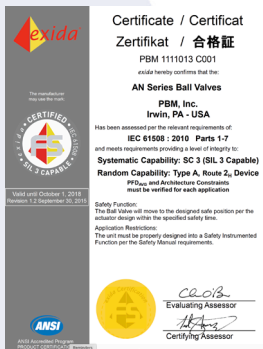
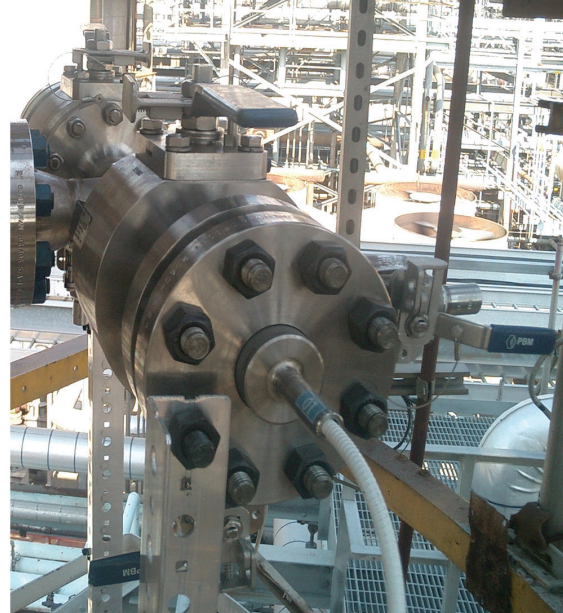


# Metal Seated Ball Valves

VALVE SOLUTIONS ENGINEERED  
FOR DEMANDING APPLICATIONS

- CHEMICAL/PETROCHEMICAL
- MINING
- OIL & GAS
- POWER GENERATION
- PULP & PAPER
- REFINING



SIL-3 Certification

# Metal Seated Ball Valves

for high temperature, abrasive, and severe service applications

## PBM's Metal Seated Valve Applications include:

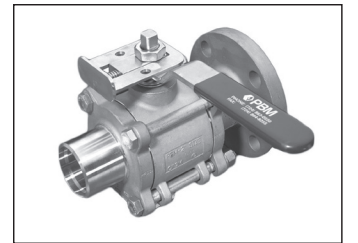
- HIGH TEMPERATURE UP TO 800°F/427°C
- CORROSIVE MEDIAS
- EROSIVE MEDIAS
- STEAM SERVICE
- ABRASIVE MEDIAS
- MODULATION SERVICE (for specific applications)



The seat is coated and lapped to match ball, creating a positive seal.

## Design Features:

- 1/2" through 10", 150# through 1500# class available
- Design capabilities to provide custom valve configurations to address severe service applications including thermal expansion.
- Quick ship 1/2" through 4" split body ANSI Class 150/300 and 3-pc design 2-Way and 3-Way Diverter Valves
- Temps up to 800°F/427°C
- Class V shut-off, Class VI available as an option with limited cycle life
- Live-loaded packing assures long maintenance-free operation
- PBM's metal seated valves are fundamentally firesafe
- Valves with weld end fittings can be welded without disassembly.
- Optional patented locking lever handle or gear operator and complete line of automation and controls
- Complete repair services available - fast turn around on valve repair
- SIL-3 capable per IEC 61508
- Extended handles and automation brackets available for higher temperature services
- Optional API-622 packing design available to address Low-E requirements up to 800°F
- Stem design, sizing torque, and pinned rigid actuator linkage per application eliminate stem twist and ensure alignment in high torque applications.



Specially designed carbide and/or ceramic thermal spray coatings are a valve industry standard. All of the coatings are applied robotically in the USA, using the Accuraspray Plume Sensor System, to insure consistently high quality coatings.

## Coating Options :

### Chrome Carbide, 20% Nickel/Chrome

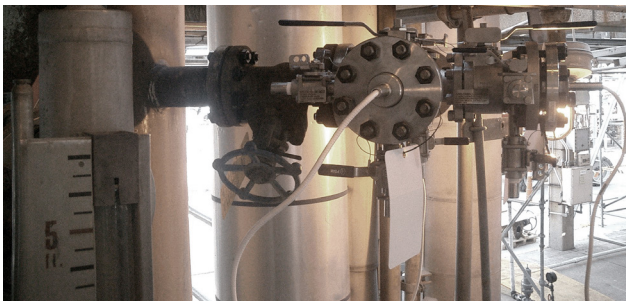
A hard coating that does not oxidize at high temperatures. Provides good abrasion, particle erosion cavitation and fretting resistance in high temperature environments. Good corrosion resistance and sliding properties.

### Tungsten Carbide, 10% Nickel

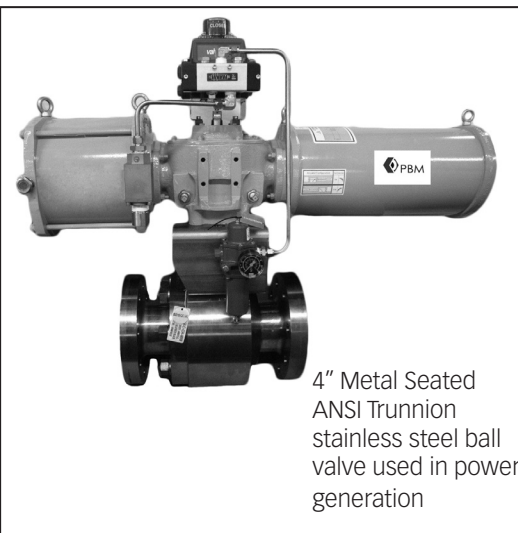
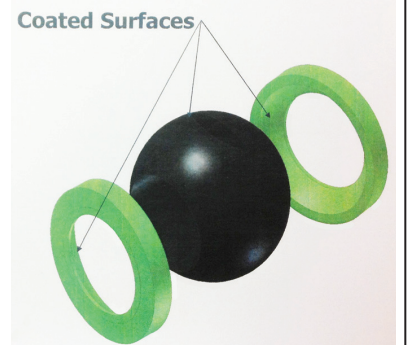
A hard, dense coating to resist high abrasive conditions, as well as particle erosion and fretting while providing the corrosion resistance of nickel with minimal loss of heat resistance.

CHROME CARBIDE	
TYPICAL COMPOSITION, WT%	
Nickel Chrome	20%
Chrome Carbide	Balance
COATING CHARACTERISTICS	
Bond Strength, PSI	>10,000/ 690 bar
Hardness	67
Porosity	2%
Max. Service Temperature	800°F/427°C

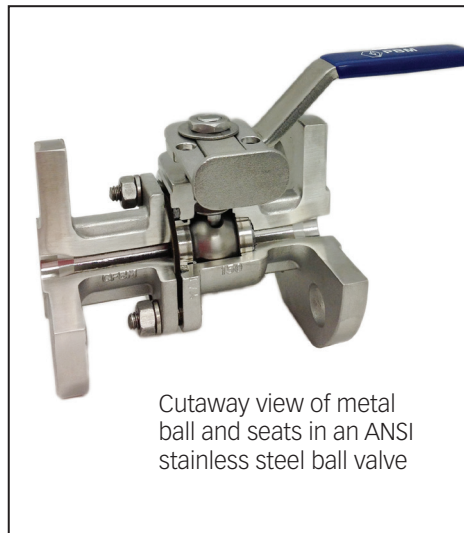
TUNGSTEN CARBIDE	
TYPICAL COMPOSITION, WT%	
Carbon	3.7%
Iron	0.5%
Nickel	10.0%
Tungsten Carbide	Balance
COATING CHARACTERISTICS	
Bond Strength, PSI	>10,000/ 690 bar
Hardness	65-58 RC
Porosity	<1%
Max. Service Temperature	800°F/427°C




- Thermal Spray Coating applied to noted surfaces
- Ground & lapped surfaces
- Excellent sealing between ball and seats
- Anti-galling coating



4" Metal Seated ANSI Trunnion stainless steel ball valve used in power generation



Cutaway view of metal ball and seats in an ANSI stainless steel ball valve

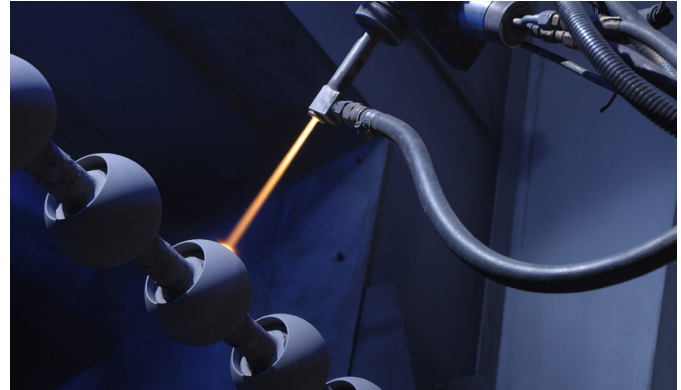
 <small>PBM Valve Solutions</small> <small>www.pbmvalve.com</small>		<small>Form 17-2018-0101 Rev 1 (October 2018)</small>	
DATE: _____ CUSTOMER: _____ ADDRESS: _____		<b>SPECIFICATIONS:</b> * SIZE: _____ <b>MATERIALS:</b> * BODY: _____ * STEM: _____ * BALL BASE MATERIAL: _____ * BALL COATING: _____ * SEAT BASE MATERIAL: _____ * SEAT COATING: _____ * PACKING MATERIAL: _____ * JACKET MATERIAL: _____	
ITEM # _____ TAG # _____ QUANTITY: _____		<b>APPLICATION:</b> * SERVICE: _____ * PROCESS: _____ * FLUID: _____ * TEMP: _____ * PRESSURE: _____	
REMARKS/SKETCH: _____  VALVE INSTALLATION: _____ VERTICAL _____ HORIZONTAL * VALVE NORMALLY: _____ OPEN _____ CLOSED VALVE CYCLES PER DAY: _____		<b>END CONNECTIONS:</b> * BODY: _____ <b>ACTUATION:</b> * AIR: _____ PSI * ELEC: _____ VOLTS * PHASE: _____ HZ	
END USER: _____ ADDRESS: _____		ACCESSORIES: _____ _____	

Request a PBM application inquiry sheet to ensure the right valve for your applications. Find this sheet on our website: [www.pbmvalve.com/metal-seated-ball-valves](http://www.pbmvalve.com/metal-seated-ball-valves)



# Coating Testing

- Bond Strength Tensile Test
- Shear Strength Tensile Test
- Macro Hardness Rockwell Test
- Porosity Determination
- Bond Line Contamination
- Abrasion Wear Testing



## Thermal Spray Coatings

We can offer various thermal spray coatings for your corrosion and wear resistance needs. The fully automated thermal spray system offers high level consistency in the thermal spray process. We also utilize a large amount of exotic alloys.

## Special Applications

PBM's Special Application Valves solve unique or challenging processing problems.



## How to order:

POS 1 & 2	POS 3 & 4	POS 5	POS 6	POS 7-8	POS 9
PRODUCT	MATERIAL*	SIZE*	SERIES	END CONNECTION*	SEAT & SEAL
AN = ANSI	C- = Hastelloy® 276	C = 1/2 inch	5	B- = Sch 40 Buttweld	F = Metal Seats/ Graphite Seals
DP = Three-Way Diverter Port	E- = Carbon Steel	D = 3/4 inch		L- = 150# Flange	
SP = Two-Way	H- = 316 Stainless Steel	E = 1 inch		M- = 300# Flange	
	HC = Alloy 20	G = 1-1/2 inch		Q- = Female FPT	
		H = 2 inch		U- = Socket Weld	
		J = 2-1/2 inch			
		K = 3 inch			
		L = 4 inch			

IM Valves are also available with metal seats.

\*Consult factory for additional sizes, pressure classes, end connections, materials, and other configurations including double block and bleed valves.

POS 10 & 11	POS 12	POS 13 & 14	POS 15
FLOW PATTERN/TANK PAD	BALL/STEM	OPERATOR**	POLISH
Positions used for DP with 2-digit flow pattern #	1 = Chrome Carbide (standard) 2 = Tungsten Carbide	-- = with manual lever operator 00 = Stainless locking oval handle 02 = Bare stem 04 = Locking lever handle 08 = with manual gear operator 20 = 80 psig supply double acting 27 = 60 psig supply double acting 34 = 80 psig supply spring return 41 = 60 psig supply spring return	- = no polish A = 20 RA ID polish F = 20 RA ID polish EP

\*\*Full line of automation & controls are available. Consult PBM for solenoid, limit switch, and other optional codes.

Scan this qr code for all PBM's brochures.



[www.PBMValve.com](http://www.PBMValve.com)

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