

External Chambers Sealed or Flanged Top



Technical
Reference
Manual

TABLE OF CONTENTS

Design Construction Comparison	2
Dimensional Information	
Head Flange Type	3
Probe Length	3
Physical Specifications	4
Model Number	4-5
Dimensional Specifications	
Slip-On Flanged Chamber Design - Commercial Construction	6
Slip-On Flanged Chamber Design - ANSI B31.3 Construction	7
Slip-On Flanged Chamber Design - ANSI B31.1 Construction	7
Weldneck Flanged Chamber Design - Commercial Construction	8
Weldneck Flanged Chamber Design - ANSI B31.3 Construction	9
Weldneck Flanged Chamber Design - ANSI B31.1 Construction	10-11
Sealed Chamber Design - Commercial Construction	12
Sealed Chamber Design - ANSI B31.3 Construction	13
Sealed Chamber Design - ANSI B31.1 Construction	14

DESIGN CONSTRUCTION COMPARISON

	Comm	B31.3	B31.1	NACE
ASME grade and NACE listed materials		•	•	•
Certificate of Conformance on materials		•	•	•
Slip-on head and process flanges ^①	•	≤1500# ^②	≤300#	•
Weld neck head and slip-on process flanges ^①		3" 1500#		
Weld neck head and process flanges		5000 psi	≥600#	
Pipe to pipe branch connections	≤600#			≤600#
Bonney type fittings	≥900#	•	•	≥900#
ASME Section IX welding procedures	•			
Welding by ASME qualified welders per ASME Section IX procedures		•	•	•
Full penetration chamber branch welds		•	•	
Full penetration circumferential welds		≥1500# ^③	≥600#	
100% visual inspection of circumferential welds for full penetration		≥1500# ^③	≥600#	
Hydrostatic test at 1.5 × rated pressure	•			•
Certified ten minute hydrostatic test at 1.5 × rated pressure		•	•	
Five percent radiographic examination of full penetration circumferential welds		•		
Post weld heat treatment				CS
Annealing, if required for hardness				SS
Hardness testing of welds and adjacent heat affected zones				•
Flanged or sealed chambers	•	•	•	•
Stress limits per design code		•	•	

① Unless weldneck process flanges are specified in model number

② Except 3" 1500# cage

③ Except 2" 1500# cage

DIMENSIONAL INFORMATION

HEAD FLANGE TYPE

Design Standard (third digit)	Chamber Rating (fifth digit)	Process Connection Type (seventh digit)							
		NPT (A, G)	Socket Weld (B, H)	Slip-on RF (D, K)	Weldneck RF (E, L)	Weldneck RTJ (F, M)			
Commercial (1, 5)	150# (A)	Slip-on raised face			Weldneck raised face				
	300# (B)								
	600# (C)								
	900# (D)								
	1500# (E)								
	5000 psi (F)								
ASME B31.3 (4, 7)	150# (A)	Weldneck raised face			Weldneck raised face				
	300# (B)								
	600# (C)								
	900# (D)								
	1500# (E)						*		
	5000 psi (F)						n/a		
ASME B31.1 (3)	150# (A)	Weldneck raised face			Weldneck raised face				
	300# (B)								
	600# (C)						Slip-on raised face		
	900# (D)								
	1500# (E)								n/a
	5000 psi (F)								

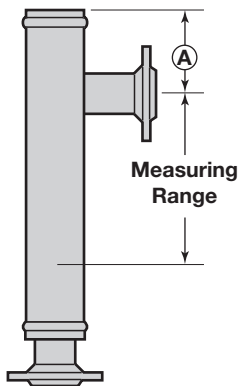
* 1500# ASME B31.3 will have a slip-on head flange on 2" cage and weldneck head flange on 3" cage

PROBE LENGTH

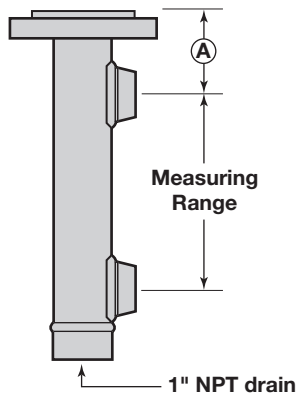
If utilizing a sealed top chamber, go to pages 13 & 14 for 'A' dimension.

To properly size your sensing element when mounting in a flange top chamber, it is necessary to determine the dimension from the face of the head flange to the centerline of the upper process connection. To determine this dimension:

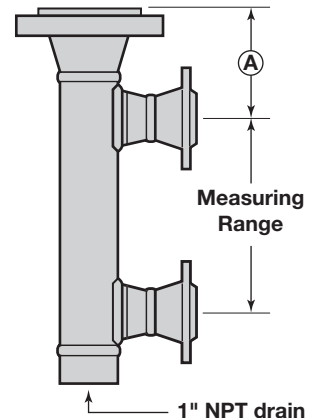
1. Use the third, fifth & seventh digits of your chamber model number and the above chart to verify the type of head flange on your chamber.
2. On pages 6–12, locate the 'A' dimension of your chamber according to the chamber pressure rating, head flange type, design standard, chamber size & process connection size.
3. Go to the formulas on page 4 for probe or cable lengths. Using your 'A' dimension and measuring range (customer designated), determine your required probe length.



Sealed Chamber



Slip-on head flange



Weldneck head flange

PHYSICAL SPECIFICATIONS

Measuring span length	From 12 to 240 inches (30-610 cm)
Eclipse probe length ①	
sealed cage	Measuring range ② + A + 5 inches (13 cm) (rounded down to nearest inch)
flanged cage	Measuring range ② + A + 6 inches (15 cm) (rounded down to nearest inch)
Kotron probe length ③	
sealed cage	Measuring range ② + A + 3 inches (7 cm) (rounded down to nearest inch)
flanged cage	Measuring range ② + A + 4 inches (10 cm) (rounded down to nearest inch)
Displacer cable length (min.) ④⑤	Measuring range ② + A + 6 inches (15 cm) (rounded up to nearest foot)
Materials of Construction	Carbon steel or 316 stainless steel (head flange bolting ASTM A193 GrB7 regardless of chamber material)
Sensor Connections	¾" or 2" NPT, 2" or 3" flange from 150# to 2500# ANSI ⑥
Process Connection Sizes	¾", 1", 1½" or 2"
Process Connection Ratings	150#, 300#, 600#, 900#, 1500# or 2500# ANSI ⑥
Process Connection Types	threaded, socketweld, slip-on RF flanges, weldneck RF flanges, weldneck RTJ flanges
Connection Configurations	Side-side, side-bottom
Process Pressures	Up to 5000 psi (345 bar)
Process Temperatures	Up to +750° F (+399° C)

- ① See bulletin 57-101 for Eclipse transmitter and probe part numbers.
- ② Measuring range is last three digits of chamber model number.
- ③ See bulletin 50-125 for Kotron probe part numbers.
- ④ See bulletin 45-115 for top mounted displacer switch part numbers and allowable high level dimension with respect to face of mounting flange.
- ⑤ Must be used in 3" flanged cage.
- ⑥ Maximum pressure rating of cage with 2500# flanges is 5000 psi @ 100° F (345 bar @ 38° C).

MODEL NUMBER

MOUNTING

S	Sealed external chamber (NPT sensor connection)
F	Flanged top external chamber

NOMINAL CHAMBER DIAMETER

2	2 inch ⑦ If sealed chamber, ¾" NPT sensor connection	If flanged chamber, flanged sensor connection same size as chamber
3	3 inch If sealed chamber, 2" NPT sensor connection	If flanged chamber, flanged sensor connection same size as chamber

⑦ Displacer switches require 3" cage.

DESIGN STANDARD

1	Commercial Construction
3	ASME B31.1 Certified ⑧⑨
4	ASME B31.3 Certified ⑧
5	Commercial Construction and NACE certified ⑧
7	ASME B31.3 Certified and NACE certified ⑧

⑧ Level switch/transmitter must also be specified to required code, if applicable.

⑨ ASME B31.1, 5000 psi chambers not available in carbon steel.



MODEL NUMBER CONTINUED

MATERIALS OF CONSTRUCTION ⑩

1	Carbon Steel, measuring range in inches ⑨
4	316/316L Stainless Steel, measuring range in inches

⑩ Process connection materials will match chamber materials

CHAMBER RATING ⑪

A	150# ANSI class
B	300# ANSI class
C	600# ANSI class
D	900# ANSI class
E	1500# ANSI class
F	5000 psi (process flanges will be 2500# ANSI)

⑪ Process flange, if applicable, will match chamber rating, except as indicated

PROCESS CONNECTION SIZE

1	3/4"
2	1"
3	1 1/2"
4	2"

PROCESS CONNECTION TYPE AND CONFIGURATION ⑫

Side/Side Configurations		Head Flange Type
A	NPT	Slip-on or weldneck ⑬
B	SW	
D	Slip-on RF Flange ⑭	
E	Weldneck RF Flange Chamber rating codes A, B & C only	Weldneck
F	Weldneck RJ Flange Chamber rating codes C, D, E & F only	
Side/Bottom Configurations		
G	NPT	Slip-on or weldneck ⑬
H	SW	
K	Slip-on RF Flange ⑭	
L	Weldneck RF Flange Chamber rating codes A, B & C only	Weldneck
M	Weldneck RJ Flange Chamber rating codes C, D, E & F only	

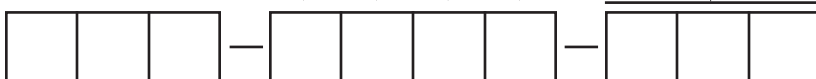
⑫ Process connection materials will match chamber materials

⑬ See page 3 to determine type of head flange

⑭ Cannot use slip-on flanges on 2" or 3", 5000 psi for B31.3, nor on 2" or 3", ≥600# for B31.1

MEASURING RANGE

12 to 240 inches
Example: 12 inches = 012



DIMENSIONAL SPECIFICATIONS

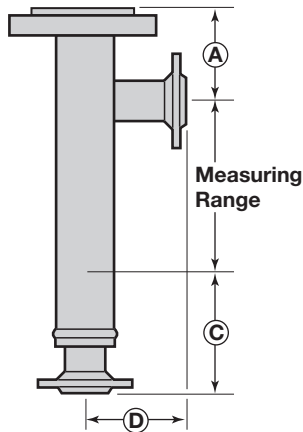
SLIP-ON FLANGED CHAMBER DESIGN

COMMERCIAL CONSTRUCTION, 2" CHAMBER (Models F21 and F25)

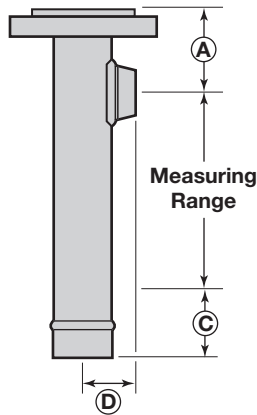
Process Connection	Conn. Size	A						B	C	D						
		150#	300#	600#	900#	1500#	5000 psi	All	All	150#	300#	600#	900#	1500#	5000 psi	
NPT	¾"	6.00				6.50	8.50	7.32	7.32	2.03			2.31		2.31	
	1"															2.18
	1½"							2.22			2.63					
	2"												5.26			5.26
SW	¾"	6.00				6.50	8.50	7.32	7.32	2.31			2.31		2.31	
	1"															2.28
	1½"							2.10			2.63					
	2"												5.07			5.07
Slip-on Flg	¾"	6.00				6.50	8.50	7.32	9.75	5.87		5.87		7.25		7.87
	1"															
	1½"							6.12			6.50					
	2"												6.00			7.00

COMMERCIAL CONSTRUCTION, 3" CHAMBER (Models F31 and F35)

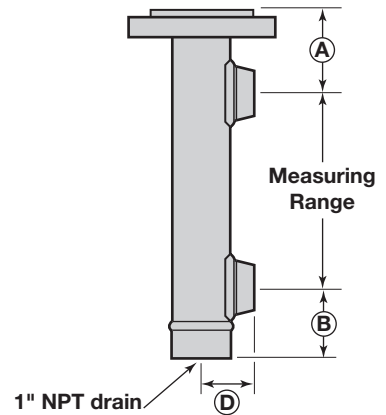
Process Connection	Conn. Size	A						B	C	D						
		150#	300#	600#	900#	1500#	5000 psi	All	All	150#	300#	600#	900#	1500#	5000 psi	
NPT	¾"	6.00				6.50	8.50	7.32	7.50	2.69			2.87		2.87	
	1"															2.87
	1½"									2.94			3.19			
	2"														2.88	
SW	¾"	6.00				6.50	8.50	7.32	7.50	2.97			2.87		2.87	
	1"															3.00
	1½"									3.00			3.19			
	2"														3.10	
Slip-on Flg	¾"	6.00				6.50	8.50	7.32	9.75	6.75		6.25		6.75		8.00
	1"															
	1½"									7.00			6.75			
	2"														7.13	



Slip-on flanged chamber with side/bottom flanged connections



Slip-on flanged chamber with side/bottom NPT or SW connections



Slip-on flanged chamber with side/side connections

DIMENSIONAL SPECIFICATIONS

SLIP-ON FLANGED CHAMBER DESIGN

ANSI B31.3 CONSTRUCTION, 2" CHAMBERS (150 thru 1500# only - Models F24 and F27)

Process Connection	Conn. Size	A					B	C	D						
		150#	300#	600#	900#	1500#			All	All	150#	300#	600#	900#	1500#
NPT	¾"	6.00					6.50	8.00	8.00	2.31					2.69
	1"							8.00	8.00	2.56					2.81
	1½"	6.00					6.50	8.18	9.50	2.63					2.94
	2"							8.18	9.50	5.26					5.26
SW	¾"	6.00					6.50	8.00	8.00	2.31					2.69
	1"							8.00	8.00	2.56					2.81
	1½"	6.00					6.50	8.18	8.12	2.63					2.94
	2"							8.18	8.12	5.07					5.07
Slip-on Flg	¾"	6.00					6.50	8.00	10.50	5.00	5.25		5.75		
	1"							8.00	10.50						
	1½"	6.00					6.50	8.18	7.00	5.00		5.25		5.75	
	2"							8.18	7.00						

ANSI B31.3 CONSTRUCTION, 3" CHAMBERS (150 thru 900# only - Models F34 and F37)

Process Connection	Conn. Size	A				B	C	D				
		150#	300#	600#	900#			All	All	150#	300#	600#
NPT/SW	¾"	6.00				8.00	8.18	2.87				
	1"							3.12				
	1½"	6.00				8.00	8.18	3.19				
	2"							3.31				
Slip-on Flg	¾"	6.00				8.00	10.50	5.50	6.00		6.25	
	1"											
	1½"	6.00				8.00	10.50	5.50	6.00		6.25	
	2"											

ANSI B31.1 CONSTRUCTION, 2" CHAMBERS (150 and 300# only - Model F23)

Process Connection	Conn. Size	A	B	C	D	
		All	All	All	150#	300#
NPT	¾"	6.00	8.00	8.00	2.31	
	1"				2.56	
	1½"	6.00	8.18	9.50	2.63	
	2"				5.26	
SW	¾"	6.00	8.00	8.00	2.31	
	1"				2.56	
	1½"	6.00	8.18	8.12	2.63	
	2"				5.07	
Slip-on Flg	¾"	6.00	8.00	10.50	5.00	5.25
	1"					
	1½"	6.00	8.18	7.00	5.00	
	2"				5.00	

ANSI B31.1 CONSTRUCTION, 3" CHAMBERS (150 and 300# only - Model F33)

Process Connection	Conn. Size	A	B	C	D	
		All	All	All	150#	300#
NPT	¾"	6.00	8.00	8.00	2.87	
	1"				3.12	
	1½"	6.00	8.00	8.00	3.19	
	2"				3.31	
SW	¾"	6.00	8.00	8.00	2.87	
	1"				3.12	
	1½"	6.00	8.00	8.00	3.19	
	2"				3.31	
Slip-on Flg	¾"	6.00	8.00	10.50	5.50	6.00
	1"					
	1½"	6.00	8.00	10.50	5.50	
	2"				5.50	

DIMENSIONAL SPECIFICATIONS

WELDNECK FLANGED CHAMBER DESIGN

COMMERCIAL CONSTRUCTION, 2" CHAMBER (Models F21 and F25)

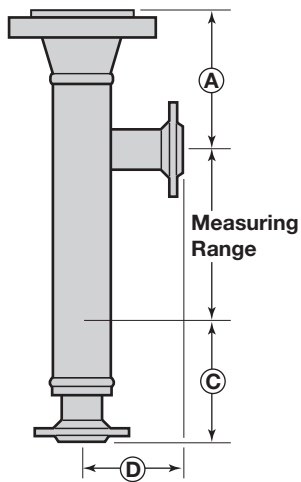
Process Connection	Conn. Size	A						B					
		150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi
Weldneck Flg	¾"	6.00				6.50	8.50	7.32					
	1"	6.00				6.50	8.50	7.32					
	1½"	7.50				6.50	6.50	9.50	7.50			8.50	7.50
	2"	7.50				6.50	6.50	9.50	7.50			8.50	7.50

Process Connection	Conn. Size	C						D					
		150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi
Weldneck Flg	¾"	12.50		13.00		13.50		5.69	5.88	5.88	4.94		5.31
	1"	12.50		13.00		13.50		5.75	6.00	6.00	5.25		6.31
	1½"	12.50		13.00		13.50		5.81	6.06	6.12	5.81		7.69
	2"	9.18		9.56	10.68		11.68		5.06	5.31	5.44	6.56	

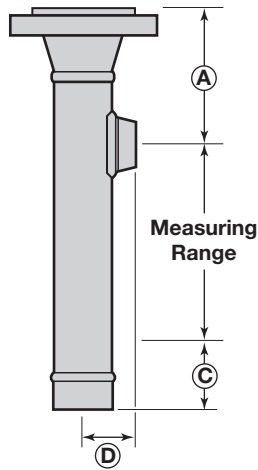
COMMERCIAL CONSTRUCTION, 3" CHAMBER (Models F31 and F35)

Process Connection	Conn. Size	A						B					
		150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi
Weldneck Flg	¾"	6.00				6.50	8.50	7.32					
	1"	6.00				6.50	8.50	7.32					
	1½"	6.00				6.50	8.50	7.32					
	2"	6.00		7.00		7.50	9.50	7.32					

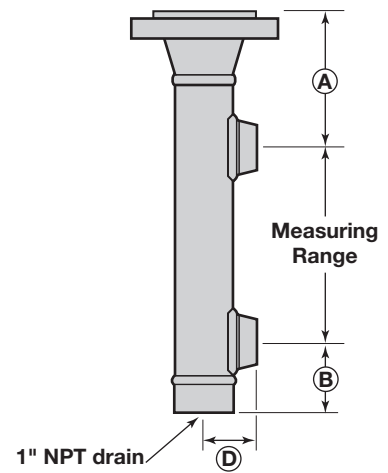
Process Connection	Conn. Size	C						D					
		150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi
Weldneck Flg	¾"	12.50		13.00		13.50		6.56	6.75	6.75	5.50		5.87
	1"	12.50		13.00		13.50		6.56	6.81	6.81	5.81		6.87
	1½"	12.50		13.00		13.50		6.69	6.94	7.00	6.37		8.25
	2"	12.50		13.00		13.50		6.76	7.01	7.14	7.37		9.05



Weldneck flanged chamber with side/bottom flanged connections



Weldneck flanged chamber with side/bottom NPT or SW connections



Weldneck flanged chamber with side/side connections

DIMENSIONAL SPECIFICATIONS

WELDNECK FLANGED CHAMBER DESIGN

ASME B31.3 CONSTRUCTION, 2" CHAMBER (Models F24 and F27)

Process Connection	Conn. Size	A						B							
		150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi		
NPT	¾"	n/a						8.50	n/a						8.00
	1"							9.50							8.18
SW	¾"	n/a						8.50	n/a						8.00
	1"							9.50							8.18
Weldneck Flg	¾"	6.00			6.50		8.50	8.00						8.00	
	1"	7.50			6.50		6.50	8.18						8.18	

Process Connection	Conn. Size	C						D							
		150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi		
NPT	¾"	n/a						8.00	n/a						2.69
	1"							8.50							2.81
SW	¾"	n/a						8.00	n/a						2.94
	1"							7.12							5.26
Weldneck Flg (cs/ss)	¾"	12.50		13.00	13.50		14.50	4.25	4.44	4.44	4.94	5.31/4.94	5.68		
	1"							4.56	4.81	4.81	5.25	5.69/5.25	6.31		
	1½"	9.18		9.56	10.68		11.68	5.00	5.25	5.31	5.81	6.56	7.69		
	2"							5.06	5.31	5.44	6.56	6.56	7.56		

ASME B31.3 CONSTRUCTION, 3" CHAMBER (Models F34 and F37)

Process Connection	Conn. Size	A						B									
		150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi				
NPT/SW	¾"	n/a						6.50	n/a						n/a	8.00	
	1"							7.50									9.50
Slip-on Flg	¾"	n/a						6.50	n/a						8.00	n/a	
	1"							7.50									n/a
Weldneck Flg	¾"	6.00						6.50	8.00								
	1"							7.50									9.50
	1½"																
	2"																

Process Connection	Conn. Size	C						D								
		150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi			
NPT/SW	¾"	n/a						8.00	n/a						2.87	3.25
	1"														3.12	3.37
	1½"														3.50	3.50
	2"														3.87	3.87
Slip-on Flg	¾"	n/a						10.50	n/a						6.75	n/a
	1"															
Weldneck Flg (cs/ss)	¾"	12.50		13.00	13.50		14.50	4.81	5.00	5.00	5.50	5.87/5.50	6.24			
	1"							5.12	5.37	4.37	5.81	6.25/5.88	6.87			
	1½"							5.56	5.81	5.87	6.37	7.12	8.25			
	2"							5.87	6.12	6.25	8.05/7.37	8.05	9.05			

DIMENSIONAL SPECIFICATIONS

WELDNECK FLANGED CHAMBER DESIGN

ASME B31.1 CONSTRUCTION, 2" CHAMBER (Model F23)

Process Connection	Conn. Size	A						B					
		150#	300#	600#	900#	1500#	5000 psi ①	150#	300#	600#	900#	1500#	5000 psi ①
NPT (cs/ss)	¾"	n/a	6.00		6.50	8.50	n/a	8.00					
	1"		7.50	6.50				8.18					
	1½"		6.00		6.50	8.50		8.00					
2"	7.50	6.50	8.18										
SW (cs/ss)	¾"	n/a	6.00		6.50	8.50	n/a	8.00					
	1"		7.50	6.50				8.18					
	1½"		6.00		6.50	8.50		8.00					
2"	6.00/7.50	7.50	6.50	6.50			9.50	8.18					

Process Connection	Conn. Size	C						D							
		150#	300#	600#	900#	1500#	5000 psi ①	150#	300#	600#	900#	1500#	5000 psi ①		
NPT (cs/ss)	¾"	n/a	8.00		8.00	8.00	n/a	2.31		2.69/2.31		2.69			
	1"		8.00					2.56		2.81/2.56		2.81			
	1½"		9.50		8.50			2.63		2.94		2.94			
SW (cs/ss)	¾"	n/a	8.00		8.00	8.00	n/a	2.31		2.69/2.31		2.69			
	1"		8.00					2.56		2.81/2.56		2.81			
	1½"		8.12		7.12			2.63		2.94		2.94			
Weldneck Flg (cs/ss)	¾"	12.50	13.00	13.50		14.50	4.25	4.44	4.44	4.94	5.31/4.94		5.68		
	1"		9.18		9.56	10.68		11.68	4.56	4.81	4.81	5.25	5.69/5.25		6.31
	1½"		9.18		9.56	10.68		11.68	5.00	5.25	5.31	5.81	6.56		7.69
	2"	9.18		9.56	10.68		11.68	5.06	5.31	5.44	6.56	6.56		7.56	

① Available in stainless steel construction only.

DIMENSIONAL SPECIFICATIONS

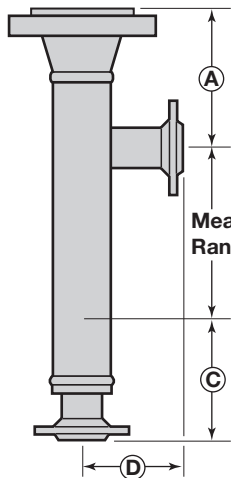
WELDNECK FLANGED CHAMBER DESIGN

ASME B31.1 CONSTRUCTION, 3" CHAMBER (Model F33)

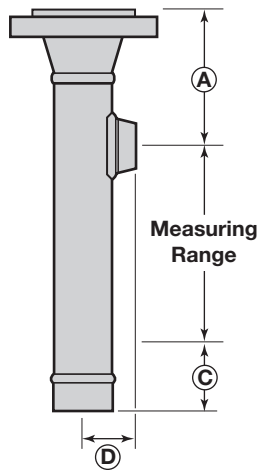
Process Connection	Conn. Size	A						B					
		150#	300#	600#	900#	1500#	5000 psi ①	150#	300#	600#	900#	1500#	5000 psi ①
NPT	¾"	n/a		6.00		6.50	8.50	n/a				8.00	
	1"			7.00		7.50	9.50						
SW	¾"	n/a		6.00		6.50	8.50	n/a				8.00	
	1"			7.00		7.50	9.50						
Weldneck Flg	¾"	6.00		6.00		6.50	8.50					8.00	
	1"			7.00		7.50	9.50						

Process Connection	Conn. Size	C						D						
		150#	300#	600#	900#	1500#	5000 psi ①	150#	300#	600#	900#	1500#	5000 psi ①	
NPT	¾"	n/a		8.00			n/a	n/a		2.87	2.87	3.25		
	1"									3.12	3.12	3.37		
	1½"									3.19	3.19	3.50		
	2"									3.31	3.31	3.87		
SW	¾"	n/a		8.00			n/a	n/a		2.87	2.87	3.25		
	1"									3.12	3.12	3.37		
	1½"									3.19	3.19	3.50		
	2"									3.31	3.87	3.87		
Weldneck Flg (cs/ss)	¾"	12.50	13.00	13.50		14.50			4.81	5.00	5.00	5.50	5.87/5.50	6.24
	1"								5.12	5.37	5.37	5.81	6.25/5.88	6.87
	1½"								5.56	5.81	5.87	6.37	7.12	8.25
	2"								5.87	6.12	6.25	8.05/7.37	8.05	9.05

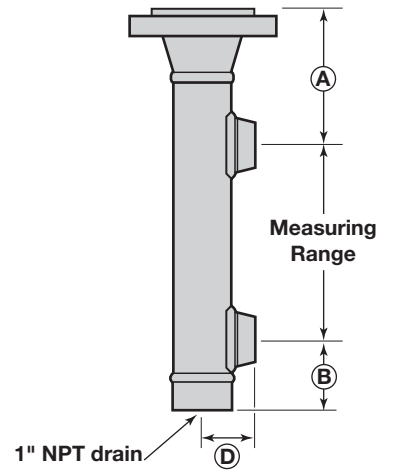
① Available in stainless steel construction only.



Weldneck flanged chamber with side/bottom flanged connections



Weldneck flanged chamber with side/bottom NPT or SW connections



Weldneck flanged chamber with side/side connections

DIMENSIONAL SPECIFICATIONS

SEALED CHAMBER DESIGN

COMMERCIAL CONSTRUCTION, 2" CHAMBER (Models S21 and S25)

Process Connection	Conn. Size	A	B	C						D					
		All	All	150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi
NPT	¾"	7.00	7.50	7.50						2.03		2.31		2.31	
	1"			7.50						2.18		2.56		2.81	
	1½"	7.00	7.50	7.50						2.22		2.63		2.94	
	2"			9.50						5.26		5.26		5.26	
SW	¾"	7.00	7.50	7.50						2.31		2.31		2.31	
	1"			7.50						2.28		2.56		2.81	
	1½"	7.00	7.50	7.50						2.10		2.63		2.94	
	2"			8.12						5.07		5.07		5.07	
Slip-on Flg	¾"	7.00	7.50	9.93						5.88		5.88		7.25	
	1"			9.93						6.00		6.00		7.37	
	1½"	7.00	7.50	9.93						6.12		6.50		8.00	
	2"			7.00						6.00		7.00		8.50	
Weldneck Flg	¾"	7.00	7.50	12.68		13.18		13.68		5.69	5.88	5.88	4.94		5.31
	1"			12.68		13.18		13.68		5.75	6.00	6.00	5.25		6.31
	1½"	7.00	7.50	12.68		13.18		13.68		5.81	6.06	6.12	5.81		7.69
	2"			9.18	9.43	9.56	10.68		11.68	5.06	5.31	5.44	6.56		7.56

COMMERCIAL CONSTRUCTION, 3" CHAMBER (Models S31 and S35)

Process Connection	Conn. Size	A	B	C						D					
		All	All	150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi
NPT	¾"	7.00	7.50	7.50						2.69		2.87		2.87	
	1"			7.50						2.87		3.12		3.37	
	1½"	7.00	7.50	7.50						2.94		3.19		3.50	
	2"			7.50						2.88		3.31		3.87	
SW	¾"	7.00	7.50	7.50						2.97		2.87		2.87	
	1"			7.50						3.00		3.12		3.37	
	1½"	7.00	7.50	7.50						3.00		3.19		3.50	
	2"			7.50						3.10		3.87		3.87	
Slip-on Flg	¾"	7.00	7.50	9.93						6.75		6.25		8.00	
	1"			9.93						6.81		6.75			
	1½"	7.00	7.50	9.93						7.00		6.75		8.00	
	2"			9.93						7.13		6.75		8.00	
Weldneck Flg	¾"	7.00	7.50	12.68		13.18		13.68		6.56	6.75	6.75	5.50		5.87
	1"			12.68		13.18		13.68		6.56	6.81	6.81	5.81		6.87
	1½"	7.00	7.50	12.68		13.18		13.68		6.69	6.94	7.00	6.37		8.25
	2"			9.18	9.43	9.56	10.68		11.68	6.75	7.00	7.13	7.37		9.05

DIMENSIONAL SPECIFICATIONS

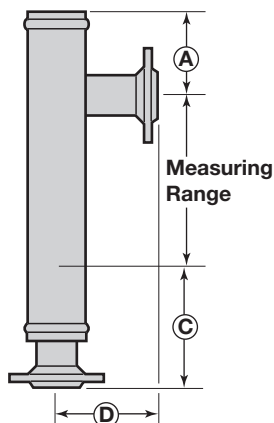
SEALED CHAMBER DESIGN

ASME B31.3 CONSTRUCTION, 2" CHAMBER (Models S24 and S27)

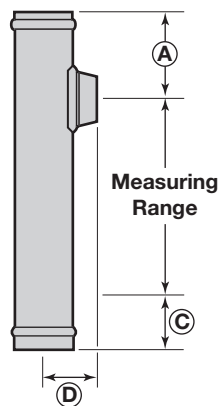
Process Connection	Conn. Size	A	B	C						D					
		All	All	150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi
NPT	¾"	7.68	8.18	8.18						2.31			2.69		
	1"									2.56			2.81		
	1½"			2.63			2.94								
	2"			9.50						5.26			5.26		
SW	¾"	7.68	8.18	8.18						2.31			2.69		
	1"									2.56			2.81		
	1½"			2.63			2.94								
	2"			9.50						5.07			5.07		
Slip-on Flg	¾"	7.68	8.18	9.93				n/a	5.00	5.25		5.75		n/a	
	1"			7.00											
	1½"														
2"															
Weldneck Flg (cs/ss)	¾"	7.68	8.18	12.68		13.18		13.68	14.68	4.25	4.44	4.44	4.94	5.31/4.94	5.68
	1"									4.56	4.81	4.81	5.25	5.69/5.25	6.31
	1½"			5.00	5.25	5.31	5.81	6.56	7.69						
	2"			9.18	9.43	9.56	10.68		11.68	5.06	5.31	5.44	6.56	6.56	7.56

ASME B31.3 CONSTRUCTION, 3" CHAMBER (Models S34 and S37)

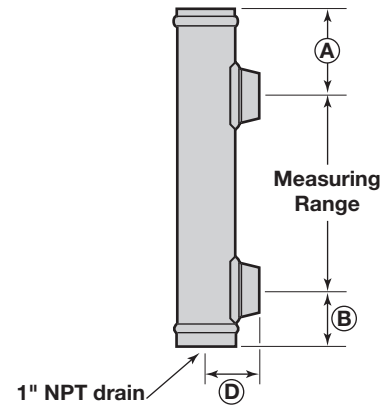
Process Connection	Conn. Size	A	B	C						D							
		All	All	150#	300#	600#	900#	1500#	5000 psi	150#	300#	600#	900#	1500#	5000 psi		
NPT	¾"	7.68	8.18	8.18						2.87			2.87	2.87			
	1"									3.12			3.37				
	1½"			3.19			3.50										
	2"			9.50						3.31			3.87				
SW	¾"	7.68	8.18	8.18						2.87			2.87	2.87			
	1"									3.12			3.37				
	1½"			3.19			3.50										
	2"			9.50						3.31			3.87				
Slip-on Flg	¾"	7.68	8.18	10.68				n/a	5.50	6.00		6.25	6.75	n/a			
	1"																
	1½"																
2"																	
Weldneck Flg (cs/ss)	¾"	7.68	8.18	12.68		13.18		13.68		14.68		4.81	5.00	5.00	5.50	5.87/5.50	6.24
	1"											5.12	5.37	5.37	5.81	6.25/5.88	6.87
	1½"			5.56	5.81	5.87	6.37	7.12	8.25								
	2"			5.87	6.12	6.25	8.05/7.37	8.05	9.05								



Sealed chamber with side/bottom flanged connections



Sealed chamber with side/bottom NPT or SW connections



Sealed chamber with side/side connections

DIMENSIONAL SPECIFICATIONS

SEALED CHAMBER DESIGN

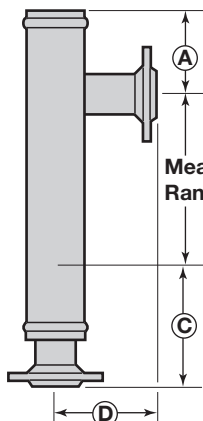
ASME B31.1 CONSTRUCTION, 2" CHAMBER (Model S23)

Process Connection	Conn. Size	A	B	C						D						
		All	All	150#	300#	600#	900#	1500#	5000 psi ①	150#	300#	600#	900#	1500#	5000 psi ①	
NPT (cs/ss)	¾"	7.68	8.18	8.18						2.31			2.69/2.31	2.69		
	1"									2.56			2.81/2.56		2.81	
	1½"			2.63			2.94		2.94							
	2"			9.50			5.26			5.26						
SW (cs/ss)	¾"	7.68	8.18	8.18						2.31			2.69/2.31	2.69		
	1"									2.56			2.81/2.56		2.81	
	1½"			2.63			2.94		2.94							
	2"			5.07			5.07			5.07						
Slip-on Flg	¾"	7.68	8.18	9.93		n/a				5.00	5.25	n/a				
	1"			7.00												
	1½"			7.00		n/a				n/a						
Weldneck Flg (cs/ss)	¾"	7.68	8.18	12.68		13.18		13.68		4.25	4.44	4.44	4.94	5.31/4.94		5.68
	1"									4.56	4.81	4.81	5.25	5.69/5.25		6.31
	1½"			5.00	5.25	5.31	5.81	6.56		7.69						
	2"			9.18	9.43	9.56	10.68		5.06	5.31	5.44	6.56	6.56		7.56	

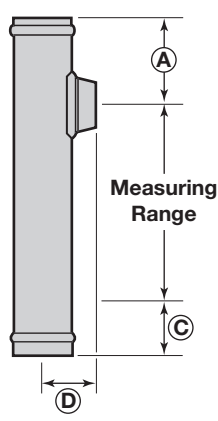
ASME B31.1 CONSTRUCTION, 3" CHAMBER (Model S33)

Process Connection	Conn. Size	A	B	C						D								
		All	All	150#	300#	600#	900#	1500#	5000 psi ①	150#	300#	600#	900#	1500#	5000 psi ①			
NPT (cs/ss)	¾"	7.68	8.18	8.18						2.87			2.87	3.25/2.87	3.25			
	1"									3.12			3.37/3.12		3.37			
	1½"			3.19			3.50		3.50									
	2"			3.31			3.31			3.87		3.87						
SW (cs/ss)	¾"	7.68	8.18	8.18						2.87			2.87	3.25/2.87	3.25			
	1"									3.12			3.37/3.12		3.37			
	1½"			3.19			3.50		3.50									
	2"			3.31			3.87/3.31			3.87		3.87						
Slip-on Flg	¾"	7.68	8.18	10.68		n/a				5.50	6.00	n/a						
	1"															10.68		n/a
	1½"			10.68		n/a				n/a								
Weldneck Flg (cs/ss)	¾"	7.68	8.18	12.68		13.18		13.68		14.68		4.81	5.00	5.00	5.50	5.87/5.50		6.24
	1"											5.12	5.37	5.37	5.81	6.25/5.88		6.87
	1½"			5.56	5.81	5.87	6.37	7.12		8.25								
	2"			5.87	6.12	6.25	8.05/7.37		8.05		9.05							

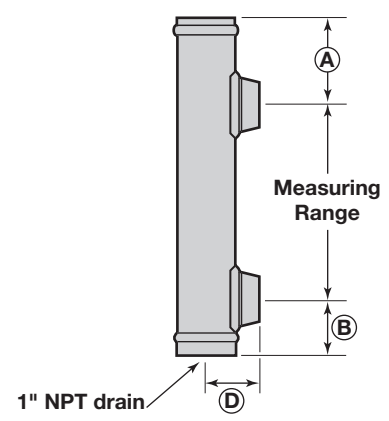
① Available in stainless steel construction only.



Sealed chamber with side/bottom flanged connections



Sealed chamber with side/bottom NPT or SW connections



Sealed chamber with side/side connections

Warranty

All Magnetrol mechanical level equipment is warranted free of defects in materials or workmanship for five full years from the date of original factory shipment.

If returned within the warranty period; and, upon factory inspection of the equipment, the cause of the claim is determined to be covered under the warranty; then, Magnetrol will repair or replace the equipment at no cost to the purchaser (or owner) other than transportation.

Magnetrol shall not be liable for misapplication, labor claims, direct or consequential damage or expense arising from the installation or use of equipment. There are no other warranties expressed or implied, except special written warranties covering some Magnetrol products.

Service Policy

Owners of Magnetrol controls may request the return of a control or any part of a control for complete rebuilding or replacement. They will be rebuilt or replaced promptly. Controls returned under our service policy must be returned by Prepaid transportation. Magnetrol will repair or replace the control at no cost to the purchaser (or owner) other than transportation if:

1. Returned within the warranty period; and
2. The factory inspection finds the cause of the claim to be covered under the warranty.

If the trouble is the result of conditions beyond our control; or, is NOT covered by the warranty, there will be charges for labor and the parts required to rebuild or replace the equipment.

In some cases it may be expedient to ship replacement parts; or, in extreme cases a complete new control, to replace the original equipment before it is returned. If this is desired, notify the factory of both the model and serial numbers of the control to be replaced. In such cases, credit for the materials returned will be determined on the basis of the applicability of our warranty.

No claims for misapplication, labor, direct or consequential damage will be allowed.

Low Voltage Directive

For use in Category II installations. If equipment is used in a manner not specified by manufacturer, protection provided by equipment may be impaired.

Quality Assurance

The quality assurance system in place at Magnetrol guarantees the highest level of quality throughout the company. Magnetrol is committed to providing full customer satisfaction both in quality products and quality service.



Magnetrol's quality assurance system is registered to ISO 9001 affirming its commitment to known international quality standards providing the strongest assurance of product/service quality available.

Return Material Procedure

So that we may efficiently process any materials that are returned, it is essential that a "Return Material Authorization" (RMA) number be obtained from the factory, prior to the material's return. This is available through Magnetrol's local representative or by contacting the factory. Please supply the following information:

1. Company Name
2. Description of Material
3. Serial Number
4. Reason for Return
5. Application

Any unit that was used in a process must be properly cleaned in accordance with OSHA standards, before it is returned to the factory.

A Material Safety Data Sheet (MSDS) must accompany material that was used in any media.

All shipments returned to the factory must be by prepaid transportation.

All replacements will be shipped F.O.B. factory.

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