

## 1. Sink & Autoclave Combo General Overview

The Sink & Autoclave Combo consist of 1no. Effluent Decontamination System ( EDS ) sink capable of processing up to 250 litres per day and 1no. 63 litre top loading Autoclave.

<b>Sterilisation Temperature Range</b>	From 100 to 138 ( °C )
<b>Sterilisation Pressure Range</b>	From 20 to 240 ( kPa ) From 0.2 to 2.4 ( bar )

## 2. Specifications

<b>Autoclave</b>	Autoclave contains the functional elements of an Astell AMA440 ( manual fill ) Autoclave.
<b>Sink EDS</b>	<ul style="list-style-type: none"> <li>• Processing rate: 250 Litres per 24 hours</li> <li>• Holding tank capacity: 25L</li> <li>• Electrical heating element</li> </ul>



A typical Sink & Autoclave Combo

## 3. Required Services

<b>Electricity</b>	2 x 13A power supplies from 220V to 240V
<b>Water Supply</b>	<ul style="list-style-type: none"> <li>• Cold water ( preferably softened ) up to 20L/min</li> <li>• &lt;50ppm Total Dissolved Solids ( TDS ).</li> <li>• pH neutral</li> </ul>
<b>Drainage</b>	Dedicated drain ( ø35mm, 60°C waste to drain )

## 4. Technical Overview

Sink Technical Details	Autoclave Technical Details
<ul style="list-style-type: none"> <li>• Stainless steel basin and tanks                             <ul style="list-style-type: none"> <li>• Automatic water tap</li> </ul> </li> <li>• 5.7" colour touch screen controller with USB port</li> <li>• Fully programmable via password protection                             <ul style="list-style-type: none"> <li>• Temperature controlled</li> <li>• Pressure displays</li> <li>• Pressure gauge</li> <li>• Safety valve</li> </ul> </li> <li>• Continuous stage monitoring</li> <li>• Level controlled 25 litre holding tank</li> <li>• Level controlled 9 litre sterilisation tank</li> <li>• Electric heating – direct immersion</li> <li>• Emergency stop ( linked to both devices )                             <ul style="list-style-type: none"> <li>• Drain Cooling</li> <li>• Optional automatic soap dispenser</li> </ul> </li> <li>• Optional Containment Level 3 / BioSafety Level 3 compliance                             <ul style="list-style-type: none"> <li>• Biowell for validation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Top loading, easy opening door design                             <ul style="list-style-type: none"> <li>• In-chamber heating</li> </ul> </li> <li>• 5.7" colour touch screen controller with USB port                             <ul style="list-style-type: none"> <li>• USB connection</li> </ul> </li> <li>• 5 standard cycles: Instruments / Glassware / Waste / Fluids / Fluid Waste</li> <li>• Fully programmable via password protection                             <ul style="list-style-type: none"> <li>• Temperature controlled</li> <li>• Pressure displays</li> <li>• Pressure gauge</li> <li>• Safety valve</li> </ul> </li> <li>• Continuous stage monitoring</li> <li>• Emergency stop ( linked to both devices )</li> <li>• Optional Containment Level 3 / BioSafety Level 3 compliance</li> </ul>

## 5. Cooling Locks

<b>Autoclave Cooling Locks</b>	In accordance with H.S.E. PM73 preventing opening of the autoclave above 80°C ( for fluid & discard cycles )
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## 6. Control Systems

<b>Controller</b>	2 x VGA ( 640 x 480 ) colour TFT + analogue resistive touchscreen
<b>Processor</b>	2 x Intel E620T 333Mhz
<b>Memory</b>	2 x 256MB DDRAM, 32KB FRAM
<b>Physical Memory</b>	2 x 2GB eMMC Flash Memory
<b>Real Time Clock</b>	2 x Gold Foil capacitor ( 1000 hours )
<b>Program Storage</b>	Software stored internally, Configuration data and cycles stored on a permanently attached USB stick

## 7. Interfaces

Sink	Autoclave
1 x Powerlink 24VDC 1 x Ethernet 10/100Mbit/s 2 x USB 2.0 ports 1 x Powerlink port ( currently spare ) 1 x RS232 serial port	1 x Powerlink 24VDC 1 x X2X communication interface 1 x Ethernet 10/100Mbit/s 2 x USB 2.0 ports 1 x Powerlink port ( currently spare ) 1 x RS232 serial port

## 8. I/O Hardware

Sink	Autoclave
X209300 - Communication card X209371 – Digital Input card, 12 Inputs 2 x X208332 – Digital Output card, 8 Outputs X204622 – Analogue Pressure Input module 4 inputs 4-20mA X204222 – Analogue Temperature Input module 4 inputs PT100	X209300 - Communication card X208971 – Digital Input card, 8 Inputs X208322 – Digital Output card, 8 Outputs X202622 – Analogue Pressure Input module 2 inputs 4-20mA X202222 – Analogue Temperature Input module 2 inputs

## 9. Applicable Standards

Applicable Standards
<ul style="list-style-type: none"> <li>• PED 2014/68/EU; ISO 17025:2017 ( UKAS ); ISO9001:2015</li> <li>• ASME U Certified Pressure Vessels</li> <li>• National Board Registered</li> </ul>

## 10. Performance Tests

Performance Tests
All electrical equipment is Safety Tested in accordance with the Low Voltage Directive. All Astell autoclaves are fully tested and calibrated before dispatch in line with our Quality Management System procedures ISO9001-2015

## 11. IQ/OQ Documentation Details (Optional Extra)

<b>IQ Documentation</b>	Details of calibration equipment; PED ( Pressure Equipment Directive ) Compliance; Declaration of Conformity; FAT ( Factory Acceptance Test ); Drawing Schedule; ISO 9001:2015 Certification; Pressure vessel specification; Door safety checks.
<b>OQ Documentation</b>	Chamber temperature distribution ( per cycle ); Automatic control test ( per cycle )
<b>Note</b>	The above outlines our standard IQ/OQ Documentation package. If other documents are required, please contact us with details of your specific requirements

## 12. Safety

<b>Safety</b>	All Astell equipment is manufactured to the highest standards and in full compliance with the Pressure Equipment Directive – i.e. 2014/68/EU and the ASMEU Pressure Vessel Certification Program. Whilst all units have the necessary safety features to minimise user risk, and help ensure long term reliability. It is recommended that at least 50cm is allowed on both sides and the rear of the autoclave to allow easy access for servicing and maintenance. Astell cannot be held responsible for any failed cycles that could occur as a result of non-validation of loads.
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