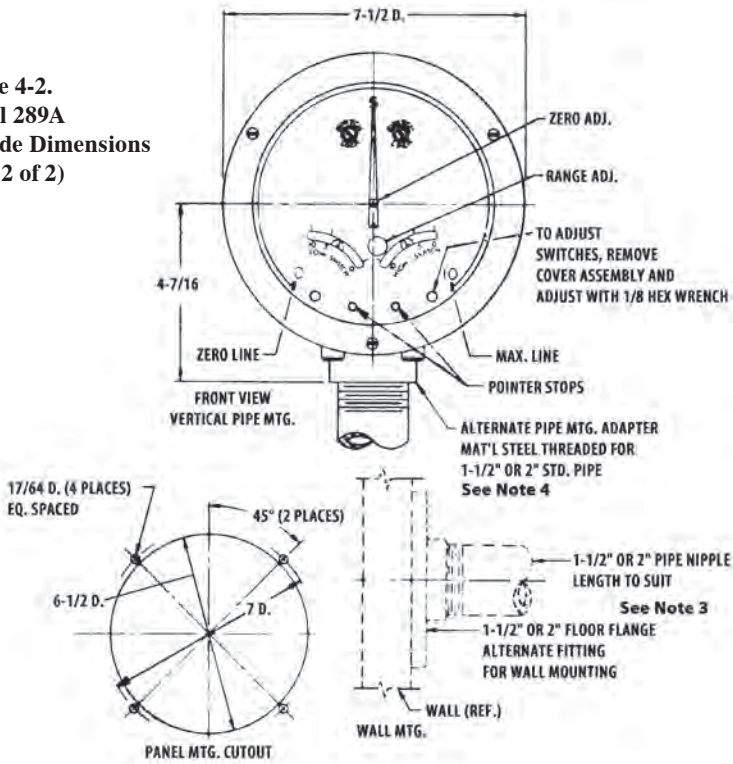


**Figure 4-2.**  
**Model 289A**  
**Outside Dimensions**  
**(Part 2 of 2)**



**Table 4-1. Model 289A Dimensions (as shown in Figure 4-1, pg. 19)**

PRESSURE RATING PSI (MPa)	HOUSING MATERIAL	PRESSURE CONNECTION		DIM. A INCHES (mm)	DIM. B INCHES (mm)	DIM. C INCHES (mm)	DIM. D INCHES (mm)	# BOLTS
		TOP	BOTTOM					
1,000 (6.9)	CAST ALUM. 356-T6	1/2 NPT (Note 1)	1/4 NPT (Note 1)	9-29/32 (251.6)	6-5/8 (168.3)	2 (50.8)	2-9/64 (51.2)	6
	FORGED STNL. ST. 316	1/2 NPT (Note 1)	1/4 NPT (Note 1)	9-29/32 (251.6)	6-5/8 (168.3)	2 (50.8)	2-9/64 (51.2)	12
2,500 (17.2)	FORGED ST. AISI C1018	1/2 NPT (Note 1)	1/4 NPT (Note 1)	10-5/32 (257.9)	7-1/8 (181.0)	2  (50.8)	2-9/64 (51.2)	6
3,000 (20.7)	FORGED STNL. ST. 316	1/2 NPT (Note 1)	1/4 NPT (Note 1)	10-5/32 (257.9)	7-1/8 (181.0)	2 (50.8)	2-9/64 (51.2)	12
	MONEL K500	1/2 NPT (Note 1)	1/4 NPT (Note 1)	10-5/32 (257.9)	7-1/8 (181.0)	2 (50.8)	2-9/64 (51.2)	12
4,500 (31.0)	FORGED ALLOY ST 4142	1/2 NPT (Note 1)	1/4 NPT (Note 1)	10-5/32 (257.9)	7-1/8 (181.0)	2 (50.8)	2-9/64 (51.2)	12
6,000 (41.4)	FORGED ALLOY ST 4142	9/16-18 UNF (Note 2)	9/16-18 UNF (Note 2)	10-5/32 (257.9)	7-1/8 (181.0)	2 (50.8)	2 (50.8)	12
	FORGED STNL ST 17-4 PH							
	FORGED ALLOY ST 4142	1/2 NPT (Note 1)	1/4 NPT (Note 1)	10-5/32 (257.9)	7-1/8 (181.0)	2 (50.8)	2-9/64 (51.2)	12

Note 1: Can be reversed when ordered or can be rotated 180° in the field.

Note 2: Suitable for use with Aminko fittings (American Inst. Co., Silver Springs, MD) or equiv.

Note 3: All standard pipe fittings furnished by customer.

Note 4: Cast alum. pipe mount supplied, unless otherwise specified. Specify pipe size when ordering threaded Stl. adapter.

Metric conversions are approximate.

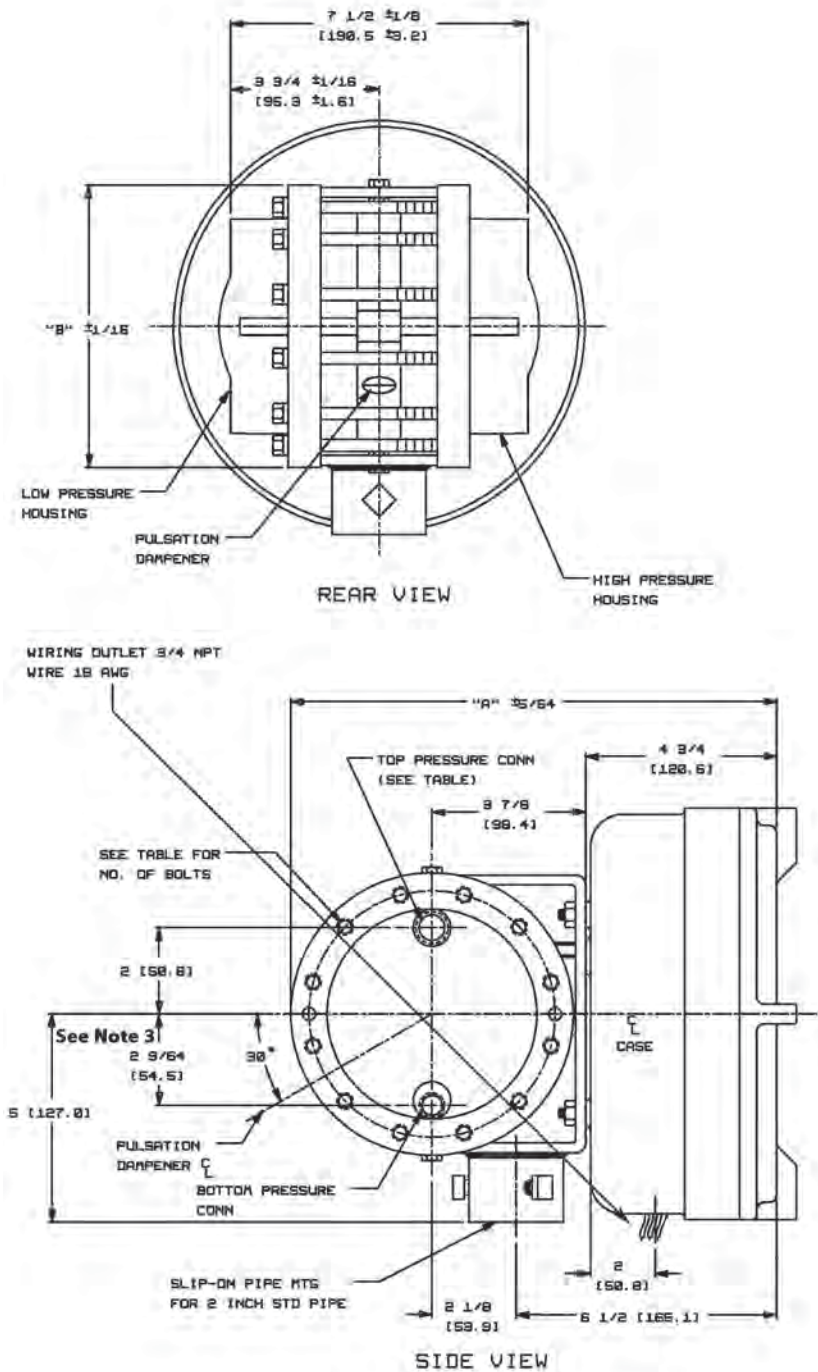


Figure 4-3. Model 291B Outside Dimensions (Part 1 of 2)

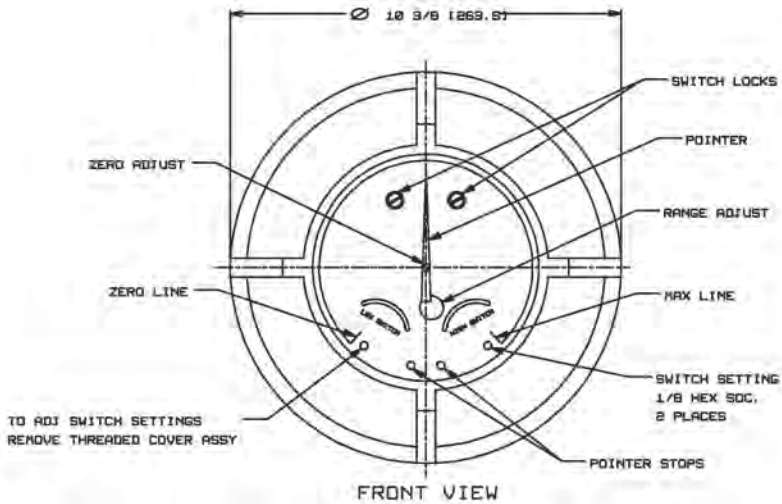


Figure 4-4. Model 291B Outside Dimensions (Part 2 of 2)

Table 4-2. Model 291B Dimensions (as shown in Figure 4-3, pg. 21)

PRESSURE RATING PSI (MPa)	HOUSING MATERIAL	PRESSURE CONNECTION		DIM. A INCHES (mm)	DIM. B INCHES (mm)	# BOLTS
		TOP	BOTTOM			
1,000 (6.9)	CAST ALUM. 356-T6	1/2 NPT (Note 1)	1/4 NPT (Note 1)	12 (304.8)	6-5/8 (168.3)	6
	FORGED STNL. ST. 316	1/2 NPT (Note 1)	1/4 NPT (Note 1)	12 (304.8)	6-5/8 (168.3)	12
2,500 (17.2)	FORGED ST. AISI C1018	1/2 NPT (Note 1)	1/4 NPT (Note 1)	12-1/4 (309.9)	7-1/8 (181.0)	6
3,000 (20.7)	FORGED STNL. ST. 316	1/2 NPT (Note 1)	1/4 NPT (Note 1)	12-1/4 (309.9)	7-1/8 (181.0)	12
4,500 (31.0)	FORGED ALLOY ST 4142	1/2 NPT (Note 1)	1/4 NPT (Note 1)	12-1/4 (309.9)	7-1/8 (181.0)	12
6,000 (41.4)	FORGED ALLOY ST 4142 FORGED STNL ST 17-4 PH	9/16-18 UNF (Note 2)	9/16-18 UNF (Note 2)	12-1/4 (309.9)	7-1/8 (181.0)	12
	FORGED ALLOY ST 4142 FORGED STNL ST 17-4 PH	1/2 NPT (Note 1)	1/4 NPT (Note 1)	12-1/4 (309.9)	7-1/8 (181.0)	12

Note 1: Can be reversed when ordered or can be rotated 180° in the field.

Note 2: Suitable for use with Aminko fittings (American Inst. Co., Silver Springs, MD) or equiv.

Note 3: For Aminko ports, dimension is 2 in. (50.8 mm).

Metric conversions are approximate.

SECTION 5 - PARTS DRAWINGS/PARTS LISTS

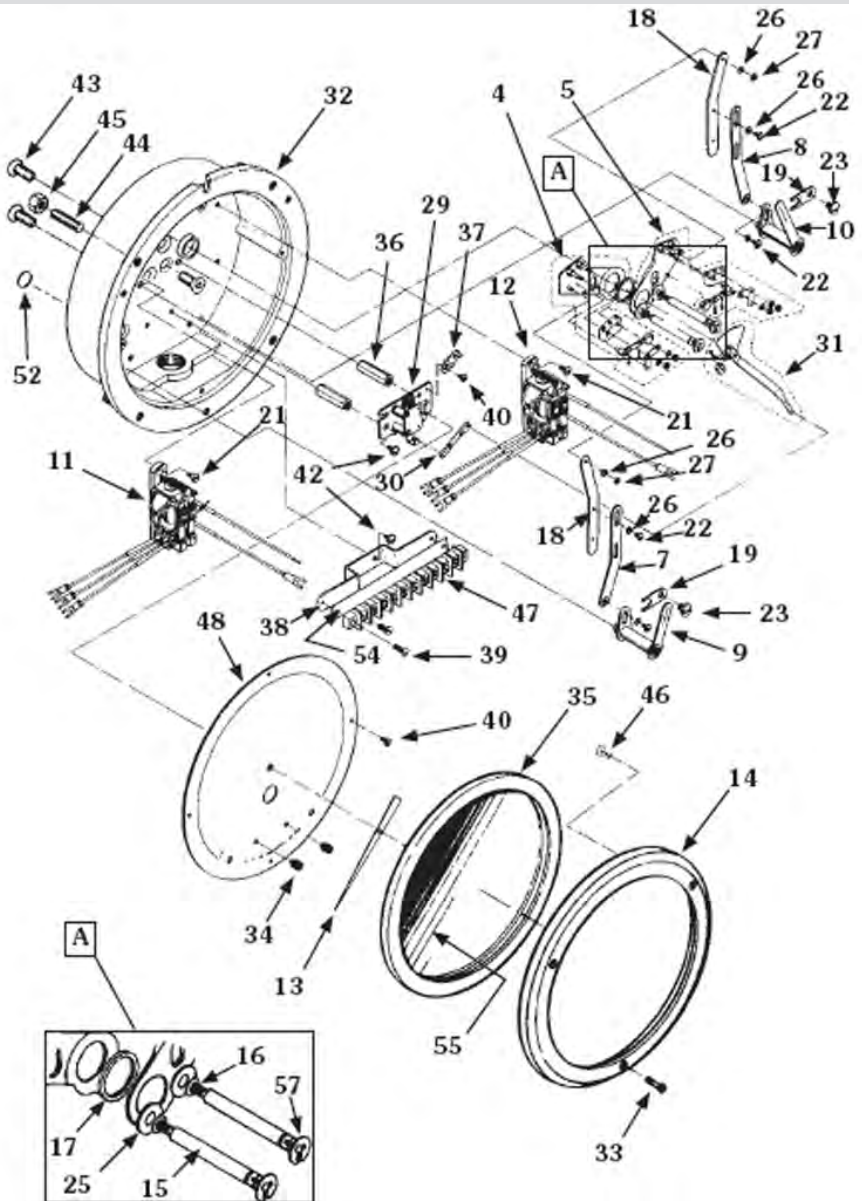


Figure 5-1. Model 289A Assembly Drawing

**WARNING** 

Use only spare parts identified in this manual. Cameron bears no legal responsibility for the performance of a product that has been serviced or repaired with parts that are not authorized by Cameron.

Table 5-1. Model 289A Parts List

ITEM	DESCRIPTION	PART NO.	PER UNIT	
1	DIFFERENTIAL PRESSURE UNIT (NOT SHOWN)	SEE DPU 199 MANUAL	1	
2	LOW ALARM, EXT. WIRING ASSY., 2.5' LENGTH (NOT SHOWN):		1	
	UNITS WITHOUT RELAY, SPDT	0288-0021B		
	UNITS WITHOUT RELAY, DPDT	S401-0018Z		
	UNITS WITH RELAY, SPDT OR DPDT	0288-0008B		
3	HIGH ALARM, EXT. WIRING ASSY., 2.5' LENGTH (NOT SHOWN):		1	
	UNITS WITHOUT RELAY, SPDT	S655-0056B		
	UNITS WITHOUT RELAY, DPDT	S401-0093Z		
	UNITS WITH RELAY, SPDT OR DPDT	0288-0007B		
4	LOW ALARM, SWITCH ASSY.:		1	
	UNITS WITHOUT RELAY, SPDT	0288-0024B		
	UNITS WITHOUT RELAY, DPDT	S401-0053Z		
	UNITS WITH RELAY, SPDT OR DPDT	0288-0039B		
5	HIGH ALARM, SWITCH ASSY.:		1	
	UNITS WITHOUT RELAY, SPDT	0288-0025B		
	UNITS WITHOUT RELAY, DPDT	S401-0056Z		
	UNITS WITH RELAY, SPDT OR DPDT	0288-0040B		
6	NOT USED			
7	LOW ALARM DRIVE PLATE ASSY.	0288-0026B	1	
8	HIGH ALARM DRIVE PLATE ASSY.	0288-0027B	1	
9	LOW SWITCH ADJUSTMENT INDEX ASSY.	0288-0028B	1	
10	HIGH SWITCH ADJUSTMENT INDEX ASSY.	0288-0029B	1	
11	LOW RELAY ASSY. (* = Non-CE Use Only):		1	
	<b>Coil Voltage</b>	<b>Wired SPDT</b>		<b>Wired DPDT</b>
	6 VAC	0288-0015B		0288-1045B
	12 VAC	0288-0045B		0288-1035B
	24 VAC	0288-0016B		0288-1044B
	*125 VAC	0288-0017B		0288-1043B
	*250 VAC	0288-0046B		0288-1034B
	6 VDC	0288-0018B		0288-1038B
	12 VDC	0288-0019B		0288-1037B
	24 VDC	0288-0020B		0288-1036B
	*110 VDC	0288-0047B		0288-1033B
	12	HIGH RELAY ASSY. (* = Non-CE Use Only):		
<b>Coil Voltage</b>		<b>Wired SPDT</b>	<b>Wired DPDT</b>	
6VAC		0288-0009B	0288-1054B	
12 VAC		0288-0042B	0288-1048B	
24 VAC		0288-0010B	0288-1053B	
*125 VAC		0288-0011B	0288-1052B	
*250 VAC		0288-0043B	0288-1047B	
6VDC		0288-0012B	0288-1051B	
12 VDC		0288-0013B	0288-1050B	
24 VDC		0288-0014B	0288-1049B	
*110 VDC		0288-0044B	0288-1046B	

*Table 5-1. Model 289A Parts List (cont'd)*

ITEM	DESCRIPTION	PART NO.	PER UNIT
**13	POINTER ASSY: WHITE BLACK	0288-0030B 0288-0031B	1
14	BEZEL ASSY. (WITH PLASTIC LENS)	0277-0018B	1
15	PLATE SCREW: LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0317-0012C 0317-0012C	1 2
16	SPRING WASHER: LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0257-0019C 0257-0019C	1 2
17	SWITCH PLATE SPACER, HIGH ALARM (SINGLE)	0258-0007C	1
18	LINK PLATE: LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0288-0016C 0288-0016C	1 2
19	STRAP: LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0288-0017C 0288-0017C	1 2
20	PLUG, SCREW, 4-40 X 1/8. SL., RD., HD. (NOT SHOWN): LOW OR HIGH ALARM (SINGLE) DUAL ALARM LOW OR HIGH ALARM (SINGLE) WITH RELAY	0111-0007J 0111-0007J 0111-0007J	5 4 3
21	SCREW, 4-40 X 1/4 SST SL., FL., HD. (WITH RELAY ONLY): LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0112-1022J 0112-1022J	2 4
22	SCREW, 3-48 X 3/16, SST SL., BINDING HD.: LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0117-0007J 0117-0007J	3 6
23	SCREW, 8-32 X 1/4, SST, SL., BINDING HD.: LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0117-0016J 0117-0016J	1 2
24	PLUG SCR., 8-32 X 1/4, SST, PAN HD. (SINGLE) (NOT SHOWN)	0119-0042J	1
25	WASHER, SST: LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0317-0019J 0317-0019J	1 2
26	WASHER, NO.3 FLAT, SST: LOW OR HIGH ALARM (SINGLE) DUAL ALARM	0003-0045K 0003-0045K	4 8
27	GRIP RING (LOW/HIGH ALM.) (SINGLE/DUAL)	0087-0011 T	1
28	WIRE NUT CONNECTOR (NOT SHOWN): LOW OR HIGH ALARM (SINGLE) WITH RELAY DUAL ALARM WITH RELAY	0109-0017T 0109-0017T	1 2
29	MOVEMENT ASSEMBLY	0288-0035B	1
30	LINK ASSEMBLY	0288-0036B	1
31	DRIVE ARM ASSEMBLY: 289A (199 DPU)	0288-0037B	1
32	CASE ASSEMBLY	0288-0038B	1

**Table 5-1. Model 289A Parts List (cont'd)**

ITEM	DESCRIPTION	PART NO.	PER UNIT
32	CASE ASSEMBLY	0288-0038B	1
33	SCREW, RETAINER	0181-0007C	3
34	STOP, SNUBBER	0226-0028C	2
**35	GASKET, BEZEL	0277-0026C	1
36	RISER, MOVEMENT	0277-0035C	2
37	BRACKET, STOP	0288-0028C	1
38	BRACKET, TERMINAL BLOCK	0288-0029C	1
39	SCREW, 6-32 X 3/8, SL., RD., HD.	0111-0015J	2
40	SCREW, 4-40 X 3/16 SST, SL., FIL., HD.	0114-0023J	4
41	SCREW, 4-40 X 3/16, SST., SL, BINDING HD.	0117-0012J	1
42	SCREW, 6-32 X 3/16 SST, SL, BINDING HD.	0117-0013J	4
43	SCREW, 10-32 X 1/2, FL. HD., SOC.	0240-0015J	10
44	SCREW, 1/2-20 X 1, SL. SET SCREW	0340-0003J	4
45	NUT, 1/4-20 HEX	0500-0010J	4
46	STUD, BEZEL, RETAINING, DRIV-LOK	0004-0005K	1
47	BLOCK, TERMINAL	0038-0033T	1
48	PLATE, SCALE (SEE NOTES BELOW):		1
	BLACK	0288-0031C	
	WHITE	0288-1014C	
49	ID. TAG (NOT SHOWN)	0199-0125C	1
50	SWITCH, WIRED, LOW ALARM (NOT SHOWN):		1
	LOW ALARM, SPDT (WITHOUT RELAY)	0257-0009B	
	LOW ALARM, DPDT (WITHOUT RELAY) #1	0257-0009B	
	LOW ALARM, DPDT (WITHOUT RELAY) #2	S401-0016Z	
	LOW ALARM (WITH RELAY)	0288-0004B	
51	SWITCH, WIRED, HIGH ALARM (NOT SHOWN):		1
	HIGH ALARM, SPDT (WITHOUT RELAY)	0257-0008B	
	HIGH ALARM, DPDT (WITHOUT RELAY) #1	0257-0008B	
	HIGH ALARM, DPDT (WITHOUT RELAY) #2	S401-0017Z	
	HIGH ALARM (WITH RELAY)	0288-0003B	
52	DISC, SEALER, 112" (WITH 3M 468 ADHESIVE)	0192-1035T	1
53	CALIBRATION KIT (NOT SHOWN)	0288-1032B	1
54	INSULATOR STRIP	0038-1345T	1
55	LENS (PLASTIC)	0181-0038C	1
56	PULLER, POINTER (NOT SHOWN)	0163-0005B	1
57	RETAINER RING:		
	SINGLE ALARM	0087-0015T	1
	DUAL ALARM	0087-0015T	2

\* INDICATES NON-CE USE ONLY.

\*\* INDICATES RECOMMENDED SPARE PART. WHEN ORDERING PARTS, PLEASE SPECIFY THE SERIAL NUMBER OF THE INSTRUMENT WITH WHICH THEY ARE TO BE USED.

SCALEPLATE IDENTIFICATION:

IF THE PLATE SHOWS AN SCR NUMBER, THIS WITH IDENTIFY IT. OTHERWISE, PROVIDE THE FOLLOWING-INFORMATION:

- SQUARE ROOT OR LINEAR GRADUATION
- SCALE (E.G., 0-100, 25-0-100, ETC.)
- NUMBER OF GRADUATIONS (LINEAR SCALES ONLY)
- DATA (E.G., PSID, INCHES WATER COLUMN, ETC.)

IF THE PLATE HAS MULTIPLE SCALES OR COLORS (OTHER THAN BLACK AND WHITE), CONSULT FACTORY FOR PRICING/DESCRIPTION.



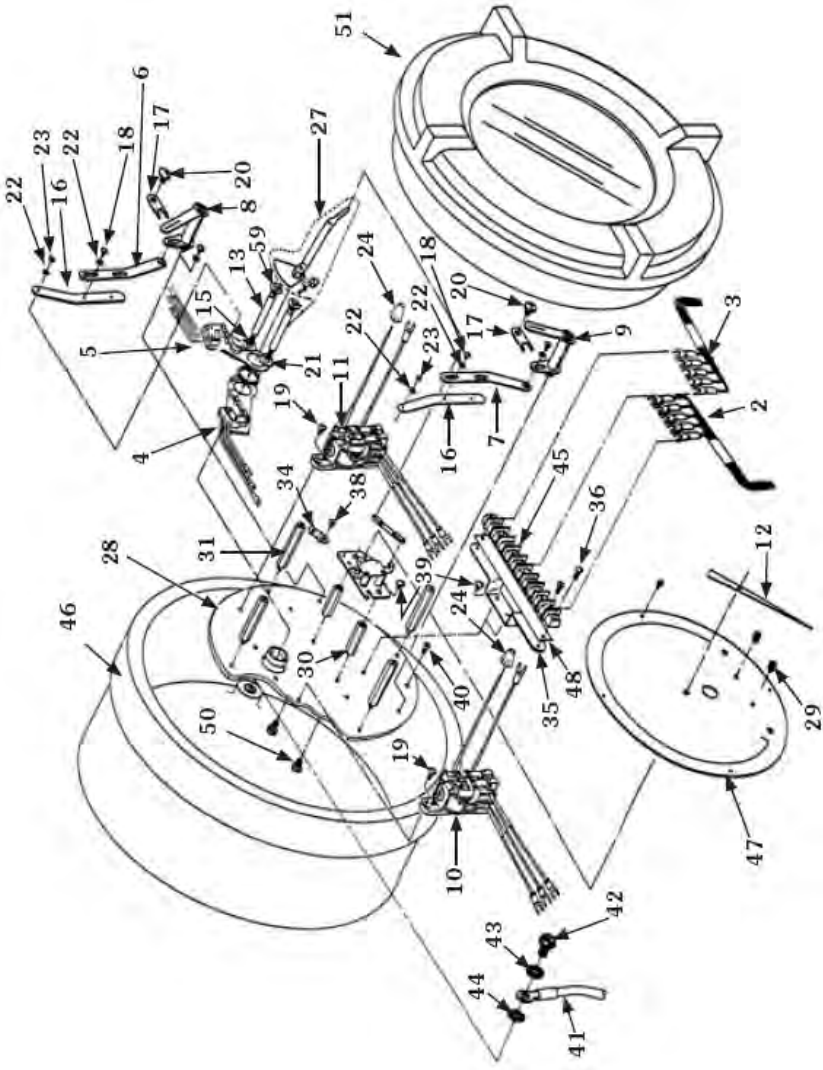


Figure 5-2. Model 291B Assembly Drawing

**WARNING** 

Use only spare parts identified in this manual. Cameron bears no legal responsibility for the performance of a product that has been serviced or repaired with parts that are not authorized by Cameron.



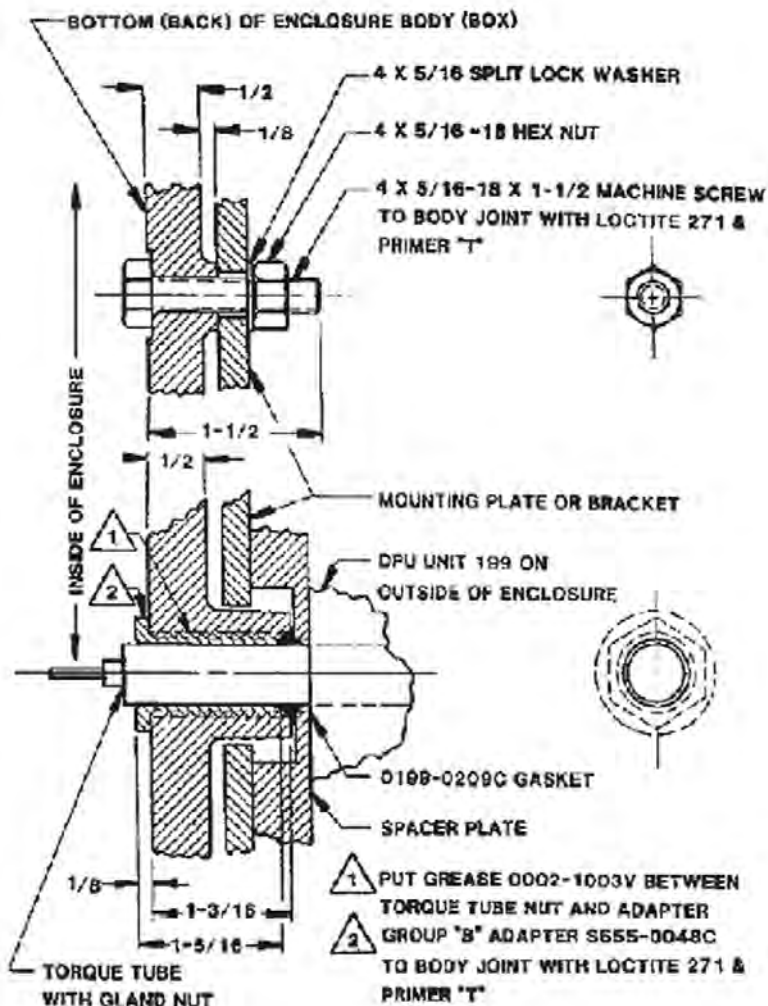


Figure 5-3. Model 291B Detail Drawing

**Table 5-2. Model 291B Parts List**

ITEM	DESCRIPTION	PART NO.	PER UNIT		
1	DIFFERENTIAL PRESSURE UNIT (NOT SHOWN)	SEE DPU 199 MANUAL	1		
2	HIGH EXTERNAL WIRING ASSY. (2.5' Long):		1		
	HIGH ALARM, SPDT (WITHOUT RELAY)	S655-0056B			
	HIGH ALARM, DPDT (WITHOUT RELAY)	290B-1090B			
	HIGH ALARM (WITH RELAY)	290B-1084B			
3	LOW EXTERNAL WIRING ASSY. (2.5' Long):		1		
	LOW ALARM, SPDT (WITHOUT RELAY)	0288-0021B			
	LOW ALARM, DPDT (WITHOUT RELAY)	290B-1089B			
	LOW ALARM (WITH RELAY)	0288-0008B			
4	LOW SWITCH ASSY.:		1		
	LOW ALARM, SPDT (WITHOUT RELAY)	0288-0024B			
	LOW ALARM, DPDT (WITHOUT RELAY)	290B-1010B			
	LOW ALARM (WITH RELAY)	0288-0039B			
5	HIGH SWITCH ASSY.:		1		
	HIGH ALARM, SPDT (WITHOUT RELAY)	290B-1006B			
	HIGH ALARM, DPDT (WITHOUT RELAY)	290B-1012B			
	HIGH ALARM (WITH RELAY)	290B-1008B			
6	LOW ALARM DRIVE PLATE ASSY.	0288-0026B	1		
7	HIGH ALARM DRIVE PLATE ASSY.	0288-0027B	1		
8	LOW SWITCH ADJUSTMENT INDEX ASSY.	0288-0028B	1		
9	HIGH SWITCH ADJUSTMENT INDEX ASSY.	0288-0029B	1		
10	LOW RELAY ASSY. (* = Non-CE Use Only):			1	
		<b>Coil Voltage</b>	<b>Wired SPDT</b>		<b>Wired DPDT</b>
		6 VAC	0288-0015B		0288-1045B
		12 VAC	0288-0045B		0288-1035B
		24 VAC	0288-0016B		0288-1044B
		*125 VAC	0288-0017B		0288-1043B
		*250 VAC	0288-0046B		0288-1034B
		6 VDC	0288-0018B		0288-1038B
		12 VDC	0288-0019B		0288-1037B
		24 VDC	0288-0020B		0288-1036B
		*110 VDC	0288-0047B		0288-1033B
11	HIGH RELAY ASSY. (* = Non-CE Use Only):			1	
		<b>Coil Voltage</b>	<b>Wired SPDT</b>		<b>Wired DPDT</b>
		6VAC	0288-0009B		0288-1054B
		12 VAC	0288-0042B		0288-1048B
		24 VAC	0288-0010B		0288-1053B
		*125 VAC	0288-0011B		0288-1052B
		*250 VAC	0288-0043B		0288-1047B
		6VDC	0288-0012B		0288-1051B
		12 VDC	0288-0013B		0288-1050B
		24 VDC	0288-0014B		0288-1049B
		*110 VDC	0288-0044B		0288-1046B

**Table 5-2. Model 291B Parts List (cont'd)**

ITEM	DESCRIPTION	PART NO.	PER UNIT
**12	POINTER ASSY:		1
	WHITE	0288-0030B	
	BLACK	0288-0031B	
13	PLATE SCREW:		
	LOW OR HIGH ALARM (SINGLE)	0317-0012C	1
	DUAL ALARM	0317-0012C	2
14	SPRING WASHER:		
	LOW OR HIGH ALARM (SINGLE)	0257-0019C	1
	DUAL ALARM	0257-0019C	2
15	SWITCH PLATE SPACER, HIGH ALARM (SINGLE)	0258-0007C	1
16	LINK PLATE:		
	LOW OR HIGH ALARM (SINGLE)	0288-0016C	1
	DUAL ALARM	0288-0016C	2
17	STRAP:		
	LOW OR HIGH ALARM (SINGLE)	0288-0017C	1
	DUAL ALARM	0288-0017C	2
18	SCREW, 3-48 X 3/16, SST SL., BINDING HD.:		
	LOW OR HIGH ALARM (SINGLE)	0117-0007J	3
	DUAL ALARM	0117-0007J	6
19	SCREW, 4-40 X 1/4 SST SL., FL., HD. (WITH RELAY ONLY):		
	LOW OR HIGH ALARM (SINGLE)	0112-0037J	2
	DUAL ALARM	0112-0037J	4
20	SCREW, 8-32 X 1/4, SST, SL., BINDING HD.:		
	LOW OR HIGH ALARM (SINGLE)	0117-0016J	1
	DUAL ALARM	0117-0016J	2
21	WASHER, #8 FLAT, SST:		
	LOW OR HIGH ALARM (SINGLE)	0317-0019J	1
	DUAL ALARM	0317-0019J	2
22	WASHER, NO. 3 FLAT, SST:		
	LOW OR HIGH ALARM (SINGLE)	0003-0045K	4
	DUAL ALARM	0003-0045K	8
23	GRIP RING (LOW/HIGH ALM.) (SINGLE/DUAL)	0087 -0011 T	1
24	WIRE NUT CONNECTOR (NOT SHOWN):		
	LOW OR HIGH ALARM (SINGLE) WITH RELAY	0109-0017T	1
	DUAL ALARM WITH RELAY	0109-0017T	2
25	MOVEMENT ASSEMBLY	0288-0035B	1
26	LINK ASSEMBLY	0288-0036B	1
27	DRIVE ARM ASSEMBLY: 289A (199 DPU)	0288-0037B	1
28	PLATE, MOUNTING ASSEMBLY	0290-0002B	1
29	STOP, SNUBBER	0226-0028C	2
30	RISER, MOVEMENT	0277-0035C	2
31	RISER, SCALEPLATE	0277-0003C	4
34	BRACKET, STOP	0288-0028C	1
35	BRACKET, TERMINAL BLOCK	0288-0029C	1
36	SCREW, 6-32 X 3/8, SL., RD., HD.	0111-0015J	2
37	SCREW, 4-40 X 3/16 SST, SL., FIL., HD.	0114-0023J	4