



*AW300H Butt Weld Angle Valve*

## INTRODUCTION

These low pressure drop refrigerant shut-off valves are designed to be butt-welded directly to steel piping, thereby eliminating potential leaky flanges or threaded joints and simplifying installation. Forged and cast steel bodies are lightweight, yet have substantial wall thickness to help overcome corrosion loss. The cast steel body is rigid, reducing the potential for seat leakage due to flexing of the valve body under abnormal conditions. The “heart” of Hansen shut-off valves is the patented non-leak seal plus packing design. This seal design is used exclusively on Hansen shut-off valves and virtually eliminates stem seal leakage.

## APPLICATIONS

Typical uses include:

Ammonia refrigeration system suction, liquid, discharge, recirculating liquid, hot gas, thermosyphon, and oil lines, using handwheel or seal cap models.

Steel pipe portions of halocarbon, commercial, industrial, and air conditioning systems, using seal cap models.

Valves are also available for other fluids such as propane, propylene, and glycol with compatible seals. Contact factory with specific fluid and application details for written approval.

The low friction, no leak stem seal design permits the use of chain actuation for crossover applications without the need to retighten the packing.

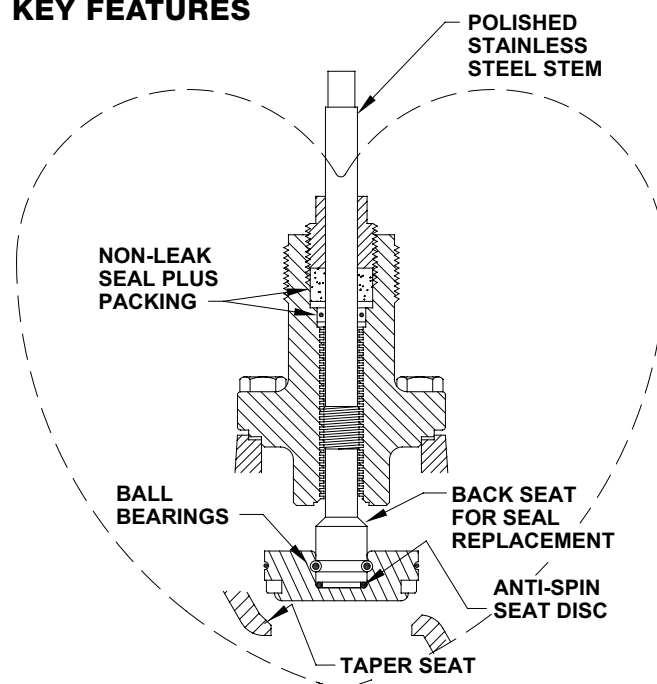
## Specifications, Applications, Service Instructions & Parts

### BUTT WELD SHUT-OFF VALVES

1/2" through 18"  
(13mm through 450mm)  
Globe & Angle  
for Refrigerants

**CRN CE**  
Canadian Registration

## KEY FEATURES



## ADDITIONAL FEATURES

Globe and angle valves available.

Low pressure drop design

Interchangeable handwheel or seal cap.

Teflon seat disc.

Also available as Hand Expansion Valve.

Chain actuators available (1/2" or 40mm and larger).

Suitable for R717 (ammonia), R22, R134a, R507a, R404a, R744 (CO<sub>2</sub>) and other Hansen approved refrigerants.

600 psig (41 bar g) SWP valves are available.

Extended neck available up through 4" (100mm) for additional insulation clearance.

## MATERIAL SPECIFICATIONS

Body: ½" to 1¼" (13mm–32mm), forged steel, ASTM A105; 1½" to 18" (40mm–450mm), cast steel, ASTM A-352, Grade LCB

Bonnet: Ductile iron, ½" to 8" (13mm–200mm) ASTM A-536; 10" to 18" (250mm–450mm) ASME SA-395

Stem: Polished stainless steel

Disc Holder: Plated steel

Seat Disc: Retained PTFE Teflon

Ball Bearings: Stainless steel

Packing Nut: Zinc plated steel

Stem Packing: Graphite composite plus neoprene O-ring in series

Handwheel: ½" to 1¼" (13mm–32mm) Zinc plated alloy; 1½" to 6" (40mm–150mm) Zinc plated iron alloy; 8" to 18" (200mm–450mm) cast aluminum

Seal Cap: ½" to 1¼" (13mm–32mm) Glass-filled polymer, safety vented; 1½" to 4" (40mm–100mm) Zinc plated steel; 5" to 18" (125mm–450mm) cast aluminum

Operating Temperature:

Standard, –60°F to 240°F (–51°C to 115°C), temperatures below –60°F (–51°C) to –76°F (–60°C) at coincident pressures

Optional, –20°F to 300°F (–29°C to 149°C) contact factory

Safe Working Pressure: 400 psig (28 bar g) standard, 600 psig (41 bar g) upon request

Connection Dimensions: ½" to 1 ½" Match Schedule 80 pipe, 2" to 10" Match Schedule 40 pipe, 12" & Up Match Standard Weight Pipe

## ADVANTAGES

Compared to conventional stem seal designs, Hansen's patented no leak seal-plus-stem-packing virtually eliminates stem seal leakage. In addition, the stem is polished to avoid packing wear. The precision stem threads avoid stem wobble and the packing nut is close fitting to remove dirt particles and frost from the stem. This results in infrequent maintenance or tightening and almost no refrigerant loss.

Hansen valves are designed with anti-spin seat discs. High velocity gas can sometimes cause ordinary seat discs to fail over time. Hansen adds a snubber to prevent the seat disc from freely rotating when valve is in the open position.

Compared to threaded valves, Hansen welding valves eliminate the chance of future leaks at pipe threads. In addition, a butt weld pipe-to-valve body joint eliminates the inherent weakness and corrosion vulnerability of the threaded portion of pipe immediately adjacent to a screwed valve body or flange.

Compared to ball valves, Hansen welding valves have no threaded or flanged-gasket pipe joints. Hansen valves also will not open or close so rapidly as to cause severe pipe shock due to sudden change in liquid velocity. In addition, ball valve stem packing typically cannot be replaced while the valve is in a pressurized line. The stem packing on these Hansen valves can be replaced while the valve is in a pressurized line. Also, dirt or damage to ball valve Teflon seats cannot be overcome by greater stem closing forces, an advantage of Hansen valves.

## INSTALLATION

All Hansen welded valves can be installed in horizontal or vertical pipe lines. Stems are normally installed horizontally, but, depending on the application, stems may be installed vertically. Inlet pressure or direction of flow for all valve sizes should normally be under valve seat disc. However, to avoid installing an angle valve with the stem down, it is better to install the valve with the normal flow opposite the direction of the arrow. For pressure differences exceeding approximately 125 psi (9 bar), valves 8" (200mm) and larger should have inlet pressure above valve disc, using a small bypass valve for preopening equalization.

Care must be taken when handling and installing large valves. Proper lifting devices and safety precautions must be observed.

A valve should have its bonnet assembly removed before welding. This reduces weight during welding, protects the Teflon seat disc from welding sparks, and facilitates cleaning of welding debris from the body interior prior to valve operation. The valve stem should be several turns open when removing and replacing the bonnet assembly. The Teflon seat disc should be protected when outside of the valve. Do not allow the Teflon seat to bump the valve body when removing it or stand the bonnet on the seat disc.

Where it is necessary or standard practice to weld a valve into the line without bonnet removal, the stem should be opened several turns to prevent heat damage to the seat disc. Extra care should be taken when welding angle valves without disassembly to avoid welding sparks striking the seat from the outlet weld connection.

Use of welding rings is recommended. They help alignment, control the gap for full penetration welding, and reduce the potential of welding debris entering the system. Welds should be annealed as necessary in accordance with good practice. Painting of valves and welds is recommended for corrosion protection. Pipe covering, where applied, should have a proper moisture barrier.

Before putting valves into service, all pipe weld connections, valve seats, bonnet seals, and stem seals should be tested for leaks at pressure levels called for in appropriate codes.

Shut-off valves leading to the atmosphere must not be left unsupervised and must be plugged or capped to prevent corrosion inside the valve as well as leakage due to seat expansion, vibration, pressure shock, or improper opening. Where hand wheel valves are subject to excessive vibration or liquid shock loads, the packing nut should be tightened to prevent handwheel vibration from potentially rotating valve stem. The valve seat should be cracked open to prevent hydrostatic expansion between the valve and the cap. A bleed valve and gauge should be installed to provide a means of monitoring and pump-out. Valves should never directly feed a water tank because of potential internal corrosion or seat opening caused by vibration.

## INSULATION

Conventional valve-shaped block insulation can occasionally be used for both angle and globe valves. However, fabricated insulation shapes are recommended. If not available locally, Hansen can recommend a source of high quality, economical valve insulation. For exterior valve insulation dimensions refer to Sales Drawing 5002-28.

## EXTENDED NECK VALVES

Hansen bonnets with extended necks, 1/2" thru 4" (13mm–100mm), meet or exceed the recommended low temperature insulation thickness dimensions of the IIAR Piping Handbook. In addition, the stem and packing nut trim are upgraded to 316 stainless steel materials. Stainless steel trim is recommended for environments where severe corrosive conditions exist. (Add an "E" suffix to the model number, for example AWE200C or GWE150H.)

## SIZING GUIDE

These flow capacity recommendations are not affected by the length of the pipe line. These are approximate optimum sizes based on power costs versus the investment costs of piping and its total installed cost. Piping sized to this capacity will have a 1°F (0.6°C) pressure drop for the following equivalent lengths:

- suction lines . . . . . 700 diameters
- discharge lines . . . . . 1400 diameters
- liquid lines . . . . . 2400 diameters

Example: 275 feet (84m) of 3" (80mm) pipe and equivalent fittings amount to 1100 diameters, pressure drop for a suction line handling 81.5 tons (287 kW) at 20°F (–7°C) is 1100/700 times 1°F (0.6°C) drop, equals 1.6°F (1°C) or 1.8 psi (0.12 bar).

Example: Hansen valves have about 145 diameters of equivalent flow resistance, or 145/700 = 0.2°F (0.12°C) of equivalent pressure drop at the suction line capacities shown for a valve in a suction line.

The rationale for the vapor line sizing was developed by William V. Richards in two papers: "Refrigerant Vapor Line Sizing Not Dependent of Length," 16th International Congress of Refrigeration, IIR, Paris, 1983; and "Practical Pipe Sizing for Refrigerant Vapor Lines," Sixth Annual Meetings, IIAR, San Francisco, 1984.

## FLOW COEFFICIENTS

NOMINAL SIZE		ANGLE				GLOBE			
INCH	MM	FLOW COEFFICIENT		EQUIVALENT LENGTH		FLOW COEFFICIENT		EQUIVALENT LENGTH	
		Cv	Kv	FEET	METERS	Cv	Kv	FEET	METERS
1/2"	13	6.0	5.2	3.7	1.1	4.0	3.5	8.4	2.6
3/4"	20	9.0	7.8	8.4	2.6	8.0	6.9	11	3.2
1"	25	19	16	7.2	2.2	15	13	12	3.5
1¼"	32	21	18	27	8.2	16	14	46	14
1½"	40	53	46	10	3.0	41	35	16	5.0
2"	50	80	69	23	7.0	67	58	33	10
2½"	65	173	150	13	3.8	163	141	14	4.3
3"	80	205	177	28	8.5	195	169	31	9.3
4"	100	320	277	47	14.3	290	251	57	17
5"	125	600	519	44	13.3	575	497	47	14
6"	150	820	709	61	18.5	790	683	66	20
8"	200	1440	1240	82	25.1	1380	1190	90	27
10"	250	2450	2120	93	28.4	2350	2030	101	31
12"	300	3400	2940	119	36.2	3270	2830	128	39
14"	350	4600	3980	113	34.4	4350	3770	126	38
16"	400	5640	4880	155	47.3	–	–	–	–
18"	450	6500	5620	222	67.6	–	–	–	–

**FLOW CAPACITIES  
PIPING AND VALVE SIZING GUIDE FOR AMMONIA**

SERVICE	CONDITIONS				CAPACITIES (MM)									
	TEMPERATURE °F (°C)		PRESSURE PSIG (BAR)		1/2" (13) TONS (kW)		3/4" (20) TONS (kW)		1" (25) TONS (kW)		1 1/4" (32) TONS (kW)		1 1/2" (40) TONS (kW)	
Suction Lines Single Stage Compressor	+20	(-6.7)	33.5	(2.3)	-	-	-	-	8.6	(30)	15.8	(56)	21.3	(75.0)
	0	(-17.8)	15.7	(1.1)	-	-	-	-	5.7	(20)	10.4	(37)	13.9	(49.0)
Suction Lines Booster	-20	(-28.9)	3.6	(0.25)	-	-	-	-	4.2	(15)	7.4	(26)	10.3	(36.0)
	-40	(-40)	8.7"	(0.7)	-	-	-	-	-	-	4.4	(15)	6.3	(22.0)
Liquid Overfeed Return Lines (4X)	+20	(-6.7)	33.5	(2.3)	-	-	-	-	5.0	(18)	9.1	(32)	12.3	(43.0)
	0	(-17.8)	15.7	(1.1)	-	-	-	-	3.4	(12)	6.3	(22)	8.5	(30.0)
	-20	(-28.9)	3.6	(0.25)	-	-	-	-	2.2	(8.0)	4.0	(14)	5.5	(19.0)
	-40	(-40)	8.7"	(0.7)	-	-	-	-	-	-	2.4	(8.0)	3.4	(12.0)
Hot Gas Feed	+70	(+21.1)	114	(7.9)	2.2	(8)	4.3	(15)	7.3	(26)	14.1	(50)	19.6	(69.0)
Hot Gas Main	+70	(+21.1)	114	(7.9)	4.4	(15)	8.6	(30)	14.7	(52)	28.1	(99)	39.2	(138)
Compressor Discharge	+86	(+30)	155	(10.7)	-	-	-	-	12.6	(44)	24.1	(85)	33.6	(118)
Condenser Drains	+86	(+30)	-	-	6.0	(21)	14.5	(51)	24.0	(84)	50.0	(176)	77.0	(271)
Liquid Mains	+86	(+30)	-	-	28.3	(100)	53.1	(187)	90.8	(320)	143	(503)	202	(711)
Liquid Feed Branch	+86	(+30)	-	-	54.9	(193)	103	(363)	176	(620)	277	(975)	392	(1380)
Liquid Overfeed Supply (4X)	+10	(-12.2)	-	-	9.0	(32)	17.0	(60)	29.0	(102)	46.0	(162)	65.0	(229)

SERVICE	CONDITIONS				CAPACITIES (MM)									
	TEMPERATURE °F (°C)		PRESSURE PSIG (BAR)		2" (50) TONS (kW)		2 1/2" (65) TONS (kW)		3" (80) TONS (kW)		4" (100) TONS (kW)		5" (125) TONS (kW)	
Suction Lines Single Stage Compressor	+20	(-6.7)	33.5	(2.3)	35.7	(126)	51.1	(180)	81.5	(287)	146	(513)	235	(826)
	0	(-17.8)	15.7	(1.1)	22.7	(80.0)	34.0	(120)	53.9	(190)	94.6	(333)	156	(549)
Suction Lines Booster	-20	(-28.9)	3.6	(0.25)	16.8	(59.0)	24.8	(87.0)	39.7	(140)	68.9	(242)	114	(401)
	-40	(-40)	8.7"	(0.7)	9.9	(35.0)	14.4	(51.0)	23.4	(82.3)	40.8	(143)	66.8	(235)
Liquid Overfeed Return Lines (4X)	+20	(-6.7)	33.5	(2.3)	20.6	(72.4)	29.4	(103)	47.0	(165)	84.3	(296)	135	(475)
	0	(-17.8)	15.7	(1.1)	13.6	(48.0)	20.5	(72.0)	32.4	(114)	56.8	(200)	93.8	(330)
	-20	(-28.9)	3.6	(0.25)	8.9	(31.3)	13.1	(46.0)	21.0	(74.0)	36.4	(128)	60.5	(213)
	-40	(-40)	8.7"	(0.7)	5.4	(19.0)	7.90	(28.0)	12.8	(45.0)	22.4	(79.0)	36.7	(129)
Hot Gas Feed	+70	(+21.1)	114	(7.9)	36.5	(128)	53.0	(186)	82.5	(290)	145	(510)	231	(812)
Hot Gas Main	+70	(+21.1)	114	(7.9)	73.0	(257)	106	(373)	165	(580)	290	(1020)	463	(1628)
Compressor Discharge	+86	(+30)	155	(10.7)	62.6	(220)	90.3	(318)	142	(499)	249	(876)	397	(1396)
Condenser Drains	+86	(+30)	-	-	140	(492)	220	(774)	375	(1319)	740	(2602)	1320	(4642)
Liquid Mains	+86	(+30)	-	-	454	(1597)	657	(2311)	1031	(3626)	1808	(6358)	2886	(10150)
Liquid Feed Branch	+86	(+30)	-	-	881	(3098)	1273	(4477)	1999	(7030)	3506	(12330)	5596	(19680)
Liquid Overfeed Supply (4X)	+10	(-12.2)	-	-	144	(506)	208	(732)	327	(1150)	573	(2015)	915	(3218)

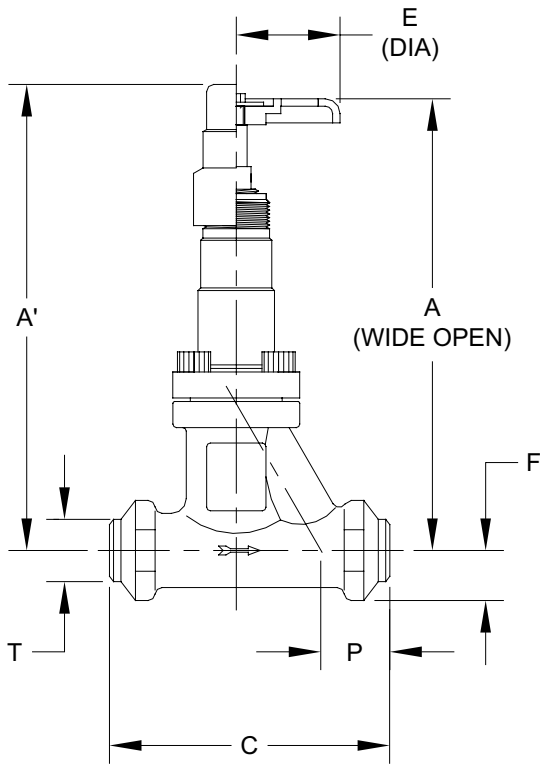
**FLOW CAPACITIES  
PIPING AND VALVE SIZING GUIDE FOR AMMONIA**

SERVICE	CONDITIONS				CAPACITIES (MM)									
	TEMPERATURE °F (°C)		PRESSURE PSIG (BAR)		6" (150) TONS (kW)		8" (200) TONS (kW)		10" (250) TONS (kW)		12" (300) TONS (kW)		14" (350) TONS (kW)	
Suction Lines Single Stage Compressor	+20	(-6.7)	33.5	(2.3)	343	(1206)	628	(2209)	1020	(3387)	1490	(5240)	1821	(6404)
	0	(-17.8)	15.7	(1.1)	225	(791.0)	414	(1456)	662	(2328)	946	(3327)	1156	(4065)
Suction Lines Booster	-20	(-28.9)	3.6	(0.25)	165	(580.0)	306	(1076)	486	(1709)	709	(2494)	867	(3049)
	-40	(-40)	8.7"	(0.7)	97.8	(344.0)	181	(637.0)	288	(1013)	419	(1474)	512	(1801)
Liquid Overfeed Return Lines (4X)	+20	(-6.7)	33.5	(2.3)	198	(696.0)	362	(1273)	587	(2064)	856	(3010)	1046	(3679)
	0	(-17.8)	15.7	(1.1)	135	(475.0)	249	(876.0)	398	(1400)	568	(1998)	694	(2441)
	-20	(-28.9)	3.6	(0.25)	87.5	(308.0)	162	(570.0)	256	(900)	375	(1319)	458	(1611)
	-40	(-40)	8.7"	(0.7)	53.7	(189.0)	100	(352.0)	158	(556)	232	(816)	284	(999)
Hot Gas Feed Hot Gas Main	+70	(+21.1)	114	(7.9)	338	(1189)	595	(2093)	949	(3338)	1377	(4843)	1683	(5919)
	+70	(+21.1)	114	(7.9)	673	(2367)	1190	(4185)	1898	(6675)	2754	(9685)	3366	(11838)
Compressor Discharge	+86	(+30)	155	(10.7)	580	(2040)	1021	(3591)	1629	(5729)	2363	(8310)	2888	(10157)
Condenser Drains	+86	(+30)	-	-	2030	(7139)	4200	(14771)	-	-	-	-	-	-
Liquid Mains	+86	(+30)	-	-	4218	(14834)	-	-	-	-	-	-	-	-
Liquid Feed Branch	+86	(+30)	-	-	8179	(28764)	-	-	-	-	-	-	-	-
Liquid Overfeed Supply (4X)	+10	(-12.2)	-	-	1337	(4702)	-	-	-	-	-	-	-	-

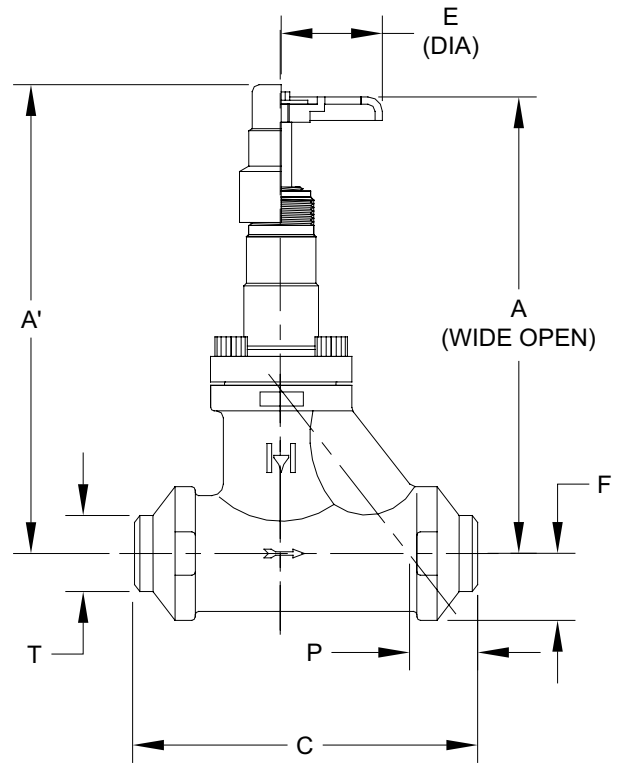
**FLOW CAPACITIES  
PIPING AND VALVE SIZING GUIDE FOR AMMONIA**

SERVICE	CONDITIONS				CAPACITIES (MM)			
	TEMPERATURE °F (°C)		PRESSURE PSIG (BAR)		16" (400) TONS (kW)		18" (450) TONS (kW)	
Suction Lines Single Stage Compressor	+20	(-6.7)	33.5	(2.3)	2310	(8124)	2663	(9365)
	0	(-17.8)	15.7	(1.1)	1684	(5922)	1941	(6826)
Suction Lines Booster	-20	(-28.9)	3.6	(0.25)	1162	(4087)	1339	(4709)
	-40	(-40)	8.7"	(0.7)	692	(2434)	798	(2806)
Liquid Overfeed Return Lines (4X)	+20	(-6.7)	33.5	(2.3)	1258	(4424)	1450	(5099)
	0	(-17.8)	15.7	(1.1)	944	(3320)	1088	(3826)
	-20	(-29)	3.6	(0.25)	614	(2159)	708	(2490)
	-40	(-40)	8.7"	(0.7)	381	(1340)	439	(1544)
Hot Gas Feed Hot Gas Main	+70	(+21)	114	(7.9)	-	-	-	-
	+70	(+21)	114	(7.9)	-	-	-	-
Compressor Discharge	+86	(+30)	155	(10.7)	3883	-	-	-

**GLOBE INSTALLATION DIMENSIONS**  
1/2" THROUGH 1 1/4" (13MM THROUGH 32MM)



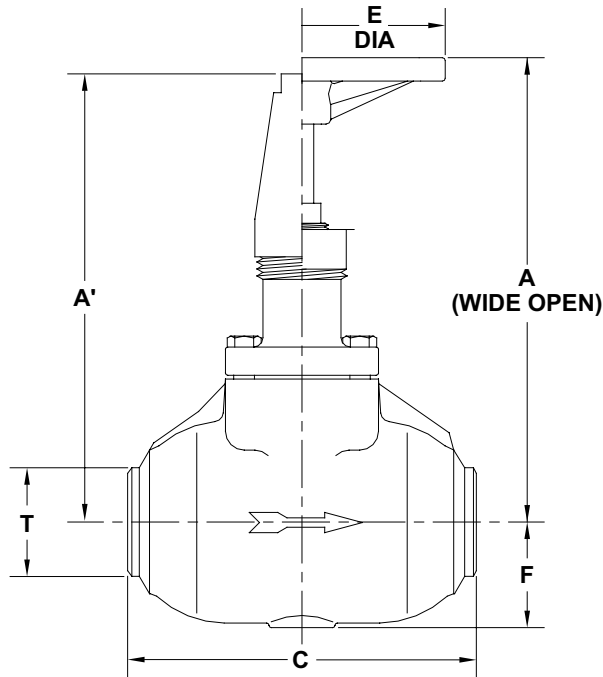
1/2" AND 3/4"  
(13MM AND 20MM)



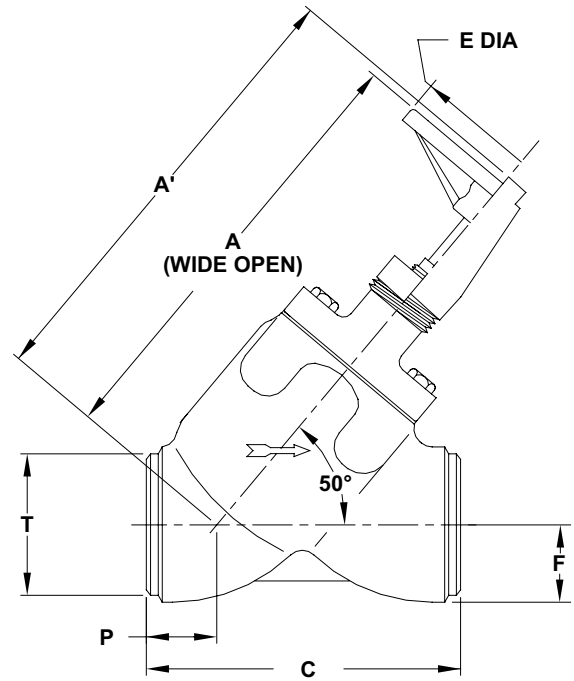
1" AND 1 1/4"  
(25MM AND 32MM)

SIZE (MM)	A	A'	C	E	F	P	T	ADD TO A, A' EXT NECK
1/2" (13)	7.62" (194)	7.86" (200)	4.73" (120)	3.5" (89)	0.84" (21)	1.17" (30)	0.84" (21)	1.8" (45)
3/4" (20)	7.62" (194)	7.86" (200)	4.73" (120)	3.5" (89)	0.84" (21)	1.17" (30)	1.05" (27)	1.8" (45)
1" (25)	7.88" (200)	8.09" (206)	5.93" (150)	3.50" (89)	1.15" (29)	1.17" (30)	1.31" (33)	1.8" (45)
1 1/4" (32)	7.88" (200)	8.09" (206)	5.93" (150)	3.50" (89)	1.15" (29)	1.17" (30)	1.66" (42)	1.8" (45)

**GLOBE INSTALLATION DIMENSIONS**  
**1½" THROUGH 14" (40MM THROUGH 350MM)**



1½" - 3", 4" EXT NECK  
 (40MM - 80MM), (100MM)

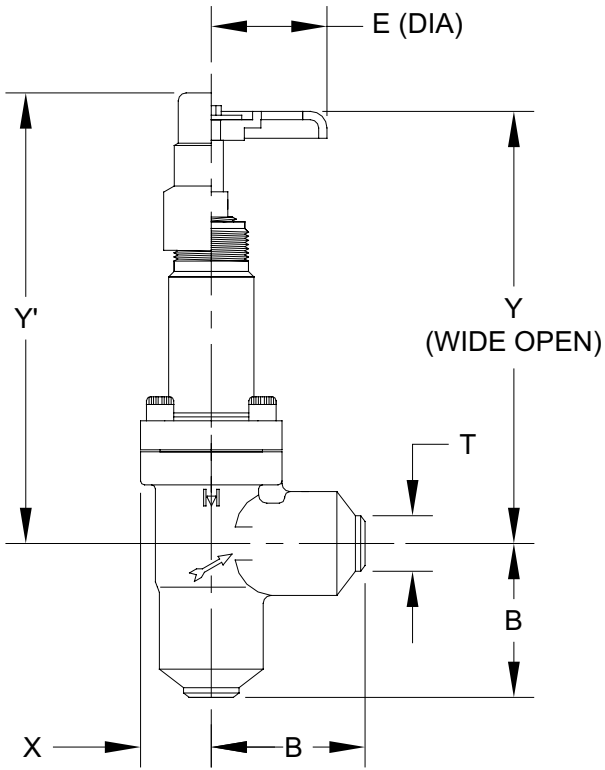


4" - 14"  
 (100MM - 350MM)

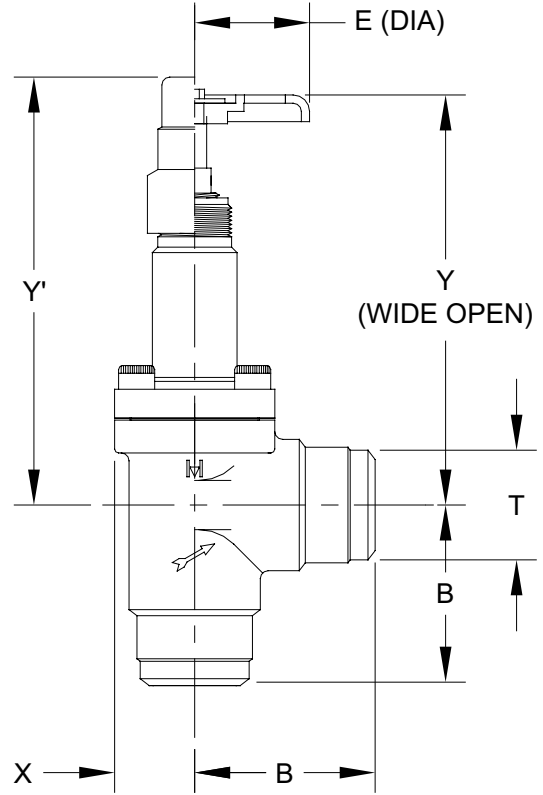
SIZE (MM)	A	A'	C	E	F	P	T	ADD TO A, A' EXT NECK
1½" (40)	8.88" (225)	9.13" (232)	7.25" (184)	4.25" (108)	2.12" (54)	-	1.90" (48)	2.85" (72)
2" (50)	8.88" (225)	9.13" (232)	7.25" (184)	4.25" (108)	2.13" (54)	-	2.38" (60)	2.85" (72)
2½" (65)	12.13" (308)	11.75" (298)	9.25" (235)	7.63" (194)	2.75" (70)	-	2.88" (73)	3.64" (92)
3" (80)	12.13" (308)	11.75" (298)	9.25" (235)	7.63" (194)	2.75" (70)	-	3.50" (89)	3.64" (92)
4" (100)	13.75" (349)	14.25" (362)	10.00" (254)	7.63" (194)	2.50" (64)	2.50" (64)	4.50" (114)	-
4" EXT NECK* (100)	13.12" (333)	12.12" (308)	12.50" (318)	7.63" (194)	3.75" (95)	-	4.50" (114)	-
5" (125)	21.38" (543)	21.63" (549)	11.65" (396)	10.00" (254)	3.00" (76)	2.65" (67)	5.56" (141)	-
6" (150)	22.10" (561)	22.15" (563)	13.26" (337)	10.00" (254)	3.50" (89)	2.73" (69)	6.63" (168)	-
8" (200)	29.10" (739)	29.51" (750)	18.10" (459)	16.00" (406)	4.61" (117)	3.98" (101)	8.63" (219)	-
10" (250)	35.29" (896)	36.16" (918)	23.38" (594)	16.00" (406)	5.81" (148)	5.19" (132)	10.75" (273)	-
12" (300)	42.16" (1071)	46.39" (1178)	29.20" (742)	20.00" (508)	7.00" (178)	6.27" (159)	12.75" (324)	-
14" (350)	47.55" (1208)	49.66" (1261)	32.86" (835)	20.00" (508)	7.63" (194)	7.23" (184)	14.00" (356)	-

\* 4" (100mm) Extended Neck is "T" style body only.

**ANGLE INSTALLATION DIMENSIONS**  
**1/2" THROUGH 1 1/4" (13MM THROUGH 32MM)**



1/2" AND 3/4"  
(13MM AND 20MM)



1" AND 1 1/4"  
(25MM AND 32MM)

SIZE (MM)	B	E	T	X	Y	Y'	ADD TO Y, Y' EXT NECK
1/2" (13)	2.33" (59)	3.50" (89)	0.84" (21)	1.07" (27)	6.46" (164)	6.70" (170)	1.80" (45)
3/4" (20)	2.33" (59)	3.50" (89)	1.05" (27)	1.07" (27)	6.46" (164)	6.70" (170)	1.80" (45)
1" (25)	2.75" (70)	3.50" (89)	1.31" (33)	1.22" (31)	6.24" (158)	6.52" (166)	1.80" (45)
1 1/4" (32)	2.75" (70)	3.50" (89)	1.66" (42)	1.22" (31)	6.24" (158)	6.52" (166)	1.80" (45)







**REPLACEMENT PARTS – BUTT WELD SHUT-OFF VALVES**

1/2" THROUGH 1 1/4" (13MM THROUGH 32MM)

ITEM	DESCRIPTION	QTY	PART NO
	<b>Gasket Kit 1/2", 3/4", 1", 1-1/4"</b> <b>(13mm, 20mm, 25mm, 32mm)</b>		<b>50-1040</b>
	<b>Gasket Kit, Extended Neck 1/2", 3/4", 1", 1-1/4"</b> <b>(13mm, 20mm, 25mm, 32mm)</b>		<b>50-1171</b>
	<i>Above kits consist of:</i>		
1	Stem Packing	1	
2	Stem Washer	1	
4	Stem O-Ring	1	
5a	Bonnet Gasket 1/2", 3/4" (13mm, 20mm)	1	
5b	Bonnet Gasket 1", 1-1/4" (25mm, 32mm)	1	
6	Seal Cap O-Ring	1	
7a	Packing Nut	1	
7b	Packing Nut, Extended Neck	1	
21	O-Ring, Anti-Spin	1	
	<b>Bonnet Assembly Kit 1/2", 3/4"</b> <b>(13mm, 20mm)</b>		<b>50-1094</b>
	<b>Bonnet Assembly Ext Neck Kit 1/2", 3/4"</b> <b>(13mm, 20mm)</b>		<b>50-1172</b>
	<b>Bonnet Assembly Kit 1", 1-1/4"</b> <b>(25mm, 32mm)</b>		<b>50-1095</b>
	<b>Bonnet Assembly Ext Neck Kit 1", 1-1/4"</b> <b>(25mm, 32mm)</b>		<b>50-1174</b>
	<i>Above kits consist of:</i>		
8a	Bonnet	1	
9a	Stem	1	
9b	Stem, Extended Neck	1	
10	Disc Assembly	1	
11	Ball Retainer	1	
12	Balls	10	
13	Bonnet Cap Screw	4	
	Gasket Kit 1/2" to 1-1/4" (13mm - 32mm)	1	
	<b>Handwheel Kit</b>		<b>50-1005</b>
	<i>Above kits consist of:</i>		
14	Handwheel	1	
15	Screw	1	
16	Nameplate	1	
18	Bonnet Thread Cap	1	
	<b>Seal Cap Kit</b>		<b>50-1036</b>
	<i>Above kits consist of:</i>		
6	Seal Cap O-Ring	1	
19	Seal Cap	1	
20	Body	1	

NOTE: A plate steel cap is available to order, specify part number 75-1014.



**REPLACEMENT PARTS – BUTT WELD SHUT-OFF VALVES**  
**1½" THROUGH 4" (40MM THROUGH 100MM)**

ITEM	DESCRIPTION	QTY	PART NO
	<b>Gasket Kit 1-1/2", 2" (40mm, 50mm)</b>		<b>50-1023</b>
	<b>Gasket Kit Ext Neck 1-1/2", 2" (40mm, 50mm)</b>		<b>50-1164</b>
	<b>Gasket Kit 2-1/2", 3" (65mm, 80mm)</b>		<b>50-1043</b>
	<b>Gasket Kit Ext Neck 2-1/2", 3" (65mm, 80mm)</b>		<b>50-1166</b>
	<b>Gasket Kit 4" (100mm)</b>		<b>50-1065</b>
	<b>Gasket Kit Ext Neck 4" (100mm)</b>		<b>50-1203</b>
	<i>Above kits consist of:</i>		
1	Stem Packing	1	
2	Stem Washer	1	
3	Back-up Washer	1	
4a	Stem O-Ring	1	
5	Bonnet Gasket 1-1/2", 2"	1	
6	Seal Cap Gasket 1-1/2", 2"	1	
7	Packing Nut 1-1/2", 2"	1	
21	O-Ring, Anti-Spin	1	
	<b>Bonnet Assembly Kit 1-1/2", 2" (40mm, 50mm)</b>		<b>50-1024</b>
	<b>Bonnet Assembly Ext Neck Kit 1-1/2", 2" (40mm, 50mm)</b>		<b>50-1165</b>
	<b>Bonnet Assembly Kit 2-1/2", 3" (65mm, 80mm)</b>		<b>50-1044</b>
	<b>Bonnet Assembly Ext Neck Kit 2-1/2", 3" (65mm, 80mm)</b>		<b>50-1167</b>
	<b>Bonnet Assembly Kit 4" (100mm)</b>		<b>50-1066</b>
	<b>Bonnet Assembly Ext Neck Kit 4" (100mm)</b>		<b>50-1184</b>
	<i>Above kits consist of:</i>		
8	Bonnet	1	
8b	Bonnet Ext Neck	1	
9	Stem	1	
9b	Stem Ext Neck	1	
13	Bonnet Cap Screw	4	
	Gasket Kit 1-1/2", 2" (40mm, 50mm)	1	
	Gasket Kit 2-1/2", 3" (65mm, 80mm)	1	
	Gasket Kit 4" (100mm)	1	
10	Disc Assembly Kit	1	
11	Ball Retainer	1	
12	Balls	1	
	<b>Handwheel Kit 1-1/2", 2" (40mm, 50mm)</b>		<b>50-1026</b>
	<b>Handwheel Kit 2-1/2", 3", 4" (65mm, 80mm, 100mm)</b>		<b>50-1037</b>
	<i>Above kits consist of:</i>		
14	Handwheel	1	
15a	Screw	1	
16	Nameplate	1	
17	Support Washer	1	
18	Bonnet Thread Cap	1	
	<b>Seal Cap Kit 1-1/2", 2" (40mm, 50mm)</b>		
	<b>Seal Cap Kit 2-1/2", 3", 4" (65mm, 80mm, 100mm)</b>		
	<i>Above kits consist of:</i>		
6	Seal Cap Gasket	1	<b>50-1027</b>
19	Seal Cap	1	<b>50-1038</b>
20	Body	1	

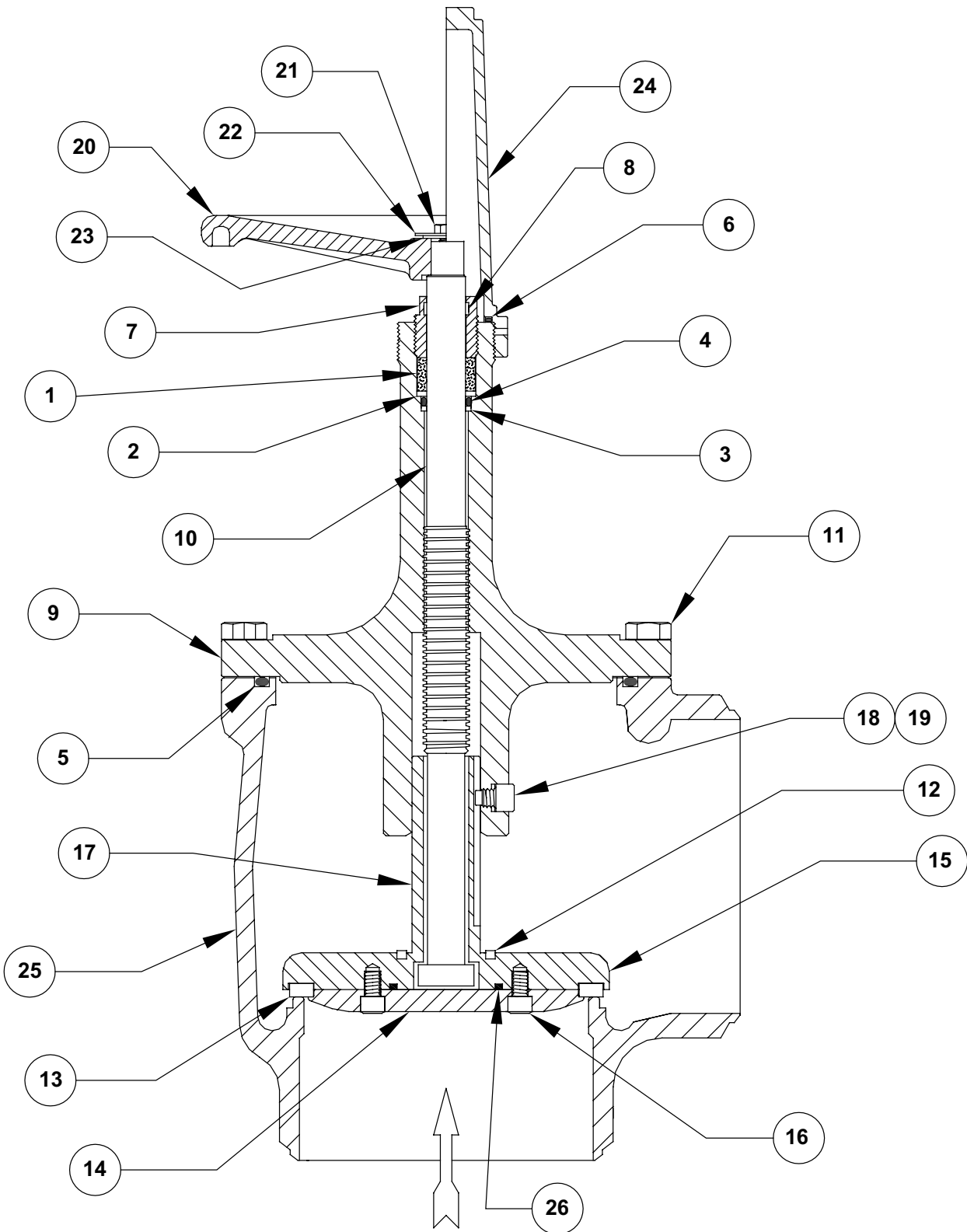


**REPLACEMENT PARTS - BUTT WELD SHUT-OFF VALVES**  
**5" THROUGH 8" (125MM THROUGH 200MM)**

ITEM	DESCRIPTION	QTY	PART NO
	<b>Gasket Kit 5" (125mm)</b>		<b>50-1082</b>
	<b>Gasket Kit 6" (150mm)</b>		<b>50-1083</b>
	<b>Gasket Kit 8" (200mm)</b>		<b>50-1084</b>
	<i>Above kits consist of:</i>		
1a	Stem Packing 5", 6" (125mm, 150mm)	1	
1b	Stem Packing 8" (200mm)	1	
2a	Stem Washer 5", 6" (125mm, 150mm)	1	
2b	Stem Washer 8" (200mm)	1	
3a	Back-up Washer 5", 6" (125mm, 150mm)	1	
3b	Back-up Washer 8" (200mm)	1	
4a	Stem O-Ring 5", 6" (125mm, 150mm)	1	
4b	Stem O-Ring 8" (200mm)	1	
5a	Bonnet O-Ring 5" (125mm)	1	
5b	Bonnet O-Ring 6" (150mm)	1	
5c	Bonnet O-Ring 8" (200mm)	1	
6a	Seal Cap O-Ring 5", 6" (125mm, 150mm)	1	
6b	Seal Cap O-Ring 8" (200mm)	1	
7a	Packing Nut 5", 6" (125mm, 150mm)	1	
7b	Packing Nut 8" (200mm)	1	
	<b>Bonnet Assembly Kit 5" (125mm)</b>		<b>50-1080</b>
	<b>Bonnet Assembly Kit 6" (150mm)</b>		<b>50-1081</b>
	<b>Bonnet Assembly Kit 8" (200mm)</b>		<b>50-1085</b>
	<i>Above kits consist of:</i>		
8a	Bonnet 5" (125mm)	1	
8b	Bonnet 6" (150mm)	1	
8c	Bonnet 8" (200mm)	1	
9a	Stem Assembly 5", 6" (125mm, 150mm)	1	
9b	Stem Assembly 8" (200mm)	1	
13a	Bonnet Cap Screw 5" (125mm)	4	
13b	Bonnet Cap Screw 6" (150mm)	6	
13c	Bonnet Cap Screw 8" (200mm)	8	
21a	Lower Disc Holder 5" (125mm)	1	
21b	Lower Disc Holder 6" (150mm)	1	
21c	Lower Disc Holder 8" (200mm)	1	
22a	Upper Disc Holder 5" (125mm)	1	
22b	Upper Disc Holder 6" (150mm)	1	
22c	Upper Disc Holder 8" (200mm)	1	
23a	Disc Holder Screw 5", 6" (125mm, 150mm)	4	
23b	Disc Holder Screw 8" (200mm)	6	
24	Bushing, Stem Guide, 8"	1	
	Gasket Kit 5" (125mm)	1	
	Gasket Kit 6" (150mm)	1	
	Gasket Kit 8" (200mm)	1	
	Disc Kit 5" (125mm)	1	
	Disc Kit 6" (150mm)	1	
	Disc Kit 8" (200mm)	1	
	<b>Disc Kit 5" (125mm)</b>		<b>50-1086</b>
	<b>Disc Kit 6" (150mm)</b>		<b>50-1087</b>
	<b>Disc Kit 8" (200mm)</b>		<b>50-1088</b>
	<i>Above kits consist of:</i>		
5a	Bonnet O-Ring 5" (125mm)	1	
5b	Bonnet O-Ring 6" (150mm)	1	
5c	Bonnet O-Ring 8" (200mm)	1	
10a	Seat Disc 5", Teflon (125mm)	1	
10b	Seat Disc 6", Teflon (150mm)	1	
10c	Seat Disc 8", Teflon (200mm)	1	

	<b>Handwheel Kit 5", 6" (125mm, 150mm)</b>		<b>50-1089</b>
	<b>Handwheel Kit 8" (200mm)</b>		<b>50-1090</b>
	<i>Above kits consist of:</i>		
14a	Handwheel 5", 6" (125mm, 150mm)	1	
14b	Handwheel 8" (200mm)	1	
15a	Screw 5", 6" (125mm, 150mm)	1	
15b	Screw 8" (200mm)	1	
16	Back-Up Washer (8" Only)	1	
17a	Nameplate 5", 6" (125mm, 150mm)	1	
17b	Nameplate 8" (200mm)	1	
	<b>Seal Cap Kit 5", 6" (125mm, 150mm)</b>		<b>50-1091</b>
	<b>Seal Cap Kit 8" (200mm)</b>		<b>50-1092</b>
	<i>Above kits consist of:</i>		
6a	Seal Cap O-Ring 5", 6" (125mm, 150mm)	1	
6b	Seal Cap O-Ring 8" (200mm)	1	
19a	Seal Cap 5", 6" (125mm, 150mm)	1	
19b	Seal Cap 8" (200mm)	1	
20a	Body, Globe 5" BW (125mm)	1	
20b	Body, Globe 6" BW (150mm)	1	
20c	Body, Globe 8" BW (200mm)	1	
20d	Body, Angle 5" BW (125mm)	1	
20e	Body, Angle 6" BW (150mm)	1	
20f	Body, Angle 8" BW (200mm)	1	

**10" THROUGH 18" (250MM THROUGH 450MM) - BUTT WELD SHUT-OFF VALVES**



NOTE: Angle valve shown; kits are the same for globe valves.



**REPLACEMENT PARTS - BUTT WELD SHUT-OFF VALVES**  
**10" THROUGH 18" (250MM THROUGH 450MM)**

ITEM	DESCRIPTION	QTY	PART NO
	<b>Gasket Kit 10" (250mm)</b>		<b>50-1122</b>
	<b>Gasket Kit 12" (300mm)</b>		<b>50-1123</b>
	<b>Gasket Kit 14" (350mm)</b>		<b>50-1124</b>
	<b>Gasket Kit 16" (400mm)</b>		<b>50-1196</b>
	<b>Gasket Kit 18" (450mm)</b>		<b>50-1197</b>
	<i>Above kits consist of:</i>		
1a	Stem Packing 10" (250mm)	1	
1b	Stem Packing 12" (300mm)	1	
1c	Stem Packing 14" (350mm)	1	
1d	Stem Packing 16", 18" (400mm, 450mm)	1	
2a	Packing Washer 10" (250mm)	1	
2b	Packing Washer 12" (300mm)	1	
2c	Packing Washer 14" (350mm)	1	
2d	Packing Washer 16", 18" (400mm, 450mm)	1	
3a	Back-up Washer 10" (250mm)	1	
3b	Back-up Washer 12" (300mm)	1	
3c	Back-up Washer 14" (350mm)	1	
3d	Back-up Washer 16", 18" (400mm, 450mm)	1	
4a	Stem O-Ring 10" (250mm)	1	
4b	Stem O-Ring 12" (300mm)	1	
4c	Stem O-Ring 14" (350mm)	1	
4d	Stem O-Ring 16", 18" (400mm, 450mm)	1	
5a	Bonnet O-Ring 10" (250mm)	1	
5b	Bonnet O-Ring 12" (300mm)	1	
5c	Bonnet O-Ring 14" (350mm)	1	
5d	Bonnet O-Ring 16" (400mm)	1	
5e	Bonnet O-Ring 18" (450mm)	1	
6a	Seal Cap O-Ring 10" (250mm)	1	
6b	Seal Cap O-Ring 12", 14" (300mm, 350mm)	1	
6c	Seal Cap O-Ring 16", 18" (400mm, 450mm)	1	
7a	Packing Nut 10" (250mm)	1	
7b	Packing Nut 12" (300mm)	1	
7c	Packing Nut 14" (350mm)	1	
7d	Packing Nut 16", 18" (400mm, 450mm)	1	
8a	Bushing, Stem Guide 10" (250mm)	1	
8b	Bushing, Stem Guide 12" (300mm)	1	
8c	Bushing, Stem Guide 14" (350mm)	1	
8d	Bushing, Stem Guide 16", 18" (400mm, 450mm)	1	
	<b>Bonnet Assembly Kit 10" (250mm)</b>		<b>50-1125</b>
	<b>Bonnet Assembly Kit 12" (300mm)</b>		<b>50-1126</b>
	<b>Bonnet Assembly Kit 14" (350mm)</b>		<b>50-1127</b>
	<b>Bonnet Assembly Kit 16" (400mm)</b>		<b>50-1198</b>
	<b>Bonnet Assembly Kit 18" (450mm)</b>		<b>50-1199</b>
	<i>Above kits consist of:</i>		
9a	Bonnet 10" (250mm)	1	
9b	Bonnet 12" (300mm)	1	
9c	Bonnet 14" (350mm)	1	
9d	Bonnet 16" (400mm)	1	
9e	Bonnet 18" (450mm)	1	
10a	Stem Assembly 10" (250mm)	1	
10b	Stem Assembly 12" (300mm)	1	
10c	Stem Assembly 14" (350mm)	1	
10d	Stem Assembly 16" (400mm)	1	
10e	Stem Assembly 18" (450mm)	1	
11a	Bonnet Cap Screw 10" (250mm)	8	
11b	Bonnet Cap Screw 12" (300mm)	12	
11c	Bonnet Cap Screw 14" (350mm)	16	
11d	Bonnet Cap Screw 16" (400mm)	20	
11e	Bonnet Cap Screw 18" (450mm)	24	
12a	Ring, Teflon Back Seat 10" (250mm)	1	
12b	Ring, Teflon Back Seat 12" (300mm)	1	
12c	Ring, Teflon Back Seat 14" (350mm)	1	
12d	Ring, Teflon Back Seat 16", 18" (400mm, 450mm)	1	
14a	Lower Disc Holder 10" (250mm)	1	
14b	Lower Disc Holder 12" (300mm)	1	
14c	Lower Disc Holder 14" (350mm)	1	
14d	Lower Disc Holder 16" (400mm)	1	
14e	Lower Disc Holder 18" (450mm)	1	
15a	Upper Disc Holder 10" (250mm)	1	
15b	Upper Disc Holder 12" (300mm)	1	
15c	Upper Disc Holder 14" (350mm)	1	
	<b>Bonnet Assembly Kits consist of: (cont'd)</b>		
15d	Upper Disc Holder 16" (400mm)	1	
15e	Upper Disc Holder 18" (450mm)	1	
16a	Disc Screw 10" (250mm)	8	
16b	Disc Screw 12" (300mm)	8	
16c	Disc Screw 14" (350mm)	8	
16d	Disc Screw 16" (400mm)	10	
16e	Disc Screw 18" (450mm)	10	
17a	Guide Tube 10" (250mm)	1	
17b	Guide Tube 12" (300mm)	1	
17c	Guide Tube 14" (350mm)	1	
17d	Guide Tube 16", 18" (400mm, 450mm)	1	
18	Screw Guide 10" to 18" (250mm to 450mm)	1	
19	Washer, Screw Guide 10" to 18" (250mm to 450mm)	1	
	Disc Kit 10" (250mm)	1	
	Disc Kit 12" (300mm)	1	
	Disc Kit 14" (350mm)	1	
	Disc Kit 16" (400mm)	1	
	Disc Kit 18" (450mm)	1	
	Gasket Kit 10" (250mm)	1	
	Gasket Kit 12" (300mm)	1	
	Gasket Kit 14" (350mm)	1	
	Gasket Kit 16" (400mm)	1	
	Gasket Kit 18" (450mm)	1	
	<b>Disc Kit 10" (250mm)</b>		<b>50-1128</b>
	<b>Disc Kit 12" (300mm)</b>		<b>50-1129</b>
	<b>Disc Kit 14" (350mm)</b>		<b>50-1130</b>
	<b>Disc Kit 16" (400mm)</b>		<b>50-1200</b>
	<b>Disc Kit 18" (450mm)</b>		<b>50-1201</b>
	<i>Above kits consist of:</i>		
5a	Bonnet O-Ring 10" (250mm)	1	
5b	Bonnet O-Ring 12" (300mm)	1	
5c	Bonnet O-Ring 14" (350mm)	1	
5d	Bonnet O-Ring 16" (400mm)	1	
5e	Bonnet O-Ring 18" (450mm)	1	
13a	Ring, Teflon Main Seat 10" (250mm)	1	
13b	Ring, Teflon Main Seat 12" (300mm)	1	
13c	Ring, Teflon Main Seat 14" (350mm)	1	
13d	Ring, Teflon Main Seat 16" (400mm)	1	
13e	Ring, Teflon Main Seat 18" (450mm)	1	
26	O-Ring, Upper Disc 10", 12", 14", 16", 18"		
	<b>Handwheel Kit 10" (250mm)</b>		<b>50-1131</b>
	<b>Handwheel Kit 12", 14" (300mm, 350mm)</b>		<b>50-1132</b>
	<b>Handwheel Kit 16", 18" (400mm, 450mm)</b>		<b>50-1193</b>
	<i>Above kits consist of:</i>		
20a	Handwheel 10" (250mm)	1	
20b	Handwheel 12", 14" (300mm, 350mm)	1	
20c	Handwheel 16", 18" (400mm, 450mm)	1	
21a	Screw 10", 12", 14" (250mm to 350mm)	1	
21b	Screw 16", 18" (400mm, 450mm)	1	
22a	Nameplate 10", 12", 14" (250mm to 350mm)	1	
22b	Nameplate 16", 18" (400mm, 450mm)	1	
23a	Support Washer 10", 12", 14" (250mm to 350mm)	1	
23b	Support Washer 16", 18" (400mm, 450mm)		
	<b>Seal Cap Kit 10" (250mm)</b>		<b>50-1133</b>
	<b>Seal Cap Kit 12", 14" (300mm, 350mm)</b>		<b>50-1134</b>
	<b>Seal Cap Kit 16", 18" (400mm, 450mm)</b>		<b>50-1194</b>
	<i>Above kits consist of:</i>		
6a	Seal Cap O-Ring 10" (250mm)	1	
6b	Seal Cap O-Ring 12", 14" (300mm, 350mm)	1	
6c	Seal Cap O-Ring 16", 18" (400mm, 450mm)	1	
24a	Seal Cap 10" (250mm)	1	
24b	Seal Cap 12", 14" (300mm, 350mm)	1	
24c	Seal Cap 16", 18" (400mm, 450mm)		
25a	Body, Globe 10" BW (250mm)	1	
25b	Body, Globe 12" BW (300mm)	1	
25c	Body, Globe 14" BW (350mm)	1	
25d	Body, Angle 10" BW (250mm)	1	
25e	Body, Angle 12" BW (300mm)	1	
25f	Body, Angle 14" BW (350mm)	1	
25g	Body, Angle 16" BW (400mm)	1	
25h	Body, Angle 18" BW (450mm)		

## SERVICE AND MAINTENANCE

Hansen steel butt welding shut-off valves require practically no service or maintenance due to the combination of polished stainless steel stems and reliable O-ring stem seals plus graphite composite packing. This almost entirely eliminates stem leakage, the common ailment of shut-off valves.

To help ensure safety, verify the tightness of the packing nut whenever the position (open or closed) is changed on isolation shut-off valves before opening the system. Ensuring that the packing nut is tight helps reduce the possibility that any line or system vibration may cause a slight unseating of a closed valve.

## STEM PACKING

When verifying the tightness of the packing nut, use an adjustable wrench. Extrusion of some black graphite packing material along the stem is normal. If the O-ring or the adjustable packing ever needs replacement as evidenced by refrigerant or oil leakage at the stem, open the valve stem firmly to the back-seat position. This separates the O-ring and packing from the system refrigerant. Remove the packing nut carefully and then use a wire hook or a small blade screwdriver to remove the packing and O-ring. Take care not to scratch the stem or bonnet sealing surfaces. Carefully install the backup washer (1½"-18" or 13mm-450mm only), new lubricated stem O-ring, stem washer, and stem packing. Tighten the packing nut only enough to give the handwheel slight turning friction.

## VALVE SEAT

To inspect or replace the valve seat disc, isolate the valve from the system and safely pump out all refrigerant to zero pressure with the stem open at least one turn. Evenly loosen all bolts one to two turns. Using a screwdriver, break the seal between the bonnet and valve body, proceeding cautiously to avoid any refrigerant which may still remain inside the valve body. Remove the bonnet bolts and bonnet assembly, being careful not to damage the Teflon seat disc surface. If the seat surface in the body is marred, it may be possible to repair the seat by polishing with emery paper.

If the Teflon seat disc is damaged, replace the entire disc assembly ½" (13mm) thru 4" (100mm) by first removing the ball retainer spring, ball bearings and anti-spin O-ring. Install a new disc assembly including anti-spin O-ring. Alternately, use a lathe to take a 1/64" (0.4 mm) by 45° surface cut on the Teflon seat. The 5" (125mm) thru 18" (450mm) Teflon seats can be replaced by disassembling the disc holder by loosening and removing the disc screws. Replace the Teflon ring, the upper disc O-ring in 10" (250mm) and above, and reassemble the disc.

Replace body gasket or O-ring and reassemble bonnet into body using care not to damage Teflon seat surface. Be careful not to pinch the O-ring. If necessary, retain O-ring in O-ring groove by using a suitable O-ring grease. Ensure the stem is opened at least several turns.

Hansen assembles valves with bonnet cap screws factory tightened as follows: ½" to 1¼" (13mm to 32mm)–30 ft-lb (41 Nm); 1½" (40mm) and 2" (50mm)–40 ft-lb (54 Nm); 2½" (65mm) and 3" (80mm)–60 ft-lb (81 Nm); 4" (100mm)–180 ft-lb (244 Nm); and 5" to 18" (125mm to 450mm)–200 ft-lb (271Nm). Test the valve for leaks before returning it to service.

## TROUBLESHOOTING VALVE LEAKS

On the rare occasion when a small valve leak is discovered, the following procedures may help:

**Stem seal leaks** – The possibility of this occurrence is based on many factors, such as frequency of use, exercising, debris or rust on stem, etc. First, simply tighten the packing nut to see if this eliminates the leak. If not, back seat the valve or isolate it entirely from the refrigeration system. See Stem Packing section of this bulletin.

**Bonnet gasket leaks** – If a gasket leak is discovered at the bonnet-to-body interface, first bring the pressure in the valve to zero pressure and check the bonnet bolt tightness. If the leak persists, isolate the valve from the refrigeration system and disassemble the valve. Check the gasket sealing surfaces on the bonnet and valve body for scratches or gouges. These scratches can sometimes be polished smooth. Install a new gasket and reassemble the valve. Evenly tighten all bolts to properly seat the bonnet. Repeat the pressure test.

**Bonnet O-ring leaks** – Valves 5" (125mm) and larger use bonnet O-rings. If a leak is discovered at the bonnet-to-body interface, first bring the pressure in the valve to zero pressure and check the bonnet bolt torque. The torque recommendations are provided below. If the leak persists, isolate the valve from the refrigeration system and disassemble the valve. Check for debris on the surfaces of the bonnet and O-ring groove in the valve body. Check for scratches and polish the surfaces. Clean and check the O-ring for cuts, cracks and embedded debris. Check the bonnet and valve surface for flatness. Occasionally, the edge of the bonnet on the valve body is struck or dropped which could damage or raise the sealing surface of the bonnet. This prevents the two sealing surfaces from being completely engaged. Remove the raised edge. Also, if not carefully re-assembled, the bonnet may have been slightly askew, preventing proper sealing. Before reassembling the valve, clean the sealing surfaces and O-ring apply suitable grease to the O-ring. Install the bonnet, making sure the stem is open several turns. Evenly tighten, then torque the bonnet bolts to the specified value below. Pressure test the valve to check for leaks.

## ORDERING INFORMATION, EXTENDED NECK BUTT WELD SHUT-OFF VALVES

SIZE	DESCRIPTION	CAT NO
1/2" (13mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWE051H AWE050H GWE051C AWE050C
3/4" (20mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWE076H AWE075H GWE076C AWE075C
1" (25mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWE101H AWE100H GWE101C AWE100C
1¼" (32mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWE126H AWE125H GWE126C AWE125C
1½" (40mm)	Globe, Handwheel Angle Handwheel Globe, Seal Cap Angle, Seal Cap	GWE150H AWE150H GWE150C AWE150C
2" (50mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWE200H AWE200H GWE200C AWE200C
2½" (65mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWE251H AWE251H GWE251C AWE251C
3" (80mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWE301H AWE301H GWE301C AWE301C
4"* (100mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWE400H AWE402H GWE400C AWE402C

\*Note: 4" Extended Neck Globe is a "T" style valve.

## ORDERING INFORMATION, BUTT WELD SHUT-OFF VALVES

SIZE	DESCRIPTION	CAT NO
1/2" (13mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWB051H AWB050H GWB051C AWB050C
3/4" (20mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWB076H AWB075H GWB076C AWB075C
1" (25mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWB101H AWB100H GWB101C AWB100C
1 1/4" (32mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GWB126H AWB125H GWB126C AWB125C
1 1/2" (40mm)	Globe, Handwheel Angle Handwheel Globe, Seal Cap Angle, Seal Cap	GW150H AW150H GW150C AW150C
2" (50mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW200H AW200H GW200C AW200C
2 1/2" (65mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW251H AW251H GW251C AW251C
3" (80mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW301H AW301H GW301C AW301C
4" (100mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW402H AW402H GW402C AW402C
5" (125mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW500H AW500H GW500C AW500C
6" (150mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW600H AW600H GW600C AW600C
8" (200mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW800H AW800H GW800C AW800C
10" (250mm)	Globe, Handwheel Angle Handwheel Globe, Seal Cap Angle, Seal Cap	GW1000H AW1000H GW1000C AW1000C
12" (300mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW1200H AW1200H GW1200C AW1200C
14" (350mm)	Globe, Handwheel Angle, Handwheel Globe, Seal Cap Angle, Seal Cap	GW1400H AW1400H GW1400C AW1400C
16" (400mm)	Angle, Handwheel Angle, Seal Cap	AW1600H AW1600C
18" (450mm)	Angle, Handwheel Angle, Seal Cap	AW1800H AW1800C

## TO ORDER

Specify catalog number. To order valves for 600 psig (41 bar g) SWP, add the letter "C" prefix to catalog number (Example: CGW200H). CE marked valves are available for 1 1/4" through 14" (32mm to 350mm), add the letter "E" suffix (Example: AW150HE).

## CAUTION

Hansen valves are for refrigeration only. These instructions must be completely read and understood before selecting, using or servicing Hansen valves and electronics. Only knowledgeable, trained refrigeration mechanics should install, operate, or service. Stated temperature and pressure limits should not be exceeded. Bonnets should not be removed from valves unless system has been evacuated to zero pressure. See also Safety Precautions in the current List Price Schedule and the Safety Precautions Sheet supplied with product.

## WARRANTY

All Hansen products, except electronics, are guaranteed against defective materials or workmanship for one year F.O.B. factory. Electronics are guaranteed against defective materials or workmanship for 90 days F.O.B. factory. No consequential damages or field labor is included.

## TYPICAL SPECIFICATIONS

"Weldable refrigerant shut-off valves shall have stainless steel stems with dual seals, forged or cast steel bodies, back-seating design for packing replacement, bonnet threads for installation of stem seal caps, butt weld ends machined dimensionally correct for schedule 80 pipe (sizes 1/2"-1 1/2"), schedule 40 pipe (sizes 2"-10") and gauge or standard weight pipe (sizes 12" and above), and suitable for a safe working pressure of 400 psig (28 bar g) or 600 psig (41 bar g) as manufactured by Hansen Technologies Corporation, or approved equal."



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