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# Ultrasonic Open Channel Flow Meter Weir Design Manual

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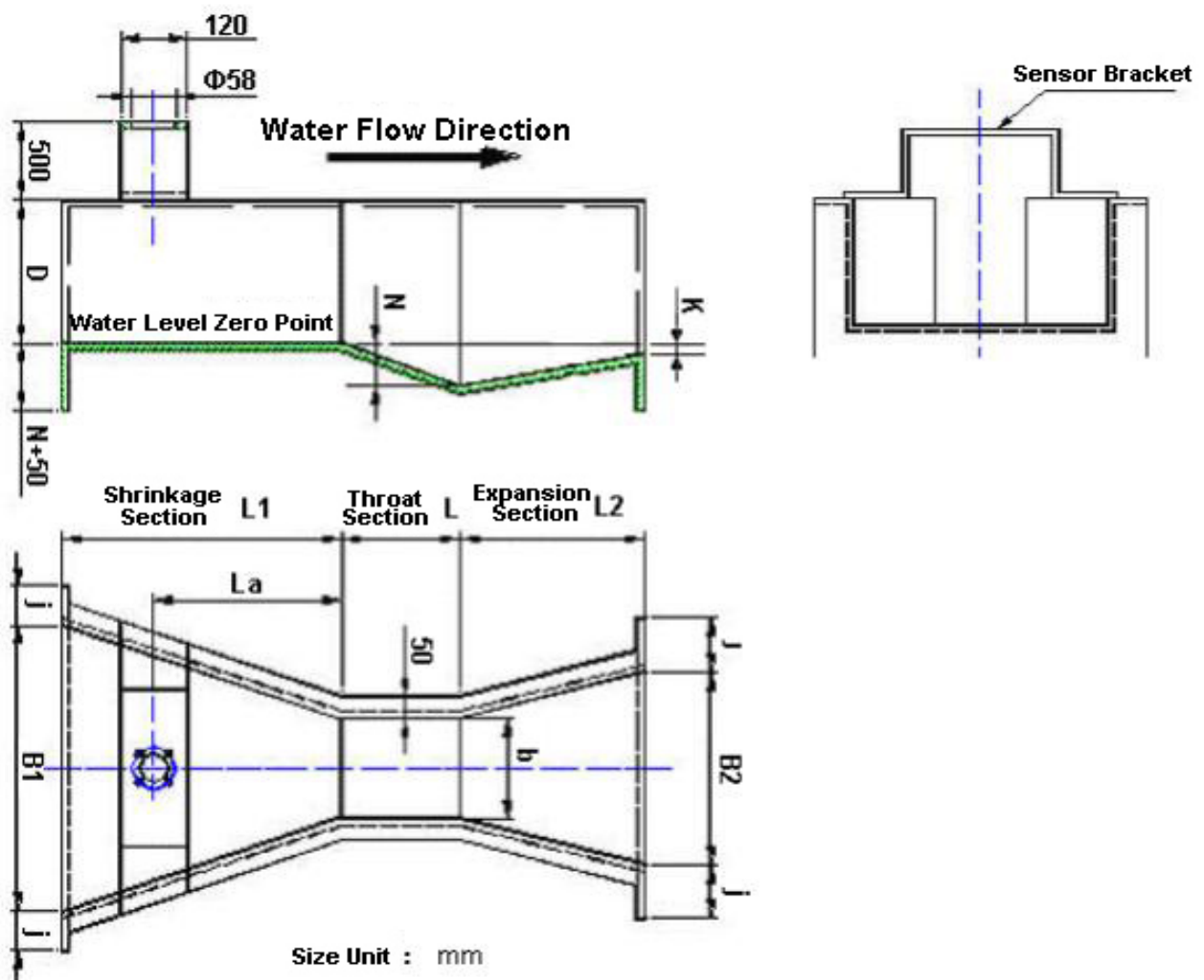
## I. Parshall Flume

### Material:

8mm thickness glass fiber unsaturated polyestercomposites material (FRP) , The bigger flow rate, the thicker wall thickness.

### Attention:

- 1.Inner size accurate, inner wall smooth & flat.
2. J size has relationship with channel installation, the user need consider according to the site.
3. Parshall plume center line should be coincide with the channel center line, which make the water flow will not have the phenomenon of bias current when enter the parshall flume.
4. After the parshall flume has water, the water should be free flow, parshall flume submerged ratio Should be smaller than the prescribed critical submerged ratio.
- 5.The parshall flume upstream should have straight pipeline 5 times of the channel and make the water enter parshall flume steadily, there is no left and right bias current and the impact of channel slope( see below pic)
- 6.Parshall flume install on the channel should be fixed, closed touch the channel wall and bottom, no leakage. The measuring part is the flume throat section.



No.	Flow Range (T/H)		Channel (mm)	Water Level Range (mm)		Critical Submerge Degree %
	Q (min)	Q (max)	>Width×Height	h (min)	h (max)	
1	0.3	19.4	>200×250	15	210	0.5
2	0.6	47.5	>250×300	15	240	0.5
3	2.8	115.6	>300×600	30	330	0.5
4	5.4	399.6	>450×800	30	450	0.6
5	9.0	903.6	>600×1000	30	600	0.6
6	12.6	1440.0	>1000×1200	30	750	0.6
7	16.2	2268.0	>1200×1200	30	750	0.6
8	45.0	3060.0	>1400×1200	50	750	0.6

Open channel flow meter installation size (unit: mm)

No.	Throat Part			Contraction Part			Diffuser Part			Wall Height	Flow Parameter	
	b	L	N	B1	L1	La	B2	L2	K	D	C	n
1	25	76	29	167	356	237	93	203	19	230	217	1.550
2	51	114	43	214	406	271	135	254	22	260	435	1.550
3	76	152	57	259	457	305	178	305	25	460	638	1.550
4	152	305	114	400	610	407	394	610	76	610	1372	1.540
5	228	305	114	575	864	576	381	457	76	770	1927	1.530
6	300	600	230	780	1350	902	600	920	80	800	2444	1.521
7	450	600	230	840	1425	948	750	920	80	950	3737	1.537
8	600	600	230	1020	1500	1000	900	920	80	950	5051	1.548

## II.Triangular Weir

### Material

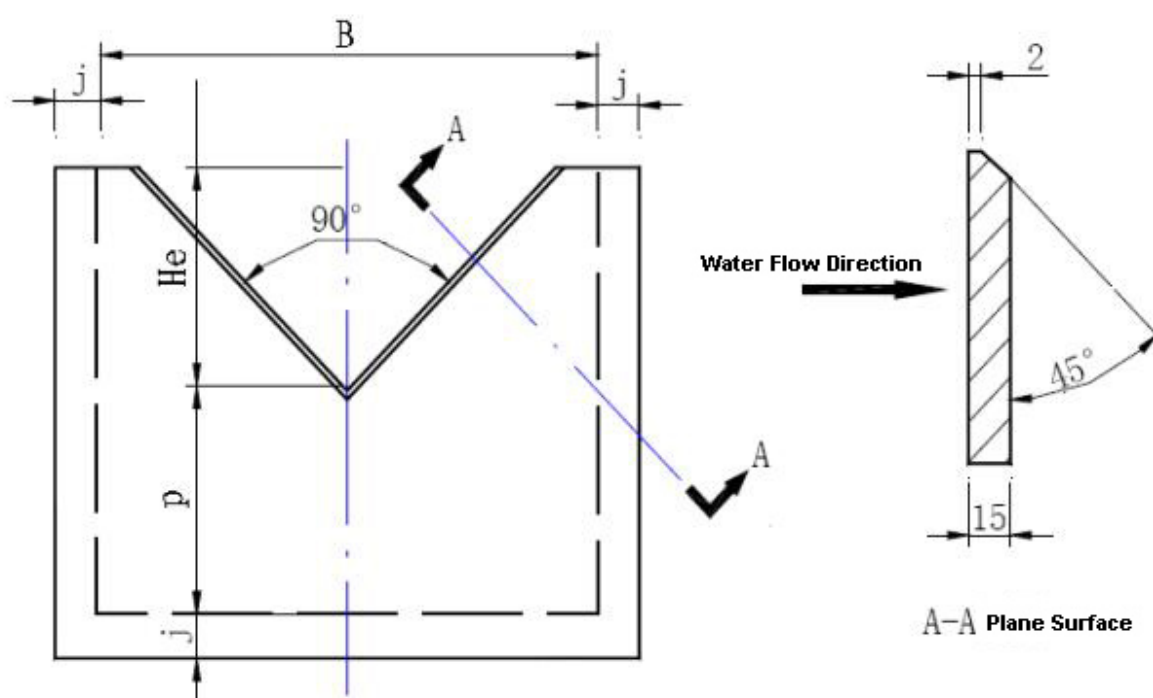
15mm thickness glass fiber unsaturated polyestercomposites material (FRP) , The bigger flow rate, the thicker wall thickness.

### Attention

Triangle size must be accurate, straight, smooth, surface smooth, flat without twist.

Triangle weir center line should be doublicated with the weir center line.

J is the embedded channel wall part, the size is according to the working site condition.



Normal specification open channel  
ultrasonic flow meter installation size ( Unit : mm)

No.	Flow Range(T / H)		Applicable Channel >Width X Height	B	He	p	Flow Parameter	
	Q (min)	Q (max)					n	C
1	0	20	>275×220	275	110	110	2.5	5083
2	0	40	>360×288	360	144	144	2.5	5083
3	0	80	>475×380	475	190	190	2.5	5083
4	0	121	>560×448	560	224	224	2.5	5083
5	0	182	>660×528	660	264	264	2.5	5083
6	0	272	>775×620	775	310	310	2.5	5083
7	0	395	>900×720	900	360	360	2.5	5083
8	0	616	>1075×860	1075	430	430	2.5	5083
9	0	899	>1250×1000	1250	500	500	2.5	5083
10	0	1359	>1475×1180	1475	590	590	2.5	5083

### III.Rectangular Weir

#### Material:

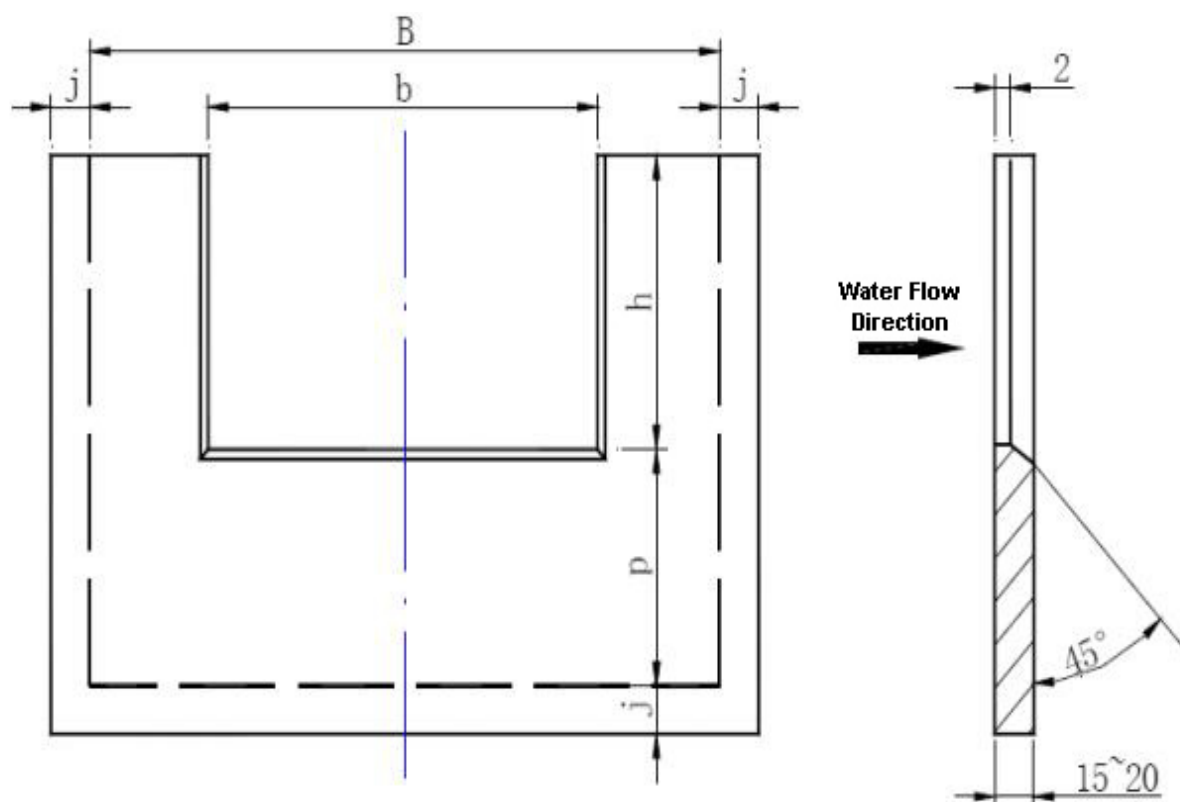
15~20mm thickness glass fiber unsaturated polyestercomposites material (FRP) , The bigger flow rate, the thicker wall thickness.

#### Attention:

Rectangular size must be accurate,straight,smooth,surface smooth,flat without twist.

Rectangular weir center line should be doublicated with the weir center line.

J is the embedded channel wall part,the size is according to the working site condition.



Normal specification open channel  
ultrasonic flow meter installation size ( Unit : mm )

No.	Flow Range ( T / H )		Applicable Channel > Wide X Height	B	b	h	p	Flow Parameter	
	Q ( min )	Q ( max )						n	C
1	0.04	85	>500×500	500	200	163	337	1.5	1280
2	0.05	195	>650×650	650	260	239	411	1.5	1660
3	0.08	414	>750×750	750	375	308	442	1.5	2406
4	0.10	803	>850×850	850	510	387	463	1.5	3318
5	0.15	1662	>1000×1000	1000	700	501	499	1.5	4669
6	0.19	3332	>1250×1250	1250	875	683	567	1.5	5886
7	0.26	6504	>1450×1450	1450	1160	857	593	1.5	8178
8	0.33	12643	>1800×1800	1800	1440	1142	658	1.5	10344
9	0.48	26396	>2150×2150	2150	1935	1453	697	1.5	15060
10	0.62	52524	>2700×2700	2700	2430	1929	771	1.5	19596