Jones + Attwood CIS™ Combined Inlet System

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CLEARLY WASTEWATER

J+A CIS™ for efficient screening, grit and grease separation

Key Features & Benefits:

- Designed to suit any elevation and flow system
- Band Screens used for fine screening
- Screw classifier for separating mineral solids from sludge
- Fabricated or concrete tanks
- Packaged to suit individual applications

How We Create Value:

- Up to 81.2% Screen Capture Ratio
- Small footprint reduces land use costs
- Lower Head loss values than other units
- Prevents ragging and pump blockages

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How it Works

The J+A CIS (Combined Inlet System) makes full use of the best available methods for the pretreatment of raw sewage effluent.

The heart of the CIS is its large grit removal chamber. Grit separation is carried out by settlement and, because of the extended retention period, there is a tendency to settle heavier particles of non-mineral solids. This contamination is minimized by band screening equipment.

Band screens have 6mm diameter perforations (2 and 3mm perforations are also available), and screen apertures have a capture value of 81.2% (UKWIR tests). This screening efficiency minimizes contamination of the grit by sludge, thus allowing grit transferal to the classification phase while avoiding problems of ragging and pump blockages.

The grit and sludge mixture is pumped from the settlement tank by specially designed J+A grit pumps. These pumps are mounted alongside the grit tank, providing them with a primed condition. The pumps deliver the grit and sludge mixture to the highly effective screw grit washer/classifier. This machine efficiently separates mineral solids from other sludge-type materials. Separated grit particles are dewatered and delivered for disposal, while the transport water and sludge is returned to the main flow.

Screenings removed by the band screens are processed through a J+A Washpactor Wave™ / Washpactor Jet™ system. This is highly effective method that washes screenings, eradicates fecal solids and presents dry, reduced volume screenings for easy disposal.

The screens are positioned within the grit settlement tank, dramatically reducing the space required for an inlet works structure. In most cases there is also ample room on the deck of the unit to house most of the ancillary apparatus (the Washpactor Wave / Washpactor Jet, Grit Classifier and the control panel) reducing the space required even further.

Locating screens within the grit tank allows them to be positioned at greater than normal depths below the water surface. Therefore, larger areas of the screen are available for the flow, and lower headloss values can be achieved. The CIS as a whole can offer considerable savings in operational headloss.

A J+A CIS for 140 l/sec, featuring a full carbon steel design and partly buried below ground

A typical J+A CIS manufactured from stainless steel, designed for 135 l/sec

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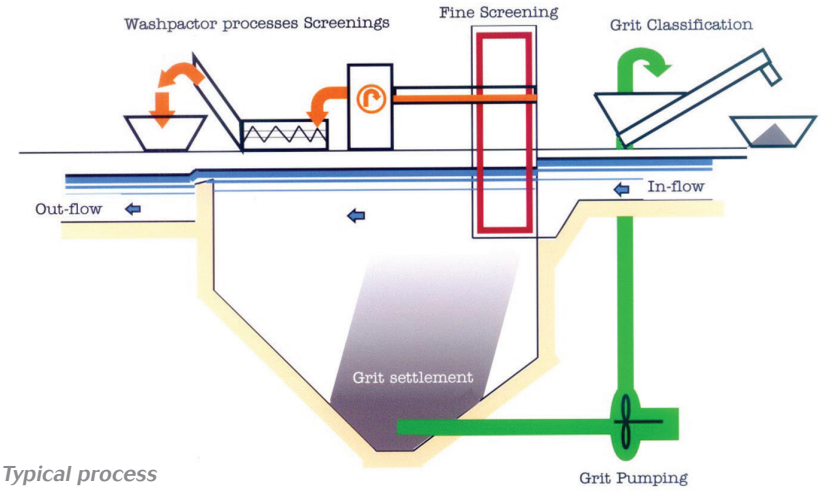


Typical process

The CIS can be arranged to suit any elevation and flow system. The CIS unit can be supplied in either full or part steel, depending on the flow capacity to be accommodated. Carbon steel versions are also available. Below grade installations and those with large capacities are most suitable for in-situ concrete construction.

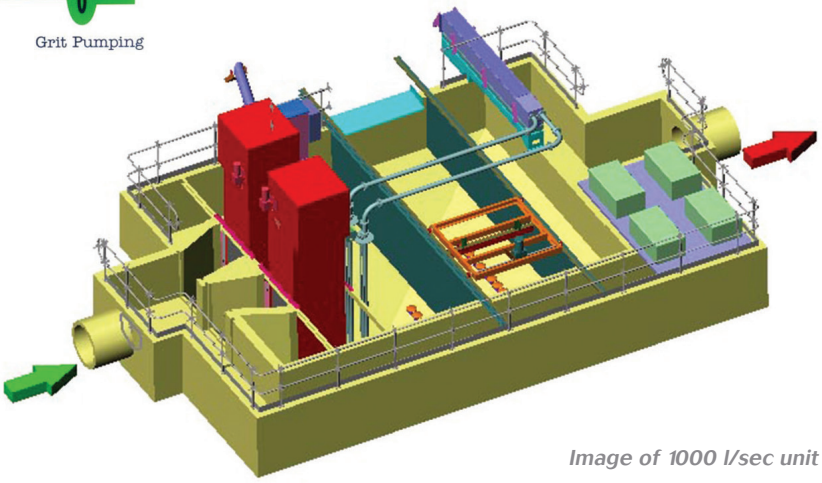
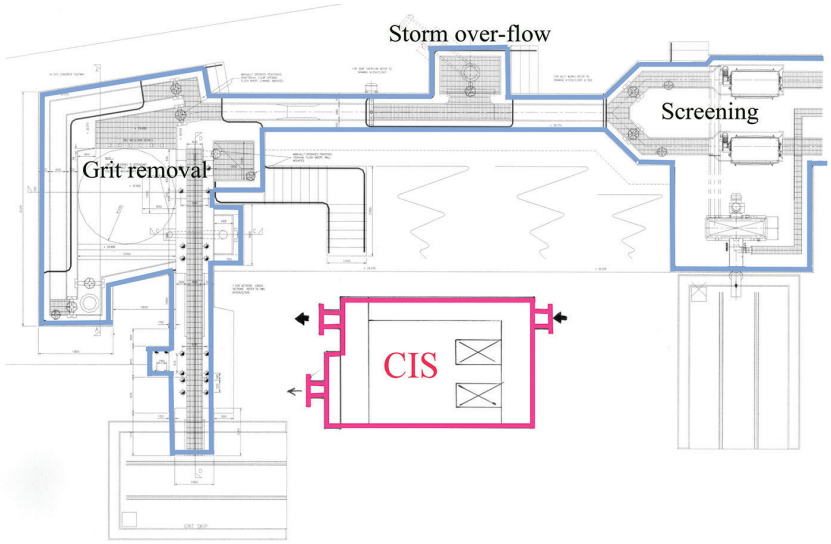


Image of 1000 l/sec unit



Comparison of J+A CIS footprint with conventional Inlet Works

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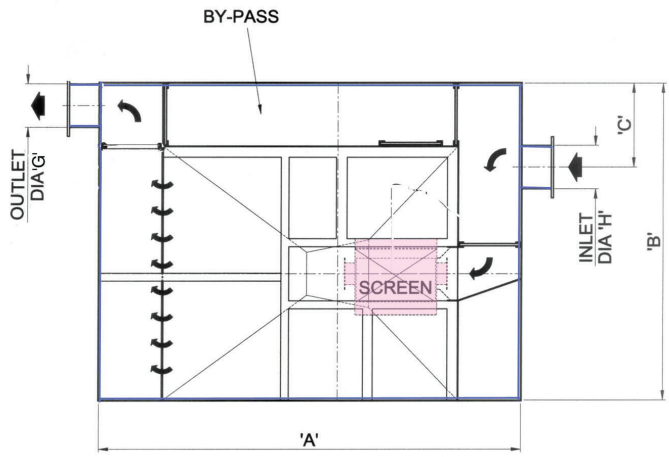
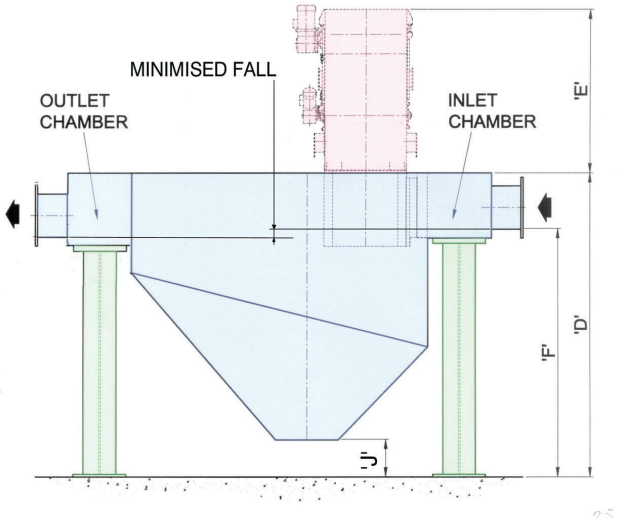
CIS NO.	Flow l/s	A	B	C	D	E	F	G	H	J
25	25	2.40	1.80	0.60	2.30	1.56	1.90	0.30	0.30	0.20
50	50	2.80	1.90	0.60	2.50	1.56	2.00	0.30	0.30	0.20
100	100	3.50	2.40	0.70	3.20	1.56	2.50	0.40	0.40	0.25
175	175	4.20	2.90	0.90	3.60	2.0	3.25	0.50	0.50	0.25
250	250	5.10	3.40	1.20	4.50	2.0	3.70	0.70	0.70	0.25
500	500	6.70	4.50	1.75	5.80	2.40	4.60	1.00	1.00	0.30
750	750	7.40	5.00	1.75	6.50	2.40	5.20	1.00	1.00	0.30
1000	1000	8.50	5.50	2.25	7.25	2.40	5.60	1.25	1.25	0.30

These dimensions are typical and should be used for guidance purposes only. All dimensions are in metres.





Transporting an inlet works

The illustration shows a complete unit.

Dimensions are for inside tank requirements. These can be used for the approximation of concrete construction where necessary.

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