

PRATT

Henry Pratt Company

Tilting Disc Check Valve



**Engineering Creative Solutions
for Fluid Systems Since 1901**

A Tradition of Excellence

With the development of the first rubber seated butterfly valve more than 70 years ago, the Henry Pratt Company became a trusted name in the flow control industry, setting the standard for product quality and customer service. Today Pratt provides the following range of superior products to the water, wastewater and power generation industries.

Butterfly Valves: from 3" to 162"

Rectangular Valves: 1' x 1' to 14' x 16'

Ball Valves –

Rubber Seated: from 4" to 60"

Metal Seated: from 6" to 48"

Plug Valves: from 1/2" to 72", 100% port available up to 48", 3 ways

Air Valves for Water and Wastewater: from 1/2" to 20"

Hydraulic Control Systems

Valve Controls

Energy Dissipating Valves and Fixed Energy Dissipaters

Cone Valves

Check Valves

Plunger Valves

A Commitment to Meeting The Customers' Needs

Henry Pratt valves represent a long-term commitment to both the customer and to a tradition of product excellence. This commitment is evident in the number of innovations we have brought to the industries we serve. In fact, the Henry Pratt Company was the first to introduce many of the flow control products in use today, including the first rubber seated butterfly valve, one of the first nuclear N-Stamp valves, and the bonded seat butterfly valve.

Innovative Products For Unique Applications

Though many of the standard valves we produce are used in water filtration and distribution applications, Pratt has built a reputation on the ability to develop specialized products that help customers to meet their individual operational challenges.

Creative Engineering for Fluid Systems

Pratt's ability to provide practical solutions to complex issues is demonstrated by the following case histories.

Earthquake Proof Valves

Pratt designed and manufactured hydraulically actuated valves for a water storage application so that the valves would automatically operate in the event of earthquakes. This led to the development of a valve that will withstand acceleration forces of up to 6gs.

Custom Actuation/Isolation Valves

Pratt has designed and manufactured nuclear quality quarter-turn valves and parts since the first nuclear-powered generating plants were built. Our custom valves are able to close in a millisecond, using specially designed Pratt electro-pneumatic actuators.

Valves Designed for Harsh Environments

Pratt designed and manufactured a 144" diameter butterfly valve for the emergency cooling system at a jet engine test facility. The valve was designed to supply water to help dissipate the tremendous heat generated by the engines during testing.



PRATT
Henry Pratt Company

Through experience, commitment and creative engineering, Pratt is uniquely suited to provide superior products for our customers' special needs. For more information, contact our corporate headquarters in Aurora, Illinois.

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Introduction



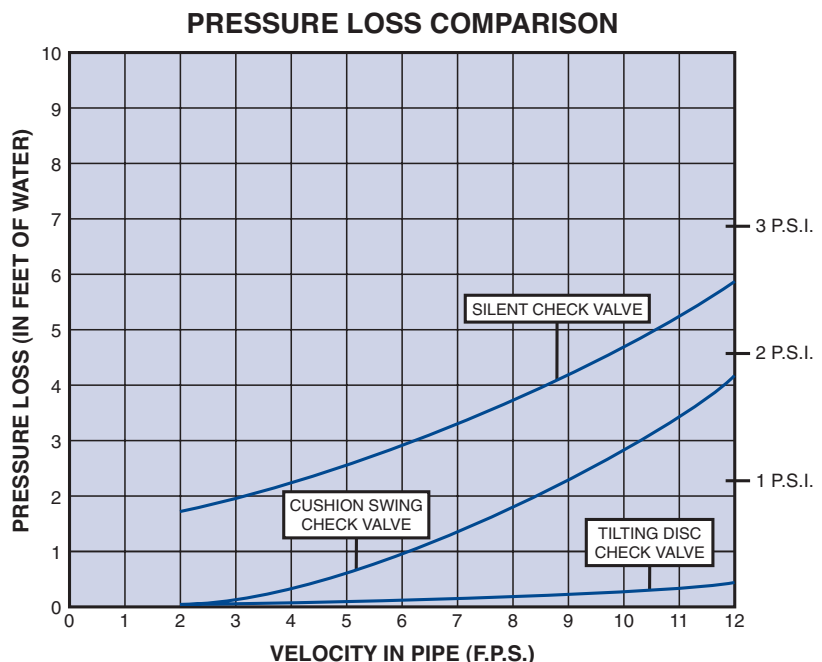
The Henry Pratt Tilting Disc Check Valve is the most versatile and reliable check valve Pratt has to offer. This valve offers significant energy and cost savings over the life of the valve due to its large flow area and low head loss characteristics. Short disc travel from full open to full close provides the ability to close very rapidly or very slowly to avoid contributing to slamming and surges. The tilting disc check valve is also offered with an upper hydraulic dashpot to aid in disc closure in multiple pump systems even after a power failure. Henry Pratt continues to expand our product offering to those customers who require specialty valves for applications where opening and closing times are critical to control flow reversal and reduce water hammer.

Scope of Line: Tilting Disc Check Valve

- Available in sizes 4 inches through 60 inches
- Various end configurations available
- Ductile iron body, disc and cover
- Stainless steel disc and body seat rings
- Stainless steel hinge pin
- Other materials available upon request
- Rated working pressure 250 psi

Low Headloss Design Advantage

The Tilting Disc Check Valve offers significant energy savings compared to other types of conventional check valves because of its larger flow area and low head loss characteristics. The valve achieves full opening when the disc “tilts” in the flow of the media. The tilting disc design through lifting and stabilizing in the full-open position, provides minimal flow resistance.



NOTE: CURVES BASED ON 6 INCH VALVE SIZE FOR ILLUSTRATION PURPOSES ONLY.

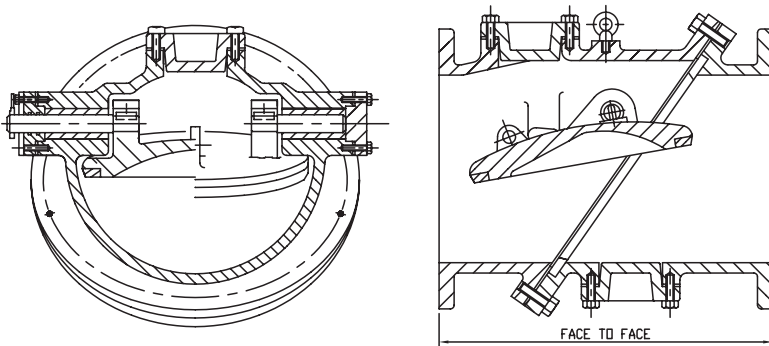
Design Details: Tilting Disc Check Valve

DESCRIPTION	MATERIAL
Body	Ductile Iron ASTM A536 Gr. 65-45-12
Disc	Ductile Iron ASTM A536 Gr. 65-45-12
Cover	Ductile Iron ASTM A536 Gr. 65-45-12
Disc Seat Ring	Stainless Steel ASTM A269 Type 304
Body Seat Ring	Stainless Steel ASTM A269 Type 304
Hinge Pin	Stainless Steel ASTM A276 Type 304
Bearing Bush	Bronze B62

Other materials available on request.

Feature	Benefit
Variable opening and closing speeds	Short disc travel from full open to full close provides the ability to close very rapidly or very slowly to avoid contributing to slamming and surges.
Cushioned closure	Action of the fluid on the disc is balanced due to pivot points that allow for cushioned movement of the disc into the seat.
Long body laying length	Permits smooth passage of water with minimum turbulence and low potential for cavitation.
Low maintenance	The stainless steel stub shafts do not come in contact with fluid and can be lubricated either manually or automatically.
Non-slam characteristics	The design of the seat and hydraulic dashpot cushions the closing forces on the disc to allow for smooth operation. This prevents slamming of the disc into the seat.
Low headloss	Minimal effort to keep the disc open is achieved through the balanced disc design that provides light weight lifting properties, which translates to minimal flow resistance.
Less risk of reverse flow	Rapid closing of the disc decreases the chance of reverse flow to occur.

Dimensional Data



Diameter	Face-to-face Length	Approximate Weight
4"	11.5"	135 lbs.
6"	15"	160 lbs.
8"	19.5"	375 lbs.
10"	24.5"	330 lbs.
12"	24"	462 lbs.
14"	30"	771 lbs.
16"	30"	1062 lbs.
18"	33"	1200 lbs.
20"	32"	1652 lbs.
24"	38"	2368 lbs.
30"	52"	3525 lbs.
36"	59.5"	5177 lbs.
42"	60"	5727 lbs.
48"	65"	8745 lbs.
54"	70"	11345 lbs.

*May vary with pressure.

Suggested Specifications

General

The check valve shall be of the tilting disc type as manufactured by Henry Pratt Company. The tilting disc check valve shall consist of a circular disc with conical rim, hinged about a fixed pivot above its center-line and offset from the plane of the seat, sealing against a body seat clamped between the two sections of the valve body.

Valve Construction

The body shall be two-piece, consisting of an entrance and a discharge section bolted together at an angle with the pipeline. An O-ring seal in a groove between the body flanges shall be in place to prevent leakage between the flanges when bolted together. The valve shall be complete with ANSI class flanges to mate with adjacent equipment.

A body seat shall be clamped in place in a slot between the two body sections. The body seat shall have a conical finish to mate with the disc seat. There shall be an inspection port provided in both the entrance and discharge sections to provide visual access both upstream and downstream of the disc. An indicator shall be provided to show disc position for the full range of travel. Bosses shall be cast in both the entrance and discharge sections to allow for a top or bottom mounted oil dashpot for controlled opening and closing.

All valve castings shall be ductile iron ASTM A536 Grade 65-45-12. The disc and body seat ring shall be stainless steel ASTM A269 Type 304. The hinge-pin shall be stainless steel ASTM A276 Type 304. The bearing sleeve shall be Bronze B62.

Testing

Seat and leakage testing shall be in strict accordance with AWWA Standard C-508 latest edition for Swing Check Valves. Rated working pressure of the check valve line is 250 psi.

Coating

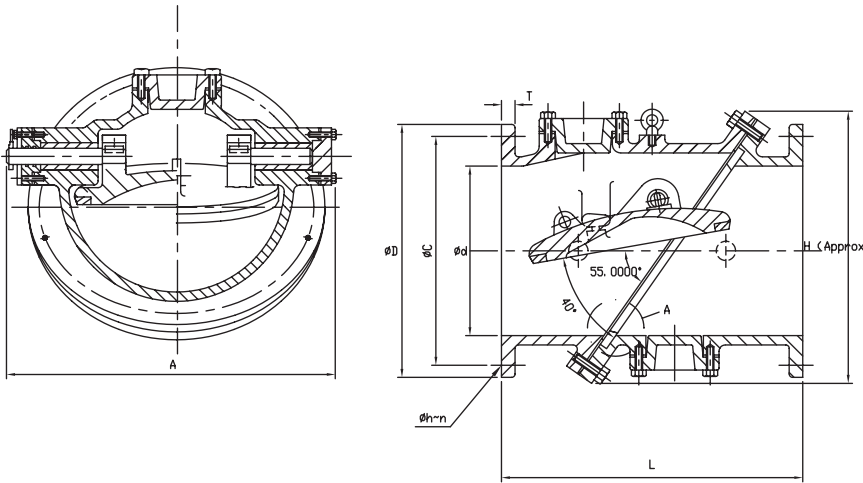
Coating shall be a NSF61 approved epoxy.

Henry Pratt reserves the right to change parts and components to improve product performance.

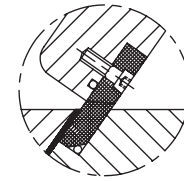
Dimensional Data: Tilting Disc Check Valve

These dimensions are correct at time of publication and are not to be construed as certified drawings. Certified drawings available upon request.

4" – 36" Tilted Disc Check Valve



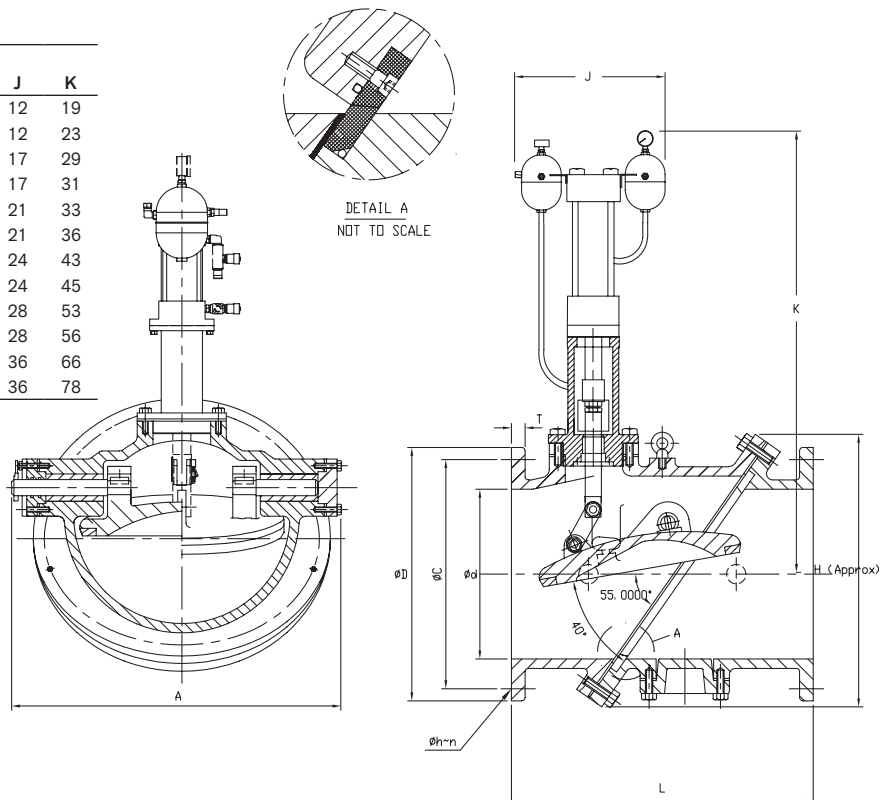
Size	ANSI B16.1 CL.125							
$\varnothing d$	L	$\varnothing D$	$\varnothing C$	$\varnothing h$	n	T	A	H
4	11½	9	7½	¾	8	1⅝	13	10
6	15	11	9½	7/8	8	1	16	13
8	19½	13½	11¾	7/8	8	1⅛	19	16
10	24½	16	14¼	1	12	1⅜	23	18
12	24	19	17	1	12	1¼	26	21
14	30	21	18¾	1⅛	12	1⅜	29	23¾
16	30	23½	21¼	1⅛	16	17/16	32	26¾
18	33	25	22¾	1¼	16	1⅞	36	30
20	32	27½	25	1¼	20	1⅞	39	32
24	38	32	29½	1⅜	20	1⅞	46	37
30	52	38¾	36	1⅜	28	2⅞	54	47
36	59½	46	42¾	1⅞	32	2⅞	64	51



DETAIL A
NOT TO SCALE

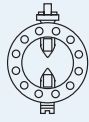
4" – 36" Tilted Disc Check Valve with Dashpot

Size	ANSI B16.1 CL.125										
$\varnothing d$	L	$\varnothing D$	$\varnothing C$	$\varnothing h$	n	T	A	H	J	K	
4	11½	9	7½	¾	8	1⅝	13	10	12	19	
6	15	11	9½	7/8	8	1	16	13	12	23	
8	19½	13½	11¾	7/8	8	1⅛	19	16	17	29	
10	24½	16	14¼	1	12	1⅜	23	18	17	31	
12	24	19	17	1	12	1¼	26	21	21	33	
14	30	21	18¾	1⅛	12	1⅜	29	23¾	21	36	
16	30	23½	21¼	1⅛	16	17/16	32	26¾	24	43	
18	33	25	22¾	1¼	16	1⅞	36	30	24	45	
20	32	27½	25	1¼	20	1⅞	39	32	28	53	
24	38	32	29½	1⅜	20	1⅞	46	37	28	56	
30	52	38¾	36	1⅜	28	2⅞	54	47	36	66	
36	59½	46	42¾	1⅞	32	2⅞	64	51	36	78	



DETAIL A
NOT TO SCALE

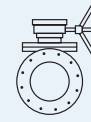
PRATT PRODUCT GUIDE



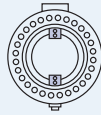
**Model
2FI**



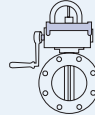
**Monoflange
MKII**



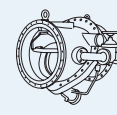
**Plug
Valve**



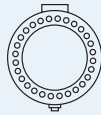
**Triton®
XR70**



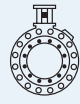
**Indicating Butterfly Valve
UL & FM approved**



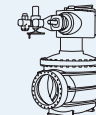
**Tilting Disc
Check Valve**



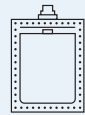
**Triton®
XL**



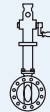
**N-Stamp Nuclear
Butterfly Valve**



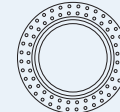
**Cone
Valve**



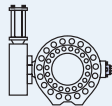
Rectangular



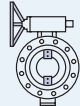
**PIVA Post Indicating Valve Assembly
UL & FM approved**



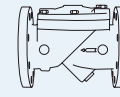
**Sleeve
Valve**



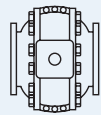
**Rubber Seated
Ball Valve**



**Triton®
HP250**



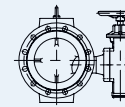
**Check
Valve**



**Metal Seated
Ball Valve**

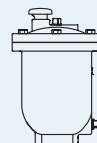


**Control
Systems**



Plunger Valve

PRATT



Air Valve

Henry Pratt Company

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