



Management of Change Guide

KTM™ Richards™ Ball Valves to KTM Series EB1, EB7 & E01 Ball Valves



KTM™


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Management of Change

Management of Change (MOC) is a procedure used to proactively manage changes that have the potential to result in safety or process impact within a process plant. Evaluating new techniques for improving MOC approval procedures can have an impact on plant efficiency. Historically, upgrading obsolete products or replacing existing process control equipment has been delayed or abandoned due to the extensive paperwork involved in completing a complex MOC approval document.

Contained in the following sections are design comparisons between the current KTM EB1, EB7 and E01 ball valves and obsolete KTM Richards ball valves. These comparisons are intended to help end users complete MOC approval documents to understand the similarities and differences between these valves to effectively transition to the current KTM ball valves.

Background

The KTM Richards line of isolation ball valves is discontinued and is to be replaced with Emerson's current KTM range of isolation ball valves.

Question and Answer Checklist

Below are typical questions received from customers regarding their management of change impact.

Q1. Does the proposed modification cause any changes to P&IDs?

A1. **No.**

Q2. Does the proposed modification change process chemistry, technology, or operating control philosophies?

A2. **No.**

Q3. Does the proposed modification change how the existing plant is operated?

A3. **No.**

Q4. Does the proposed modification change process flows?

A4. **No.**

Q5. Will the proposed changes affect products quoted and delivery times?

A5. **Yes, new alternative products will be offered with plant lead times.**

Q6. Do the proposed changes, change the process of how I receive my quotation?

A6. **No. The sales teams and the Brisbane quoting team will continue to support Emerson replacement products and spare parts.**

Q7. Have the codes and standards to which the new equipment has been designed changed?

A7. **No. The alternative products quoted will conform with the same international standards. For API 6D requirement, please consult factory.**

Q8. Does the proposed modification change the materials of construction such as a change in material form (cast, forged, or alloy)?

A8. **No. KTM EB1, EB7 and E01 valves are cast construction.**

Q9. Does the proposed modification introduce equipment items that require new periodic predictive maintenance?

A9. **No. The new equipment items will require the same periodic maintenance as required by the old equipment items.**

Q10. Does the proposed modification change existing operator training requirements?

A10. **No.**

Q11. Does the proposed modification introduce new equipment items that require training, manuals, maintenance procedures, or training to teach maintenance department craftsmen how to maintain them?

A11. **Yes. Emerson local business partners and sales offices offer local training and support to help ensure operators, maintenance personnel, and instrument technicians are fully trained.**

Q12. Does the proposed modification introduce new equipment items that require spares or obsolete spares for existing equipment?

A12. **Yes. New spares will be required for the replacement valves, which are not compatible with the obsolete valves.**

Q13. Does the proposed modification permanently remove the spares for existing pieces of equipment?

A13. **Once the equipment items are replaced, yes, the spare parts of the existing equipment items should be removed from the plant.**

Q14. Does the proposed modification change the inspection scope or inspection interval?

A14. **No.**

Q15. Are the new replacement valves covered by AGA certification?

A15. **Series EB1 has existing AGA certification. Series E01 & EB7 need to be recertified on case-by-case basis.**

KTM Richards and KTM Series EB1, EB7 & E01 Comparison

Emerson’s KTM EB1, EB7 & E01 ball valves are capable of use in a broad range of industries and applications and will be the primary replacement for the KTM Richards model line. Visit the following links to view literature.

EB1: <https://www.emerson.com/en-us/catalog/floating-ball-valves/ktm-p000417>

EB7: <https://www.emerson.com/en-us/catalog/floating-ball-valves/ktm-p000446>

E01: <https://www.emerson.com/en-us/catalog/ktm-sku-series-e01-trunnion-mounted-ball-valve>

The tables and sections that follow describe the similarities and differences between these product lines.

1. Seat Availability

Each valve should be reviewed to help ensure the appropriate KTM valve is selected for the application. The following tables provide the necessary design information to compare the Richards valves to the Series EB1, EB7 and E01 valves.

KTM Richards Range		KTM Series EB1, EB7 & E01 Replacement Summary by Size (inch)														
Model	Seat	1/4	1/2	3/4	1	1 1/2	2	3	4	6	8	10	12	14	16	
431 / 433	RPTFE									E0125 / E0126		E0106 / E0107				
436 / 439	RPTFE									E0108 / E0109						
435	PEEK									E0110						
441 / 443	RPTFE										E0821 / E0822		E0801 / E0802			
446 / 449	RPTFE									E0804 / E0807						
445	PEEK									E0808						
535 / 538	Devlon / RPTFE		No direct replacement													
545 / 548	Devlon / RPTFE		No direct replacement													
588	PTFE / RPTFE		No direct replacement													
598	PTFE / RPTFE	No direct replacement														
711 / 713	PTFE / RPTFE									EB7						
721 / 723	PTFE / RPTFE		EB7						EB11 / EB12							
726 / 726 / 725	Devlon / RPTFE		E0108 / E0109 / E0110													
731 / 733	PTFE / RPTFE									E0125 / E0126						
741 / 743	PTFE / RPTFE									E0821 / E0822						

- Replace with Series EB1 (T-Seat / G-Seat)
- Replace with Series EB7 (E-Seat)
- Replace with Series E01 (H-Seat)
- No direct replacement - Consult Factory
- Not in KTM Richards range

2. Body and Trim Material Availability

Please see the table below for body materials comparison.

KTM Richards Range		KTM Series EB1, EB7 & E01 Replacement Summary by Size (inch)														
Model	Body Material	1/4	1/2	3/4	1	1 1/2	2	3	4	6	8	10	12	14	16	
431 / 433	WCB / CF8M									E0125 / E0126		E0106 / E0107				
436 / 439	WCB / CF8M									E0108 / E0109						
435	WCB / CF8M									E0110						
441 / 443	WCB / CF8M									E0821 / E0822		E0801 / E0802				
446 / 449	WCB / CF8M									E0804 / E0807						
445	WCB / CF8M									E0808						
535 / 538	WCB / CF8M		No direct replacement													
545 / 548	WCB / CF8M		No direct replacement													
588	WCB / CF8M		No direct replacement													
598	WCB / CF8M	No direct replacement														
711 / 713	WCB / CF8M									EB7						
721 / 723	WCB / CF8M		EB7							EB11 / EB12						
726 / 726 / 725	WCB / CF8M		E0108 / E0109 / E0110													
731 / 733	WCB / CF8M									E0125 / E0126						
741 / 743	WCB / CF8M									E0821 / E0822						

	Available with Series EB1
	Available with Series EB7
	Available with Series E01
	No direct replacement - Consult Factory
	Not in KTM Richards range

3. Torque Comparison (Nm)

Please see the table below for valve Break to Open (BTO) Torque values comparison. Refer to product literature for more information on rated torque values.

KTM Richards Series	431	433	436	439	435	441	443	446	449	445	711	713	721	723	726	729	725	731	733	741	743		
Class Rating	150	300	600	900	1500	150	300	600	900	1500	150	300	150	300	600	900	1500	150	300	150	300		
Bore Type	FB	FB	FB	FB	FB	RB	RB	RB	RB	RB	RB	RB	FB	FB	FB	FB	FB	FB	FB	RB	RB		
Seat Material	RPTFE	RPTFE	RPTFE	RPTFE	PEEK	RPTFE	RPTFE	RPTFE	RPTFE	PEEK	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	Devlon	RPTFE	RPTFE	RPTFE	RPTFE		
1/2													8	9	16	17	29						
3/4													12	14	16	17	29						
1													14	17	21	25	38						
1 1/2													27	33	40	46	84						
2			73	88	284							27	33	68	90								
3			168	221	391				73	88	284	89	114	130	197								
4			264	336	699				168	221	391	130	197	216	336								
6	348	468	664	862	1574				264	336	699	216	336	445	816								
8	455	686	1064	1445	3430	348	468	664	862	1574	445	816	827	1571									
10	616	971	1553	2137	6910	455	686	1064	1445	3430													
12	1483	1998	2843	3691				616	971	1553	2137	6910											
14	2505	3182	4293	5408				1483	1998	2843	3691												
16	3010	3921	5415	6915				2505	3182	4293	5408												
KTM Series EB1 / EB7 / E01	E0125	E0126	E0108	E0109	E0110	E0821	E0822	E0804	E0807	E0808	EB7	EB7	EB7	EB7	E0108	E0109	E0110	E0125	E0126	E0821	E0822		
	E0106	E0107				E0801	E0802																
Class Rating	150	300	600	900	1500	150	300	600	900	1500	150	300	150	300	600	900	1500	150	300	150	300		
Bore Type	FB	FB	FB	FB	FB	RB	RB	RB	RB	RB	RB	RB	FB	FB	FB	FB	FB	FB	FB	RB	RB		
Seat Material	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	E-Seat	E-Seat	E-Seat / PTFE	E-Seat / PTFE	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE			
1/2											5	6	5.5	6.7	15	14	18						
3/4											8	9	7.1	8.6	23	27	36						
1											9	11	9.4	12.2	43	37	50						
1 1/2											18	22	17	25.6	107	CF	CF						
2			135	220	404							18	22	24	41								
3			271	449	808				135	220	404	59	76	78	117								
4			480	780	1416				271	449	808	86	131	144	213								
6	292	477	870	1440	2685				480	780	1416	144	224	447	580								
8	526	846	1604	2596	4644	292	477	870	1440	2685	297	544	950	1220									
10	885	1441	2707	4396	7986	526	846	1604	2596	4644													
12	1462	2282	4256	7085				885	1441	2707	4396	7986											
14	2000	3284	6050	9978				1462	2282	4256	7085												
16	2828	4780	8502	CF				2000	3284	6050	9978												

 Series EB1 dimensions	 Series E01 dimensions	 With energized seat
 Reduced MOP, not 5110 Kpa	 Consult Factory	 Not in KTM Richards range
 Series EB7 dimensions		

4. Face-to-Face Dimensions

The table below highlights the face-to-face dimensions of the Richards and Series EB1, EB7 and E01 valves.

KTM Richards Series	431	433	436		439		435		441	443	446		449		445		711	713	721	723	726	729	725	731	733	741	743	
Class Rating	150	300	600		900		1500		150	300	600		900		1500		150	300	150	300	600	900	1500	150	300	150	300	
Bore Type	FB	FB	FB		FB		FB		RB	RB	RB		RB		RB		RB	RB	FB	FB	FB	FB	FB	FB	FB	FB	RB	RB
Flange Type	RF	RF	RF	RTJ	RF	RTJ	RF	RTJ	RF	RF	RF	RTJ	RF	RTJ	RF	RTJ	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
1/2																			108	140	165	216	216					
3/4																			117	152	191	229	229					
1																			127	165	216	254	254					
1 1/2																			165	190	241	305	305					
2			292	295	368	371	368	371									178	216	178	216					178	216	178	216
3			356	359	381	384	470	473			356	359	381	384	470	473	203	282	203	283					203	283	203	283
4			432	435	457	460	546	549			432	435	457	460	546	549	229	305	229	305					229	305	229	305
6	394	403	559	562	610	613	705	711			559	562	610	613	705	711	267	403	394	403					394	403	394	403
8	457	502	660	664	737	740	832	841	457	502	660	664	737	740	832	841	292	419	457	-					457	502	457	-
10	533	568	787	791	838	841	991	1000	533	568	787	791	838	841	991	1000												
12	610	648	838	841	965	968			610	648	838	841	965	968	1130	1146												
14	686	762	889	892	1029	1038			686	762	889	892	1029	1038														
16	762	838	991	994	1130	1140			782	838	991	994	1130	1140														
KTM Series EB1 / EB7 / E01	E0125	E0126	E0108		E0109		E0110		E0821	E0822	E0804		E0807		E0808		EB7	EB7	EB7	EB7	E0108	E0109	E0110	E0125	E0126	E0821	E0822	
Class Rating	150	300	600		900		1500		150	300	600		900		1500		150	300	150	300	600	900	1500	150	300	150	300	
Bore Type	FB	FB	FB		FB		FB		RB	RB	RB		RB		RB		RB	RB	FB	FB	FB	FB	FB	FB	FB	FB	RB	RB
Flange Type	RF	RF	RF	RTJ	RF	RTJ	RF	RTJ	RF	RF	RF	RTJ	RF	RTJ	RF	RTJ	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
1/2																			108	140	165	216	216					
3/4																			117	152	191	229	229					
1																			127	165	216	254	254					
1 1/2																			165	190	241	305	305					
2			292	295	368	371	368	371									178	216	178	216					178	216	-	-
3			356	359	381	384	470	473			356	359	381	384	470	473	203	282	203	283					203	283	203	283
4			432	435	457	460	546	549			432	435	457	460	546	549	229	305	229	305					229	305	229	305
6	394	403	559	562	610	613	705	711			559	562	610	613	705	711	267	403	394	403					394	403	394	403
8	457	502	660	664	737	740	832	841	457	419	660	664	737	740	832	841	292	419	457	-					457	502	457	419
10	533	568	787	791	838	841	991	1000	533	457	787	791	838	841	991	1000												
12	610	648	838	841	965	968			610	648	838	841	965	968	1130	1146												
14	686	762	889	892	1029	1038			686	762	889	892	1029	1038														
16	762	838	991	994	1130	1140			782	838	991	994	1130	1140														

 Series EB1 dimensions	 Dimensional difference
 Series EB7 dimensions	 Not in KTM Series E01 range
 Series E01 dimensions	 Not in KTM Richards range

5. Design Features Comparison

The KTM Richards and KTM Series EB1, EB7 and E01 valves share many standard features.

Valve	KTM Richards Series 400	KTM Richards Series 500	KTM Richards Series 700	KTM Series EB1	KTM Series EB7	KTM Series E01
Design	ASME B16.34 API 6D ISO 14313	ASME B16.34 ISO 17292	ASME B16.34 ISO 17292	ASME B16.34 API 608 ISO 17292	ASME B16.34 ISO 17292	ASME B16.34 API 608 ISO 17292
End Connection	Flanged	NPT / SW BSPT / Flanged	Flanged	Flanged	Flanged	Flanged
Body	2-piece bolted (Cast) 3-piece bolted (Forged)	2-piece locked (No Bolting) 3 piece bolted (588 / 598)	Unibody (711 / 713) 2 piece (721 thru 743)	2-piece Full Bore	Unibody Full Bore Reduced Bore	2-piece Full Bore Reduced Bore
Packing	Primary and Secondary Seal	Gland, Belleville Spring	Gland, Belleville Spring	Gland, Adjustable	Gland, Belleville Spring	Gland, Adjustable
Fire Safe	API 607	API 607	API 607	API 607 ISO 10497	API 607	API 607
Topworks	ISO 5211	Yes (Non-ISO)	Yes - ISO 5211 for models 711, 713, 721 and 723 only. Non-ISO for all other Series 700	ISO 5211	ISO 5211	ISO 5211
Flow Direction	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional
Temperature Capabilities	-29°C to +260°C	-29°C to +260°C	-29°C to +260°C	-196°C to +500°C	-29°C to +232°C	-29°C to +500°C

Conclusion

The obsolescence of the KTM Richards valve ends soft goods spare parts availability in 2025. The KTM Series EB1, EB7, and E01 valves offer compatible sizes, features, and materials to cover the wide range of customer application needs and is the recommended replacement for KTM Richards valves. Below is a table of recommended replacements for the KTM Richards valves.

KTM Richards Range		KTM Series EB1, EB7 & E01 Replacement Summary by Size (inch)													
Series	Model	1/4	1/2	3/4	1	1 1/2	2	3	4	6	8	10	12	14	16
400	431 / 433									E0125 / E0126			E0106 / E0107		
	436 / 439									E0108 / E0109					
	435									E0110					
	441 / 443										E0821 / E0822		E0801 / E0802		
	446 / 449										E0804 / E0807				
	445										E0808				
500	535 / 538		No direct replacement												
	545 / 548		No direct replacement												
	588		No direct replacement												
	598		No direct replacement												
700	711 / 713								EB7						
	721 / 723		EB7					EB11 / EB12							
	726 / 726 / 725		E0108 / E0109 / E0110												
	731 / 733									E0125 / E0126					
	741 / 743									E0821 / E0822					

- Replace with Series EB1
- Replace with Series EB7 (E-Seat)
- Replace with Series E01 (H-Seat)
- No direct replacement - Consult Factory
- Not in KTM Richards range

Thank you for utilizing this Management of Change Document to aid you in this transition

Please contact your Emerson local business partner or sales office for additional details, questions, and support regarding Emerson's KTM ball valve portfolio.

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