

# PENBERTHY material specifications

For: 220 and 230 GAGECOCKS

Ref. No.	Description	STANDARD MATERIALS				Optional Materials
		Carbon Steel to -20°F	STS Construction to -325°F	Sour Gas Service to -20°F	Low-Temp. to -50°F	
11	Body	ASTM A105 (forged) Carbon Steel	ASTM A351 316/316L STS (cast) Gr. CF3M	ASTM A105 (forged) Carbon Steel per NACE MR0175 &/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 &/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 20 Cb3)®
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	T R I M	Ball	ASTM A493, A262 or A276 316 STS			ASTM B574 Hastelloy C® 276 Borosilicate Glass ASTM B473 Alloy 20 (CARP 20 Cb3)® 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 A582 416 STS or ASTM A276 410 STS	ASTM A276 316/316L STS per NACE MR0175 &/OR MR0103	ASTM A582 416 STS or ASTM A276 410 STS
18	Stem Packing Retainer	MPIF SS-316N2-33 316 STS (sintered)				ASTM B164 Monel® 400 ASTM B473 Alloy 20 (CARP 20 Cb3)® 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 &/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 20 Cb3)®
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 20 Cb3)® 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 &/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 20 Cb3)®
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