

STORAGE TANK SAMPLING SYSTEM

- ◆ **FUEL SAMPLING WITHIN A CLOSED SYSTEM**
- ◆ **FULLY COMPLIANT WITH JIG2 APPENDIX A11**
- ◆ **ALJAC SAMPLER FOR VISUAL FUEL CHECK**
- ◆ **200 LITRE STAINLESS STEEL FLUSH TANK**
- ◆ **STAINLESS STEEL VALVES AND PIPEWORK**
- ◆ **SUPPORT FRAMEWORK WITH FORK LIFT POINTS**



Introduction

Aljac has been the market leader in the introduction of closed sampling since we designed the Aljac 4 Litre Closed Circuit Sampler (CCS) in early 1980s. Previously, aviation fuel sampling was carried out by draining fuel into glass jars and stainless steel buckets. However, the introduction of closed sampling brought with it the benefits of improved operational efficiency, zero fuel spillage and reduced environmental impact. These benefits rapidly became recognised by fuel suppliers and resulted in the closed sampling philosophy spreading from use on hydrant dispensers only to the development of complete sampling systems for storage tank sampling, road tanker offloading and fueller loading operations.

Description

For applications where it is necessary to flush a large fuel volume before visually checking the fuel sample, such as storage tank sampling, we have developed our Storage Tank Sampling System. This system is fully in accordance with JIG2 Appendix A11 and uses the Aljac 4 litre Closed Circuit Sampler (CCS) alongside a 200 litre Flush

Tank. Note, larger Flush Tanks can be supplied if a higher flush volume is required. The system uses spring close valves to control the flushing and sampling operations, and the complete system is mounted within a framework which can be fork lifted into position before connecting into the tank drain/sample line and depot pipework.

Closed Sampler.

The Aljac 4 Litre CCS with a hinged lid and integral drain valve allows easy visual examination of the fuel sample for the presence of sediment or free water. Additional water detector test capsule, hydrometer and thermometer options can also be added to the basic Aljac 4 Litre CCS if required.

Flush Tank.

The Flush Tank is manufactured from brushed finish stainless steel and has a conical base to allow water and sediment to drain towards the central low point. A drain line is fitted to the low point to sample the fuel in the tank so that any contamination can be removed before returning the fuel to the depot product recovery system. The counterbalanced hinged lid provides unobstructed access to the entire tank internals and can be locked in the open position to allow

easy internal inspection and cleaning. The Flush Tank is fitted with a graduated Level Gauge which allows the fuel level in the tank to be observed and permits the operator to judge the amount of fuel which has been flushed. In addition, there is a Sample Return Opening in the Flush Tank lid which is fitted with a hinged cover and an internal conical section with a strainer and drop tube. This allows fuel to be poured into the Flush Tank without it free falling inside the tank. The Flush Tank lid is also fitted with a Vent which incorporates a filter to prevent dust entering the tank.

General.

All pipework is stainless steel and all flanged joints are fitted with a bonding wire to ensure electrical continuity throughout the system which prevents the build up of dangerous static electrical charges.

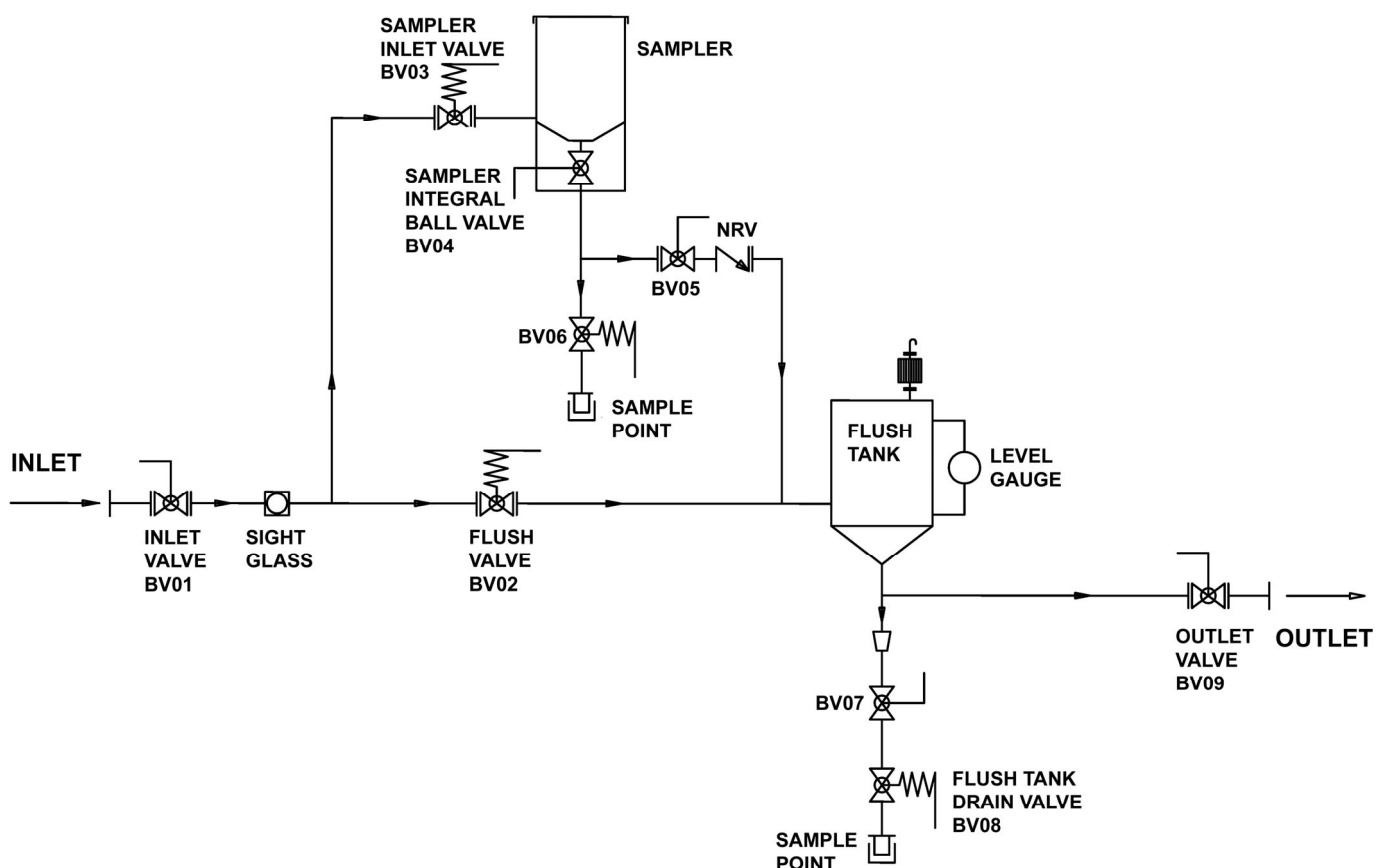
Brass Bonding Lugs are fitted adjacent to the Sample Return Opening and all Sample Points. When returning fuel to the Flush Tank or when flushing/sampling using stainless steel buckets the bucket bonding lead clip must be connected to the appropriate Bonding Lug.

All valves are stainless steel with spring close handles being fitted to the Flush Valve, Sampler Inlet Valve and all Drain Valves.

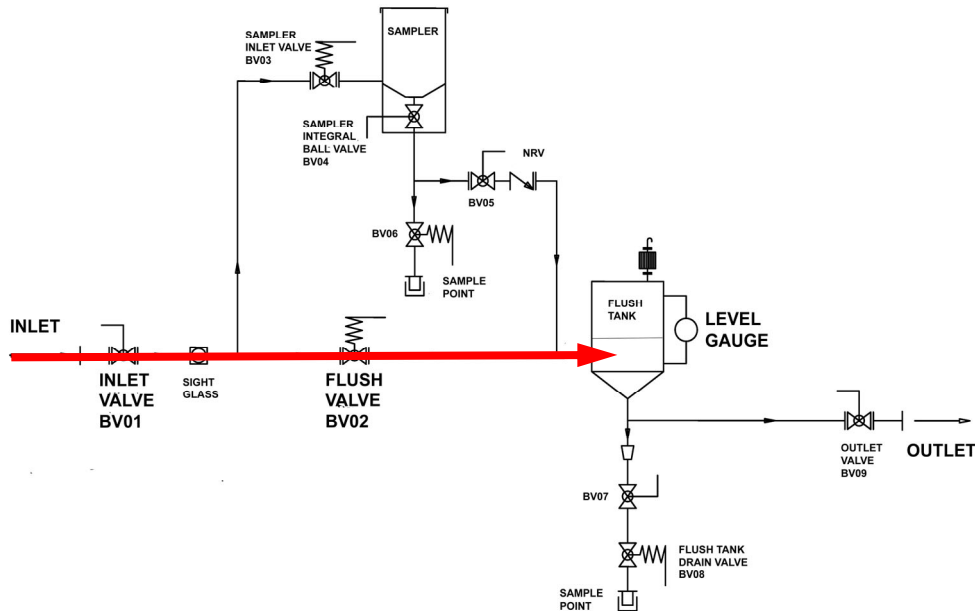
A Sight Glass is fitted so that the operator can easily confirm that flow is actually taking place through the system.

The mounting frame is fabricated from carbon steel and is powder coated to maximise protection against corrosion. The frame incorporates two fork lift points for lifting the system during transit and installation.

Piping and Instrumentation Diagram

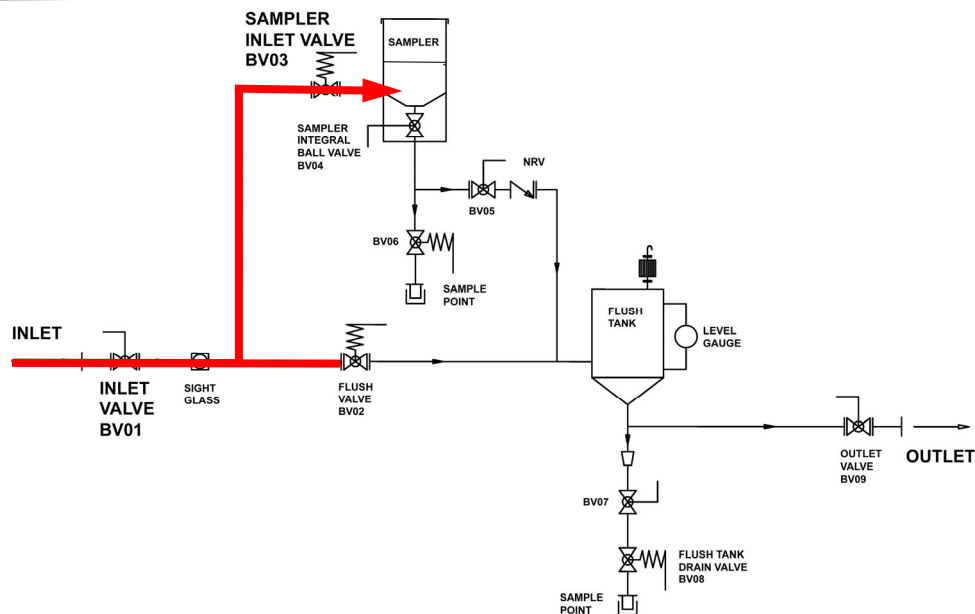


Operation



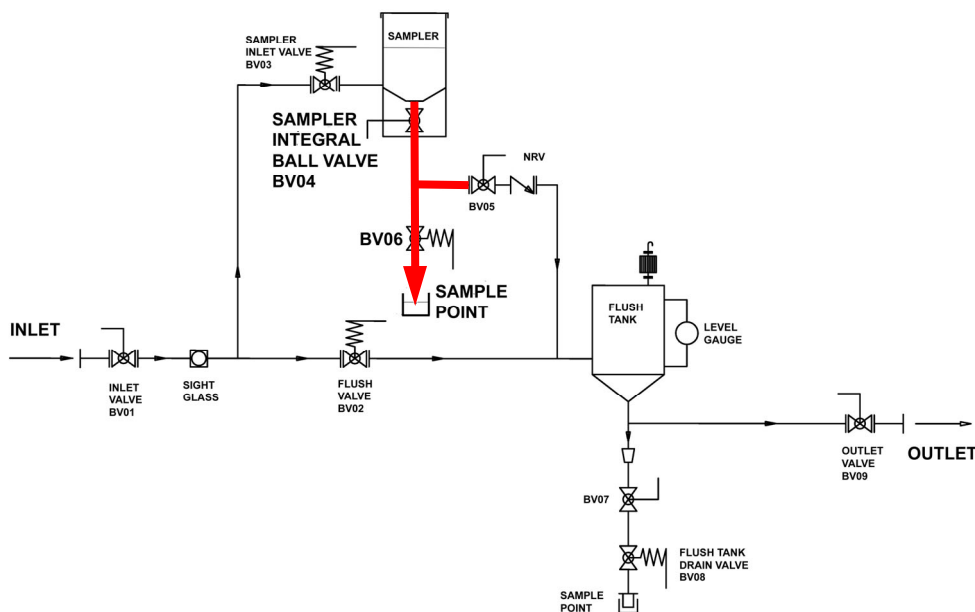
1. Flushing

All valves closed.
Open Inlet Valve BV01.
Hold open Flush Valve BV02 until the required fuel volume has been flushed to fully clear the storage tank sample line contents (judged using the Level Gauge).
Close Inlet Valve BV01.



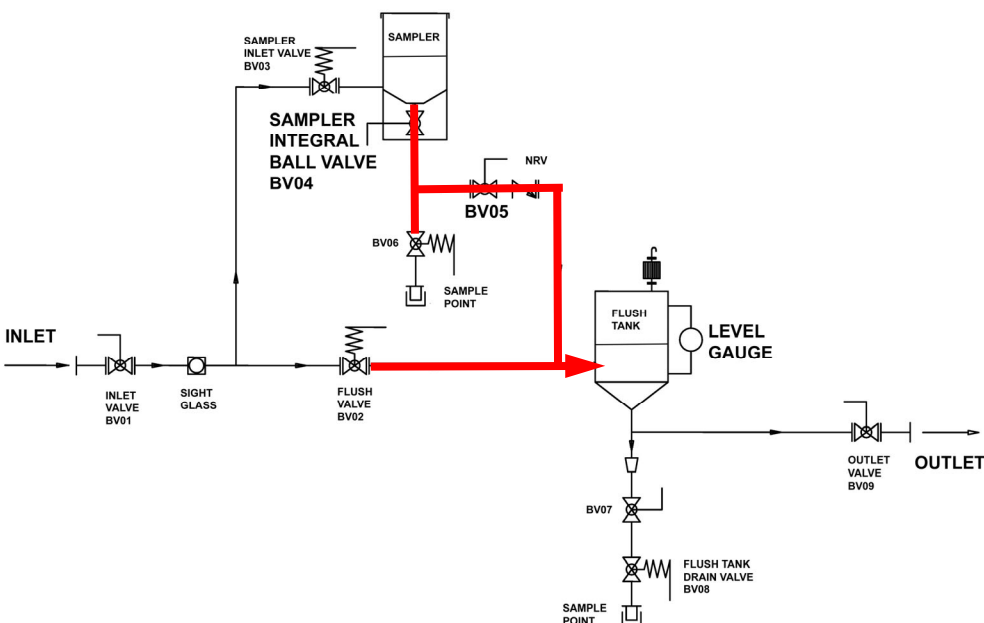
2. Sampling.

All valves closed.
Open Inlet Valve BV01.
Hold open Sampler Inlet Valve BV03 until the Sampler is full.
Visually check the fuel quality and (if appropriate) the fuel density/temperature.
Close Inlet Valve BV01.



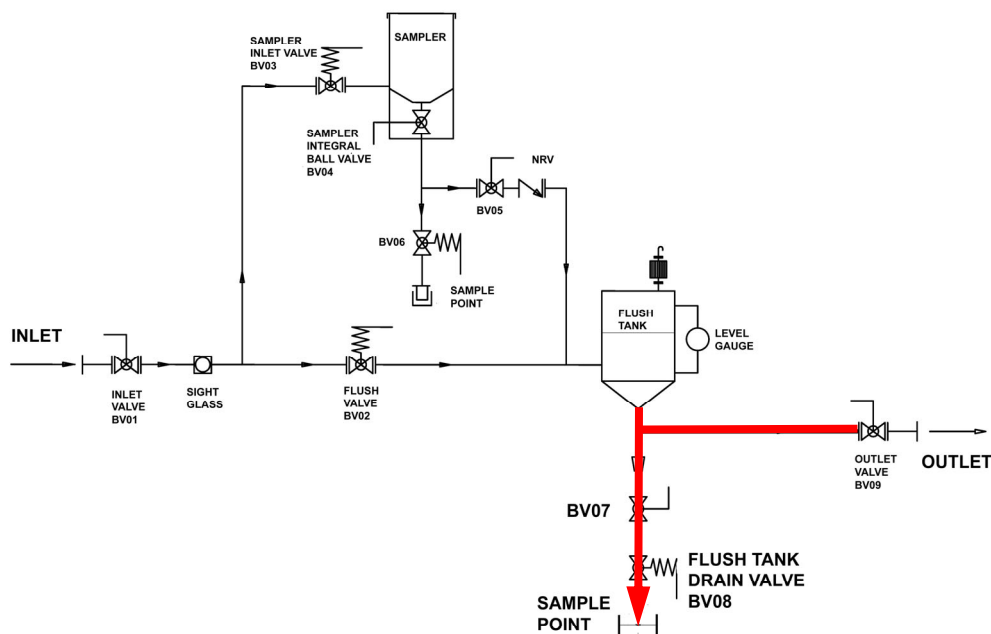
3. Filling Sample Retention Container (If Required).

All valves closed.
Position the sample retention container under the Sample Point and remove the Dust Cap.
Open Sampler Integral Ball Valve BV04 (in the Sampler base).
Hold open Valve BV06 until the sample retention container is full.
Close Sampler Integral Ball Valve BV04 (in the Sampler base).
Replace the Dust Cap.



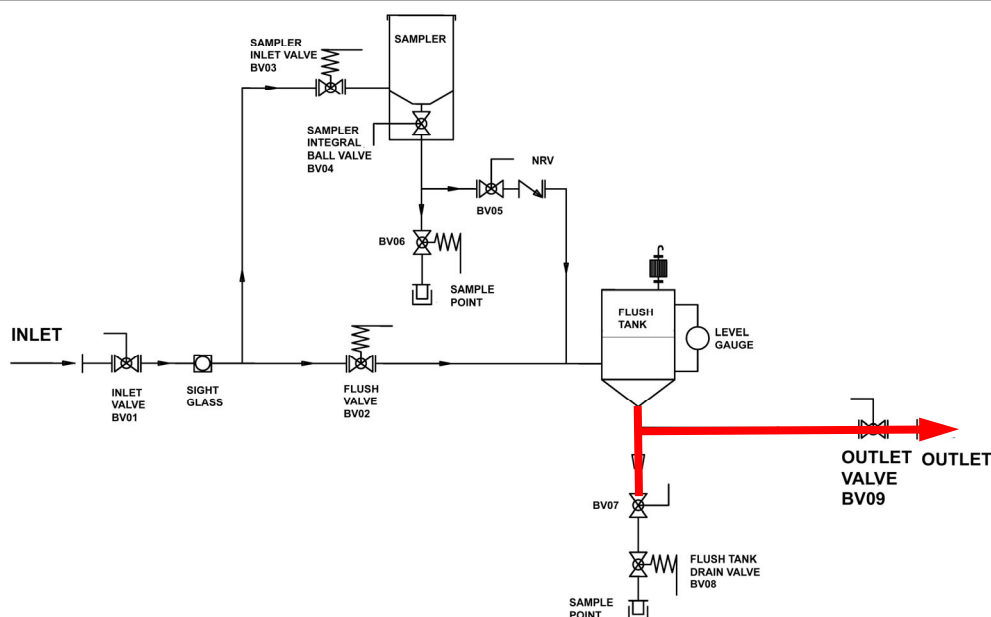
4. Draining Sampler

All valves closed.
Check that there is sufficient available capacity in the Flush Tank using the Level Gauge.
Open Sampler Integral Ball Valve BV04 (in the Sampler base).
Open Valve BV05.
Close Valve BV05 when the Sampler is completely empty.
Close Sampler Integral Ball Valve BV04 (in the Sampler base).



5. Sampling Flush Tank.

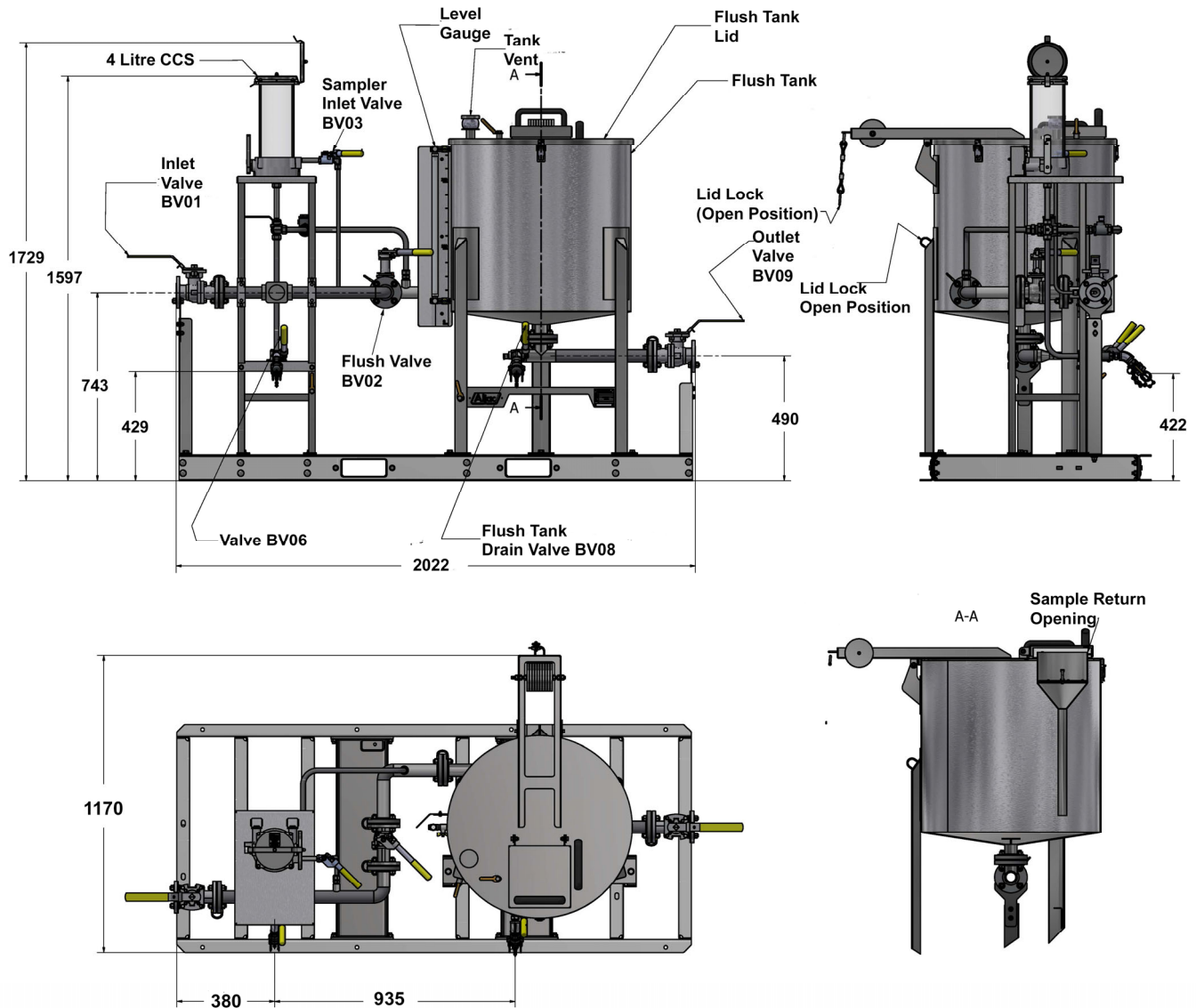
All valves closed.
Position the sample receptacle under the Sample Point.
If using a stainless steel bucket connect the bucket bonding lead clip to the adjacent Bonding Lug.
Remove the Dust Cap.
Open Valve BV07.
Hold open Flush Tank Drain Valve BV08 until the sample receptacle is full.
Repeat until an acceptable sample is obtained.
Close Valve BV07.
Replace the Dust Cap
Disconnect the bucket bonding lead clip.



6. Draining Flush Tank.

All valves closed.
Open Outlet Valve BV09 until the Flush Tank is completely empty.
Close Outlet Valve BV09.

General Arrangement Drawing



All Dimensions in Millimetres. Dimensions are approximate and not to be used for installation.

Detailed Specification

Flush Tank Useable Capacity: 200 Litres (standard). Larger volumes available if required.

Flush Tank Material: Brushed finish type 304 stainless steel. Type 316 is available if required.

Flush Tank Features: Conical sloping base to a central drain point. Counterbalanced hinged lid provides unobstructed access to the entire tank with open position lid lock. Tank vent with filter. Sample return opening with drop tube, strainer and hinged cover. Graduated Level Gauge.

Sampler: Aljac 4 Litre Closed Circuit Sampler. Optional water detector, hydrometer and thermometer additions if required.

Sight Glass: Stainless steel, flanged 1.1/2 inch ANSI B16.5 150lb raised face.

Sampler Inlet Valve: Conbraco 3/8 inch stainless steel spring closed ball valve.

Flush Valve: Stainless steel ball valve flanged 1.1/2 inch ANSI B16.5 150lb raised face, firesafe and antistatic, with spring close handle.

Inlet and Outlet Valves: Stainless steel ball valves flanged 1.1/2 inch ANSI B16.5 150lb

raised face, firesafe and antistatic,

Non Return Valve: Stainless steel threaded 1 inch BSP swing check..

Drain Valves: Conbraco 3/4 inch stainless steel spring close ball valves.

Sample Points: Aluminium Kamlok male adapters with dust caps and brass keep chains.

Large Bore Pipework: Type 316 stainless steel, welded and flanged.

Pipework Gaskets: CNAF 1.5mm thick.

Small Bore Tubing: Type 316 stainless steel with compression fittings.

System Inlet and Outlet: Flanged 1.1/2" ANSI B16.5 150lb raised face.

Support Framework: Carbon steel U section, powder coated RAL 9003 Signal White.

Bonding: All flanges fully bonded. Brass bonding lugs adjacent to all sample points and Sample Return Opening.

WE CAN ALSO OFFER BESPOKE SYSTEMS. PLEASE CONTACT OUR SALES DEPARTMENT WITH YOUR SPECIFICATION.