

# 459

ZIRCONIA  
CERAMIC LINED

**PureFlex**<sup>®</sup>  
an ANDRONACO INDUSTRIES company

# The future of erosion control is about to change

# 459

## Tough Valve For Tough Services

Ceramic Lined

PureFlex 459 series ceramic lined composite ball valve is a superior quality, ANSI Class 150 valve engineered with features not yet available in any other ceramic valve. The valve body is manufactured from strong, light weight advanced premium Z-Core® epoxy resin reinforced with carbon graphite. The ceramic liner / seats and ball are Yttria-partially stabilized zirconia (Y-TZP) which provides unmatched impact resistance. The valve is able to withstand abrasion, cavitation, wear, thermal cycling and severe corrosive media and environments up to 275°F. The 459 series ball valve exceeds Class IV shut-off and its stem seal will meet your routine or most rigid service requirements. The massive one piece body meets ANSI B16.10 dimensions and its ISO 5211 universal mounting pad and flange mounting makes automation simple even with the valve in service. The 459 series valves are 1/2 the weight of competitors ceramic valves, offers maximum corrosion resistance, the virtual elimination of product entrapment and provides the ultimate in flexibility and value.

LIMITED  
**2**  
YEAR  
WARRANTY

### Flow Control Options



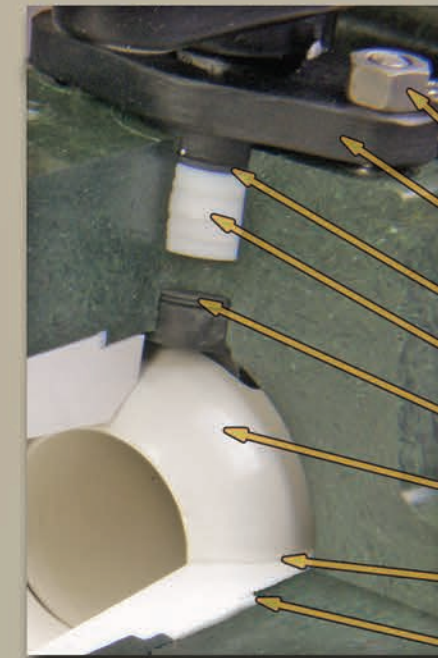
Full Cv    60 Degree    30 Degree    15 Degree



Independent locking wrench stop and ISO-5211 universal mounting pad for actuation

Locking wrench manufactured from Durcor®-62™ vinyl ester and is virtually unbreakable

**Strong**  
**Light Weight**  
**Zero Corrosion**



### Features

- Hastelloy® C276 Hardware
- Patented Durcor®-62™ Live-Load™ packing gland
- Stem Bearing - Graphite / PTFE
- Stem Sealing - PTFE Chevron type
- Thrust Bearing - Graphite / PTFE
- Ball - Yttria-Partially Stabilized (Y-TZP) Zirconia
- Seats / Liner - Full cavity filled Yttria-Partially Stabilized (Y-TZP) Zirconia
- End Cap Seal - PTFE coated Viton®

### Industries Served

**Coal-Fired Power**  
**Pulp & Paper**  
**Steel**  
**Mining**  
**Chemical Processing**  
**Pollution Abatement**



### Applications

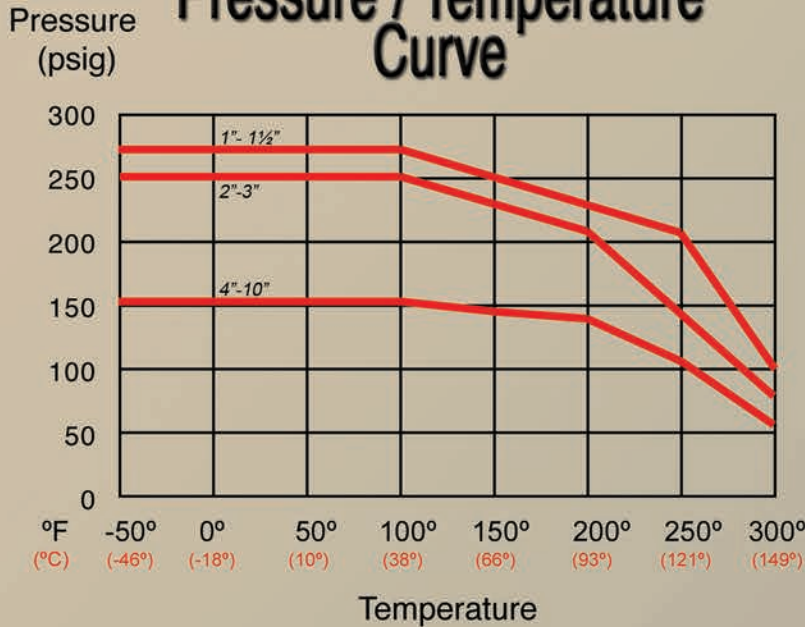
**Desulfurization**  
**Corrosive Pulps**  
**Iron Ore Tailings**  
**Titanium Dioxide Slurry**  
**Fly Ash**  
**Lime Slurry**  
**Calcium Chloride Brine**  
**Scrubber Liquor**  
**Fume Scrubber**  
**Sand Slurry**  
**Pump Cavitation**  
**Valve Throttling**

### Knoop Hardness Comparison

<b>PureFlex 459 Zirconia Y-TZP</b>	<b>1,200</b>
Tungston Carbide Hardfacing	780
Porcelain	600
Glass	484
Titanium	437
Stainless 316	169
Carbon Steel Rolled	169
Stainless 304	138

# Technical Data

## Pressure / Temperature Curve



## Cv Data

VALVE SIZE	FULL OPEN CV
1"	45
1 1/2"	120
2"	165
3"	350
4"	550
6"	1245
8"	2150
10"	2500

## Actuator Sizing

VALVE SIZE	TORQUES @ MAX. DIFF. PSI
1"	70 in.-lbs.
1 1/2"	160 in.-lbs.
2"	180 in.-lbs.
3"	440 in.-lbs.
4"	920 in.-lbs.
6"	1745 in.-lbs.
8"	2650 in.-lbs.
10"	3900 in.-lbs.

## Valve Data

**SIZE RANGE:** 1" TO 10"

**CERAMIC:** YTTRIA-PARTIALLY STABILIZED ZIRCONIA

**PRESSURE RANGE:** FULL VACUUM TO 275psi

**MAXIMUM SHOCK:** INSTANTANEOUS THERMAL = 200°F

**TEMPERATURE RATINGS:** (-)50°F TO 275°F

(PROCESS FLUID MAY EFFECT TEMPERATURE LIMIT, PLEASE CONSULT PUREFLEX CHEMICAL GUIDE)

**FLOW:** BI-DIRECTIONAL

**CONFORMANCE:** CONFORMS TO ALL APPLICABLE

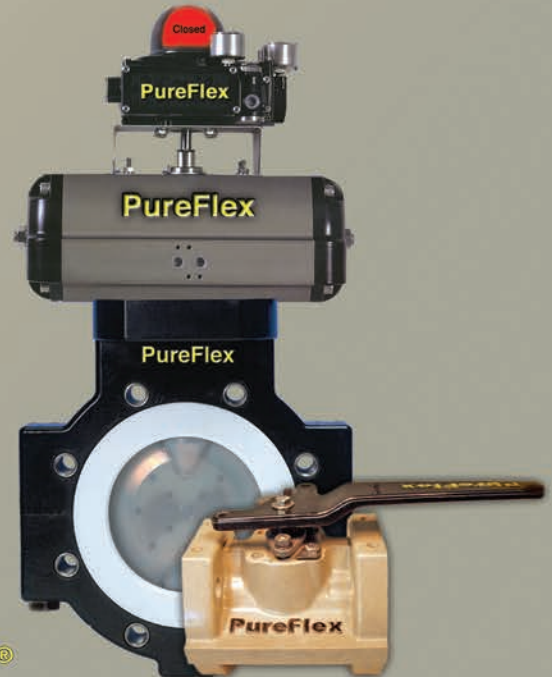
STANDARDS OF ANSI / ASME B16.10, API-598,

MSS-SP72 AND ISO-5211

**FLANGE ADAPTABILITY:** ANSI B16.5 CLASS 150 (STD)

DIN, JIS AND BS AVAILABILITY

**SHUT OFF:** EXCEEDS ANSI/FCI 70-2 CLASS IV



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 an ANDRONACO INDUSTRIES company

4855 Broadmoor Ave.  
 Kentwood, MI. 49512 USA

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