



Wilo-Pressurisation Units.

Heating and Chilled Water Systems



Wilo Pressurisation Units

Pressurisation units for heating and chilled water systems



Advantages of sealed systems

A sealed system is a move away from the feed and expansion system which requires a heavy roof top tank and associated pipework, therefore water loss due to evaporation is greatly reduced. A correctly selected sealed pressurised system is subjected less to corrosion and is able to operate at higher temperatures which allows cost savings in the form of smaller bore pipework and small circulating pumps.

Standards Applied:

Machinery Directive 2006/42/EC

EMC 2004/108/EC

BS EN809

BS7074 parts 1 to 3

BS 13077:2008

Water regulations 1999

* Systems with temperatures in excess of 90°C require the installation of an intermediate vessel.

** Except the OP range

Wilo pressurisation units are available in four ranges to suit every installation. From open pack base mounted, comfort wall and floor mounted and twin systems able to control both heating and chilled systems.

Each range has one and two pump models available with a selection of pumps to suit a range of static requirements.

Wilo pressurisation units are designed to keep sealed MTHW*, LTHW and chilled water systems at a predetermined pressure by topping the system up with wholesome water via an AB air gap. 1 or 2 pumps are controlled by the Wilo comfort controller**.

Comfort Controller

The comfort controller works on closed loop pressure control via an analogue pressure transducer and an electronic micro processor ensuring accurate measurement and feedback of system condition. The control philosophy allows the duty pump to run, ensuring that the cold fill pressure (CF) measured in bar is constantly met. 2 pump models will rotate the duty automatically between both pumps ensuring even wear; if the duty pump fails the standby pump will start automatically.

To ensure efficient operation of the sealed system the comfort controller also monitors the number of pump starts and changes in pressure providing excess start or system leak alarms if operating outside of the standard parameters.

The controller has a two tier security access with view mode allowing access to the hand / off / auto function and then to view all other parameters only. The user mode requires a password for access to parameters such as cold fill pressure, high pressure, low pressure and excess starts alarms.

Please see the features chart for a comprehensive list on page 5.

System Fill

The open pack and comfort range, with exception of wall mount unit, can fill the system without the need for a quick fill loop. The comfort controller has a system fill command that will enable the pump to run for a maximum of 24 hours or until the CF pressure has been met without activating any alarms.

Selection details

Wilo UK can select the correct pressurisation unit and expansion vessels for your system in accordance with BS7074 if you provide the following information:

- 1 Static height of the building above the pressurisation unit (metres)
- 2 System content (litres) If unknown provide the boiler power (Kw) which can then be used to estimate the system content
- 3 Flow and return temperatures
- 4 Glycol content (%)
- 5 Final working pressure

A data sheet detailing the calculation process can be obtained from a WILO representative or by e-mailing sales@wilo.co.uk.



Open Pack pressurisation

Open Pack pressurisation – OP135, OP235

- 1 and 2 pump systems
- Pressure switch controlled
- 8 litre expansion vessel
- Pressure regulating valve
- Optional pressure switches for high and low pressure bms contacts
- Fused spur
- AB Air gap



Comfort WM pressurisation unit

Comfort Wall Mount pressurisation unit – P130-WM, P230-WM

- For installation in small systems only with expansion vessels upto 300 litres
- Wall mount only
- 1 and 2 pump systems
- Micro processor controlled
- Full BMS
- AB Air gap



Comfort pressurisation unit

Comfort pressurisation unit – P135, P160, P180, P235, P260, P280

- 1 and 2 pump systems
- Micro processor controlled
- Available in 35, 60 and 80 metre head models
- Full BMS
- AB Air gap



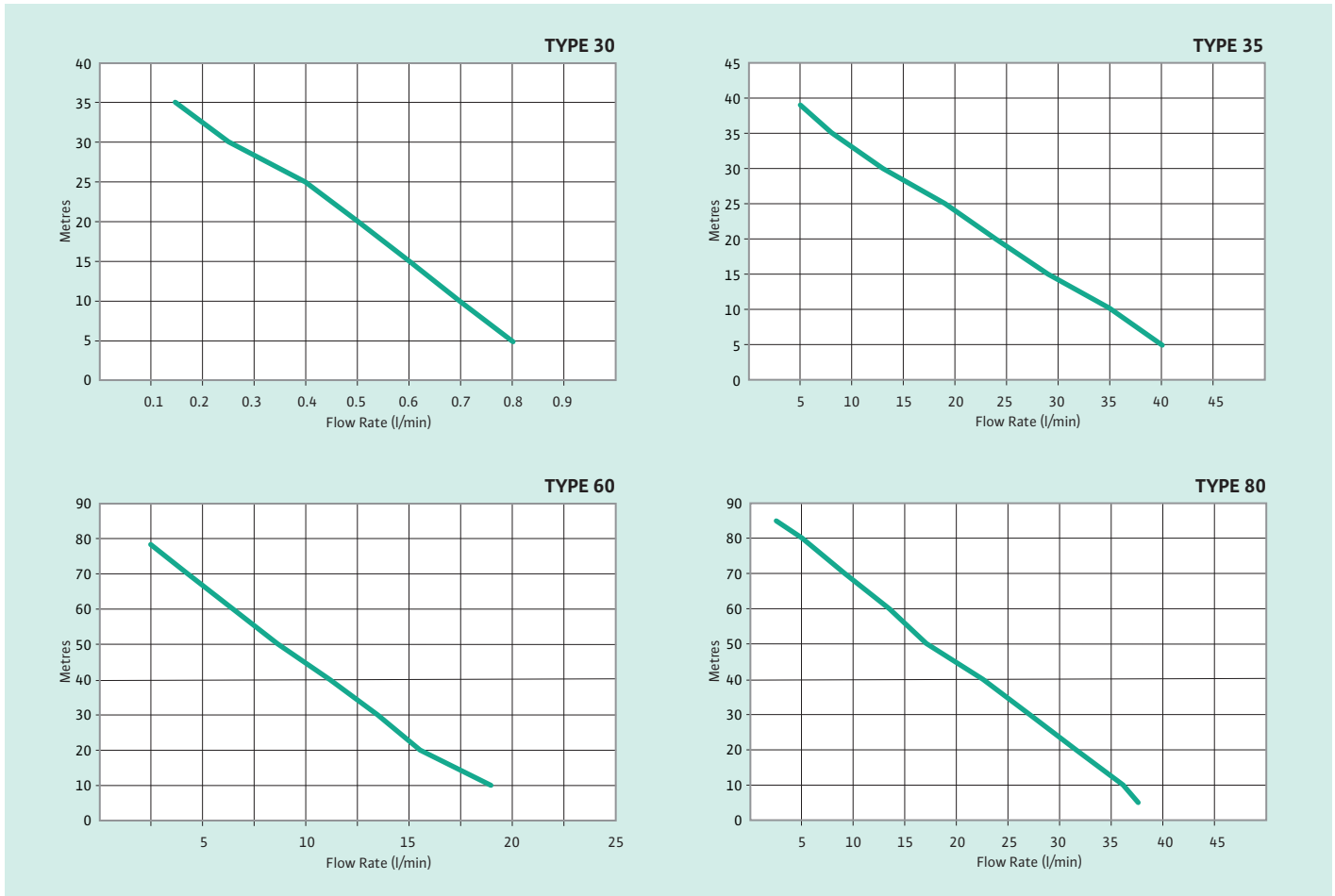
Twin System Comfort pressurisation unit

Twin System Comfort pressurisation unit – P135-TS, P160-TS, P180-TS

- 1 pump twin systems
- Controls 2 independent systems, heating and chilled
- Micro processor controlled
- Available in 35, 60 and 80 metre head models
- Full BMS
- AB Air gap

Wilo Pressurisation Units

Performance data



Wilo-Pressurisation Units											
Range	Art No.	Model	Kw	In (A)	PN (Bar)	Dimensions (mm)			Weight (Kg)	Inlet (")	Outlet (")
						W	D	H			
	2819503	OP 135	0.37	2.5	8	465	555	580	14	1/2	1/2
	2819504	OP 135-PS	0.37	2.5	8	565	555	580	17	1/2	1/2
	2819505	OP 235	0.37	2.5	8	605	600	650	21	1/2	1/2
	2819506	OP 235-PS	0.37	2.5	8	705	600	650	24	1/2	1/2
	2819501	P130-WM	0.03	0.8	8	250	165	440	6.3	1/4	1/4
	2819502	P230-WM	0.03	1	8	250	165	440	6.5	1/4	1/4
	2819492	P135	0.37	2.5	10	530	360	785	24	1/2	1/2
	2819493	P160	0.50	3.1	10	530	360	785	29	1/2	1/2
	2819494	P180	0.75	5.6	10	530	360	785	32	1/2	1/2
	2819495	P235	0.37	2.5	10	530	360	785	29	1/2	1/2
	2819496	P260	0.50	3.1	10	530	360	785	39	1/2	1/2
	2819497	P280	0.75	5.6	10	530	360	785	45	1/2	1/2
	2819498	P135-TS	0.37	5	10	550	360	785	31	1/2	1/2 x2
	2819499	P160-TS	0.50	6.2	10	550	360	785	41	1/2	1/2 x2
	2819500	P180-TS	0.75	11.2	10	550	360	785	47	1/2	1/2 x2

Wilo Pressurisation Units

Features

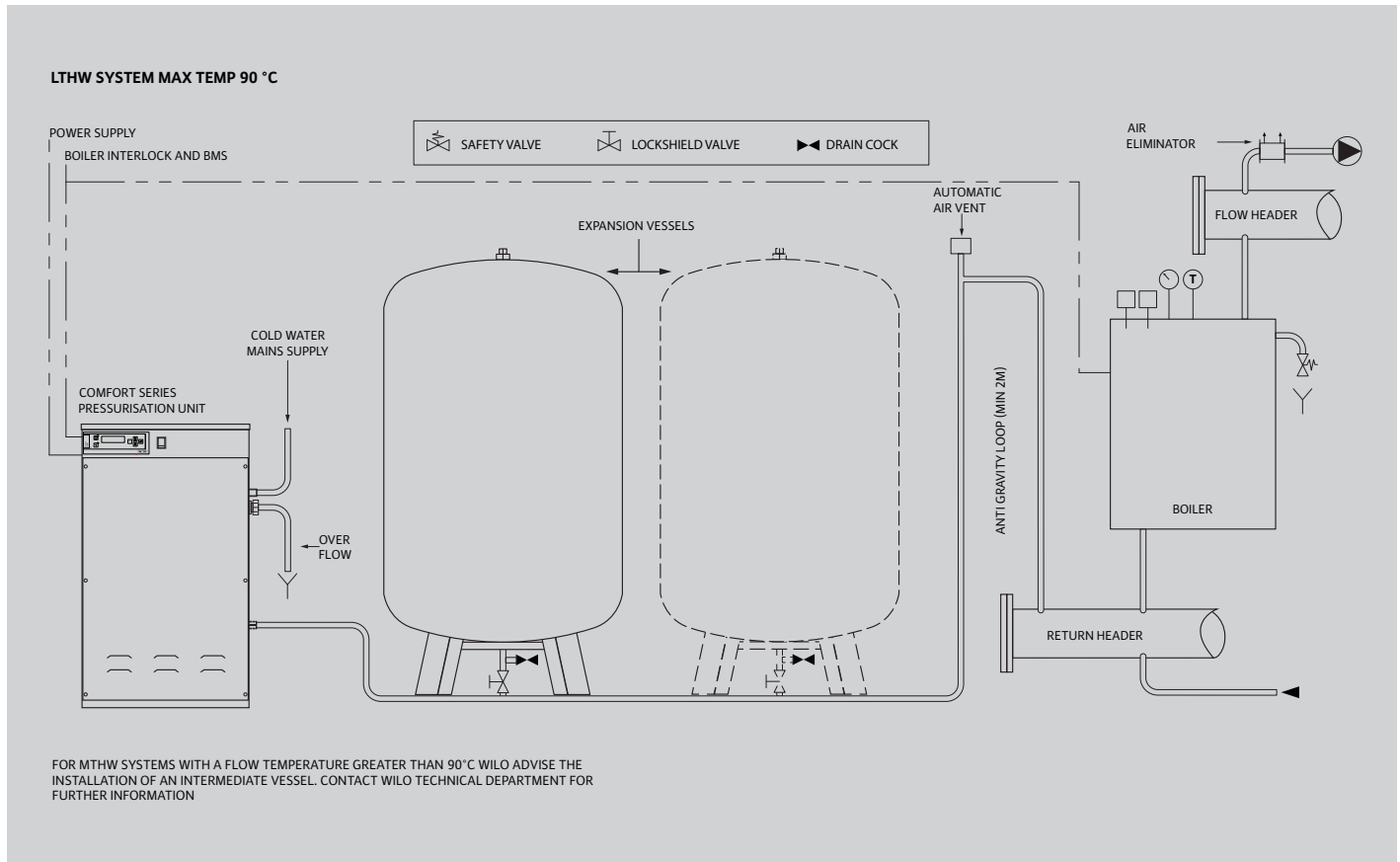
Equipment list															
	OP - Open Pack				Wall Mount		Comfort						Twin System		
	135	235	135-PS	235-PS	P130-WM	P230-WM	P135	P160	P180	P235	P260	P280	P135-TS	P160-TS	P180-TS
Mechanical Features															
Open base plate	✓	✓	✓	✓											
Cabinet					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Floor mounted	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓
Wall mounted					✓	✓	○	○	○	○	○	○	○	○	○
Duty pump	✓		✓		✓		✓	✓	✓				✓	✓	✓
Duty / standby pumps		✓		✓		✓				✓	✓	✓			
Twin system													✓	✓	✓
Pump inlet strainer							✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump non return valve	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓
Common outlet isolation valve	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WRAS approved float valve	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AB Air gap to BS 13077	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cold fill pressure 0-3.0 bar					✓	✓									
Cold fill pressure 0-3.5 bar	✓	✓	✓	✓			✓			✓			✓		
Cold fill pressure 3.5-6.0 bar								✓			✓			✓	
Cold fill pressure 6.0-8.0 bar									✓			✓			✓
8 litre pressure vessel	✓	✓	✓	✓											
Pressure regulating valve	✓	✓	✓	✓											
Electrical Features															
Pressure switch control	✓	✓	✓	✓											
Pressure transducer control					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Password protection					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 line LCD display – backlite					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LED healthy and fail					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump trip and fail monitoring					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System fill mode							✓	✓	✓	✓	✓	✓	✓	✓	✓
System leak detection					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service due reminder					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump check routine					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fused switch	✓	✓	✓	✓											
Hand/Off/Auto selection					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Adjustable Delay start					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Adjustable Differential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low water alarm					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High water alarm					○	○	○	○	○	○	○	○	○	○	○
Hours run					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alarm logging 0-30					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic duty rotation						✓			✓	✓	✓				
Manual duty selector switch		✓		✓											
RS485 connectivity					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Volt free contacts – 5A 230V															
Pump run – NO					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump trip – NO					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low pressure – NO		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High pressure – NO		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Excess starts – NO				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low water – NO				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Boiler interlock – NC				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Volt free contact programmable – 10A 230V															
Power Fail				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Common alarm				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Common pressure alarm				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Included as standard ○ Optional extra

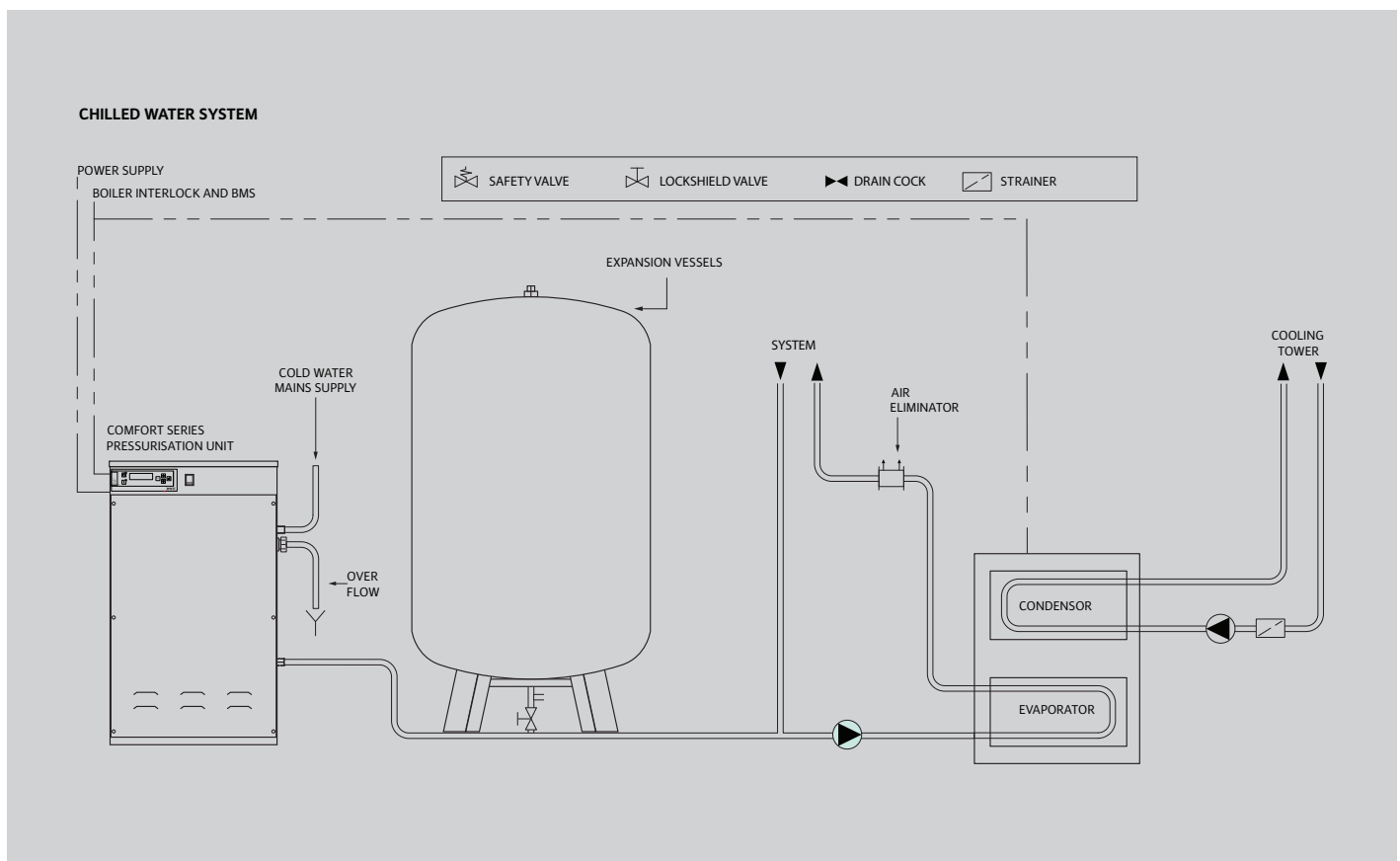
Wilo Pressurisation Units

Installation Diagrams

Typical layout drawing LTHW and MTHW



Typical layout drawing Chilled Water



Wilo Pressurisation Units

Modular Expansion System

To eliminate installation time on site WILO have developed the modular expansion system which when ordered with a comfort pressurisation unit provides a base-mounted pressurisation system with expansion vessel(s), interconnecting pipework, lockshield gate valves and drain cock.



Expansion system range

Art No.	Model	Dimension (mm)			Inlet (")	Outlet (")
		W	D	H		
2819507	Modular Expansion System - 50Lt	1200	500	835	1/2	1/2
2819508	Modular Expansion System - 60Lt	1200	500	880	1/2	1/2
2819509	Modular Expansion System - 80Lt	1200	500	835	1/2	1/2
2819510	Modular Expansion System - 100Lt	1200	500	930	1/2	1/2
2819511	Modular Expansion System - 150Lt	1200	510	1080	1/2	1/2
2819512	Modular Expansion System - 200Lt	1250	590	1130	1/2	1/2
2819513	Modular Expansion System - 300Lt	1280	650	1300	1/2	1/2
2819514	Modular Expansion System - 200+200Lt	1935	590	1130	1/2	1/2
2819515	Modular Expansion System - 500Lt	1400	750	1650	1/2	1/2
2819516	Modular Expansion System - 300+300Lt	1970	650	1300	1/2	1/2
2819517	Modular Expansion System - 750Lt	1400	800	1830	1/2	1/2
2819518	Modular Expansion System - 500+500Lt	2250	775	1650	1/2	1/2
2819519	Modular Expansion System - 1000Lt	1400	800	2130	1/2	1/2
2819520	Modular Expansion System - 750+750Lt	2250	800	1830	1/2	1/2
2819521	Modular Expansion System - 1000+1000Lt	2250	800	2130	1/2	1/2

Wilo Pressurisation Units

Pressurisation units for heating and chilled water systems



Pumps

Pumps types 35 and 60 are horizontal peripheral pumps with cast iron volute and brass impeller, motor bracket is of patented design to reduce risk of impeller seizure after periods of inactivity.

Pumps type 80 are horizontal peripheral pumps with Ryton volute and brass impeller, motor bracket is of patented design to reduce risk of impeller seizure after periods of inactivity.

Pumps of type 30 are composite solenoid pumps.

Break Tank

18 litre polyethylene water tank complete with 22mm overflow and AB airgap to water regulations 1999 and BS 13077.

Valves

WRAS approved equilibrium ball float valve to BS1212 part 2.

Spring loaded brass non return valve.

1/4 turn mini ball valves.

Pipework

1/2" in brass and braided flexible hoses.

1/4" in brass and nylon tubing.

Expansion Vessels

Manufactured to BS4814 with removable diaphragms, maximum working pressure of 10 or 16 bar.

Max working temperature 100°C.

Wilo would suggest the use of an intermediate vessel in systems with flow temperature in excess of 90°C.

Vessels are WRAS approved and conform to PED.

Electrical Supply

Input supply: 230v/1 ph/50Hz

Volt free contact: Max 5A at 230V ac

Switching volt

free contact: Max 10A at 230V ac



Accessories

Wilo Expansion Vessels - XT Range

The WILO range of expansion vessels comprises 31 models. With three styles: horizontal, vertical and pipeline mounted, you can be sure that a vessel to suit your needs is available.

Wilo Pressurisation and Expansion vessel selection

Wilo have compiled a data sheet that explains the selection process as set out in BS7074.



WILO (UK) LTD, Second Avenue, Centrum 100, Burton Upon Trent, DE14 2WJ
T: +44 (0)1283 523000 F: +44 (0)1283 523099 E: sales@wilo.co.uk www.wilo.co.uk

Wilo Ireland, Unit B1, Corcanree Business Park, Dock Road, Limerick, Ireland
T: +353 (0)61 227 566 F: +353 (0)61 229 017 E: sales@wilo.ie www.wilo.ie