## **CRANE VALVE GROUP**







#### VALVES FOR BACKFLOW PREVENTION

In almost every piping system, there is a need for backflow prevention. Most piping systems utilize pumps or compressors to generate needed pressure for movement of line fluids or gases. When rotating equipment stops, flow reversal or backflow occurs. Check valves are used to stop backflow and protect rotating equipment or other mechanical devices from the sudden backflow surges that may occur.

To satisfy your needs, specify Crane Valves—the worldwide leader of valves manufactured for backflow prevention.

#### WHY WAFER CHECK VALVES?

Wafer check valves are preferred because of their compactness, ease of installation and lower initial costs than traditional flanged swing checks. These key reasons have made Uni-Chek II popular in recent years. There are additional benefits, such as reduced costs for maintenance, installation and shipping.

#### **TEMPERATURE RATINGS**

Seal	Max. Temperature
Metal/Stainless Steel	450°F (230°C)*
Viton	400°F (204°C)
Nitrile	250°F (121°C)
EPDM	300°F (150°C)
Neoprene	210°F (100°C)
PTFE	450°F (230°C)

<sup>\*</sup>Max temperature due to internal components.

#### CV AND OPENING PRESSURE

Valve Size		Openi	ng Press	ure Diff	erential
in (mm)	CV.	in WC	(mmWC)	psi	Bars
2 (50)	62	5.95	(151)	0.215	(0.015)
2.5 (65)	109	4.50	(114)	0.163	(0.011)
3 (80)	166	3.76	(95)	0.136	(0.009)
4 (100)	318	3.18	(81)	0.115	(800.0)
5 (125)	471	2.58	(65)	0.093	(0.006)
6 (150)	720	2.12	(54)	0.077	(0.005)
8 (200)	1384	2.34	(59)	0.085	(0.006)
10 (250)	2298	2.25	(57)	0.081	(0.006)
12 (300)	4153	2.00	(51)	0.072	(0.005)
14 (350)	4984	1.60	(41)	0.058	(0.004)
16 (400)	8307	1.00	(25)	0.036	(0.002)
18 (450)	11906	0.95	(24)	0.034	(0.002)
20 (500)	16059	0.90	(23)	0.032	(0.002)
24 (600)	22705	0.82	(21)	0.030	(0.002)
30 (750)	47071	0.65	(17)	0.023	(0.002)
36 (900)	53993	0.60	(15)	0.020	(0.001)

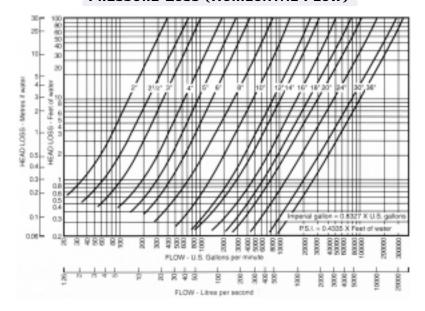
#### FEATURES AND BENEFITS

Users find the single disc Uni-Chek II valves attractive because they provide unobstructed flow paths, are spring-assisted and less expensive than the traditional bolted cap swing check valves. In addition, they have comparable pressure drop of swing check valves. The Crane Uni-Chek II offers these features and benefits:

- Market Needs—available in sizes 2" (50mm) through 36" (900mm), and pressure classes to meet ASME, BS, DIN, AS, JIS and ISO standards.
- **Compactness**—enabling installation in restricted spaces not possible with conventional swing check valves.
- Lightweight—making them easier to handle and install, with less weight to support, eliminating expensive support systems.
- Variety of Materials—versatility for many services satisfies more application needs.
- Installation—wafer design bolts between flanges using one set of studs. Saves time and installation cost.
- Lower Cost—10% to 20% the weight of conventional swing checks saves money in initial cost, with minimum maintenance design.
- Single Disc-Spring Closure—provides unobstructed flow, bubble-tight O-ring seal, with good dynamic response to reduce damaging water hammer.
- Versatility—providing optional features, including external shaft with counterweight or backflush lever, position indicator, limit switches and external springs.

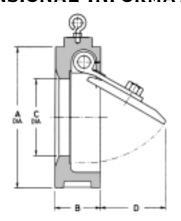
Note Uni-Chek II valves are not intended for use in reciprocating compressor service.

#### PRESSURE LOSS (HORIZONTAL FLOW)



### **DIMENSIONAL INFORMATION**

#### UNI-CHEK™ II



#### ASME CLASS 125

si	ze		A B		С			D		ight	
in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg.
2"	50	4%	105	1¾	45	<b>1</b> ½6	33	1%	29	3.7	1.7
2½"	65	4%	124	1%	48	<b>1</b> 11/16	43	<b>1</b> ¾6	30	5	2.3
3"	80	5%	137	2	51	21/16	52	<b>2</b> <sup>3</sup> / <sub>16</sub>	56	6.6	3
4"	100	6%	175	21/4	57	3	76	<b>2</b> <sup>15</sup> / <sub>16</sub>	75	11	5
5"	125	<b>7</b> ¾	197	2½	64	3¾	95	3¾	95	16	7.3
6"	150	8¾	222	<b>2</b> ¾	70	<b>4</b> ¾	121	4½	114	20	9
8"	200	11	279	2%	73	<b>6</b> ½6	164	6%	156	32	14.4
10"	250	13%	340	3%	79	<b>7</b> %	194	<b>7</b> %	187	52	23.4
12"	300	16%	410	3%	86	9½	241	<b>8</b> ¾	222	77	35
14"	350	<b>17</b> ¾	451	41/4	108	10½	267	9	229	154	70
16"	400	201/4	514	41/4	108	12½	318	9¾	248	170	77
18"	450	21%	549	41/4	108	14	356	11¾	299	203	92
20"	500	23%	606	5½	140	151/4	387	12¾	324	298	135
24"	600	281/4	718	6	152	19	483	15¼	387	452	205
30"	750	34¾	883	6	152	23	584	20¾	527	_	_
36"	900	41¼	1048	6	152	29	737	25	635	_	_

**ASME CLASS 150** 

si		l .	.		ь				_			١٨/-	ا العامة:	
	ze		4		_		B B*		С		D		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg.	
2"	50	41%	105	2%	60	1¾	45	<b>1</b> %6	33	1/2	13	5.5	2.5	
2½"	65	4%	124	_	_	1%	48	<b>1</b> 11/16	43	_	_	_	_	
3"	80	5%	137	2%	73	2	51	21/16	52	<b>1</b> ½6	34	10	4.5	
4"	100	6%	175	2%	73	21/4	57	3	76	<b>2</b> 5/16	59	16	7	
5"	125	<b>7</b> ¾	197	_	_	<b>2</b> ½	64	3¾	95	_	<b>—</b>	_	_	
6"	150	8¾	222	3%	98	<b>2</b> ¾	70	<b>4</b> ¾	121	3¾	86	31	14	
8"	200	11	279	5	127	2%	73	<b>6</b> ½6	164	4	102	49	22	
10"	250	13%	340	5¾	146	3%	79	<b>7</b> %	194	4¾	121	82	37	
12"	300	16%	410	<b>7</b> %	181	3%	86	9½	241	5	127	124	56	
14"	350	<b>17</b> ¾	451	71/4	184	41/4	108	10½	267	6	152	176	80	
16"	400	201/4	514	<b>7</b> ½	191	41/4	108	<b>12</b> ½	318	6½	165	220	100	
18"	450	21%	549	8	203	41/4	108	14	356	8	203	242	110	
20"	500	23%	606	8%	219	5½	140	15¼	387	9%	245	372	169	
24"	600	281/4	718	8¾	222	6	152	19	483	12½	318	584	265	
30"	750	34¾	883	_	_	6	152	23	584	_	_	_	_	
36"	900	411/4	1048	_	_	6	152	29	737	_	_	_	_	

For additional sizes and pressure classes, consult factory.
Valves available in accordance with DIN, JIS and ISO standards.
Weights are for valves only. Consult factory for weights not shown.

• Class 150 and 300 weights are for standard valves.

#### AS TABLE E (BS TABLE E)

size		Α		E	3	(	С		D		ight
in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg.
2"	50	3%	98	1¾	45	<b>1</b> %	33	1%	29	3.7	1.7
2½"	65	<b>4</b> %	111	1%	48	<b>1</b> 11/16	43	11%	29	5	2.3
3"	80	51/8	130	2	51	21/16	52	<b>2</b> <sup>3</sup> / <sub>16</sub>	56	6.6	3
4"	100	6%	162	21/4	57	3	76	<b>2</b> <sup>15</sup> / <sub>16</sub>	75	11	5
5"	125	<b>7</b> %	194	2½	64	<b>3</b> ¾	95	3¾	95	16	7.3
6"	150	8½	216	<b>2</b> ¾	70	<b>4</b> <sup>3</sup> / <sub>4</sub>	121	4½	114	20	9
8"	200	10¾	273	2%	73	67/16	164	6%	156	32	14.4
10"	250	131/4	337	3%	79	<b>7</b> %	194	<b>7</b> %	188	52	23.4
12"	300	15%	384	3%	86	9½	241	<b>8</b> <sup>3</sup> / <sub>4</sub>	222	77	35
14"	350	<b>17</b> %	448	41/4	108	10½	267	9	229	154	70
16"	400	19⅓	498	41/4	108	12½	318	<b>9</b> ¾	248	170	77
18"	450	22%	562	41/4	108	14	356	11¾	299	203	92
20"	500	24%	619	5½	140	151/4	387	<b>12</b> ¾	324	298	135
24"	600	28%	727	6	152	19	483	15¼	387	452	205
30"	750	321/4	895	6	152	23	584	20¾	527	_	_
36"	900	41¾	1060	6	152	29	737	25	635	_	_

#### ASME CLASS 300

siz	ze	1	4		В	E	<b>3</b> *	(	c	ı	)	W€	eight
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg.
2"	50	4%	111	2%	60	1¾	45	<b>1</b> ½6	33	1/2	13	6.7	3
2½"	65	—	_	_	_	1%	48	<b>1</b> 11/16	43	_	<b> </b> —	<b>—</b>	_
3"	80	5%	149	2%	73	2	51	21/16	52	<b>1</b> ½6	34	13	5.8
4"	100	<b>7</b> %	181	2%	73	21/4	57	3	76	<b>2</b> 5/16	59	17	7.5
5"	125	_	_	_	_	2½	64	3¾	95	_	_	_	_
6"	150	9%	251	3%	98	<b>2</b> ¾	70	<b>4</b> ¾	121	3¾	86	36	16.2
8"	200	121/8	308	5	127	2%	73	61/16	164	4	102	53	24
10"	250	14¼	362	5¾	146	3%	79	<b>7</b> %	194	<b>4</b> ¾	121	88	40
12"	300	16%	422	<b>7</b> %	181	3%	86	9½	241	5	127	143	65
14"	350	19%	486	8¾	222	41/4	108	10½	267	4½	114	210	95
16"	400	21¼	540	9%	232	41/4	108	12½	318	<b>4</b> <sup>1</sup> /⁄ <sub>16</sub>	124	275	125
18"	450	23%	597	10%	264	41/4	108	14	356	5%	143	304	138
20"	500	25¾	654	11½	292	5½	140	151/4	387	6¾	171	462	210
24"	600	30%	775	12½	318	6	152	19	483	8¾	222	754	342

<sup>\*</sup> Optional for short pattern valve, S

<sup>\*</sup> Optional for short pattern valve, S

CHECK VALVE

The Uni-Chek II valve installs between two pipe flanges. The body is flangeless and is centered in line by the surrounding flange bolts. Correct selection of materials and installation will ensure trouble free operation.

Acceptable

Normal Flow

#### **CONSIDER THE FOLLOWING:**

- Check that the pipe flange drilling complies with the valve tag specification.
- Flow direction is indicated by an arrow on the valve body or name plate.
- On horizontal installations, the valve tag should always be at the top.
- Flow should always be upward on vertical installations. (Consult factory)
- The valve reaches the fully open position when the disc contacts the inside diameter of the pipe.
   Care should be taken when non-standard or lined pipe is used.
- Allow a downstream length of straight pipe equal to one pipe diameter before installing other valves or pipe bends, tees etc.
- Each piping system has a unique geometry which should be evaluated whenever the liquid media velocity exceeds 8 feet/second (2.4 m/sec) through a swage or expansion (15° or greater included angle) directly upstream of the valve. A minimum of five (5) pipe diameters distance should be maintained between the valve and the pump discharge and pipe fittings (swages or expansion).
- Avoid manifolds where a pump discharges directly into another pump discharge.

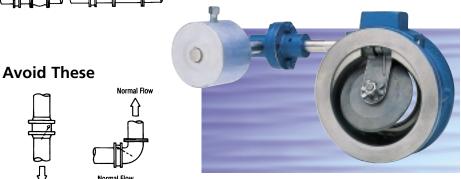
#### **MAINTENANCE PRECAUTIONS**

Due to the low wearing of working parts and simple robust construction, the valve should not require attention for several years in normal service. However, if the valve is installed on critical applications such as sanitary isolation, it is considered prudent to make more frequent inspections. Valves subject to high frequency of operation may require spring replacement at earlier intervals. This becomes apparent when valve closure is noisy.

# installation will SHAFT OPTIONS



WITH OPEN/SHUT INDICATOR



COUNTERWEIGHT



with BACKFLUSH LEVER (left hand option shown)



MICROSWITCH

#### **ORDERING INFORMATION**

UNI-CHEK™ II

24" 12 3 2 0 Α 1 0 2 Body Valve Size Pressure Flange Disc Arm & Seal & Spring End Shaft Coating Class Material Pin Material Material Connection Option Option

**Description:** 24" Pressure Class 125, ASME Flange, Cast Iron Body, 316S.S. Disc Arm & Pin, Nitrile Seal, 316S.S. Spring, Flat Smooth Face, External Lever and Counterweight, Manufacturing Standard Coating.

#### VALVE SIZE

Nominal valve sizes are expressed in inches or millimeters.

**In inches:** For use with ASME, API and BS flange standards.

In millimeters: For use with AS, DIN or JIS flange standards. (size preceded by "M" for DIN, "J" for JIS and "A" for AS with PN number shown as pressure class).

#### PRESSURE CLASS

CODE	CLASS	
12	125	
15	150	
30	300	
10-16	DIN or JIS	

S-Optional prefix for class 150 and 300 short pattern (S15, S30). Refer to Table B\* dimensions.

#### **FLANGE**

CODE	FLANGE
Α	ASME
Ε	AS 2129 / BS 10 – Table E

#### **BODY MATERIAL**

CODE	MATERIAL
0	Carbon Steel to ASTM A216 Gr. WCB
1	Cast Iron to ASTM A126 Class B
2	316 Stainless Steel to ASTM A351 Gr. CF-8M
3	Low Temperature Steel to ASTM A352 Gr. LCB

#### DISC, ARM AND PIN

CODE	MATERIAL
3	316 Stainless Steel

#### SEAL AND SPRING MATERIAL

CODE	MATERIAL
0	Same as body material, Inconel X Spring
1	316S.S Weld Overlay, Inconel X Spring
2	Nitrile, 316S.S. Spring
3	Viton, 316S.S. Spring
4	EPDM, 316S.S. Spring
5	Neoprene, 316S.S. Spring
6	PTFE, 316S.S. Spring

#### **END CONNECTION**

CODE	DESCRIPTION
0	Flat-Smooth 125 AARH
1	Serrated Per ASME B16.5

#### SHAFT OPTION

CODE	DESCRIPTION
0	No Option
1	External Lever
2	External Lever and
	Counterweight
3	Visual Open/Closed Indicator
4	Microswitch
5	External Spring

L-Suffix for left hand option (1L, 2L, 3L, 4L, 5L), consult factory. **CAUTION:** external options may interfere with installation on some

#### **COATING OPTION**

sizes, consult factory.

CODE	DESCRIPTION
0	Manufacturers Standard
1	Internal Solventless Epoxy
2	External Solventless Epoxy
3	Internal and External Solventless Epoxy

#### UNI-CHEK™ II

#### **NORTH AMERICAN OPERATIONS**

9860 Johnson Road Montgomery, Texas 77316-9494 Tel: 936-588-4447 • Fax: 936-588-4427

#### GLOBAL HEADQUARTERS

9200 New Trails Road The Woodlands, Texas 77381-5219 Tel: 281-298-5463 • Fax: 281-292-1749

#### **AUSTRALIAN OPERATIONS**

322 Settlement Road
Thomastown, Victoria Australia 3074
Tel: 61-39-465-2755 • Fax: 61-39-466-1365

#### **UNITED KINGDOM OPERATIONS**

6 Alexander Road Cregagh, Belfast BT6 9HJ Tel: 441-2890-704222 • Fax: 441-2890-401582

#### **CRANE VALVE GROUP**

#### Flow Control on a Global Scale

#### CENTER LINE®

Resilient Seated Butterfly and Check Valves
Pneumatic and Electric Actuators

#### FLOWSEAL®

**High Performance Butterfly Valves** 

#### **DUO-CHEK®**

**High Performance Check Valves** 

#### Noz-CHEK® & COMPAC-Noz®

Severe Service Check Valves www.craneflow.com

#### **CRANE SERVICE CENTERS**

Certified OEM Valve Repair Services www.cranevalveservices.com

#### CRANE NUCLEAR, INC.

Valves Designed for Nuclear Service Diagnostic Valve Repair, Equipment and Services www.cranenuclear.com

#### CRANE

Cast Steel, Bronze and Iron Valves

#### **JENKINS**

Bronze, Iron and Cast Steel Valves

#### ALOYCO

Corrosion Resistant Gate, Globe and Check Valves

#### PACIFIC

High Pressure and Severe Service Valves Quarter Turn Severe Service Plug Valves



VISIT OUR WEBSITE FOR OUR FEATURED PRODUCTS.

www.cranevalve.com

CV-603 0405 A Crane Co. Company