heating and plumbing products
that won't cost the **earth**

Intasol combi solar diverter

July 2010

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Description
The Intasol is a hot water diverter valve for use with combination boilers or instantaneous water heaters. This means that a solar system can now be linked with a combi boiler as back-up.

Cross-flow contamination is eliminated by the clever deployment of solar check valves integrated within the valve.

Intasol combi solar diverter
(patented design)

Introduction
The Intasol manifold allows unvented hot water heated by solar thermal panels, to be used safely with a combination boiler. The Intasol system automatically harnesses the thermal energy contained in a solar water storage system to provide water at a controlled, optimum temperature.

Intasol is supplied complete with a TMV2 thermostatic mixing valve, thermostatic diverting valve, thermostatic blending valve and integral non-return valve.

The system ensures that the user always receives hot water at the set temperature, and diverts cold water at 28°C to activate the boiler when the temperature of the water coming from the solar storage cylinder falls below 48°C.

Its compact design means that all the valves are housed in the body of the Intasol, and it's supplied complete with connections suitable for copper pipe.

High temperature solar systems
The temperature of the domestic water in solar thermal systems can reach very high temperatures over long periods.

In Summer, expecially if there is little water usage, the hot water can reach a temperature of around 98°C before the temperature and pressure safety relief valves are actuated.

At these temperatures, the hot water cannot be used directly because of the risk of scalding to the user.

Water temperatures over 50°C can cause burns very quickly. At 55°C, partial burns occur after 30 seconds immersion. At 60°C, they can occur in as little as 5 seconds.

Intasol incorporates a TMV2 thermostatic mixing valve which blends the hot and cold water to deliver blended water at a safe temperature for users.

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Technical specification

Connections:	15mm compression for copper tube
Body material:	DZR copper alloy BS EN 12164 CW602N
Shutter:	UDEL GF-120NT
Spring:	Stainless steel AISI 302

Thermostatic mixing valve

Maximum working pressure:	10 bar (static), 5 bar (dynamic)
Adjustment range:	35-55°C
Accuracy:	± 2°C
Maximum inlet temperature:	100°C
Maximum inlet pressure ratio (H/C or C/H)	2:1
Minimum temperature difference between the inlet hot water and the outlet mixed water to ensure anti-scald performance:	10°C
Minimum flow rate for stable operation:	6 litres per minute

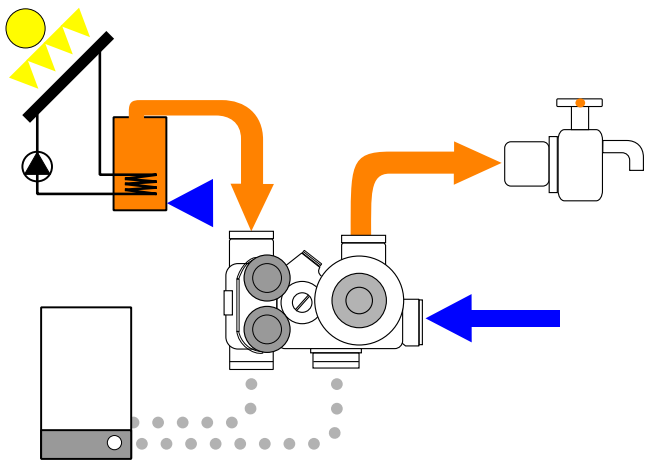
Thermostatic diverting valve

Maximum working pressure:	10 bar (static), 5 bar (dynamic)
Factory set:	48°C
Maximum inlet temperature:	100°C

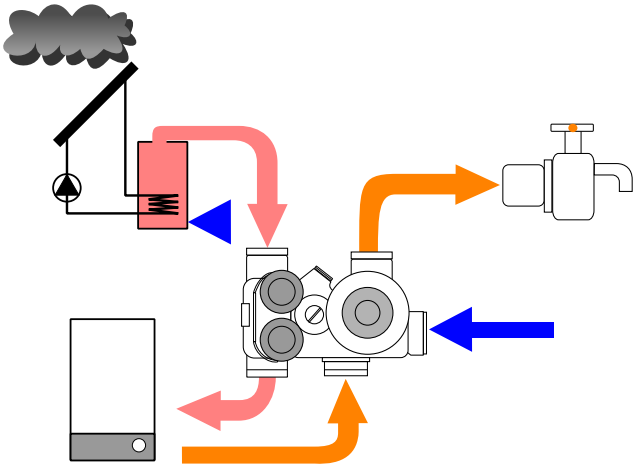
Thermostatic blending valve

Maximum working pressure:	10 bar (static), 5 bar (dynamic)
Factory set:	28°C
Maximum inlet temperature:	90°C

Operation example 1:
DHWS heated by Solar delivery direct to taps via mix with cold to a safe temperature



Operation example 2:
DHWS from cylinder only warm (or cold). Intasol diverts to the combi boiler, heats DHWS and delivers to taps. DHWS is mixed at the Intasol valve to maintain safe temperatures



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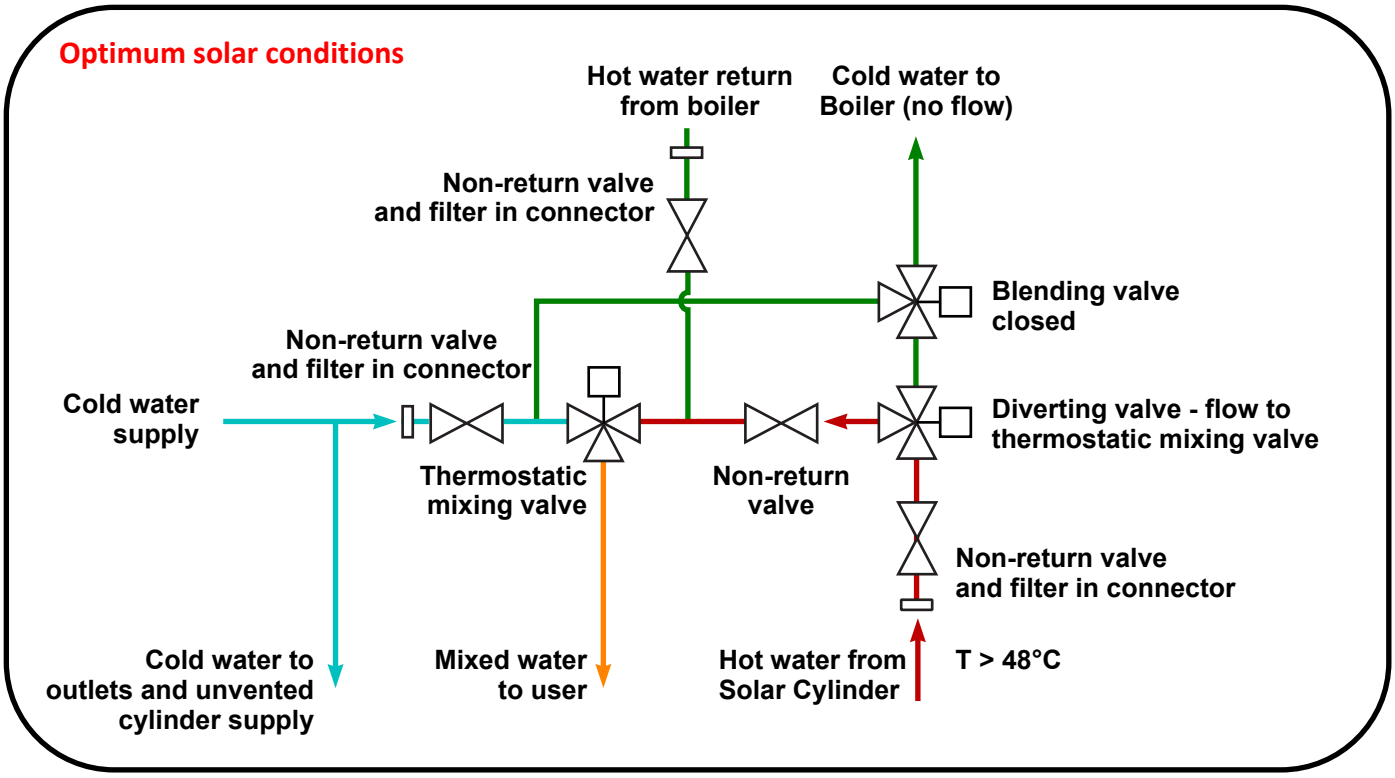
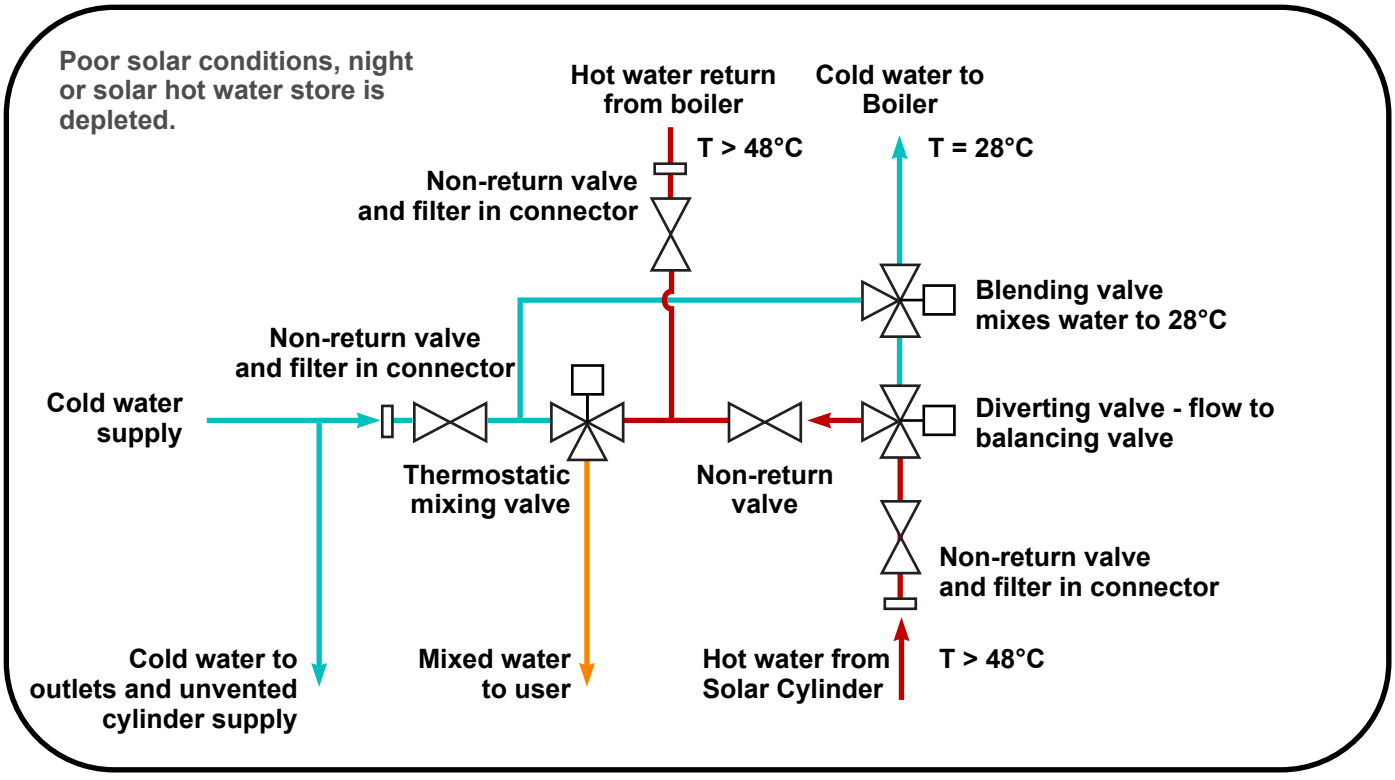
Schematic diagrams





Inactive | Hot water | Cold water | Blended water

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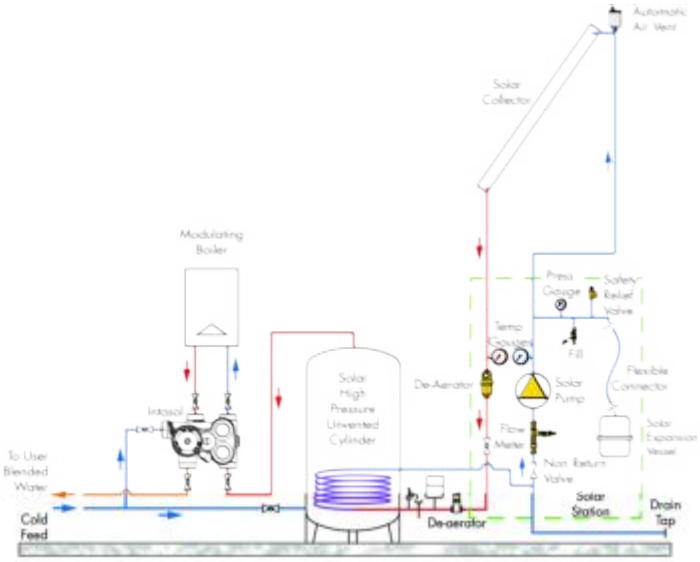
Typical circuit using Intasol



The Intasol manifold should preferably be installed close to the boiler, on the outlet from the solar hot water storage, to ensure a constant temperature of mixed water is supplied to users.

The manifold should be fitted in a circuit similar to the one illustrated above.

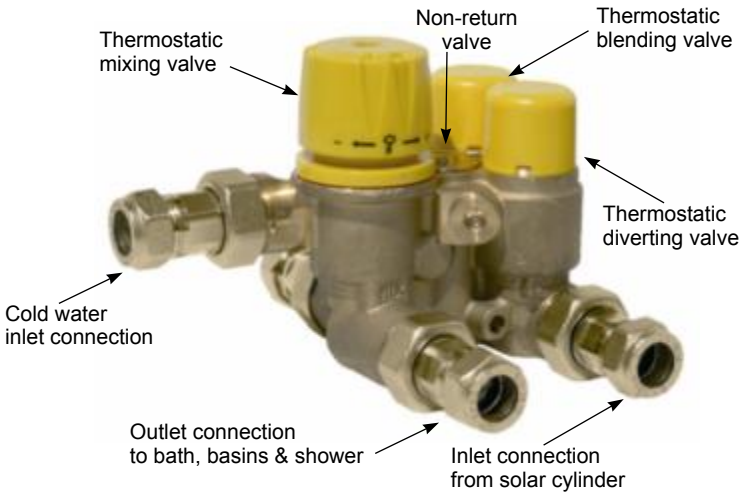
To ensure that maintenance, commissioning and testing can be undertaken easily, the manifold must be installed in an accessible position.

Given the flow characteristics of the integral thermostatic mixing valve, Intasol can be used for a single outlet, eg; washbasin, shower or for multiple outlets.

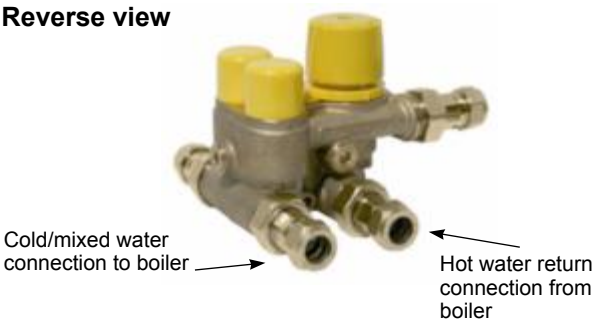
To ensure that the mixed water is supplied at the set temperature, a minimum flow rate of 6 litres per minute is required.

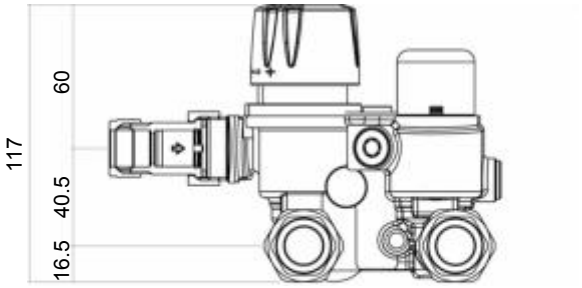
The installation of thermostatic mixing valves must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999.

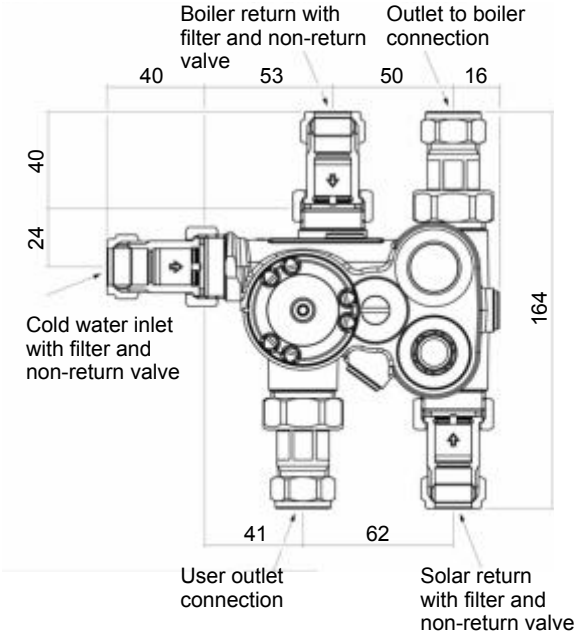
Features



Reverse view







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