



# CYLINDER UNIT OPTIONAL PARTS EHPT ACCESSORIES for UK PAC-WK01UK-E

## INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the cylinder unit.
- Please read carefully and observe fully the following safety precautions.

**⚠ WARNING** Precautions that must be observed to prevent injuries or death.

- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user.  
Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

**⚠ WARNING**

- Before installing any accessories on the cylinder unit ensure the unit is isolated from the power supply.
- Connections must be made securely and without tension on the terminals.  
The included component parts of the PAC-WK01UK-E EHPT ACCESSORIES for UK shall be used only for the purposes indicated in the installation manual.

In addition to annual servicing it is necessary to replace or inspect the ICG after a certain period of system operation. Please see table below for detailed instructions. Replacement and inspection of the ICG should always be done by a competent person with relevant training and qualifications.

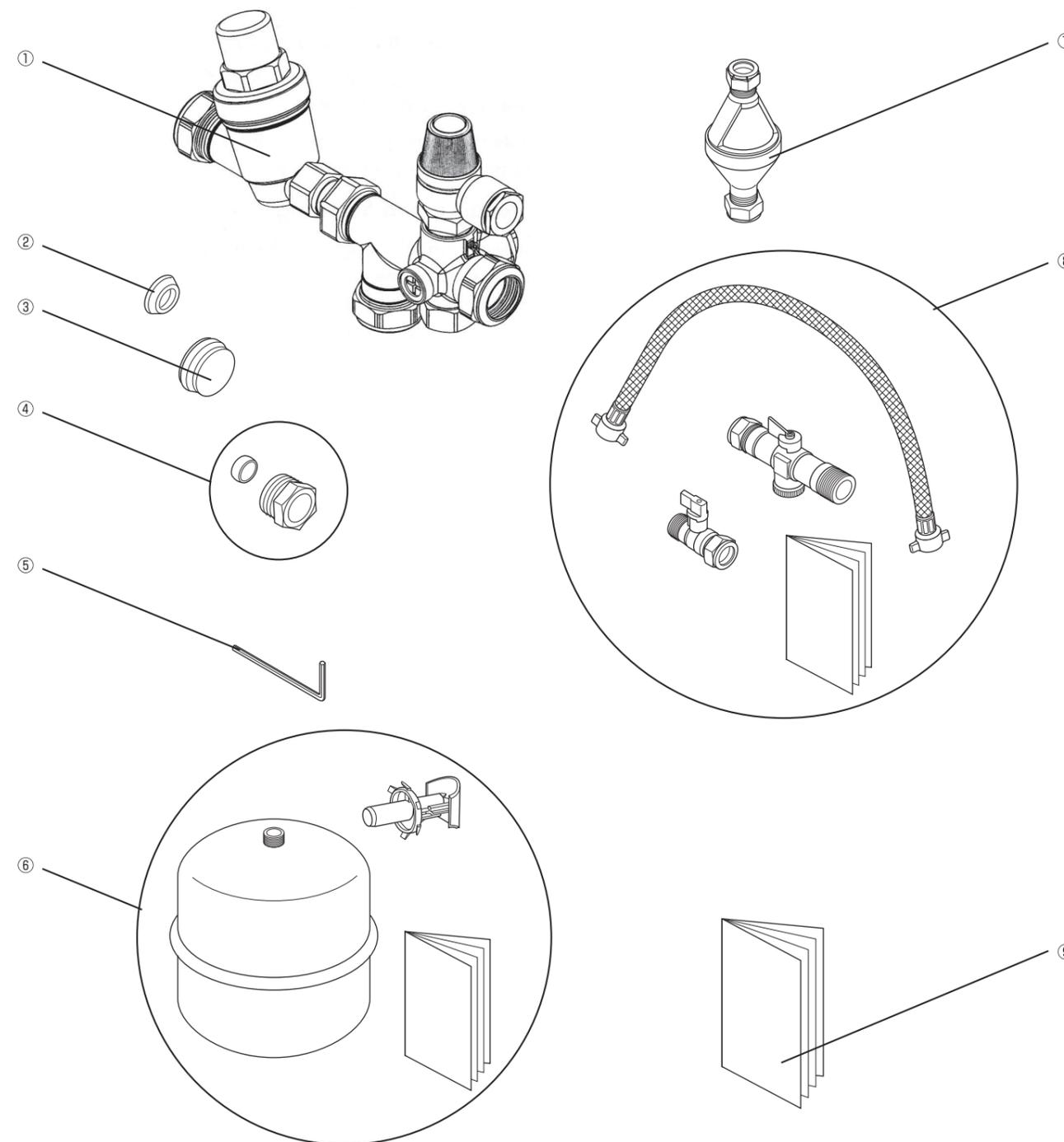
**Part which requires regular replacement**

Part	Replace every	Possible failures
Inlet control group (ICG)	6 years	Water leakage due to brass corrosion (Dezincification)

### Contents

	Item	Piece(s)
①	Unvented inlet control group (Pressure reducing valve/strainer/check valves/expansion relief valve).	1
②	Cap (15mm)	1
③	Cap (22mm)	1
④	Nipple & Olive (15mm)	1
⑤	Tool	1
⑥	Expansion vessel 18L (R3/4" )	1
⑦	Tundish (15mm, 22mm)	2
⑧	Filling loop (15mm)	1
⑨	Installation manual	1

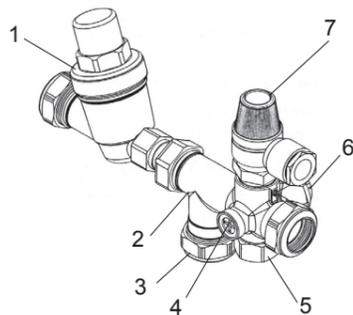
The parts ① to ⑦ are provided to meet the requirements for the UK Building Regulation G3.  
The parts ② to ⑤ are accessory parts for the unvented inlet control group.  
The pressure reducing valve is factory set at 3.5 bar and the expansion relief valve at 6.0 bar.  
The gas charge pressure for the expansion vessel is 3.5 bar.



## Installation

Carefully follow these instructions and ensure that the installation conforms to UK Building Regulation G3 and the Water Supply Regulations.

### Unvented inlet control group



Item	Component
1	Pressure reducing valve
2	Manifold block (Including check valves)
3	22mm balanced cold water take-off
4	Pressure gauge port
5	15mm connection for exp. vessel
6	3/4" alternative connection for exp.vessel
7	Expansion relief valve

It is recommended that isolation valves are installed upstream and downstream to facilitate any future maintenance. For safety reasons, it is essential that no isolation valve is fitted between the inlet control group and the cold water inlet connection of the cylinder.

Install the pressure reducing valve with its embossed arrow pointing in the direction of flow.

The black plug is a connection prepared for a pressure gauge, which is available when specified.

Ensure the expansion relief valve is seated correctly into the manifold and the Allen Key screw is fully tightened to secure its position.

Ensure that the expansion relief valve discharge pipework has a continuous fall and terminates via a tundish and in such a position as not to cause injury.

The first 22mm connection on the manifold block contains a check valve and may be used as a balanced cold water supply. If not used, use the blanking cap (22mm) supplied.

The 15mm connection on the manifold is used when an expansion vessel is required or may be used for a drain off. If not used, use the blanking cap (15mm) supplied.

On the opposite side of the manifold to the pressure gauge connection, there is an alternative 3/4" plugged connection that may also be used for direct mounting to the expansion vessel if required.

### Expansion vessel

Install the expansion vessel between the pressure reducing valve and the cylinder unit. (Ensure the expansion vessel is connected to an active section of the potable pipework and is NOT directly connected to any redundant "Dead-leg" section of pipework.)

#### Note:

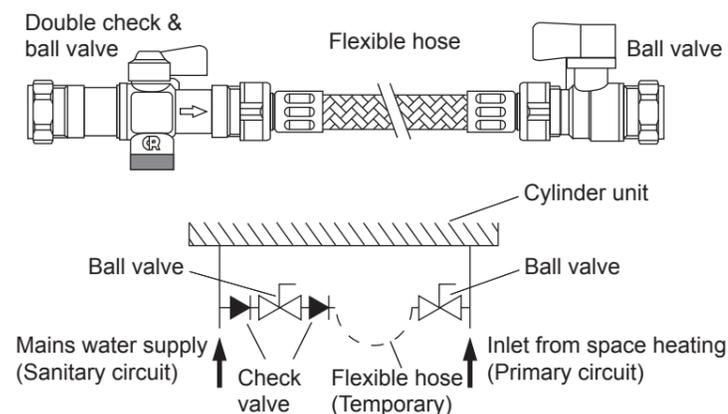
- When connecting the unvented inlet control group to the expansion vessel with a field-supplied flexible hose, provide sufficient bending radius to prevent abnormal noise.
- For more details about the following instructions, refer to the installation manual provided with the potable expansion vessel, as well as this manual.
  - If the expansion vessel is installed separately to the ICG (ie. direct in-line) then the supplied flow diverter can be used.
  - ICG should always be installed on cold water supply to cylinder to comply with WRAS/Building Regulation G3.
  - Expansion vessel should be installed hanging from connecting pipework.
  - Expansion vessel should be fastened to a suitable surface (wall etc.) to prevent strain on pipe connection.
  - Gas inlet screw type: 8V1

### Tundish

Install the tundishes in accordance with the UK Building Regulation G3. For more details refer to the "Safety Device Discharge Arrangements" section in the installation manual for the cylinder unit .

### Filling loop

Note: Refer to the installation manual provided with the filling loop as well.



The procedure and recommendations specified in the cylinder unit installation manual for filling and pressurising the primary heating circuit of the cylinder unit must be followed.

The heating return pipe and the cold water supply pipe must be provided with tees with a short length of R250 (half hard) copper tube in the side port.

Fit the double check valve to the pipe from the mains supply pipe using the compression joint, which complies with BS EN 1252-2, ensuring that the flow through the valve is in the same direction as the arrow on the body.

Fit the ball valve to the pipe from the heating return using the compression joint.

Connect the flexible hose between the double check valve and ball valve and tighten the wing nuts to make water tight joints.

Open both ball valves and fill the system, when the pressure starts to increase on the cylinder unit pressure gauge partially close the ball valve on the double check valve to control the pressure to that specified by the cylinder unit installation manual.

Once filling and pressurisation have been completed, close both ball valves and remove the flexible hose.

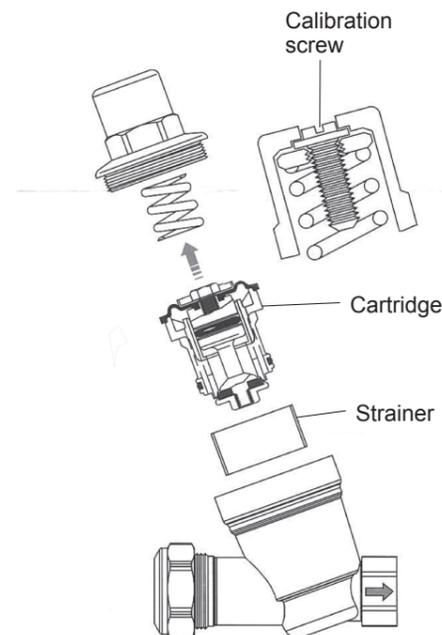
If the flexible hose is removed it is recommended that caps(not supplied) are fitted to both valve connections to prevent any potential leakage.

## Maintenance and service

Under normal circumstances the pressure reducing valve should not require any maintenance, but regular inspection and cleaning is recommended.

If the strainer or cartridge are damaged replace entire valve.

1. Isolate the water supply to the pressure reducing valve.
2. Unscrew anticlockwise the central calibration screw to decompress the spring.
3. Remove the plastic cover using a spanner on the hexagon faces.
4. Extract the cartridge with the aid of long nosed pliers to grip the head of the set screw.
5. Remove the strainer element.
  - \*If the strainer or cartridge are damaged replace item(s) accordingly.
6. Clean the strainer element and cartridge under clean running water.
7. Replace the strainer, cartridge and cover.
8. Turn on the water supply and check for leakage.
9. Re-calibrate the pressure reducing valve. (Rotate it clockwise to increase the outlet pressure and anticlockwise to reduce it.)



Manually operate (rotate head anti-clockwise) the expansion relief valve to ensure free water flow through discharge port and connecting pipe.

The pre-charge must be checked annually to make sure that the expansion vessel is in working order.

If water discharges through the expansion relief valve, it is possible that the expansion vessel's existing gas pre-charge pressure is too low.

Check this in the following manner:

1. Close the water supply.
2. Drain the sanitary circuit until the pressure is 0 bar.
3. Check the pre-charge.
4. Increase the gas pre-charge pressure with nitrogen/air as necessary.

Make sure that the pre-charge is not higher than the maximum working pressure.

If the expansion vessel cannot be pressurized, it is possible that the membrane has a leak.

You must then replace the expansion vessel.