



KTM MECAFRANCE SERIES RA BALL VALVE INSTALLATION AND MAINTENANCE INSTRUCTIONS

Before installation these instructions must be fully read and understood

CONTENTS

1	Introduction.....	1
2	Correct use	1
3	Safety information	1
4	Transport and storage.....	2
5	Installation in a pipe system	2
6	General information	7
7	Customer service.....	7

1 INTRODUCTION

These instructions are intended to support the user of KTM Mecafrance ball valves during installation, operation and maintenance.

WARNING

Disregarding the information and warning signs may result in hazards for the user or operator. Failure to observe the warning signs and information may cause the manufacturer's warranty to become void.

2 CORRECT USE

KTM Mecafrance ball valves of the R, RA, CA, ES and CRYO ranges are intended solely for installation in pipe systems or for mounting on containers, pump or distributors. The form of connection can be flanges (CBF), welded ends (CBS), threaded ends (CBG) or a special connection specified by the customer. KTM Mecafrance ball valves are for use for shutting off the flow of media within the limits of use determined by the sealing material. The standard versions of KTM Mecafrance ball valves must not be used for regulating the flow of media. The pressure and temperature limits are stated on the type plate and must not be exceeded under any circumstances. Please also refer to the pressure/temperature diagrams.

In the case of a flange connection between the pipe system and the valve, the pipe flange must be positioned so that it is plane parallel and correctly aligned. Incorrect alignment or incorrect face-to-face dimensions will cause extra stresses, vibrations and other forces on the valve bolts; these must be avoided as they can result in poor sealing and potential hazards and will also cause the warranty to become void.

WARNING

Valves must not be operated if their permitted limits of use lie outside the operating conditions of the installation. The installation operator must check that the valves are compatible with the flow medium before they are put into service. Failure to follow instructions can cause danger to life and limb and/or damage to the pipe system.

3 SAFETY INFORMATION

3.1 General safety instructions

All the safety rules applicable to the operation of a pipe system consisting of a wide range of different components also apply without limitation to the valves installed. Additional safety instructions must be observed and are considered part of these safety instructions. There are special safety instructions for valves that are automated by fitting an actuator; please refer to the documentation supplied with the actuator assembly for these instructions.

3.2 Special safety instructions

DANGER

Before loosening or removing the valve body, flange bolts or valve stem nut, ensure that the pressure has been fully released on both sides. This is the only way to prevent uncontrolled outflow of the medium.

Working on a valve under pressure is highly dangerous!

DANGER

When a valve is removed from a pipe system, the medium can flow from the pipe and from the valve itself. In particular, note that the valve hole may still be filled with the medium and this will flow out when the valve is removed. The additional warning signs and safety rules must be observed when working with dangerous, noxious or explosive media.

The valve must never be exposed to pressures or temperatures higher than those indicated on the type plate. Never exceed the limits of use stated on the type plate, not even for a short time. Exceeding these limits will automatically cause the warranty to become void.

KTM MECAFRANCE SERIES RA BALL VALVE

INSTALLATION AND MAINTENANCE INSTRUCTIONS

4 TRANSPORT AND STORAGE

All valves must be stored, packed and transported with care. The protective caps on the valve connections should be removed only when fitting the valves to the pipe system.

The valves should be stored in dry clean conditions, and if possible in closed rooms. Oil-free and grease-free valve types are supplied in shrink-wrap. Freedom from oil and grease is guaranteed only if the packaging is **sealed and undamaged**.

5 INSTALLATION IN A PIPE SYSTEM

5.1 General information

DANGER

Operating a KTM Mecafrance valve outside a pipe system causes a risk of crushing.

An automated valve must never be operated with an operational actuator outside a pipe system.

If a KTM Mecafrance valve is installed as an end fitting, the outlet must have a bolted protective cap or the outlet pipe must be of sufficient length to make it impossible to reach into the valve.

WARNING

For automated units, the actuator is already adjusted to the intended stop positions.

The OPEN (AUF) and CLOSED (ZU) end stops must not be modified or removed

In automated units, the closing times of the valve must be chosen so that no pressure surges occur anywhere in the pipe system.

Supply and control lines must be adapted to the actuator so that the closing times are within the desired period.

Only the supplied connecting and adapter parts are permitted for connecting the actuator and the valve. It must be easy to insert all parts in the actuator and set them on the valve stem.

Failure to follow these instructions and/or the use of third-party components can damage the valve and/or the actuator.

Installing third-party components automatically causes the warranty to become void.

5.2 Preparation for installation

Ensure that the valve to be fitted is appropriate for the pressure and temperature specifications of the pipe class. Valves with permitted pressure or temperature limits outside the operating conditions must not be fitted to this pipe system. Details of the ranges of application can be found on the type plate on the valve body.

DANGER

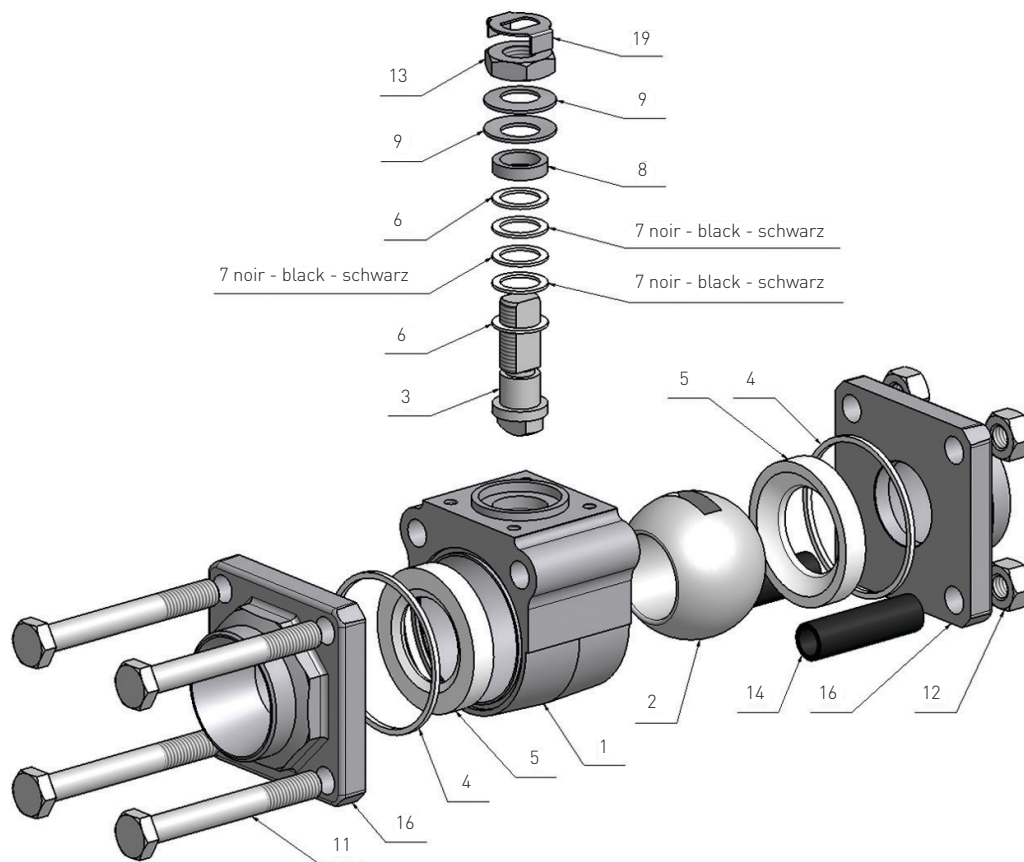
Failure to follow these instructions can cause danger to life and limb and/or cause damage to the pipe system or to the valve itself.

- Unpack the valves only at the place of installation, and check them for completeness and transport damage. Damaged or incomplete valves must not be installed.
- Remove the protective caps.
- Only the parts and components supplied are to be used. In no circumstances should the valve body bolts or other fastenings be replaced with other (similar) parts. The bolt dimensions and materials have been selected specifically for the conditions of use of the valve.
- Carry out a functional test before installation. Any faults detected in operation should be repaired immediately.
- Check that the pipe mating flanges are plan-parallel and correctly aligned.
- The valve body must be centered between the pipe flanges.
- Before fitting, the valve and the connected pipe must be cleaned to remove any dirt, and particularly any extraneous solids (weld beads clinker residue etc.). Testing with contaminated media will immediately cause damage to the valve sealing system.
- Check the pipes items 'left behind', such as bolts, nuts etc.
- Tighten the valve and flange bolts to the specified torques.

KTM MECAFRANCE SERIES RA BALL VALVE

INSTALLATION AND MAINTENANCE INSTRUCTIONS

GENERAL STRUCTURE OF A KTM MECAFRANCE VALVE (BALL VALVE)



PARTS LIST

Item	Description
1	Body
2	Ball
3	Stem
4	Body seal
5	Seal seat
6	Stem seal
7	Gland packing
8	Contact ring
9	Belleville washer
10	-
11	Body bolt
12	Body nut
13	Stem nut
14	Centering sleeve
15	-
16	Connection end
17	-
18	-
19	Lock washer

NOTES

The actual number of parts on the stem may vary according to the nominal size. Please refer to the documentation supplied with the item. If in doubt, please contact your local Emerson representative.

KTM MECAFRANCE SERIES RA BALL VALVE

INSTALLATION AND MAINTENANCE INSTRUCTIONS

TIGHTENING TORQUES FOR SERIES R/RA

Body bolts and nuts			
Ball valves reduced bore (Standard)	Ball valves full bore (Integral)	Thread	Torque M_d
DN	DN		Nm
10	8	M6	12
15	10	M6	12
20	15	M8	16 - 17
25	20	M8	16 - 17
32	25	M8	16 - 17
40	32	M10	30 - 32
50	40	M10	30 - 32
65	50	M12	80 - 90
80	65	M12	80 - 90
100	80	M14	120 - 140
125	-	M14	120 - 140
150	100	M14	120 - 140
200	150	M18	200 - 230
250	200	M20	270 - 300

NOTE

The valve body bolts and nuts are tightened at the factory to the indicated torques. These tightening torques apply to newly made bolts with undamaged threads.

STEM NUTS (PTFE PACKING)

Body bolts and nuts		
Standard	Integral	Torque M_d
DN	DN	Nm
15	10	8
20	15	8
25	20	14
32	25	14
40	32	20
50	40	20
65	50	20
65 (reinforced version)	50 (reinforced version)	25
80	65	85
100	80	85
150	100	85

NOTE

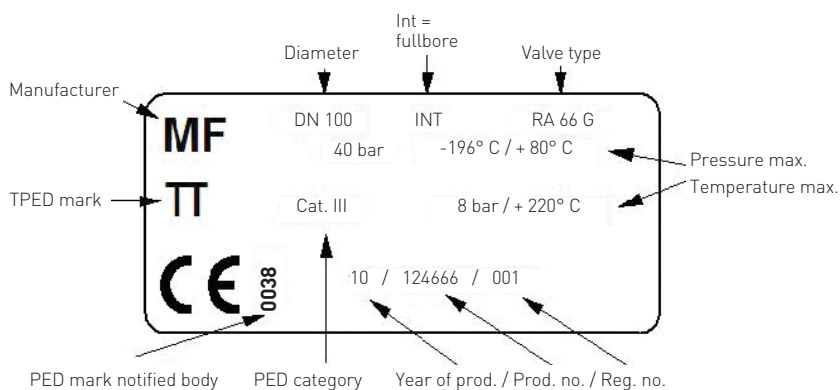
After tightening the stem nuts to the specified torque, check that the lock washers are correctly seated as described in our installation and maintenance instructions

KTM MECAFRANCE SERIES RA BALL VALVE

INSTALLATION AND MAINTENANCE INSTRUCTIONS

KTM MECAFRANCE IDENTIFICATION PLATE

CE IDENTIFICATION PLATE: CATEGORY I, II AND III



The information on the type plate may vary, depending on the valve model. The traceability of each valve is ensured by the combination of year of manufacture and production number.

5.3 Installation in the pipe

- Ball valves are sealed on both sides, with the exception of the fittings on the body and upper stem marked with a flow-direction arrow.
- Remove the packaging and the protective caps - check the valve for damage.
- Make sure that the connection flanges, flange gaskets and profiles of the weld ends are clean and undamaged.
- Check that the connection flanges are accurately aligned.
- Spread the connection flanges to allow easier fitting of the valve into the pipe.
- If there is any dirt in the pipe system, it must be rinsed clean before the valve is fitted.
- Tighten the flange connection bolts to the prescribed torque in opposite-pair sequence (see page 4).
- Before welding into the pipe, set the ball valve to the open position and remove the hand lever.
- Fit the valve to the pipe, taking care to allow sufficient room for safe actuation.
- When rinsing out the pipe, partly open the valve so that the hollow spaces inside the valve are also cleaned.

KTM MECAFRANCE SERIES RA BALL VALVE

INSTALLATION AND MAINTENANCE INSTRUCTIONS

5.4 Welding procedures

5.4.1 Ball valves with end connections acc. to [ISO, DIN 11850 & DIN 11866, row A, B and C](#)

After the removal of the protection caps, the KTM Mecafrance ball valve is ready for welding. Valves with the connections named above can be welded into the piping system in their **open-position** without dismounting. The welding has to be according to the technical rules and procedures (WIG). After cooling down the valves, the body screws have to be fastened with the given torque moments (see page 4). **Ball valves with upstream degassing bore have to be mounted under respect of the flow direction.**

5.4.2 Ball valves with connections acc. to [DIN or schedule](#)

After the removal of the protection caps, the KTM Mecafrance ball valve is ready for welding. Valves with end connection according to DIN or schedule dimensions have to be dismounted before welding. The center part has to be removed before welding. After cooling down the weldings, remount the center part between the welded flanges and fasten the body screws with the given torque moments (see page 4). **Ball valves with upstream degassing bore have to be mounted under respect of the flow direction.**

5.4.3 Ball Valves with end connections acc. to [socket weld design](#)

After the removal of the protection caps, the KTM Mecafrance ball valve is ready for welding. Valves with the connections in socket weld design can be welded into the piping system in their **open-position** without dismounting. The welding has to be according to the technical rules and procedures (WIG). After cooling down the valves, the body screws have to be fastened with the given torque moments (see page 4). **Ball valves with upstream degassing bore have to be mounted under respect of the flow direction.**

5.4.4 Valves in [Fire-safe](#) and [Fire-safe design](#)

Do not disassemble fire-safe valves and fire-safe-designed valves.

The valves can be welded without dismantling under respect to the the general welding procedures (5.4). When dismantling the valves, the graphite body seals will be destroyed and have to be replaced.

KTM MECAFRANCE SERIES RA BALL VALVE

INSTALLATION AND MAINTENANCE INSTRUCTIONS

6 GENERAL INFORMATION

6.1 Storage and protection precautions

Packaged ball valves should be stored in clean dry rooms. The ball valves are supplied with protective caps on the connections. The protective caps must only be removed immediately before the valves are installed in the pipe. No foreign bodies etc. must be allowed to remain inside the ball valve.

6.2 Ball valves as end fittings

All KTM Mecafrance ball valves can be used as end fittings. Observe the pressure and temperature limits.

6.3 Operation and maintenance

- The ball valves close in the clockwise direction.
- If optional part-turn actuators are fitted to the ball valves, their end stops have already been set at the factory and must not be adjusted.
- In normal operation, no further checking or maintenance is required to ensure perfect leak-tightness and fault-free operation. Regular visual checks of the valves should be carried out as part of the inspection work in order to detect possible leaks in good time.
- If there are signs of leakage in the valve, first depressurize the pipe, then carry out the appropriate repairs as described in the manufacturer's guidelines and maintenance instructions.

KTM Mecafrance valve stem sealing systems are self-adjusting and maintenance-free. Leaks in the valve stem packing can be corrected by tightening the gland packing using the stem nut. In the long term, if leaks continue to occur at the stem, the gland packing and stem seal should be replaced.

ATTENTION

Only GENUINE KTM Mecafrance spare parts are permitted. Installing replacement seals or parts NOT made by KTM Mecafrance will automatically cause the warranty to become void. Details can be found in the KTM Mecafrance product information.

7 CUSTOMER SERVICE

When ordering or inquiring about spare parts, please supply the data from the type plate. Product information (installation, maintenance and operating instructions, datasheets and diagrams) are available on request from your local Emerson representative.

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