

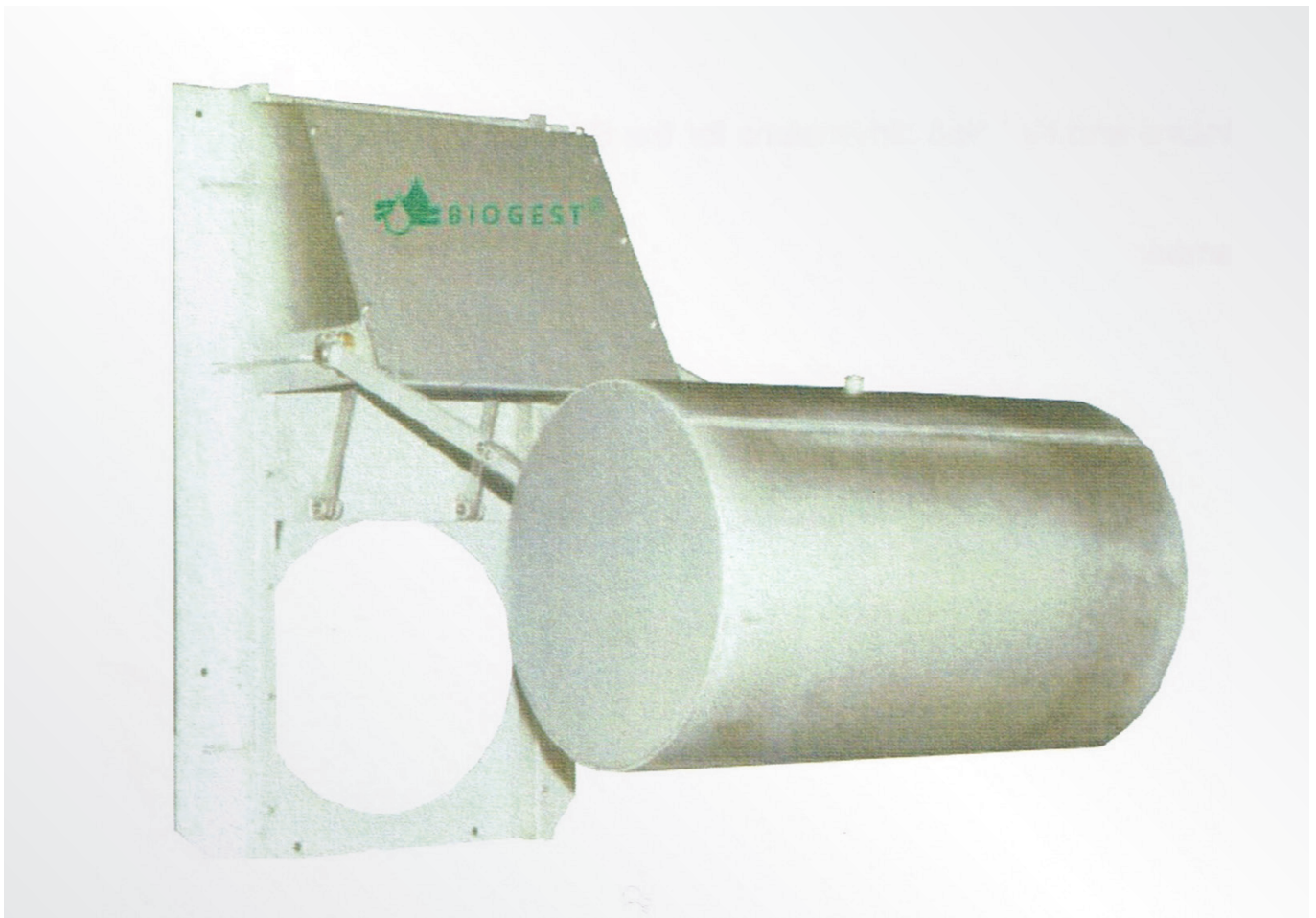
## SWDS Flowlimiters

### Key Features & Benefits:

- Float controlled penstock with moving shutter to limit downstream flow.
- Used for shallow impounding heads up to 3m.
- Wall or Flange mounting.
- Installed on the wet side (outlet) of a chamber.
- Adjustable maximum flow.

### How We Create Value:

- Self Regulating - no external power required.
- Low cost flow control.
- Minimal Maintenance requirement.
- 25 year design life – stainless steel manufacture.



## SWDS Flowlimiters

The SWDS float controlled penstock is an economic method of limiting the flow rate passing downstream. The unit can be set to permit a maximum flow rate, but this can be adjusted on site following experience if required.

In dry weather conditions, the float is in its lowest position and the orifice is fully open and unrestricted. When a storm event occurs, the level in the chamber increases and in turn the float rises which lowers the shutter restricting the flow passing through the unit.

The pass forward flow is calculated using the estimated maximum head and the orifice area.

### Size & Flow Range:

The adjacent table provides a guide to the available range of penstocks together with the flow range each unit can be set to.

If the head range is exceeded the flow will increase in line with a standard orifice discharge.

### Installation:

The penstock can be installed on a flat vertical wall; however if a circular manhole ring is being used to construct the chamber then a stainless steel adapter plate is available for easy mounting.

Flange connection can also be used for units up to DN 500 if a direct connection to a ductile iron pipe is required.

SWDS Size	Flow Range		Max Head m	Application	
	min l/s	max l/s		Foul	SW
100	5	11	1	No	Yes
150	12	26	1	No	Yes
200	20	48	1	Yes	Yes
250	42	82	1.5	Yes	Yes
300	70	128	1.5	Yes	Yes
350	90	185	1.5	Yes	Yes
400	150	256	2	Yes	Yes
450	180	340	3	Yes	Yes
500	240	438	3	Yes	Yes
550	330	550	3	Yes	Yes
600	370	680	3	Yes	Yes
650	450	820	3	Yes	Yes
700	540	990	3	Yes	Yes
750	650	1170	3	Yes	Yes
800	760	1370	3	Yes	Yes
850	890	1590	3	Yes	Yes
900	1020	1830	3	Yes	Yes
950	1170	2090	3	Yes	Yes
1000	1330	2400	3	Yes	Yes

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### Head / Discharge Characteristics:

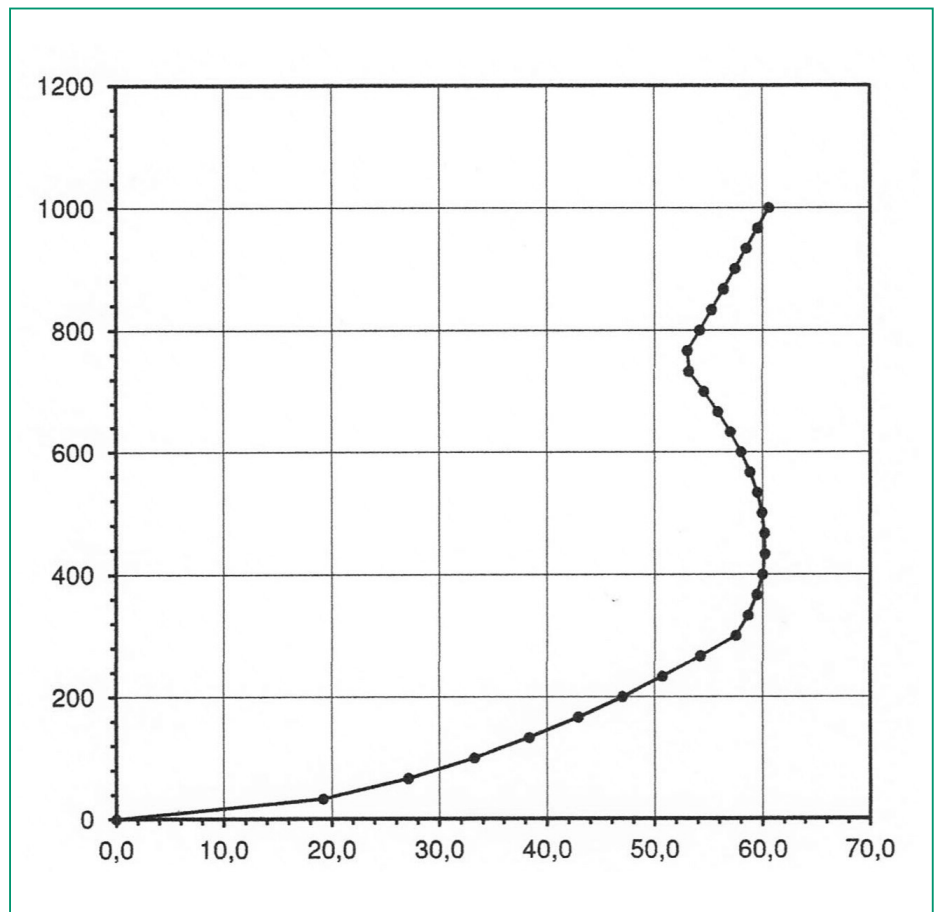
The head /discharge characteristics of the flow limiter are different to the more accurate Alpheus flow regulator range. The difference is that the flow regulators are provided with a control cam that is designed to ensure that the discharge is kept constant; whereas the flow limiter is purely a direct relationship between the float position and the shutter plate. This provides a curve as follows:

The graph above provides a typical discharge curve for the flow limiter. This example is for a DN 250 unit limited to a maximum, discharge of 60 l/s.

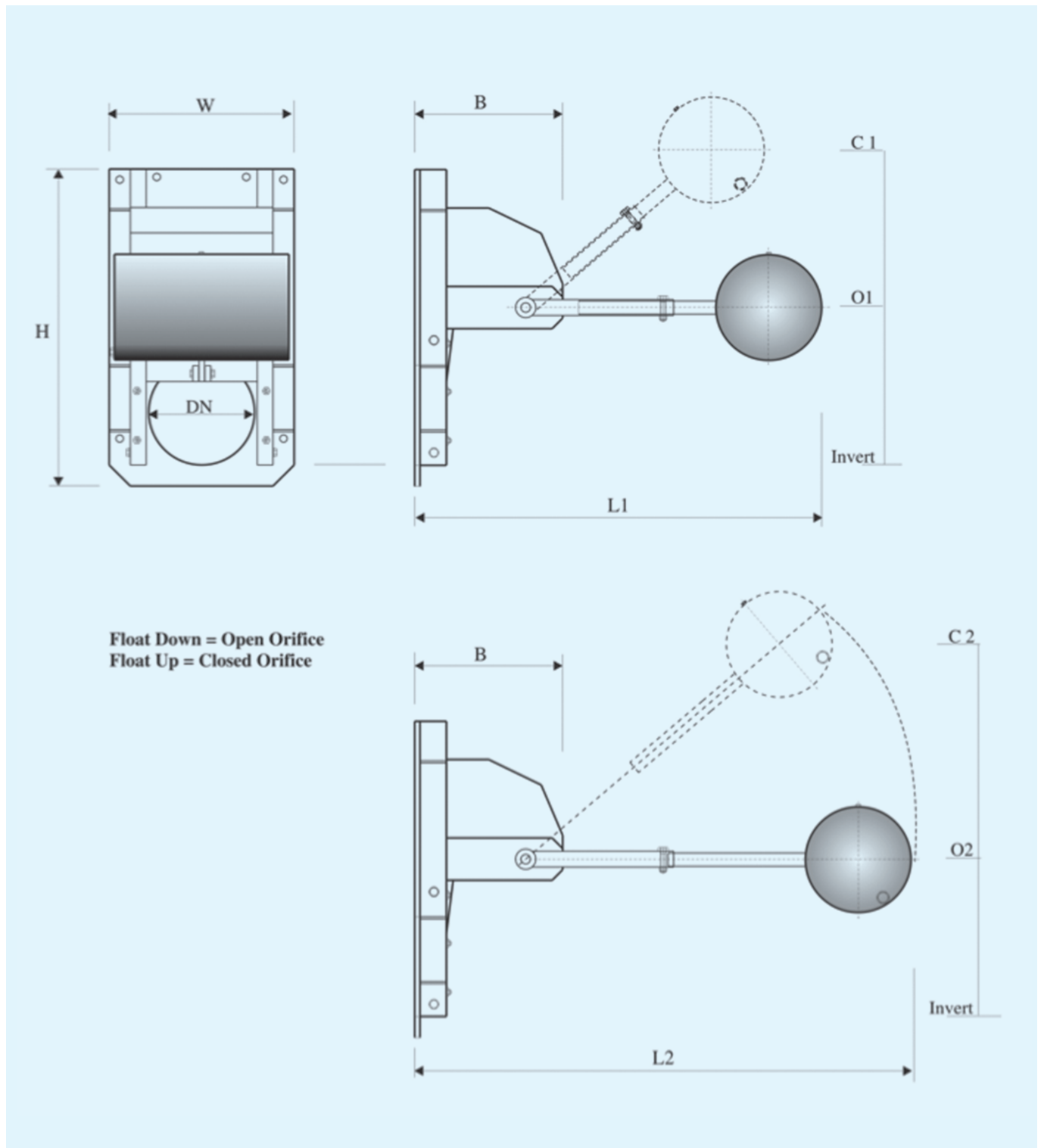
The curve is very typical of a vortex type flow control (Hydro-brake type). The advantage of this unit is that

the penstock is installed with standard approach channel (no contorted approach benching) also all silts can be passed through the control without restriction.

If required this unit can be adjusted to allow greater or lesser flows to pass, by adjustment of the float arm. The float position required to pass a particular flow rate can be calculated and provided for adjustment.



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DN mm	Height H mm	Width W mm	B mm	Float Position			Float Position		
				Float Length L1	Fully Open O1	Fully Closed C1	Float Length L2	Fully Open O2	Fully Closed C2
100	400	250	220	560	50	*	640	50	*
150	500	300	250	640	75	*	770	75	*
200	600	350	280	770	100	*	950	100	*
250	700	400	310	900	125	*	1130	125	*
300	800	450	350	1020	150	*	1300	150	*
350	900	550	380	1160	175	*	1490	175	*
400	1000	600	420	1300	200	*	1670	200	*
450	1100	650	460	1430	225	*	1850	225	*
500	1200	700	490	1550	250	*	2020	250	*
550	1400	850	570	1830	275	*	2220	275	*
600	1500	900	600	1970	300	*	2410	300	*
650	1600	950	640	2110	325	*	2600	325	*
700	1700	1000	700	2260	350	*	2800	350	*
750	1800	1050	740	2390	375	*	2980	375	*
800	1900	1100	620	2530	400	*	3170	400	*
850	2000	1150	820	2680	425	*	3370	425	*
900	2100	1200	840	2810	450	*	3550	450	*
950	2200	1250	890	2950	475	*	3740	475	*
1000	2300	1300	772	3040	500	*	3880	500	*

\* depending on specific flow requirements

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