



# FIGURE 790 CRYOTREE™ ASSEMBLY

SIZES 3/4" to 1 1/2"  
PRESSURES to 400 psig at 400°F

- Dual safety relief systems engineered for maximum safety and reliability
- Easy system installation
- Includes high capacity safety relief valves, full flow diverting valve, rupture discs, bleed valves, and related piping assembled
- Standardized components
- Low maintenance
- Eliminates the need to shut down and evacuate the tank for service
- Minimizes pressure drop in system
- Cleaned and packaged for use in O<sub>2</sub> service in compliance with the CGA specification G-4.1
- Sealed in 6 mil poly bags to eliminate contamination prior to installation
- Handle indicates flow direction

### APPLICATIONS DATA

- On stationary cryogenic storage tanks to isolate safety relief valves and rupture discs in the event they need to be serviced

### APPLICABLE CODES

- CGA S-1.2 and S-1.3.
- ASME Sec.VIII
- API 527
- ANSI B16.18
- ANSI B31.1

Our CryoTree™ assemblies are manufactured for use on stationary cryogenic storage tanks to isolate safety relief valves and rupture discs in the event they need to be serviced. Utilizing this system eliminates the need to shut down and evacuate the tank for service. This modular assembly provides for just a single connection to the internal tank piping.

### MODELS

- 790 - Bronze CryoTree™

### CODE SELECTION CHART

Model			Valve Size	Orifice	Top Port	Bottom Port	Side Port	Mat'l	SRV Outlet	SRV Orifice	Set Pressure		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>7</b>	<b>9</b>	<b>0</b>	<b>G</b>	<b>F</b>	<b>D</b>	<b>E</b>	<b>A</b>	<b>B - E</b>	<b>B</b>	<b>2</b>	<b>5</b>	<b>0</b>	
<b>Model -</b> Position 1, 2 & 3 790 = CryoTree™			<b>Orifice -</b> Position 5 F = Full		<b>Bottom Port -</b> Position 7 A = 1/4 B = 3/8 C = 1/2 D = 3/4 E = 1 F = 1 1/4		<b>Side Port -</b> Position 8 A = 1/4	<b>Material -</b> Position 9 B = Bronze w/316 Stem			<b>SRV Orifice -</b> Position 11 A B C D E		
<b>Valve Size -</b> Position 4 D = 3/4 E = 1 G = 1 1/2			<b>Top Port -</b> Position 6 D = 3/4 E = 1 F = 1 1/4 G = 1 1/2					<b>SRV Outlet -</b> Position 10 D = 3/4 E = 1 F = 1 1/4 G = 1 1/2 H = 2			<b>Set Pressure -</b> Position 12, 13 & 14 _ _ _ = Actual Setting		

# FIGURE 790 CRYOTREE™ ASSEMBLY

## SPECIFICATION

The valve shall be utilized for applications that requires full flow manifolds. The valve shall have 180 degrees of operation. The valve shall contain two safety relief valves, two rupture discs and two bleed valves. The handle shall indicate the direction of flow. The stem shall be blow out proof and contain V-ring packing material. The valve shall be cleaned to CGA G-4.1.

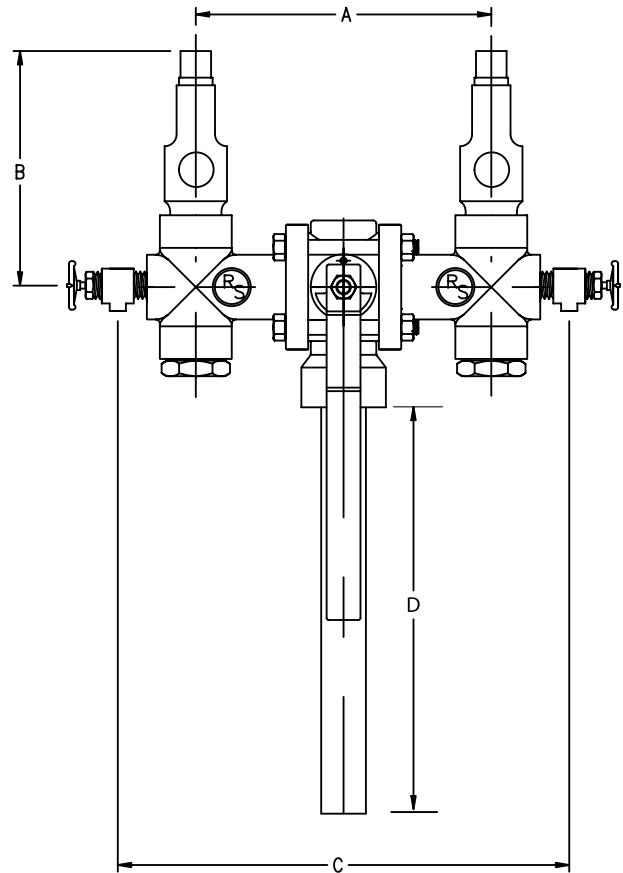
## MATERIALS

Body .....	Bronze B62
End Plate .....	Bronze B62
Ball .....	Bronze
Stem .....	316SS
Inlet Pipe.....	304SS ASTM 312 Schedule
Bleed Port Valve .....	Brass
Rupture Disk .....	Brass/Monel
Bolts .....	304SS A193

High Flow Diverter Valve C<sub>v</sub> Values\*

Size (inches)	Safety Relief Valve Outlet		Rupture Disc Outlet	
	C <sub>v</sub> @ mid position (90°)	C <sub>v</sub> @ full open (180°)	C <sub>v</sub> @ mid position (90°)	C <sub>v</sub> @ full open (180°)
¾F	9.2	8.2	10.7	8.1
1F	25.3	18.3	16.4	14.0
1½F	40.0	30.4	23.8	22.2

Flows may vary slightly due to outlet connection sizes.



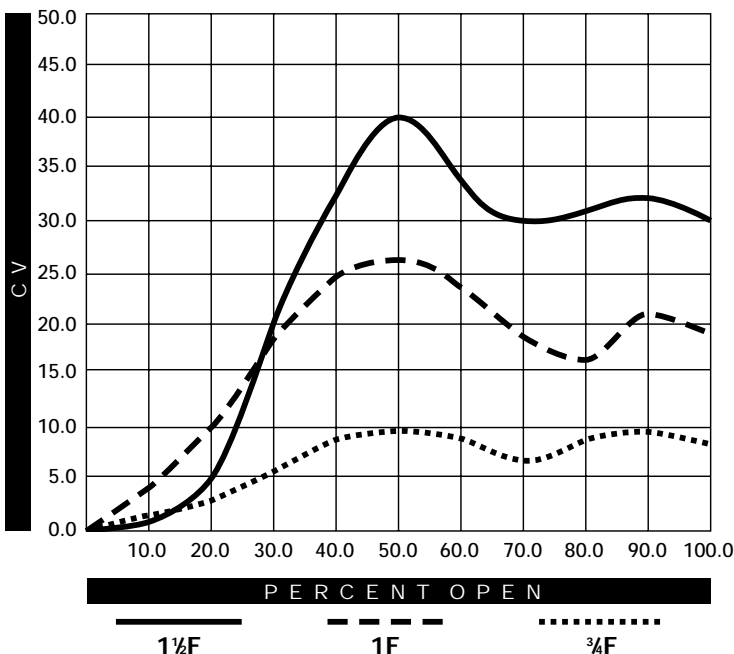
DIMENSIONS inches (mm)

SIZE	A	B*	C	D
¾F (20)	7.3 (185.4)	22.5 (571.5)	14.8 (375.9)	7.75 (196.9)
1F (25)	8.7 (221.0)	25.7 (652.8)	16.5 (419.1)	12.00 (304.8)
1½F (40)	10.2 (259.1)	27.3 (693.4)	18.3 (464.8)	12.00 (304.8)

Dimensions for reference only.

\* Height varies depending on valve.

High Flow Diverter Valve C<sub>v</sub> Graph



## CryoTree Configuration Chart

### 790DFxxxB-xx ¾" CryoTree

Largest Configuration Possible = 790DFDCDB-GC  
 Top = ¾" NPT Max  
 Bottom = ½" NPT Max  
 Side = ¾" NPT Max (¼" recommended)  
 SRV Outlet = ½" Max  
 SRV Orifice = C Max

### 790EFxxxB-xx 1" CryoTree

Largest Configuration Possible = 790EFFEED-HD  
 Top = 1" NPT Max  
 Bottom = 1" NPT Max  
 Side = 1" NPT Max (¼" recommended)  
 SRV Outlet = 2" Max  
 SRV Orifice = D Max

### 790GFxxxB-xx 1½" CryoTree

Largest Configuration Possible = 790GFGFFB-JE  
 Top = 1½" NPT Max  
 Bottom = 1½" NPT Max  
 Side = 1½" NPT Max (¼" recommended)  
 SRV Outlet = 2½" Max  
 SRV Orifice = E Max

Refer to valve information for maximum set pressure.

FIGURE 790  
CRYOTREE™