Solar kit

Automatic Divertion and Control Of Hot Water Flow Between Solar Storage and Boiler

INNOVATION

Thermometer & Temperature Control Indicator

Brass Form

PRODUCTION OF HEATING AND PLUMBING VALVES

Thank you

for choosing a Brass Form product
supporting our efforts for to continuously
development and production
of new modern innovative & high-quality products,
focused on hygiene, protection,
and **energy saving.**

Mixing Valve

Diverting Valve

INNOVATION

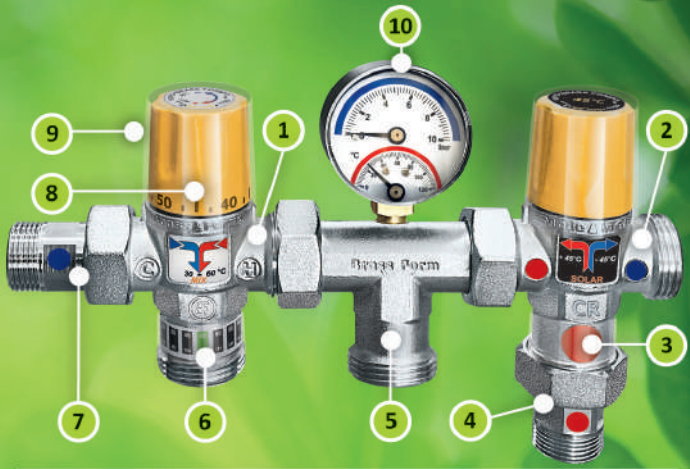
TEMPERATURE CONTROL & THERMOMETER

TEMPERATURE LCD INDICATOR SOLAR SYSTEM WORKING STATUS

Automatic Divertion and Control Of Hot Water Flow Between Solar Storage and Boiler

TECHNICAL SPECIFICATIONS

- **Drinkable Water Approved**
  Certified raw materials according to European standards
- **Thermostatic Cartridge**
  -Requirements and Tests in accordance to standards EN1111, NF077-DT4
  -Resistance to Lime scale
  -Anti-scalding Safety function
- **Certified Dezincification Resistance Alloy (DZR)**
  Hot forged brass CW602N, chrome plated
- **Suitable for drinkable water**
- **Gauge holder connection**
- **Operating accuracy +/- 2°C**
- **Flow Rate Kv (m^3/h): 1.4**
- **Maximum static pressure 10 bar**
- **Maximum inlet temperature 100°C**



1. **Thermostatic mixing valve (setting range 30-60°C)**
2. **Thermostatic diverter valve (default temperature set 45°C)**
3. **Solar system working indicator**
   -Temperature sensor (LCD) in inlet
   -Red sign when above 45°C – Green sign when below 45°C
4. **High temperature solar check valve with built in strainer (Black color check valve)**
5. **Tee fitting upon 1" swivel connection**
   -Installation in 360° with 1/4" gauge connection
6. **Real time thermometer**
   -LCD screen green color on temperature control level
7. **Check valve with built in strainer (White color check valve)**
8. **Adjusting Knob with temperature setting range**
9. **Transparent Cover for locking the possition with UV protection**
10. **Temperature and pressure control (Thermomanometer)**

GENERAL

The Thermostatic kit for hot water applications provides the parallel connection of a solar water heater and of a second heating source such as gas boiler and is aimed at optimizing the user of solar thermal energy and saving fuel in the most efficient way.

APPLICATION

The Thermostatic Kit consists of a thermostatic diverting valve and an adjustable mixing valve and is applied to hot water generation plants, by the use of solar water heaters and gas boilers.

The Thermostatic diverting valve automatically diverts water from the solar heater either for use or to the gas boiler, while the adjustable thermostatic mixing valve controls and maintains the preset temperature of the water providing safety and protection against burns by automatically shitting off the hot water supply in the event of cut of from the cold water supply.

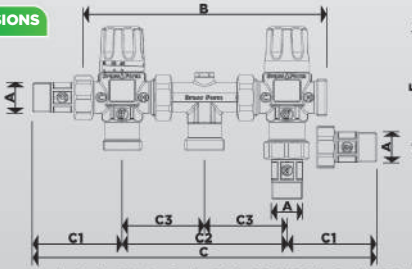
OPERATION

If the hot water temperature of the solar water is greater than the preset temperature in the diverting valve, the water is diverted to the mixing valve where its is automatically mixed with the cold water, making optimal use of the free solar energy. When the water from the solar heater is lower than the preset temperature in the diverting valve it is diverted to the second heat source, which heats the water by consuming energy and then transmit it to the mixing valve for consumption.

SPECIFICATIONS

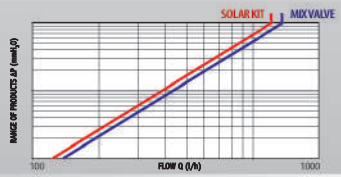
Maximum static pressure	10 bar
Maximum working pressure	5 bar
Maximum inlet temperature	100°C
Temperature setting range	30-60°C
Accuracy	+/- 2°C
Threads according to	ISO 228-1
Compatible fluids	Water
Diverter valve default Temperature set	45°C
Maximum inlet pressure ratio (H:C or C:H)	2 : 1
Minimum flow rate	4 L/min
Minimum temperature difference between inlet hot water and mixed water	10°C
Requirements and Tests according to Standards	NF077-DT4, EN1111

DIMENSIONS



	A	B	C	C1	C2	C3	D	D1	D2	E	F
4560	1/2	207	290	75	140	70	151	62.5	88.5	109.5	38
6045	3/4	207	292	76	140	70	152	62.5	89.5	109.5	38

PRESSURE DROP DIAGRAM



GENERAL INSTALLATION INSTRUCTIONS

The Thermostatic mixing and diverter valves are designed for **use in solar thermal systems**. Before installing them in the circuit, it is necessary to clean the circuit from any impurities circulating in the pipping.

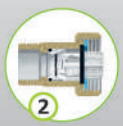
They both can be installed **in any position** (vertically, horizontally, or upside down) without affecting their operation and performance. The temperature can be adjusted by turning the thermostatic valve handle either dock wise or counterclockwise. By rotating it clockwise, the temperature in the flow drops while the temperature rises in the opposite direction. The handle on the mixing valve **has a pre-assembled temperature calibration** for quick and easy adjustment while the diverting valve is **locked and preset** at 45°C.

The thermostatic valves are equipped with an adjusting protection cap. To adjust the temperature, **remove the transparent cover**, set the desired temperature and then place it again, **guided by the two valve outlines**.

DIVERTING VALVES AND FILTERS

In each solar system installation, it is recommended to install diverting valves to prevent the entry to impurities. The diverting valves and filters are pre-installed in the inside of the connecting tail.

Place the tail with the black non-return valve in the inlet from the solar water heater to the **diverting valve (1)** and the tail with the white one in the cold water supply from the water supply to the **mixing valve (2)**



BRASS FORM INNOVATED

1 THERMOMETER

The thermometer of mix valve has a temperature range from 30°C to 60°C. It is of reversible temperature and follows the temperature of the water in real time at the outlet by changing its color to green according to the temperature.

2 DIVERSION TEMPERATURE SENSOR

The temperature sensor of the diverting valve can change between green and red, depending on the water temperature in the inlet.

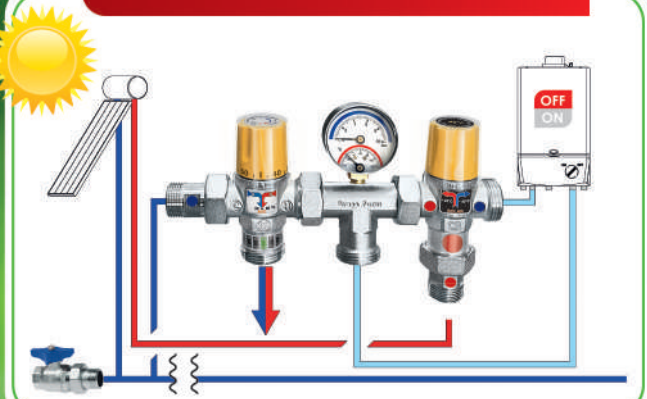
INSTALLATION

BUILD IN THERMOMETER & TEMPERATURE SENSOR

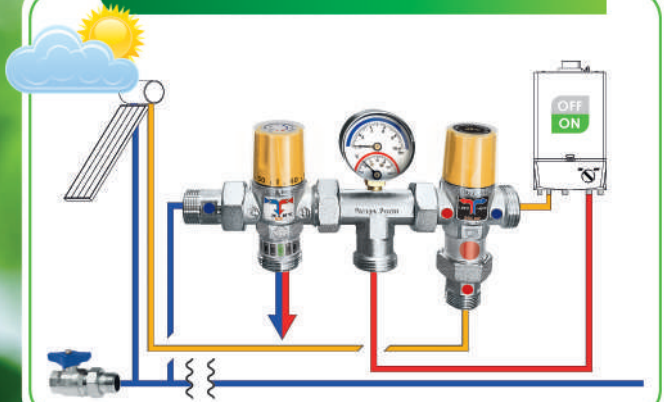
The mixing valve LCD thermometer and the diverting valve temperature sensors are not glued to the brass bodies. After the product installation, place the thermometers to the desired position for the best visual inspection.

For better adhesion of the thermometers, apply to dust and water free surfaces, and place the specially designed sunroof protection shield.

SOLAR WATER HEATER TEMPERATURE OVER 45°C

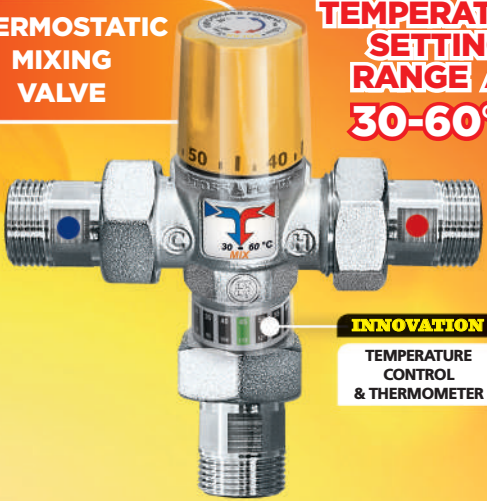


SOLAR WATER HEATER TEMPERATURE UNDER 45°C



THERMOSTATIC MIXING VALVE

TEMPERATURE SETTING RANGE AT 30-60°C



The basic function of mix valve is the regulation of the hot water temperature for greater safety and energy saving. **Automatically mixes hot water from the heating source with the cold water of the water supply network achieving constant water temperature for use,** regardless any temperature pressure and flow changes both at the hot and cold water inlet.

The thermostatic mix valve is equipped with a self-adhesive LCD type thermometer that allows you to control the actual temperature of the water for use.

INSTALLATION INSTRUCTIONS

Place at the hot water inlet the connecting tail with solar check valve **(1)** ideally for use at high temperatures (Solar) and to the cold water inlet the connection tail with the white non returning valve **(2).**

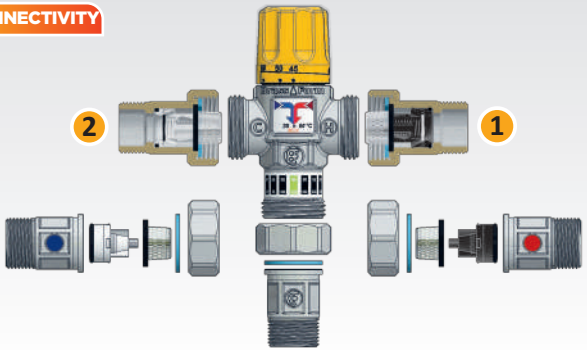
The LCD thermometer has a measuring range of 30-60°C, is of reversible temperature and follows in real-time the water temperature at the outlet of the mixing valve.

The thermometer is not glued, after the product installation, place the thermometers to the desired position for the best visual inspection.

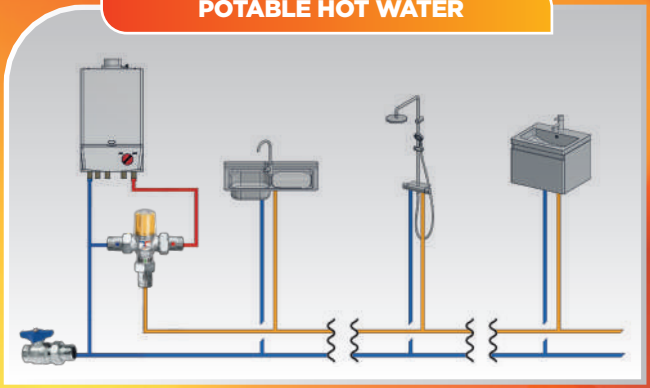
The temperature can be adjusted by turning the thermostatic valve handle either dock wise or counterclockwise. By rotating it clockwise, the temperature in the flow drops while the temperature rises in the opposite direction.

The handle on the mixing valve has a pre-assembled temperature calibration for quick and easy adjustment while the diverting valve is locked and preset at 45°C.

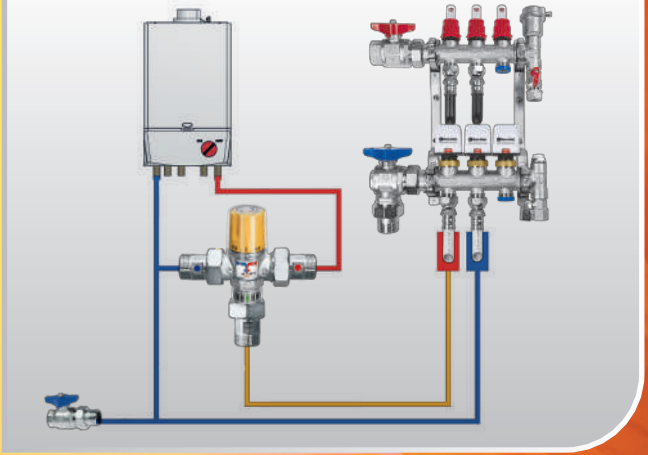
CONNECTIVITY



POTABLE HOT WATER



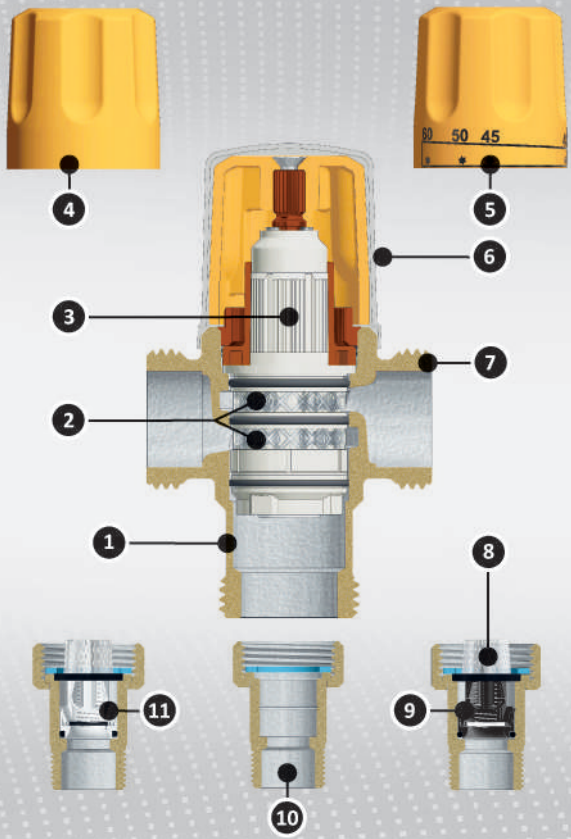
UNDERFLOOR HEATING



CHARACTERISTICS THERMOSTATICS VALVES

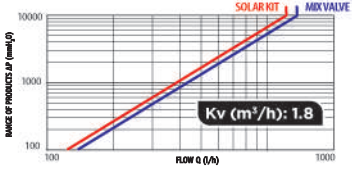
1. **Certified Dezincification Resistant Alloy (DZR)**
   -suitable for drinkable water
2. **Stainless steel strainers on inlets**
3. **Thermostatic cartridge tested in accordance to EN1111, NF077-DT4**
   Resistance to Lime scale
4. **Fixed Knob (ABS) on Diverter Valve**
5. **Adjusting knob (ABS) with Temperature setting range**
   -Setting range 30-60°C
   -Fixed flow diverting at 45°C
6. **UV protection and setting safety cover (polycarbonate PC)**
7. **Connections threads 1”**
8. **Stainless steel strainer (AISI 304)**
   -Protection against impurities
9. **Tail piece with 1” union nut with solar check valve and strainer**
10. **1/2 and 3/4 Tail piece with 1” union nut**
    -Hot forged brass CW617N
11. **Tail piece with 1” union nut with check valve and strainer**
12. **Installation in 360° upon 1” swirel connection**
13. **Solar system working indicator on diverter valve**
14. **Temperature indicator on mixing valve**

SECTION VIEW



SPECIFICATION

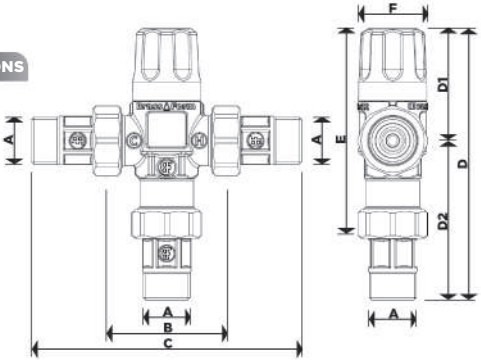
FLOW RATE THERMOSTATIC VALVE



RANGE OF PRODUCTS

CODE	TYPE	CONNECTION	KV
4512	Diverting Valve	1/2	1.8
4534	Diverting Valve	3/4	1.8
6012	Mixing Valve	1/2	1.8
6034	Mixing Valve	3/4	1.8

DIMENSIONS



	A	B	C	C1	C2	C3	D	D1	D2	E	F
4560	1/2	207	290	75	140	70	151	62.5	88.5	109.5	38
6045	3/4	207	292	76	140	70	152	62.5	89.5	109.5	38
4512	1/2	67.5	151	-	-	-	151	62.5	88.5	109.5	38
4534	3/4	67.5	152.5	-	-	-	152	62.5	89.5	109.5	38
6012	1/2	67.5	151	-	-	-	151	62.5	88.5	109.5	38
6034	3/4	67.5	152.5	-	-	-	152	62.5	89.5	109.5	38

THERMOSTATIC DIVERTING VALVE

BEFORE SETTING-UP
45°C

INNOVATION

TEMPERATURE LCD INDICATOR SOLAR SYSTEM WORKING STATUS

The diverter valve basic function is to divert the water coming from the solar water storage directly to use or to the secondary storage system for integration according to the set temperature.
It is locked and preset at 45°C and is equipped with a highly sensitivity and precision thermal mechanism LCD type that change its color to green and red depending on which thermal source is in use.

ALTERNATIVE HOT WATER SUPPLY

SOLAR STORAGE

INSTALLATION INSTRUCTIONS

Place in the inlet from the solar water heater the high temperature resistant (black colour) to the inlet of the solar water heater **(1)**.

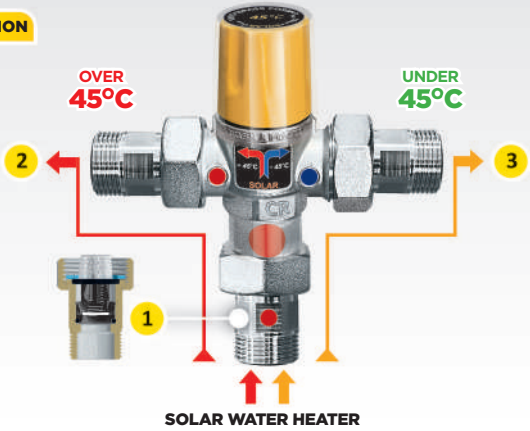
If the water temperature from the solar heater is greater than the 45°C benchmark temperature then the water is diverted for use **(2)**.

On the contrary, if the water temperature is lower then the water is diverted to the second heating source to reheat and then will be available for use.

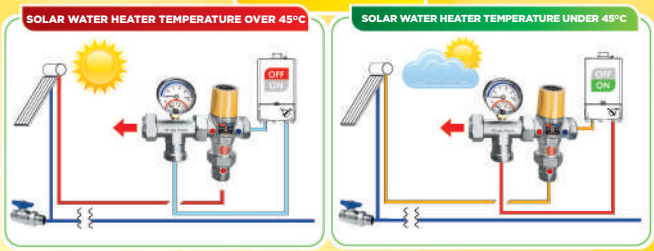
The LCD temperature changes color according to the water temperature at the inlet of the valve, which allows the matching of the color with a heat source **(3)**.

When the deflection is direct to the use, the sensor has red indicator and when the deflection is to the auxiliary heat source it has the green indication.

OPERATION



APPLICATION



OPTIONAL EQUIPMENT

CONNECTION KIT

TAIL PIECE WITH UNION NUT
TEE FITTING WITH 1/4 GAUGE HOLDER CONNECTION

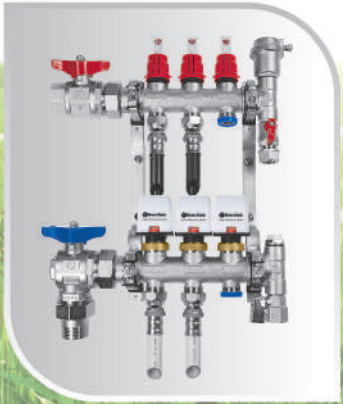
CODE	SWIVEL NUT	TAIL-END	DESCRIPTION - TYPE
1256	1"	1/2"	TAIL PIECE WITH UNION NUT
1260	1"	1/2"	CHECK VALVE AND STRAINER
1245	1"	1/2"	**SOLAR** CHECK VALVE AND STRAINER
3456	1"	1/2"	TAIL PIECE WITH UNION NUT
3460	1"	1/2"	CHECK VALVE AND STRAINER
3445	1"	1/2"	**SOLAR** CHECK VALVE AND STRAINER

CODE: **56**

TEE FITTING WITH 1" SWIVEL CONNECTION
UNION NUT SYSTEM

- Installation in 360°
- 1/4 gauge holder connection

RELATED PRODUCTS



TÜV HELLAS
TÜV NORD GROUP

CERTIFICATE

Management system as per
ISO 9001 : 2015
Quality Management Systems-Requirements
In accordance with TÜV HELLAS (TÜV NORD) S.A., procedures, it is hereby certified that

BRASS FORM S.A.
Area of Xiro Pigadi
196 00 Mandra Attikis
Hellas

Brass Form

applies a management system in line with the above standard for the following scope

Design, Development, Production and Trading - Distribution of Brass Fittings and Components for Hot and Cold Water Installations.

Certificate Registration No. 041 05 0008
Audit Report No. E-0289/2018

Valid from 2017-03-20
Valid until 2020-03-11
Initial certification 2005

TÜV HELLAS (TÜV NORD) S.A. Certification Body

Athens, 2018-04-18

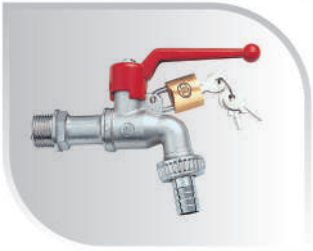
This certification was conducted in accordance with the TÜV HELLAS (TÜV NORD) S.A. auditing and certification procedures and is subject to regular surveillance audits.

IAF

TÜV NORD
TÜV HELLAS
SYSTEM CERTIFICATION

TÜV HELLAS S.A. 282, Mesogeion Ave., 155 62 Cholargos, Athens, Greece

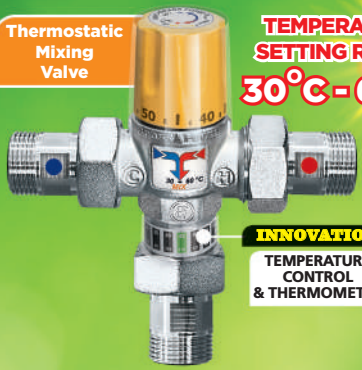
Attending t
«over



he quality
rall»

Thermostatic Valves

Thermostatic Mixing Valve



TEMPERATURE SETTING RANGE

30°C - 60°C

INNOVATION

TEMPERATURE CONTROL & THERMOMETER

Thermostatic Diverting Valve

PRE-ADJUSTMENT TEMPERATURE AT

45°C

INNOVATION

TEMPERATURE LCD INDICATOR SOLAR SYSTEM WORKING STATUS

www.brassform.gr