



UNIVERSAL SALES

TUF-SKIN VALVES

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Valve Stem Extension Assembly Guide

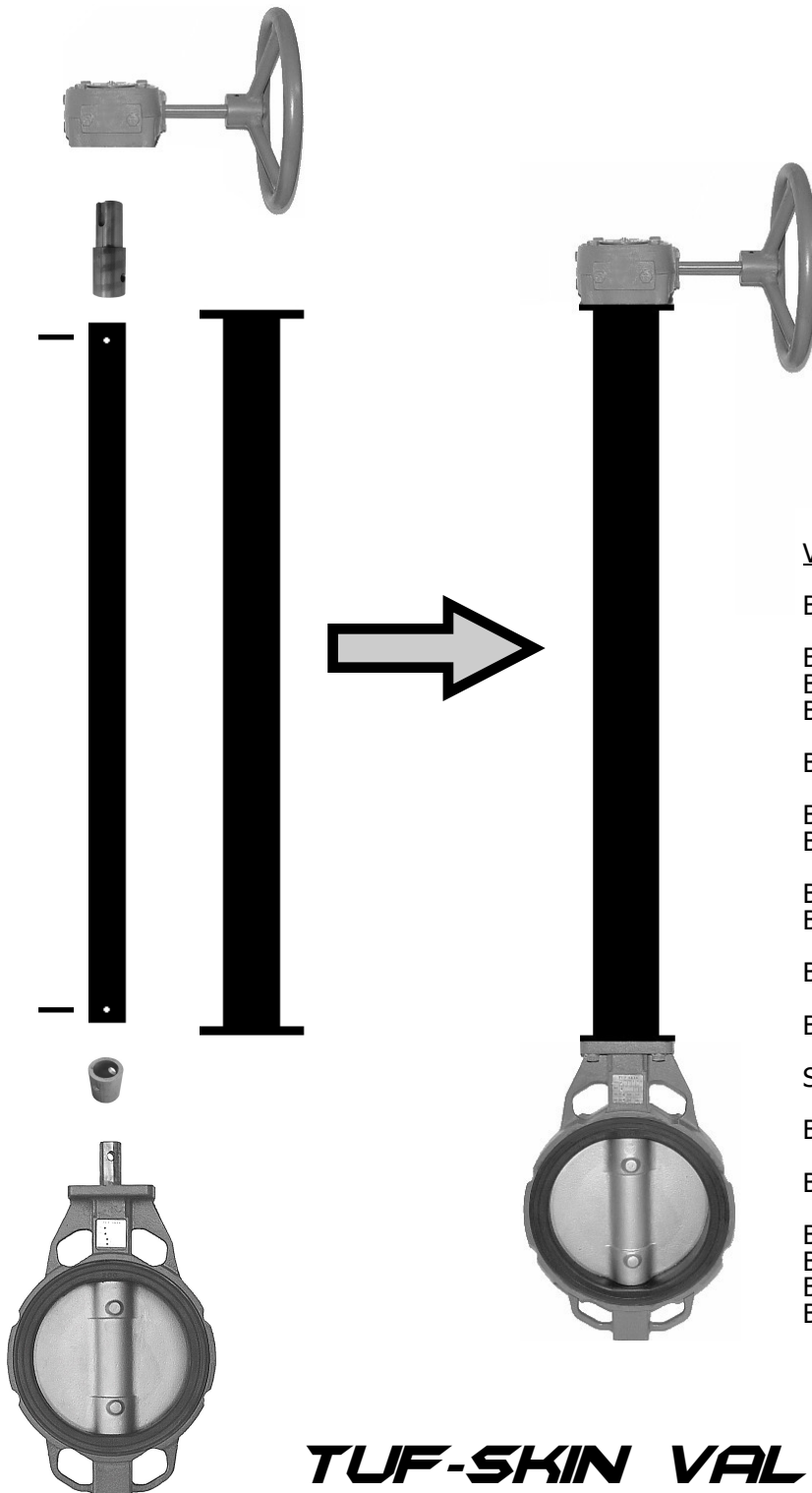
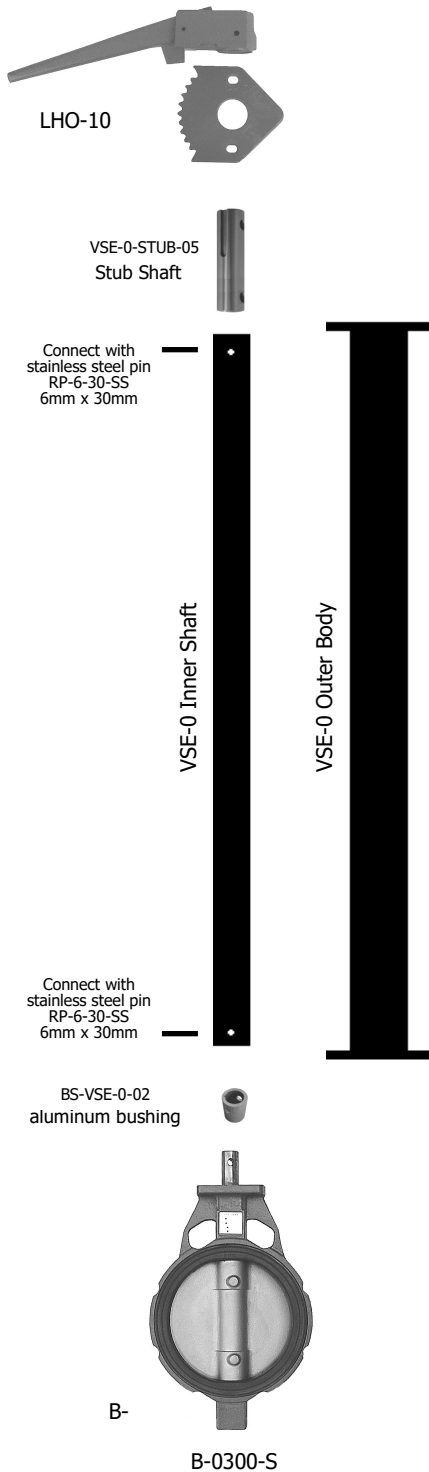


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TUF-SKIN VALVES



Installation instructions for VSE-0 on B-0300-L (same for B-0200-L and B-0250-L)



VSE Parts list:

- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-05 stub shaft
- 2 = 6mm x 30mm stainless roll pin
- 1 = BS-VSE-0-02 aluminum bushing
- 1 = LHO-10 lever operator
- 4 = 5/16" x 1 1/2" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts

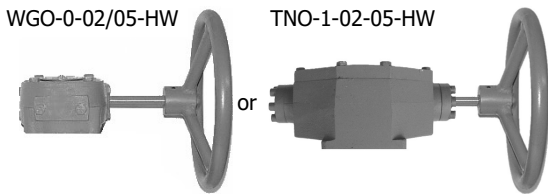
Note: The inner shaft on the VSE-0 was changed in 2019. The old inner shaft has a 7/8" inside diameter while the new inner shaft has a 3/4" inside diameter. The old shaft uses the old VSE-0-STUB-04 stub shaft and a BS-VSE-0-04 bushing not shown on these instructions.

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the LHO-05 lever operator from the valve and discard (it won't fit on the VSE). Keep the roll pin, bolts, nuts, and washers for step #6.
- 3) Install the VSE-0-STUB-05 into the inner shaft, with the key end out, using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-VSE-0-02 bushing, and a 6mm roll pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the new LHO-10 lever operator onto the extension using the original roll pin, bolts, nuts, and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the lever notch plate if needed.

Pictures for illustration only. Actual product may vary.



Installation instructions for VSE-0 on B-0300-W or B-0300-TNO-HW (same for B-0200-W and B-0250-W) (same for B-0200-TNO-HW and B-0250-TNO-HW)



VSE-0-STUB-05
Stub Shaft

Connect with
stainless steel pin
RP-6-30-SS
6mm x 30mm

VSE-0 Inner Shaft

VSE-0 Outer Body

Connect with
stainless steel pin
RP-6-30-SS
6mm x 30mm

BS-VSE-0-02
aluminum bushing



B-0300-S

VSE Parts list:

- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-05 stub shaft
- 2 = 6mm x 30mm stainless roll pin
- 1 = BS-VSE-0-02 aluminum bushing
- 1 = 1/4" key
- 4 = 5/16" x 1 1/2" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts

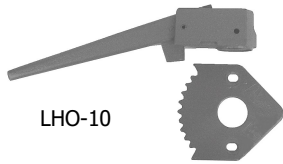
Note: The inner shaft on the VSE-0 was changed in 2019. The old inner shaft has a 7/8" inside diameter while the new inner shaft has a 3/4" inside diameter. The old shaft uses the old VSE-0-STUB-04 stub shaft and a BS-VSE-0-04 bushing not shown on these instructions.

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the gear box from the valve. Keep the bolts and the washers for step #6. Discard the step down key and the slotted bushing.
- 3) Install the VSE-0-STUB-05, with the key end out, into the inner shaft using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-VSE-0-02 bushing and a 6mm roll pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the gear box onto the extension using the new key and the bolts and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the stops if needed.

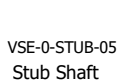
Pictures for illustration only. Actual product may vary.



Installation instructions for VSE-0 on B-0400-L (same for B-0500-L)



LHO-10



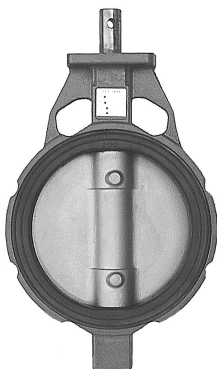
VSE-0-STUB-05
Stub Shaft

Connect with
stainless steel pin
RP-6-30-SS
6mm x 30mm

VSE-0 Inner Shaft

VSE-0 Outer Body

Connect with
stainless steel pin
RP-6-30-SS
6mm x 30mm



B-0400-S

VSE Parts list:

- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-05 stub shaft
- 2 = 6mm x 30mm stainless roll pin
- 4 = 5/16" x 1 1/2" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts

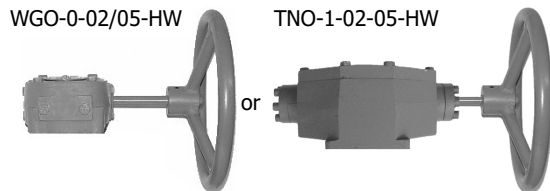
Note: The inner shaft on the VSE-0 was changed in 2019. The old inner shaft has a 7/8" inside diameter while the new inner shaft has a 3/4" inside diameter. The old shaft uses the old VSE-0-STUB-04 stub shaft and a BS-VSE-0-04 bushing not shown on these instructions.

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the lever operator from the valve. Keep the roll pin, bolts, nuts, and washers for step #6.
- 3) Install the VSE-0-STUB-05 into the inner shaft, with the keyed end out, using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied 6mm roll pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the lever operator onto the extension using the original roll pin, bolts, nuts, and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the lever notch plate if needed.

Pictures for illustration only. Actual product may vary.

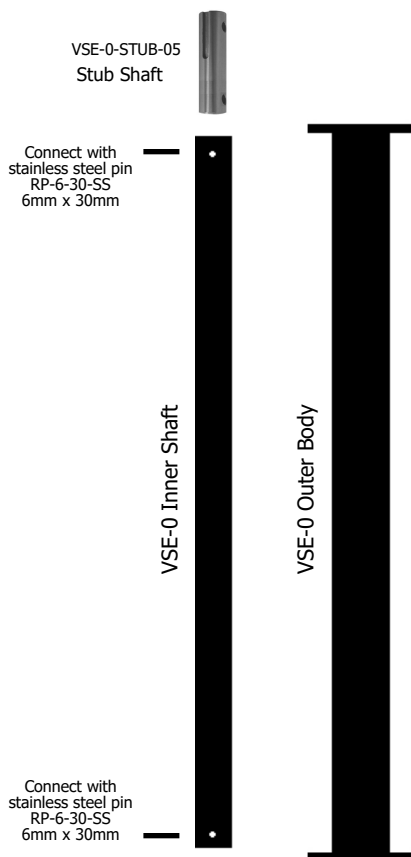


Installation instructions for VSE-0 on B-0400-W or B-0400-TNO-HW (same for B-0500-W and B-0500-TNO-HW)



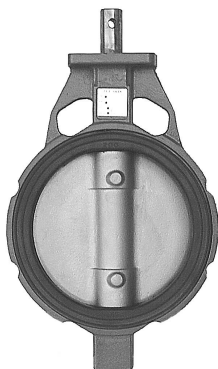
VSE Parts list:

- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-05 stub shaft
- 2 = 6mm x 30mm stainless roll pin
- 4 = 5/16" x 1 1/2" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts



Note: The inner shaft on the VSE-0 was changed in 2019. The old inner shaft has a 7/8" inside diameter while the new inner shaft has a 3/4" inside diameter. The old shaft uses the old VSE-0-STUB-04 stub shaft and a BS-VSE-0-04 bushing not shown on these instructions.

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the gear box from the valve. Keep the key, bolts, and washers for step #6.
- 3) Install the VSE-0-STUB-05 into the inner shaft, with the keyed end out, using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied 6mm roll pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the gear box onto the extension using the key, bolts, and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the stops if needed.



B-0400-S

Pictures for illustration only. Actual product may vary.



Installation instructions for VSE-1 on B-0600-L (same for B-0800-L, B-1000-L, and B-1200-L)

VSE Parts list:

- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts



LHO-15

VSE-1-STUB-12
Stub Shaft

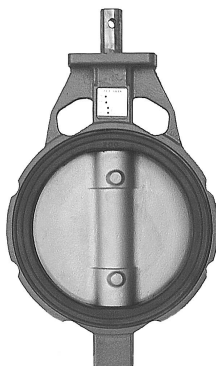
Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm

VSE-1 Inner Shaft

VSE-1 Outer Body

Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm

BS-LHO-15-06
Bushing



B-0600-S

Note: Replace XX in the bushing part number with the valve size (06 for 6", 08 for 8", 10 for 10", and 12 for 12").

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the lever operator from the valve. Keep the roll pin, bolts, nuts, and washers for step #6. Keep the BS-LHO-15-XX bushing for step #4.
- 3) Install the VSE-1-STUB-12 into the inner shaft, with the keyed end out, using a 10mm solid stainless steel grooved pin.
- 4) Install the inner shaft onto the valve shaft by using the BS-LHO-15-XX bushing that was in the lever operator and a 10mm solid stainless steel grooved pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the lever operator onto the extension using the original roll pin, bolts, nuts, and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the lever notch plate if needed.

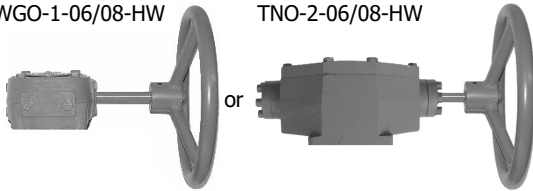
Pictures for illustration only. Actual product may vary.



Installation instructions for VSE-1 on B-0600-W or B-0600-TNO-HW

WGO-1-06/08-HW

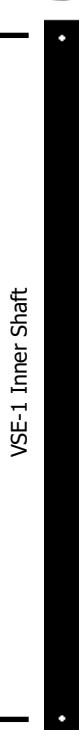
TNO-2-06/08-HW



VSE-1-STUB-08
Stub Shaft



Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm



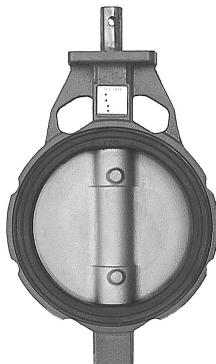
VSE-1 Inner Shaft



VSE-1 Outer Body

Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm

BS-LHO-15-06
Bushing



B-0600-S

VSE Parts list:

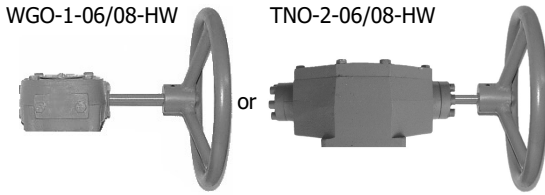
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-08 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-06 bushing
- 1 = 5/16" key
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the gear box from the valve. Keep the bolts and washers for step #6. Discard the step down key and slotted bushing.
- 3) Install the VSE-1-STUB-08 into the inner shaft using a 10mm solid stainless steel grooved pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-LHO-15-06 bushing and a 10mm solid stainless steel grooved pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the gear box onto the extension using the new 5/16" square key and the bolts and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the stops if needed.

Pictures for illustration only. Actual product may vary.



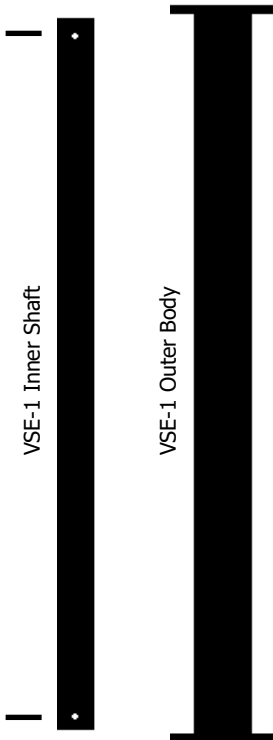
Installation instructions for VSE-1 on B-0800-W or B-0800-TNO-HW



VSE-1-STUB-08
Stub Shaft



Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm

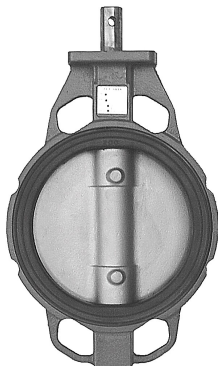


VSE-1 Inner Shaft

VSE-1 Outer Body

Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm

BS-LHO-15-08
Bushing



B-0800-S

VSE Parts list:

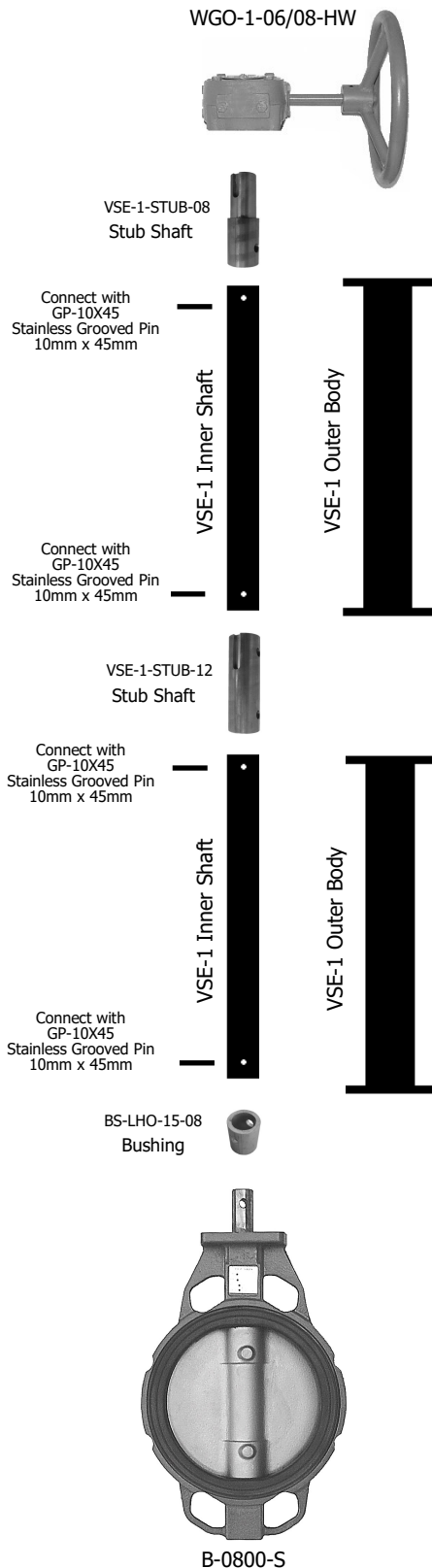
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-08 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-08 bushing
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the gear box from the valve. Keep the key, bolts, and washers for step #6.
- 3) Install the VSE-1-STUB-08 into the inner shaft, with the keyed end out, using a 10mm solid stainless steel grooved pin.
- 4) Install the inner shaft onto the valve shaft by using a 10mm solid stainless steel grooved pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the gear box onto the extension using the key, bolts, and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the stops if needed.

Pictures for illustration only. Actual product may vary.



Installation instructions for stacking two VSE-1 on B-0800-W (same for B-0800-TNO-HW)



VSE Parts list:

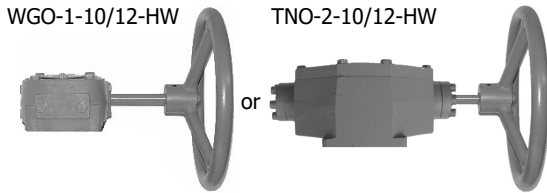
- 2 = VSE-1 outer body
- 2 = VSE-1 inner shaft
- 1 = VSE-1-STUB-08 stub shaft
- 1 = VSE-1-STUB-12 stub shaft
- 4 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-08 bushing
- 8 = 3/8" x 1 1/2" bolts
- 8 = 3/8" flat washers
- 8 = 3/8" lock washers
- 8 = 3/8" nuts

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the worm gear operator from the valve. Keep the key, bolts, and washers for step #9.
- 3) Install the VSE-1-STUB-12 into an inner shaft using a 10mm solid stainless steel grooved pin.
- 4) Install the inner shaft with the VSE-1-STUB-12 onto the valve shaft by using the supplied BS-LHO-15-08 bushing and a 10mm solid stainless steel grooved pin.
- 5) Slide an outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the VSE-1-STUB-08 into the remaining inner shaft using a 10mm solid stainless steel grooved pin.
- 7) Install the inner shaft with the VSE-1-STUB-08 onto the previously installed VSE with a 10mm solid stainless steel grooved pin.
- 8) Slide an outer body over the inner shaft and attach it to the other VSE mounting flange using the supplied bolts, washers, and nuts.
- 9) Install the worm gear operator onto the extension using the original key, bolts, and washers from step #2.
- 10) Check the operation of the valve by opening and closing it a few times. Make adjustments to the stops if needed.

Pictures for illustration only. Actual product may vary.



Installation instructions for VSE-1 on B-1000-W or B-1000-TNO-HW



VSE-1-STUB-12
Stub Shaft



Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm



VSE-1 Inner Shaft

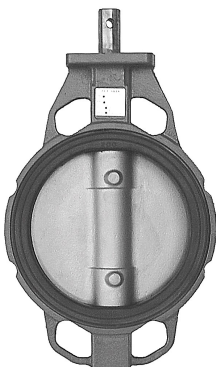


VSE-1 Outer Body



Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm

BS-LHO-15-10
Bushing



B-1000-S

VSE Parts list:

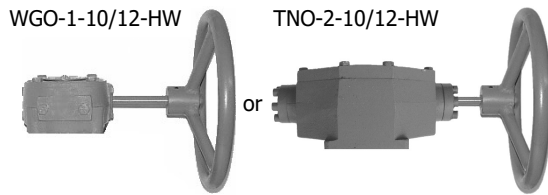
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-10 bushing
- 1 = 5/16" key
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the gear box from the valve. Keep the bolts and washers for step #6. Discard the rectangular key and slotted bushing.
- 3) Install the VSE-1-STUB-12 into the inner shaft, with the keyed end out, using a 10mm solid stainless steel grooved pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-LHO-15-10 bushing and a 10mm solid stainless steel grooved pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the gear box onto the extension using the new 5/16" square key and the bolts and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the stops if needed.

Pictures for illustration only. Actual product may vary.



Installation instructions for VSE-1 on B-1200-W or B-1200-TNO-HW



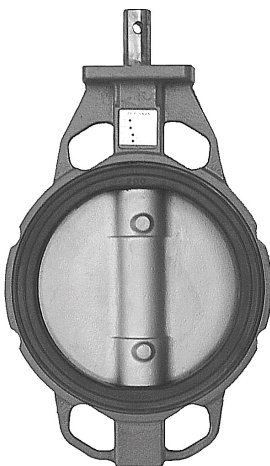
VSE-1-STUB-12
Stub Shaft

Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm

VSE-1 Inner Shaft

VSE-1 Outer Body

Connect with
GP-10X45
Stainless Grooved Pin
10mm x 45mm



B-1200-S

VSE Parts list:

- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the gear box from the valve. Keep the key, bolts, and washers for step #6.
- 3) Install the VSE-1-STUB-12 into the inner shaft, with the keyed end out, using a 10mm solid stainless steel grooved pin.
- 4) Install the inner shaft onto the valve shaft by using a 10mm solid stainless steel grooved pin.
- 5) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 6) Install the gear box onto the extension using the key, bolts, and washers from step #2.
- 7) Check the operation of the valve by opening and closing it a few times. Make adjustments to the stops if needed.

Pictures for illustration only. Actual product may vary.

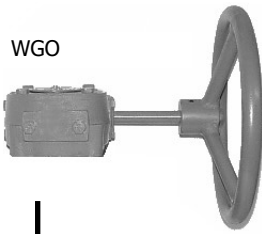


Installation instructions for

VSE on B-1400-W

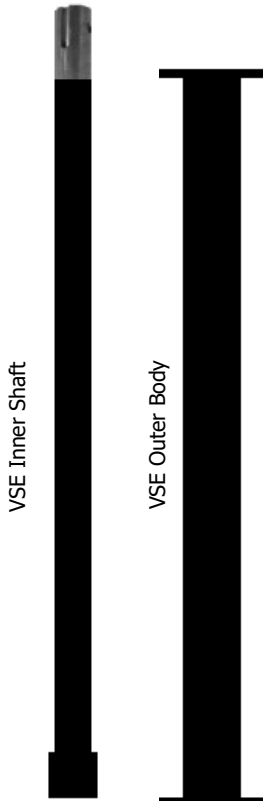
(same for b-1600-W, B-1800-W,
B-2000-W, B-2400-W)

(same for 1400-TNO-HW,
B-1600-TNO-HW, B-1800-TNO-HW)



WGO

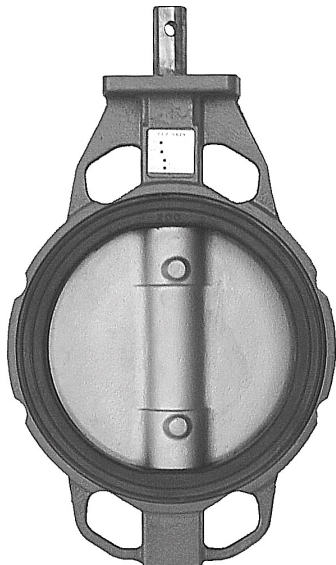
Connect with key



VSE Inner Shaft

VSE Outer Body

Connect with key



VSE Parts list:

- 1 = VSE outer body
- 1 = VSE inner shaft
- 1 = key for inner shaft
- 8 = hex bolts
- 4 = flat washers
- 4 = lock washers
- 4 = hex nuts

- 1) Relieve pressure and flow in the pipeline. Before working on a valve installed on a pipeline, make sure there is no pressure or flow, or serious injury may result.
- 2) Remove the gear box from the valve. Keep the key and washers for step #5.
- 3) Install the inner shaft onto the valve shaft by using the supplied key.
- 4) Slide the outer body over the inner shaft and attach it to the valve mounting flange using the supplied bolts, washers, and nuts.
- 5) Install the gear box onto the extension using the key and washers from step #2 and the new hex bolts (the original bolts may be too long for the thinner VSE mounting flange).
- 6) Check the operation of the valve by opening and closing it a few times. Make adjustments to the stops if needed.

Pictures for illustration only. Actual product may vary.