

Conley Product Bulletin

RUGGED TOP OF THE LINE PERFORMANCE ~ AFFORDABLE COST

Conley Valve Types

- Weir style diaphragm valves in sizes from 1 ½” through 6”
- Swing check valve in sizes from 2” through 6”
- Dual containment valves available since 1993

Description

- Conley valves were introduced in 1953
- Extra heavy wall filament wound for service up to 150 psi
- 60 mil double Nexus® reinforced corrosion barrier (inner liner)
 - ▣ Premium epoxy resin liner
 - ▣ Premium vinyl ester resin liner
 - ▣ Premium novolac vinyl ester resin liner
 - ▣ Premium furan resin liner
 - ▣ Optional 100 mil liner available
- Premium aromatic amine cured epoxy cages for operating temperatures up to 275°F
- Color coding available
 - Conductive valves available
- Fire-resistant valves available
 - Abrasion-resistant liners available

Typical Applications

- Waste water treatment
- Steel pickling
- Solvents
- Petrochemical
- Pharmaceutical
- Chemical processing
- Jet fuel
- Gasoline – Diesel – Fuel Oil
- Cooling water
- Industrial waste
- Food and beverages
- Brine (salts) and brackish water

Performance



- Excellent chemical resistance inside and outside to a variety of caustics, acids, brines, and petroleum products ~ See the chemical resistance chart for fluid services
- Hydrostatic pressure testing at 225 psi
- Diaphragm valve 100% seal tested at 150 psi
- Chemical Processing Industry “TOP HONNORS” in 1986
- Chemical Processing” VAALER AWARD

Specifications

- Diaphragm: Hypalon standard
- Optional diaphragms: R2 Teflon, EPDM, Viton, Buna-N, and other common elastomers
- Hardware: 316 Stainless steel
- Diaphragm valve suitable for vertical or horizontal mounting
- Actuators available: electric, pneumatic, hydraulic

Dual Containment Application Legislation

- 40 CFR 280. RCRA, Subtitle 1
- 40 CFR 264/5
- CERCLA “Superfund Act”

Conley Swing Check Valves

Conley Swing Check Valves offer three distinct advantages.

- 1) All glass fiber construction – no metal working parts to corrode.
- 2) Ease of serviceability – internal mechanism may be removed and replaced in seconds without removing the valve from the line.
- 3) Low cost – virtually the price of thermoplastic valves.

Conley Swing Check Valves are available in Epoxy, Vinyl Ester, and Furan resin liner systems in standard 60 mil or optional 100 mil liner thicknesses. All liners are reinforced with multiple layers of Nexus®.

Conley Swing Check Valves may be mounted either vertically or horizontally with unrestricted flow. With standard face to face ANSI dimensions, replacing in line valves is never a problem with Conley Swing Check Valves.

Conley Diaphragm Valves

Conley Diaphragm Valves offer complete corrosion protection both internally and externally. Excellent for throttling of corrosive liquids with a cost savings over exotic alloys and lined steel.

Corrosion resistance plays an important part of Conley Diaphragm Valves with the availability of Epoxy, Vinyl Ester or Furan liner systems in standard 60 mil or optional 100 mil liner thicknesses. All liners are reinforced with multiple layers of Nexus®. Non composite external parts are 316 stainless steel. Teflon bearings eliminate bonnet grease fittings.

Light weight is another feature of Conley Diaphragm Valves; weighing approximately one-third of their metal counterparts.

Conley Diaphragm Valves may be mounted either vertically or horizontally and may be serviced without removal from the line. Utilizing standard face to face ANSI dimensions, interchangeability is never a problem.

Diaphragms and Seats Available

HYPALON®

Chlorosulfonated polyethylene; recommended for sodium chloride, chromic acid, hydrofluoric acid, sulphuric acid, hydrocarbon oils, salts, and others. Temperature rating of -5°F to 150°F.

BUNA-N

Nitrile rubber; a general purpose elastomer recommended for sealing of water, oil, mild solvents and petroleum products. Not recommended for strong acids, ketones or halogenated hydrocarbons. Excellent abrasion and tear resistance. Temperature rating of -40°F to 200°F.

EPDM

Ethylene-propylene diene; recommended for ozone, phosphate, ester, ketones, alcohols, glycols, concentrated sulphuric acid, bleaching (20%), alkaline solutions in general, treated water (with caustic soda, sodium sulphate, chlorine), and hot water. Temperature rating of -30°F to 250°F.

SBR

Styrene butadiene; recommended for acids and alkalis. Temperature rating of -5°F to 175°F.

TEFLON®

Polytetrafluorethylene; a self-lubricating compound recommended for most chemicals and solvents. Temperature rating of -200°F to 350°F.

VITON® Fluorelastomer

Fluorocarbon; excellent chemical compatibility with a wide range of temperature and concentrations. Can be used in most applications of mineral acids, chlorinated hydrocarbons, salt solutions and petroleum oils. Temperature rating of 20°F to 300°F.



INSTALLATION

The following is the proper procedure for installation of Conley Valves. Conley Valves mate with all Class 150 ANSI B16.5 flat face flanges. Use only full face gaskets with a minimum thickness of 1/8" and having a Durometer rating of 50-70 on the Shore "A" scale. Always use a spacer ring if mating with raised face flanges.

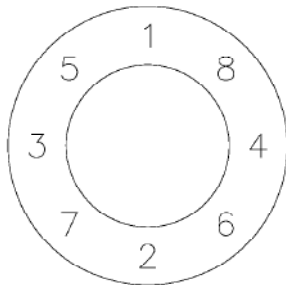
- 1) Make sure all surfaces on both the valve and flange mating surface are clean.
- 2) Check bolt holes of mating flanges for alignment. **Do not** attempt to install valves that do not have proper alignment.
- 3) Check flange dimensions versus valve dimensions and include proper allowance of space for gaskets.
- 4) Use SAE flat washers under both bolt and nuts.
- 5) Insert lubricated bolts.
- 6) Check mating flange faces for excessive distance or gap. **Do not** attempt to install valves that have excessive distances or gaps to mating flanges.
- 7) Tighten nuts/bolts diametrically in stages using a torque wrench. Uniform tightness across the face of the flange will eliminate gasket leaks.



BOLT TORQUE REQUIREMENTS

Flange Size	Recommended Torque
1 1/2"	15 ft lbs
2"-4"	25 ft lbs
6"	45 ft lbs

TORQUE SEQUENCE



Diaphragm Valve Dimensional Data* and Pressure Ratings⁽¹⁾ from – 50° to 275°F

⁽¹⁾Static pressure rating; steady (stationary) pressure is created when using a gear pump, turbine pump, centrifugal pump, etc.
⁽²⁾Vacuum Service: A full vacuum within the pipe is equivalent to 14.7 psi external pressure at sea level. Contact Conley Corp for higher external pressure ratings.

NOM PIPE DIA	I.D. (IN)	NOM LINER THK (IN)	A FACE to FACE (IN)	C HEIGHT (IN)	WT (LBS)	INT PRESS (PSI)	VAC PRESS (PSI) ⁽²⁾
1 ½"	1.38	0.060	6 ½"	7 3/8"	6	150	1370
2"	1.88	0.060	7 ½"	7 5/8"	8	150	675
3"	3.00	0.060	10"	10 3/16"	19	150	160
4"	4.00	0.060	12 ½"	11 7/8"	29	150	123
6"	6.00	0.060	16"	17 11/16"	65	120	82

Swing Check Valve Dimensional Data* and Pressure Ratings⁽¹⁾ from – 50° to 275°F

⁽¹⁾Static pressure rating; steady (stationary) pressure is created when using a gear pump, turbine pump, centrifugal pump, etc.
⁽²⁾Vacuum Service: A full vacuum within the pipe is equivalent to 14.7 psi external pressure at sea level. Contact Conley Corp for higher external pressure ratings.

NOM PIPE DIA	I.D. (IN)	NOM LINER THK (IN)	A FACE to FACE (IN)	C HEIGHT (IN)	WT (LBS)	INT PRESS (PSI)	VAC PRESS (PSI) ⁽²⁾
2"	1.88	0.060	8"	4"	6	150	675
3"	3.00	0.060	9 ½"	5 ¼"	13	150	160
4"	4.00	0.060	11 ½"	6"	24	150	123
6"	6.00	0.060	14"	8 5/8"	53	150	82

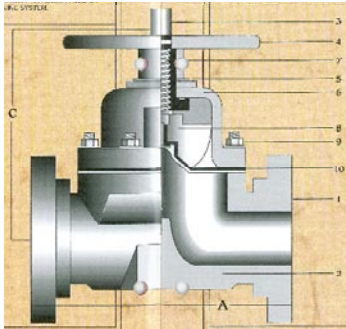
Diaphragm Valve CV Rating*

*Valve coefficient of flow represents the flow of water in gallons per minute with 1 PSI pressure drop through the valve.

% OPEN	1 ½"	2"	3"	4"	6"
10	5.3	10	42	60	103
20	14.9	22	70	120	270
30	25	36	99.5	165	395
40	30	51	120.5	215	497
50	36.5	65.5	140	245	583
60	38	69	150	270	630
70	40	70	168	280	669
80	41	70	170	285	678
90	40	68	177	290	685
100	39	67	176	285	690

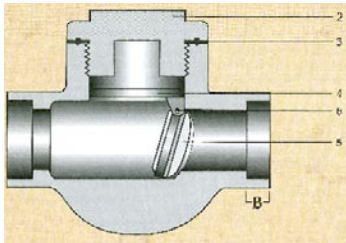


Diaphragm Valve Material Specifications and Part Numbers



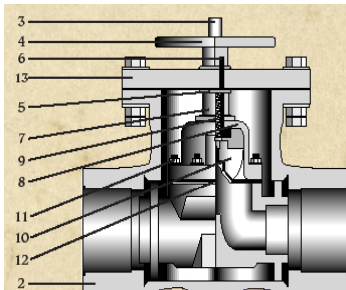
NUMBERS	PART	DESCRIPTION
1	Complete Valve Assembly	
2	Body	Nexus reinforced liner with filament-wound cage
3	Indicating Stem	Poly Pro
4	Hand Wheel	Fiber-Forged Composite
5	Seals	Teflon® and Viton®
6	Bonnet	Fiber-Forged Composite
7	Induction Assembly	Steel-Naval Brass
8	Compressor	Fiber-Forged Composite
9	Hardware	316 SS
10H	Diaphragm	Hypalon®

Swing Check Valve Material Specifications and Part Numbers



NUMBERS	PART	DESCRIPTION
1	Complete Valve Assembly	
2	Cap	Fiber-Forged Composite
3V	O-Ring	Viton
4	Disc Hanger	Fiber-Forged Composite
5V	Disc Assembly Standard Seat	Fiber-Forged Composite Viton®
6	Disc Pin	Teflon

Dual Containment Valve Material Specifications and Part Numbers



NUMBERS	PART	DESCRIPTION
1	Complete Valve Assembly	
2	Body and Annulus	
3	Indicating Stem	Poly Pro
4	Hand Wheel	Fiber-Forged Composite
5	Seals	Teflon® and Viton®
6	Extension Shaft	316 SS
7	Coupler	Fiber-Forged Composite
8	Bonnet	Fiber-Forged Composite
9	Induction Assembly	Steel-Naval Brass
10	Compressor	Fiber-Forged Composite
11	Hardware	316 SS
12	Diaphragm	Hypalon®
13	Containment Lid	Fiber-Forged Composite

Optional O-Ring and Seat Materials

Available in:

- EPDM
- Hypalon
- Black Butyl
- White Butyl
- Neoprene
- Natural Rubber
- Buna N
- Teflon
- Viton
- Other common elastomers

Factory Tested Replacement Parts

Conley Valve Division has a full range of replacement parts ready to install with minimum down time.

Typical Properties

TEMPERATURE	75°F	250°F	
PROPERTY	VALUE	VALUE	METHOD
HYDROSTATIC DESIGN BASIS	16,000 psi	8,000 psi	ASTM D2992 PROCEDURE B
HYDROSTATIC BURST (WALL STRESS @ 72°F)	32,000 psi	24,000 psi	ASTM D1599
DEGREE OF CURE	175°C (347°F) Tg		DMA
HEAT DEFLECTION TEMPERATURE	150°C (302°F)		ISO 75-3
FLOW FACTOR (HAZEN- WILLIAMS)	150		
SURFACE ROUGHNESS	1.7 X 10 ⁻⁵ FEET		
MANNING'S "n"	0.009 INCH		

Factory Tested Replacement Parts

To simplify the valve ordering process, the Conley Valve Division has developed a valve and parts numbering code that will facilitate order processing and help us expedite our Valve Products to *You*. The numbering code is as follows:

EXAMPLE

If you need a 2" Swing check Valve with a Vinyl Ester 441 Corrosion Barrier, Then order a SC2F441-1

WHERE

SC = Swing Check 2 = Size F = Flanged 441 = Resin Type 1 = Part Code Number

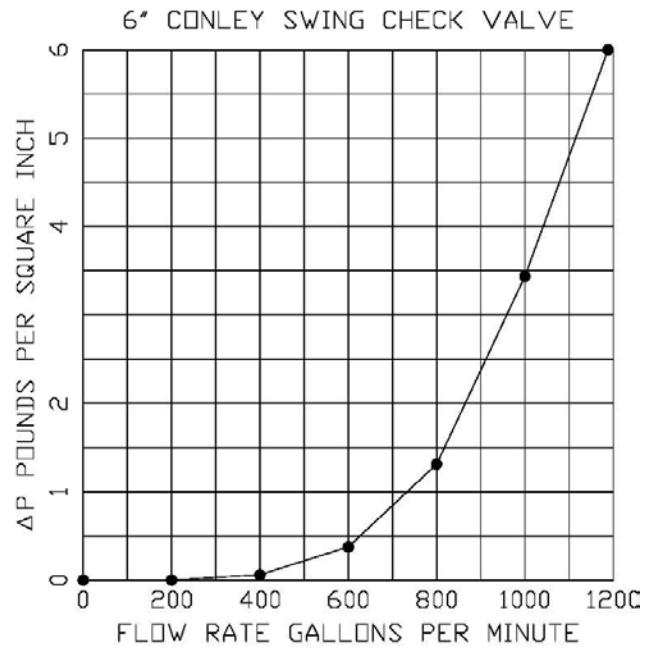
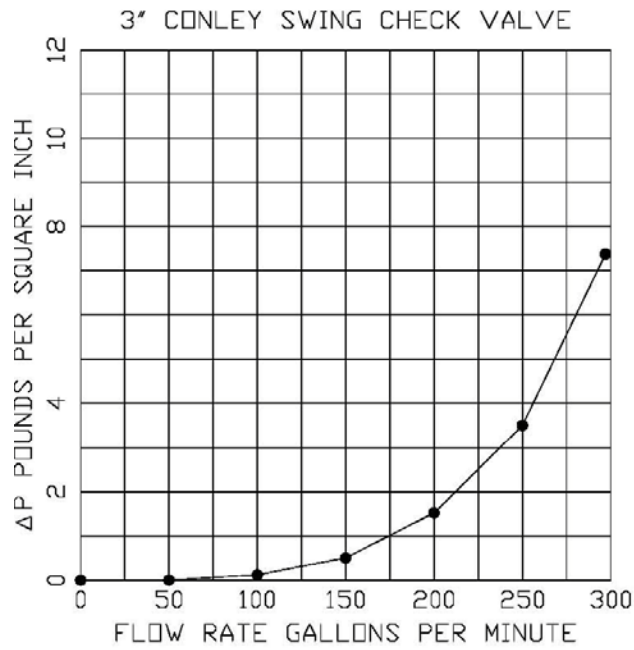
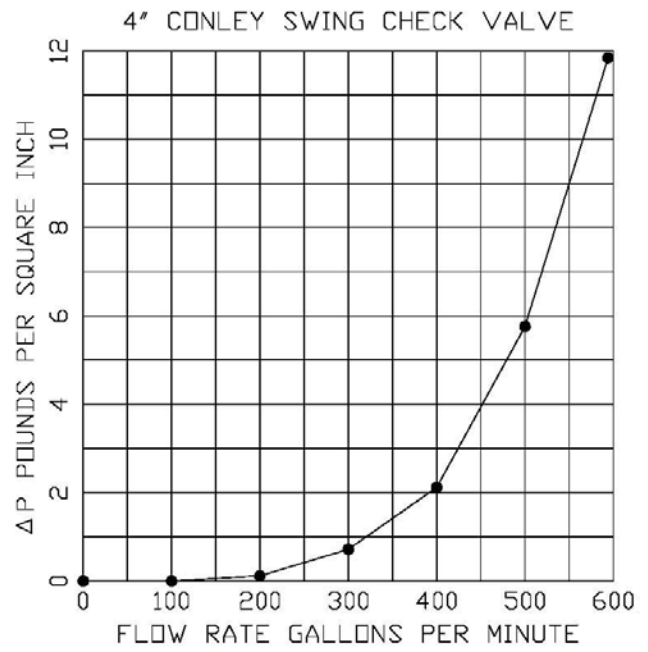
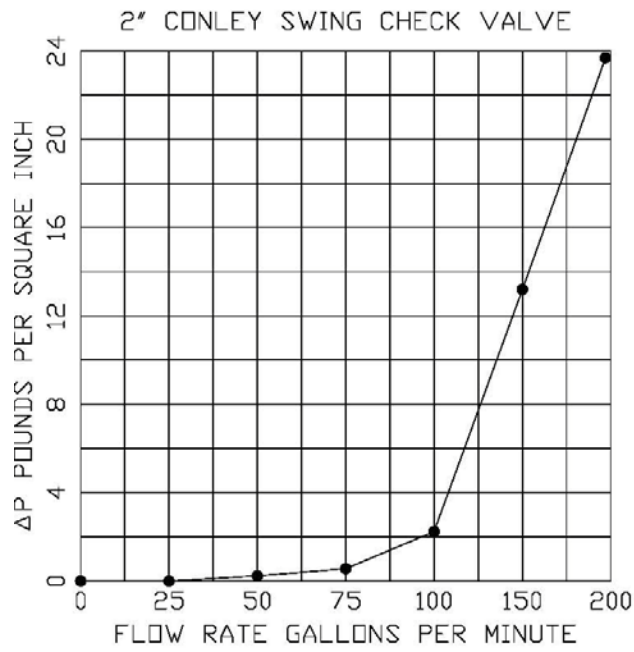
YOU WILL RECEIVE

A complete valve, tagged SC2F441-1-999 (The last numbers are the serial numbers, placed on complete valves and valve bodies only)

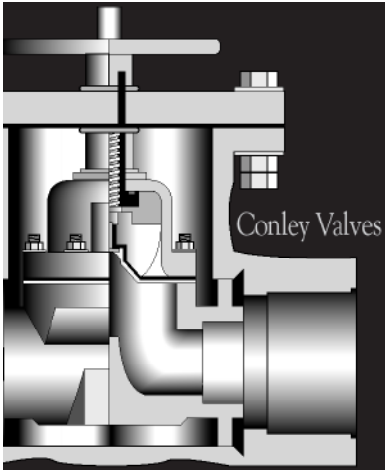
Valve Parts Designation Code

<p>VALVE TYPES Swing CheckSC Diaphragm (WEIR)DW</p> <p>VALVE SIZE DESIGNATION STANDARD VALVES 1 ½"1.5 2"2 3"3 4"4 6"6</p> <p>DUAL CONTAINMENT VALVES 2/424 2/626 3/636 3/838 4/646 4/848 6/868 6/10610</p> <p>VALVE BODY STYLE DESIGNATION FlangedF Socket (cement)S Dual ContainmentDC</p> <p>VALVE CORROSION BARRIER RESIN INNER LINER EpoxyE</p> <p>VINYL ESTERS 411411 441441 470470</p> <p>FURANFN ABRASIONAB</p>	<p>SWING CHECK PARTS DESIGNATION Complete Valve1 Cap2 O-Ring (Viton)*3 Disc Hanger4 Disc Assembly (Viton)*5 Disc Pin6</p> <p>DIAPHRAGM (WEIR) PARTS DESIGNATION Complete Valve1 Body2 Indicating Pin3 Hand Wheel4 Seals5 Bonnet6 Induction Assembly7 Compressor8 Hardware9 Diaphragm (Hypalon)10</p> <p>DUAL CONTAINMENT PARTS DESIGNATION Complete Valve1 Body and Annulus.....2 Indicating Stem3 Hand Wheel4 Seals5 Extension Shaft6 Coupler7 Bonnet8 Induction Assembly9 Compressor10 Hardware11 Diaphragm (Hypalon)12 Containment Lid13 Cap14 Disc Hanger15 Disc Assembly (Viton)*16 O-Ring (Viton)*17</p>	<p>FACTORY TESTED REPLACEMENT PARTS Should service be required, the Conley Valve Division has a full range of replacement parts ready to install with a minimum of system down time. All parts undergo the same rigorous testing program as the complete Conley Valves. (Conley does recommend routine testing after replacement).</p> <p>To expedite ordering replacement parts, the Conley Valve Division uses part number designations that are compatible with the valve's traceability code.</p> <p>Each Conley Valve type has a parts schematic to assist you when ordering factory tested replacement parts.</p> <p>* Indicates standard product see list for other options</p> <p style="text-align: center;">FOR ASSISTANCE IN VALVE SELECTION CALL (800) 331-5502</p>
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PRESSURE LOSS vs FLOW RATE



For more technical information Contact Conley Valve Division



This product data sheet and recommendations it contains are based on data reasonably believed to be reliable. It is intended that this data be used by competent personnel having acceptable training in accordance with current industry practice and operating conditions. Variation in environment, application or installation, changes in operating procedures, or extrapolation of data may cause unsatisfactory results. Conley Corporation makes no representation or warranty, express or implied, including warranties of merchantability or fitness for purpose, as to accuracy, adequacy or completeness of the recommendations or information contained herein. Conley Corporation assumes no liability whatsoever in connection with this literature or the information or recommendations it contains.



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