

KTM RICHARDS FIGURE R741/R743 PIN TRUNNION VALVE

DN 50 - 200

KTM Richards firesafe and anti-static ASME150/300 reduced bore, one piece, end entry, pin trunnion ball valve for the chemical and petroleum industries.

- R741 ASME class 150
- R743 ASME class 300



GENERAL APPLICATION

Ideally suited for use in the oil and gas production, refining and chemical applications. Body material and wetted trim components conform to NACE standard MR0175 - 2002.

Hazardous areas handling flammable fuels, gases or chemicals where 'fire-safe', or anti-static valves are mandatory or desirable.

TECHNICAL DATA

Size range: DN 50 - DN 200
 Pressure rating: ASME class 150 to 300
 Temperature rating: Up to 260°C
 End connections: Flanged ASME B16.5

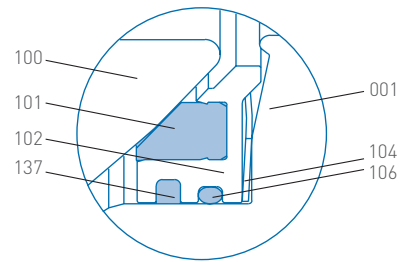
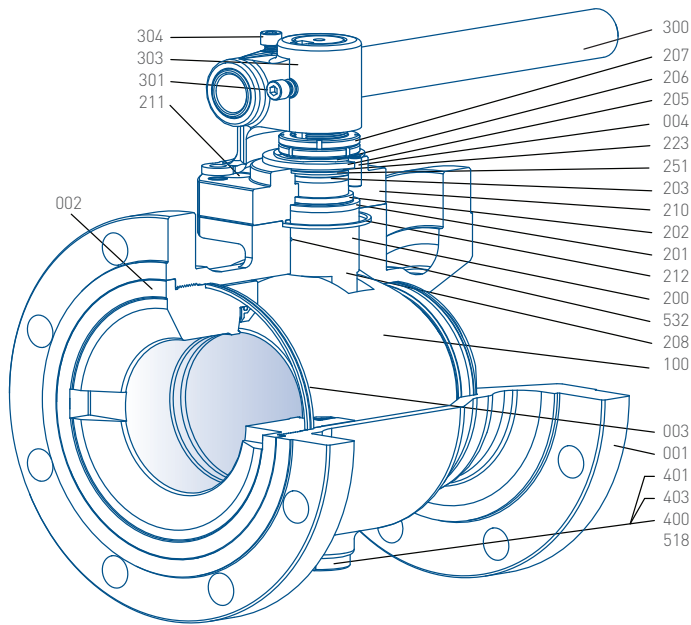
FEATURES

- Designed to ASME B16.34, API 608 and ISO 17292. Optional testing to API 6D / ISO 14313
- Single piece end entry body design complies with ASME B16.34
- ISO 5211 top mounting flange
- Face to face ASME B16.10
- Fire Safe tested and certified to API 607 by Lloyd's Register Asia
- Flange connection to ASME B16.5 as standard
- One piece body offers total pipe integrity minimizing the number of potential leak paths
- Carbon steel or stainless steel body as standard
- Precision 316 stainless steel ball and duplex stem as standard
- Blow-out proof shouldered stem
- Anti-static device to API 608
- A secondary metal "firesafe" seat
- Spring energized constrained seat design
- Double block and bleed capability (optional)
- Optional cavity pressure bleed / vent fitting
- External replaceable weather seal
- Emergency sealant facility (optional)
- Spring energized stem assembly to compensate for wear and temperature changes
- Optional fugitive emission stem seal package
- Vented ball equalizes body cavity pressure in open position and prevents possible seat damage
- Manufactured under quality system ISO 9001 Cert. No. MEL0929678/A and API 6D Q1 Cert. No. 6D-0243
- All valves factory hydro/air tested to API 598
- Certificate of Compliance to EN 10204 / ISO 10474 Type 3.1 (DIN 50 049) are supplied as standard
- EC Certificate of Conformity for PED 97/23/EC, Schedule 4, Module H



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Seat detail

NOTE:

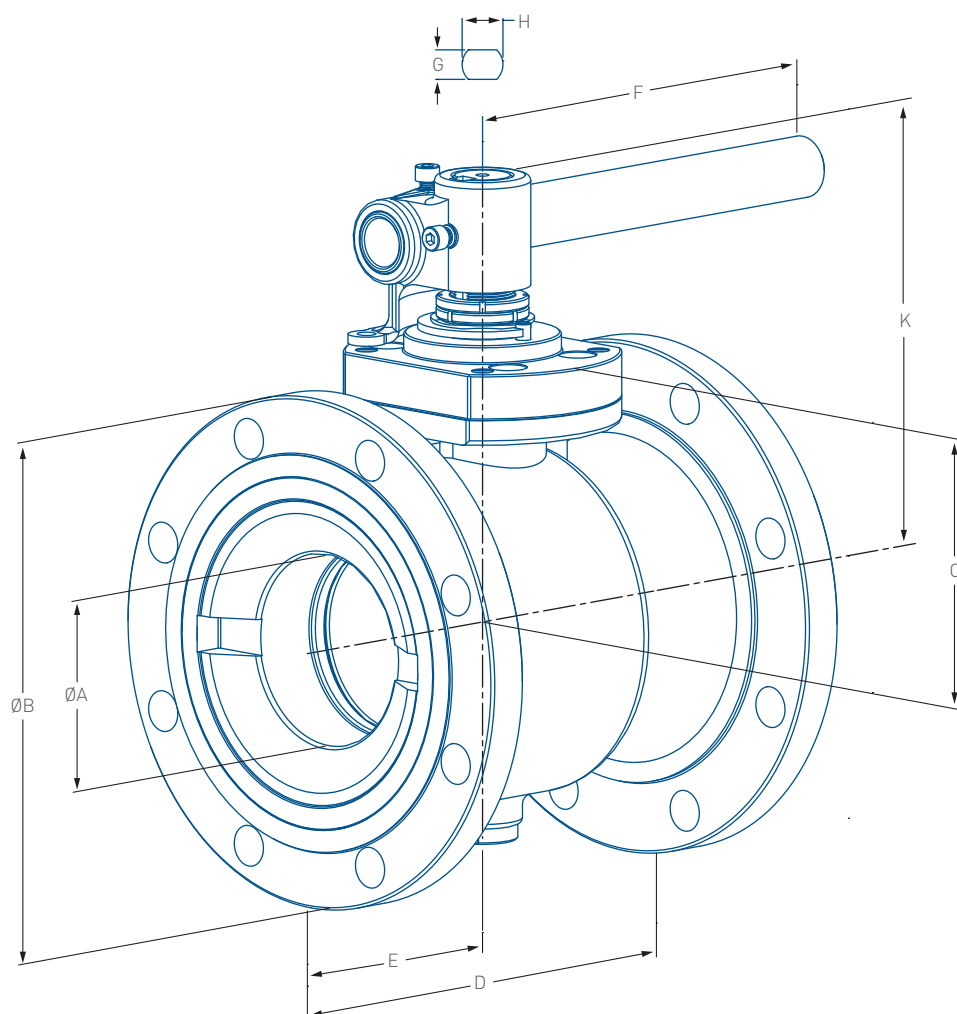
Pressure containing materials conform to NACE MR0175 - 2002.

PARTS LIST

No.	Description	Carbon steel	Stainless steel
001	Body	ASTM A216-WCC	ASTM A351-CF8M
002	Body insert	ASTM A216-WCC	ASTM A351-CF8M
003	Body insert seal	Virgin PTFE	Virgin PTFE
004	Stop pin	UNS S31600	UNS S31600
100	Ball	UNS S31600	UNS S31600
101	Seat (Code 2 - Energized)	Carbon reinforced PTFE	Carbon reinforced PTFE
102	Seat follower (Energized seat)	UNS S31600	UNS S31600
104	Seat spring (Energized seat)	Inconel	Inconel
106	Seat housing seal (Energized seat)	FKM A	FKM A
137	Aux seat housing seal (DN 200)	Flexible graphite	Flexible graphite
200	Stem (Standard)	UNS S31803	UNS S31803
	Stem (High strength)	(Optional - UNS S17400)	(Optional - UNS S17400)
201	Primary stem seal	Carbon reinforced PTFE	Carbon reinforced PTFE
202	Firesafe stem seal	Flexible graphite	Flexible graphite
203	Aux. stem seal	FKM A	FKM A
205	Stop plate	UNS S31600	UNS S31600
206	Stem spring	Inconel	Inconel
207	Stem nut	UNS S31600	UNS S31600
208	Stem bearing	CS / PTFE	SS / PTFE
210	Stem cover housing	ASTM A105N	ASTM A182 F316
211	Stem cover screw	ASTM A193 Gr B7	ASTM A193 Gr B8M
212	Stem housing gasket	Flexible graphite	Flexible graphite
223	Stem seal follower	UNS S31600	UNS S31600
251	Weather seal	Comp. carbon fiber	Comp. carbon fiber
258	Lock washer (DN 50)	UNS S31600	UNS S31600
300	Wrench (DN 50)	UNS S31600	UNS S31600
	Wrench (DN 80 - DN 150)	Carbon steel zinc plated (Optional - UNS S31600)	Carbon steel zinc plated (Optional - UNS S31600)
301	Wrench retainer	UNS S31600	UNS S31600
303	Wrench head	WCC (Prime coated) (Optional - UNS S31600)	WCC (Prime coated) (Optional - UNS S31600)
304	Wrench retainer	UNS S31600	UNS S31600
400	Trunnion	UNS S31803	UNS S31803
401	Trunnion bearing (DN 50 - DN 150)	PEEK	PEEK
	Trunnion bearing (DN 200)	CS / PTFE	SS / PTFE
403	Trunnion seal	Flexible graphite	Flexible graphite
518	Plug	ASTM A105N	UNS S31600
532	Anti-Static device	UNS S31600/ Inconel	UNS S31600/ Inconel

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DN 50 - 200



DIMENSIONS (mm)

Valve size	ØA bore	ØB		C	D		E	F	K	Stem conn.		Top plate data			Mass (kg)		K _v at full open	
		150	300		150	300				H x G	Keyway	No. holes	Hole dia.	PCD	150	300	150	300
50	38	150	165	60	178	216	89	200	135	19 x 12.7	N/A	4	M8	70	11	13	139	152
80	63	190	210	111	203	283	103	427	195	22 x 15.9	N/A	4	M10	102	22	29	351	357
100	76	230	255	125	229	305	115	427	205	22 x 15.9	N/A	4	M10	102	33	43	532	600
150	102	280	320	149	267	403	134	625	255	Ø32	10 x 10	4	M12	125	55	81	578	832
200	150	345	380	184	292	419	161	N/A	N/A	Ø32	10 x 10	4	M12	125	101	121	1280	1558

NOTE:

F = The handle dimension when the handle is in the extended position N/A when fitted with gear operator.

G = The dimension across the stem flats.

K_v = The flow rate of water in m³/hr that will pass through a valve with a pressure drop of 1 bar (100 kPa) at 20°C.

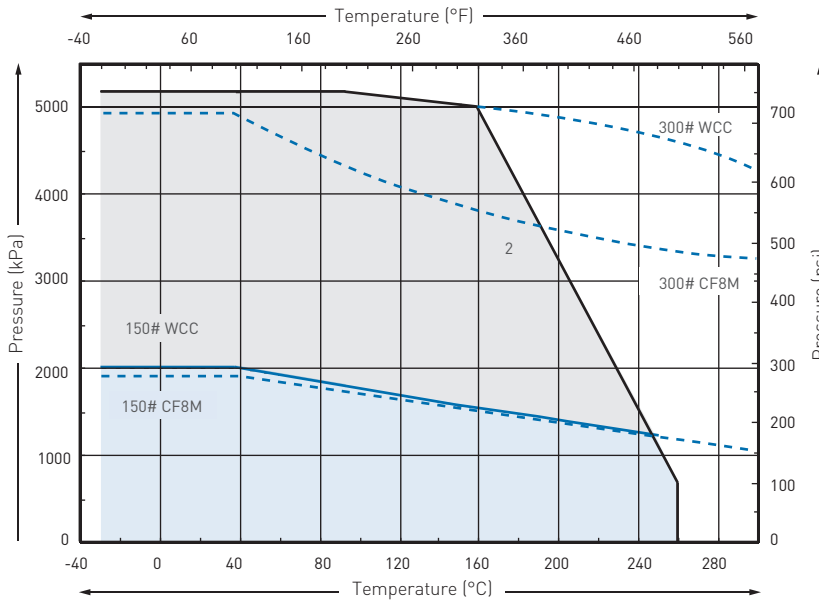
C_v = 1.155 K_v

Dimensions are nominal to ± 1 mm.

KTM RICHARDS FIGURE R741/R743 PIN TRUNNION VALVE

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PRESSURE/TEMPERATURE CHART



2 R'PTFE energized seat

PRESSURE/TEMPERATURE RATINGS

Class 150 (Figure R741) Carbon reinforced PTFE energized seat

Carbon steel:
1960 kPa/19.6 bar max at 38°C
Stainless steel:
1900 kPa/19 bar max at 38°C

Class 300 (Figure R743) Carbon reinforced PTFE energized seat

Carbon steel:
5110 kPa/51.1 bar max at 38°C
Stainless steel:
4960 kPa/49.6 bar max at 38°C

NOTE

1. These pressure/temperature ratings displayed are for total valve assembly with the respective seat material fitted.
2. Seat pressure/temperature limitations displayed for Class 150 and 300 are in combination with FKM A O-ring seals. For other seat/sealing materials refer to Emerson.
3. Carbon steel valves have a minimum temperature limitation of minus 29°C.

TYPICAL SPECIFYING SEQUENCE - CLASS 150 AND CLASS 300

100	R741	C	A	A	2	S	T	3	-	01
Valve size	Figure no.	Body material	End conn. (note 1)	End conn. (note 1)	Seat type	Trim material	Body seal	Certification code (note 2)	Valve variant	Standard option

Size range: DN 50 - DN 200 (reduced bore)

Figure no: R741 - Fire safe, anti-static, Class 150, reduced bore, pin trunnion design ball valve, wrench operated with locking device.
R743 - Fire safe, anti-static, Class 300, reduced bore, pin trunnion design ball valve, wrench operated with locking device.

Trim code	Body material	End conn.	End conn.	Seat	Trim	Body seal
CAA2ST	Carbon steel	Flg ASME	Flg ASME	Carbon R'PTFE	316 S/S	PTFE
SAA2ST	316 S/S	Flg ASME	Flg ASME	Carbon R'PTFE	316 S/S	PTFE

NOTE:

1. For end connection details refer to Emerson.
2. Certification code: Standard certification code 3 includes pressure test certification and material certification of the pressure containing components conforming to EN 10204:1991/ISO 10474 Type 3.1 (DIN 50 049). Additional certification requirements is available on request, refer to Emerson.
3. Valve variant: Standard valve is not offered with variants. Should a valve variant be required, refer to Emerson for variant listing and order code details.
4. Standard options: Base valve is supplied with wrench operator with locking device - code 01. For other valve options, refer to Emerson for listing and order code details. For bare shaft valves (code 08) where fitment of gearbox or actuator is required, the order requirement is to be specified as "Complete with" followed by the details of the requirement - eg: complete with gearbox.