

R-P&C FORGED STEEL VALVES

F-190 150 lb. Flanged End
F-390 300 lb. Flanged End
F-690 600 lb. Flanged End

Sizes:
 $\frac{1}{2}$ " Thru 2"

PISTON CHECK VALVE
BOLTED CAP

150 P.S.I. @ 500°F.
 300 P.S.I. @ 850°F.
 600 P.S.I. @ 850°F.

(For Horizontal Installation Only)

WORKING PRESSURE (NON-SHOCK)

F-190 — 150# FLANGED END
 150 PSI @ 500°F STEAM-OIL
 275 PSI @ -20°F TO 100°F

TEST PRESSURE: 425 PSI HYDROSTATIC SHELL

F-390 — 300# FLANGED END
 300 PSI @ 850°F STEAM-OIL
 720 PSI @ -20°F TO 100°F

TEST PRESSURE: 1100 PSI HYDROSTATIC SHELL

F-690 — 600# FLANGED END
 600 PSI @ 850°F STEAM-OIL
 1440 PSI @ -20°F TO 100°F

TEST PRESSURE: 2175 PSI HYDROSTATIC SHELL

MATERIALS OF CONSTRUCTION

No.	Part	Material	A.S.T.M. Spec.	Remarks
1	Nameplate	Aluminum	—	Commercial
2	Cap	Forged Steel	A105	Grade II
3	Bolt, Cap	Alloy Steel	A193	Grade B7
4	Gasket	Stainless Steel Asbestos Filled		Spiral Wound
5	Disc	Stainless Steel	A276	Type 420 (500 BHN)
6	Body	Forged Steel	A105	Grade II Seat Stellite #6

TRIM SELECTION CHART

Figure Number	Body & Bonnet	Disc & Integral Seat	Bonnet Gasket	Packing
F 190 DE	A-105 Gr. II	CR 13*	304-ASB	—
F 190 A	A-105 Gr. II	316 S.S.	304-ASB	—
F 190 M	A-105 Gr. II	Monel	Monel-ASB	—
F 190 MT	A-105 Gr. II	Monel	Monel-TEF	—

*Integral seat Stellite-Faced

Note: F 390 (300# Flg) & F 690 (600# Flg) Also Available In Above Trims
 Valves with Teflon trim are limited to 500° F service.

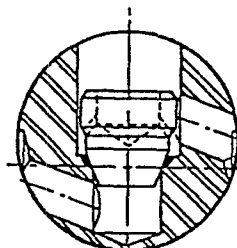
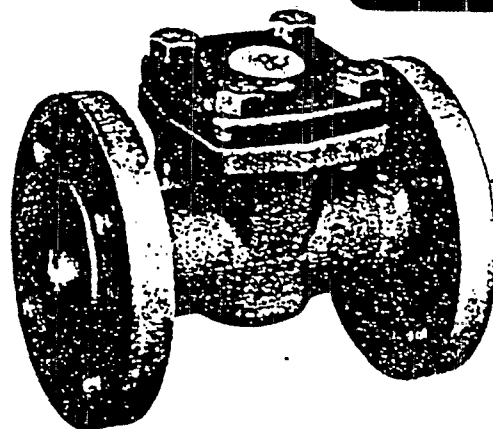
DIMENSIONAL SPECIFICATIONS

Size	Face to Face			Center to Top (Open)	Gasket Size $\frac{1}{8}$ " Thick	Dia. of Port Opening	Approx. Weight		
	*F-190	*F-390	†F-690				F-190	F-390	F-690
$\frac{1}{2}$	4 $\frac{1}{4}$	6	6 $\frac{1}{2}$	2	1 $\frac{3}{4}$ x 1 $\frac{1}{4}$	$\frac{3}{8}$	6	7 $\frac{1}{4}$	7 $\frac{3}{4}$
$\frac{3}{4}$	4 $\frac{3}{4}$	7	7 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{3}{4}$ x 1 $\frac{1}{4}$	$\frac{1}{2}$	6 $\frac{3}{4}$	9 $\frac{1}{4}$	10 $\frac{3}{4}$
1	5	8	8 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{3}{4}$ x 1 $\frac{1}{2}$	$\frac{3}{4}$	10	11	12
1 $\frac{1}{2}$	6 $\frac{1}{2}$	9	9 $\frac{1}{2}$	3 $\frac{1}{4}$	2 $\frac{3}{4}$ x 1 $\frac{3}{4}$	1 $\frac{1}{4}$	17	22	25
2	8	10 $\frac{1}{2}$	11 $\frac{1}{2}$	4 $\frac{1}{2}$	2 $\frac{3}{4}$ x 2 $\frac{3}{4}$	1 $\frac{1}{2}$	26	32	34

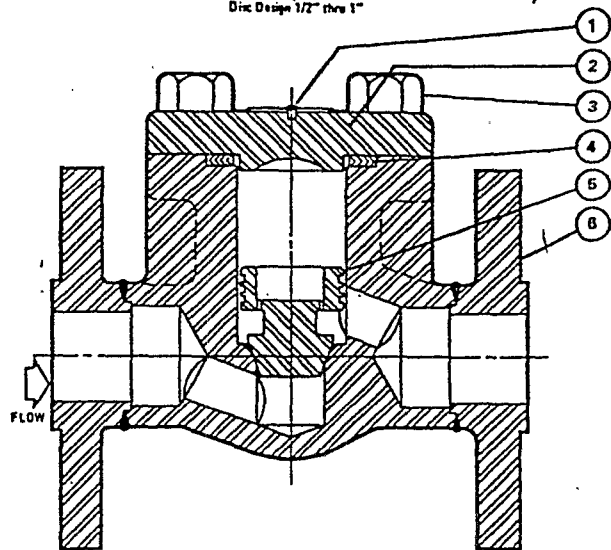
*†Conforms to ANSI-B16.10 (*Includes $\frac{1}{8}$ " Raised Faces †Includes $\frac{1}{4}$ " Raised Faces).

PLAINTIFF'S
 EXHIBIT

CHV-61



Disc Design $\frac{1}{2}$ " thru 1"



R-P&C FORGED STEEL VALVES

F-90 Screwed End

F-91 Socket Weld End

PISTON CHECK VALVE

BOLTED CAP

800 P.S.I. @ 850°F.

(For Horizontal Installation Only)

WORKING PRESSURE (NON-SHOCK)

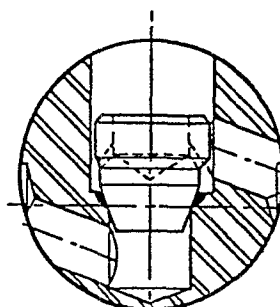
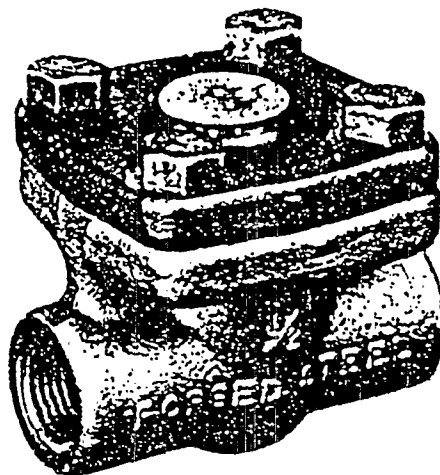
600 PSI @ 900°F STEAM-OIL

800 PSI @ 850°F STEAM-OIL

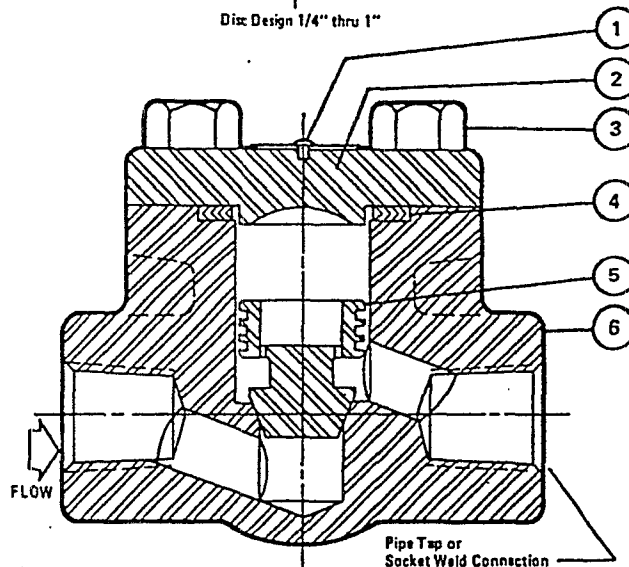
2000 PSI @ -20°F TO 100°F

TEST PRESSURE: 3000 PSI HYDROSTATIC SHELL

Sizes: 1/4" Thru 2"



Disc Design 1/4" thru 1"



MATERIALS OF CONSTRUCTION

No.	Part	Material	A.S.T.M. Spec.	Remarks
1	Nameplate	Aluminum	—	Commercial
2	Cap	Forged Steel	A105	Grade II
3	Bolt, Cap	Alloy Steel	A193	Grade B7
4	Gasket	Stainless Steel Asbestos Filled		Spiral Wound
5	Disc	Stainless Steel	A276	Type 420 (500 BHN)
6	Body	Forged Steel	A105	Grade II Seat Stellite #6

TRIM SELECTION CHART

Figure Number	Body & Bonnet	Disc & Integral Seat	Bonnet Gasket	Packing
F 90 DE	A-105 Gr. II	CR 13*	304-ASB	—
F 90 A	A-105 Gr. II	316 S.S.	304-ASB	—
F 90 M	A-105 Gr. II	Monel	Monel-ASB	—
F 90 MT	A-105 Gr. II	Monel	Monel-TEF	—

*Integral seat Stellite-Faced

Note: F 91 also available in above trims.

Valves with Teflon trim are limited to 500° F service.

DIMENSIONAL SPECIFICATIONS

Size	Face to Face	Center to Top	Gasket Size 1/8 Thick	Dia. of Port Opening	Socket Weld Bore*	Socket Weld Depth*	Approx. Weight
1/4	3	2	1 3/4 x 1 1/4	1/4	.555	3/8	3 3/4
3/8	3	2	1 3/4 x 1 1/4	3/8	.690	3/8	3 3/4
1/2	3	2	1 3/4 x 1 1/4	1/2	.855	3/8	3 3/4
3/4	3 1/2	2 1/4	1 3/4 x 1 1/4	3/4	1.065	1/2	3 3/4
1	4 1/8	2 1/4	1 3/4 x 1 1/4	1	1.330	1/2	5 1/2
1 1/4	6	3 1/4	2 1/4 x 1 3/4	1 1/4	1.675	1/2	11
1 1/2	6	3 1/4	2 1/4 x 1 3/4	1 1/2	1.915	1/2	11
2	7	4 1/2	2 3/4 x 2 1/4	1 3/4	2.405	3/4	14 1/2

*Conforms to ANSI B16.11

R-P & C

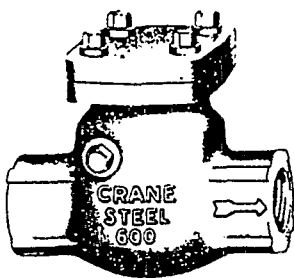
FAIRVIEW, PA. 16415
TELEPHONE: 814-474-5581
TELEX: 91-4454

One of the White Consolidated Industries
WCI

CHEV BB
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CRANE

SWING CHECK VALVE CLASS 600 • 1/2" to 12"



No. 174, T-Pattern

Bolted Cap

No. 174, Threaded

No. 175, Flanged

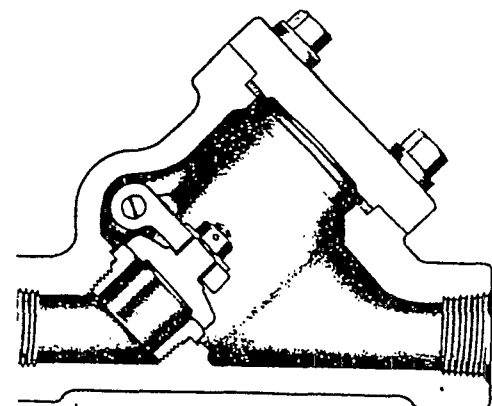
No. 175 1/2, Butt-Welding

Pressure-Temperature Rating
Carbon Steel, ASTM A216 Grade WCB
1480 psi @ -20F to 100F

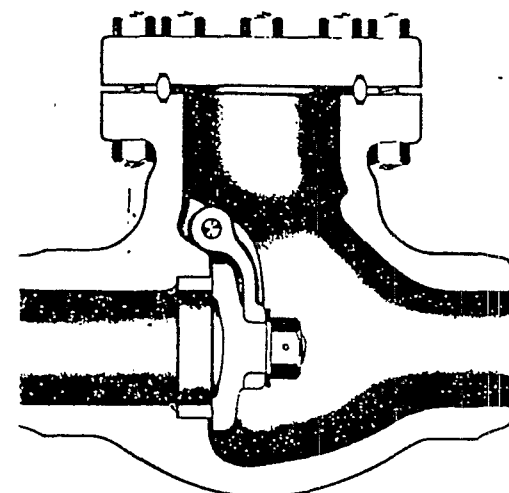
See page 55 for ratings of other materials and temperatures

Design Data and Features:

- These valves comply with applicable requirements of Standards: ANSI-B16.5, ANSI-B16.10, ANSI-B16.25, ANSI-B16.34.
- Material—carbon steel. Other materials available when specified—Crane No. 5, 7, 9, LCB and "Arctic" steels. See page 3 for specifications and recommendations.
- Trim—X or XU—suitable for a broad spectrum of services to 1100F. Other trims available when specified include: L or LU and A or AU. See pages 3 and 22 for trim description and service recommendations.
- Outside weight and lever to assist in rapid closing or for sensitive balance at low velocities is available on valves up to 8" in size.
- Drilling templates are shown on page 51.
- Flange and facing dimensions are shown on page 47.
- Ring joint facing (page 48) can be supplied when specified.
- Butt-welding ends are bored to match the inside diameter of the pipe to be used. Orders must specify the diameter of bore (I.D. of pipe). See page 45.
- Threaded end valves are furnished with spiral wound stainless steel asbestos filled bonnet gasket.
- Flanged and butt-welding end valves are furnished with ring type joint bonnet gasket.
- Threaded end valves in sizes 1/2", 3/4" and 1" are Y-Pattern with seat and cap at 45° to run of valve.
- For test information, see page 54.

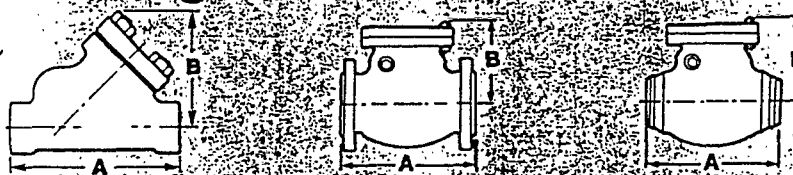


No. 174, Y-Pattern



No. 175 1/2

Weights and Dimensions



Valve N.P.S.	Weight—Pounds				Dimensions—Inches				
	174 "Y" Pattern	174 "T" Pattern	175	175 1/2	A			B	
	174 "Y" Pattern	174 "T" Pattern	175 & 175 1/2	174	174 "Y" Pattern	174 "T" Pattern	175 & 175 1/2	174	175 & 175 1/2
1/2	5	—	—	—	4.62	—	—	3.38	—
3/4	8	—	—	—	6.00	—	—	4.00	—
1	11	—	—	—	7.00	—	—	4.50	—
1 1/4	—	22	38	32	—	7.50	9.0	5.50	6.25
1 1/2	—	29	50	40	—	8.50	9.5	6.25	6.75
2	—	36	70	55	—	9.50	11.5	6.25	7.00
2 1/2	—	—	104	70	—	—	13.0	—	8.25
3	—	—	135	100	—	—	14.0	—	9.00
4	—	—	255	170	—	—	17.0	—	10.25
5	—	—	400	300	—	—	20.0	—	12.75
6	—	—	530	420	—	—	22.0	—	13.50
8	—	—	900	740	—	—	26.0	—	15.25
10	—	—	1250	1030	—	—	31.0	—	18.75
12	—	—	1830	1410	—	—	33.0	—	21.50

"S" pattern is straightway design, as illustrated.

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