

New Swiftlock Compact Autoclaves

NEW SWIFTLICK COMPACT AUTOCLAVES

Astell's range of **New Swiftlock Compact Autoclaves** offers guaranteed precision and versatility in sterilization. All units (23, 40, and 60L) are suitable for a wide range of autoclaving applications and provide remarkable flexibility and unrivalled convenience in today's quality conscious laboratory.

All sizes are available as front-loading benchtop machines, whilst the 60L model is also available as a top-loading unit.

Two different versions of these autoclaves are available :

1. Classic Version

This is the ideal model for all standard traditional laboratory sterilization procedures. Water fill is manual; during the cycle condensate leaves the vessel via a silicone tube that is connected to a heat resistant bottle.

These units feature a four program controller as standard; the programs can be set to accommodate all common laboratory sterilization requirements (e.g. Media, Discard, Glassware etc). Time and temperature can be easily adjusted by the operator, as can a variety of other parameters (see Control System details overleaf).

NB. Media holdwarm is a standard feature on this version.

2. Autofill Version

Astell's automatic water fill/recirculation system, together with extremely versatile programming capability, provide exceptional sophistication in a small autoclave. The integral reservoir, once filled, provides sufficient water for up to 20 cycles; moreover, the same container also acts as a collection vessel for both condensate and water (which is returned from the autoclave chamber following the sterilization process). Thus the system is completely self-contained, and connection to a drain or waste container is unnecessary.

This version has a four program control system; all programs can be set either for fluid loads (e.g. media, mixed/fluid discard) or non-fluid loads (e.g. glassware, instruments). Once again, time and temperature can be easily adjusted by the operator, as can a number of standard and/or optional parameters (see Control System below). A pulsed-heat drying system, which is adjustable in 5 minute steps, is available when running a non-fluid cycle.



Advantages of the New Swiftlock Compact Autoclaves

All Models:

4 Program Micro-Controller

For user flexibility, to suit all applications

Ultra Quick New Swiftlock Door Mechanism

To enable easy access both before and after the cycle

Temperature Range 100°C-138°C (0.2 – 2.4 bar)

Fully programmable temperature control allowing all sterilization requirements to be met

316L Stainless Steel Pressure Vessels

All autoclaves are built to the highest quality and conform to PED5500 PED EN/97/23/EC

Conformance with National and International Standards

To ensure safety and peace of mind for any user

Designed for Maximum Chamber Capacity

e.g. The AMB230 (40 litre) unit will accommodate eleven 1 litre Duran bottles.

Autofill Version

Automatic Water Fill

No installation is required: the units can be positioned almost anywhere in the laboratory

Water Recycling as Standard

The Autofill benchtop range can run for up to twenty cycles before the water tank needs replenishing

Integral Drying System

For added convenience



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Control System

All models feature the unique "Secure" four program microprocessor controller, which ensures repeatable, safe and accurate sterilization time after time. In addition to Time and Temperature, operator adjustable/selectable parameters include Freesteam Time, Delayed Start and Load Sensed Process Timing (optional for both versions).

A clear 16 Character, 2 line LCD display gives an easy-to-read, stage by stage report on cycle progress, and provides operator warnings with easily understood text messages. The touch-button 'click-action' keyboard has a wipe-clean surface and clear symbols to minimize operator error. PIN code access to the supervisor mode allows restricted access of cycle parameters.

Construction.

Astell Autoclaves are designed and manufactured for reliability, long life and ease of use. Production is monitored throughout all stages and every unit is rigorously tested before leaving the factory. The 316L stainless steel pressure vessels are manufactured to the very highest standards (including PED97/23EC), in order to conform with national and international regulations. An Independent Manufacturing Inspection Certificate can be provided on request.

Safety

Recognising that safety is of prime importance, Astell has incorporated a wide range of standard risk-reducing features on these models to ensure safe operation in the most demanding situations. These include:

- Low water detection in chamber
- Overheat protection
- Audible & visual alarms, including *Cycle Fault*, *Cycle Interruption*, *Sterilize Failure*, *Water Low* and *Door Unlocked*





Installation

A single phase power requirement and integral reservoir and/or condensate bottle ensure that no special installation requirements are generally necessary for these models. The reservoir bottle on the Autofill Version provides sufficient water (without refill) for up to 20 consecutive cycles, whilst the manual filling of the vessel on the Classic Version is a simple procedure that only takes a matter of minutes.

For information on connection to 'non-standard' power supplies, please contact Astell's Sales Office.

Accessories

A wide selection of baskets, containers, load support plates and shelving systems are available for all machines giving optimum capacity for numerous applications.

Capacity

Despite being compact, and therefore suitable for smaller laboratories and confined spaces, these autoclaves have been designed and constructed to maximize usable space within the chamber. The following table indicates the bottle capacity of the Compact range. (N.B. This is based on typical *Duran* type bottles).

	AMB420 AMB220	AMB430 AMB230	AMB440 AMB240	AMA440 AMA240
500ML	8	14	21	24
1000ML	-	11	15	14
2000ML	-	3	4	6*

*AMA240/AMA440 will hold 8 x 2000ml bottles if baskets are not used.

SPECIFICATIONS AND ORDERING DETAILS

Reference Classic/Autofill	Top or Front Loading	Volume Litres	Power Supply	Chamber dia x depth mm	Overall Dims wxdxh mm
AMB420/AMB220	Front	23	1Ø-13A	250 x 430	540 x 670 x 415
AMB430/AMB230	Front	40	1Ø-13A	350 x 400	670 x 720 x 570
AMB440/AMB240	Front	60	1Ø-13A	350 x 600	670 x 950 x 570
AMA440/AMA240	Top	60	1Ø-13A	350 x 545	530 x 700 x 1200

NB. AMA240/AMA440 is mounted on casters as standard

ACCESSORIES

Swiftlock Compact Autoclaves		For use with
AAN348	Discard Container	AMB220/AMB420
AAN346	Discard Container	AMB230/AMB430(accepts 2) AMB240/AMB440(accepts 3)
AAN340	Half Depth S/Steel Basket	AMA240/AMA440
AAN342	Half Depth Morrison Container	AMA240/AMA440
AAN074	Load Support Plate	AMA240/AMA440
AAN020	Three Position Shelf Rack (plus 2 shelves)	AMB220/AMB420
AAN022	Spare Shelf for AAN020	AMB220/AMB420
AAN530	Five Position Shelf Rack (plus 3 shelves)	AMB230/AMB430
AAN532	Spare Shelf for AAN530	AMB230/AMB430
AAN040	Five Position Shelf Rack (plus 3 shelves)	AMB240/AMB440
AAN043	Spare Shelf for AAN040	AMB240/AMB440
AAN308	Spare Condensate Bottle for Classic Range	AMB420/30/40 + AMA440

Options (for all models)

	Compact Autoclaves (CT)	Swiftlock 90-330 Autoclaves (SW)	Square Section Sterilizers (SQ)
Integral Data Printer	AAR130	AAR100	AAQ100
External Dataprinter Dual Colour	Not Available	AAR102	APQ102
Secure Print Freestanding Dataprinter	AAR600 AAR602 AAR604	AAR600 AAR602 AAR604	AAR600 AAR602 AAR604
AutoSCRIBE DataLogger	AAR500	AAR500	AAR500
Load Sensed Process Timing	AAR014	AAN014	AAQ014
RS232 Interface	AAR120	AAR120	AAQ120
Ethernet interface	AAR122	AAR122	AAR122
8 Program Controller	Not Available	AAP800	AAQ800
Pulsar Freesteaming	Not Available	AAN009	Not applicable
Automatic Waterfill (mains supply)	Not Available	AAP019	Standard
Internal Convection Fan Cooling	Not Available	AAP102	AJA102
Advanced Water Cooling	Not Available	AAP100-AAP300	Standard
Deluge Cooling	Not Available	ADA100	AJA100
Assisted Air Cooling	AAP007	AAP006	N/A
Air Ballast	Not Available	AVC004	AVQ004
Vacuum	Not Available	AVC002 (FL Only)	AVQ002
Cat III Compliance	Not Available	AVC005	AVQ005
Partial Heated Jacket	Not Available	Not Available	AAQ101-AAQ401
Full Heated Jacket	Not Available	AJP100-AJP300	AAQ102-AAQ402
Integral Air Compressor	Not Required	Not Required	AAQ500
Exhaust Heat Exchange System	Not required	AVC100	Not Required
SPF Seal	Not applicable	AVC007	AVQ007

Data Printers

Integral Data Printer

The Integral Data Printer is essential where a traceable cycle record is required, it records Temperature and elapsed time for each cycle, together with cycle stage messages and time of cycle. The Printer employs a long life ink ribbon system which provides fade resistant printouts.

CT: AAR130 SW: AAR100 SQ: AAQ100

External Data Printer Dual Colour

This printer is mounted in a freestanding case, and prints on plain paper rolls in 2 colours. The printer may be sited up to

15 metres from the machine. Warnings and other alarm states are printed in red.

CT: Not Available SW: AAR102 SQ APQ102

Secure Print Freestanding DataPrinter

A Benchtop data printer designed to give an independent printer verification of the sterilization function with adjustable and automatic printing start and stop, chamber temperature and time is displayed with a dual speed papersave feature. AAR600- Temperature, AAR602- Temperature and Pressure, AAR604- 2x Temperature (Chamber and Load), 1x Pressure

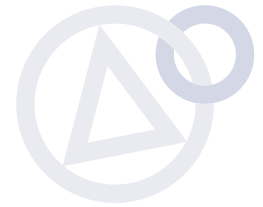


Chart Recorders

For use with all Astell autoclaves

Circular Chart Recorders

These are high performance microprocessor based recorders with an alphanumeric display to provide more information and easier operation. The recorders are available with 1, 2 or 3 pens, recording accuracy is 1% of Span. Single pen recorders register chamber temperature, two pen recorders register chamber temperature and load temperature via two wandering probes. Three pen chart recorders also measure chamber pressure.

AAR020 Single Pen AAR021 Two Pen AAR024 Three Pen

Strip Chart Recorders

These are microprocessor controlled strip chart recorders available with 1,2 or 3 pens. Recording accuracy is 1% of Span through the use of accurate stepper motors. The recorder incorporates a high definition alphanumeric display, indicating temperature and pressure (where applicable).

The following models are available: The Single Pen AAR022 records chamber temperature only, whilst the Two Pen AAR023 records chamber temperature plus load temperature. There are two versions of the Three Pen Recorders: The AAR090 registers chamber temperature plus load temperature (via two probes), whilst the AAR091 registers chamber temperature, chamber pressure and load temperature.

AAR022: Single Pen AAR023: Two Pen
AAR090: Three Pen AAR091: Three Pen

Datalogger

AutoSCRIBE Sterilization Datalogger

A wall mounted Datalogger with LCD display and keyboard which allows maximisation of storage capacity by only recording during the operation cycle. An RS232 outlet port is connected to either a desktop printer or to a PC for downloading using the software supplied (windows 95/98). Standard units supplied with two thermocouples for load/ chamber temperatures. Additional Thermocouples are available (max 4).

CT: AAR500 SW: AAR500 SQ: AAR500

Cooling Options

Advanced Water Cooling

This can only be fitted to machines that have been connected to a mains water supply. A series of cooling coils or a non-pressurised jacket is fitted to the outside of the autoclave chamber. At the end of the cycle these coils are circulated with cold water, resulting in a rapid decrease of temperature.

CT: Not Available, SW: Front Loading AAP100: 120L, AAP130: 150L, AAP200: 230L, AAP240: 275L, AAP300: 330L,; Top Loading: AAP080: 90L, AAP101:120L, AAP125: 130L, SQ Not Available.

NB Please note that all Square Section Sterilizers are fitted as standard with water cooling via a (partial) jacket.

Assisted Air Cooling

Powerful fans are built within the cabinet outside the chamber, these circulate ambient air over the external chamber walls, and result in an appreciable reduction in cycle times.

CT: AAP007, SW: AAP006, SQ: Not Applicable

Internal Convection Fan Cooling

Fans are sited within the chamber itself, which create turbulence reducing cooling time greatly. Internal fan cooling in conjunction with an external cooling system is one of the most efficient ways of cooling the chamber.

CT: Not Available, SW: AAP102, SQ: AJA102

Deluge Cooling

A super-quick internal spray-cooling system for use only in conjunction with sealed fluid loads (e.g. bottled media). This option can result in up to a 50% reduction in cooling time for specialised fluid applications.

CT: Not Available, SW: ADA100, SQ: AJA100

Drying Options

Partially Heated Jacket:

All basic Square Section Astell autoclaves are fitted with a partial jacket which provides a built in external water cooling system. The optional heated version in conjunction with the vacuum improves temperature distribution during sterilization and enhances the drying performance, removing any moisture or condensation from the chamber walls.

CT: Not Available, SW:Not Available, SQ: AAQ101(100L), AAQ201 (200L), AAQ301 (300L), AAQ351 (350L), AAQ401 (490L).

Full Heated Jacketed.

This option provides a full pressurised jacket around the chamber and further enhances the drying performance of the sterilizer. In conjunction with the vacuum option this is the most effective way of drying loads and is essential for fabric loads and wrapped instruments.

CT: Not Available, SW:AJP100 (ASB260), AJP130 (ASB270), AJP 200 (ASB280), AJP240 (ASB290), AJP300 (ASB300) SQ:AAQ102(100L), AAQ202 (200L), AAQ302 (300L), AAQ352 (350L), AAQ402 (490L).

Vacuum System

A pre vacuum and steam pulsing system is the most efficient means of removing air from problematic loads, or other loads with multiple air pockets such as pipette tips, glassware, fabrics and some instruments, Many of these loads will also benefit from the post vacuum drying system.

CT: Not Available, SW:AVC002, SQ:AVQ002

Options (for all models)

Other Options

8 Program Controller

The optional 8 program controller allows storage of up to eight programs providing speed and versatility during operation. Additional features include a digital pressure display and a “menu” that allows the user to display and cross check all programs at the press of a button. If an optional integral Dataprinter is also fitted then this menu may be printed out.
CT: Not Available (4 Program Controller fitted as standard)
SW: AAP800, SQ: AAQ800

Load Sensed Process Timing

This option allows the cycle timing to be controlled via the temperature achieved in the centre of the load. A wandering probe situated within the chamber is inserted into the load, or a load simulator, and initiates the sterilization period once the probe reaches the sterilization temperature. A Selectable ‘profiled overshoot boost’ feature speeds up the cycle and minimises over-processing of media loads.
CT: AAR014, SW: AAN014, SQ: AAQ014

RS232 Interface

This allows cycle progress to be monitored on an external computer equipped with suitable software (Computer not supplied). Windows itself provides a suitable interface, and any spreadsheet may be used to view the data.
CT: AAR120, SW: AAR120, SQ: AAQ120

Ethernet Interface

Adds Ethernet connectivity to the RS232 connection.
AA122 (All models use the same product code)

Pulsar® Freesteaming^{PAT}

Selected via the Secure controller, this feature assists with air removal from ‘difficult’ loads. The cyclical opening and closing of the vent valve greatly increases turbulence at the Freesteaming stage.
CT: Not available, SW: AAN009, SQ: Not Available

Automatic Mains Supply Waterfill

The Autofill option automatically maintains adequate water level within the chamber. This is a fully automatic system incorporat-

ing an internal reservoir tank which accepts mains cold water at 2-6 bar pressure. The water inlet is controlled by level switching and includes an air gap to comply fully with EC water regulations. The unit is readily connected to the water supply via a 1.5m flexible hose (supplied). All units supplied with the Vacuum Option or Deluge cooling have Waterfill supplied as standard
CT: Not Available, SW: AAP019, SQ: Not Available

Air Ballast

This option, which is available in conjunction with Vacuum, provides a controlled replacement of steam with compressed air during the cooling phase. This effectively prevents the ‘boiling over’ of bottled fluids that is frequently associated with assisted cooling systems.
CT: Not Available, SW: AVC004, SQ: AVQ004

Option for Category III Compliance

Steam enters the chamber through the drain which is sealed during the cycle ensuring all condensate is sterilized. A Bacterial retentive filter fitted into the exhaust line ensures that nothing leaves the chamber without being sterilized. The positioning of the filter ensures that it is sterilized during every cycle.
CT: Not Available, SW: AVC005, SQ: AVQ005

Integral Air Compressor

A supply of compressed air is necessary to operate the sliding door mechanism on Astell Square Section powered door Sterilizers. This option is therefore essential in situations where such a supply is not available
CT: Not Available, SW: Not Available, SQ: AAQ500

Exhaust Heat Exchange System

An option to significantly reduce the temperature of the exhaust/waste in situations where heat resistant drains are not present. N.B This option requires a mains water supply
CT: Not Required, SW: AVC100, SQ: Not Required

SPF Seal

A bacteriological seal mounted on a special flange to enable a double doored unit to be installed between a sterile and a non sterile area. The SPF seal/flange is fitted against the dividing wall and prevents bacterial migration between the areas
CT: Not Applicable, SW: AVC007, SQ: AVQ007

	Load Sensed Process Timing	Vacuum Pulsing	Vacuum & Heated Jacket	Assisted Cooling	Assisted Cooling & Air Ballast
Media	◆	x	x	◆ (3)	◆
Mixed Discard	◆	◆	x	x	x
Fluid Discard	◆	x	x	◆	◆
Glassware	x	◆	x	x	x
Unwrapped Instruments	x	◆	◆ (1)	x	x
Wrapped Instruments	x	✓	◆ (1)	x	x
Fabrics	x	✓	✓ (2)	x	x

(1) Vacuum & Heated Jacket will give improved load drying
 (2) Vacuum & Heated Jacket required to ensure drying of Fabric Loads
 (3) To prevent excessive cycle time

✓ Essential ◆ Recommended x Not Needed