PENBERTHY SERIES 100 AND 200 STRAIGHT PATTERN FLAT GLASS GAGECOCKS

Straight pattern gagecocks that provide a 90° connection to the process vessel and isolate the gage chamber from the liquid content of the vessel

Model 130

Model 230

FEATURES

- Straight pattern.
- Integral bonnet (100 series).
- Union bonnet (200 series).
- Union vessel connection.
- Ball check shut-off prevents loss of process fluid in the event of an accidental breakage of the gage glass.
- Integral seat (100 series).
- Threaded renewable seat (200 series).
- Can be supplied to meet ASME requirements, with ball check shut-offs omitted.
- Wide variety of gage and vessel connections available.

GENERAL APPLICATION

These gagecocks have internal screw threads that are wetted by the process liquid. They are used in conjunction with direct reading flat glass gages in the petroleum, chemical and general process industries.

TECHNICAL DATA

Materials:	Forged steel, stainless steel
Sizes:	½" to 1" (DN 15 to 25)
Gage connection	
Model 120/220:	Union
Model 130/230:	Rigid
Pressure (max.):	4000 psi at 100°F (275.8 bar at 38°C)
Temperature range:	-300°F to 750°F (-184°C to 399°C)

PRODUCT OVERVIEW

The 100 and 200 series includes models 120/220 and 130/230. These gagecocks have inside screw threads that are wetted by the liquid. They are offered with a wide range of features in straight pattern design.
Gagecock seat leakage is Class I per ISA RP39.6, FCI 70-2 (formerly ASME B16. 105) and/or IEC 60534-4.

A variety of optional features is available when specified. Optional materials can be specified for the gagecock body and trim (trim consists of the stem, stem packing retainer, ball check and seat (200 series only)). Standard and optional materials conform to ASTM specifications.

CENTER-TO-CENTER DIMENSIONS, in (cm)

Model	Dimension X	Dimension Y
120/220	5⅝ (14.9)	3⅜ (9.2)
130/230	2⅝ (7.3)	⅜ (1.6)

To obtain the maximum length permissible for a given vessel center-to-center dimension using ½" nipples:

Maximum gage length = (gagecock center-to center dimension) - (dimension X)

To determine the overall length of nipples needed to make up a gage set for fixed vessel center-to-center dimension using ½" nipples:

Combined nipple length = (gagecock center-to-center dimension) - (gage length + dimension Y)

Overall nipple length can be divided between nipples to suit the application.
Minimum length required for each nipple is: 1⅛" for ½" NPT nipple; 1⅜" for ¾" NPT nipple.

A floating shank union vessel connection permits the gagecock center-to-center dimension to vary ⅜" (9.5 mm) total from the actual vessel center-to-center dimension.

PRESSURE/TEMPERATURE

	Maximum working pressure psi (kPa) at temperatures to:									
	-300°F (-184°C)	-150°F (-101°C)	-20°F (-29°C)	100°F (38°C)	200°F (93°C)	300°F (149°C)	400°F (204°C)	500°F (260°C)	550°F (288°C)	750°F (399°C)
**	-	-	4000 (27580)	4000 (27580)	3900 (26890)	3815 (26300)	3730 (25720)	3525 (24300)	3355 (23130)	2620 (18060)
***	4000 (27580)	4000 (27580)	4000 (27580)	4000 (27580)	3900 (26890)	3815 (26300)	3730 (25720)	3525 (24300)	3355 (23130)	2755 (18990)

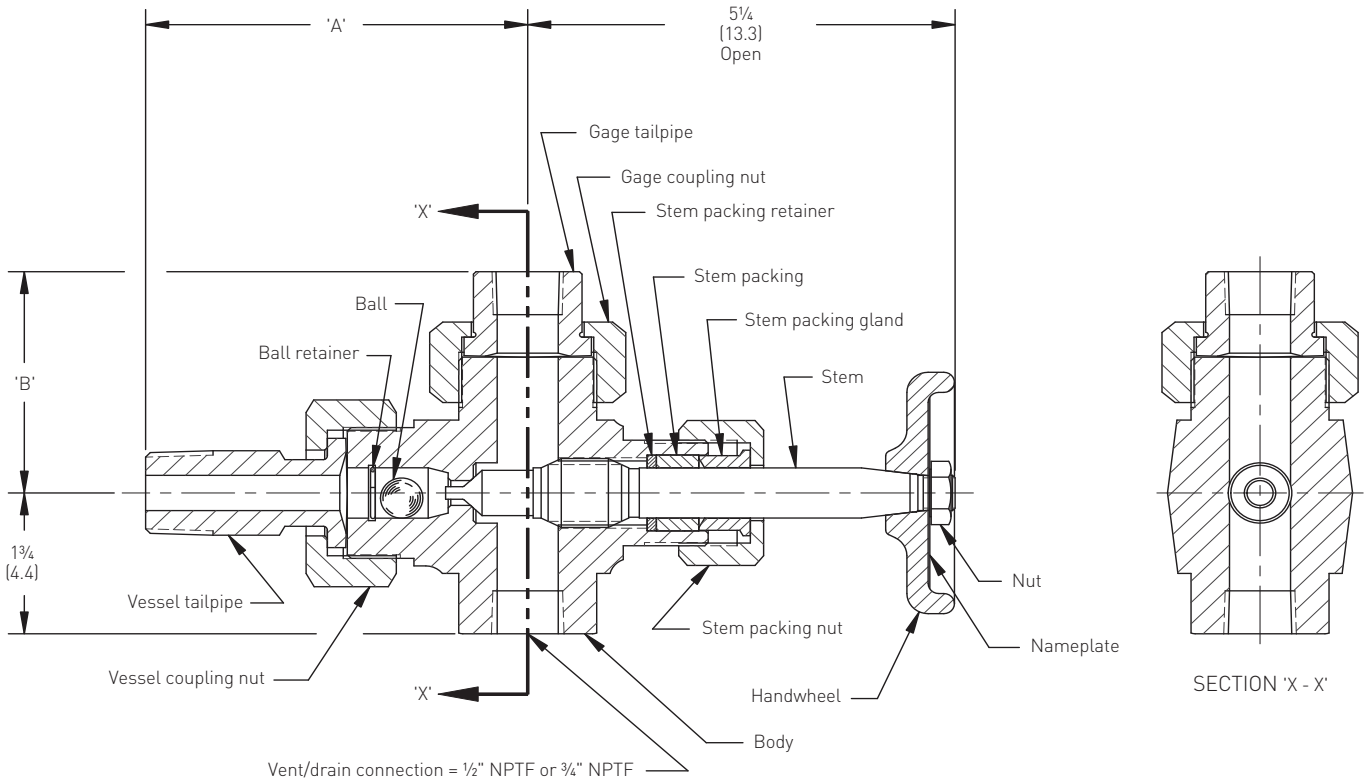
** Forged steel
*** Stainless steel

ASME Boiler Code

Series 100 and 200 gagecock sets that are acceptable for ASME Boiler Code are supplied with ball check shut-offs omitted.

PENBERTHY SERIES 100 AND 200 STRAIGHT PATTERN FLAT GLASS GAGECOCKS

SERIES 100 - DIMENSIONS



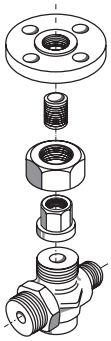
SERIES 100 - DIMENSIONS

		Dimension 'B' inches (cm)	
Connection	**Dimension 'A' inches (cm)**	**Standard**	**120 option / Side connect**
Union			
½" NPTF	3 3/16 (8.1)	2¾ (7.0)	-
½" NPTM	4⅜ (11.1)	3⅜ (8.6)	4 1/16 (10.3)
¾" NPTF	3 3/16 (8.1)	2¾ (7.0)	-
¾" NPTM	4½ (11.4)	3⅜ (8.6)	4 1/16 (10.3)
1" NPTM	4⅝ (11.7)	-	-
Rigid			
½" NPTF	-	1¼ (3.2)	-
¾" NPTF	-	1¼ (3.2)	-
Solid shank			
½" NPTM	4 (10.2)	-	-
¾" NPTM	4 (10.2)	-	-
1" NPTM	4 (10.2)	-	-
Socketweld			
½" Female union	-	2¾ (7.0)	-
½" Female rigid	-	1¼ (3.2)	-
½" Male union	4⅜ (11.1)	3⅜ (8.6)	4 1/16 (10.3)
¾" Female rigid	-	1¼ (3.2)	-
¾" Male union	4½ (11.4)	3⅜ (8.6)	4 1/16 (10.3)
1" Male union	4⅝ (11.7)	-	-
Spherical union			
½" NPTF	4 9/16 (11.6)	4⅛ (10.5)	-
½" NPTM	4 9/16 (11.6)	4⅛ (10.5)	-
¾" NPTM	4 9/16 (11.6)	4⅛ (10.5)	-

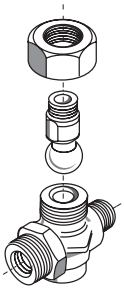
SERIES 100 - DIMENSIONS - FLANGED CONNECTION

	Dimension 'A' inches (cm)		Dimension 'B' inches (cm)	
Flanged connection	**RF Threaded**	**RF Slip on**	**RF Threaded**	**RF Slip on**
Union				
½" - 150# (F)	-	-	3 11/16 (9.4)	3 13/16 (9.7)
½" - 300# (F)	-	-	3 15/16 (10.0)	3 15/16 (10.0)
½" - 600# (F)	-	-	4 3/16 (10.6)	4 3/16 (10.6)
½" - 1500# (F)	-	-	4 13/16 (12.2)	4¾ (12.1)
½" - 150# (M)	4½ (11.4)	4⅝ (11.7)	3 11/16 (9.4)	3⅝ (9.2)
½" - 300# (M)	4½ (11.4)	4⅝ (11.7)	3¾ (9.5)	3¾ (9.5)
½" - 600# (M)	4¾ (12.1)	4⅝ (11.7)	4 1/16 (10.3)	4 1/16 (10.3)
½" - 1500# (M)	5 (12.7)	4⅝ (11.7)	4¾ (12.1)	4¾ (12.1)
¾" - 150# (F)	-	-	3 15/16 (10.0)	-
¾" - 300# (F)	-	-	4 3/16 (10.6)	-
¾" - 600# (F)	-	-	4 7/16 6 (11.3)	-
¾" - 1500# (F)	-	-	4 15/16 (12.5)	-
¾" - 150# (M)	4⅝ (11.7)	4¾ (12.1)	3¾ (9.5)	3¾ (9.5)
¾" - 300# (M)	4⅝ (11.7)	4¾ (12.1)	4⅛ (10.5)	4 1/16 (10.3)
¾" - 600# (M)	5 (12.7)	4¾ (12.1)	4⅜ (11.1)	4 5/16 (11.0)
¾" - 1500# (M)	5¼ (13.3)	4¾ (12.1)	4⅞ (12.4)	4⅞ (12.4)
Rigid				
¾" - 150# (F)	-	-	2 15/16 (7.5)	2⅞ (7.3)
¾" - 300# (F)	-	-	3 3/16 (8.1)	3 3/16 (8.1)
¾" - 600# (F)	-	-	3 7/16 (8.7)	3 7/16 (8.7)
¾" - 1500# (F)	-	-	4 1/16 (10.3)	4 (10.2)
Union				
1" - 150# (M)	4 11/16 (11.9)	4⅞ (12.4)	3¾ (9.5)	3¾ (9.5)
1" - 300# (M)	4 11/16 (11.9)	4⅞ (12.4)	4⅛ (10.5)	4 1/16 (10.3)
1" - 600# (M)	5 1/16 (12.9)	4⅞ (12.4)	4⅜ (11.1)	4 5/16 (11.0)
1" - 1500# (M)	5⅜ (13.7)	4⅞ (12.4)	-	-

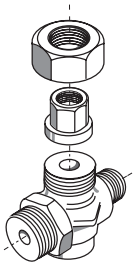
GAGE CONNECTIONS



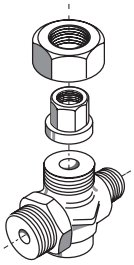
Flanged
120 Option



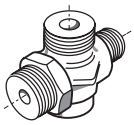
Spherical Union
120 Option



Union
120 Standard

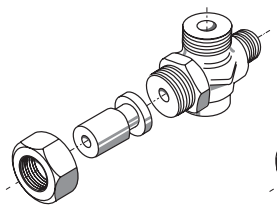


Socketweld
120 Option

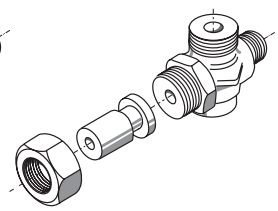


Rigid
130 Standard

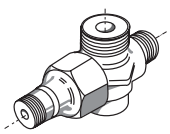
VESSEL CONNECTIONS



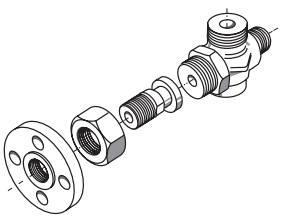
Socketweld
120/130 Option



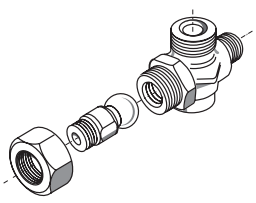
Union
120/130 Standard



Solid Shank
120/130 Option



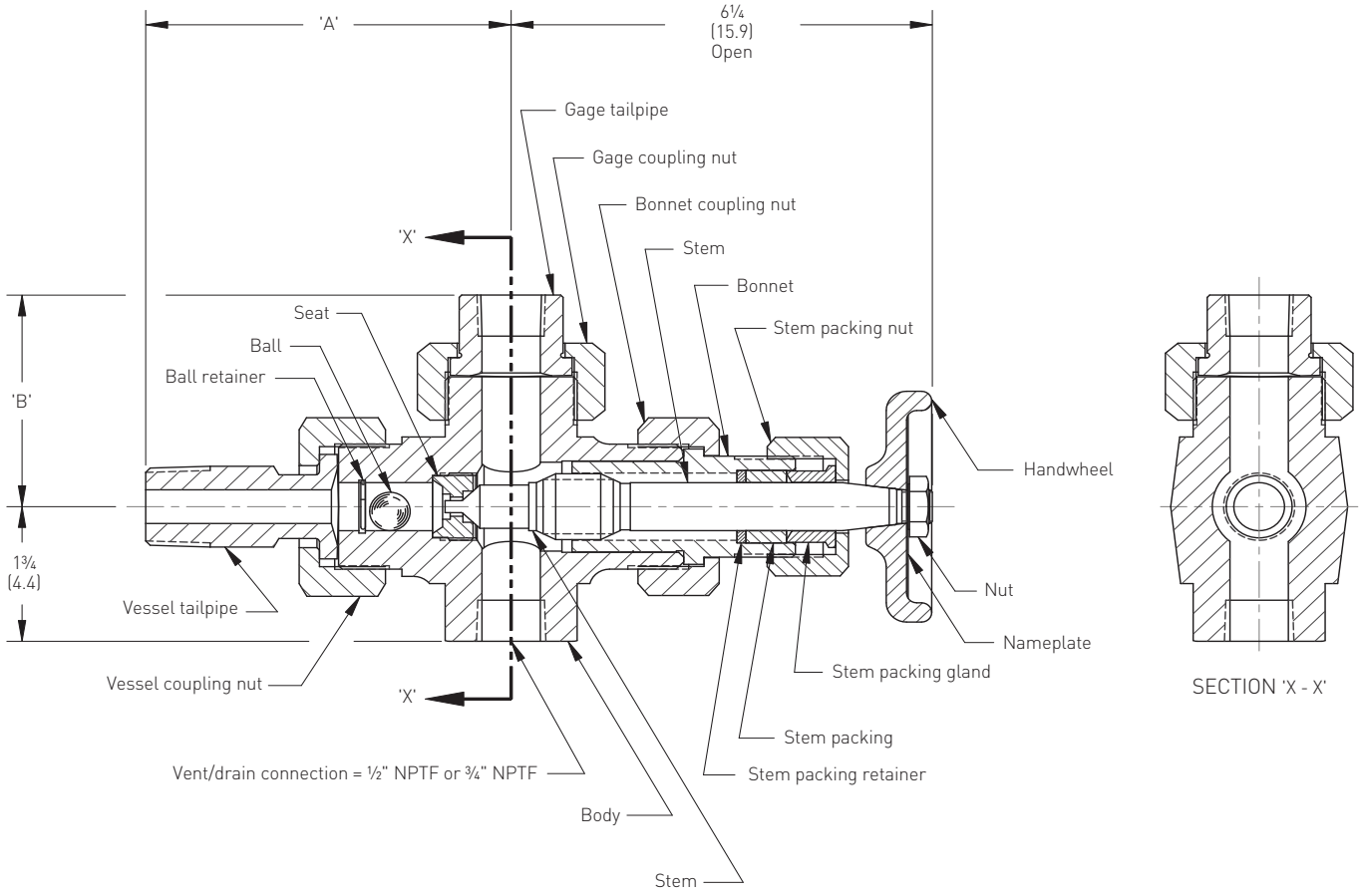
Flanged
120/130 Option



Spherical Union
120/130 Option

SERIES 100 MATERIALS

Ref. no.	Description		Standard materials: Carbon steel to -20°F	STS construction to -325°F	Sour gas service to -20°F	Low-temp. to -50°F	Optional materials
11	Body		ASTM A105 (forged) carbon steel	ASTM A351 316/316L STS (cast) Gr. CF3M	ASTM A105 (forged) carbon steel per NACE MR0175 and/or MR0103	ASTM A350 (forged) carbon steel Gr. LF2 Cl. 1	ASTM A351 304/304L STS Gr. CF3 ASTM A182 Gr. F51 Duplex 2205 STS ASTM A494 Hastelloy B® Gr. N-12MV ASTM A352 carbon steel Gr. LCC ASTM A743 Alloy 20 Gr. CN7M ASTM B564 Monel® 400 N04400 ASTM A494 Hastelloy C® Gr. CW12MW ASTM A123 galvanized steel
12	Vessel tailpipe		ASTM A108 carbon steel AISI C1018	ASTM A276 316/316L STS	ASTM A108 carbon steel AISI C1018 per NACE MR0175 and/or MR0103	ASTM A350 carbon steel Gr. LF2 Cl. 1	ASTM A276 304/304L, Duplex 2205 STS ASTM B164 Monel® 400 ASTM B473 Alloy 20 (CARP 20Cb-3)® ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276 ASTM A123 galvanized steel
13	Vessel coupling nut		ASTM A108 carbon steel AISI C1018	Investment cast 316 STS		Investment cast 316 STS	
14	Ball retainer		ASTM A313 316 STS (spring wire)				None
15	TRIM	Ball	ASTM A493, A262 or A276 316 STS				ASTM B574 Hastelloy C® 276 Borosilicate glass ASTM B473 Alloy 20 (CARP 20Cb-3)® ASTM B164 Monel® 400 ASTM B335 Hastelloy B® CRS 304 STS ASTM A276 Duplex 2205 STS
17	TRIM	Stem	ASTM A582 416 STS or ASTM A276 410 STS	ASTM A276 316/316L STS	ASTM A276 316/316L STS per NACE MR0175 and/or MR0103	ASTM A582 416 STS or ASTM A276 410 STS	ASTM A276 316/316L STS ASTM A276 304/304L STS ASTM A276 Duplex 2205 STS ASTM B164 Monel® 400
18	TRIM	Stem packing retainer	MPIF SS-316N2-33 316 STS (sintered)				ASTM B473 Alloy 20 (CARP 20Cb-3)® ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276
19	Stem packing gland						
25	Stem packing		Graphite composite				Teflon® Viton®
26	Stem packing nut		ASTM A108 carbon steel AISI C1018	Investment cast 316/316L STS	ASTM A108 carbon steel AISI C1018	Investment cast 316/316L STS	ASTM A276 304/304L, Duplex 2205 STS ASTM B164 Monel® 400 ASTM B473 Alloy 20 (CARP 20Cb-3)® ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276 ASTM A123 galvanized steel
28	Handwheel		ASTM A216 Carbon steel Gr. WCB				None
30	Handwheel nut		ASTM A563 Steel Gr. A				None
120 Gagecock							
31	Gage tailpipe		ASTM A108 carbon steel AISI C1018	ASTM A276 316/316L STS	ASTM A108 carbon steel AISI C1018 per NACE MR0175 and/or MR0103	ASTM A350 carbon steel Gr. LF2 Cl. 1	ASTM A276 304/304L, Duplex 2205 STS ASTM B164 Monel® 400 ASTM B473 Alloy 20 (CARP 20Cb-3)® ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276 ASTM A123 galvanized steel
32	Gage coupling nut		ASTM A108 carbon steel AISI C1018	Investment cast 316 STS		Investment cast 316 STS	



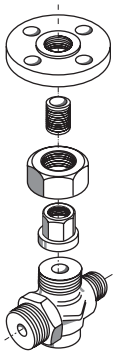
SERIES 200 - DIMENSIONS

		Dimension 'B' inches (cm)	
Connection	**Dimension 'A' inches (cm)**	**Standard**	**220 option / Side connect**
Union			
½" NPTF	3 3/16 (8.1)	2¾ (7.0)	-
½" NPTM	4⅜ (11.1)	3⅜ (8.6)	4 1/16 (10.3)
¾" NPTF	3 3/16 (8.1)	2¾ (7.0)	-
¾" NPTM	4½ (11.4)	3⅜ (8.6)	4 1/16 (10.3)
1" NPTM	4⅝ (11.7)	-	-
Rigid			
½" NPTF	-	1¼ (3.2)	-
¾" NPTF	-	1¼ (3.2)	-
Solid shank			
½" NPTM	4 (10.2)	-	-
¾" NPTM	4 (10.2)	-	-
1" NPTM	4 (10.2)	-	-
Socketweld			
½" Female union	-	2¾ (7.0)	-
½" Female rigid	-	1¼ (3.2)	-
½" Male union	4⅜ (11.1)	3⅜ (8.6)	4 1/16 (10.3)
¾" Female rigid	-	1¼ (3.2)	-
¾" Male union	4½ (11.4)	3⅜ (8.6)	4 1/16 (10.3)
1" Male union	4⅝ (11.7)	-	-
Spherical union			
½" NPTF	4 9/16 (11.6)	4⅛ (10.5)	-
½" NPTM	4 9/16 (11.6)	4⅛ (10.5)	-
¾" NPTM	4 9/16 (11.6)	4⅛ (10.5)	-

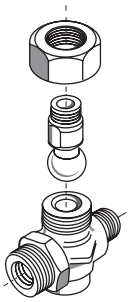
SERIES 200 - DIMENSIONS - FLANGED CONNECTION

	Dimension 'A' inches (cm)		Dimension 'B' inches (cm)	
Flanged connection	**RF Threaded**	**RF Slip on**	**RF Threaded**	**RF Slip on**
Union				
½" - 150# (F)	-	-	3 11/16 (9.4)	3 13/16 (9.7)
½" - 300# (F)	-	-	3 15/16 (10.0)	3 15/16 (10.0)
½" - 600# (F)	-	-	4 3/16 (10.6)	4 3/16 (10.6)
½" - 1500# (F)	-	-	4 13/16 (12.2)	4¾ (12.1)
½" - 150# (M)	4½ (11.4)	4⅝ (11.7)	3 11/16 (9.4)	3⅝ (9.2)
½" - 300# (M)	4½ (11.4)	4⅝ (11.7)	3¾ (9.5)	3¾ (9.5)
½" - 600# (M)	4¾ (12.1)	4⅝ (11.7)	4 1/16 (10.3)	4 1/16 (10.3)
½" - 1500# (M)	5 (12.7)	4⅝ (11.7)	4¾ (12.1)	4¾ (12.1)
¾" - 150# (F)	-	-	3 15/16 (10.0)	-
¾" - 300# (F)	-	-	4 3/16 (10.6)	-
¾" - 600# (F)	-	-	4 7/16 (11.3)	-
¾" - 1500# (F)	-	-	4 15/16 (12.5)	-
¾" - 150# (M)	4⅝ (11.7)	4¾ (12.1)	3¾ (9.5)	3¾ (9.5)
¾" - 300# (M)	4⅝ (11.7)	4¾ (12.1)	4⅛ (10.5)	4 1/16 (10.3)
¾" - 600# (M)	5 (12.7)	4¾ (12.1)	4⅜ (11.1)	4 5/16 (11.0)
¾" - 1500# (M)	5¼ (13.3)	4¾ (12.1)	4⅞ (12.4)	4⅞ (12.4)
Rigid				
¾" - 150# (F)	-	-	2 15/16 (7.5)	2⅞ (7.3)
¾" - 300# (F)	-	-	3 3/16 (8.1)	3 3/16 (8.1)
¾" - 600# (F)	-	-	3 7/16 (8.7)	3 7/16 (8.7)
¾" - 1500# (F)	-	-	4 1/16 (10.3)	4 (10.2)
Union				
1" - 150# (M)	4 11/16 (11.9)	4⅞ (12.4)	3¾ (9.5)	3¾ (9.5)
1" - 300# (M)	4 11/16 (11.9)	4⅞ (12.4)	4⅛ (10.5)	4 1/16 (10.3)
1" - 600# (M)	5 1/16 (12.9)	4⅞ (12.4)	4⅜ (11.1)	4 5/16 (11.0)
1" - 1500# (M)	5⅜ (13.7)	4⅞ (12.4)	-	-

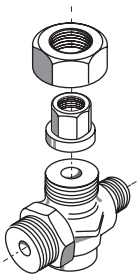
GAGE CONNECTIONS



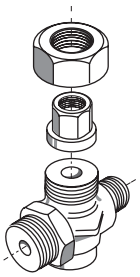
Flanged
220 Option



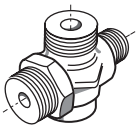
Spherical Union
220 Option



Union
220 Standard

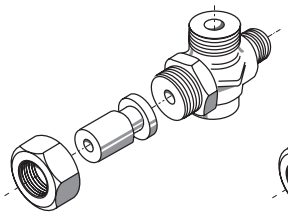


Socketweld
220 Option

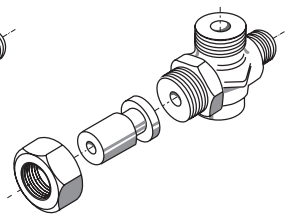


Rigid
230 Standard

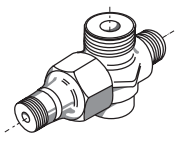
VESSEL CONNECTIONS



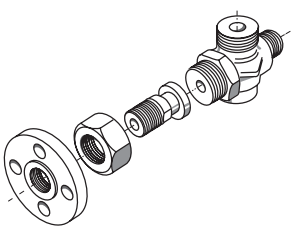
Socketweld
220/230 Option



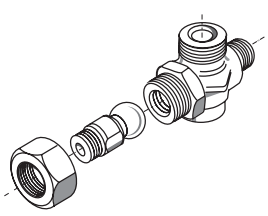
Union
220/230 Standard



Solid Shank
220/230 Option



Flanged
220/230 Option



Spherical Union
220/230 Option

SERIES 200 MATERIALS

Ref. no.	Description		Standard materials: Carbon steel to -20°F	STS construction to -325°F	Sour gas service to -20°F	Low-temp. to -50°F	Optional materials
11	Body		ASTM A105 (forged) carbon steel	ASTM A351 316/316L STS (cast) Gr. CF3M	ASTM A105 (forged) carbon steel per NACE MR0175 and/or MR0103	ASTM A350 (forged) carbon steel Gr. LF2 Cl. 1	ASTM A351 304/304L STS Gr. CF3 ASTM A182 Gr. F51 Duplex 2205 STS ASTM A494 Hastelloy B® Gr. N-12MV ASTM A352 carbon steel Gr. LCC ASTM A743 Alloy 20 Gr. CN7M ASTM B564 Monel® 400 N04400 ASTM A494 Hastelloy C® Gr. CW12MW ASTM A123 galvanized steel
12	Vessel tailpipe		ASTM A108 carbon steel AISI C1018	ASTM A276 316/316L STS	ASTM A108 carbon steel AISI C1018 per NACE MR0175 and/or MR0103	ASTM A350 carbon steel Gr. LF2 Cl. 1	ASTM A276 304/304L STS ASTM A276 Duplex 2205 STS ASTM B164 Monel® 400 ASTM B473 Alloy 20 (CARP 20Cb-3)®
13	Vessel coupling nut		ASTM A108 carbon steel AISI C1018	Investment cast 316 STS		Investment cast 316 STS	ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276 ASTM A123 Galvanized steel
14	Ball retainer		ASTM A313 316 STS (spring wire)				None
15		Ball	ASTM A493, A262 or A276 316 STS				ASTM B574 Hastelloy C® 276 Borosilicate glass ASTM B473 Alloy 20 (CARP 20Cb-3)® ASTM B164 Monel® 400 ASTM B335 Hastelloy B® CRS 304 STS ASTM A276 Duplex 2205 STS
16		Seat	ASTM A276 316/316L STS				
17		Stem	ASTM A582 416 STS or ASTM A276 410 STS	ASTM A276 316/316L STS	ASTM A276 316/316L STS per NACE MR0175 and/or MR0103	ASTM A582 416 STS or ASTM A276 410 STS	ASTM A276 316/316L STS ASTM A276 304/304L STS ASTM A276 Duplex 2205 STS ASTM B164 Monel® 400
18		Stem packing retainer	MPIF SS-316N2-33 316 STS (sintered)				ASTM B473 Alloy 20 (CARP 20Cb-3)® ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276
19	Stem packing gland						
20	Bonnet		ASTM A108 carbon steel AISI C1018	ASTM A276 316/316L STS	ASTM A108 carbon steel AISI C1018 per NACE MR0175 and/or MR0103	ASTM A350 Carbon steel Gr. LF2 Cl. 1	ASTM A276 304/304L STS ASTM A276 Duplex 2205 STS ASTM B164 Monel® 400 ASTM B473 Alloy 20 (CARP 20Cb-3)®
21	Bonnet nut		ASTM A108 carbon steel AISI C1018	Investment cast 316 STS	ASTM A108 carbon steel AISI C1018	Investment cast 316 STS	ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276 ASTM A123 galvanized steel
25	Stem packing		Graphite composite				Teflon® Viton®
26	Stem packing nut		ASTM A108 carbon steel AISI C1018	Investment cast 316/316L STS	ASTM A108 carbon steel AISI C1018	Investment cast 316/316L STS	ASTM A276 304/304L, Duplex 2205 STS ASTM B164 Monel® 400 ASTM B473 Alloy 20 (CARP 20Cb-3)® ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276 ASTM A123 galvanized steel
28	Handwheel		ASTM A216 Carbon steel Gr. WCB				None
30	Handwheel nut		ASTM A563 Steel Gr. A				None
220 Gagecock							
31	Gage tailpipe		ASTM A108 carbon steel AISI C1018	ASTM A276 316/316L STS	ASTM A108 carbon steel AISI C1018 per NACE MR0175 and/or MR0103	ASTM A350 carbon steel Gr. LF2 Cl. 1	ASTM A276 304/304L, Duplex 2205 STS ASTM B164 Monel® 400 ASTM B473 Alloy 20 (CARP 20Cb-3)®
32	Gage coupling nut		ASTM A108 carbon steel AISI C1018	Investment cast 316 STS		Investment cast 316 STS	ASTM B335 Hastelloy B® ASTM B574 Hastelloy C® 276 ASTM A123 galvanized steel

PENBERTHY SERIES 100 AND 200 STRAIGHT PATTERN FLAT GLASS GAGECOCKS
FEATURES

STANDARD/OPTIONAL FEATURES

		120		220		130		230	
Feature		**Std.**	**Opt.**	**Std.**	**Opt.**	**Std.**	**Opt.**	**Std.**	**Opt.**
Pattern									
Straight		X	-	X	-	X	-	X	-
Bonnet									
Integral		X	-	-	-	X	-	-	-
Union		-	-	X	-	-	-	X	-
Gage connection									
Union	½" NPTF	X	-	X	-	-	-	-	-
	½" NPTM	-	X	-	X	-	-	-	-
	¾" NPTF	-	X	-	X	-	-	-	-
	¾" NPTM	-	X	-	X	-	-	-	-
Rigid	½" NPTF	-	-	-	-	X	-	X	-
	¾" NPTF	-	-	-	-	-	X	-	X
Socketweld	½" Female	-	X	-	X	-	X	-	X
	½" Male	-	X	-	X	-	-	-	-
	¾" Male	-	X	-	X	-	-	-	-
	¾" Female	-	-	-	-	-	X	-	X
Flanged		-	X	-	X	-	X	-	X
Spherical union	½" NPTF	-	X	-	X	-	-	-	-
	½" NPTM	-	X	-	X	-	-	-	-
	¾" NPTM	-	X	-	X	-	-	-	-
Vessel connection									
Union	½" NPTF	-	X	-	X	-	X	-	X
	½" NPTM	-	X	-	X	-	X	-	X
	¾" NPTM	X	-	X	-	X	-	X	-
	1" NPTM (non floating)	-	X	-	X	-	X	-	X
Solid shank	½" NPTM	-	X	-	X	-	X	-	X
	¾" NPTM	-	X	-	X	-	X	-	X
	1" NPTM	-	X	-	X	-	X	-	X
Socketweld	½" Male	-	X	-	X	-	X	-	X
	¾" Male	-	X	-	X	-	X	-	X
	1" Male	-	X	-	X	-	X	-	X
Flanged		-	X	-	X	-	X	-	X
Spherical union	½" NPTF	-	X	-	X	-	X	-	X
	½" NPTM	-	X	-	X	-	X	-	X
	¾" NPTM	-	X	-	X	-	X	-	X
Vent/drain connection									
½" NPTF		X	-	X	-	X	-	X	-
¾" NPTF		-	X	-	X	-	X	-	X
Ball check shut-off									
Horizontal lower and upper gagecocks		X	-	X	-	X	-	X	-
Omitted*		-	X	-	X	-	X	-	X
Vacuum - horizontal upper and lower		-	X	-	X	-	X	-	X
Seat									
Integral		X	-	-	-	X	-	-	-
Threaded (renewable)		-	-	X	-	-	-	X	-
Backseating stem		-	-	-	X	-	-	-	X
Handwheel									
w/standard pitch threads		X	-	X	-	X	-	X	-
w/quick closing thread		-	X	-	X	-	X	-	X
Lever									
w/quick closing thread (¼ turn)		-	X	-	X	-	X	-	X

* Acceptable for ASME service

PENBERTHY SERIES 100 AND 200 STRAIGHT PATTERN FLAT GLASS GAGECOCKS

SELECTION GUIDE - PART 1

SELECTION GUIDE

Example:	120	C	C	X	E
Model					
120 Model 120					
121 Model 120 with gasketed vessel tailpipe					
122 Model 120 with gasketed gage tailpipe					
123 Model 120 with gasketed vessel and gage tailpipe					
130 Model 130					
131 Model 130 with gasketed vessel tailpipe					
220 Model 220					
221 Model 220 with gasketed vessel tailpipe					
222 Model 220 with gasketed gage tailpipe					
223 Model 220 with gasketed vessel and gage tailpipe					
230 Model 230					
231 Model 230 with gasketed vessel tailpipe					
Body material					
C Carbon steel (standard)					
S 316/316L Stainless					
L Low-temp carbon steel					
M Monel®					
A Alloy 20					
H Hastelloy C®					
D Duplex 2205					
F 304/304L Stainless					
I Incoloy 625					
N A105 N					
B A182 F9 body/flg/tip					
Trim material					
C 416 Stainless steel (standard)					
S 316/316L Stainless					
B 410 Stainless Steel					
M Monel®					
A Alloy 20					
H Hastelloy C®					
D Duplex 2205					
F 304/304L Stainless					
I Incoloy 625					
NACE MR-01-75 and/or MR-0103					
X None					
E Environmental					
Vessel connection size					
C ½"					
E ¾" (standard)					
F 1"					
G 1¼" (flange only)					
H 1½" (flange only)					
J 2" (flange only)					
K 2½" (flange only)					
L 3" (flange only)					

PART 2 - PAGE 12

A	X	C

PART 3 - PAGE 13

A	X	C	A

PART 4 - PAGE 14

C	A	G	S	S	XXXXX

PENBERTHY SERIES 100 AND 200 STRAIGHT PATTERN FLAT GLASS GAGECOCKS

SELECTION GUIDE - PART 2

PART 1 - PAGE 11

120	C	C	X	E

SELECTION GUIDE - PART 2

Example:	A	X	C

Vessel connection type

A	NPTM union (standard)
B	NPTF union
C	Socket weld male union
D	Socket weld female union
E	Spherical union NPTM
F	Spherical union NPTF
G	Spherical union SWM
H	Spherical union SWF
L	Welded solid shank NPTM
M	Welded solid shank SWM
N	Raised face SO flange
P	Flat face SO flange
R	RTJ SO flange
S	Raised face SW flange
T	Flat face SW flange
U	RTJ SW flange
V	Raised face WN flange
W	Flat face WN flange
Y	RTJ WN flange
Z	Spherical union RTJ SO flange
1	Spherical union RF SO flange
2	Spherical union RF WN flange
4	Spherical union RTJ WN flange
5	Welded SSV flanged
6	Raised face threaded flange
7	Wessel Tlp and Cplg nut omitted

Vessel connection pressure class (if flanged)

X	None
1	P CL 150
3	P CL 300
6	P CL 600
9	P CL 900
F	P CL 1500
T	P CL 2500

Gage connection size

X	None
C	½" (standard)
E	¾"
F	1" (flange only)
G	1¼" (flange only)
H	1½" (flange only)
J	2" (flange only)
K	2½" (flange only)
L	3" (flange only)

PART 3 - PAGE 13

A	X	C	A

PART 4 - PAGE 14

C	A	G	S	S	XXXXX

PENBERTHY SERIES 100 AND 200 STRAIGHT PATTERN FLAT GLASS GAGECOCKS

SELECTION GUIDE - PART 3

PART 1 - PAGE 11

120	C	C	X	E

PART 2 - PAGE 12

A	X	C

SELECTION GUIDE - PART 3

Example:	A	X	C	A
Gage connection type				
A NPTF union (standard on 12X or 22X model)				
D Socket weld female union				
G Spherical union NPTF				
H Spherical union NPTM				
J Spherical union SWF				
K Spherical union SWM				
Y NPTF rigid (standard on 13X or 23X model)				
Z SWF rigid				
L Raised face SO flange				
M Flat face SO flange				
N RTJ SO flange				
P Raised face SW flange				
R Flat face SW flange				
S RTJ SW flange				
T Raised face WN flange				
U Flat face WN flange				
V RTJ WN flange				
1 NPTM union flange				
B NPTM union 1 11/16 L				
C NPTM union 2 3/8 L				
E SWM union 1 11/16 L				
F SWM union 2 3/8 L				
2 Socket weld female Coupling				
5 Raised face treaded				
Gage connection pressure class (if flanged)				
X None				
1 P CL 150				
3 P CL 300				
6 P CL 600				
9 P CL 900				
F P CL 1500				
T P CL 2500				
Vent connection size				
X None				
C ½" (standard)				
E ¾"				
F 1" (flange only)				
G 1¼" (flange only)				
H 1½" (flange only)				
J 2" (flange only)				
K 2½" (flange only)				
L 3" (flange only)				
Vent connection type				
X None				
A NPTF (standard)				
B Socket weld female				
C Raised face SO flange				
D Flat face SO flange				
E RTJ SO flange				
F Raised face SW flange				
G Flat face SW flange				
H RTJ SW flange				
J Raised face WN flange				
K Flat face WN flange				
L RTJ WN flange				
M Socket weld plugged				
N Socket weld male				
P NPT plugged				

PART 4 - PAGE 14

C	A	G	S	S	XXXXX

PENBERTHY SERIES 100 AND 200 STRAIGHT PATTERN FLAT GLASS GAGECOCKS

SELECTION GUIDE - PART 4

PART 1 - PAGE 11

120	C	C	X	E

PART 2 - PAGE 12

A	X	C

PART 3 - PAGE 13

A	X	C	A

* Option code assigned at time of order

SELECTION GUIDE - PART 4

Example:		C	A	G	S	S	XXXXX
Drain connection size							
X	None						
C	½" (standard)						
E	¾"						
F	1" (flange only)						
G	1¼" (flange only)						
H	1½" (flange only)						
J	2" (flange only)						
K	2½" (flange only)						
L	3" (flange only)						
Drain connection type							
X	None						
A	NPTF (standard)						
B	Socket weld female						
C	Raised face SO flange						
D	Flat face SO flange						
E	RTJ SO flange						
F	Raised face SW flange						
G	Flat face SW flange						
H	RTJ SW flange						
J	Raised face WN flange						
K	Flat face WN flange						
L	RTJ WN flange						
M	Socket weld plugged						
N	Socket weld male						
P	NPT plugged						
Stem packing material							
G	Grafoil (standard)						
T	Teflon®						
V	Viton® A						
Stem operation							
S	Standard close w/handwheel (standard)						
A	Quick close w/lever						
B	Quick close w/handwheel						
C	Standard close, back seat w/handwheel (200 series only)						
D	Quick close, back seat w/lever (200 series only)						
E	Quick close, back seat w/handwheel (200 series only)						
F	Standard close w/lever						
Paint specification							
X	None						
S	Standard						
O	Offshore spec 2600 paint						
Options							
XXXXX	None						
*	Welded solid shank vessel						
*	Ball check shut off omitted (ASME)						
*	Vacuum service ball check vessel connection						

NOTES

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