

General Specifications

Combination Wafer and/or Extended Flange Connections

Direct Mount H.P side / Capillary Mount L.H side

Specification**Type CL****Application**

Flange type diaphragm seals are commonly used in applications which involve processing of Chemical, Petroleum, Slurry and Pulp and Paper, Food, Beverage and Pharmaceutical products.

Configuration

Differential pressure only. The high pressure side has the diaphragm seal direct mounted to the transmitter and a compensation capillary is added for zero stability. The low pressure side has the diaphragm seal connected to the transmitter via capillary. A Low Volume cover flanges must be fitted to all DP transmitters to reduce fill quantities and therefore reduce errors induced by ambient temperature change.

Process Connection

ASME RF, FF, RTJ, Large Tongue, Large Groove. DIN, Table & JIS

Process Connection Size

DN50 (2"), DN80 (3") & DN100 (4")

Seal Construction

Flange machined from Forged Billet or Plate. Welded or Bonded Diaphragm.

Packing Surface Finish:

To connection standard.

Wetted Materials

316/316L Dual Certified Stainless Steel (standard)
Other materials available upon request.

Backing Flange Materials

316/316L Dual Certified Stainless Steel (standard)
Other materials available upon request.

Capillary

Available in 1 to 10 metre lengths.

Capillary Armour

PVC coated 304 Stainless Steel (standard)
For processes with temperatures over 100°C or sanitary applications spiral wound 304 Stainless Steel.

Zero Stability

Stability will be affected by the instrument configuration, ambient temperature, process temperature, connection size (diaphragm size) and the measuring range.

Please contact to discuss temperature effects and instrument accuracy.

Dimensional Drawings & System Configuration

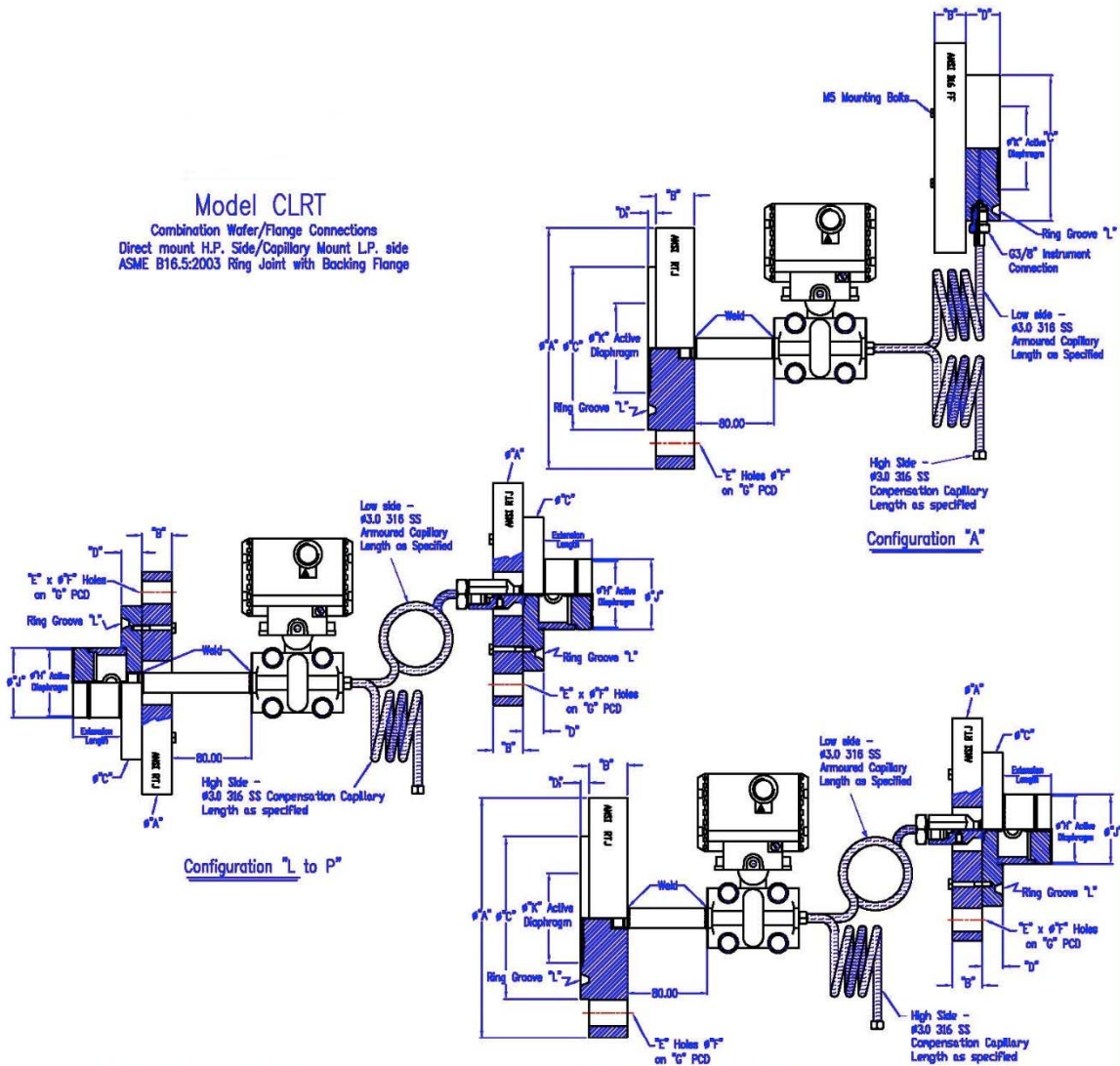
Refer to Dimensional Drawings.



General Specifications

	Combination Wafer and or Extended Flange Connections - Type CL	Suffix Code	
Process Connection	Combination Flange	CL	
Connection Type	ASME B16.5 Raised Face	AR	
	ASME B16.5 Flat Face	AF	
	ASME B16.5 Ring Type Joint (RTJ)	RT	
	DIN (EN1092-1)	DN	
	ASME B16.5 Large Tongue	AT	
	ASME B16.5 Large Groove	AM	
	JIS B 2220	JI	
	Table AS2129	TB	
	Special	XX	
Connection Size	DN50 (2") (For ASME 900lb use Code 5 in "Connection Rating")	16	
	DN80 (3")	24	
	DN100 (4")	32	
	Special	XX	
Connection Rating	ASME 150lb, Table E	1	
	ASME 300lb, DIN PN10-16, JIS 10K, Table F	2	
	ASME 600lb, DIN PN25-40, JIS 16K, Table H	3	
	ASME 900lb, DIN PN64, JIS20K Table J (ASME 900lb for DN80 (3") & above)	4	
	ASME 1500lb, DIN PN100, JIS 30K, Table K	5	
	ASME 2500lb, DIN PN160	6	
Diaphragm Material	316/316L Stainless Steel	S	
	304/304L Stainless Steel	A	
	Hastelloy C-276 (MUST have the same Wetted parts, Flush Diaphragm only)	H	
	Monel 400 (MUST have the same Wetted parts, Flush Diaphragm only)	M	
	Titanium Grade 2 (MUST have the same Wetted parts, Flush Diaphragm only)	I	
	Tantalum (MUST have the same Wetted parts, Flush Diaphragm only)	T	
	PFA (316/316L Stainless Steel coated)	F	
	Gold Plated 316/316L Stainless Steel	G	
	Duplex 2205	U	
	Special	X	
	Wetted Parts	316/316L Stainless Steel	S
304/304L Stainless Steel		A	
Hastelloy C-276 (MUST have the same Diaphragm material, Flush Diaphragm only)		H	
Monel 400 (MUST have the same Diaphragm material, Flush Diaphragm only)		M	
Titanium Grade 2 (MUST have the same Diaphragm material, Flush Diaphragm only)		I	
Tantalum (MUST have the same Diaphragm material, Flush Diaphragm only)		T	
PFA (316/316L Stainless Steel Coated)		F	
Duplex 2205		U	
Special		X	
Backing Flange Material		316/316L Stainless Steel	S
		304/304L Stainless Steel	A
	Hastelloy C-276	H	
	Titanium Grade 2	I	
	Carbon Steel	C	
	Duplex 2205	U	
	Special	X	
System Configuration	Flush Diaphragm on LP & HP	A	
	50mm Extended Diaphragm HP & Flush Diaphragm LP	B	
	100mm Extended Diaphragm HP & Flush Diaphragm LP	C	
	150mm Extended Diaphragm HP & Flush Diaphragm LP	D	
	200mm Extended Diaphragm HP & Flush Diaphragm LP	E	
	250mm Extended Diaphragm HP & Flush Diaphragm LP	F	
	50mm Extended Diaphragm LP & Flush Diaphragm HP	G	
	100mm Extended Diaphragm LP & Flush Diaphragm HP	H	
	150mm Extended Diaphragm LP & Flush Diaphragm HP	I	
	200mm Extended Diaphragm LP & Flush Diaphragm HP	J	
	250mm Extended Diaphragm LP & Flush Diaphragm HP	K	
	50mm Extended Diaphragm LP & HP	L	
	100mm Extended Diaphragm LP & HP	M	
	150mm Extended Diaphragm LP & HP	N	
	200mm Extended Diaphragm LP & HP	O	
	250mm Extended Diaphragm LP & HP	P	
System Type	Sanitary Specification – Only available for System "A"	A	
	Chemical Specification with Straight Extension added	B	
	Chemical Specification with Tapered Extension	C	
Capillary	1 Metre	01	
	2 Metres	02	
	3 Metres	03	
	4 Metres	04	
	5 Metres	05	
	6 Metres	06	
	7 Metres	07	
	8 Metres	08	
	9 Metres	09	
	10 Metres	10	
Fill Liquid	KN32 704 Silicon Oil 30cs (-10°C to +300°C)	A	
	KN22 Silicon Oil 100cs (-40°C to +290°C)	B	
	KN33 705 Silicon Oil 320cs (-10°C to +400°C)	C	
	KN21 Fluorolube 7cs (-20°C to +120°C)	D	
	KN55 Ethylene Glycol (-13°C to +196°C)	E	
	KN17 Silicon Oil 2cs (-90°C to +80°C for less than 1Bar, -90°C to +180°C for greater than 1Bar)	L	
	Special	X	
Taper on Extension Length	No Taper	0	
	1mm Taper	1	
	2mm Taper	2	
	3mm Taper	3	
	4mm Taper	4	
	5mm Taper	5	
Jacking Bolts	2 x 1/2" UNF Grade 5	J	

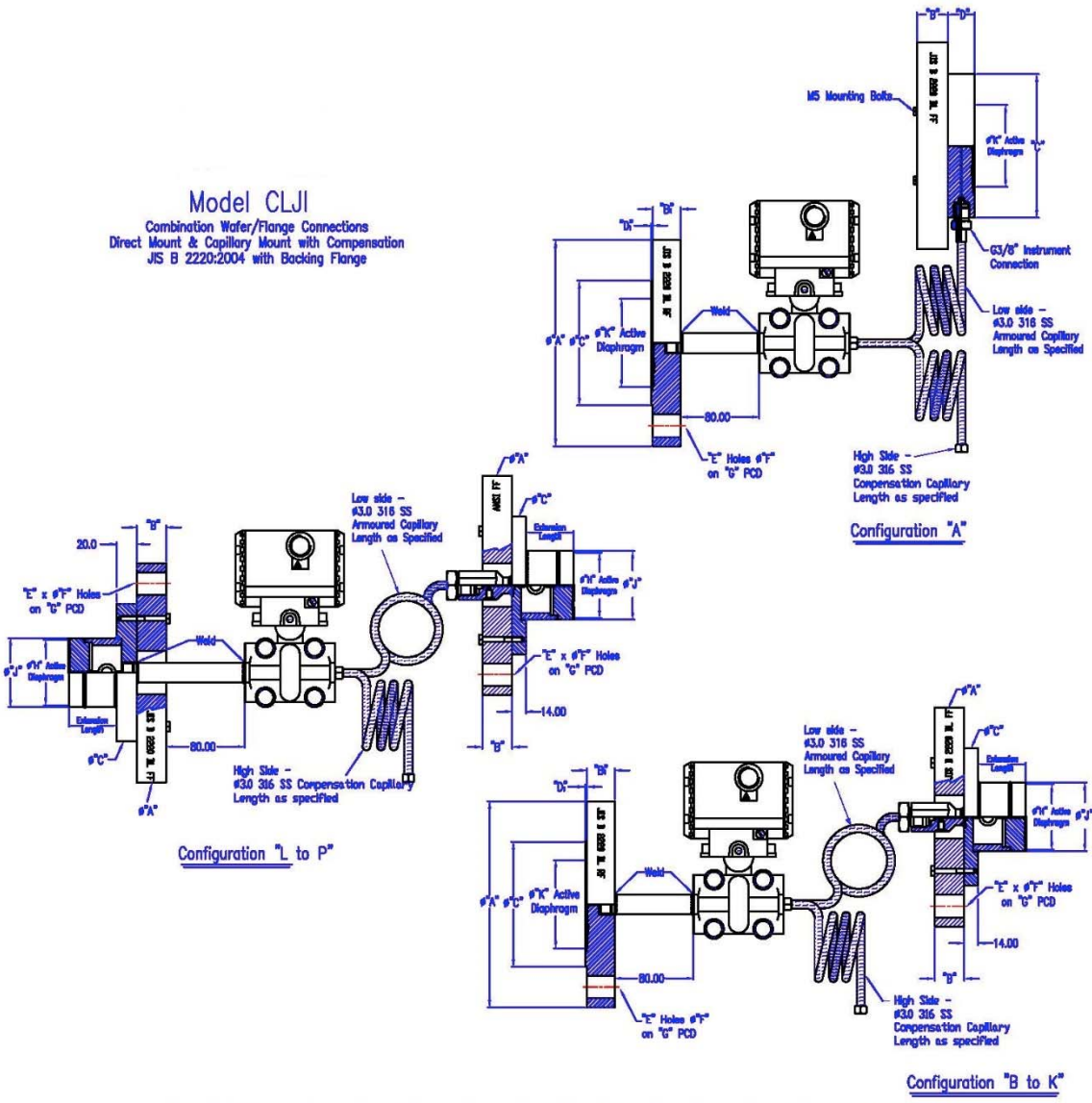
Model CLRT
 Combination Wafer/Flange Connections
 Direct mount H.P. Side/Capillary Mount L.P. side
 ASME B16.5:2003 Ring Joint with Backing Flange



Size	Rating	"A"	"B"	"C"	"D"	"D ₁ "	"D ₂ "	"E"	"F"	"G"	"H"	"J"	"K"	"L"
2"	#150	150.0	18.0	102.0	34.0	6.4	4	19.0	120.7					R22
	#300	185.0	22.0	108.0	36.0	8.0	8	19.0	127.0					R23
	#600	185.0	26.0	108.0	36.0	8.0	8	19.0	127.0	45.0	47.3	58.0		R23
	#900/1500	215.0	39.0	124.0	36.0	8.0	8	26.0	165.1					R24
	#2500	235.0	51.0	127.0	36.0	8.0	8	29.0	171.4					R26
3"	#150	190.0	23.0	134.0	34.0	6.4	4	19.0	152.4					R29
	#300	210.0	28.0	146.0	36.0	8.0	8	23.0	168.3					R31*
	#600	210.0	32.0	146.0	36.0	8.0	8	23.0	168.3	58.0	70.0	89.0		R31*
	#900	240.0	39.0	156.0	36.0	8.0	8	26.0	190.5					R31
	#1500	265.0	48.0	168.0	36.0	8.0	8	32.0	203.2					R35
#2500	305.0	67.0	168.0	38.0	9.5	8	35.0	228.6					R32	
4"	#150	230.0	23.0	172.0	34.0	6.4	8	19.0	190.5					R36
	#300	255.0	31.0	175.0	36.0	8.0	8	23.0	200.0					R37
	#600	275.0	39.0	175.0	36.0	8.0	8	26.0	215.9	89.0	89.0	89.0		R37
	#900	290.0	45.0	181.0	36.0	8.0	8	32.0	235.0					R37
	#1500	310.0	54.0	194.0	36.0	8.0	8	35.0	241.3					R39
	#2500	355.0	76.5	203.0	40.0	11.0	8	42.0	273.0					R38

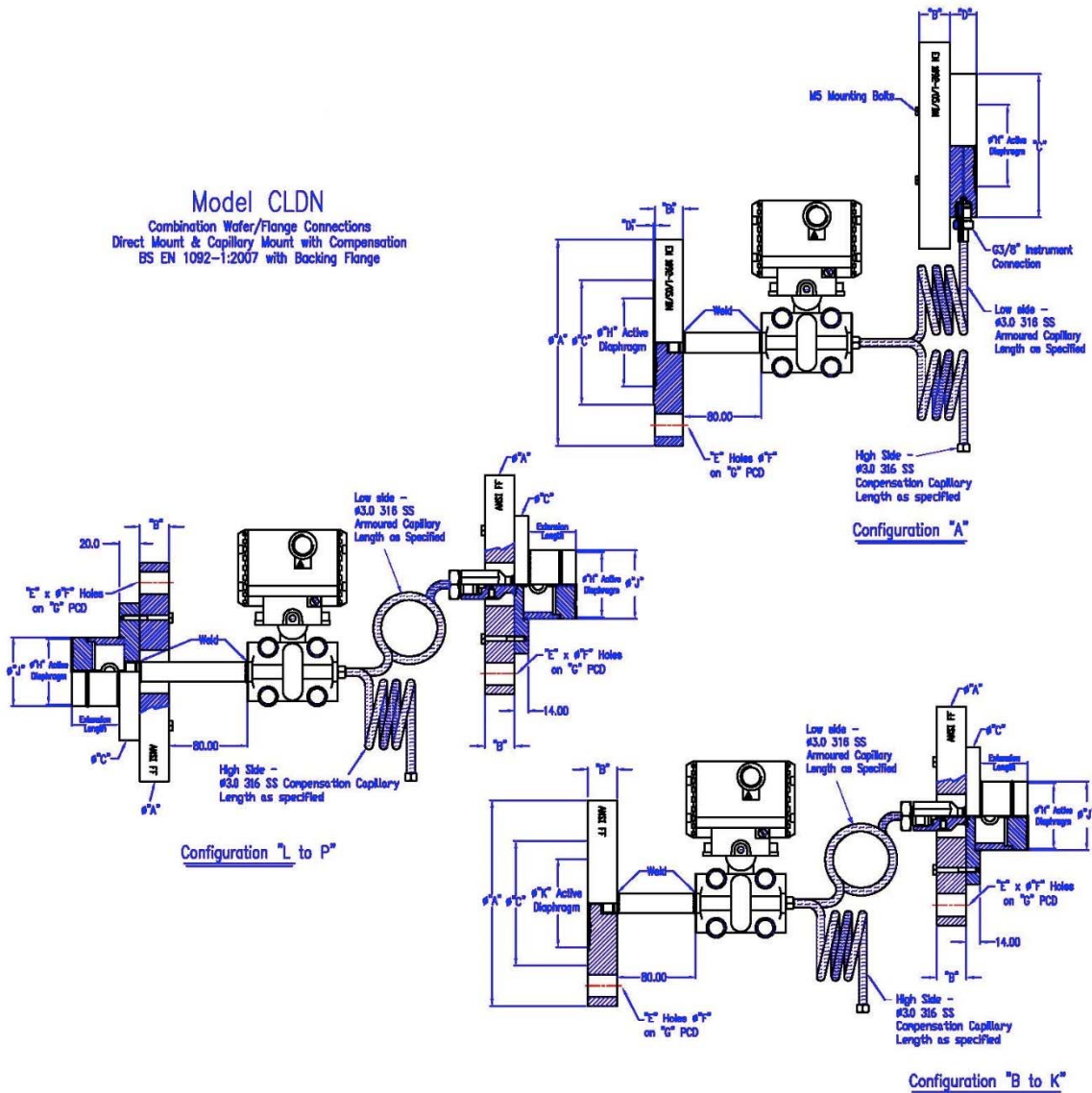
* For ring joints with lapped flanges #300 & #600 use Ring/Groove No. 30 instead of 31

Model CLJI
 Combination Wafer/Flange Connections
 Direct Mount & Capillary Mount with Compensation
 JIS B 2220:2004 with Backing Flange



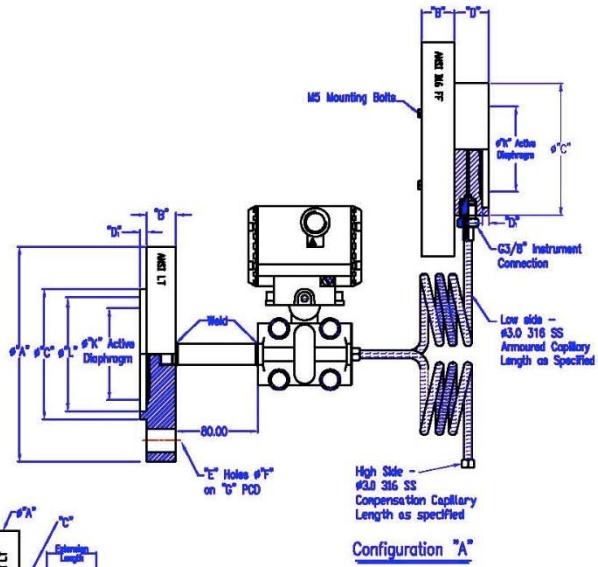
Size	Rating	"A"	"B"	"B"	"C"	"D"	"D"	"E"	"F"	"G"	"H"	"J"	"K"
DN50	5K	130.0	14.0	12.0	85.0	25.0	2.0	4	15.0	105.0	45.0	48.0	58.0
	10K	155.0	16.0	14.0	96.0			4	19.0	120.0			
	16K	155.0	16.0	14.0	96.0			8	19.0	120.0			
	20K	155.0	18.0	16.0	96.0			8	19.0	120.0			
DN80	5K	180.0	14.0	12.0	121.0	25.0	2.0	4	19.0	145.0	58.0	70.0	89.0
	10K	185.0	18.0	16.0	126.0			8	19.0	150.0			
	16K	200.0	20.0	18.0	132.0			8	23.0	160.0			
	20K	200.0	22.0	20.0	132.0			8	23.0	160.0			
DN100	5K	200.0	16.0	14.0	141.0	25.0	2.0	8	19.0	165.0	89.0	96.0	89.0
	10K	210.0	18.0	16.0	151.0			8	19.0	175.0			
	16K	225.0	22.0	20.0	160.0			8	23.0	185.0			
	20K	225.0	24.0	22.0	160.0			8	23.0	185.0			
	30K	240.0	32.0	30.0	180.0			8	25.0	195.0			

Model CLDN
 Combination Wafer/Flange Connections
 Direct Mount & Capillary Mount with Compensation
 BS EN 1092-1:2007 with Backing Flange

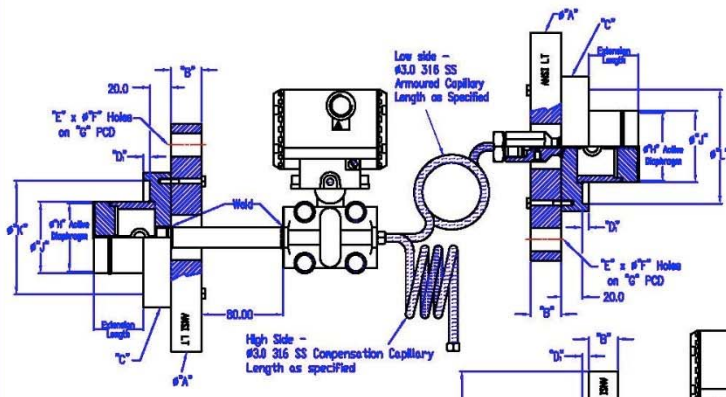


Size	Rating	"A"	"B"	"B"	"C"	"D"	"D"	"E"	"F"	"G"	"H"	"J"	"K"
DN50	PN10-16	165.0	17.0	14.0	102.0	25.0	3.0	4	18.0	125.0	45.0	47.3	58.0
	PN25-40	165.0	17.0	14.0				4	18.0	125.0			
	PN63	180.0	23.0	20.0				4	22.0	135.0			
	PN100	195.0	25.0	22.0				4	26.0	145.0			
DN80	PN10-16	200.0	17.0	14.0	138.0	25.0	3.0	4	18.0	160.0	58.0	70.0	89.0
	PN25-40	200.0	21.0	18.0				8	18.0	160.0			
	PN63	215.0	27.0	24.0				8	22.0	170.0			
	PN100	230.0	31.0	28.0				8	26.0	180.0			
DN100	PN10-16	220.0	19.0	16.0	158.0	25.0	3.0	8	18.0	180.0	89.0	96.0	89.0
	PN25-40	235.0	23.0	20.0				8	22.0	190.0			
	PN63	250.0	29.0	26.0				8	26.0	200.0			
	PN100	265.0	33.0	30.0				8	30.0	210.0			
	PN160	265.0	37.0	34.0				8	30.0	210.0			

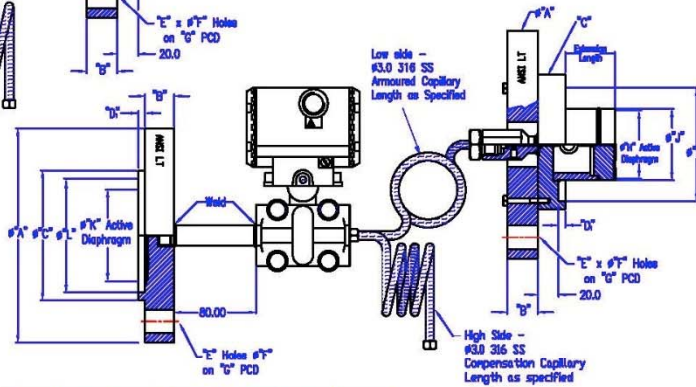
Model CLAT
 Combination Wafer/Flange Connections
 Direct Mount & Capillary Mount with Compensation
 ASME B16.5:2003 Large Tongue with Backing Flange



Configuration "A"



Configuration "L to P"

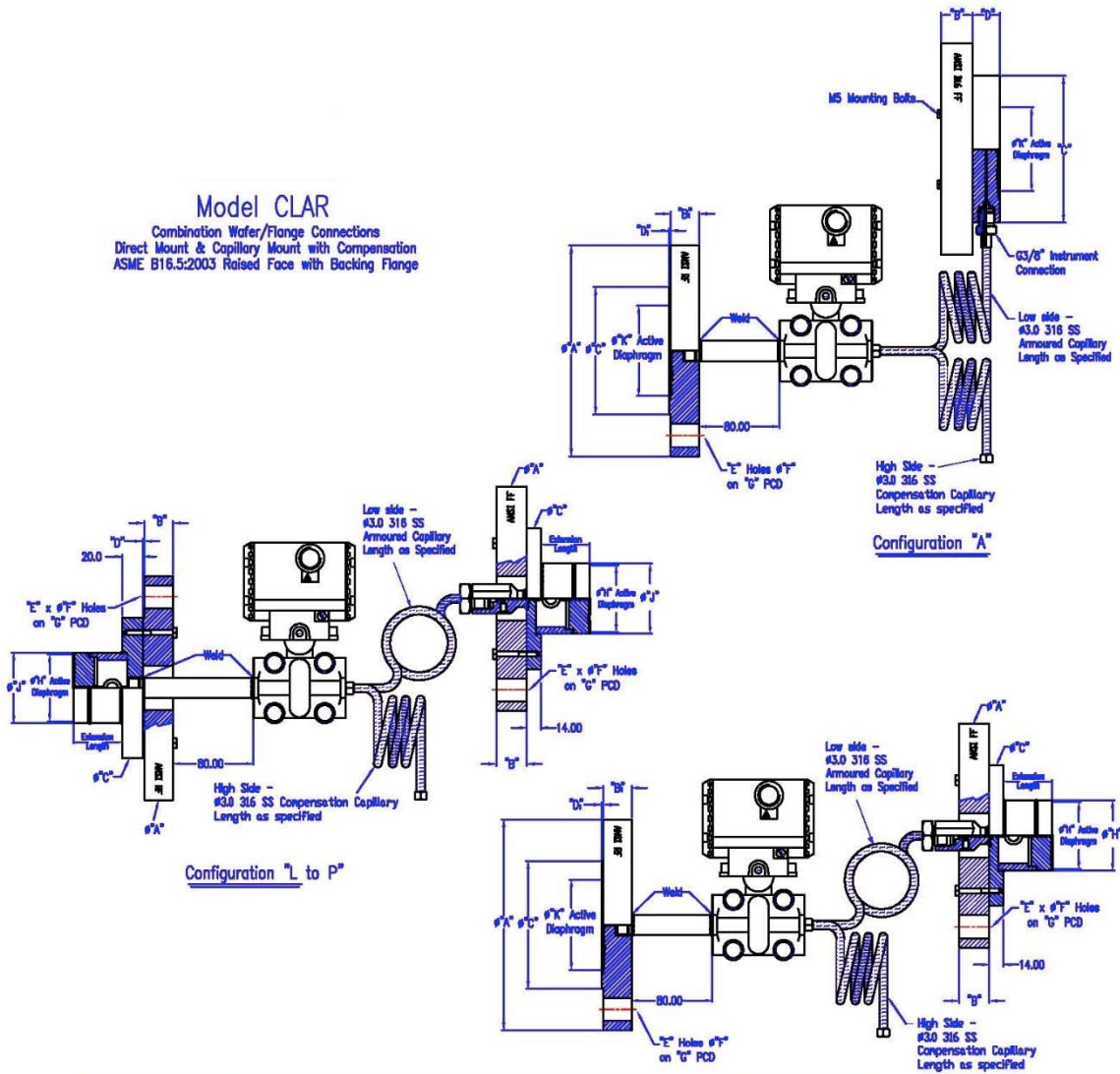


Configuration "B to K"

Size	Rating	"A"	"B"	"C"	"D"	"D ₂ "	"E"	"F"	"G"	"H"	"J"	"K"	"L"
2"	#150	150.0	18.0	92.1	34.0	7.0	4	19.0	120.7	45.0	47.3	58.0	73.0
	#300	165.0	22.0				8	19.0	127.0				
	#600	165.0	26.0				8	19.0	127.0				
	#900/1500	215.0	39.0				8	26.0	165.1				
	#2500	235.0	51.0				8	29.0	171.4				
3"	#150	190.0	23.0	127.0	34.0	7.0	4	19.0	152.4	58.0	70.0	89.0	108.0
	#300	210.0	28.0				8	23.0	168.3				
	#600	210.0	32.0				8	23.0	168.3				
	#900	240.0	39.0				8	26.0	190.5				
	#1500	285.0	48.0				8	32.0	203.2				
	#2500	305.0	67.0				8	35.0	228.6				
4"	#150	230.0	23.0	157.2	34.0	7.0	8	19.0	190.5	89.0	96.0	89.0	131.8
	#300	255.0	31.0				8	23.0	200.0				
	#600	275.0	39.0				8	26.0	215.9				
	#900	290.0	45.0				8	32.0	235.0				
	#1500	310.0	54.0				8	35.0	241.3				
	#2500	355.0	76.5				8	42.0	273.0				

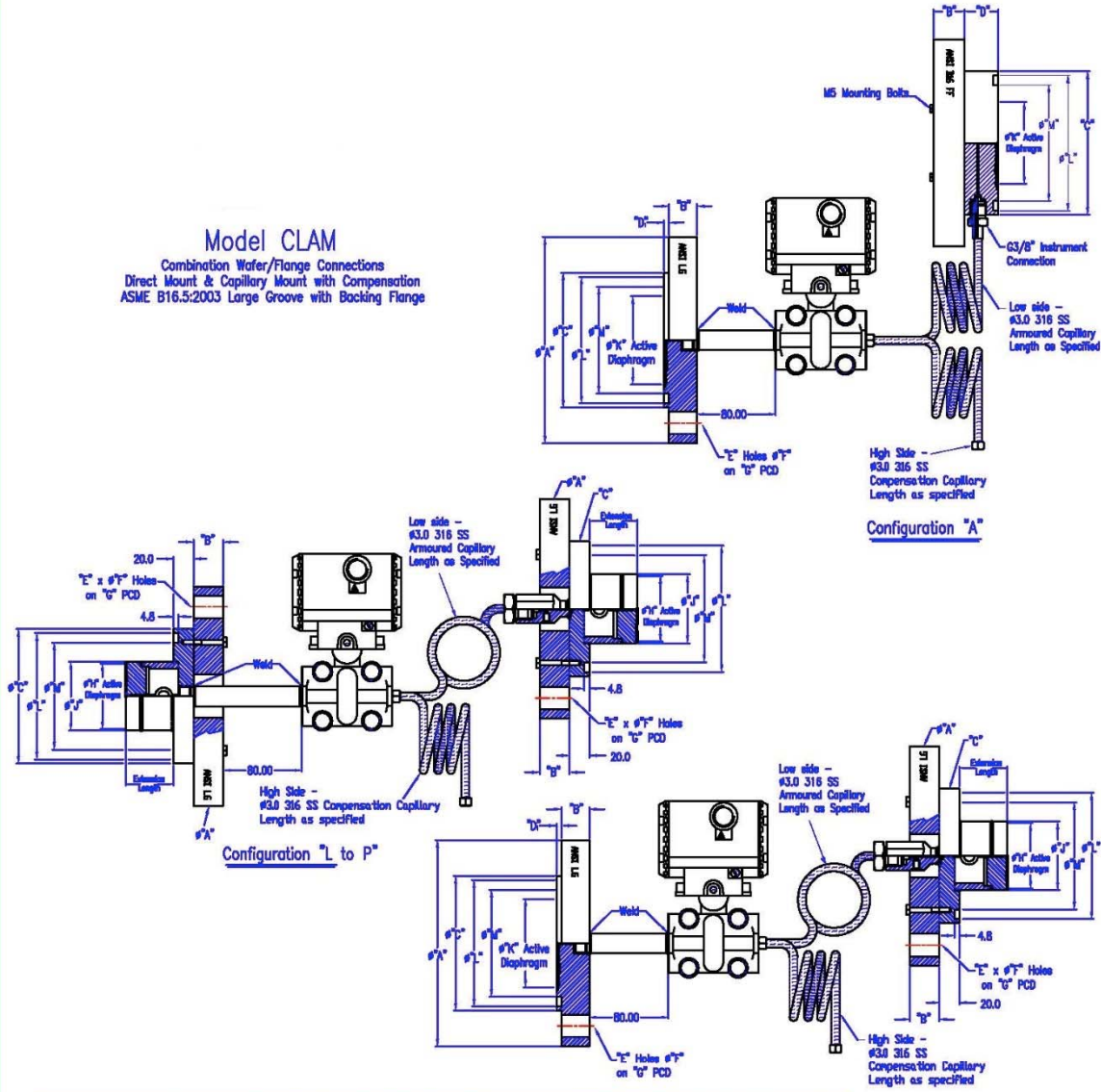
Model CLAR

Combination Wafer/Flange Connections
 Direct Mount & Capillary Mount with Compensation
 ASME B16.5:2003 Raised Face with Backing Flange



Size	Rating	"A"	"B"	"B _i "	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	
2"	#150	150.0	20.0	18.0	92.1	25.0	2.0	4	19.0	120.7	45.0	47.3	58.0
	#300	165.0	23.0	22.0				8	19.0	127.0			
	#600	165.0	32.0	26.0			7.0	8	19.0	127.0			
	#900/1500	215.0	45.0	39.0				8	26.0	165.1			
	#2500	235.0	58.0	51.0				8	29.0	171.4			
3"	#150	190.0	24.0	23.0	127.0	25.0	2.0	4	19.0	152.4	58.0	70.0	89.0
	#300	210.0	29.0	28.0				8	23.0	168.3			
	#600	210.0	39.0	32.0			7.0	8	23.0	168.3			
	#900	240.0	45.0	39.0				8	26.0	190.5			
	#1500	265.0	55.0	48.0				8	32.0	203.2			
	#2500	305.0	74.0	67.0				8	35.0	228.6			
4"	#150	230.0	24.0	23.0	157.2	25.0	2.0	8	19.0	190.5	89.0	96.0	89.0
	#300	255.0	32.0	31.0				8	23.0	200.0			
	#600	275.0	45.0	39.0			7.0	8	26.0	215.9			
	#900	290.0	51.0	45.0				8	32.0	235.0			
	#1500	310.0	61.0	54.0				8	35.0	241.3			
	#2500	355.0	83.0	76.5				8	42.0	273.0			

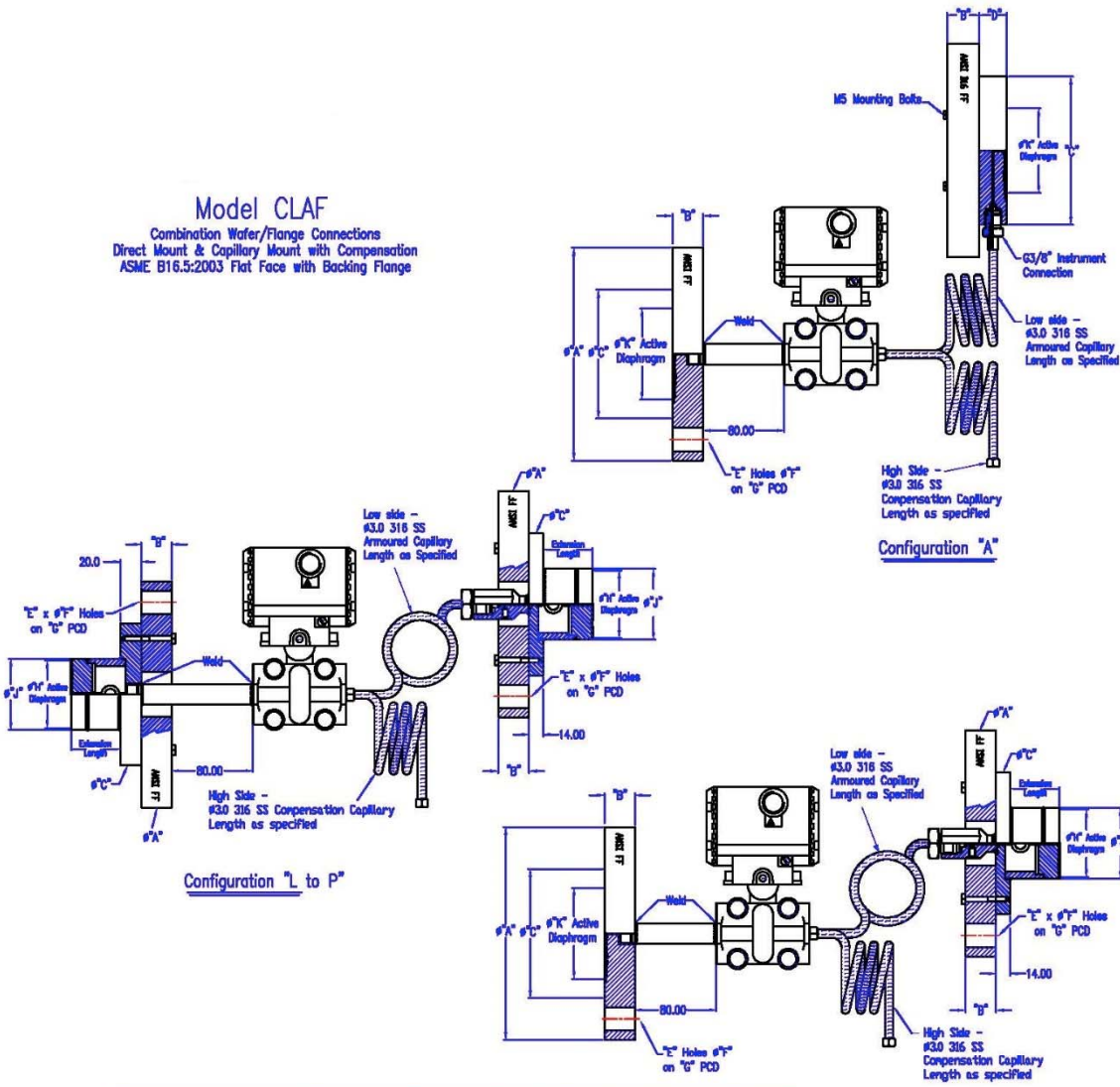
Model CLAM
 Combination Wafer/Flange Connections
 Direct Mount & Capillary Mount with Compensation
 ASME B16.5:2003 Large Groove with Backing Flange



Size	Rating	"A"	"B"	"C"	"D"	"D ₁ "	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"
2"	#150	150.0	18.0	103.0	34.0	5.0	4	19.0	120.7	45.0	47.3	58.0	93.7	71.5
	#300	165.0	22.0				8	19.0	127.0					
	#600	165.0	26.0				8	19.0	127.0					
	#900/1500	215.0	39.0				8	26.0	165.1					
	#2500	235.0	51.0				8	29.0	171.4					
3"	#150	190.0	23.0	138.0	34.0	5.0	4	19.0	152.4	58.0	70.0	89.0	128.6	106.5
	#300	210.0	28.0				8	23.0	168.3					
	#600	210.0	32.0				8	23.0	168.3					
	#900	240.0	39.0				8	26.0	190.5					
	#1500	265.0	48.0				8	32.0	203.2					
#2500	305.0	67.0	8	35.0	228.6									
4"	#150	230.0	23.0	168.0	34.0	5.0	8	19.0	190.5	89.0	96.0	89.0	158.8	130.0
	#300	255.0	31.0				8	23.0	200.0					
	#600	275.0	39.0				8	26.0	215.9					
	#900	290.0	45.0				8	32.0	235.0					
	#1500	310.0	54.0				8	35.0	241.3					
#2500	355.0	76.5	8	42.0	273.0									

Configuration "B to K"

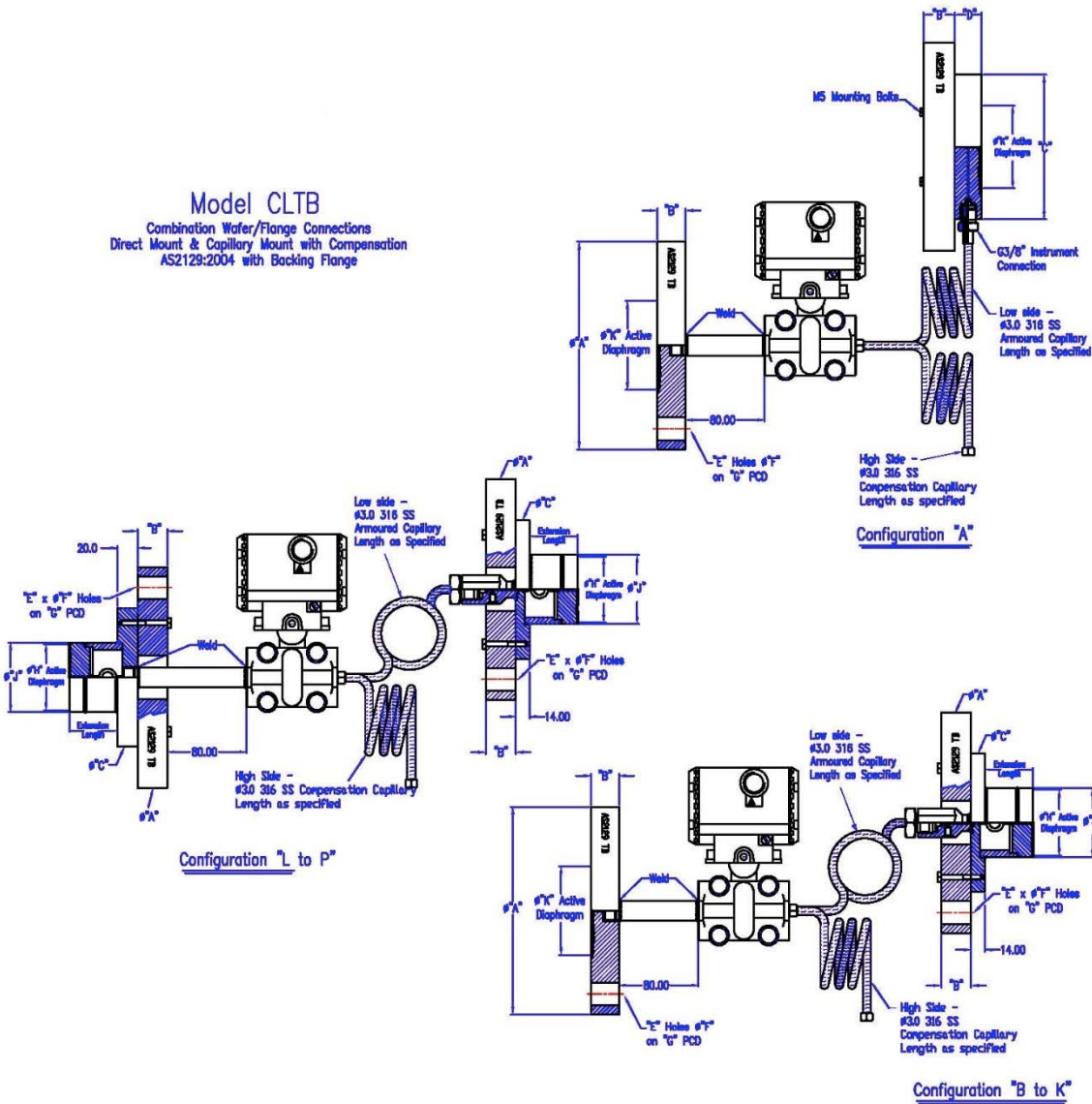
Model CLAF
 Combination Wafer/Flange Connections
 Direct Mount & Capillary Mount with Compensation
 ASME B16.5:2003 Flat Face with Backing Flange



Size	Rating	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"
2"	#150	150.0	20.0	92.1	25.0	4	19.0	120.7	45.0	47.3	58.0
	#300	165.0	23.0			8	19.0	127.0			
	#600	165.0	32.0			8	19.0	127.0			
	#900/1500	215.0	45.0			8	26.0	165.1			
	#2500	235.0	58.0			8	29.0	171.4			
3"	#150	190.0	24.0	127.0	25.0	4	19.0	152.4	58.0	70.0	89.0
	#300	210.0	29.0			8	23.0	168.3			
	#600	210.0	39.0			8	23.0	168.3			
	#900	240.0	45.0			8	26.0	190.5			
	#1500	265.0	55.0			8	32.0	203.2			
	#2500	305.0	74.0			8	35.0	228.6			
4"	#150	230.0	24.0	157.2	25.0	8	19.0	190.5	89.0	96.0	89.0
	#300	255.0	32.0			8	23.0	200.0			
	#600	275.0	45.0			8	26.0	215.9			
	#900	290.0	51.0			8	32.0	235.0			
	#1500	310.0	61.0			8	35.0	241.3			
	#2500	355.0	83.0			8	42.0	273.0			

Configuration "B to K"

Model CLTB
 Combination Wafer/Flange Connections
 Direct Mount & Capillary Mount with Compensation
 AS2129:2004 with Backing Flange



Size	Rating	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"
2"	Table E	150.0	12.0	90.0	25.0	4	18.0	114.0	45.0	47.3	58.0
	Table F	165.0	16.0	103.0		4	18.0	127.0			
	Table H	165.0	19.0	102.0		4	18.0	127.0			
	Table J	165.0	25.0	102.0		4	22.0	127.0			
	Table K	165.0	25.0	102.0		8	18.0	127.0			
3"	Table E	185.0	14.0	122.0	25.0	4	18.0	146.0	58.0	70.0	89.0
	Table F	205.0	16.0	141.0		8	18.0	165.0			
	Table H	205.0	22.0	127.0		8	18.0	165.0			
	Table J	205.0	32.0	127.0		8	22.0	165.0			
	Table K	205.0	32.0	127.0		8	22.0	165.0			
4"	Table E	215.0	16.0	154.0	25.0	8	18.0	178.0	89.0	96.0	89.0
	Table F	230.0	19.0	167.0		8	18.0	191.0			
	Table H	230.0	25.0	152.0		8	18.0	191.0			
	Table J	230.0	35.0	152.0		8	22.0	191.0			
	Table K	240.0	35.0	152.0		8	26.0	197.0			