

Fire Protection Products



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 nuclearpowered 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.

PRATE 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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FEATURES AND BENEFITS OF PRATT FIRE PROTECTION PRODUCTS

When Pratt designed the first Post Indicating Valve Assembly (PIVA) with the help of Factory Mutual more than thirty years ago, special emphasis was placed on providing a product that exceeds industry standards. The PIVA has been further refined since its introduction and the product line has been expanded to include the Pratt UL Groundhog and Indicating Butterfly Valve (IBV).

While other manufacturers sell industrial fire protection valves at lower costs, no product comes close to meeting the quality of design, materials and workmanship that Pratt fire protection products provide or surpass the features and benefits discussed below.

Features	Benefits
The PIVA, UL Groundhog and IBV conform to AWWA C504 standards.	 Meeting AWWA Standards ensures higher quality.
The PIVA has asymmetrical construction.	Cannot be assembled improperly.
The PIVA is furnished as a complete assembly.	No job site assembly or adjustment is required. Contractor performs installation only, thus alleviating the possibility of problems in the field.
The PIVA includes a torque spring.	If the post is sheared, the torque spring will maintain the valve in the open position thus assuring a continued supply of water. This feature is unique to the Pratt PIVA.
The PIVA target is visible from 300 feet away.	Provides positive assurance of valve position.
The PIVA design includes sequential shear pins.	Pins will fracture before enough force can be applied to the target drive train to cause false indication.
The PIVA FM-5 design includes a break flange.	Break flange minimizes the need to excavate the entire assembly if a vehicle damages the post. The post can be replaced without valve removal.
The IBV and PIVA come equipped with a weather proof actuator.	The IBV is well suited for a wide variety of severe applications including pit service.
The UL Groundhog, PIVA and IBV do not require exercising.	 Allows for trouble-free upkeep and lower maintenance costs.

Henry Pratt Company

PIVA® POST INDICATING VALVE ASSEMBLY

20"- 24" PIVA® FM-4

4"-18" PIVA® FM-5

Foolproof Valve Position Indication

Orientation of valve disc to target mechanism is foolproof. Valve disc position indication is always 100 percent accurate and can be relied upon without manual testing. Protected against damage by sequential shear pin failure, valve "disc target" connection remains intact, even though operator is abused.

Simplified Operation

A detachable crank opens the valve in a counter-clockwise direction. The largest size PIVA[®] valve can be easily opened or closed by one person – even after many years in one position. Depending on valve size, the crank requires between 28 to 44 turns to swing the valve disc through the full 90 degrees required. This assures sufficient mechanical advantage for all operating conditions.

New Breakflange (4" – 18" Valves only)

The FM-5 PIVA[®] valve contains a breakflange to minimize the need to excavate the entire assembly if a vehicle were to damage the assembly, as the breakflange will separate. Reassembly of the top works can be accomplished without removing the valve from the line.

Torque Spring

The Pratt PIVA[®] valve contains a unique feature: the torque spring. If the valve operator fails, or if the operator and extension tube are damaged or severed by a fire truck or other emergency vehicle, the torque spring will maintain the valve in the open position.

DETERMINING PIVA® BONNET LENGTH

4"-18"

20"- 24"

	20 & 24 Inch Valve Sizes	L 20" Size	L 24" Size
	2'6" to 3'3"	49"	48"
BD	3'3" to 4'9"	67"	62"
(Buried	4'9" to 6'3"	85"	80"
Depth)	6'3" to 7'9"	103"	98"
	7'9" to 9'3"	121"	116"

PIVA BURIAL DEFINED

				Val	ve Size				L
BD	4	6	8	10	12	14	16	18	4" to 18"
(Buried	1'3" to 2'3"	1'4" to 2'4"	1'5" to 2'5"	1'6" to 2'6"	1'8" to 2'8"	1'9" to 2'9"	1'10" to 2'10"	1'11" to 2'11"	54"
Depth)	2'3" to 3'3"	2'4" to 3'4"	2'5" to 3'5"	2'6" to 3'6"	2'8" to 3'8"	2'9" to 3'9"	2'10" to 3'10"	2'11" to 3'11"	66"
	3'3" to 4'3"	3'4" to 4'4"	3'5" to 4'5"	3'6" to 4'6"	3'8" to 4'8"	3'9" to 4'9"	3'10" to 4'10"	3'11" to 4'11"	78"
	4'3" to 5'3"	4'4" to 5'4"	4'5" to 5'5"	4'6" to 5'6"	4'8" to 5'8"	4'9" to 5'9"	4'10" to 5'10"	4'11" to 5'11"	90"
	5'3" to 6'3"	5'4" to 6'4"	5'5" to 6'5"	5'6" to 6'6"	5'8" to 6'8"	5'9" to 6'9"	5'10" to 6'10"	5'11" to 6'11"	102"
	6'3" to 7'3"	6'4" to 7'4"	6'5" to 7'5"	6'6" to 7'6"	6'8" to 7'8"	6'9" to 7'9"	6'10" to 7'10"	6'11" to 7'11"	114"
	7'3" to 8'3"	7'4" to 8'4"	7'5" to 8'5"	7'6" to 8'6"	7'8" to 8'8"	7'9" to 8'9"	7'10" to 8'10"	7'11" to 8'11"	126"

Valves for the 21st Century

PIVA® DIMENSIONAL DATA

FLANGED ENDS

PIVA VALVE – FLANGED ENDS

Valve								
Size	A	В	C	D	E	F	G	
4	5%	4½	9	5	1	4¾	7½	
6	6%	5½	11	5	1%	8¾	9½	
8	81⁄8	6¾	13½	6	1¾6	8¾	11¾	
10	9%	9%	16	8	1%	12%	14¼	
12	11	11%	19	8	1%	12%	17	
14	12%	12%	21	8	11/16	121	18¾	
16	14	14½	23½	8	1½	161	21¼	
18	14%	15¼	25	8	1%	161%	23¾	
20	16½	17	27½	8	13/4	201%	25	
24	19%	18½	32	8	1 ¹⁵ /16	201¼	29½	

All Dimensions Shown in Inches

	PIVA VA	LVE – MON	OFLANGE	
Valve Size	Α	В	C	D
4	5%	3½	6¾	2 5⁄16
6	6%	5%	8%	2 ¹⁵ / ₁₆
8	81⁄8	6½	10%	31/16
10	9%	9%	13¼	33/16
12	11	11%	16	31/16
14	12%	12¾	17%	3 ¹ / ₁₆
16	14	14%	201%	43/16
18	14%	15¼	21½	4 ¹ / ₁₆
20	16½	16%	23¾	53/16
All Dimension	ns Shown in Ir	nches		

PIVA VALVE – MECHANICAL JOINT ENDS

e	Α	В	C	D	E	F	G	Х
	5%	4½	9	81/8	1	4¾	7½	3½
	6%	5½	11	8 ½	11/16	6¾	9½	3½
	8½	6¾	13¼	8%	11%	6¾	11¾	3%
)	9%	9%	15%	10	13/16	8¾	14	5
2	11	11%	17 ¹⁵ / ₁₆	10½	1¼	8¾	16¼	5½
Ļ	12%	12%	205/16	11½	15/16	10¾	18¾	4½
;	14	14½	22%	12	11/16	12¾	21	5
}	14%	15¼	24 ¹ / ₁₆	12¼	1%	12¾	231/4	5¼
)	16½	17	273/32	12½	1½	14¾	25½	5½
ŀ	19%	18½	31%	13¼	1 ¹⁹ / ₃₂	16¾	30	6¼

All Dimensions Shown in Inches

Mechanical Joint INSTALLATION DIAGRAM NOTE: BOLTS, NUTS, GLANDS, AND GASKETS FURNISHED BY OTHERS UNLESS OTHERWISE SPECIFIED IN CONTRACT.

MECHANICAL JOINT ENDS

The following actuator sizes are furnished: Valve Size Actuator Size

4" thru 10"	MDT-2S
12" thru 14"	MDT-3S
16" thru 20"	MDT-4S
24"	MDT-5

Pratt PIVA® valve bodies are available with wafer, flanged or mechanical joint ends, in sizes 4" through 24". PIVA® valves are available in a variety of post lengths to accommodate varying buried depths. All valves 4" through 24" have a Factory Mutual 175-psi rating. Underwriters Laboratories standards rate sizes 4" through 24" as 250 psi.

4½

4½

4½

21/16

2¹³/₁₆

5%

30

40

44

Henry Pratt Company

MDT-3S

MDT-4S

MDT-5

12%

13½

14¾

3¼

3%

4%

33/32

4

5½

5%

71/16

8¾

5%

6¾

10

12½

18¹/₁₆

23%

8%

121/16

121/16

IBV INDICATING BUTTERFLY VALVE Model A 6" - 24" Flanged & Mechanical Joint Ends,

250 psi rating; UL Approved

The Pratt IBV® valve is a manually operated rubber seat butterfly valve with a high visibility target. The IBV® valve is designed for indoor or vault service in fire protection sprinkler systems.

Mechanical Joint Ends

Flanged Ends

INSTALLATION DIAGRAM NOTE: BOLTS, NUTS, GLANDS, AND GASKETS FURNISHED BY OTHERS UNLESS OTHERWISE SPECIFIED IN CONTRACT.

						MECH	HANICAL	JOINT	ENDS								FL	ANGED	ENDS	
Nom. Valve Size	В	C	D	E	F	G	H	J	М	N	P	Q	R	U	х	C	D	E	F	G
4	4½	9	81⁄8	1	4¾	7½	715/32	7%	21⁄8	2	4½	4½	11	4%	3½	9	5	1	4¾	7½
6	5½	11	8½	11/16	6¾	9½	8½	7%	21⁄8	2	4½	4¼	11	4%	3½	11	5	11/16	8¾	9½
8	6¾	13¼	8%	1%	6¾	11¾	9¾	7%	21⁄8	2	4½	4¼	135/16	8%	3%	13½	6	13/16	8¾	11¾
10	9%	15%	10	13/16	8¾	14	111/16	721/32	3¼	35/32	5%	5%	15%	8%	5	16	8	1%	12%	14¼
12	11%	1715/16	10½	1¼	8¾	16¼	1215/16	721/32	3¼	31/32	5%	5%	151/16	8%	5½	19	8	1%	12%	17
14	12%	20%	11½	15/16	10¾	18¾	14¾	721/32	3¼	31/32	5%	5%	151/16	8%	4½	21	8	1%	121	18¾
16	14½	22%	12	1%	12¾	21	1611/32	9%	3%	4	75/16	6¾	18¾	121/16	5	23½	8	1½	161	211/4
18	15¼	2411/16	121/4	1%	12¾	23¼	171/32	9%	3%	4	75/16	6¾	18¾	12%	51⁄4	25	8	1%	161%	22¾
20	17	273/2	12½	1½	14¾	25½	1915/2	115/32	4½	5½	8¾	10%	24	12%	5½	27½	8	1¾	201%	25
24	18%	31%	13¼	1%	16¾	30	235/16	121⁄8	5½	7	10½	1515/16	26%	121/16	6¾	32	8	1%	201¼	19½

NOTE: All dimensions shown in inches. $\pm 1/16^{\circ}$ through 10° valves. $\pm 1/8^{\circ}$ for 12° and larger valves

UL LISTED GROUNDHOG® VALVES

Groundhog Valve with Mechanical Joint Ends

Mechanical Joint Ends

Flanged Ends

Mechanical Joint Installation Diagram Note: Bolts, nuts, glands, and gaskets furnished by others unless otherwise specified in contract.

can be installed separately.

Both	Ends		FLAN	GED EN	IDS			MECH	ANICAL	JOINT	ENDS							Μ	IDT OP	ERATO	R TABL	E		
Valve Size	Δ	в	C	п	F	F	G	в	C	D	F	F	G	x	Oper. Size	Oper. Size		ı	м	N	Р	0	R	Y
1	51/	21/	0	5	3/	95/	71/	21/	0	Q1/	1	·	71/	21/	20	MDT-29	13/	2	01/	2	/1/	41/	11/	32
6	5½ 6¼	51/	11	5	1	0% 8%	Q1/2	51%	11	81%	11/~	4% 6%	Q1/2	31/8	20	MDT-3S	478 51/	2 27/s	2/8	35%	472 5%	4/4 57/e	472 65/	30
8	73/	6%	13%	6	1%	83/	11%	6%	13%	8%	1%	63/	11%	3%	25	MDT-4S	5%	227/2	3%	4	75%	6%	7%	40
10	9	10	16	8	1%	12%	14%	9%	15%	10	1%	83/	14	5	25	MDT-5	71%	315/2	41%	5%	8%	10%	13%	44
12	10%	11%	19	8	1%	12%	17	11%	1715/16	10%	1%	834	16¼	5%	28	MDT-5S	81/2	315/16	51/2	7	10%	1515/16	1511/16	136
14	11%	13	21	8	1%	121	18¾	12¾	20%	11½	15/16	10¾	18%	4½	35	MDT-6S	11	51/16	7	8¼	12%	26½	22¼	215
16	13½	14½	23½	8	1%	161	211/4	14½	22%	12	1%	12¾	21	5	3S					-		-		
18	14%	15%	25	8	1%	161%	22¾	15%	24 ¹ / ₁₆	12¼	1%	12¾	23¼	51⁄4	4S	NOT	ES:							
20	16	17½	27½	8	111/16	201%	25	17	273/2	12½	1½	14¾	25½	5½	5	1. Al	1 aimer	isions sno 6" throug	DWN IN II h 10" va	ncnes.	1/8" for	12" and I	arger	
24	18%	18%	32	8	1%	201¼	29½	18%	31%	13¼	1%	16¾	30	5%	5	2.0	lves.	0 unoug	ii iu va	1063, 4/-	1/0 101	12 01101	arger	
30	21½	24¾	38¾	12	21%	281%	36	24%	39	18	1 ¹³ / ₁₆	201	36%	10	5	3. 0	perator	mounted	in posit	ion as sl	nown.			
36	251/16	28¼	46	12	27 ₁₆	321½	42¾	28¼	45%	22	2	241	43¾	14	5S	4. Fo	or use v	vith butte	rfly valv	e indicat	or post, l	Style G.		
42	29%	32%	53	12	2%	361½	49½	32%	53	22	2	281¼	50%	14	6S	5. Vá	alves m	anutactur	'ed in ac fard III .	CORDANC	e WITN UI	nderwrite	rs	
48	341/16	36%	59½	15	2¾	441½	56	37%	59%	24	2	321¼	57½	16	6S	6. R	otation	open left.		1031, ia	lest cuiti	011.		
lated W	orking P	ressure	:													7. Tł fo	ne Pratt r use w	UL listed	l Ground ratt UL I	dhog But isted Sty	terfly Va le G Indi	lve is sui cator Po	table st or	

Rated Working Pressure: 4"-12" – 175 psi 14"-48" – 150 psi

UL LISTED BUTTERFLY VALVE AND ADJUSTABLE INDICATOR POST – STYLE G

The Pratt UL listed butterfly valve and Style G indicator post provides an economical and reliable assembly for use in buried service fire protection lines. It provides easy to see valve position indication from 300 feet away and tight shut off in the service line when required.

Also makes an excellent yard valve for water treatment plant applications.

- Meets AWWA Standard C504 for rubber seated butterfly valves.
- Bubble-tight shut off.
- No exercising required.
- Seat on body design.
- Compact Size.

Wrench Handle Shear Pin Construction

Specially designed with shear pin construction to eliminate over torquing.

Secure from Tampering and Inclement Weather

With a padlock in place, the top cover cannot be opened, thus securing the inner workings against tampering and the elements.

Easy Installation

Install the valve, cut the inner barrel and shaft extension to desired length, position over the 2" square operator nut and backfill.

Rugged Operators

Pratt traveling nut operators can be relied upon to maintain exact valve position under specified design flow conditions. Stop-limiting devices are capable of withstanding 450 ft/lbs. of input torque.

Optimal Butterfly Valve Design

The Pratt[®] butterfly valve is the heart of our fire protection product line. It's UL listed, and built to AWWA standards. Invented by Pratt, the resilient seated butterfly valve is widely used in water distribution where its intrinsic design benefits and superior performance have long been recognized.

Rated Working Pressure

4" – 12" – 175 PSI 14" – 48" – 150 PSI

Pratt has been a leader in valve technology for the better part of a century.

UL LISTED ADJUSTABLE INDICATOR POST – STYLE G

Principle of Operation

- 1. Padlock is removed to gain access to wrench.
- Top cover is lifted and wrench inserted over operating nut.
- 3. Operating nut is rotated counter-clockwise through multiple revolutions to open valve.
- 4. Target lowers with the turning of the operating nut.
- 5. Round openings in the post are revealed as the target lowers.
- 6. Cap is closed, wrench is replaced and the padlock replaced to lock the butterfly valve in the open position.
- 7. The post will then indicate valve position from a distance at a glance. When the round post windows are open, the butterfly valve is open. When the windows are blocked by the red target, the butterfly valve is closed. Reflective white stripes on the target allow easy checking of the valve position at night with a flashlight.

NOTES:

- The Pratt Style G indicator post is intended for use with only Pratt 4" – 48" Groundhog[®] valves.
- 2. Indicator post available in 5' and 10' standard extensions. Refer to table below.
- 3. Installer to provide padlock for insertion in the wrench assembly to lock the valve open.
- Indicator post designed and tested in accordance with Underwriters Laboratories Test Guide UL-1091.
- 5. Paint: Bright Red

BURIED DEPTHS and SOIL PIPE APPLICATIONS

Valve Size	5' Soil Pipe	10' Soil Pipe	Valve Size	5' Soil Pipe	10' Soil Pipe
4	14-49	14-109	14	17-51	17-111
6	14-49	14-109	16	17-51	17-111
8	14-49	14-109	18	18-52	18-112
10	15-49	15-109	20	23-59	23-119
12	15-49	15-109	24	23-59	23-119
			30	23-59	23-119
			36	26-59	26-119
			42	32-59	32-119
			48	32-59	32-119

All dimensions shown in inches

SUGGESTED SPECIFICATIONS

PIVA - Post Indicating Valve Assembly (Underwriters Laboratories Listed and FM Approved)

Post indicating valve assembly shall consist of a buried butterfly valve and above grade indicator actuator of the traveling nut type. The actuator shall have a rating of 450 ft.lbs. of torque against the input stops. The target mechanism shall consist of an internal rotating member that contains a 2-3/4" hole on four sides. The outer member is stationary and shall contain similar holes. A fail-safe spring shall be included on the post to preclude accidental closing. The butterfly valve and post assembly shall be the PIVA as manufactured by Pratt, Underwriters Laboratories listed and Factory Mutual approved or approved equal. Valves shall be manufactured in accordance with AWWA C-504 (latest revision), Class 150B.

UL Listed Groundhog and Style G Indicator Post (Underwriters Laboratories Listed)

Each buried butterfly valve shall be equipped with a UL listed indicator post to display valve position above ground. The post target shall consist of a minimum 2-3/4" hole on four sides and be designed to accept a padlock to prevent tampering. The indicator post shall be a Pratt Style G type suitable for use with 4" – 48" Pratt UL listed Groundhog butterfly valves or approved equal. Valves shall be manufactured in accordance with AWWA C-504 (latest revision), Class 150B.

IBV Indicating Butterfly Valve (Underwriters Laboratories Listed and FM Approved)

Butterfly valves for above ground use shall be of the indicating type with a highly visible yellow flag on the valve actuator that indicates whether the valve is open or closed. The valve actuator shall be a traveling nut type and have an input rating of 450 ft.lbs. of torque against the input stops. Externally, the actuator shall be driven by a crank or 2" nut that is affixed to the input shaft by a shear pin. Butterfly valves shall be Pratt Indicating Butterfly Valves Underwriters Laboratories listed and Factory Mutual approved (up to 12") or approved equal. Valves shall be manufactured in accordance with AWWA C-504 (latest revision), Class 150B.

"The Pratt Edge"

The Pratt PIVA valve contains a torque spring, a unique safety feature that no other fire protection valve, butterfly or gate valve has.

Continued water supply is assured by the PIVA torque spring that maintains the valve in the open position even if the extension tube is severed by fire trucks or other vehicles.

PRATT PRODUCT GUIDE

