Tolomatic
EXCELLENCE IN MOTION®

**DISCONTINUED PRODUCT STYLE OR SIZE. PARTS SHEET IS FOR REFERENCE USE ONLY.**

*Parts Sheet*

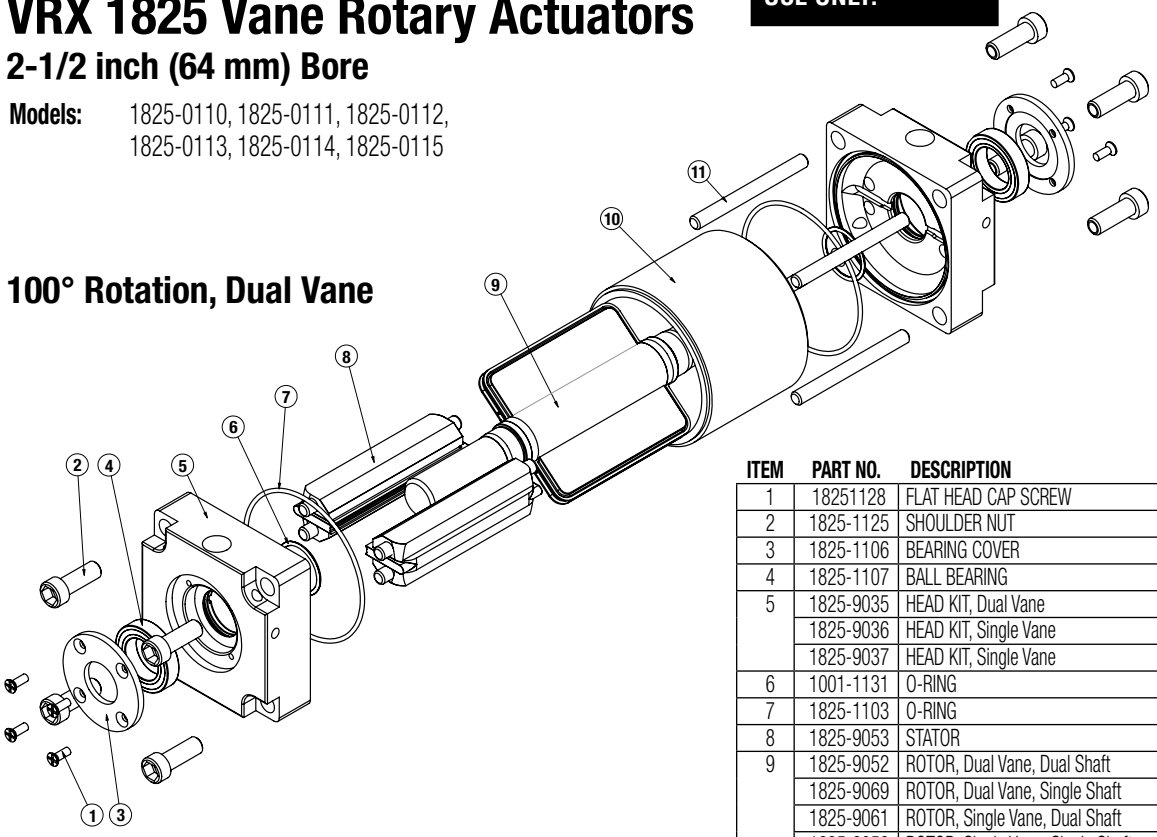
1800-4005_01

# VRX 1825 Vane Rotary Actuators

## 2-1/2 inch (64 mm) Bore

**Models:** 1825-0110, 1825-0111, 1825-0112, 1825-0113, 1825-0114, 1825-0115

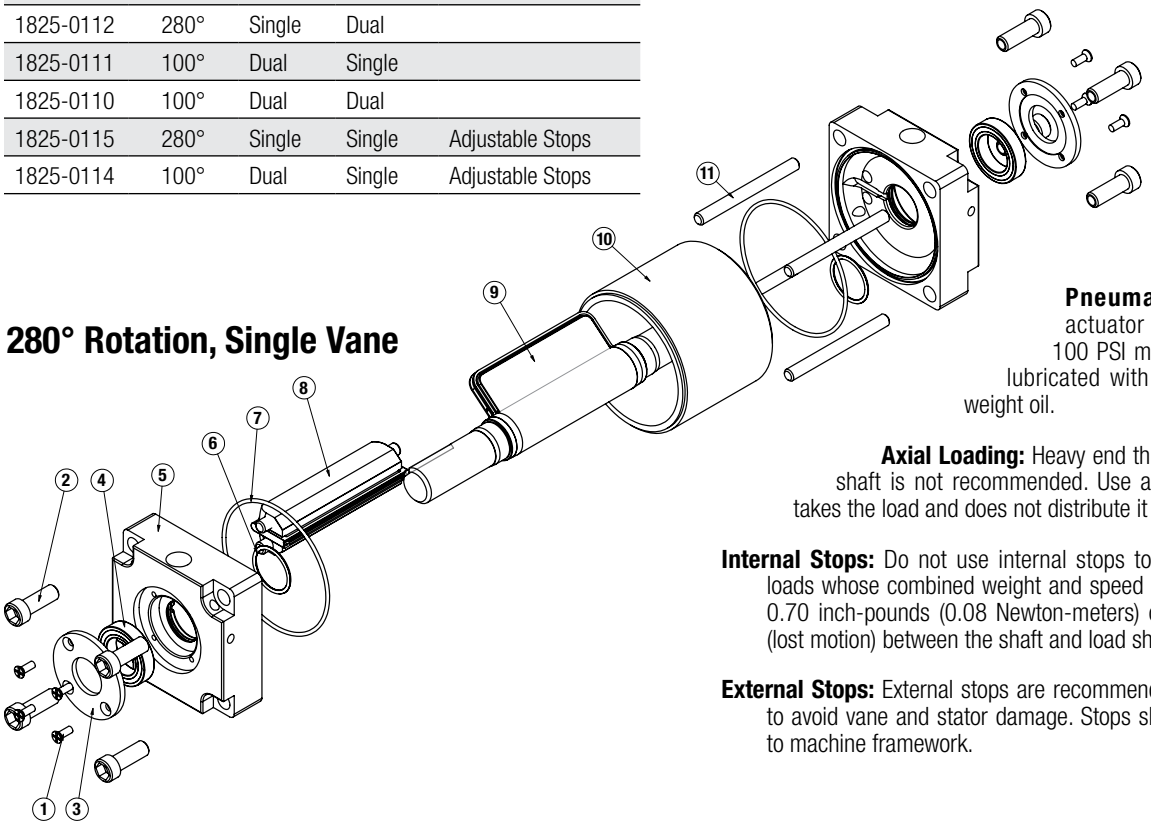
## 100° Rotation, Dual Vane




| MODEL NUMBER | ROTATION | VANE / STATOR | SHAFTS AVAILABLE | OPTION |
|---|---|---|---|---|
| 1825-0113 | 280° | Single | Single | |
| 1825-0112 | 280° | Single | Dual | |
| 1825-0111 | 100° | Dual | Single | |
| 1825-0110 | 100° | Dual | Dual | |
| 1825-0115 | 280° | Single | Single | Adjustable Stops |
| 1825-0114 | 100° | Dual | Single | Adjustable Stops |

| ITEM | PART NO. | DESCRIPTION | 100° | | 280° | |
|---|---|---|---|---|---|---|
| | | | 1825-0110 1825-0114 | 1825-0111 | 1825-0112 1825-0115 | 1825-0113 |
| 1 | 18251128 | FLAT HEAD CAP SCREW | 8 | 8 | 8 | 8 |
| 2 | 1825-1125 | SHOULDER NUT | 8 | 8 | 8 | 8 |
| 3 | 1825-1106 | BEARING COVER | 2 | 2 | 2 | 2 |
| 4 | 1825-1107 | BALL BEARING | 2 | 2 | 2 | 2 |
| 5 | 1825-9035 | HEAD KIT, Dual Vane | 2 | 2 | - | - |
| | 1825-9036 | HEAD KIT, Single Vane | - | - | 1 | 1 |
| | 1825-9037 | HEAD KIT, Single Vane | - | - | 1 | 1 |
| 6 | 1001-1131 | O-RING | 2 | 2 | 2 | 2 |
| 7 | 1825-1103 | O-RING | 2 | 2 | 2 | 2 |
| 8 | 1825-9053 | STATOR | 2 | 2 | 1 | 1 |
| 9 | 1825-9052 | ROTOR, Dual Vane, Dual Shaft | 1 | - | - | - |
| | 1825-9069 | ROTOR, Dual Vane, Single Shaft | - | 1 | - | - |
| | 1825-9061 | ROTOR, Single Vane, Dual Shaft | - | - | 1 | - |
| | 1825-9059 | ROTOR, Single Vane, Single Shaft | - | - | - | 1 |
| 10 | 1825-1145 | TUBE | 1 | 1 | 1 | 1 |
| 11 | 1825-1118 | TIE ROD | 4 | 4 | 4 | 4 |

## 280° Rotation, Single Vane




**Pneumatic Service:** The VRX actuator should be operated with 100 PSI maximum pneumatic service lubricated with a non-detergent SAE 30 weight oil.

**Axial Loading:** Heavy end thrust loading of the actuator shaft is not recommended. Use an isolating coupling which takes the load and does not distribute it to the actuator shaft.

**Internal Stops:** Do not use internal stops to stop rotation except with loads whose combined weight and speed do not generate more than 0.70 inch-pounds (0.08 Newton-meters) of kinetic energy. Backlash (lost motion) between the shaft and load should be avoided.

**External Stops:** External stops are recommended for higher inertia loads to avoid vane and stator damage. Stops should be securely mounted to machine framework.

**DISASSEMBLY NOTE:**

VRX Ball Bearings (#4) are installed using retaining compound. Additional force may be required to separate the Ball Bearings (#4) during disassembly. Also note that the Ball Bearing (#4) may stay attached to the Rotor (#9) or to the Head (#5).

**ASSEMBLY INSTRUCTIONS – 100° ACTUATOR**

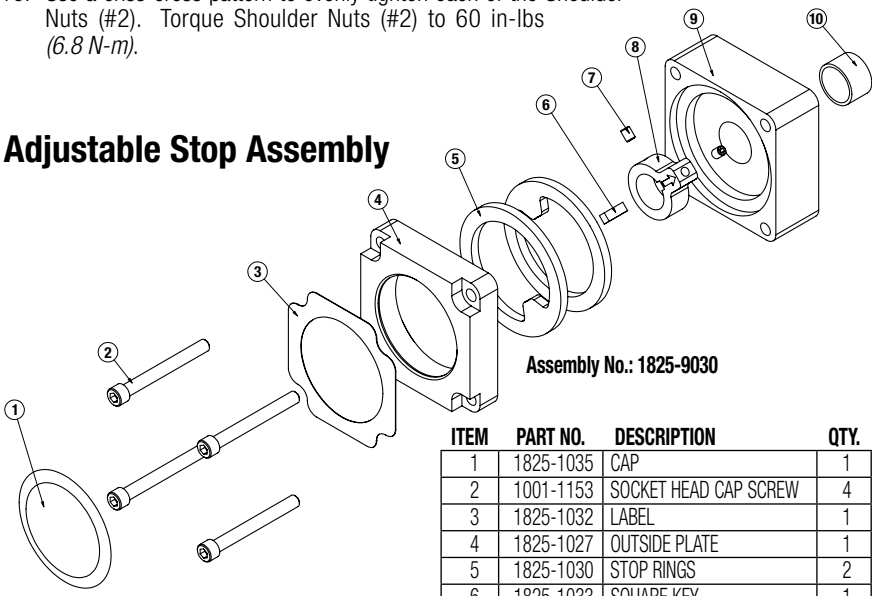
1. Use Teflon®-additive grease when lubrication is required.
2. Lubricate and install small O-Ring (#6) into groove in center bore of each Head (#5).
3. Lubricate and install large O-Ring (#7) into groove on face of each Head (#5).
4. Lubricate rubber surfaces and insert two [2] Stators (#8) into one Head (#5) by aligning the dowel pins with the holes in the Head (#5).
5. Lubricate rubber surfaces and insert Rotor (#9) between the two [2] Stators (#8) and into the center bore of the Head (#5).
6. Lightly lubricate the inside diameter of the Tube (#10) and slide over the two [2] Stators (#8) and Rotor (#9) until engaging the Head (#5).
7. Align and install the other Head (#5) onto the dowel pins of the two [2] Stators ( #8) and the shaft of the Rotor (#9) through the center bore. NOTE: Assemble with the ports on the same side of both Heads (#5).
8. Thread four [4] Shoulder Nuts (#2) half way onto each of the four [4] Tie Rods (#11) then insert each Tie Rod (#11) through the holes in both Heads (#5).
9. Thread the remaining four [4] Shoulder Nuts (#2) onto the four [4] Tie Rods (#11). Shoulder Nuts (#2) must be inserted into Head (#5) then threaded onto the Tie Rod (#11).
10. Use a criss-cross pattern to evenly tighten each of the Shoulder Nuts (#2). Torque Shoulder Nuts (#2) to 60 in-lbs *(6.8 N-m)*.
11. Use retaining compound on the outside and inside diameter of each of the two [2] Ball Bearings (#4) then slide Ball Bearing (#4) over and into the bore of each Head (#5). NOTE: The Ball Bearing (#4) will bottom out on the Rotor (#9) shaft not the bore in the Head (#5).
12. Install Bearing Cover (#3) onto each of the Heads (#5) using Flat Head Screws (#1).

**ASSEMBLY INSTRUCTIONS – 280° ACTUATOR**

1. Use Teflon®-additive grease when lubrication is required.
2. Lubricate and install small O-Ring (#6) into groove in center bore of each Head (#5).
3. Lubricate and install large O-Ring (#7) into groove on face of each Head (#5).
4. Lubricate rubber surfaces and insert Stator (#8) into Head (#5) by aligning the dowel pins with the holes in the Head (#5).
5. Lubricate rubber surfaces and insert Rotor (#9) next to the Stator (#8) and through the center bore of the Head (#5). Rotate Rotor (#9) so vane is across from the Stator (#8).
6. Lightly lubricate the inside diameter of the Tube (#10) and slide over the Stator (#8) and Rotor (#9) until engaging the Head (#5).
7. Align and install the other Head (#5) onto the dowel pins of the Stator (#8) and the shaft of the Rotor (#9) through the center bore. NOTE: Assemble with the ports on the same side of both Heads (#5).
8. Thread four [4] Shoulder Nuts (#2) half way onto each the four [4] Tie Rods (#11) then insert each Tie Rod (#11) through the holes in both Heads (#5).
9. Thread the remaining four [4] Shoulder Nuts (#2) onto the four [4] Tie Rods (#11). Shoulder Nuts (#2) must be inserted into Head (#5) then threaded onto Tie Rod (#11).
10. Use a criss-cross pattern to evenly tighten each of the Shoulder Nuts (#2). Torque Shoulder Nuts (#2) to 60 in-lbs *(6.8 N-m)*.
11. Use retaining compound on the outside and inside diameter of the two [2] Ball Bearings (#4) then slide Ball Bearing (#4) over and into the bore of each Head (#5). NOTE: The Ball Bearing (#4) will bottom out on the Rotor (#9) shaft not the bore in the Head (#5).
12. Install Bearing Cover (#3) onto each of the Heads (#5) using Flat Head Screws (#1).

Teflon® is a registered trademark of the E.I.DuPont de Nemours Co., www.dupont.com

## Adjustable Stop Assembly




**Assembly No.: 1825-9030**

| ITEM | PART NO. | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 1825-1035 | CAP | 1 |
| 2 | 1001-1153 | SOCKET HEAD CAP SCREW | 4 |
| 3 | 1825-1032 | LABEL | 1 |
| 4 | 1825-1027 | OUTSIDE PLATE | 1 |
| 5 | 1825-1030 | STOP RINGS | 2 |
| 6 | 1825-1033 | SQUARE KEY | 1 |
| 7 | 1825-1034 | SET SCREW | 2 |
| 8 | 1825-1026 | PADDLE | 1 |
| 9 | 1825-1028 | INSIDE PLATE | 1 |
| 10 | 1825-1011 | BRONZE BUSHING | 1 |

Tolomatic
3800 County Road 116, Hamel, MN 55340
http://www.Tolomatic.com • Email: Help@Tolomatic.com
Phone: (763) 478-8000 • Fax: (763) 478-8080 • Toll Free: 1-800-328-2174