

LP SERIES

INSTRUCTIONS MANUAL FOR STORAGE, INSTALLATION, OPERATION AND MAINTENANCE OF SOFT SEATED BALL VALVES.

Staitech

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SCOPE:

This manual is intended as a guide to assist customers or end-users in storage, installation, operating and maintenance of Vinco ball valves under standard arrangements.

For this reason, subsequent additions and special instructions to the present manual will be provided in case of special ball valves, critical services or specific customer requirements.

APPLICABILITY:

This manual is applicable to VINCO ball valves only

CERTIFICATION:

- ISO 9001
- PED according to 97/23/EC Directive
- ATEX certification according to 94/4/CE Directive

CAUTION:

To prevent personnel injury or damage equipment, please read this section before performing any operation:

1. Verify that the application does not exceed the pressure or temperature rating on the nameplate.
2. Always depressurize the line with the valve in open position before disassembly.
3. Wear protective equipment and take appropriate precautions to safeguard against injury caused by discharge of trapped fluids.
4. Use only Vinco spare parts for maintenance.
5. Any modification of a valve must not be performed without a prior consult or recommendation of the manufacturer.

STORAGE & PRESERVATION:

CAUTIONS to be taken when the valves are not destined to **IMMEDIATE USE:**

1. It is advisable to keep the valves in the original individual packaging during the entire period of storage.
2. Valves must remain in the open position during storage.
3. It is recommended to store the valve in a dry place. Valves shall be protected to safeguard against all adverse environments: humidity, moisture, rain, dust, dirt, sand, mud and seawater.
4. Valves to be stored for a long period of time should be checked by the quality control personnel every six months
5. Internal surface must be inspected to guarantee the absence of dust or other foreign parts.
6. Ball valves should be operated for at least two complete cycles before installing or returning to storage.

CAUTION: BEFORE INSTALLING THE VALVE:

1. Prior to installation, valves should be checked for possible shipping and handling damages.
2. Do not subject the valves to any piping stress. Check pipe alignment and parallelism with tubing.
3. OBW end connections are prepared for orbital welding.
4. Dirt, welding residues may damage the ball or seats.
5. The valve must be installed in a completely open position to avoid seat damage.
6. Make sure that during the cleaning operations and whenever needed, the solvent used is compatible.

INSTALLATION OF VALVES WITH CLAMP ENDS:

- When installing valves with CLAMP ends consider maximum working pressure.

OPERATION INSTRUCTIONS:

During operation, ball valves must be in either complete **OPEN** or **CLOSED position** in order to ensure their smooth and efficient working as well as long duration of seats. A half open position of the ball can damage the soft seats.

1. Open and close the valve by turning the lever one quarter turn (90°).
2. The valve is in a fully open position when lever is in line with the valve and pipe.
3. The valve is in the fully closed position when the lever is perpendicular to pipe.

DISASSEMBLY AND INSPECTION:

1. Valve must be in the open position.
2. Remove the valve from the line.
Valve must be in the OPEN position
3. Remove all nuts (15) and body bolts (14) and separate the body (1) from the end connections (2).

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4. Remove seats (6) and body seals (8) from both sides.
5. Turn the stem (4) to CLOSE the valve.
6. Carefully remove ball (3).
7. Unscrew stop pin (13) from body
8. Remove upper stem nut (10), lever (16), locking clip (11), lower stem nut (10), disc springs (12) and gland packing (5) (hold the stem (4) to prevent it from falling, damaging the body (1) and the stem itself).
9. Remove the stem (4).
10. Stem thrust seals (7) can now be removed from body recesses. Upper stem seal (9) can now be removed.
- 11.

With valve fully disassembled check all components taking following recommendations into consideration:

- All valve components should be cleaned;
- Ball surface should be free from any defect;
- Carefully check for any signs of corrosion and/or mechanical damage;
- Clean body and stem recesses.

REPLACEMENT AND ASSEMBLY INSTRUCTIONS:

NOTE: After valve disassembly there are several components which can no longer be used.

- Ball must be replaced if any defect is found in its surface;
- It is advisable the replacement of seats;
- Stem and Body seals should be replaced.
 1. Place low stem seal (7) through stem top.
 2. Insert stem (4) in the body (1) through its cavity (hold the stem to avoid damages to body and itself).
 3. Place upper stem seals (9), gland packing (5), disc springs (12) and lower stem nut (10), and tighten using torque fig. provided in Table 1. Lock in with locking clip (11).
 4. Hold the ball (3) in **CLOSED** position letting it slide into body (1). Operate the stem (4) for a couple of times before moving on with assembly. Leave the valve in **CLOSED** position.
 5. Place the body seals (8) into respective recesses followed by seats (6).
 6. Line up end connections (2) and fit bolting through (14) end-body-end. Tight nuts (15).
 7. Screw the stop pin (13).
 8. Place the lever (16) followed by upper stem nut (10).

CHECK VALVE MANOEUVRABILITY AFTER ASSEMBLY:

1. After assembly is complete, check valve manoeuvrability making sure the ball rotates freely.
2. Make sure the test does not contaminate the valve.
3. If available, test the valve in line to adequate specification.

SPARE PARTS:

Spare parts available under request.

TABLE 1 – BODY BOLTS TORQUE

| DN/SIZE | BODY BOLTS TORQUE | | |
|----------|-------------------|-----|----------|
| ASME BPE | DIMENSIONS | N-m | inch lbs |
| ½" | 4xM6 | 4 | 35 |
| ¾" | 4xM6 | 6 | 53 |
| 1" | 4xM8 | 13 | 115 |
| 1 ½" | 4xM10 | 26 | 230 |
| 2" | 4xM12 | 44 | 389 |

TABLE 2 – VALVE TORQUE FIGURE

| DN/SIZE | *VALVE TORQUE FIGURE (BREAK TORQUE) | |
|----------|-------------------------------------|----------|
| ASME BPE | N-m | inch lbs |
| ½" | 3.6 | 35 |
| ¾" | 5.4 | 53 |
| 1" | 10.4 | 115 |
| 1 ½" | 20.8 | 230 |
| 2" | 35.2 | 389 |

* SEATS IN TFM 1600
At full differential pressure

TABLE 3 – DIMENSIONAL EQUIVALENCE

| ASME BPE | DIN | ISO (TB) | ISO (FB) |
|----------------|-----|----------|----------|
| DN/SIZE | | | |
| ½" | 10 | 8 | 10 |
| ¾" | 15 | 10 | 15 |
| 1" | 20 | 15 | 20 |
| --- | 25 | 20 | 25 |
| 1 ½" | 32 | 25 | 32 |
| --- | 40 | 32 | 40 |
| 2" | 50 | 40 | 50 |