

ThermoSetter™ Recirculation thermal balancing valve



1164 Series 1/2" - 3/4"

Submittal Data 03302 NA — Issue Date 3/2020

Application

The ThermoSetter™ 1164 series adjustable thermal balancing valve is used for automatic balancing of recirculation loops in domestic hot water systems, to speed hot water delivery, reduce water waste and save energy. The internal thermostatic balancing cartridge automatically modulates flow to ensure a constant temperature in the recirculation piping system. The 116 Series has an adjustment knob with 105°F to 150°F (40°C to 65°C) temperature scale indication. The adjustment knob is lockable for tamper-proofing. An integral dry-well holds a slide-in temperature gauge for local indication, or a sensor for remote temperature sensing. The optional check valve protects against circuit thermo-syphoning. The valve is ICC-ES certified to NSF/ANSI 61 (180°F/82°C Commercial Hot), and NSF/ANSI 372, low lead laws. It meets codes IPC, IRC, UPC and NPC for use in accordance with the US and Canadian plumbing codes.

Typical Specification

Furnish and install on the plans and describing herein, a Caleffi recirculation thermal balancing valve, as manufactured by Caleffi. Each balancing valve must be designed with a DZR low-lead brass body certified to NSF/ANSI 372 by ICC-ES, file PMG-1360. Certified to NSF/ANSI 61 (180°F/82°C Commercial Hot) by ICC-ES, file PMG-1512. PSU adjustable cartridge, peroxide-cured EPDM seals, ABS adjustment knob. The balancing valve must include 1/2" or 3/4" NPT female connections. Each valve has 230 psi (16 bar) maximum working pressure and 105–150°F (40 – 65°C) adjustable temperature range. Provide with optional outlet temperature gauge with 30–180°F (0–80°C) temperature scale, optional check valve, and optional pre-formed insulation shell. Each valve shall be Caleffi model 1164 or approved equal. (See product instructions for specific installation information.)



Technical specifications

Materials:

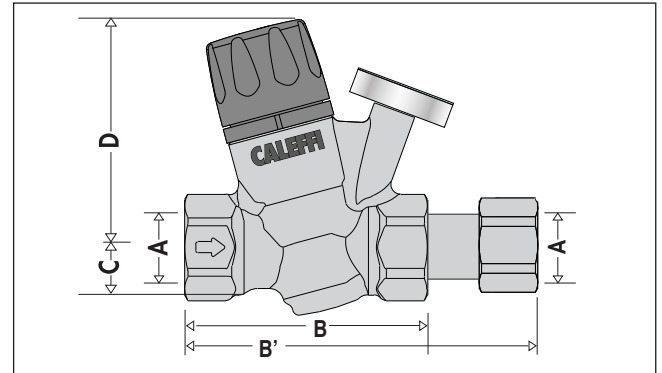
Body: DZR low-lead brass EN 12165 CW724R
 Adjustable cartridge: PSU
 Springs: stainless steel AISI 302 (EN 10270-3)
 Hydraulic seals: peroxide-cured EPDM
 Adjustment knob: ABS

Performance:

Suitable fluid: water
 Max. working pressure: 230 psi (16 bar)
 Max. differential pressure: 15 psi (1 bar)
 Max. inlet temperature: 195°F (90°C)
 Adjustment temperature range: 105–150°F (40 – 65°C)
 Factory setting: 135°F (58°C)

Flow Cv (Kv) max: 2.1 (1.8)
 Flow Cv (Kv) min: 0.35 (0.3)
 Flow Cv (Kv) design: 0.69 (0.6)

Dimensions



Code	A	B	B**	C	D	Wt (lb/kg)
116440A(C)	1/2" NPT F	2 13/16"	4 13/16"	3/4"	3"	1.6 / 0.72
116441A(C)**	1/2" NPT F	2 13/16"	4 13/16"	3/4"	3"	1.5 / 0.77
116450A(C)	3/4" NPT F	2 13/16"	5"	3/4"	3"	1.6 / 0.72
116451A(C)**	3/4" NPT F	2 13/16"	5"	3/4"	3"	1.5 / 0.77

*Models with check valve tail-piece (C) end-to-end dimension is B'. Add 0.2 lb for (C) models.
 **with integral outlet temperature gauge.

Connections:

Main connections: 1/2" and 3/4" NPT female
 Temperature gauge/sensor dry-well: Ø 10 mm metric

Temperature gauge code 116010

Scale: 30 - 180°F (0–80°C)
 Diameter: 1 1/2" (40 mm)
 Stem diameter: 0.35" (9 mm)

Technical specifications of insulation

Materials: closed cell expanded PE-X
 Thickness: 1/2 inch (13 mm)
 Density: -internal part: 1.9 lb/ft³ (30 kg/m³)
 -external part: 5.0 lb/ft³ (80 kg/m³)
 Thermal conductivity (DIN52612):
 - at 32°F (0°C): 0.82 BTU · in/hr · ft² · °F (0.0345 W/(m · K))
 - at 105°F (40°C): 0.94 BTU · in/hr · ft² · °F (0.0398 W/(m · K))
 Coefficient of resistance to the diffusion of vapor: > 1,300
 Working temperature range: 32–212°F (0–100°C)
 Flammability (ASTM D 635): Class VO

Certifications:

- Complies with codes IPC, IRC, UPC and NPC. ICC-ES certified to NSF/ANSI 61 (180°F/82°C Commercial Hot), file PMG-1512.
- NSF/ANSI 372, low lead certified by ICC-ES, file PMG-1360.

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice. Contractors should request production drawings if prefabricating the system

Job name _____
 Job location _____
 Engineer _____
 Mechanical contractor _____
 Contractor's P.O. No. _____
 Representative _____

Size _____
 Quantity _____
 Approval _____
 Service _____
 Tag No. _____
 Notes _____