



SuperSeal Wear/Corrosion Resistant Upgrade Systems for Rotary Valves



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Wear Resistance Engineers





About Omegaslate SuperSeal Systems

Omegaslate has upgraded rotary valves and blowing seals, for more than 25 years ago.

Our upgrades are intended to maximise the operating life and reliability of rotary valves and blowing seals, no matter whom the manufacturer, by applying improvements in design, engineering and materials.

This presentation endeavours to explain our technology.

Often valves are sent to us in a totally worn-out conditions, with holes in vanes, endplates and bodies; we also upgrade new valve.

On receipt of a valve, we strip and inspect it; prepare a condition report, supported by photographs, an upgrade specification and a detailed quotation.

The upgrade specification depends on the degree a sophistication required by the customer.

We use advanced ceramic materials to provide corrosion and abrasion resistance. These materials are bonded and mechanically fixed to the areas of the valve requiring protection.

Normally, we reduce the rotor diameter and length to take account for the ceramic lining thicknesses.

The most important aspect of our technology is our ceramic grinding facility. The ceramic components are fitted to the valve bore, endplates and rotor and then precision ground to size on a large rotary grinding machines.

We have a variety of rotor and shaft sealing options available .

In all respects, we ensure to ensure that our systems provide the best possible cost effectiveness.



Advantages of the SuperSeal Lining System

- Low maintenance costs.
- Increased operating life and reliability.
- Increased plant efficiency.
- In very abrasive conditions it is possible to save in the region of £35,000.00 per annum, per 380mm bore valve, over traditional non-ceramic refurbishing costs.
- Reduced spares requirement.



Upgrading Rotary Valves



- Omegaslate upgrade and refurbish rotary valves and blowing seals for operation in extremely aggressive bulk minerals, metals and plastics handling and processing environments.

Rotary Valve Body



- Rotary valve bodies are fitted with a 10mm thick CEROXALIDE Z3TM and Z4TM, and RESILIDETM ceramic lining system.
- The lining system is bonded and mechanically locked in position.
- In order to provide an accurate and smooth bore, the ceramic lining system is precision diamond ground, after fitting, on large rotary grinding machines.

End Plates



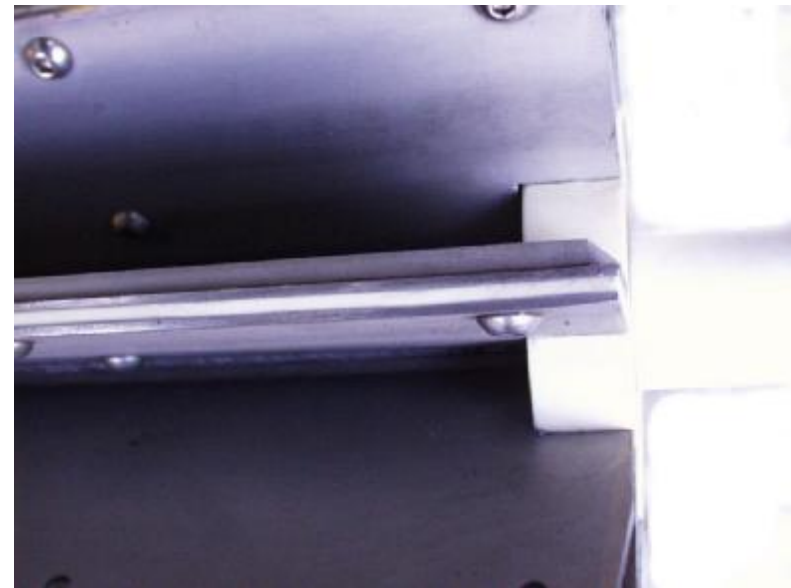
- Depending on the size of the valve, 6mm or 12mm thick ceramic linings are bonded to the endplates.
- The ceramic linings are diamond ground across the wear face and on the O/D to ensure an accurate fit inside the ceramic bore lining.

Rotors



- The steel rotors are reduced in diameter and length to accommodate the bore and endplate lining systems.
- Ceramic secondary seals are fitted on the ends of the rotor and diamond ground
- Ceramic protection is fitted to the parts of the rotor shaft that rotate in the stuffing boxes.

Heavy Duty Rotors with Ceramic Inserted Vanes



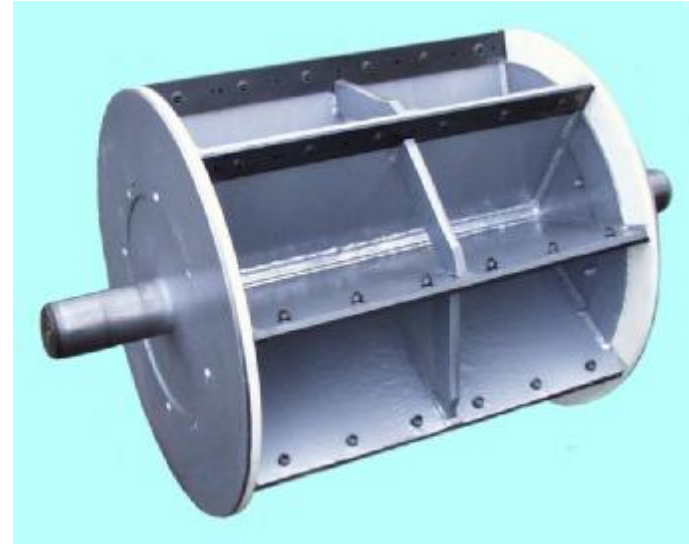
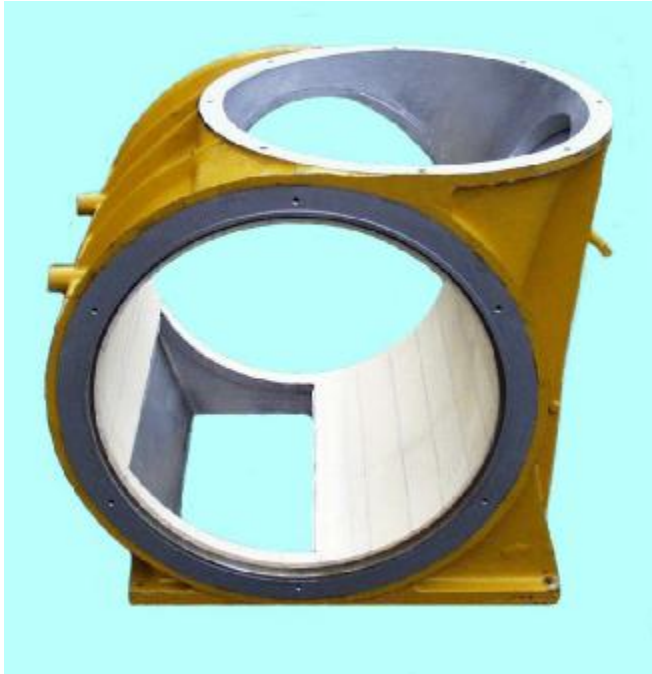


Rotor Vane Sealing Blade Options



- CEROXALIDE Z3 and Z4tm alumina Ceramic, RESILIDEtm, tungsten carbide ceramic, and hardened steel blades can be fitted to the rotor vanes.





Valves used in the Grain Handling.

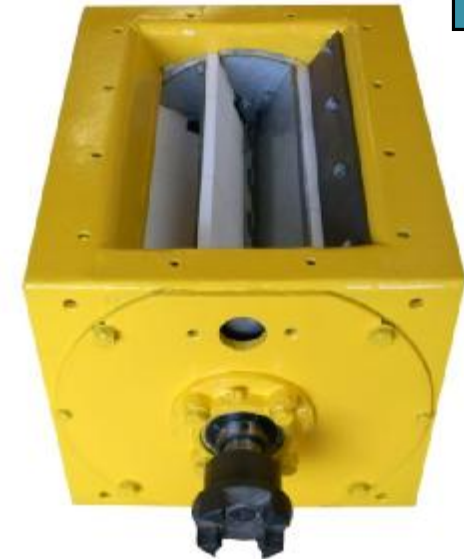
This is a rotary valve with a 670 mm diameter x 631 mm long bore, used for handling grain.

The cast iron bore is fitted with a 10 mm thick, diamond ground, 99.7% (CEOXALIDE Z4[™]) lining system.

The rotor is fitted with 12 mm thick 95% diamond ground alumina ceramic closed rotor end seals and 6 mm thick adjustable hardened steel blades.

The rotor clearance is 0.15 mm to 0.20 mm.





Valves used in the Wood Industry.

This is a rotary valve with a 320 mm diameter x 500 mm long bore, used for handling burner dust in the wood industry.

The fabricated steel bore is fitted with a 10 mm thick, diamond ground, 99.7% (CEOXALIDE Z4™) lining system.

The rotor is fitted with 25 mm thick 95% diamond ground alumina ceramic closed rotor end seals and 12 mm thick 95% alumina ceramic vane sealing blades.

The rotor clearance is 0.15 mm to 0.20 mm.

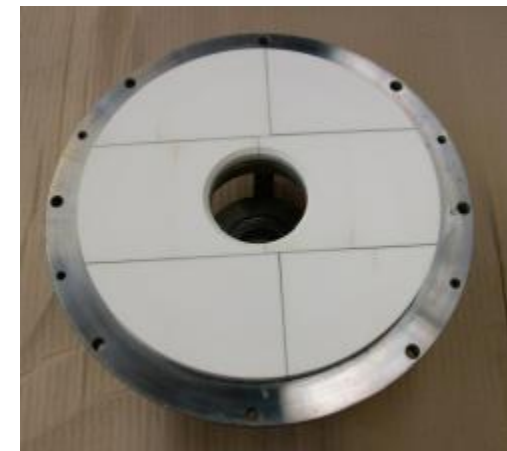


Valves used in Quarrying.

This 300 mm rotary valve is used to feed abrasive dust into a pneumatic conveying system at a quarry.

The following upgrades were required in order to reliably increase the operating life of the valve:

- New heavy duty rotor complete with 75 mm O/D ceramic shaft protection, ceramic secondary seals, and ceramic sealing blades .
- New fabricated and machined steel endplates incorporating larger stuffing boxes and larger section packing to accommodate the heavy duty rotor.
- The rotor clearance is 0.15 mm to 0.20 mm.



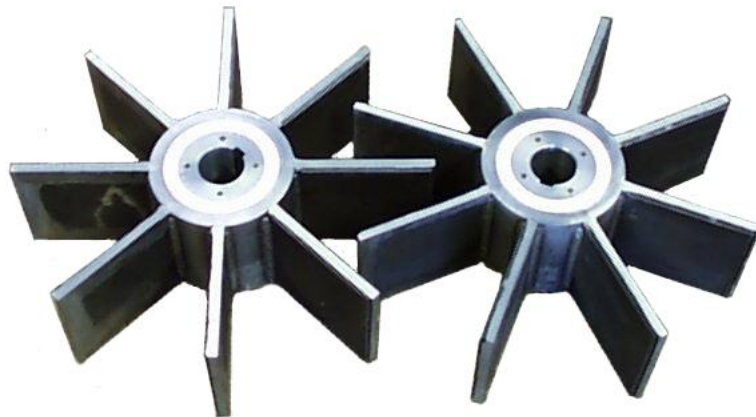
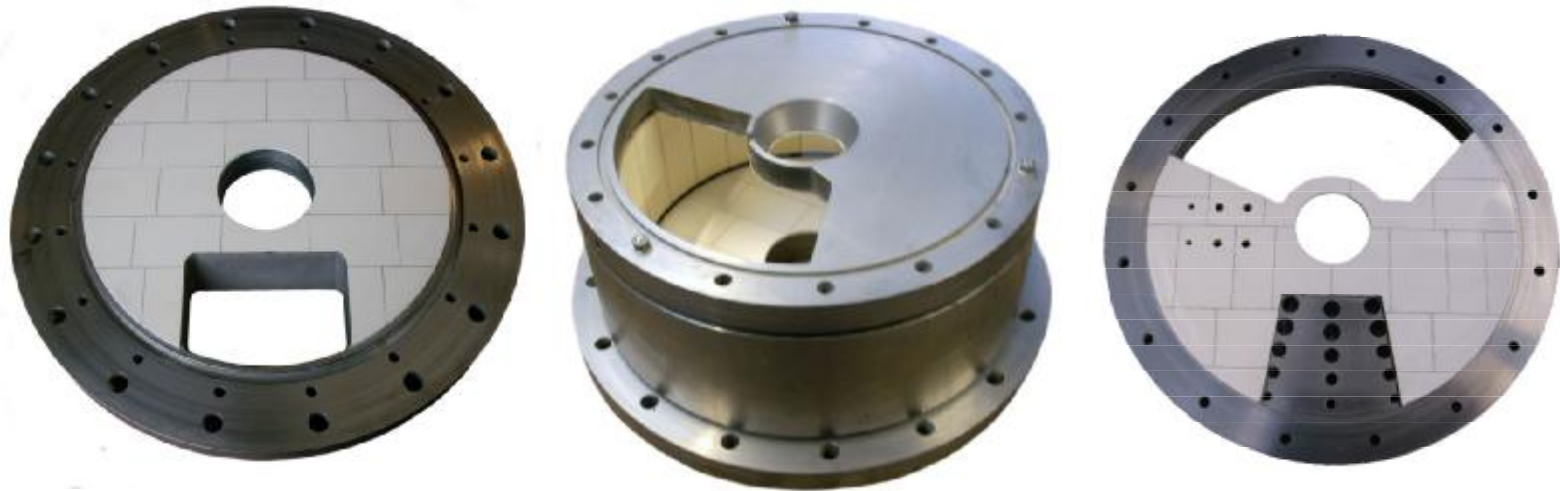
Rotor Seal Options



- *Normal flexible gland packing can be used for the stuffing boxes.*
- *RESILIDE[®] air purge seals can be used in extremely abrasive applications.*
- *Ceramic mechanical seals can be used in abrasive powder and grit applications.*
- *Rubber lip seals can be used when handling fibrous materials, such as saw dust*



Rotofeeders

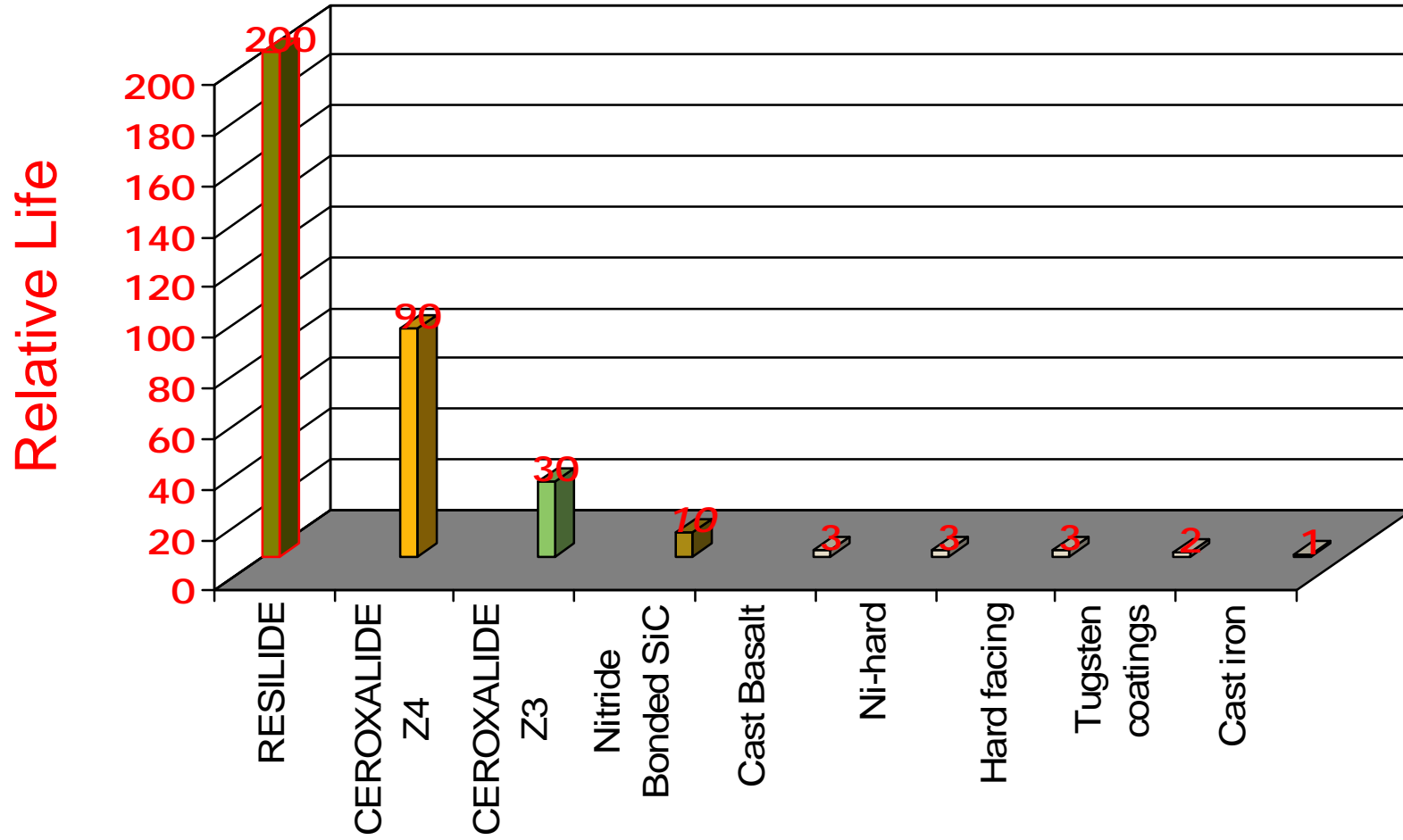


This 650 mm bore Roto-Feeder
Is fully lined with 12 mm thick, fully
diamond ground, 99.7% alumina
ceramic.

The rotor runs with a rotor clearance
of 0.15 mm



Approximate Relative Life of Wear Resistant Materials





Heat Transmission Properties of Wear/Corrosion Resistant Materials.

