



KTM SERIES POWDER DISCHARGE SYSTEM (PDS) BALL VALVES

A solution for powder handling applications, suitable for high speed and high frequency polyethylene (PE)/polypropylene (PP) processing applications



FEATURES

- For use in on-off powder service such as polyethylene, polypropylene and hydrocarbon vapor mixture etc.
- Superior seating: ANSI/FCI 70-2
- Spring loaded seat maintains close contact with ball assuring tight sealing even at low pressure. This results in stable opening and closing torques at high differential pressures over a wide range of temperatures.
- Scraper design for metal seat mechanically minimizes residual powder between surfaces of ball and seat to maintain seal ability during operation and to maintain smooth open-close action.
- Powder proof devices around seat areas. The spring area is shielded from contaminants by means of innovative ring to provide a constant and stable seat loading to ensure smooth operation.
- The valve stem is made of low alloy steel to maintain high strength. Electroless nickel plating for corrosion and abrasion resistance.
- A non-lubricated dry PEEK bearing with low friction (for upper stem and lower stem) provides high abrasion resistance.
- Allowable min temp. of the actuator is -45°C.

GENERAL APPLICATION

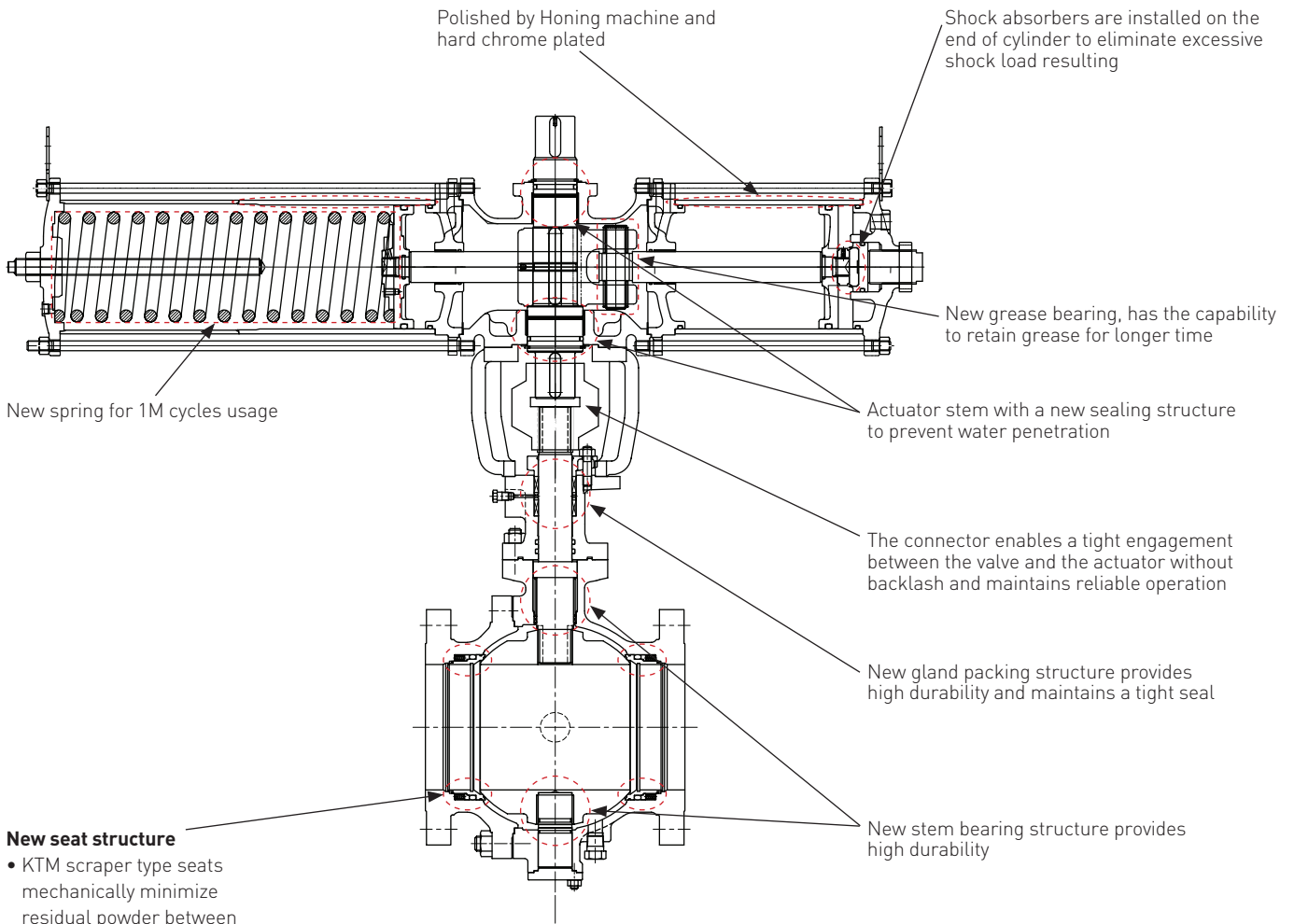
- Polyethylene
- Polypropylene
- Other powder discharge systems

TECHNICAL DATA

Sizes: DN 15 - 350
Pressure rating: ASME Class 150 to 600
Temperature: -46°C to 180°C

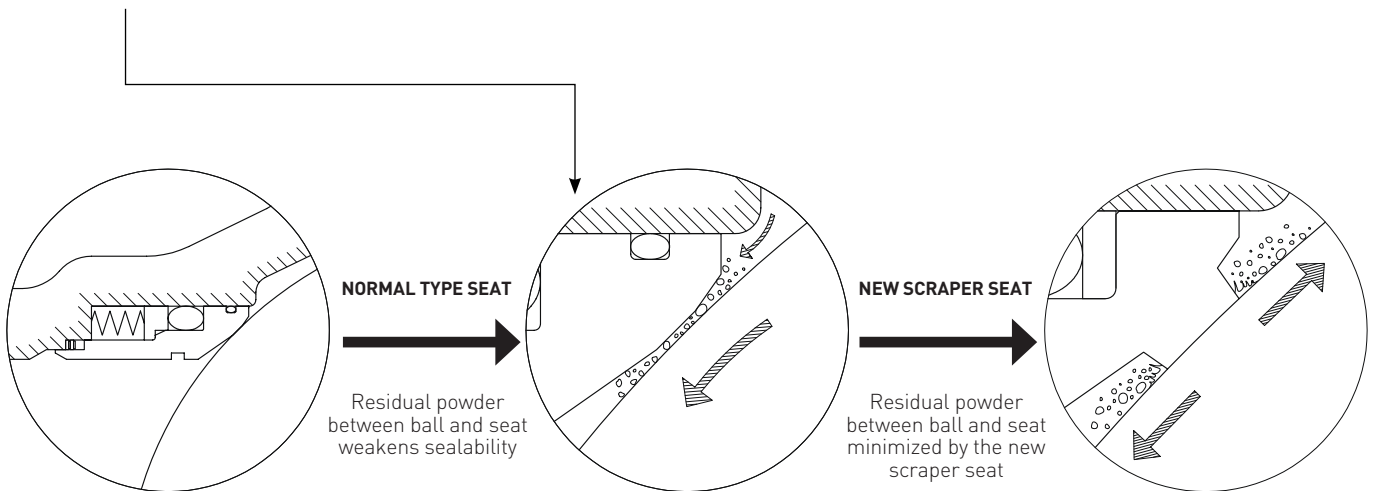
Standards
Face to face: ASME B16.10
End connection: ASME B16.5

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New seat structure

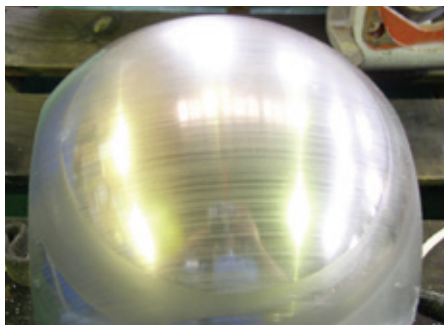
- KTM scraper type seats mechanically minimize residual powder between ball and seat to maintain sealability during operation
- New seat structure prevents powder penetration to the inside of seat and ensures smooth operation



KEY CHANGES TO THE EXISTING KTM PDS BALL VALVE AND ACTUATOR

KTM SERIES POWDER DISCHARGE SYSTEM (PDS) BALL VALVES

PERFORMANCE VALIDATION OF THE PDS VALVE



AFTER 200.000 CYCLES



AFTER 500.000 CYCLES



AFTER 1.000.000 CYCLES

BALL IMAGES OF A TESTED PDS VALVE AFTER DIFFERENT NUMBER OF OPERATION CYCLES

The PDS ball valve has been designed and tested to last for 1 million cycles and more (figure above). The innovative design features help to overcome the typical failure modes observed in ball valves used for powder applications and ensure a long life of over 1 million cycles delivering high performance with safety thereby enabling longer mean time between maintenance schedules, improved plant availability and process operation efficiency resulting in great benefits to the plant operators.

DIMENSIONS - RAISED FACE CLASS 150

Valve size (DN)	Face to face (mm)
50	178
80	203
100	229
150	394
200	457
250	533
300	610

DIMENSIONS - RAISED FACE CLASS 300

Valve size (DN)	Face to face (mm)
50	216
80	283
100	305
150	403
200	502
250	568
300	648

DIMENSIONS - RAISED FACE CLASS 600

Valve size (DN)	Face to face (mm)
50	292
80	356
100	432
150	559
200	660
250	787
300	838

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PARTS LIST

Items	Description
Body and body cap	A216 WCB, A352 LCB or A351 CF8M
Ball	A351 CF8M with nickel alloy overlay (Tungsten carbide facing is an option)
Seat	316 SS with stellite facing - scraper design or PEEK (Tungsten carbide facing is an option)
Stem	SCM 435H [equivalent to AISI 4137] with electroless nickel plating
Stem packing	Double gland packing with RPTFE/PEEK adapter

HARD FACING CHARACTERISTICS

Hard facing	Main content	Methods	Thickness	Hardness	Temperature	Corrosion resistance
Stellite	Co, Cr, W	Welding	1.5 - 3 mm	HRC 40 - 44	500 - 600°C	Similar with 316 SS
Nickel alloy overlay	Ni, Cr	Powder type overlay (Fused coating)	0.5 - 1 mm	HRC 50 - 60	Max 650°C	Better than 316 SS
Tungsten carbide	WC, WCr, Ni	Plasma sprayed	30 - 250 microns	HV 1000 - 1200 HRC 69 - 71	Max 350°C	

SELECTION GUIDE

Example	E0126	M	K	62	BY
Valve code					
EB11*	Full bore, floating type, ASME CL150 (DN 15 - 40)				
EB12*	Full bore, floating type, ASME CL300 (DN 15 - 40)				
E1108*	Full bore, floating type, ASME CL600 (DN 15 - 40)				
E0125	Full bore, trunnion type, ASME CL150, (DN 50 - 200)				
E0126	Full bore, trunnion type, ASME CL300, (DN 50 - 200)				
E0105	Full bore, trunnion type, ASME CL150, (DN 250 - 350)				
E0106	Full bore, trunnion type, ASME CL300, (DN 250 - 350)				
E0108	Full bore, trunnion type, ASME CL600, (DN 50 - 350)				
Sub code					
M	Metal seated				
Blank	Soft seated				
Special feature					
K	Powder service				
Blank	Feature for powder service shall be selected				
Body code					
62	A216 WCB				
50	A352 LCB				
32	A351 CF8M				
Trim code	Ball	Seat	Stem	Seal	
BY	CF8M SFNI	316 SS Stellite	SCM 435H ENP	RTFE	
BG	CF8M SFNI	316 SS Stellite	SCM 435H ENP	Graphite	
WY	CF8M WC	316 SS WC	SCM 435H ENP	RTFE	
WG	CF8M WC	316 SS WC	SCM 435H ENP	Graphite	

SFNI - Nickel alloy overlay

ENP - Electroless Nickel Plating

WC - Tungsten Carbide coating

* These PDS valves are available only for high frequency operations with hard facing for ball and scraper seats for powder media.