CAMERON

Document Number: TC003001-16
Revision: Rev 1

WKM® DynaSeal™ 210A/210L Ball Valve

Installation, Operation, and Maintenance Manual

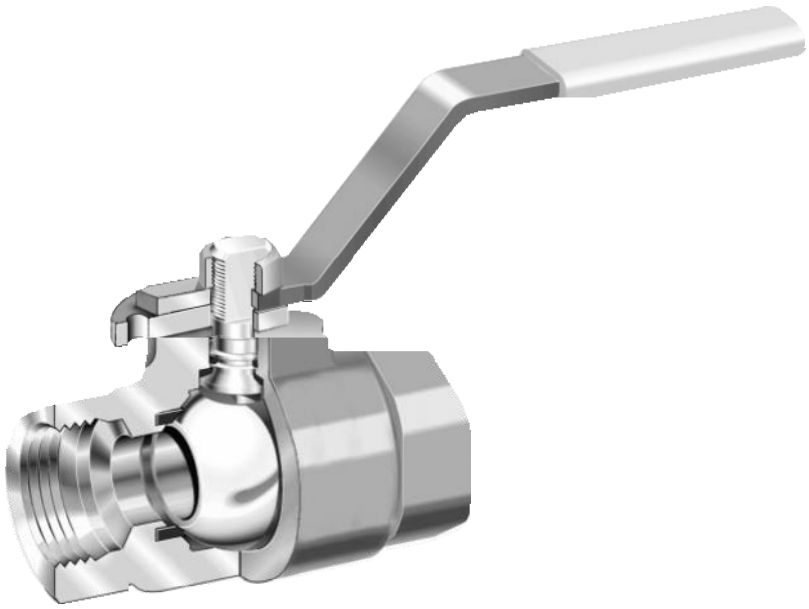

TABLE OF CONTENTS

The procedures included in this book are to be performed in conjunction with the requirements and recommendations outlined in API Specifications. Any repairs to the equipment covered by this book should be done by an authorized Cameron service representative. Cameron will not be responsible for loss or expense resulting from any failure of equipment or any damage to any property or death or injury to any person resulting in whole or in part from repairs performed by other than authorized Cameron personnel. Such unauthorized repairs shall also serve to terminate any contractual or other warranty, if any, on the equipment and may also result in equipment no longer meeting applicable requirements.

File copies of this manual are maintained. Revisions and/or additions will be made as deemed necessary by Cameron. The drawings in this book are not drawn to scale, but the dimensions shown are accurate.

BILL OF MATERIALS

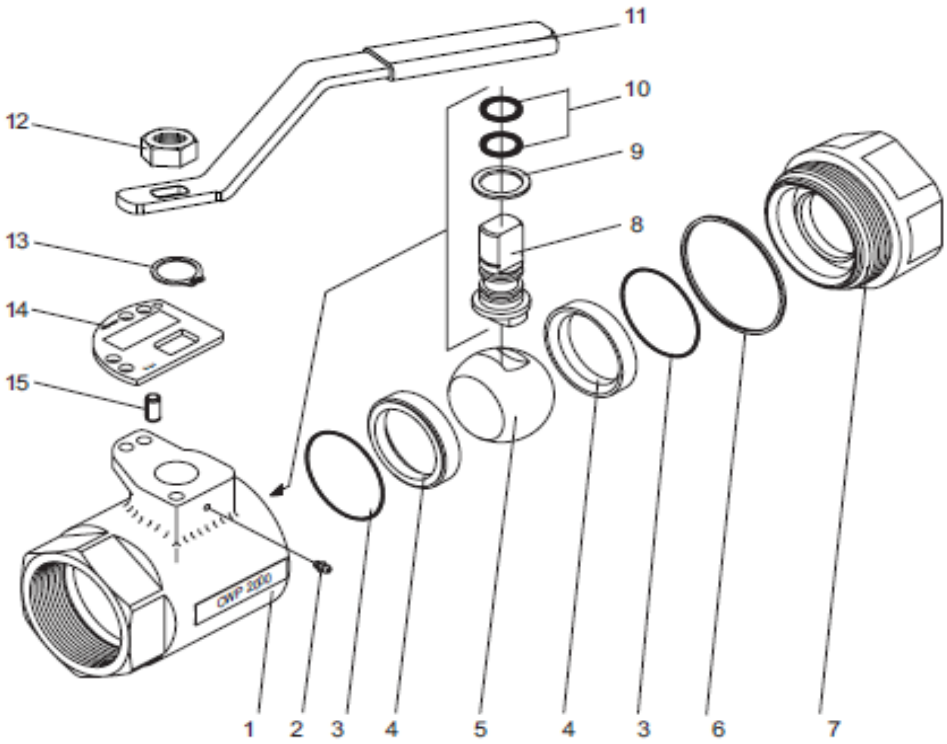

Figure 1 – WKM® DynaSeal™ 210A/210L Ball Valve

Table 1 – WKM DynaSeal 210A/210L Ball Valve Parts List

Item	Qty.	Description
1	1	Body
2	1	Grease Fitting[1]
3	2	Seat O-Ring[2]
4	2	Seat Ring
5	1	Ball
6	1	Tailpiece Gasket
7	1	Tailpiece
8	1	Stem
9	1	Stem Seal
10	2	Stem O-Rings
11	1	Handle[3]
12	1	Lock Nut[3] (or Retainer Clip)
13	1	Retainer Ring
14	1	Locking Plate
15	1	Stop Pin

[1] Old option (discontinued 1998), not on all valves.

[2]Used with old style Delrin seat with notched back. New “43” Delrin seat does not require O-ring, nor does the “02” or “42” Teflon seat.

[3]Optional

SCOPE

Cameron’s WKM DynaSeal 210 floating ball valve is a rugged, but economical, ductile iron ball valve designed ideally for oilfield applications. It has deep-pocketed seats, double O-ring stem seals and is available with API Line Pipe threaded outlets. The 210A and 210L have a 2-piece, threaded end valve design. The 210A is offered in sizes 1” to 4”x 3”and pressure ratings 1000 psi, 1500 psi, and 2000 psi. The 210L is offered in 2”, 3”, and 4” reduced port sizes with a maximum pressure rating of 1000 psi.

NAMEPLATE INFORMATION

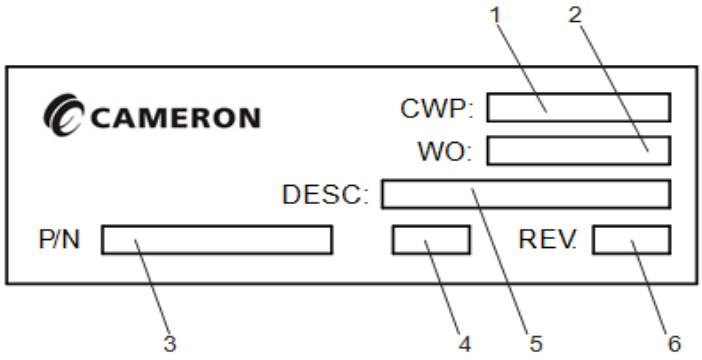

Figure 2 – WKM DynaSeal 210A/210L Ball Valve Nameplate

Table 2 - WKM DynaSeal 210A/210L Ball Valve Nameplate Information

Item	Description
1	Maximum Cold Working Pressure
2	Work Order Number
3	Assembly Part Number
4	NACE Compliance Mark
5	Valve Size and Type (Model and Body Trim Designation)
6	Revision Level

STORAGE

After valves are assembled and tested, they are placed in the full open position, bores are greased and end protectors are installed. This will provide adequate protection for indoor storage. Extended outdoor storage requires periodic inspection and the addition of a corrosion inhibitor. Contact your Cameron representative for

extended storage guidelines. Valves should only be stored in the full open or full close position to prevent seat distortion.

INSTALLATION AND OPERATION INSTRUCTIONS

INSTALLATION

WKM DynaSeal 210 ball valves may be installed in any position with flow from either direction. However, to optimize service life there is a preferred vertical or horizontal position to maximize sealing and minimize the accumulation of sediment. In the vertical position it is preferred to have the upstream pressure from above so the weight of the ball will assist the pressure in sealing. With the run of the valve in a horizontal position, it is preferred to have the stem lying horizontal (i.e., toward the viewer) with pressure from the right. During operation, flow will act as a siphon and minimize retention of sediment.

When handling or installing a valve, keep the valve in the full open position whenever possible to prevent foreign object damage to the ball.

Threaded end valves are installed using two pipe wrenches; one on the flats of the tailpiece or body and the other on the adjacent pipe (i.e., DO NOT apply wrench to the body section when making up pipe to the tailpiece as this may result in breaking loose the threaded tailpiece-to–body joint). Conventional pipe thread compound is recommended when installing 210, ductile ball valves. Teflon tape can cause threads to gall.

FIELD TESTING

Field testing, if performed after the valve has been properly installed into the line, should be done in accordance with the following procedure:

Caution: Ensure that all test fluids contain corrosion inhibitors and are compatible with valve seat and seal material.

1. Preliminary Testing – Completely flush the system or the line to minimize damage to the seats and ball surface which might be caused by weld slag or other foreign matter resulting from installation procedures.

2. Line Testing – When performing this test, the valve should be in the half-open position to ensure that the body cavity is completely filled with the test media and to prevent accidental over pressure of the seats. NOTE: Line may be tested at a maximum of 1-1/2 times the valve's cold working pressure rating without consulting the factory.

3. Seat Testing – When testing the seats with the valve in the closed position, do not exceed the valve's cold working pressure rating.

4. Upon completion of testing, purge all test fluids from the valve.

OPERATION

WKM DynaSeal 210 ball valves operate from fully open to fully close by a 90-degree turn of the handle. When the handle is aligned (parallel) with the pipe, the valve is open. When the handle is perpendicular to the pipe, the valve is closed. Additionally, the stems have flats that align the handle and can be used to indicate the position of the ball. The bore of the ball is parallel to the faces of the stem flats.

WKM DynaSeal 210 valves may be power actuated. Pneumatic and hydraulic actuators, whether of the fail- open, fail-close, or fail-last position type, have actuation indicators on the top of each unit. On a pneumatic actuator, make sure filters and lubricators (if recommended by the actuator manufacturer) are installed prior to valve and actuator installation. Should any maintenance be necessary, obtain the part number from the unit's nameplate and contact Cameron or the nearest representative.

MAINTENANCE PROCEDURES

Due to its design and simplicity, the 210 ball valve requires very little maintenance. The non-lubricated, self-cleaning ball can provide reliable, bubble-tight performance for the life of the valve.

Warning: Valves should be placed in a partially open position prior to working on a valve or removing it from service to vent pressure or drain product that may be trapped in the body cavity. When removing threaded end valves from the line, apply wrenches in the same manner used for installation and NOT to the valve body section as this may result in breaking loose the threaded tailpiece to body joint.

TROUBLESHOOTING

Table 3 - Troubleshooting

Trouble	Probable Cause	Remedy
Will not open or close	a. Iced up due to restricted flow or low temperatures. b. Pressure locked. (Condition in which the body pressure exceeds the line pressure by an excessive amount.)	a. Flush out with warm material. b. Reduce valve temperature or pressurize line to rated working pressure to reduce pressure differential sufficient to operate valve.
Hard to operate	a. Accumulation or solidification of material in the body of valve. b. Swelling seats. c. Corrosion between stem and valve body d. Operator not installed properly.	a. Flush valve to get material out of body. b. Install correct trim.* (Requires valve removal and disassembly.) c. Apply penetrating oil around stem. If the valve still won't operate, disassemble valve and polish stem.* d. Check operator.
Will not seal properly	a. Worn or damaged seats and/or ball. b. Foreign matter between seat and ball.	a. Replace worn parts.* (Requires valve removal and disassembly.) b. Operate several times to wipe clean.

Valve leaking between body and tailpiece	a. Leaking tailpiece gasket. b. Tailpiece and body are not tightened together properly.	a. Replace gasket.* (Requires valve removal and disassembly.) b. Tighten parts to specified torque.*
Leaking around stem	a. Worn or damaged stem seals.	a. Replace O-ring stem seals.* (Requires valve removal and disassembly.)

*Contact your Cameron representative for a repair manual

CONTACT INFORMATION

HEADQUARTERS
3250 Briarpark Drive, Suite 300
Houston, TX 77042
USA
Tel 281 499 8511

MANUFACTURING
845 SE 29th Street
Oklahoma City, OK 73143
Tel 405 631 1321

For more information: www.c-am.com/WKM | WKM@c-a-m.com