

THE ANSWERS AND SOLUTIONS FOR ALL YOUR PROBLEMS



**robo** *kit*  
**extra**



**ALTECNIC**  
*we answer to you*





Altecnic have produced their own combination unit, the Robokit, which contains all the essential components required for a sealed system installation. The robokit is the easiest kit to install and comprises of:

Safety Relief Valve complete with gauge and 15mm compression outlet connection, filling loop with braided hose, isolation valve with built in isolation cock, pressure gauge and fourway manifold with tapings for direct system connection via a 15mm nut and olive cone and connection for the expansion tank.

The system pressure gauge to facilitate easy circuit pressurisation. A four way connection manifold, with tapings for direct system connection via a 15mm nut and olive cone, and direct connection for the expansion tank. The robokit extra offers the installer all the components including the heating system in accordance with the British norms.



## Robokit Accessories

There are many other accessories which are designed to be used with the basic Robokit within a Sealed System. The following is just part of the extensive range.

- Altecnic Expansion Vessel
- Pressure Gauge
- Filling Loops
- Auto Air Vent
- Pressure Reducing Valve
- Air Separator
- Tundish



## The Suppliers

Through our national distribution network, Altecnic can supply all of the components needed for effective and profitable sealed system installations.



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## Sealed Systems

### General

Sealed Systems are the most commonly used form of central heating used in Europe, and most of the other parts of the world. Ease of installation makes it particularly attractive to the installer, alleviating the need to fit, feed and vent tanks in a central heating system.

The system must be used in closed circuits, where steel services maybe in contact with the system water (e.g. steel pipes and radiators).

### Principle of Operation

A vessel is arranged so that it is virtually full of air when the system is cold. Water expelled from the system by expansion, enters the vessel and compresses the air charge.

The acceptance factor of the tank depends on the maximum pressure rise that can be tolerated under normal working conditions. Air and water are separated by a flexible diaphragm.

## Robokit Components and Locations

### Advantages

- System Flexibility - due to component siting alternatives.
- Cost Savings - due to considerably reduced installation time.
- No Feed and Expansion Tank - hence avoiding "pumping over" problems, risk of freezing up etc.
- Longer Life - due to virtual elimination of corrosion problems.
- Noise Reduction - Due to higher system pressure, boiler noise (localised heating) is significantly reduced or eliminated.
- Low Maintenance Costs - as equipment is virtually maintenance free, other than for periodic operational checks.

The Expansion Vessel is the key component and should have an acceptance volume sufficient to accommodate the volume change (expansion) of system water when heated from 10°C up to full operational temperature or beyond under fault conditions.

The expansion vessel should be connected to the system at a point close to the pump inlet in order to maintain positive pressures throughout the system.

Suitable expansion vessel locations are given in Fig.1 below, depending on pump location.

Note: Domestic sealed heating systems should take due account of the following British Standards.

BS07074: Part 1: 1989 - "Application, selection and installation of expansion vessels and ancillary equipment for sealed water systems - Part 1. Code of practice for domestic heating and hot water supply."

BS5449: 1990 - "Forced circulation hot water central heating systems for domestic premises."

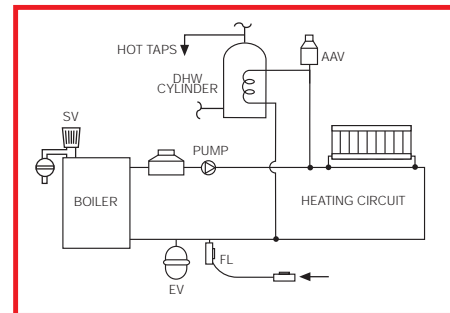
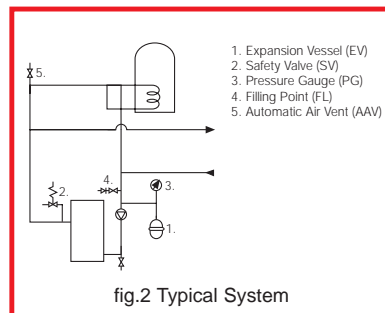
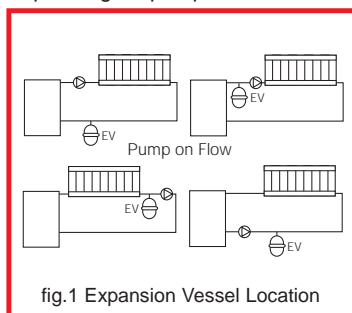
The essential components of a sealed system are:

- Diaphragm Expansion Vessel (complying with BS4814)
- Safety Valve (pressure relief valve)
- Pressure Gauge
- Filling Point (means for system filling, make-up and venting)

The Safety valve should be fitted either on, or close to the boiler on the flow pipe.

The pressure gauge should be fitted preferably close to the expansion vessel and/or the boiler, in such a position that it can be easily read from the filling point.

The filling Point should be near the key components, particularly the pressure gauge, and should be a temporary connection to allow filling from the water mains, incorporating a double check valve and isolating valve(s).





## The Quattro

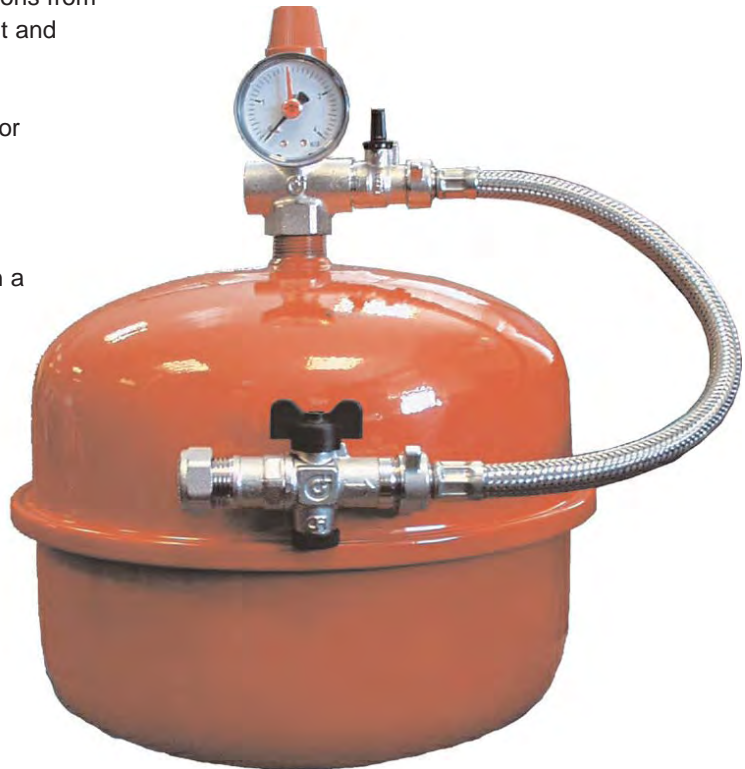
Altecnic have produced a neat, simple four way connector to make the installation as simple as possible. The quattro facilitates the connection of the water inlet, safety valve, pressure vessel and the system. It is supplied complete with double check valve and only requires the Robofill to complete the installation. The unit has been designed to accept 'O' ring connections from flexible hoses and is supported with 15mm nut and olive connection for ease of installation. The quattro is the only four way connection which gives the installer the possibility for either left or right installation on the system.

## The Safety Valve

Altecnic's range of safety valves is available in a range of sizes from 1/2" to 1" bsp and are available with either male or female connections.

For use with domestic installations Altecnic's range comes complete with nut and olive to make it easy for the installer to fix the discharge pipe without the need for necessary "expensive fittings".

The Altecnic range of safety valves is the leading safety valves used by all manufacturers in the UK. The valves used on the domestic range are fully WRc approved.



## Mounting Bracket

A robust, heavy epoxy coated mounting bracket, which allows you to positively mount the expansion vessel, not leaving it hanging on the pipework.

The bracket is designed to fit the Altecnic range of expansion tanks, up to 25 litres.

## Robofill Auto

The Robofill Auto has been designed to automatically fill the system, to a pre determined pressure, on commissioning the central heating system, where appearance is important. Robofill Auto, Pressure Reducing Valve, Air Separator and Tundish.

## The Vessel

Altecnic's range of expansion vessels conforms to the requirements of BS4814. Constructed in two halves joined by a peripheral rolled seam. During the seaming, the edge of the diaphragm is enfolded to locate it into the vessel to make a sound joint.

The water side is provided with a threaded spigot, for the expansion pipe. The air side has an air charged valve of the kind used on tyres, protected by a large plastic cap. The standard finish is an epoxy coated red. The maximum working pressure is 4 bar and the maximum system temperature is 110°C.