

1724 Low E Installation Instructions

Live Load Kit Designed by Chesterton to fit Valtek® MK1 Control Valves

Precaution: System should be shut down, depressurized, drained and cool before valve is handled. Observe all plant safety requirements.

1. **Check the condition of the valve for the following:**

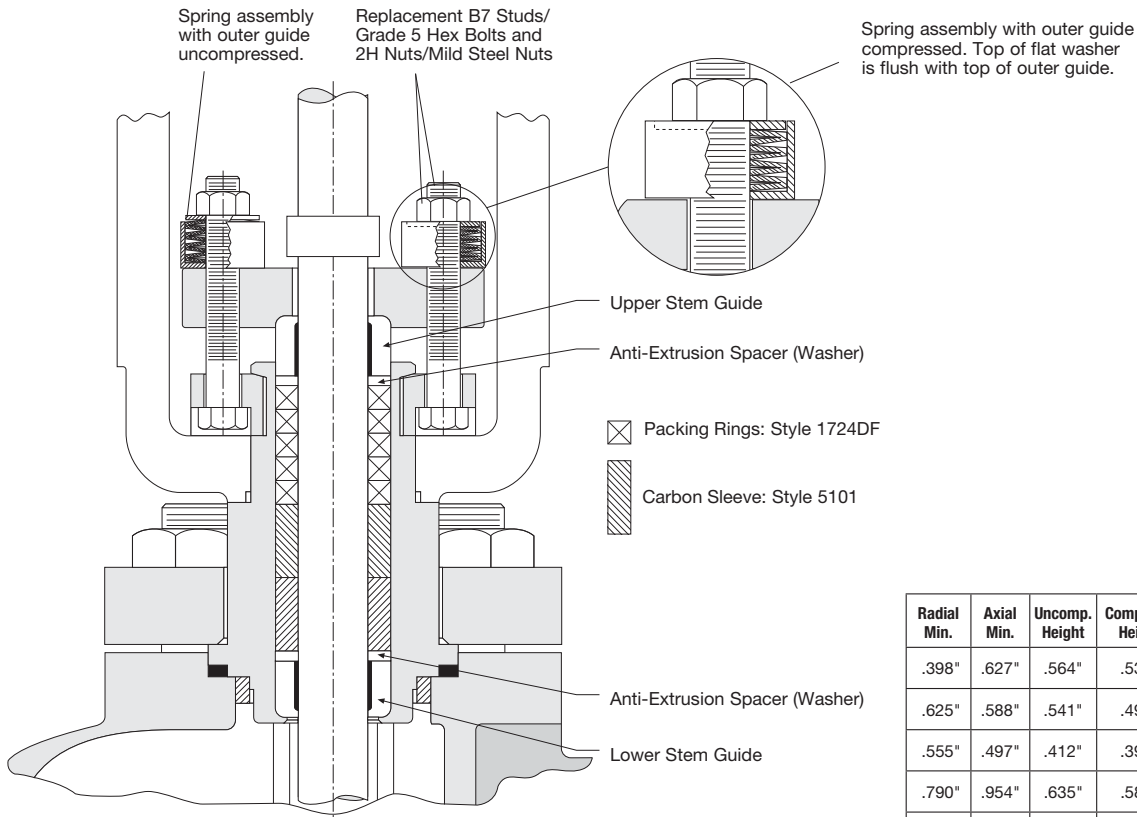
- A 10 to 32 RMS (7.5 to 24 Ra) stem finish is required.
 - The stuffing box bore should be 125 RMS (94 Ra) or better finish.
 - The stem run out should not exceed ± 0.010 TIR/FT ($\pm 0,25$ TIR/M).
 - The Lower Stem Guide and Liner and Anti-Extrusion Spacer (washer) should be in the bottom of the stuffing box. (See *Packing Configuration*.)
2. The stuffing box must be clean, i.e. completely free of any previous packing or foreign material. The valve stem must be clean, free of nicks, scratches and burrs.
3. Verify the split carbon sleeve height is correct. The height of the carbon sleeve should be the calculated height. The calculated height is the difference between the stuffing box depth and the measured packing set height. The packing height is approximately five times the cross section for the 1724 Low E Set. Install the Split Carbon Sleeve(s) (5101) in the bottom of the stuffing box. Make sure the two halves align and are seated properly on the stuffing box bottom.
4. Install one ring of 1724 Low E packing using a Chesterton Valve Tamping Tool. Care must be taken to insure the skive-cut ends are properly mated. Firmly tamp the ring to the bottom of the box. Install remaining rings in the same manner, staggering joints 90°. (See *Packing Configuration*.)
5. *Install the Anti-Extrusion Spacer (washer). Install the Upper Stem Guide and Liner and packing gland flange. Make sure the Upper Stem Guide enters into the stuffing box smoothly.*
6. Install the new gland studs or hex bolts. Verify the B7 studs and the 2H nuts or SAE Grade 5 hex bolts and mild steel nuts provided are of the same or better grade than the studs and nuts being replaced.

7. Lubricate the studs, bottom of the nuts, and live loading assembly components (belleville springs and flat washer) with Chesterton recommended anti-seize compound. Verify the springs and flat washers are properly stacked. (See *Packing Configuration*.)
8. Install a live loading assembly on each stud. The cut away portion of the outer guide should face the stem.
9. Install the two packing gland nuts. Tighten each nut until finger tight. Alternately tighten the gland nuts until the top surface of the flat washer is flush or even with the top, flat surface of the outer guide. Verify that the packing gland is square and perpendicular to the stem.
10. To properly consolidate the packing, reference torque values in Torque and Friction Values table (page 2). When seating the packing set, torque bolts to the higher value supplied (for corresponding valve size). Actuate the valve 5 times, retighten the packing gland nuts at the end of the last down/in-stroke. Loosen gland nuts, then torque to the lower value supplied. Actuate the valve 5 more times then check the gland nut torque. Torque the packing gland nuts at the end of the last down stroke as necessary, using the lower value supplied. All final torques will use the lower torque value supplied.
11. Follow normal safety precautions when returning the valve to service.
12. It is advisable to check gland adjustment after a few hours of service. Take up as necessary.

If the valve does not actuate properly at the compressed assembly height, release all packing gland load completely. Then gradually tighten the packing gland nuts until no leakage is observed. Do not tighten to the point where the stem will not actuate. (Ref. *Torque and Friction Values*.) *It should be further noted that stem and stuffing box conditions greatly affect sealability in this type of service.*

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PACKING CONFIGURATION



* The stuffing box depth is measured with the lower stem guide bushing and one anti-extrusion spacer washer installed.

Radial Min.	Axial Min.	Uncomp. Height	Compress. Height	Bolt Dia.	Spring Configuration	AWC Live Load Item#
.398"	.627"	.564"	.530"	.375"	2 in parallel, 3 in series	291107
.625"	.588"	.541"	.498"	.500"	2 in parallel, 2 in series	291109
.555"	.497"	.412"	.390"	.500"	1 parallel, 2 in series	291120
.790"	.954"	.635"	.582"	.625"	2 in parallel, 2 in series	291110
.790"	.753"	.635"	.582"	.750"	2 in parallel, 2 in series	291111
.625"	.982"	.584"	.548"	.750"	2 in parallel, 2 in series	291112

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BODY RATING: Class 150												
Spud Size	Valve/Actuator Size	Stem O.D.	Box I.D.	Bolt/Stud Dia.	Bolt/Stud Length	Box Depth*	5101 Bushing Qty./Hgt.	Live Load Item #	Chesterton Kit Item #	Installed Torque Ft-lbs	Operational Torque Ft-lbs	Calculated Packing Friction
2.00"	1/2-1" size 25/50	0.562"	1.000"	0.375"	2.750"	2.812"	1 @ 1.437"	291107	336809	7 Ft Lbs.	6 Ft Lbs.	152 Lbs.
2.00"	1.5-2" size 25/50	0.875"	1.250"	0.375"	2.750"	3.531"	1 @ 2.484"	291107	336810	8 Ft Lbs.	7 Ft Lbs.	203 Lbs.
2.62"	3" size 50/100	1.125"	1.625"	0.500"	3.000"	4.031"	1 @ 2.656"	291109	336811	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
2.62"	4" size 50	1.125"	1.625"	0.500"	3.000"	5.343"	2 @ 1.984"	291109	336812	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
2.88"	4" size 100	1.125"	1.625"	0.500"	3.500"	5.343"	2 @ 1.984"	291109	336813	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
2.62"	6" size 50	1.125"	1.625"	0.500"	3.000"	6.031"	2 @ 2.328"	291109	336817	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
2.88"	6" size 100	1.125"	1.625"	0.500"	3.500"	6.031"	2 @ 2.328"	291109	336817	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
3.38"	6" size 300	1.125"	1.625"	—	—	6.031"	2 @ 2.328"	—	—	—	—	—
3.38"	8" size 100	1.500"	2.000"	0.625"	6.000"	6.218"	2 @ 2.422"	291112	336825	30 Ft Lbs.	25 Ft Lbs.	464 Lbs.
BODY RATING: Class 300												
Spud Size	Valve/Actuator Size	Stem O.D.	Box I.D.	Bolt/Stud Dia.	Bolt/Stud Length	Box Depth*	5101 Bushing Qty./Hgt.	Live Load Item #	Chesterton Kit Item #	Installed Torque Ft-lbs	Operational Torque Ft-lbs	Calculated Packing Friction
2.00"	1/2-1" size 25/50	0.562"	1.000"	0.375"	2.750"	2.812"	1 @ 1.437"	291107	336809	7 Ft Lbs.	6 Ft Lbs.	152 Lbs.
2.00"	1.5-2" size 25/50	0.875"	1.250"	0.375"	2.750"	3.531"	1 @ 2.484"	291107	336810	8 Ft Lbs.	7 Ft Lbs.	203 Lbs.
2.62"	3" size 50/100	1.125"	1.625"	0.500"	3.000"	4.031"	1 @ 2.656"	291109	336811	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
2.62"	4" size 50	1.125"	1.625"	0.500"	3.000"	5.343"	2 @ 1.984"	291109	336812	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
2.88"	4" size 100	1.125"	1.625"	0.500"	3.500"	5.343"	2 @ 1.984"	291109	336813	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
3.38"	6" size 100	2.000"	2.500"	0.625"	6.000"	7.032"	2 @ 2.828"	291110	336819	39 Ft Lbs.	32 Ft Lbs.	618 Lbs.
3.38"	6" size 300	2.000"	2.500"	0.750"	6.000"	7.032"	2 @ 2.828"	291111	336820	46 Ft Lbs.	39 Ft Lbs.	618 Lbs.
3.38"	8" size 100	2.000"	2.500"	0.625"	6.000"	7.812"	2 @ 3.219"	291110	336824	39 Ft Lbs.	32 Ft Lbs.	618 Lbs.
3.38"	8" size 300	2.000"	2.500"	0.750"	6.000"	7.812"	2 @ 3.219"	291111	336825	46 Ft Lbs.	39 Ft Lbs.	618 Lbs.
BODY RATING: Class 600												
Spud Size	Valve/Actuator Size	Stem O.D.	Box I.D.	Bolt/Stud Dia.	Bolt/Stud Length	Box Depth*	5101 Bushing Qty./Hgt.	Live Load Item #	Chesterton Kit Item #	Installed Torque Ft-lbs	Operational Torque Ft-lbs	Calculated Packing Friction
2.00"	1/2-1" size 25/50	0.562"	1.000"	0.375"	2.750"	2.812"	1 @ 1.437"	291107	336809	7 Ft Lbs.	6 Ft Lbs.	152 Lbs.
2.00"	1.5-2" size 25/50	0.875"	1.250"	0.375"	2.750"	3.531"	1 @ 2.484"	291107	336810	8 Ft Lbs.	7 Ft Lbs.	203 Lbs.
2.62"	3" size 50/100	1.125"	1.625"	0.500"	3.000"	4.031"	1 @ 2.656"	291120	336814	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
2.62"	4" size 50	1.125"	1.625"	0.500"	3.000"	5.343"	2 @ 1.984"	291120	336815	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
2.88"	4" size 100	1.125"	1.625"	0.500"	3.500"	5.343"	2 @ 1.984"	291120	336816	19 Ft Lbs.	16 Ft Lbs.	348 Lbs.
3.38"	6" size 100	2.000"	2.500"	0.625"	6.000"	7.032"	2 @ 2.828"	291110	336821	39 Ft Lbs.	32 Ft Lbs.	618 Lbs.
3.38"	6" size 300	2.000"	2.500"	0.750"	6.000"	7.032"	2 @ 2.828"	291111	336822	46 Ft Lbs.	39 Ft Lbs.	618 Lbs.
3.38"	8" size 100	2.000"	2.500"	0.625"	6.000"	7.812"	2 @ 3.219"	291110	336824	39 Ft Lbs.	32 Ft Lbs.	618 Lbs.
3.38"	8" size 300	2.000"	2.500"	0.750"	6.000"	7.812"	2 @ 3.219"	291111	336825	46 Ft Lbs.	39 Ft Lbs.	618 Lbs.