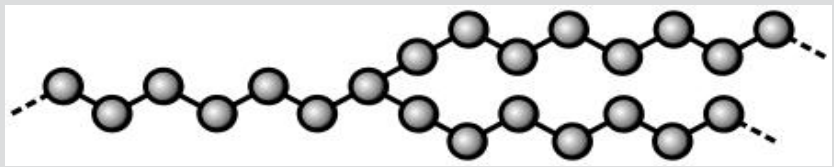
Extrusion Feeder

Polymer Processing

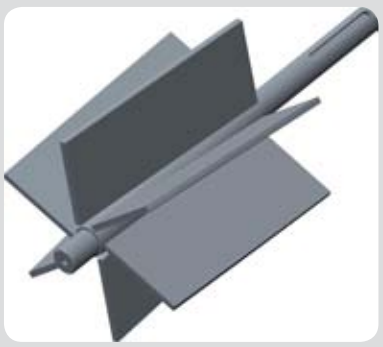
Client

Our client is a leading manufacturer of polyethylene, and polymer products having many state of the art manufacturing facilities with high quality standards in South Asia

Anval were approached to provide a solution to the frequent valve jamming from which their process plant was suffering as a result of particle breakage.



Polymer Chain



Skewed Rotor

Material Collection

Increased overall material collection through use of application specific rotor

Rejection Rate

Skewed rotor helps to ease the flow of material at the pinch point and to avoid the breakages.

Particle Size

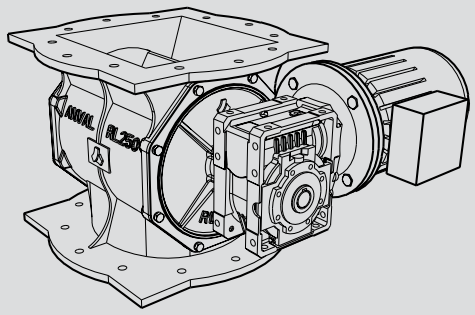
Granules

Abrasiveness

Medium

Material

Polypropylene



Pressure

Atmospheric

Polymer has the property to bend and twist and even get tangled up just like a ball of string. Some of the polymers can be stiff and strong which jam the rotor.

To improve the discharge performance, Anval configured the valve with a deflector plate and a skewed rotor in order to avoid pinch points and handle the granule particle in an efficient way.

Adhesive & Sticky Material

Regular Valve Jamming

Downtime

Valve failures have been eliminated with the skewed rotor and thus reduced downtime due to jamming

Flowability

Increased the overall material flow, performance and efficiency

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RL SERIES

Extraction System

Biomass Torrefaction

Particle Size
Irregular
Abrasiveness
Very Low
Material
Wood Fibers
Pressure
15KPa
Temperature
Ambient

Abrasive Material

Weighing Accuracy

Regular Valve Jamming

Client

Our client is a global industry leader in providing high-quality design, manufacture, supply, and maintenance of fume dust extraction, filtration and industrial ventilation systems.

Before approaching Anval they were facing excessive jamming in handling the stingy wood fibres. Frequent jamming leads to shutting the entire system very often.

Upon recommendation from Anval, the client replaced their existing valve with Anval's RL model with a flexible tipped rotor to handle the stingy material and completely avoided jamming at the pinch points.

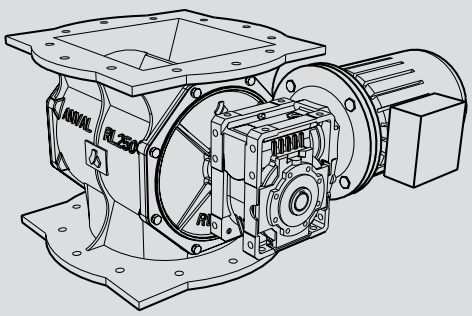
Flow Efficiency

↑ Increased overall material flow performace, efficiency of the valve

Siezed Rotary Valve

Downtime

↓ Downtime due to material bloggage is drastically reduced.



Plant Performance

↑ Increased plant performance through proper feeding and airlocking

Plant Safety

↑ Improved plant safety record by eliminating occurrence of hazardous gas leakage

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RL SERIES

Weighing & Automation

Metering and Packaging

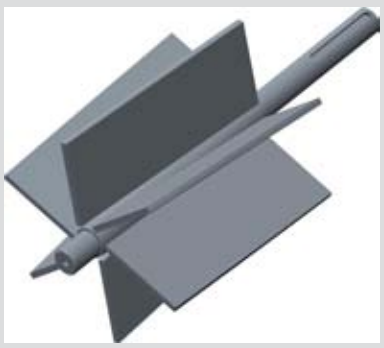
Client

Our client is a leading manufacturer of customized Weighing and Automation systems for various industries across the globe.

Anval were approached to help them in solving frequent jamming issues with their existing Rotary feeders that was being caused by silica particles catching and breaking in the pinch point.

Material Breakage

Regular Valve Jamming



Skewed Rotor

Material Collection

↑ Increased overall material collection through use of application specific rotor

Silica Granules

Rejection Rate

↓ Skewed rotor helps to ease the flow of material at the pinch point and to avoid the breakages.

Particle Size

<3 mm

Abrasiveness

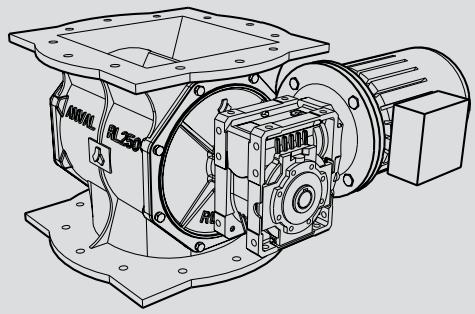
Medium

Material

Silica

Pressure

Atmospheric



Silica is a granular, vitreous, and porous particle and, by its nature, is tough to handle. It absorbs moisture very well and, as such, needs to be processed and conveyed in an air-locked environment..

Anval configured RL Series valve with a deflector plate and a skewed rotor design, which helps to avoid pinch points and handle granule particle in an efficient way.

The special low landing vane tipped rotor further helped in easy flow of material.

Downtime

↓ Valve failures have been eliminated with the skewed rotor and thus reduced downtime due to jamming

Flowability

↑ Increased the overall material flow, performance and efficiency

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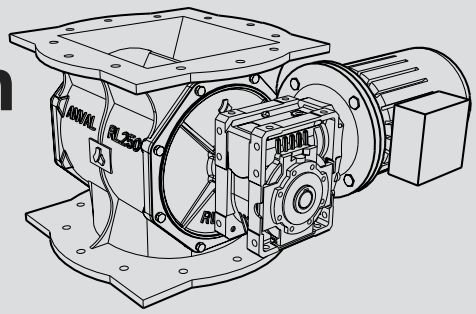
RL SERIES

Alumina Feed

Alumina Processing

Particle Size
<50 micron
Abrasiveness
High
Material
Alumina
Pressure
15KPa
Temperature
Ambient



Abrasive Material

Weighing Accuracy

Regular Valve Jamming

Client

Our client is a global industrial process machinery supplier manufacturing, mixing, drying andagglomerationequipments for the powder and bulk industry.

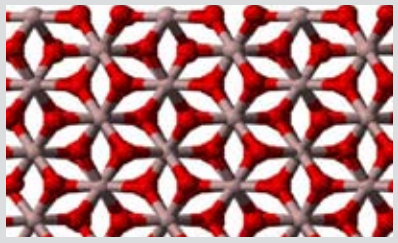
The client approached Anval to provide an alternative to their existing valves that were suffering from very high levels of wear on both the body and rotor as a result of processing fine alumina powder.

Anval provided the client with a cost effective, plug and play RL Series model, customized with a specially designed rotor. RL Series are with close axial and radial clearance, grease purge and labyrinth seal with the single piece cast iron body. Theclientexperiencedveryless wear over a comparable period of time than the previous valve; as a result, the plant reduced leakage levels and increased operational efficiency.

Alumina Powder

Flow Efficiency

Increased overall material flow performace, efficiency of the valve



Molecular structure of high abrasive alumina

Plant Performance

Increased plant performance through proper feeding and airlocking

Leakage

Drastic reducion in leakage with the use of closed clearance between the rotor and body.

Sealing

Anval uses a unique Labyrinth Seal on the RL Series that virtually eliminates shaft leakage

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RL SERIES

Cyclone Collector

Food Processing

Wheat Flour

Low Clearance Requirement

Air Seal Critical

Severe Leakage Issues

Client

Our client is a premier producer of wheat flour and pasta products for international consumption. The client has state of the art food manufacturing facilities and extremely high quality standards that all potential suppliers must adhere to.

Anval were approached to provide a solution to a high leakage situation that was causing significant blockages.

Material
Wheat Flour

Particle Size
<100 Micron

Abrasiveness
Low

Pressure
15KPa

Our high efficiency RL Series Rotary Valves are designed for a variety of applications including food, flour, grains, plastic, chemicals, pharma and milling industries.

This “Single Piece” cast design reduces the number of seams that become wear points and have a compact and robust design.

Wastage

Minimise accumulation of food particles in the vane corners which causes high level of degradation

Plant Output

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

Sealing

Anval uses a unique Labyrinth Seal on the RL Series that virtually eliminates shaft leakage

Leakage

Drastic reducion in leakage with the use of closed clearance between the rotor and body.

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RL SERIES

Bag Filter

Carbon Handling

Particle Size

Irregular

Abrasiveness

High

Material

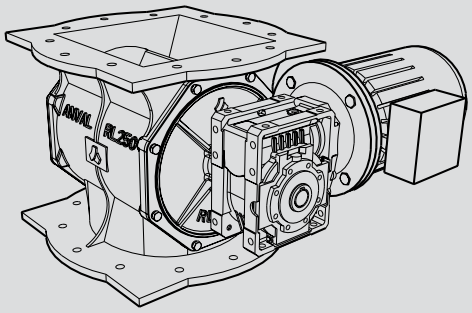
Graphite Carbon

Pressure

15KPa

Temperature

Ambient



Client

Our client is a highly regarded manufacturer and supplier of a wide range of carbon products to global customer base.

The client was experiencing recurring build up of carbon inside the valve that would become increasingly sticky and hinder plant throughput.

The accumulation was being caused because of the friction between the rotor and body of the existing valve; this would generate heat which in turn warmed the carbon feed material. The warmed material would become sticky and further increase the friction within the valve.

Anval provided a rotor with special vane tip to balance the leakage and squeching material between the body.

Abrasive Material

Weighing Accuracy

Regular Valve Jamming

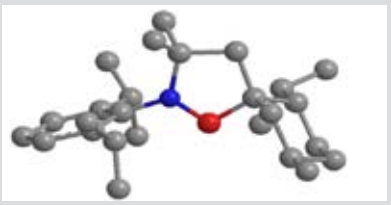
Flow Efficiency

↑ Increased overall material flow performace, efficiency of the valve

Downtime

↓ Downtime due to material bloggage is drastically reduced.

Graphite carbon



Carbon molecule structure

Plant Safety

↑ Improved plant safety record by eliminating occurrence of hazardous gas leakage

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RL SERIES

Mechanical Dust Collector

Thermal Power Generation

Particle Size
Irregular
Abrasiveness
High
Material
Coal Powder
Pressure
15KPa
Temperature
100°C

Coal Powder

Abrasive Material

Air Seal Critical

Leakage Issues

Client

Our client is a large multi-national engineering organisation that provides energy and environmental solutions in over 75 countries worldwide.

Anval were approached as the client had been experiencing extremely high wear on their existing valves in both the rotor and body. This was leading to very high level of particle leakage, causing material loss and environmental issues.

Anval provided and installed RL Series into the process plant in place of the old valves. Using a single piece, cast iron body, Anval have provided the client with a more consistent process flow that significantly lower wear levels and has an increased output efficiency.

Leakage

↓ Drastic reducion in leakage with the use of closed clearance between the rotor and body.

Downtime

↓ Downtime due to material bloggage is drastically reduced.

Sealing

↑ Anval uses a unique Labyrinth Seal on the RL Series that virtually eliminates shaft leakage

Plant Safety

↑ Improved plant safety record by eliminating occurrence of hazardous gas leakage

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RL SERIES

Blast Furnace Charge

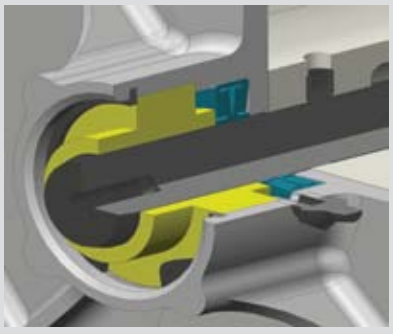
Material Feeding into Furnace

Our client is is the global leader in thermal ceramic insulation, refractory products. They are one of the trusted supplier to the steel, aluminium, power, chemical processing, ceramics, automotive and other industries for over seven decades, with manufacturing and distribution operations across 40 countries.

Anval were approached to help them in solving wear and leakage issues in their feeding system that was being caused by the mixed alumina particles.

Abrasive Material

Wear Application



Purge Sealing Arrangement

Plant Performance

Increased plant performance through proper feeding and airlocking

Mixed Alumina & Quartz

Airlocking

Effective airlock, reduce wear parts of rotary valve

Particle Size

<4 mm

Abrasiveness

Medium

Material

Mixed Alumina & Quartz

Pressure

Atmospheric

Anval's RL Series valve with a perfect shaft sealing arrangement using the Labyrinth Seal that helped to resolve the leakage through the shaft and close clearance between the rotor and housing reduces the wear & tear in the body.

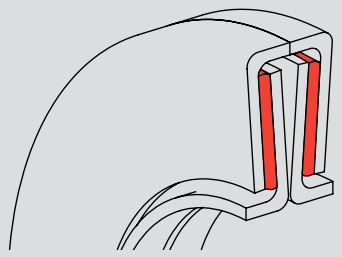
"Double Labyrinth Seals" are standard with this valve that are filled with flock pads, greased on each side of the valve.

Severe Leakage Issues

Air Seal Critical

Process Efficiency

Leakage almost reduced to zero and in turn improved the airlocking efficiency



Labyrinth Seal

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