

PROCESS DEVELOPMENT & CONTROL LLC

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**INSTALLATION, OPERATION AND MAINTENANCE FOR (700mm-1200mm)
26" THRU 60", EXCEL SERIES 40 WAFER STYLE VALVE**

RELEASED: 07/10/95	ID #	APPROVED BY:	DATE:
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STORAGE AND HANDLING OF VALVE ASSEMBLIES

RELEASED: 3/12/2003	ID #	APPROVED BY:	DATE:
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ENGINEERING INSTRUCTION BULLETIN

EIB.: 12.1 ORIGINAL DATE: 3/12/2003 PAGE: 1 of 1 REVISION: Revised DATE: 11/5/12

TITLE: STORAGE AND HANDLING OF VALVE ASSEMBLIES

1. INSPECTION PROCEDURE

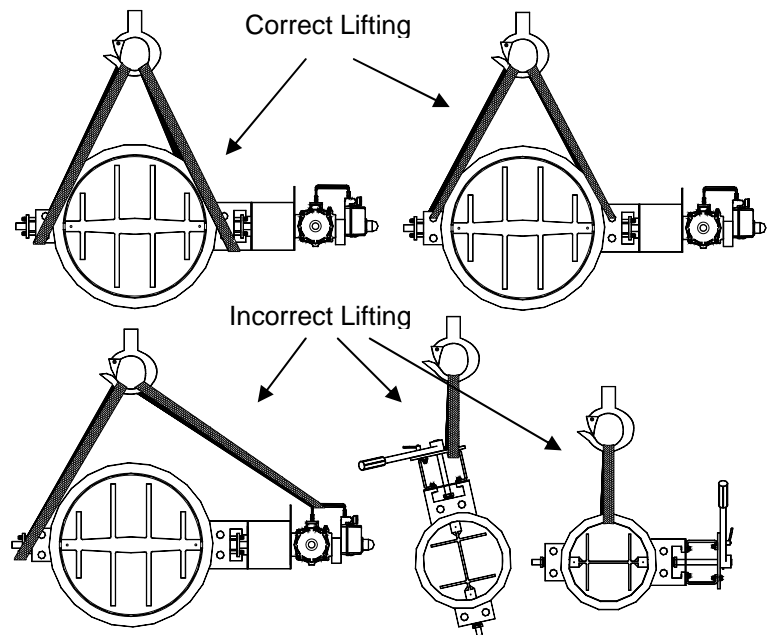
1.1 Valve assemblies should be inspected upon receiving and prior to installation. Carefully remove the valve assembly from its shipping crate or box. Valve and accessories should be inspected for damage. The valve sealing surfaces should be inspected for scratches.

2. HANDLING PROCEDURE

2.1 Never lift or move the valve assembly using the disc, valve seat (bore), shafts or packing follower / nut as a pressure point.

2.2 Never lift or move the valve assembly by using the actuator, positioner, tubing or other attached accessories.

2.3 It is recommended that lifting straps (instead of chains or hooks) be used around the valve stem neck and thru the flange bolt holes for pressure points.



3. STORAGE PROCEDURE

3.1 Valve assemblies should be kept in a clean, heated, weather tight (dry), well-ventilated, storage facility with flooring that seals against dust and dirt and will not be subject to flooding. **Climate controlled storage of cast iron or steel damper-valve assemblies is highly recommended due to the exposed bare metal sealing surfaces necessary for operation (gasket faces, disc to body seats, valve bores, etc.) and due to the electronics and controls many times included.** If outdoor storage is unavoidable for short periods of time, support the valve assembly off of the ground and protect with a watertight cover on all sides.

3.2 Valve assemblies should be stored off of the floor on suitable skids, pallets or racks and protected from dirt, debris and exposure to direct sunlight, particularly to elastomer sealing surfaces.

3.3 Valve assemblies should be protected from rodents, insects or other creatures which can cause damage.

3.4 The proper use of racks, pallets, and handling equipment shall be used. The assemblies should be arranged so as to prevent damage to protruding accessories during storage.

3.5 Valve assemblies with electrical components, pneumatic tubing, positioners, actuators, and other accessories should be protected from impact.

3.6 Rubber seated valves should be stored with the disc slightly opened, (about 5°), if practical.

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WAFER STYLE BUTTERFLY VALVES INSTALLATION INSTRUCTIONS

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ENGINEERING INSTRUCTION BULLETIN

EIB.: 1.1

ORIGINAL DATE: 8/1/89

PAGE 1 OF 1

REVISION 2

Date: 12/16/91

TITLE: WAFER STYLE BUTTERFLY VALVE INSTALLATION INSTRUCTIONS

WARNING! VALVE MUST BE INSTALLED WITH SHAFT IN HORIZONTAL POSITION.

1. INSTALLATION

- 1.1. Remove valve assembly from box or crate with caution. Check assembly for possible damage during shipping.
- 1.2. Check alignment of pipe flanges before installation of valve. Poor alignment may cause installation and operation difficulties.
- 1.3. For valves not manually operated, which are received with disc in open position, it will be necessary to disconnect the power linkage and rotate disc to the closed position.
- 1.4. Valves may be installed with flow in either direction through the valve, but should be installed with the shaft in the horizontal position.
- 1.5. Gaskets may be installed at this time on valve faces or after valve has been positioned between flanges if desired.
- 1.6. Install butterfly valve between flanges using the four alignment holes. Install remaining bolts and tighten nuts evenly after valve has been centered and disc opens and closes without interference.
- 1.7. If it was necessary to disconnect power linkage in 1.3 open valve and reconnect linkage.
- 1.8. Make all necessary connections to actuator and accessories in accordance with manufacturers' recommendations and codes.

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OPERATION AND MAINTENANCE OF WAFER STYLE BUTTERFLY VALVES

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ENGINEERING INSTRUCTION BULLETIN

EIB NO.: 9.0 ORIGINAL DATE: 9/1/89 PAGE: 1 OF 2 REVISION: 2 DATE: 12/16/91

TITLE: OPERATION AND MAINTENANCE OF WAFER STYLE BUTTERFLY VALVE ASSEMBLIES

1. OPERATION

1.1. General

- 1.1.1. PDC wafer style butterfly valves are designed to provide long, dependable service with minimum maintenance, requiring only the possible adjustment of the packing gland after the valve has been installed.
- 1.1.2. The packing list should be carefully examined to determine the maximum operation and service conditions of the butterfly valve.

1.2. Determine Disc Position

- 1.2.1. PDC offers several shaft drive configurations depending on type of lever or actuator furnished. If the end of the shaft is saw cut, the saw cut will be in line with the disc edge.
- 1.2.2. Flats of flatted drive shafts will be in line with the disc edge.
- 1.2.3. Hexed drive shafts will have the end of the shaft saw cut in line with the disc edge.
- 1.2.4. Keyways on keyed drive shafts will be in line with the disc edge. (When keyways are not in line with disc edge, the end of the shaft will be saw cut. In this case the saw cut will be in line with the disc edge.)
- 1.2.5. Plain round drive shafts will have the end of the shaft saw cut in line with the disc edge.

1.3. Adjusting Packing Nut

- 1.3.1. The packing nut or follower tube has been adjusted prior to shipping. However, it may be necessary to readjust it when a system is started up.
- 1.3.2. If it is necessary to adjust the packing nut or follower, tighten $\frac{1}{4}$ turn. Operate for 15 minutes. If leakage persists after 15 minutes continue to tighten $\frac{1}{4}$ turn and operate for 15 minutes. (Repeat this process until leakage stops.)

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ENGINEERING INSTRUCTION BULLETIN

EIB NO.: 9.0 ORIGINAL DATE: 9/1/89 PAGE: 2 OF 2 REVISION: 2 DATE: 12/16/91

TITLE: OPERATION AND MAINTENANCE OF WAFER STYLE BUTTERFLY VALVE ASSEMBLIES

2. MAINTENANCE

2.1. Lubrication

2.1.1. No routine lubrication of the standard PDC wafer style butterfly valve is required.

2.1.2. Valves that are furnished with lubrication fittings should be periodically lubricated as outlined in Table I and/or Table II.

TABLE I BUSHINGS, INBOARD

TEMPERATURE	ATMOSPHERE	GREASING INTERVAL
Up to 120° F	Clean	12 Months
Up to 210° F	Clean	6 months
Up to 150 ° F	Dirty	1 to 3 Months
Over 150° F	Dirty	Monthly
Any Temperature	Extreme Condition	Weekly

TABLE II BUSHINGS, OUTBOARD

SPEED	TEMPERATURE	ATMOSPHERE	GREASING INTERVAL
1-100 RPM	Up to 120° F	Clean	6 to 12 Months
500 RPM	Up to 150° F	Clean	2 to 6 months
1000 RPM	Up to 210 ° F	Clean	2 Weeks to 2 Months
1500 RPM	up to 210° F	Clean	Weekly
Any Speed	Up to 150° F	Dirty	1 Week to 1 Month
Any Speed	Over 150° F	Dirty	Daily to 2 Weeks
Any Speed	Any Temperature	Very Dirty	Daily to 2 Weeks

Grease: Use lithium based grease to a NLGI grade 2 consistency. This light viscosity, low torque grease is rust inhibited, water resistant, and has a temperature range of -30° F to +200° F with intermittent highs.

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**REPACKING PROCEDURE FOR PDC EXCEL BUTTERFLY VALVES, SERIES
40, 26" THRU 60" VALVE SIZES**

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ENGINEERING INSTRUCTION BULLETIN

EIB.: 10.6 ORIGINAL DATE: 2/27/1984 PAGE: 1 of 1 REVISION: 3 DATE: 6/24/2002

TITLE: REPACKING PROCEDURE FOR PDC EXCEL BUTTERFLY VALVES, SERIES 40,
26" THRU 60" VALVE SIZES

IMPORTANT: THERE ARE TWO STUFFING BOXES ON THE EXCEL SERIES 40 BUTTERFLY VALVE, THE STEPS BELOW SHOULD BE REPEATED FOR BOTH STUFFING BOXES.

- 10.6.1 REMOVE THE PACKING FOLLOWER (ITEM #7) BY TURNING THE HEX JAM NUTS USING A COUNTER-CLOCKWISE ROTATION (SEE NOTE 1, BELOW). SLIDE FOLLOWER BACK TO GIVE ADEQUATE CLEARANCE.
- 10.6.2 REMOVE ALL RINGS OF PACKING (ITEM #6) WITH FLEXIBLE PACKING PICK (SEE NOTE 1, BELOW).
- 10.6.3 THOROUGHLY CLEAN OUT PACKING GLAND HOLE AND REMOVE ALL RESIDUE.
- 10.6.4 REPACK VALVE WITH NEW PACKING (ITEM #6) BY STAGGERING ALL RING ENDS 90° APART (SEE NOTE 2, BELOW).
- 10.6.5 REPLACE FOLLOWER (ITEM #7). HAND TIGHTEN THE HEX JAM NUTS (CLOCKWISE). ONCE THE FOLLOWER IS HAND TIGHT, USE AN OPEN ENDED WRENCH TO TIGHTEN THE HEX JAM NUTS OF THE FOLLOWER AN ADDITIONAL ½ TURN. THIS ADDITIONAL ½ TURN PAST HAND TIGHT SEATS THE RINGS OF PACKING (SEE NOTE 3, BELOW). **CAUTION: DO NOT OVER TIGHTEN PACKING FOLLOWER.**

NOTES:

1. A FLEXIBLE PACKING PICK IS AVAILABLE FROM THE FACTORY. EMPLOYMENT OF THIS PICK WILL GREATLY FACILITATE THE REPACKING PROCEDURE AND ITS PURCHASE IS RECOMMENDED.
2. EACH REPACKING SET CONSISTS OF EXTRA RINGS OF PACKING, HOWEVER, IN MOST CASES, (5) FIVE RINGS OF PACKING SHOULD BE SUFFICIENT. (DO NOT USE MORE RINGS THAN WERE REMOVED).
3. IT MAY BE NECESSARY TO READJUST THE FOLLOWER WHEN THE SYSTEM IS STARTED UP. IF IT IS NECESSARY TO ADJUST THE FOLLOWER, TIGHTEN THE JAM NUTS ¼ TURN. OPERATE FOR 15 MINUTES. IF LEAKAGE PERSISTS AFTER 15 MINUTES CONTINUE TO TIGHTEN THE JAM NUTS ¼ TURN AND OPERATE FOR 15 MINUTES (REPEAT THIS PROCESS UNTIL LEAKAGE STOPS).
CAUTION: DO NOT OVER TIGHTEN PACKING FOLLOWER.

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7. PACKING FOLLOWER
8. PIN
9. JAM NUT
10. THREADED STUD

