



5800E

Installation Instructions

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

1. **Precaution:** System should be shut down, depressurized, drained, and cool before valve is handled. Observe all plant safety requirements.
2. **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 (± 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*.)
3. 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.
4. Verify the split carbon sleeve height provided 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 six times the cross-section for the 5800E 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.
5. If end rings are used, install one ring 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.
6. Carefully install graphite wedge rings starting with an End Cap, followed by an I.D. Sealing Ring, O.D. Sealing Ring, I.D. Sealing Ring, and End Cap. (See *Packing Configuration*.)
 - a) Install rings over the valve stem by twisting slightly, never open rings with a hinge like action.
 - b) Stagger ring joints 90°.
 - c) Use outer most or next ring to push previously installed rings into stuffing box until all rings are in place. **DO NOT USE A TAMPING TOOL**, you may damage the sealing surface on the wedge shaped rings.
7. Install top end ring.
8. Gently seat the packing set with the Chesterton Tamping Tool.
9. 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.
10. Lubricate the studs and bottom of the nuts with a Chesterton recommended anti-seize compound.
If a non-Live Load Kit, proceed to Step 13b.
If Live Loading is used, lubricate the assembly components (Belleville springs and flat washer) with a Chesterton recommended anti-seize compound. Verify the springs and flat washers are properly stacked as shown in the chart. (See *Packing Configuration*.)
11. 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.
12. Install a live loading assembly on each stud. The cut away portion of the outer guide should face the stem.
- 13a. Install the two packing gland nuts. Tighten each nut until finger tight. Alternate tightening 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.
- 13b. For non-Live Loaded kits use calibrated torque wrench, alternating between bolts. Verify that the packing gland is square and perpendicular to the stem.
14. To properly consolidate the packing: Actuate the valve 10 times, retighten the packing gland nuts at the end of the last down / in-stroke. Actuate the valve 10 more times, retighten the packing gland nuts at the end of the last down / in-stroke.
15. Follow normal safety precautions when returning the valve to service.
16. It is advisable to check gland adjustment (torque/live loading) 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. Reference the Torque and Packing Friction values in the chart if necessary.

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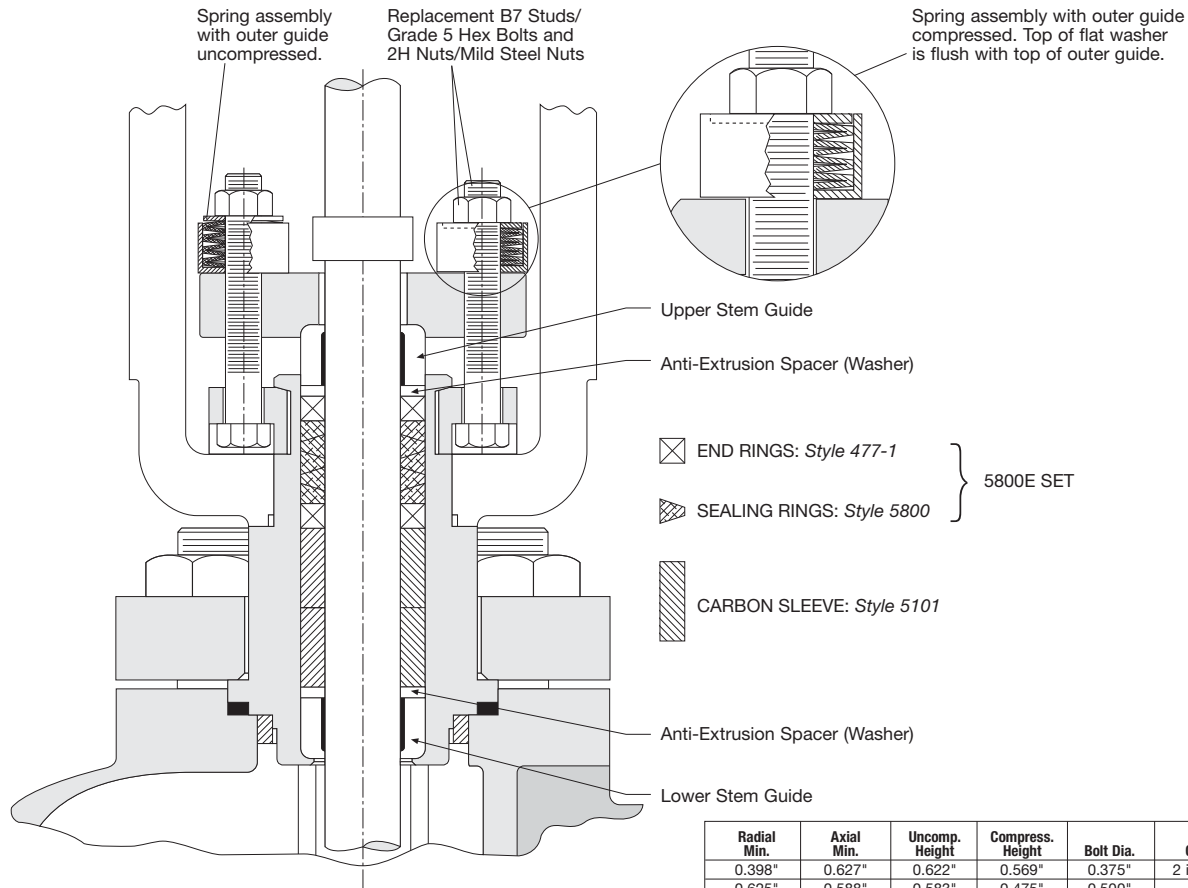


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PACKING CONFIGURATION



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

** No Live Load Kits contain packing & bushing only.

Radial Min.	Axial Min.	Uncomp. Height	Compress. Height	Bolt Dia.	Spring Configuration	AWC Live Load Item #
0.398"	0.627"	0.622"	0.569"	0.375"	2 in par/4 in ser	024729
0.625"	0.588"	0.583"	0.475"	0.500"	4 in series	024735
0.555"	0.497"	0.492"	0.454"	0.500"	2 in par/2 in ser	024778
0.790"	0.706"	0.701"	0.593"	0.750"	4 in series	025599
0.790"	0.753"	0.748"	0.635"	0.750"	4 in series	025925
0.790"	0.954"	0.949"	0.788"	0.625"	6 in series	030718
0.790"	1.025"	1.020"	0.849"	0.625"	6 in series	031044
0.810"	0.982"	0.977"	0.810"	0.625"	8 in series	033816

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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 #	Complete Kit Item #	No LL Kit Item #**	Predicted Packing Friction	Torque Ft-lbs	Torque N-M
2.00"	1/2-1" / 25/50	0.562"	1.000"	0.375"	2.750"	2.812"	1 / 1.406"	024729	148009	148154	281 lbs.	5	7
2.00"	1.5-2" / 25/50	0.875"	1.250"	0.375"	2.750"	3.531"	1 / 2.375"	024729	148010	148155	321 lbs.	5	7
2.62"	3" / 50/100	1.125"	1.625"	0.500"	3.000"	4.031"	1 / 2.500"	024735	148011	148156	326 lbs.	6	8
2.62"	4" / 50	1.125"	1.625"	0.500"	3.000"	5.343"	2 / 1.906"	024735	148012	148157	326 lbs.	6	8
2.88"	4" / 100	1.125"	1.625"	0.500"	3.500"	5.343"	2 / 1.906"	024735	148013	148158	326 lbs.	6	8
2.62"	6" / 50	1.125"	1.625"	0.500"	3.000"	6.031"	2 / 2.250"	024735	148017	148159	326 lbs.	6	8
2.88"	6" / 100	1.125"	1.625"	0.500"	3.500"	6.031"	2 / 2.250"	024735	148018	148163	326 lbs.	6	8
3.38"	6" / 300	1.125"	1.625"	n/a	n/a	6.031"	2 / 2.250"	n/a	n/a	n/a	n/a	n/a	n/a
3.38"	8" / 100	1.500"	2.000"	0.625"	6.000"	6.218"	2 / 2.328"	033816	148023	148168	421 lbs.	10	14
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 #	Complete Kit Item #	No LL Kit Item #**	Predicted Packing Friction	Torque Ft-lbs	Torque N-M
2.00"	1/2-1" / 25/50	0.562"	1.000"	0.375"	2.750"	2.812"	1 / 1.406"	024729	148009	148154	281 lbs.	5	7
2.00"	1.5-2" / 25/50	0.875"	1.250"	0.375"	2.750"	3.531"	1 / 2.375"	024729	148010	148155	321 lbs.	5	7
2.62"	3" / 50/100	1.125"	1.625"	0.500"	3.000"	4.031"	1 / 2.500"	024735	148011	148156	326 lbs.	6	8
2.62"	4" / 50	1.125"	1.625"	0.500"	3.000"	5.343"	2 / 1.906"	024735	148012	148157	326 lbs.	6	8
2.88"	4" / 100	1.125"	1.625"	0.500"	3.500"	5.343"	2 / 1.906"	024735	148013	148158	326 lbs.	6	8
n/a	6" / 50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3.38"	6" / 100	2.000"	2.500"	0.625"	6.000"	7.032"	2 / 2.750"	030718	148019	148164	561 lbs.	13	18
3.38"	6" / 300	2.000"	2.500"	0.750"	6.000"	7.032"	2 / 2.750"	025599	148020	148165	561 lbs.	15	20
3.38"	8" / 100	2.000"	2.500"	0.625"	6.000"	7.812"	2 / 3.125"	030718	148024	148169	561 lbs.	13	18
3.38"	8" / 300	2.000"	2.500"	0.750"	6.000"	7.812"	2 / 3.125"	025599	148025	148170	561 lbs.	15	20
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 #	Complete Kit Item #	No LL Kit Item #**	Predicted Packing Friction	Torque Ft-lbs	Torque N-M
2.00"	1/2-1" / 25/50	0.562"	1.000"	0.375"	2.750"	2.812"	1 / 1.406"	024729	148009	148154	281 lbs.	5	7
2.00"	1.5-2" / 25/50	0.875"	1.250"	0.375"	2.750"	3.531"	1 / 2.375"	024729	148010	148155	321 lbs.	5	7
2.62"	3" / 50/100	1.125"	1.625"	0.500"	3.000"	4.031"	1 / 2.500"	024778	148014	148159	592 lbs.	12	16
2.62"	4" / 50	1.125"	1.625"	0.500"	3.000"	5.343"	2 / 1.906"	024778	148015	148160	592 lbs.	12	16
2.88"	4" / 100	1.125"	1.625"	0.500"	3.500"	5.343"	2 / 1.906"	024778	148016	148161	592 lbs.	12	16
n/a	6" / 50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3.38"	6" / 100	2.000"	2.500"	0.625"	6.000"	7.032"	2 / 2.750"	031044	148021	148166	1052 lbs.	24	33
3.38"	6" / 300	2.000"	2.500"	0.750"	6.000"	7.032"	2 / 2.750"	025925	148022	148167	1052 lbs.	29	39
3.38"	8" / 100	2.000"	2.500"	0.625"	6.000"	7.812"	2 / 3.125"	031044	148026	148171	1052 lbs.	24	33
3.38"	8" / 300	2.000"	2.500"	0.750"	6.000"	7.812"	2 / 3.125"	025925	148027	148172	1052 lbs.	29	39

The 477-1 end rings for the .562" x 1.000" x .218 CS packing set are .236" cross section (.218" CS is not manufactured).