Rodwell

Rodwell Scientific Instruments:

Autoclave Range

UK Manufactured since 1965

40 - 770 litres, vertical & horizontal loading

Why specify a Rodwell Autoclave?

Make the smart choice

Autoclaves are often overlooked in the central role they play to the operation of the modern laboratory. The vast majority of laboratories simply cannot function without one. Therefore, it is the smart buyer who gives such careful consideration to the single piece of equipment so essential to the efficient everyday to day running of a laboratory.

"Spending more will cost you less as a Rodwell autoclave will outlive most of the competition many times over..."

Everybody is under constant pressure to reduce costs and save money. However, how smart is the buyer who saves money on the initial purchase, only to incur additional costs in extra maintenance; breakdowns which will ultimately result in the early replacement of an instrument?

Rodwell autoclaves tend to cost more than most of the competition but vast savings are quickly realised due to reduced operating, service and maintenance costs. Not to mention the knock-on costs to the laboratory when an autoclave breaks down. A reliable autoclave not only means an efficient laboratory, but a happier workforce too, which in turn saves money!

You get what you pay for?

This is certainly the case for cheaper equipment for the reasons mentioned above, but with Rodwell Autoclaves you do not get what you pay for. You get more!

- The highest quality materials
- High pressure pipe work and compression fittings for easy maintenance
- Proven materials, systems and technology
- Control system with more standard features
- Solid construction ensuring many years reliable service
- Upgradeable technology
- Sensible, practical design as opposed to aesthetics
- Safety locks + lock detection systems
- Diagnostic control system that informs the operator of the nature of any faults for quick and simple fault finding.

Support for your autoclave – a team obsession

Rodwell Scientific Instruments is a division of the Rodwell Engineering Group, a family owned company who's team of engineers have achieved success over the past 50 years simply by doing their best to ensure total customer satisfaction.

A Global Business

Rodwell Scientific Instruments have been exporting for the past 30 years and have established distributors in many nations all over the world. Our distributors share our commitment for proficient after-sales service, using fully trained engineers with access to the latest technology and total support from the manufacturers they represent.

Making full use of modern available technology

Email and the internet has allowed us to develop up-to-date software (optional) which allows the scientist to email complete cycles to our technical department for full on-screen diagnosis and set-up recommendations.

Expertise

Rodwell Engineering Group is a family business founded in 1945. Over the years it has expanded to a multi-faceted engineering company though natural growth, acquisition and shrewd investment. Some of Rodwell's acquisitions have a history spanning back nearly 100 years!

The company also has extensive property and business interests which ensure financial stability even throughout the most turbulent times.

This broad nature of Rodwell Engineering Group's activities plus sound financial foundations ensure that your Rodwell Autoclave is manufactured to the highest engineering standards and can be supported throughout its lifetime.

Rodwell Scientific Instruments	Autoclave Manufacturers
Rodwell HTB	Paper & Board Feeders & Stackers
Rodwell Bayne	Compressed Air Engineers Air Conditioning Engineers
Rodwell Precision Engineering	Production & Precision Engineers
Rodwell Powell	Aerospace Engineers & Inspection
Rodwell Group Services	Central accounts Property Investment

Precision Engineering since 1945

Compact Autoclaves

Phoenix Benchtop

Design Features
- 40 or 60 litre
- MP 25 Control (see page 7)
- Robust space-saving design
- Single phase ‘plug in & play’
- Phoenix 40 has a capacity for up to 13 1-litre media bottles
- Bench or trolley mounted
- Integral drip tray under door
- Fold down control panel

Optional Accessories
- Optional loading baskets
- Waste discard system
- High speed fan accelerated cooling
- Condense collector which eliminates a drain requirement
- Air removal hepa filter
- Cycle Data Recorders

Capacities and Dimensions

Model	Phoenix 40	Phoenix 60
Chamber Capacity:	40 litres	60 litres
Vessel dimensions (mm)	350 Ø x 460 deep	350 Ø x 600 deep
Overall dimensions (mm)	550w x 790h x 710d	550w x 790h x 860d

Monarch Compact

Monarch Design Features
- 50 or 75 litre
- MP 25 Control (see page 7)
- Counterbalanced lid for easy opening
- Angled control panel
- Exceptionally low loading height
- Excellent load capacity for up to 3 baskets

Optional Accessories
- Additional loading baskets
- Waste discard system
- High speed fan accelerated cooling
- Condense collector which eliminates a drain requirement
- Air removal hepa filter
- Cycle Data Recorders

Monarch 50 Features
- Designed to fit underneath a bench in laboratories which are short on bench space
- Single Phase 3kW ‘plug in and play’
- 3kw Heater for Portability

Monarch 75 Design Features
- Powerful 4 kW heater

Capacities and Dimensions

Model	Monarch 50	Monarch 75
Chamber Capacity:	50 litres	75 litres
Vessel dimensions (mm)	350 Ø x 520 deep	350 Ø x 780 deep
Overall dimensions (mm)	465w x 800h x 680d	465w x 1100h x 680d

Medium Capacity Autoclaves

Ensign

Design Features
- 100 or 125 litre
- MP 25 Control (see page 7)
- Robust space-saving design
- Single or 3 phase supply

Formats
1) 6 kW Electric in-chamber heating (100)
2) 9 kW Electric in-chamber heating (100 and 125)
3) Heated by external steam source
4) Separate pre-heated 9kW steam generator for instant heating

Optional Accessories
- Additional loading baskets
- Automatic Fill
- Automatic drain and re-fill
- Scale prevention systems
- Waste discard system
- High speed fan accelerated cooling
- Condense collector which eliminates a drain requirement (100 litre only)
- Loading step (125 litre only)
- Electric loading hoist
- Vacuum air removal systems
- Range of cycle recording systems
- Air removal hepa filter

Capacities and Dimensions

Model	Ensign 100	Ensign 125
Chamber Capacity:	100 litres	125 litres
Vessel dimensions (mm)	460 Ø x 610 deep	460 Ø x 760 deep
Overall dimensions (mm)	560w x 1090h x 800d	560w x 1240h x 800d*
		560w x 1240h x 1100d**

* Without loading step ** With loading step

Ambassador

Design Features
- 100, 125 or 158 litre
- MP 25 Control (see page 7)
- Robust space-saving design
- Single or 3 phase supply
- Drip tray under door

Optional Accessories
- Automatic Fill
- Automatic drain and re-fill
- Air Ballasting option
- Scale prevention systems
- Waste discard system
- High speed fan accelerated cooling
- Range of cycle recording systems
- Air removal hepa filter
- Loading Trolley, baskets and trays

Formats
1) 6 kW Electric in-chamber heating (100)
2) 9 kW Electric in-chamber heating (125 and 158)
3) Separate under chamber steam generator
4) Pre-heated under chamber steam generator
5) Heated by external steam source
6) Heated by external steam source c/w steam generator back up
7) Steam heated liquid ring vacuum
8) 18 kW liquid ring vacuum c/w pre-heated steam generator
9) Double door variant (158 litre)

Capacities and Dimensions

Model	Ambassador 100	Ambassador 125	Ambassador 158
Chamber Capacity:	100 litres	125 litres	158 litres
Vessel dimensions (mm)	460 Ø x 610 deep	460 Ø x 760 deep	460 Ø x 960 deep
Overall dimensions (mm)	650w x 1240h x 1160d	650w x 1240h x 1160d	650w x 1240h x 1310d

Large Capacity Autoclaves

Gemini

Totally unique: two independent autoclaves in one robust frame!

Design Features
- 2 x 158 litre vessels
- 316 litre total capacity
- MP 25 Control (see page 7)
- Independent control of each chamber
- Space-saving design
- Can be used as a clean and dirty autoclave in one frame
- Integral drip tray under each door
- Available in electrically heated version or from a piped steam source
- Integrated steam generator available

Optional Accessories
- Fan accelerated cooling
- Hydraulic loading trolley
- Air Ballasting option
- Loading baskets
- Waste discard system
- Drainline condenser for plastic drains
- Range of cycle recording systems
- Scale prevention systems
- Automatic Fill
- Vacuum air removal systems

Capacities and Dimensions

Model	Gemini 250	Gemini 316
Chamber Capacity:	125 litres (x2)	158 litres (x2)
Vessel dimensions (mm)	460 Ø x 760 deep (x2)	460 Ø x 960 deep (x2)
Overall dimensions (mm)	650w x 1970h x 1310d	650w x 1970h x 1310d

Crystal

Design Features
- 200, 250 & 300 litre variants
- MP 25 Control (see page 7)
- Square section chamber
- Cost effective hinge / bolt door
- Fixed seal
- Space-saving design
- Integral drip tray under door
- Efficient fan assisted cooling

Optional Accessories
- Loading trolley
- Scale prevention system
- Waste discard system
- Range of cycle recording systems
- Air Ballasting option

Optional Accessories (continued)
- Drain condenser for plastic drains
- Baskets and Trays
- Vacuum air removal systems

Formats
1) Separate under chamber steam generator
2) Pre-heated steam generator
3) Heating from an external steam source
4) Steam heated with generator back-up
5) Liquid ring pre & post cycle vacuum (available with formats 3, 4 & 5)
6) 300 litre double door variant

Capacities and Dimensions

Model	Crystal 200	Crystal 250
Chamber Capacity:	200 litres	250 litres
Vessel dimensions (mm)	510w x 510h x 670d	510w x 510h x 860d
Overall dimensions (mm)	830w x 1600h x 1450d	830w x 1600h x 1450d

Model	Crystal 300
Chamber Capacity:	300 litres
Vessel dimensions (mm)	510w x 510h x 1030d
Overall dimensions (mm)	830w x 1600h x 1450d

Large Capacity Autoclaves

Sapphire

The Sapphire is a technical revolution in simplicity. Simple to use, simple to service and a simple design for maximum reliability. Our designers have eliminated the traditional pneumatic door and 'blow out' seal in favour of a simple hoist operated door, fixed seal and a surprisingly simple automatic door clamping mechanism.

The Sapphire is available in many sizes and variants to suit all applications and budgets. We do not intend this to be a cheap autoclave but this machine will save you money within a very short space of time when compared to less expensive alternatives. The Sapphire is ultimate proof that spending more will cost you less!

Design Features

- 330, 440, 550, 660, 770 litre
- MP 25 Control (see page 7)
- Reliable 'Hoist & Clamp' door
- Fixed seal
- Steam Jacket Drying
- Accelerated water cooling by means of a water jacket
- Square section chamber

Formats

1) Separate under-chamber steam generator
2) Pre-heated steam generator
3) Heating from an external steam source
4) Steam heated with generator back-up
5) Liquid ring pre & post cycle vacuum (available with formats 3, 4 & 5)
6) Double door variant (660 & 770L)

Optional Accessories

- Loading trolley
- Waste discard systems
- Range of cycle recording systems
- Air Ballasting option
- Double Door Variants (larger models)
- Drain condenser for plastic drains
- Available in Stainless Steel
- Scale prevention systems
- Vacuum air removal systems
- Additional loading baskets

Capacities and Dimensions

All measurements are in mm unless explicity stated otherwise.

Model	Sapphire 330	Sapphire 440	Sapphire 550	Sapphire 660	Sapphire 770
Autoclave Weight	990 kg	1040 kg	1055 kg	1100 kg	1205 kg
Overall dimensions	980w x 1930h x 1530d	980w x 1930h x 1530d	980w x 1930h x 1530d	980w x 1930h x 1750d	980w x 1930h x 2340d
Chamber dimensions	670w x 670h x 633d	670w x 670h x 848d	670w x 670h x 1070d	670w x 670h x 1280d	670w x 670h x 1480d
Chamber Capacity	330 litres	440 litres	550 litres	660 litres	770 litres

"The Sapphire is our flagship autoclave. Powerful and unique with its huge square chamber, this state of the art autoclave is ideally suited for heavy duty work where capacity and supreme reliabilty are key."

MP 25 Control and Smartcard

The common control system fitted to every autoclave in the Rodwell range. The MP25 has evolved to be one of the finest laboratory instrument control systems on the market today. What sets this system apart from any other control system is that it is totally interchangeable. The same MP25 control system with any Rodwell autoclave: from a bench top to a large square chambered vacuum machine.

Total versatility in 25 programs!

Standard Features

25 programs
Can be programmed and stored by the laboratory supervisor

Smart card access system

- Allows programs to be stored and locked off by a supervisor
- Operator cards give access to pre-programmed cycles only
- Available with or without operator smartcard access for operator access

Load Activated Sterilise timer
(On/Off) prevents the sterilise timer from starting until the chamber and load have reached set point temperature.

Free steam timer (adjustable by time)
Holds the chamber at approximately 100°C (without pressurising) for a pre-determined time during the heating period and allows effective steam penetration into the load.

Delayed Start (24 hour clock)
Timer option allows the autoclave to be pre-programmed at a pre-determined time so the autoclave completes a cycle just before the lab arrives for work the following morning for pre-prepared warm media.

Adjustable Stay Warm (on/off)
Keeps the chamber warm at the end of the cycle for pourable media. This is adjustable to allow the operator to select the optimum temperature.

Instrument Cycles (programs 21 to 24 only)
Exhausts the chamber at the end of the cycle for dryer glassware and instruments upon completion.

Self Diagnostic
Notifies the operator of any faults. The nature of many faults are clearly displayed on the LCD.

Sterilise Fault Warning
Notifies the operator if there has been a power supply problem or the temperature has not been maintained during the cycle.

MP25 Options

Post Cycle Drying
Programs 17 to 20 can be set to control a post-cycle drying heater within the chamber
(cannot be used with in-chamber heating systems unless autodrain or separate steam generator is specified)
(standard on liquid ring vacuum autoclaves)

Cycle Recorders
Cycle recorders are available to record:

- Load temperature - (single channel)
- Load & Chamber temperature (2 channel)
- Load & Chamber temperatures + Pressure (3 channel)

Data Printers
Provides a hard copy print out of parameters and readings during the cycle (2 or 3 channel available).

Chart Recorders
A complete range of circular and strip type chart recorders are available to provide a graphical representation of chamber conditions during each cycle. The MP25 will switch on the chart recorder only when a cycle is operating in order to save chart paper. A complete range of anything up to 12 channels are available plus a range of independent graphical recorders (1, 2 or 3 channel available).

SmartLog™ Cycle Data Recording Software
The ultimate system for autoclave logging. Enables a personal computer to analyse each autoclave cycle in great detail. The software provides a multi-channel readout including a full graphic profile, and the ability to provide remote diagnostic support.

USB Memory Logging
For quick and efficient downloading of log data the MP25 can be equipped with a USB port for direct data transfer straight to a Rodwell USB Key. The data can then be transferred to a PC for analysis on our SmartLog™ Software.

Options & Features Explained

*standard or not applicable to some models; see product data sheets for further information

Accelerated Load Cooling Systems

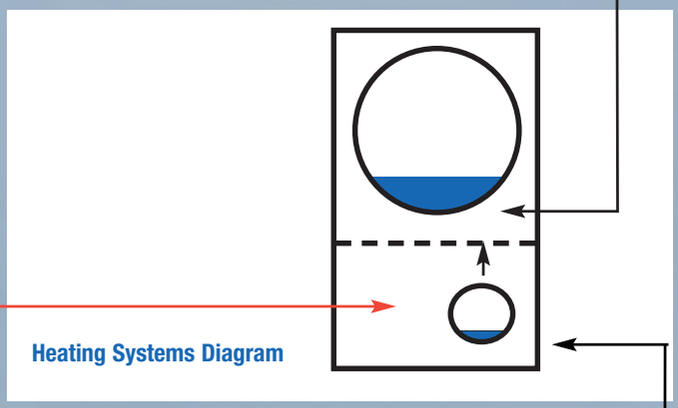
Fan Accelerated Cooling (Available on all models except Sapphire)
Powerful fans, strategically located, direct a blast of cool air around the chamber which significantly improves cooling times by up to 50%.

Water Cooling (Sapphire Only)
The most efficient way of cooling **square chambered** autoclaves. Cold water passes through a complete water jacket, surrounding the autoclave chamber, which rapidly cools the chamber and load. This system is far more effective than 'cooling coils' fitted to some other autoclaves.

Air Ballasting (Available on all models except Monarch and Phoenix)
Uses compressed air to improve cooling times even further and prevent 'boil-over' and breakages in bottled liquid loads. An oil free air compressor can also be supplied if there is no compressed air supply in the laboratory.

Heating Systems (Available on all models)

In-Chamber Electric Steam Heating generates steam within a water compartment in the bottom of the chamber below the shelf or the trivet.



Heating Systems Diagram

Electrically Heated by separate steam generator
(Available on Ambassador, Crystal & Sapphire)
Steam is generated by means of a steam generator mounted below the autoclave chamber. Includes a high pressure inlet pump which automatically tops up the steam generator during the cycle.

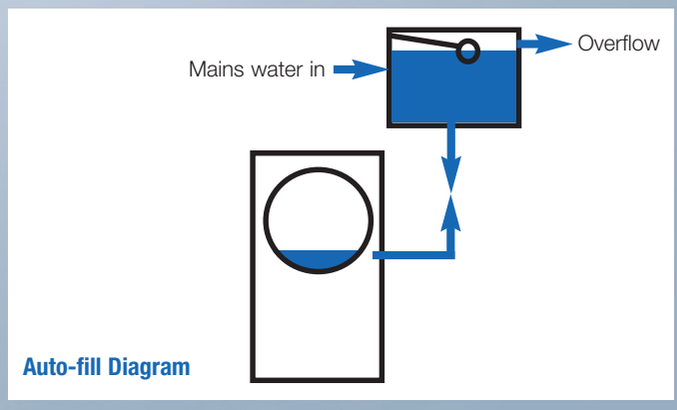
Pre-heated steam generator
(Available on all models except Phoenix and Monarch)
This works on a similar principle as above, except the steam generator remains constantly heated providing instant heating of the chamber when a cycle is started

- The steam generator stands separate from the autoclave for top loading models and Gemini
- More powerful pre-heated steam generators are required for electrically heated liquid ring vacuum autoclaves

Direct Steam Heated
Heating by means of a steam inlet valve from an external steam supply. A saturated steam supply regulated to a pressure between 35lb and 70lb at 2.62 bar is required. (Depending on model requirements)

Auto-fill Systems

A water supply is required for automatic fill options. The supply must be fed via a break tank, which isolates the chamber from the mains supply to comply with regulations.



Auto-fill Diagram

Manual Fill (Available on all models except Sapphire)
Basic in-chamber heated autoclaves are manual fill for simplicity. No water supply is required for manual fill machines unless a drain line condenser is specified. The MP25 notifies the operator if the chamber is low on water. The autoclave cannot be started unless the chamber has sufficient water. The chamber is simply topped up with a jug of water when necessary.

Auto-fill for in-chamber heating
In-chamber heated autoclaves can be manufactured with a 'top-up system'. If the MP25 senses the chamber is low, it sends a signal to a motorised valve which opens to allow the chamber to be topped up from the water supply.

Auto-drain and Re-fill for in-chamber heating (Available on all models)
The chamber dumps all the water from the chamber at the end of the cycle and fills with fresh water when a new cycle is started.

Auto-fill for separate steam generator models
Note that automatic fill is standard on autoclaves supplied with a separate steam generator

Water Treatment Systems

An industrial grade electronic system alters the physical characteristics of minerals within the inlet water supply so they pass through the autoclave without sticking to the chamber or boiler.

Inlet Water Filter
Industrial grade filter traps most scale and chalk from the mains water supply.

Drain Systems

Condense Collector (Available for manual fill autoclaves only*)

Eliminates the need for a drain service by collecting the condense in a stainless steel container.

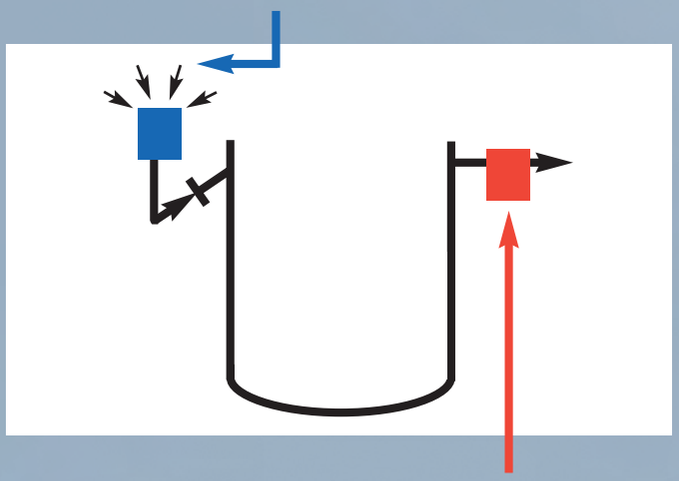
*Basic manual fill autoclaves are Phoenix, Monarch, Ensign and Ambassador. Not suitable for direct steam autoclaves

Drain Line Condenser

This option is required if the autoclave is to be connected to a plastic drain service either directly or indirectly. Works by injecting cold water into the drain if it reaches temperatures over 50°c. The drain line condenser now includes a temperature cut out switch which stops the autoclave if the drain reaches 100°c.

Vacuum Break & Filter

As the chamber cools a natural vacuum is drawn; therefore a vacuum break can be offered complete with a hepa-filter to filter the incoming air being drawn back into the chamber.



Drain Line Filters (Available on in-chamber heated models only)

Hepa filter fitted to the autoclave vent to prevent the release of dangerous pathogens into the drain. Condensate retention required on direct steam heated, separate boiler and vacuum models

Condensate retention

Includes drain line filter (above). The autoclave displaces air upwards during the heating and sterilise part of the cycle via the hepa filter. Condense is contained, sterilised by the incoming steam and dumped at the end of the cycle.

Chamber Furniture

A complete range of shelves, containers and discard systems are available to enhance the performance of your autoclave. Rodwell Scientific Instruments' chamber furniture is specifically tailored to maximise space within the chamber. Bespoke furniture can be manufactured on request.

Shelves

Our shelves are manufactured using rigid punched stainless steel capable of taking the heaviest of loads.

- 1 shelf per chamber for Phoenix, Ambassador and Gemini
- 1 shelf supplied for Crystal and Sapphire

Baskets

Our baskets are manufactured using strengthened grade 316 stainless steel wire mesh for optimum durability.

- 1 basket included with every top loading autoclave
- Option of additional baskets if required
- Loading Baskets optional for front loading autoclaves

Discard Systems

Laboratory waste must be autoclaved to render it safe prior to disposal. Research has shown that a high efficiency vacuum air removal system is necessary when sterilising waste in solid sided containers with a height of greater than 200mm.

However, Rodwell Scientific Instruments offer a unique patented range of discard containers which allows total efficient sterilisation of laboratory waste without the need for a vacuum system.

Advantages of the Rodwell Waste Discard Container system are:

- Simplifies the autoclave by eliminating the need for a vacuum system
- Efficient sterilisation of waste by naturally removing air pockets
- Trivet system catches spillages and helps keep the chamber clean for reduced housekeeping

We're here to help...

If you'd like help or advice choosing the right autoclave please get in touch, our knowledgeable sales people will do their best to guide you toward the choice that is right for your application and budget.

+44(0)1268 286 646

info@rodwell-autoclave.com

Vacuum Autoclaves Explained

A liquid ring vacuum system may be required if the following is going to be sterilised.

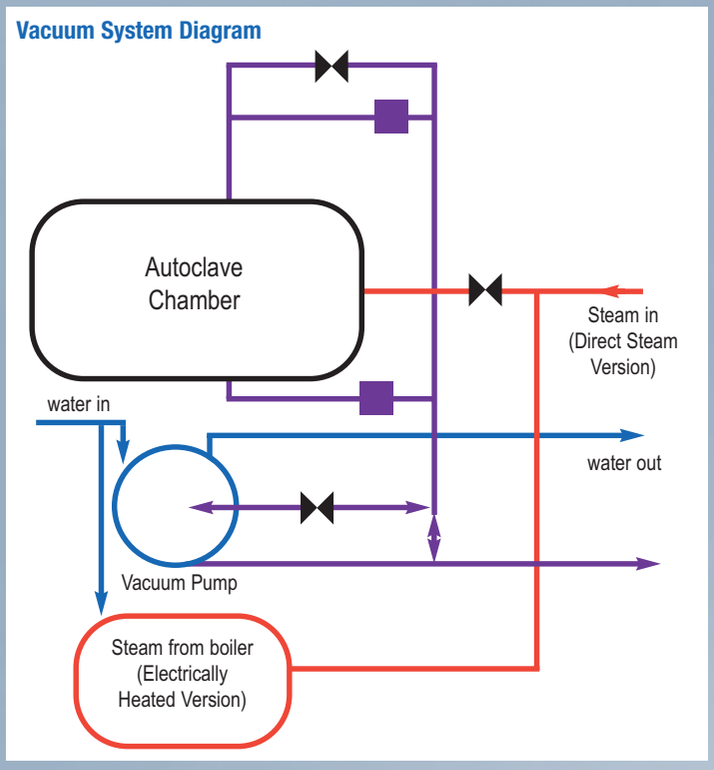
- Tightly packed lab coats/ textiles
- Soil
- Waste in non-approved waste containers

Available on Crystal and Sapphire

A vacuum autoclave operating in basic form is much like a direct steam autoclave. However, in the case of a vacuum autoclave, a liquid ring vacuum pump and associated control valves are added. For reliability, these valves have to be different from those used in non vacuum autoclaves as they have to be leak free and bi-directional - in other words, be able to operate just as efficiently with vacuum and pressure either side.

It is for this reason that Rodwell Scientific Instruments utilise 'Pneu-valve technology'. The Rodwell 'Pneu-valve' system is designed to seal 100% - totally leak-free. The Pneu-valve system will function just as well with pressure or vacuum on either side. The majority of vacuum autoclave systems cannot do this. This is why the Rodwell Pneu-valve system can draw almost absolute vacuum (typically -0.8 to -0.9bar), whereas many manufacturers can only manage -0.4 bar. This ensures that there will be no cold spots, in even the most porous of loads and 100% sterilisation is achieved.

Vacuum System Diagram



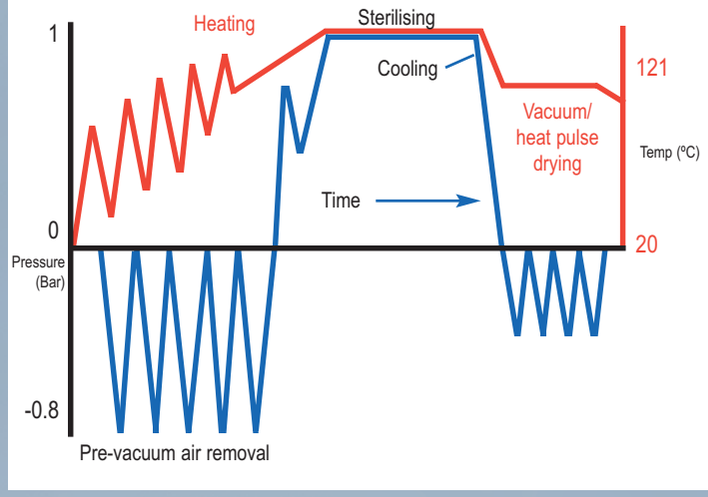
There is another advantage of the Pneu-valve system: reliability. Many other valves can be affected by debris such as broken glass or lime scale. Pneu-valve will not. If debris does get caught within it, the valve still closes and crushes any debris out of the way as it does so.

Finally, a steam supply is required. Ideally, this needs to be supplied to the autoclave at around 3.5 bar for the best steam penetration and drying properties. Obviously, a steam supply is not always available and if there is one, it is often unreliable. Therefore, to meet this demand, Rodwell manufacture a range of heavy-duty steam generating systems and accessories capable of generating steam to the correct volume and pressure, up to a maximum of 4 bar.

There are many cheaper vacuum systems available, all designed with cost rather then performance in mind. However, the additional investment in a Rodwell vacuum system will save money and cut down on the problems associated with traditional vacuum autoclave systems. Financially speaking, a pay-back period will be realised very quickly.

- Greater reliability means reduced downtime and lower maintenance costs.
- Not susceptible to load breakages or hard water problems.
- Leak free operation ensures full vacuum is drawn every time and full sterilisation is achieved.
- Modular 'Pnue-valve' design means repairs can be effected easily and cost effectively.

Vacuum Cycle Diagram



The best after-sales care for your autoclave

Every Rodwell Autoclave is manufactured to the highest standards and will provide many years of reliable service if looked after and maintained by an approved, accredited Rodwell engineer. Our service engineers have extensive knowledge and the very latest up-to-date technical information for our equipment, as well as the latest working practices and procedures.

To get the very best from your autoclave, it is essential that it is maintained by the people who know your autoclave best - Rodwell trained and accredited engineers or approved Rodwell service agents. They understand your autoclave, care about it and are committed to achieving your complete satisfaction. Not only that, it is in Rodwell Engineering Group's best interest to keep your autoclave running reliably for as long as possible in order to maintain the reputation for reliability and durability that we currently enjoy.

Expertise

Rodwell and their approved service agents have highly trained technicians with the specialist skills and knowledge required to maintain your autoclave in accordance with Rodwell Scientific Instruments' recommendations and leave your equipment in a SAFE STATE OF REPAIR. Our trained engineers have access to the latest technical information so they know precisely what's needed to maintain your autoclave in a safe and reliable condition.

Specialist Equipment

Every Rodwell Engineer has access to a vast array of specialised spare parts and tools essential to keep your autoclave in a reliable, safe state of repair. Consider this: an autoclave is a pressure vessel with a door that has a force equivalent to 3 to 11 tonnes exerted on it when up to pressure. Do you want to be responsible for any accidents or litigation as a result of your authorisation for maintenance by a company not trained or accredited by the manufacturer of the equipment?

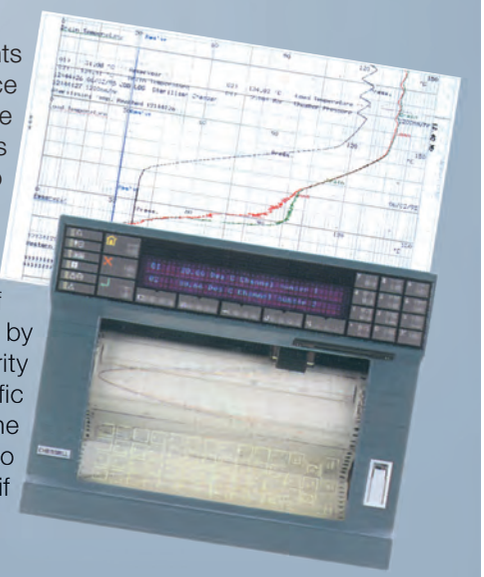
Genuine Parts

Your autoclave is made up of hundreds of different parts, set up to various tolerances and finely set to give maximum performance and paramount safety. Whenever a worn part is replaced, you should make sure that genuine Rodwell Scientific Instruments parts are used.

They are designed, tested and manufactured to the original tolerances and specification. Only Rodwell Engineering know exactly what is required of each part because it is only Rodwell Scientific Instruments who designed each part to come together perfectly to make the overall machine - your Rodwell Autoclave.

Calibration

Rodwell Scientific Instruments offer a calibration service using the very latest cycle recording equipment. This work can be carried out to the most demanding standards. The equipment and working practices equate or improve on any of those standards dictated by any accreditation authority and Rodwell Scientific Instruments have the knowledge and expertise to fine-tune your autoclave if deemed necessary.



Please feel free to contact our technical service team with any questions regarding the maintenance of your autoclave.

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