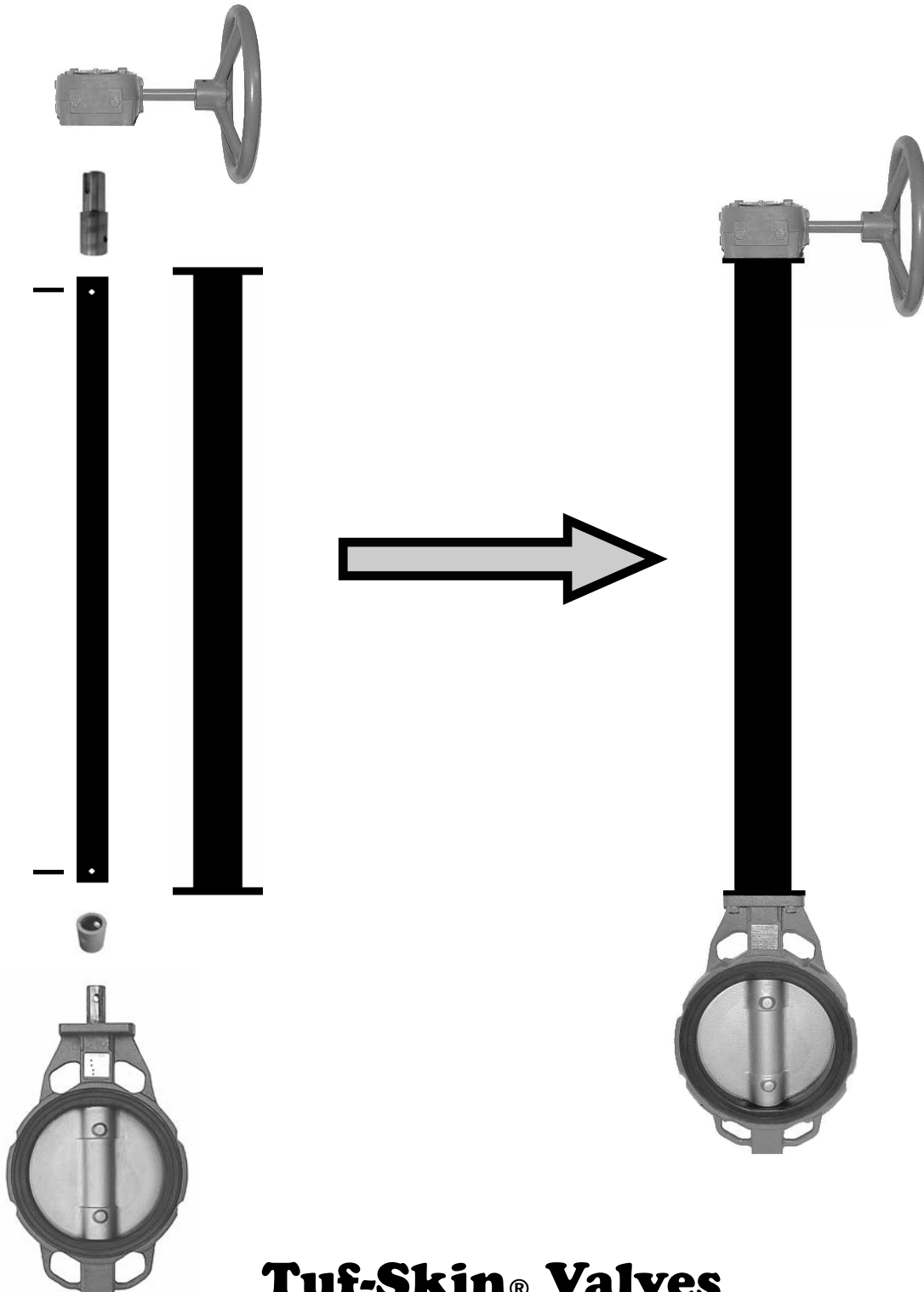




# **Valve Stem Extension Assembly Guide**





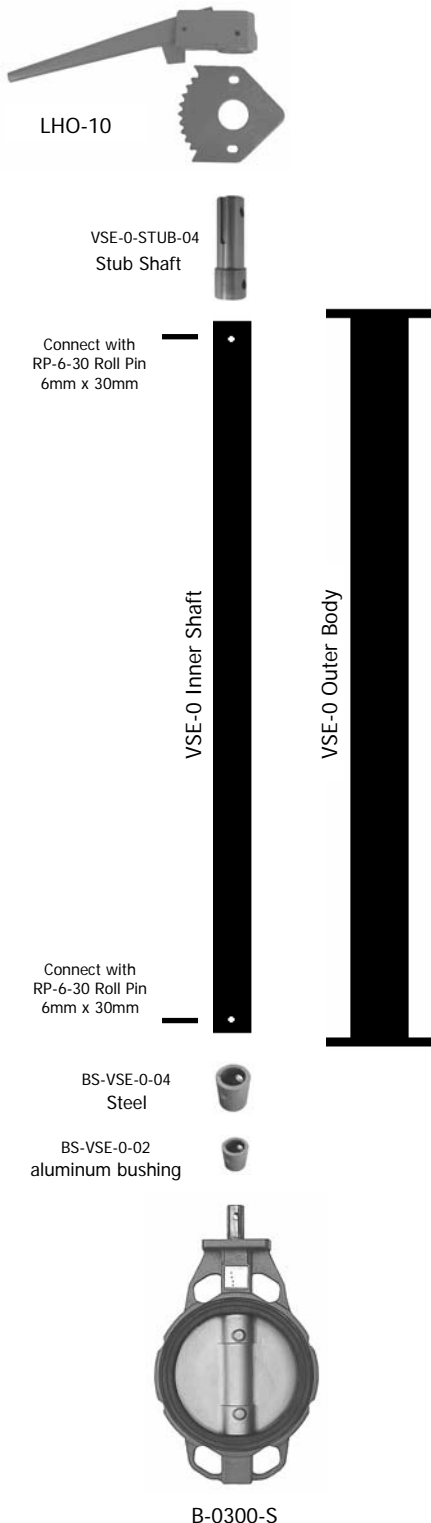
## VSE Assembly Guide

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



### VSE Parts list:

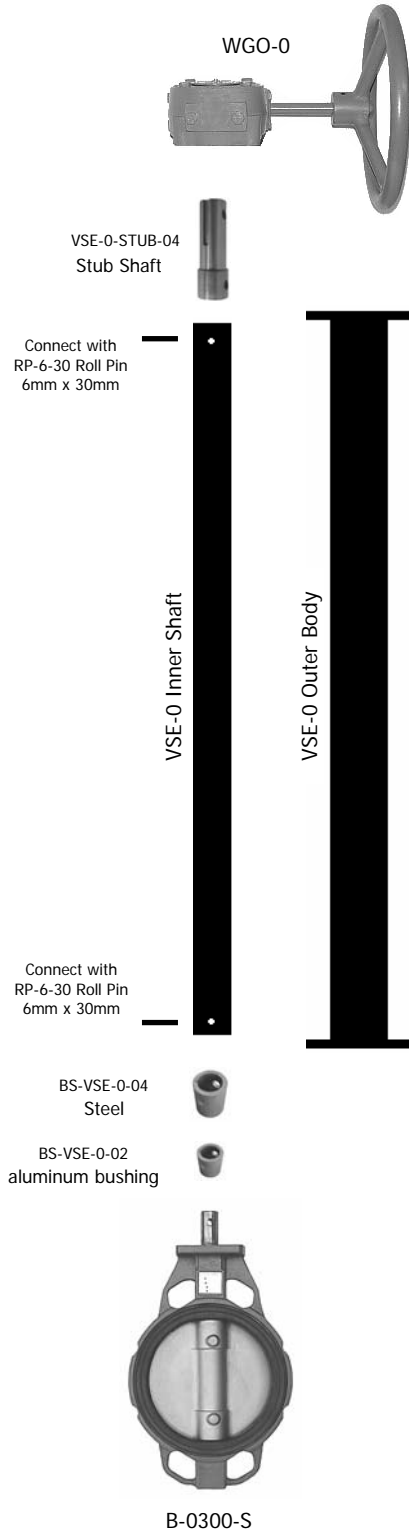
- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-04 stub shaft
- 2 = 6mm x 30mm roll pin
- 1 = BS-VSE-0-04 steel bushing
- 1 = BS-VSE-0-02 aluminum bushing
- 1 = LHO-10 lever operator
- 4 = 5/16" x 1 1/4" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts

- 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 lever operator from the valve. Keep the roll pin, bolts, nuts, and washers for step #6.
- 3) Install the VSE-0-STUB-04 into the inner shaft, with the small end out, using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-VSE-0-04 bushing, BS-VSE-0-02 bushing, and a 6mm roll pin. (The aluminum bushing should fit inside the steel bushing).
- 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 (same for B-0200-W and B-0250-W)



### VSE Parts list:

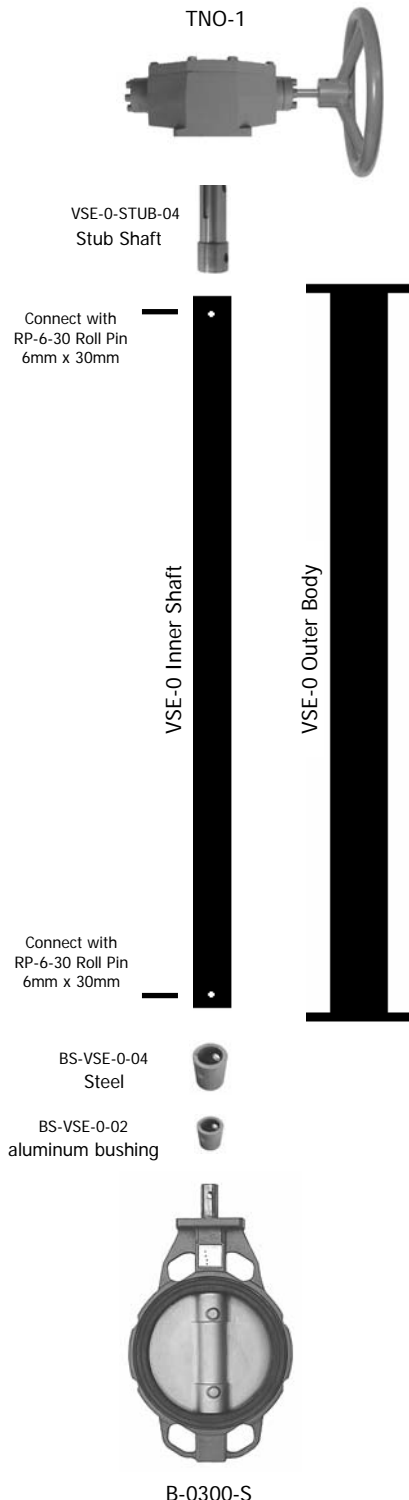
- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-04 stub shaft
- 2 = 6mm x 30mm roll pin
- 1 = BS-VSE-0-04 steel bushing
- 1 = BS-VSE-0-02 aluminum bushing
- 1 = 1/4" key for WGO
- 4 = 5/16" x 1 1/4" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts

- 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 bolts and the washers for step #6. Discard the step down key and the slotted bushing.
- 3) Install the VSE-0-STUB-04 into the inner shaft using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-VSE-0-04 bushing, BS-VSE-0-02 bushing, and a 6mm roll pin. (The aluminum bushing should fit inside the steel bushing).
- 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 worm gear operator 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 stop

Pictures for illustration only. Actual product may vary.



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



### VSE Parts list:

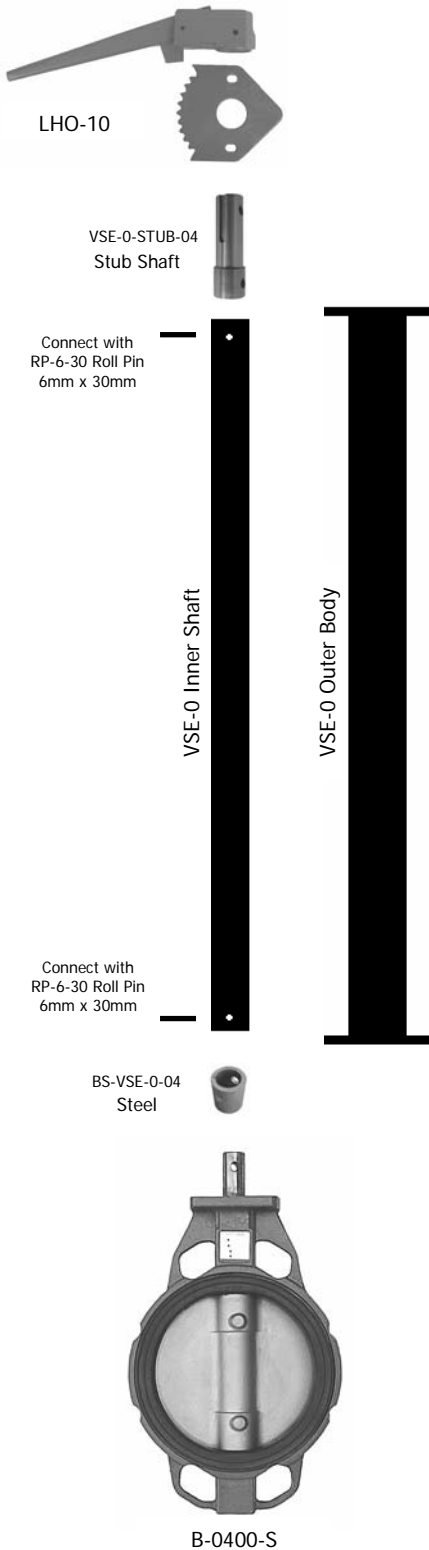
- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-04 stub shaft
- 2 = 6mm x 30mm roll pin
- 1 = BS-VSE-0-04 steel bushing
- 1 = BS-VSE-0-02 aluminum bushing
- 1 = 1/4" key for TNO
- 4 = 5/16" x 1 1/4" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts

- 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 traveling nut operator 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-04 into the inner shaft using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-VSE-0-04 bushing, BS-VSE-0-02 bushing, and a 6mm roll pin. (The aluminum bushing should fit inside the steel bushing).
- 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 traveling nut operator 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 traveling nut 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)



### VSE Parts list:

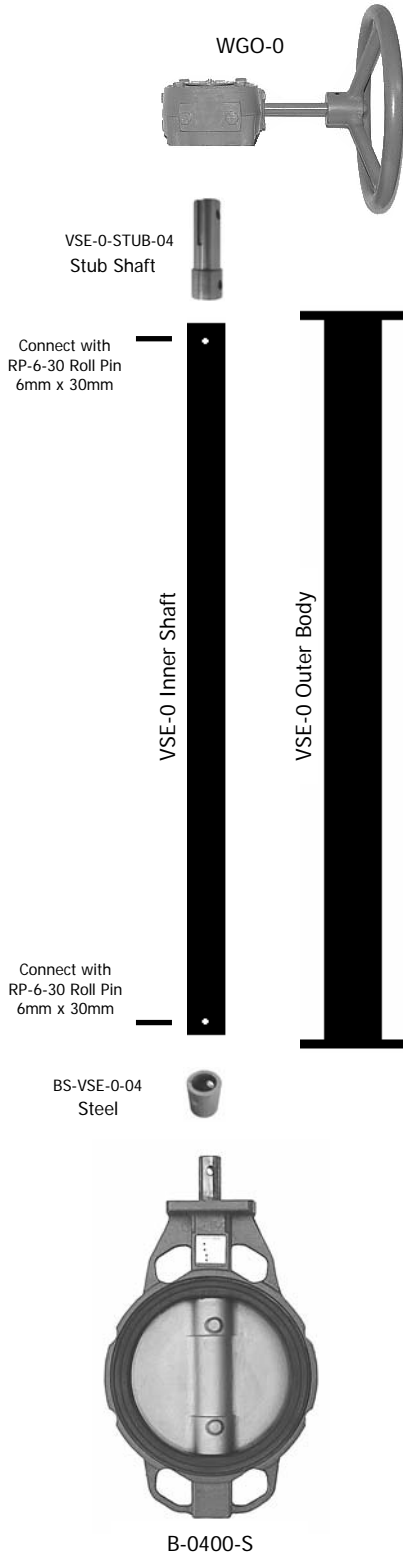
- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-04 stub shaft
- 2 = 6mm x 30mm roll pin
- 1 = BS-VSE-0-04 steel bushing
- 4 = 5/16" x 1 1/4" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts

- 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 lever operator from the valve. Keep the roll pin, bolts, nuts, and washers for step #6.
- 3) Install the VSE-0-STUB-04 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 BS-VSE-0-04 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 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 (same for B-0500-W)



### VSE Parts list:

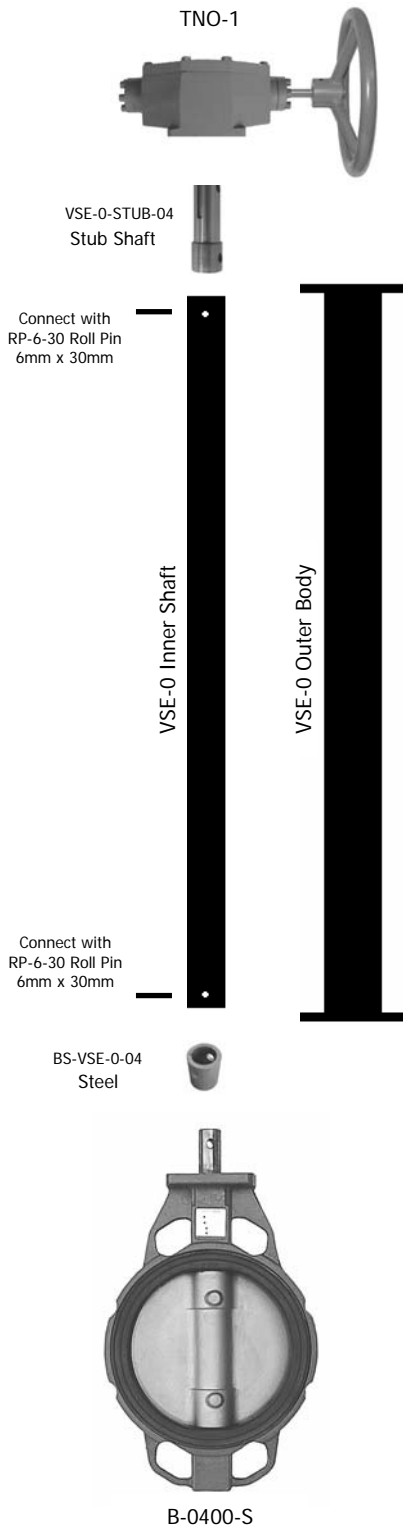
- |     |                             |     |                        |
|-----|-----------------------------|-----|------------------------|
| • 1 | = VSE-0 outer body          | • 4 | = 5/16" x 1 1/4" bolts |
| • 1 | = VSE-0 inner shaft         | • 4 | = 5/16" flat washers   |
| • 1 | = VSE-0-STUB-04 stub shaft  | • 4 | = 5/16" lock washers   |
| • 2 | = 6mm x 30mm roll pin       | • 4 | = 5/16" nuts           |
| • 1 | = BS-VSE-0-04 steel bushing |     |                        |

- 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 #6.
- 3) Install the VSE-0-STUB-04 into the inner shaft using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-VSE-0-04 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 worm gear operator 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 stop bolts if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-0 on B-0400-TNO-HW (same for B-0500-TNO-HW)



### VSE Parts list:

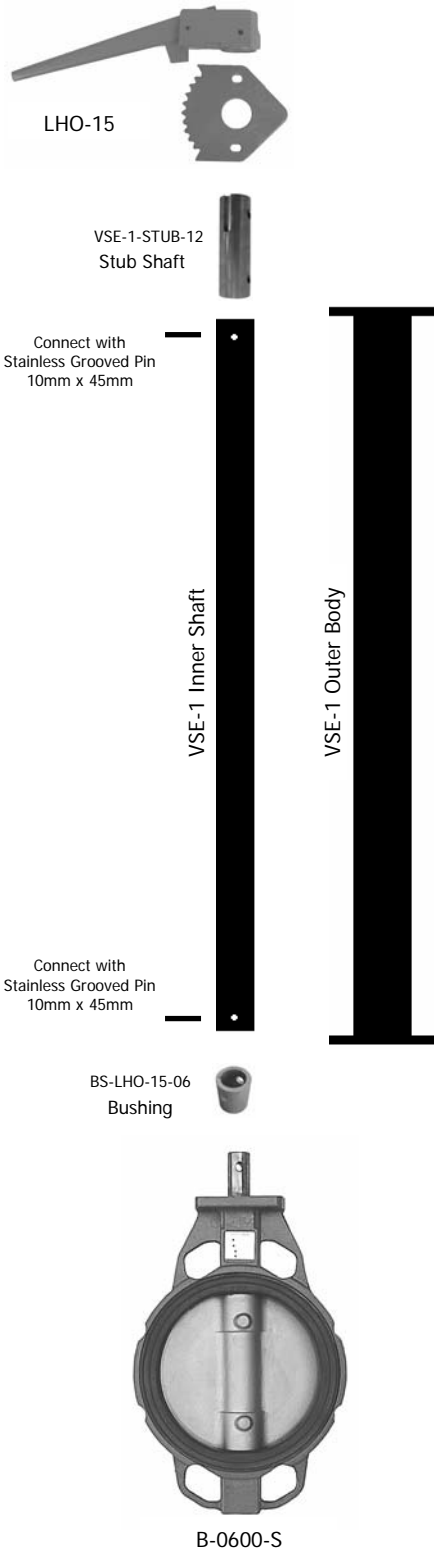
- 1 = VSE-0 outer body
- 1 = VSE-0 inner shaft
- 1 = VSE-0-STUB-04 stub shaft
- 2 = 6mm x 30mm roll pin
- 1 = BS-VSE-0-04 steel bushing
- 4 = 5/16" x 1 1/4" bolts
- 4 = 5/16" flat washers
- 4 = 5/16" lock washers
- 4 = 5/16" nuts

- 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 traveling nut operator from the valve. Keep the key, bolts, and washers for step #6.
- 3) Install the VSE-0-STUB-04 into the inner shaft using a 6mm roll pin.
- 4) Install the inner shaft onto the valve shaft by using the supplied BS-VSE-0-04 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 traveling nut operator 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 traveling nut stops if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-1 on B-0600-L



### VSE Parts list:

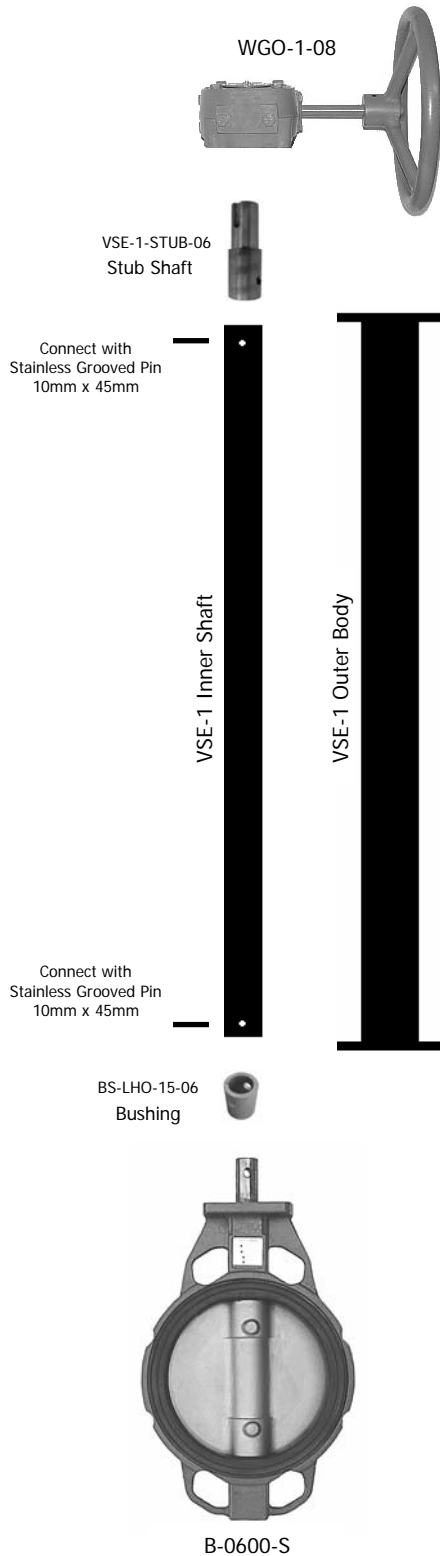
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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-15-06 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-15-06 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



### VSE Parts list:

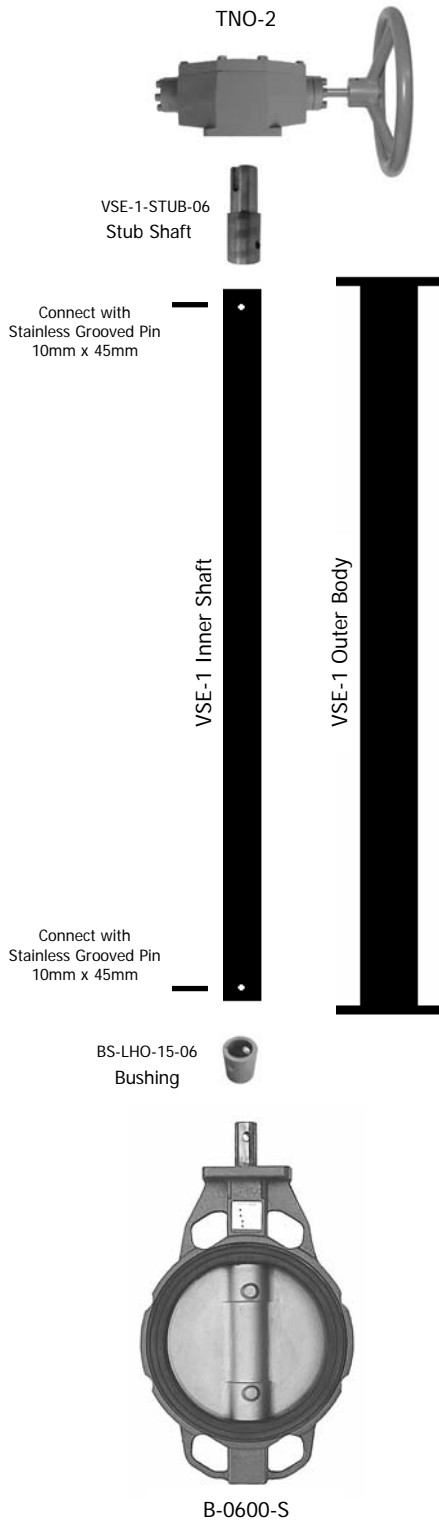
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-06 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-06 bushing
- 1 = 5/16" key for WGO
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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 worm gear operator 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-06 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 worm gear operator 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 stop bolts if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-1 on B-0600-TNO-HW



### VSE Parts list:

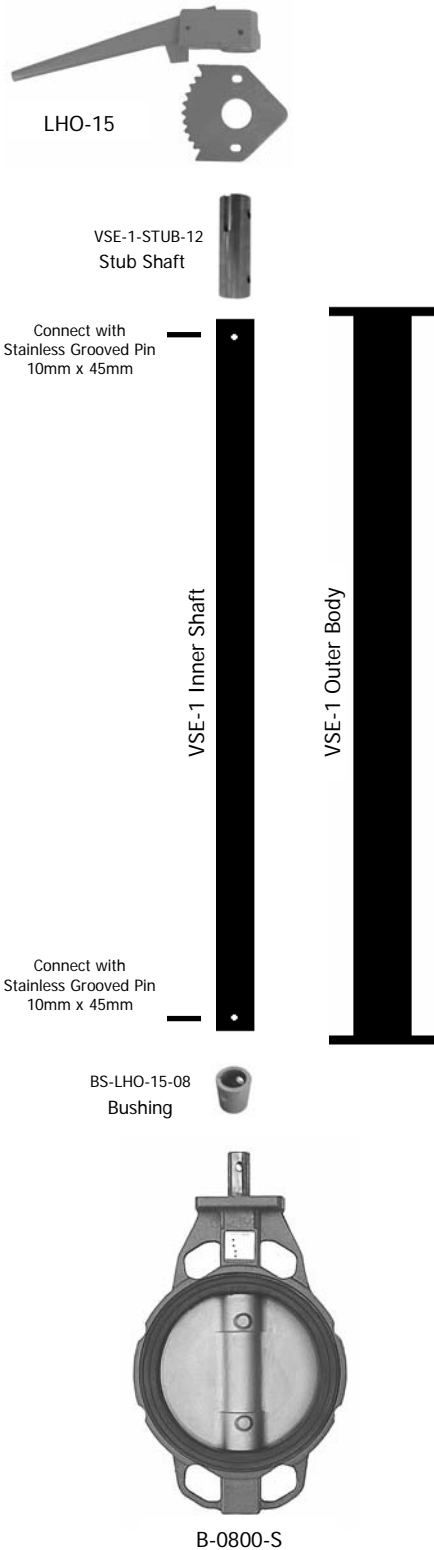
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-06 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-06 bushing
- 1 = 5/16" key for TNO
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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 traveling nut operator 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-06 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 traveling nut operator 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 traveling nut stops if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-1 on B-0800-L



### VSE Parts list:

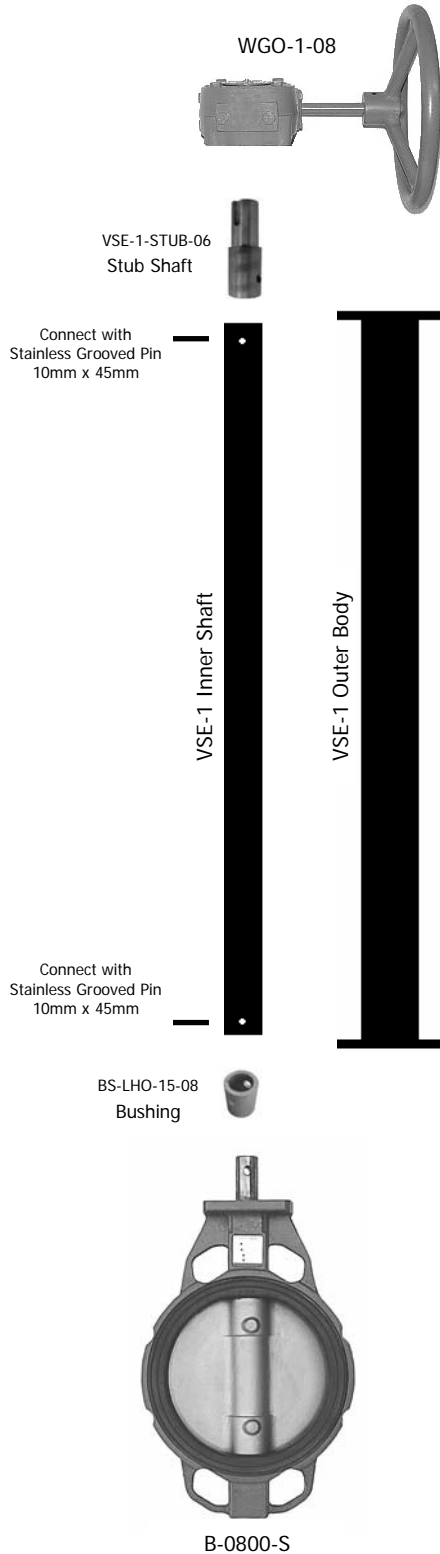
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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-15-08 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-15-08 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-0800-W



### VSE Parts list:

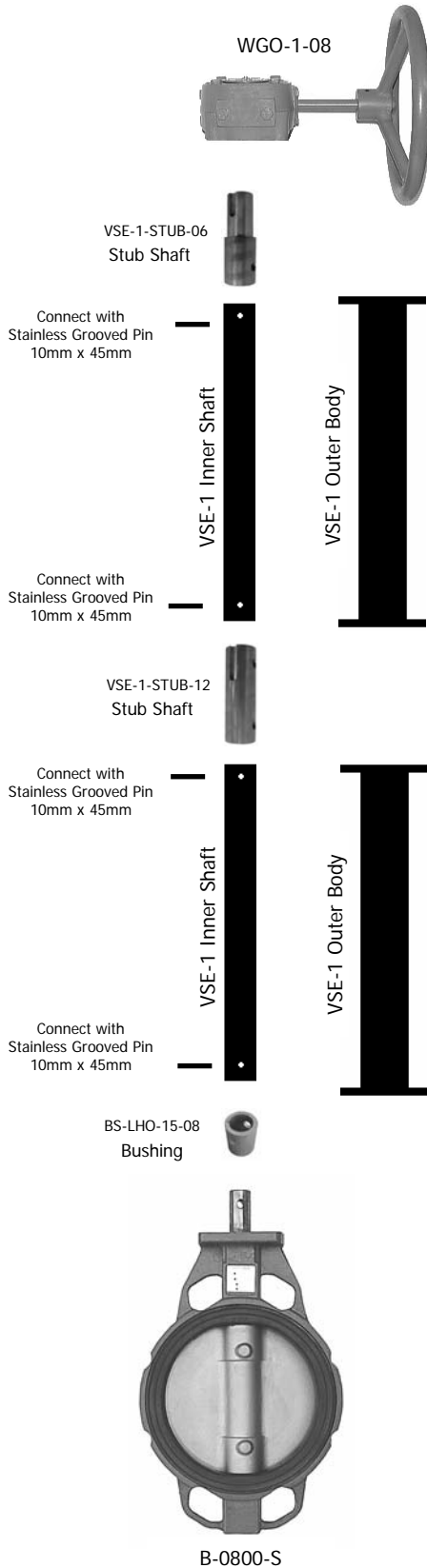
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-06 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-08 bushing
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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 worm gear operator from the valve. Keep the key, bolts, and washers for step #6.
- 3) Install the VSE-1-STUB-06 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-15-08 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 worm gear operator onto the extension using the original 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 stop bolts if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for stacking two VSE-1 on B-0800-W



### VSE Parts list:

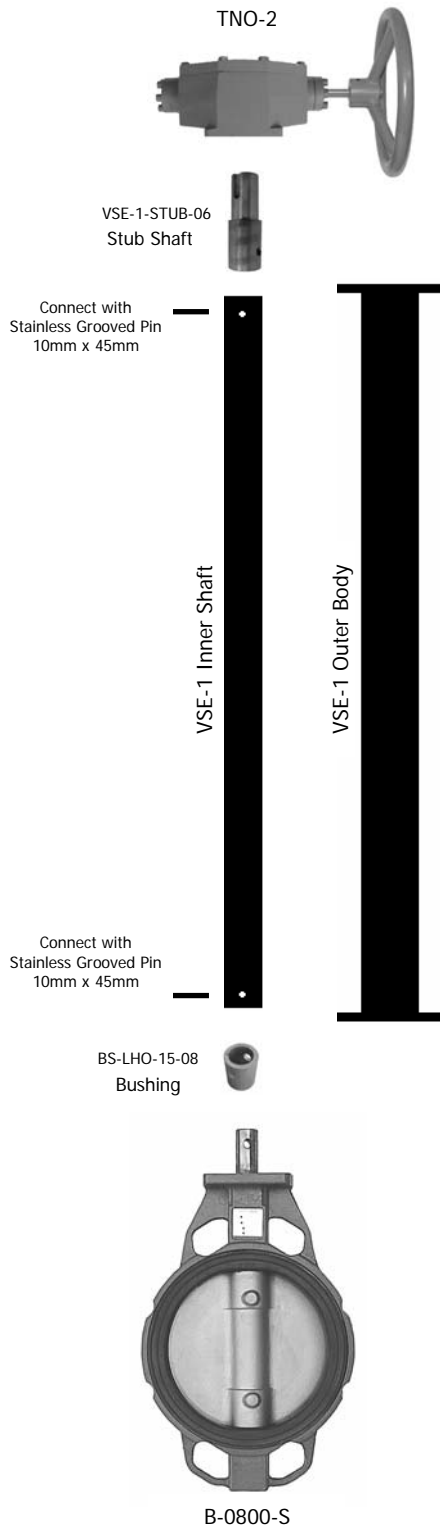
- 2 = VSE-1 outer body
- 2 = VSE-1 inner shaft
- 1 = VSE-1-STUB-06 stub shaft
- 1 = VSE-1-STUB-12 stub shaft
- 4 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-08 bushing
- 8 = 3/8" x 1 1/2" bolts
- 8 = 3/8" flat washers
- 8 = 3/8" lock washers
- 8 = 3/8" nuts

- 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-06 into the remaining inner shaft using a 10mm solid stainless steel grooved pin.
- 7) Install the inner shaft with the VSE-1-STUB-06 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 stop bolts if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-1 on B-0800-TNO-HW



### VSE Parts list:

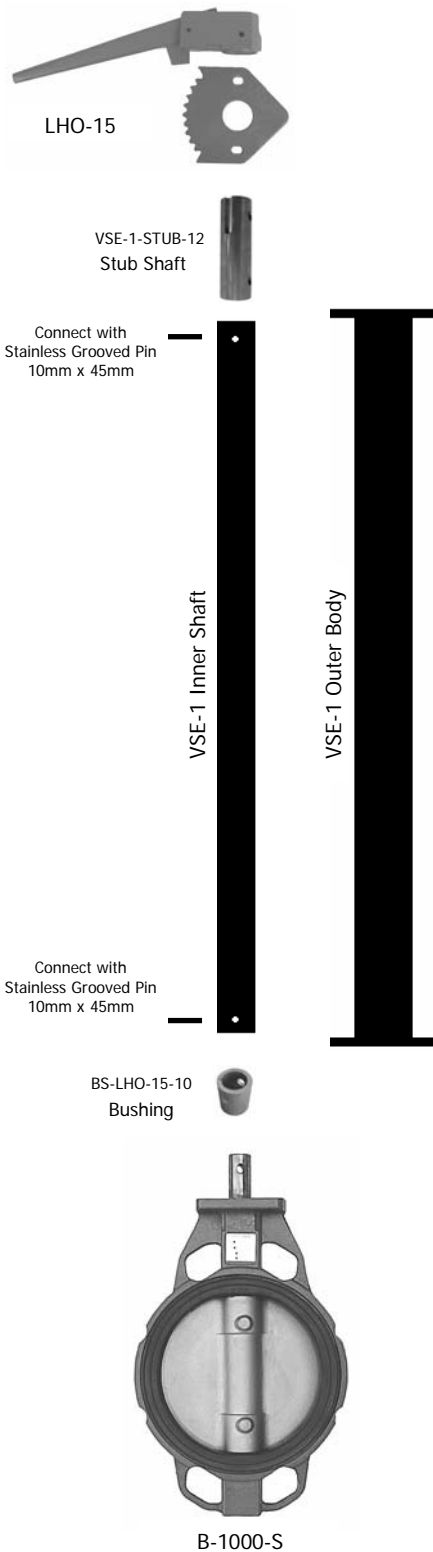
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-06 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-08 bushing
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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 traveling nut operator from the valve. Keep the key, bolts, and washers for step #6.
- 3) Install the VSE-1-STUB-06 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-15-08 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 traveling nut operator onto the extension using the original 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 traveling nut stops if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-1 on B-1000-L



### VSE Parts list:

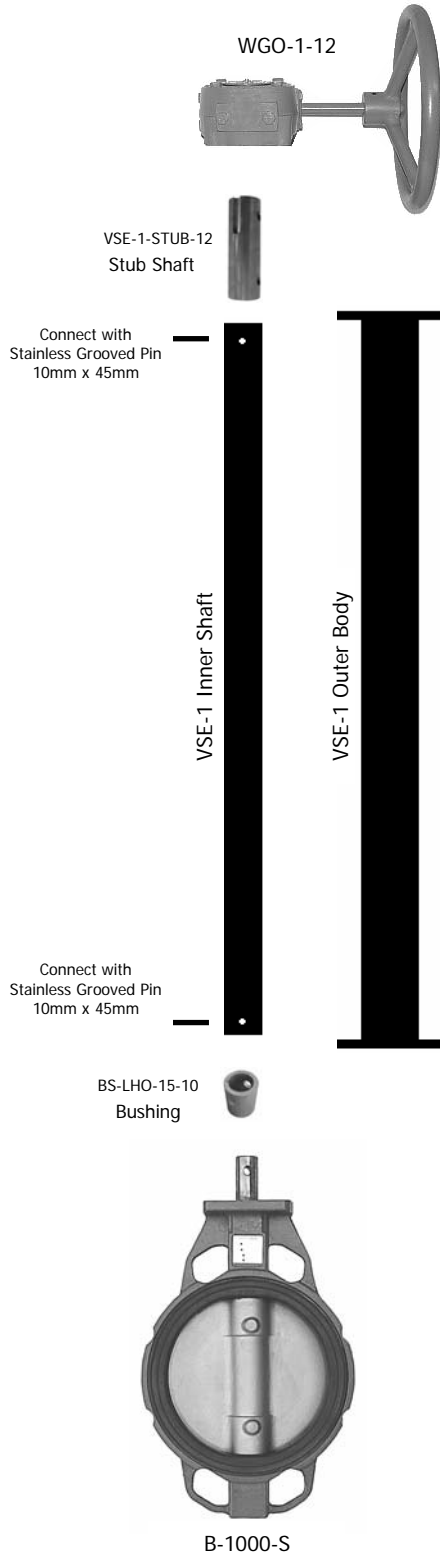
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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-15-10 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-15-10 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-1000-W



### VSE Parts list:

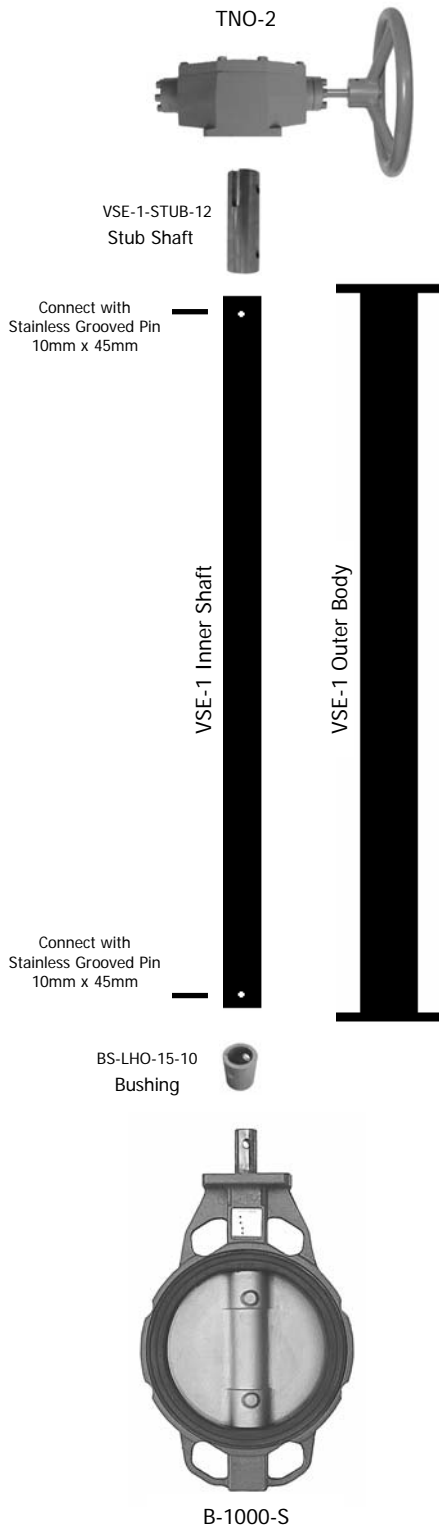
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-10 bushing
- 1 = 5/16" key for WGO
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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 worm gear operator 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 worm gear operator 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 stop bolts if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-1 on B-1000-TNO-HW



### VSE Parts list:

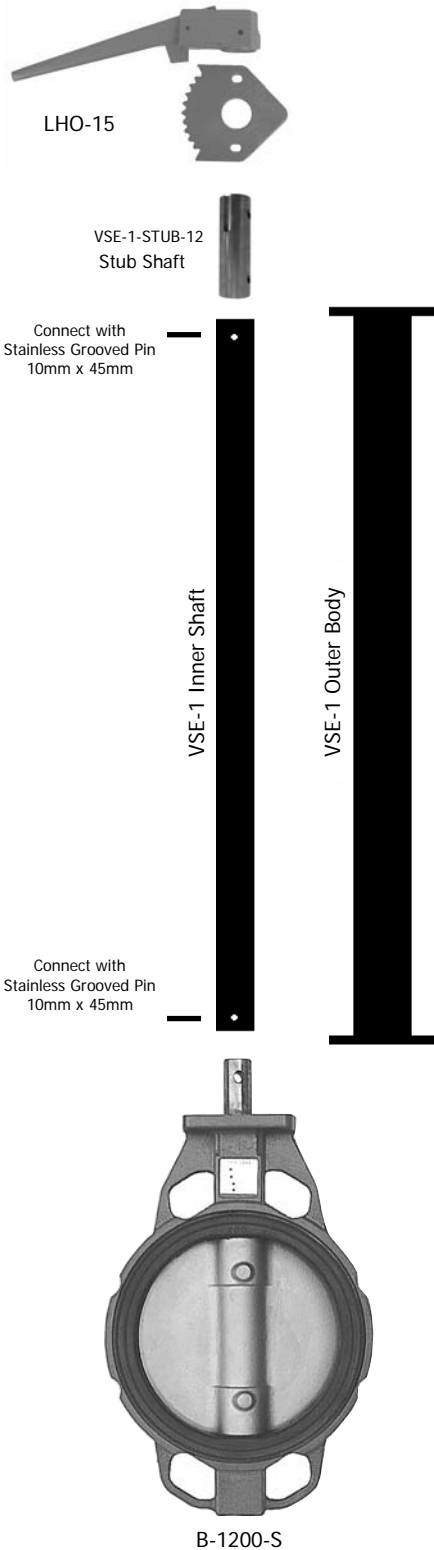
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 1 = BS-LHO-15-10 bushing
- 1 = 5/16" key for TNO
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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 traveling nut operator 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 traveling nut operator 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 traveling nut stops if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-1 on B-1200-L



### VSE Parts list:

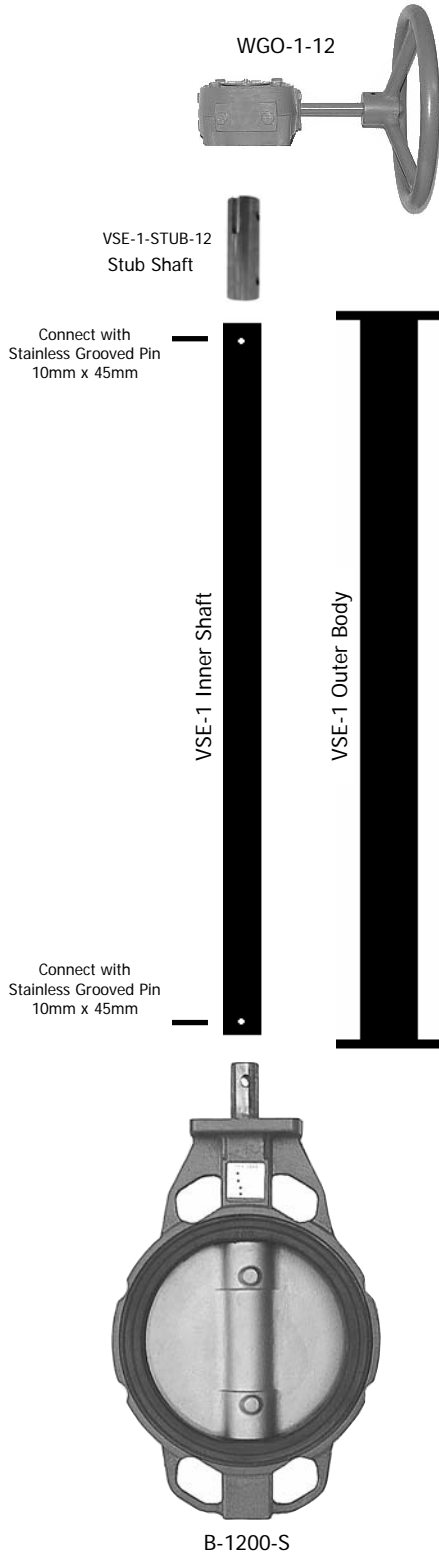
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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-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 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-1200-W



### VSE Parts list:

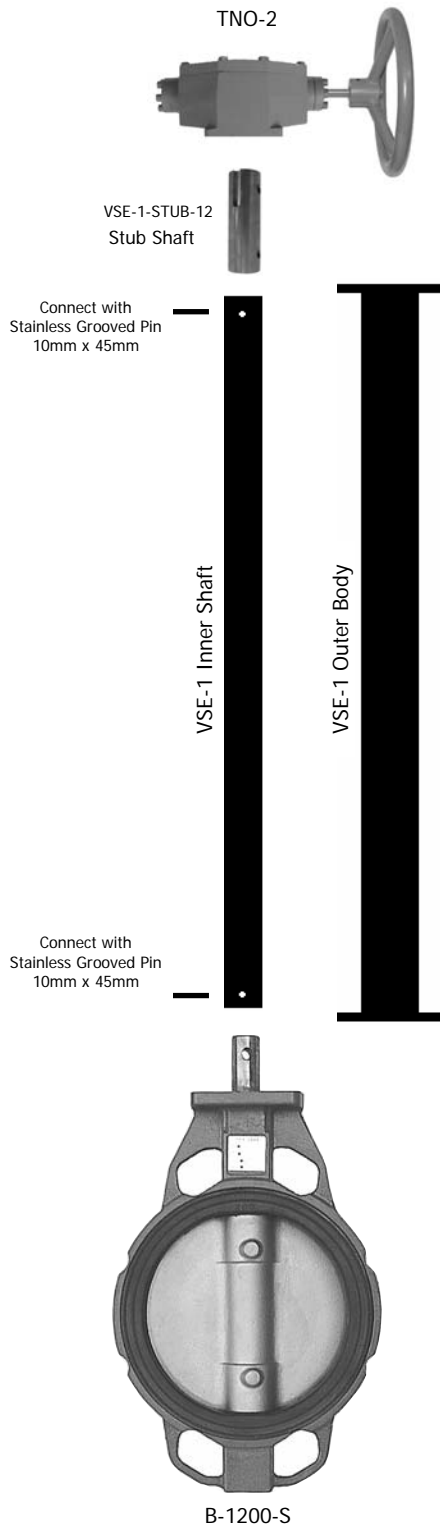
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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 worm gear operator 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 worm gear operator 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 stop bolts if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-1 on B-1200-TNO-HW



### VSE Parts list:

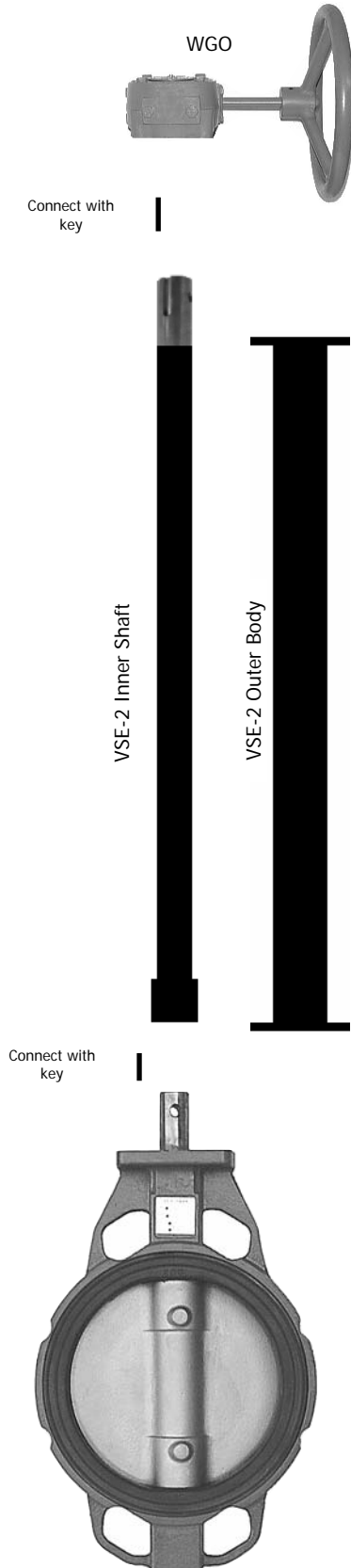
- 1 = VSE-1 outer body
- 1 = VSE-1 inner shaft
- 1 = VSE-1-STUB-12 stub shaft
- 2 = 10mm x 45mm stainless pin
- 4 = 3/8" x 1 1/2" bolts
- 4 = 3/8" flat washers
- 4 = 3/8" lock washers
- 4 = 3/8" nuts

- 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 traveling nut operator 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 traveling nut operator 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 traveling nut stops if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-2 on B-1400-W



### VSE Parts list:

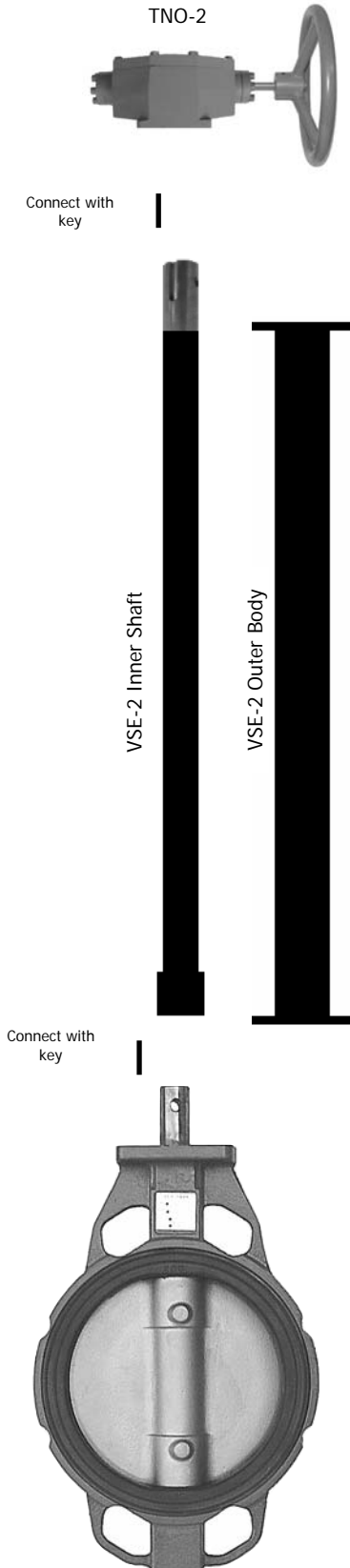
- 1 = VSE-2 outer body
- 1 = VSE-2 inner shaft
- 1 = key for inner shaft
- 4 = 1/2" x 1" hex bolts
- 4 = 1/2" x 1 1/2" hex bolts
- 4 = 1/2" flat washers
- 4 = 1/2" lock washers
- 4 = 1/2" hex nuts

- 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 worm gear operator 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 worm gear operator onto the extension using the key and washers from step #2 and the new hex bolts (the original bolts will 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 stop bolts if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE-2 on B-1400-TNO-HW



### VSE Parts list:

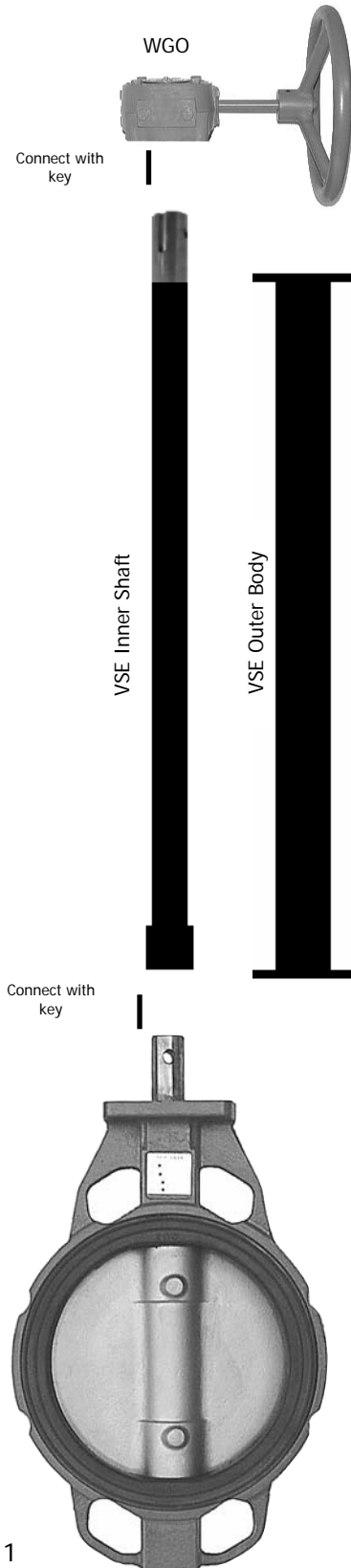
- 1 = VSE-2 outer body
- 1 = VSE-2 inner shaft
- 1 = key for inner shaft
- 4 = 1/2" x 1" hex bolts
- 4 = 1/2" x 1 1/2" hex bolts
- 4 = 1/2" flat washers
- 4 = 1/2" lock washers
- 4 = 1/2" hex nuts

- 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 traveling nut operator 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 traveling nut operator onto the extension using the key and washers from step #2 and the new hex bolts (the original bolts will 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 traveling nut stops if needed.

Pictures for illustration only. Actual product may vary.



## Installation instructions for VSE on B-1600-W (same for B-1800-W, B-2000-W, B-2400-W) (same for B-1600-TNO-HW, B-1800-TNO-HW)



### 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 operator 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 operator 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.