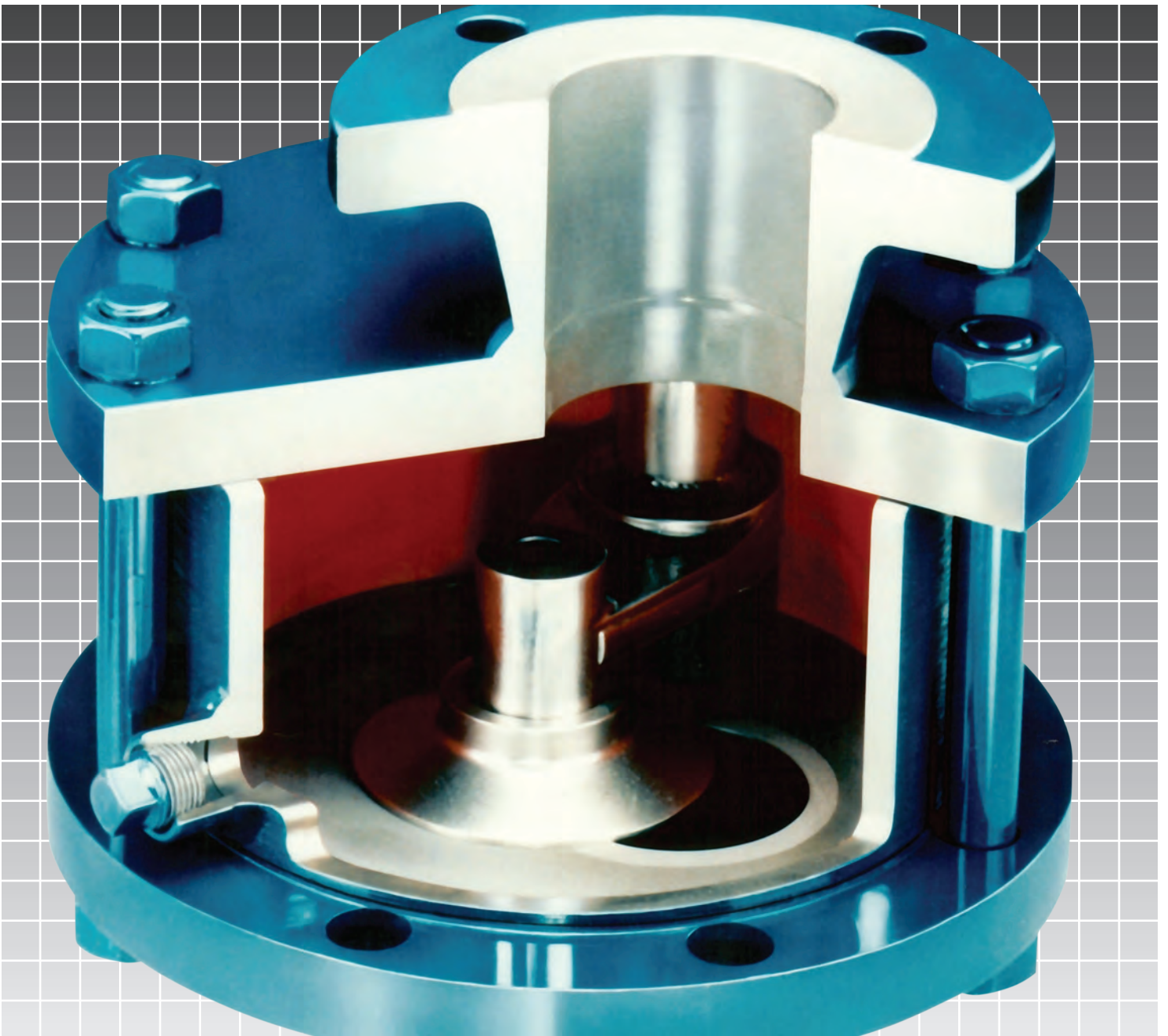


## *ROTATING DISC VALVES*

- *Temperatures to 1500+°F • Pressures to 10,000 psig • Abrasives • Corrosives • Coking • Slurries*
- *High Cycling • Bi-Directional • Intrinsically Fire Safe*



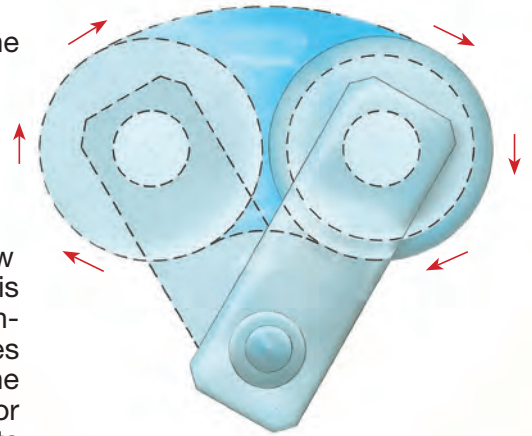
# OVER 100 YEARS OF FIELD PROVEN SERVICE – WITH APPLICATIONS WORLDWIDE.

**PROVEN CONCEPT** Starting in 1904 the unique rotating shearing disc concept was the standard for steam locomotive boiler blowdown. Following this the packaged boiler industry has also accepted the Everlasting quick opening valve where our reputation remains unchallenged. The valve handles boiler blowdown, scale, chemicals, high pressures, temperatures, and flashing condensate, they have an average life of 16 years.

Our slurry valves are installed throughout the world in processes that are abrasive, corrosive or fouling and that have high pressure, temperature or cycling. The unique self lapping metal to metal seat design provides repeated tight shutoff

in severe service, while sealing improves with use.

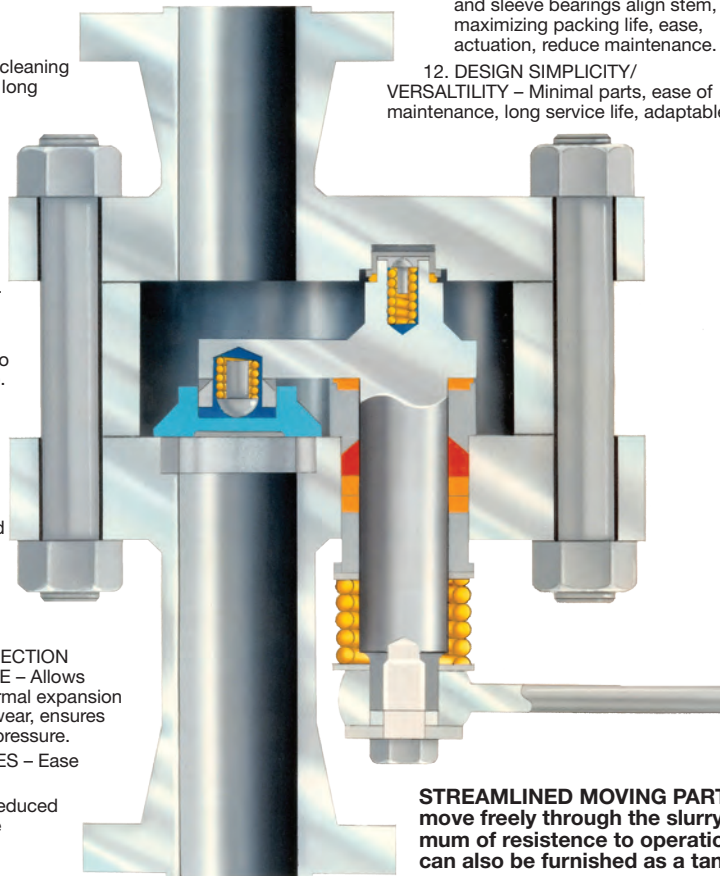
**PRINCIPAL OF OPERATION** The actuator moves the stem and lever arm a quarter turn which drives the disc. The entire sealing surface of the disc is constantly in contact with the seat or pad through force exerted by coiled springs. These springs allow the disc to move vertically. This compensates for thermal expansion and contraction of the valves components also overcoming the effect of any back pressure for which it was designed and prevents particles from lodging between the sealing surfaces. Differences in tangential disc to seat friction forces cause the disc to rotate on its seat



as the valve cycles, thereby shearing and wiping away any process material that may accumulate. No other valve is similar.

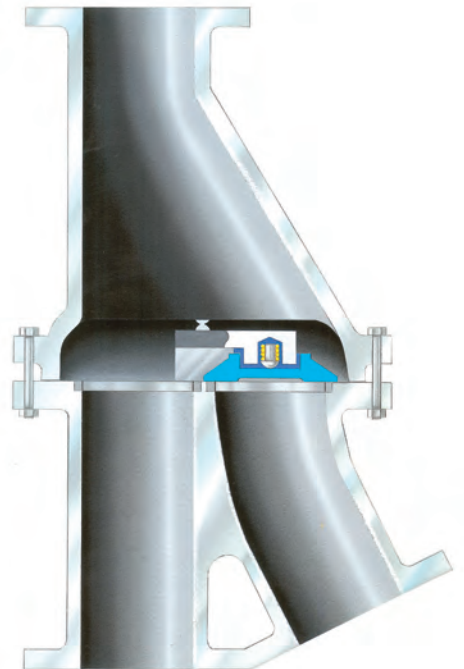
## FEATURES AND BENEFITS

1. UNIQUE ROTATING/SHEARING DISC – Self lapping disc, enhance seat cleaning action, cuts through solids, long lasting tight shut-off
2. METAL TO METAL SEATING – abrasion resistance, wide temperature range.
3. WIDE BAND SEATING – High pressure capability, better sealing than industry standards, force distributed over larger area, less trim wear.
4. FULL PORT – abrasion resistance, no obstruction to flow, minimal pressure drop.
5. ROTATING STEM – Increased packing life, wide selection of actuators.
6. SELF DRAINING BODY – Reduced chance of jamming due to material entrainment, stagnation and degradation.
7. BODY PURGE CONNECTIONS – Ability to flush valve cavity and internals while in operation.
8. SPRING LOADED CONNECTION BETWEEN DISC AND DRIVE – Allows disc to compensate for thermal expansion or contraction, adjusts for wear, ensures tight shut-off, resists back pressure.
9. FLAT SEATING SURFACES – Ease of maintenance.
10. REPAIRABLE SEAT – Reduced inventory, less maintenance expense.



11. STEM BEARINGS – Trunion and sleeve bearings align stem, maximizing packing life, ease, actuation, reduce maintenance.

12. DESIGN SIMPLICITY/VERSATILITY – Minimal parts, ease of maintenance, long service life, adaptable



**THREE WAY, DIVERTING, OR CONVERGING.** This valve is shown in cast configuration suitable to 300 psig. Fabricated version is available for higher pressures and temperatures

**STREAMLINED MOVING PARTS** are made to move freely through the slurry with a minimum of resistance to operation. This design can also be furnished as a tank bottom valve.



# DURABILITY AND PERFORMANCE FOR SHUT OFF AND ISOLATION APPLICATIONS

## SELF LAPPING, WEARS IN-NOT OUT

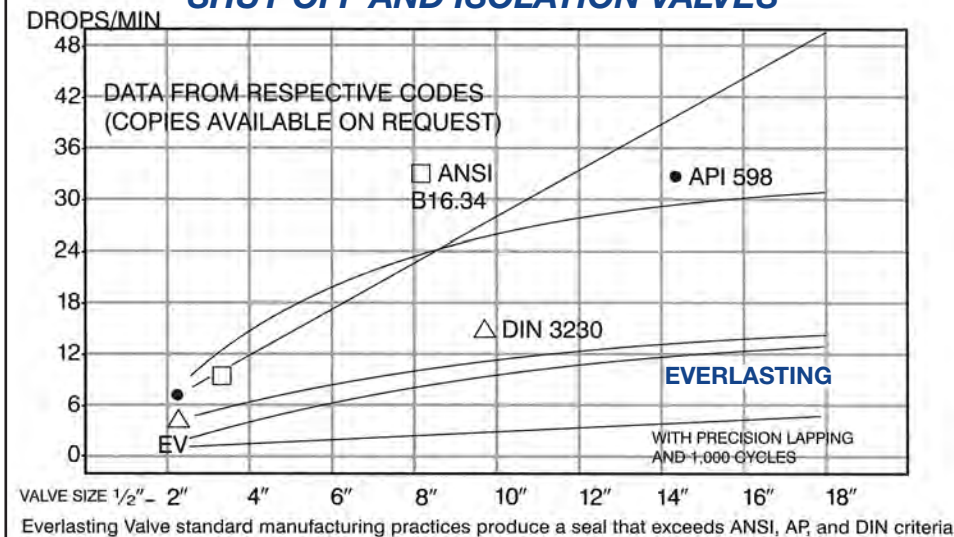
Rotation of the disc produces an action that in the process medium renews and polishes the metal seating surfaces with each operation. This concept is unique causing the Everlasting valve to wear in with use while all other valves are busy wearing out.

**TIGHT SEAL ASSURED** The wide seat and disc surfaces are routinely machine lapped during manufacture within several light bands of flatness. This produces a seal that is better than industry standards for SHUT OFF and ISOLATION valves. (Refer to graph). Precision lapping and factory cycling of the valve can reduce leak rates further.

## CONSTRUCTION

- SIZES 1/2" to 18"
- END CONNECTIONS:  
Screwed, flanged, socket and butt weld
- BODY MATERIAL:  
Cast Iron/Ductile Iron  
Carbon Steel  
Stainless Steel  
Weldable Alloys  
Packing Seals  
Grafoil or PTFE
- DISC/SEAT MATERIAL:  
Stellite #6  
440C Stainless Steel
- BASIS OF DESIGN:  
Vacuum to 10,000 PSIG  
ANSI Classes 150, 300, 600, 900, 1500, 2500
- TEMPERATURES:  
-350°F to 1500+°F
- ACTUATORS:  
Manual Lever  
Manual Wheel  
Pneumatic  
Hydraulic  
Electric

## ALLOWABLE LEAK RATES SHUT OFF AND ISOLATION VALVES

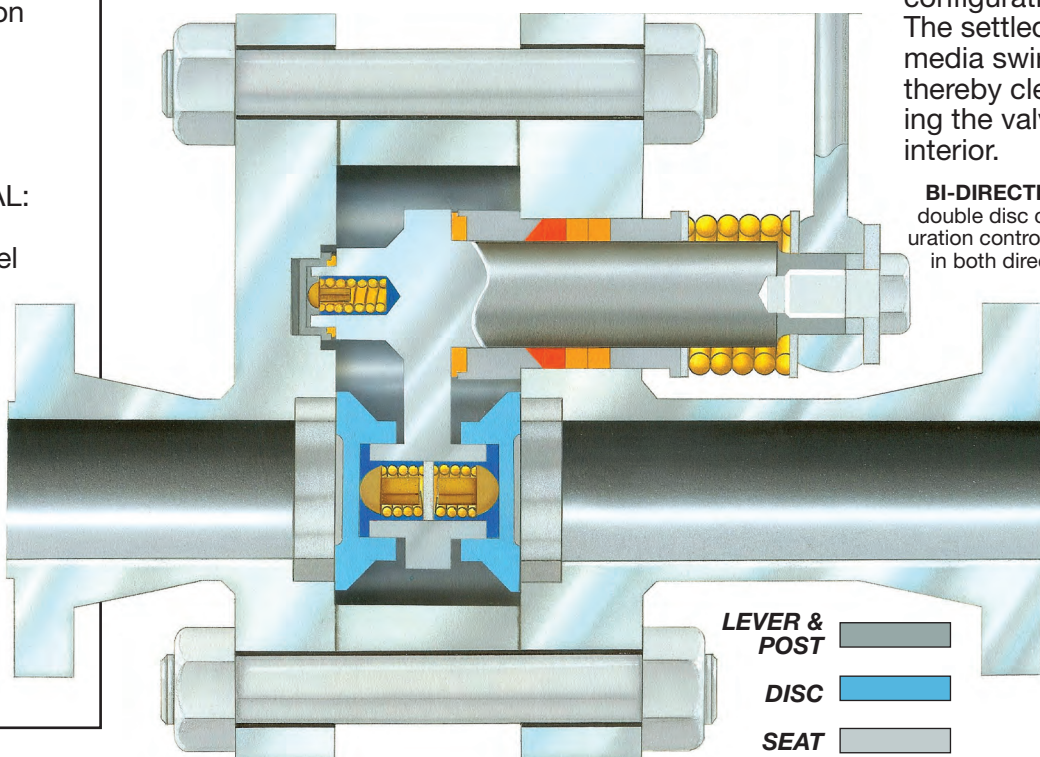


**SELF CLEANING** The valve body openness provides space for the product to be freely displaced by the lever arm and disc with each cycle. Fines can not compact in small open

areas and possibly jam components as is the case with other valve concepts. Each time the valve opens to discharge product, a vortex is caused by the eccentric body to port

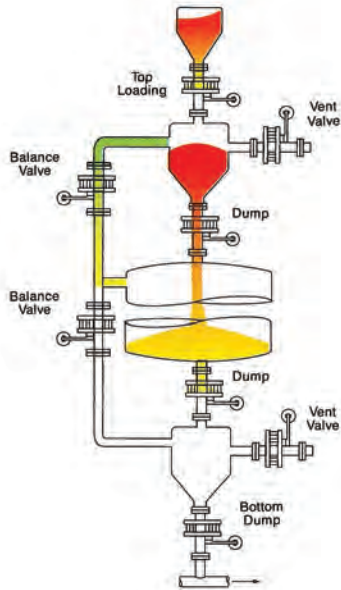
configuration. The settled media swirls; thereby cleaning the valve's interior.

**BI-DIRECTIONAL**  
double disc configuration controls flow in both directions.

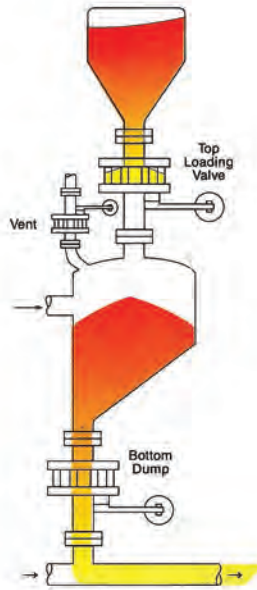


# Everlasting Abrasive Service Valves

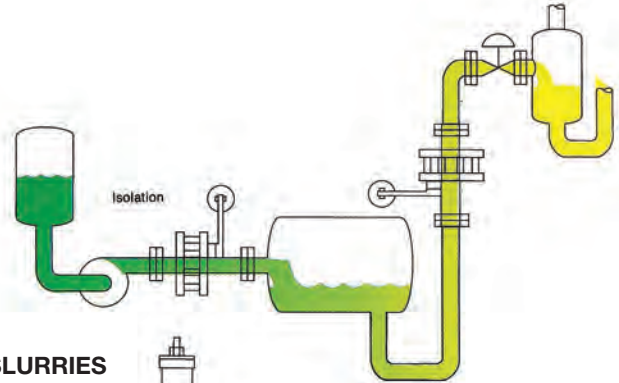
Everlasting PROCESS and BULK MATERIAL VALVES are used where existing valves or rotary feeders are repaired or replaced more than once a year. Sizes range from 1/2" to 18", vacuum to class 2500, temperatures +1500° F.



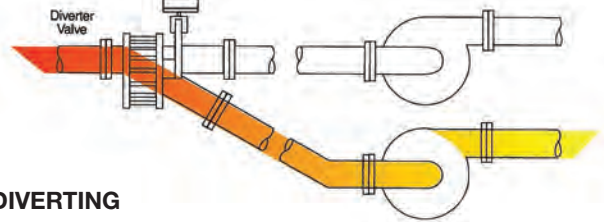
1. REACTOR LOADING



2. PNEUMATIC CONVEYING



3. SLURRIES



4. DIVERTING

Their open body concept is self cleaning and incorporates precision flat lapped hard metal seals and discs that move in non-wedging, non-binding fashion through abrasive materials whether they are dry powders or in a slurry. Differences in tangential disc to seat friction cause the disc to rotate a few degrees with each cycle. This rotation polishes the mating surfaces improving the valve's seal with each operation. HERE ARE SOME APPLICATIONS

## 1. REACTOR LOADING

Everlasting valves are used to replace other valves or rotary feeders for reactors that can begin its process with positive pressure then drop to a negative pressure. Pressure Equalizing valves balance the loading or let-down hoppers so the reactor valves may cycle with zero differential. They also may cycle with a full differential. Pressure Equalizing valves are opened to either allow media to enter the loading hopper or the let-down hopper.

## 2. PNEUMATIC CONVEYING

Usually there are trains of two or more vessels that alternate continually to transport media. The vessel valves duty cycle

are often less than once a minute. The vent valve being smaller is exposed to higher than system velocities, it must resist erosion from the particulate laden atmosphere being discharged between vessel cycles. Everlasting's unique totalizing disc valves are being bought for more of these systems with each day.

## 3. SLURRIES

Everlasting's eccentric body configuration tends to swirl the flowing media. This design was developed over 100 years ago to handle solids specifically. Other types of valves allow the media to accumulate in small clearances around the seats or between its sealing member and body causing them to jam.

In this real situation the vessel volume is 16,000 cubic feet maintained above 500 psig including mine tailings dissolved in acid that exceeds 400°F. The isolation valves are normally open and cycle closed after several months operation for change out of a modulating flash let-down valve without losing system pressure. When the isolation valves fail to seal it takes nearly a day to bleed the system and half a week to start-up. Production loss is worth a small

fortune, literally and so are yours. Space age metals and ceramics used alone could not overcome the attacks of corrosion, erosion, and agglomerating media. The Everlasting Process valves combined the latest materials and its unique design to solve this problem.

## 4. DIVERTING

The rotating disc concept is ideal for diverting flow to storage bins or silos and to isolate pumps for maintenance. Everlasting diverters remain operating for years in 65% coal and sludge slurries. Turn them around and they converge the process from separate sources into a single stream. There are no small spaces where fines can compact to jam its components. After the customer tested a dozen other manufacturer's products in a simulated system, the Everlasting Diverter design was selected for use in processing abrasive, corrosive, chemical waste.

Whether your applications require carbon, stainless steel or space age materials, you can give your abrasives handling problem to the Everlasting 100 year old workaholic.



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