

ThermoSetter™ Recirculation thermal balancing valve



1164 Series 1/2" - 3/4"

Submittal Data 03302 NA — Issue Date 10/2021

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 ThermoSetter complies with NSF/ANSI/CAN 61, as certified by ICC-ES, file PMG-1512 (180°F/82°C Commercial Hot), and complies with NSF/ANSI 372, low lead laws, as certified by ICC-ES, file PMG-1360. It also meets codes IPC, IRC, UPC and NPC for use in accordance with the US and Canadian plumbing codes.

The ThermoSetter 1164A series is also available pre-assembled with the Caleffi NA108 series low-lead brass full-port ball valve for isolation. This can be ordered complete with two of these ball valves plus low-lead close nipples by adding a suffix "001" to the order code number.

Typical Specification

Furnish and install on the plans and describing herein, a ThermoSetter recirculation thermal balancing valve, as manufactured by Caleffi. Each balancing valve must be designed with a DZR low-lead brass body that complies to NSF/ANSI 372 low-lead laws, as certified by ICC-ES, file PMG-1360. The valve also complies to NSF/ANSI/CAN 61 (180°F/82°C Commercial Hot), as certified by ICC-ES, file PMG-1512. It also meets codes IPC, IRC, UPC and NPC for use in accordance with the US and Canadian plumbing codes. 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. Provide with optional inlet and outlet low-lead brass full-port ball valves, NPT female x NPT female, for isolation, factory-assembled, or separately-sourced, Code NA108 series, with separately-sourced low-lead close nipples. Each valve shall be Caleffi model 1164 or approved equal. (See product instructions for specific installation information.)

NSF/ANSI/CAN 61



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)

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)

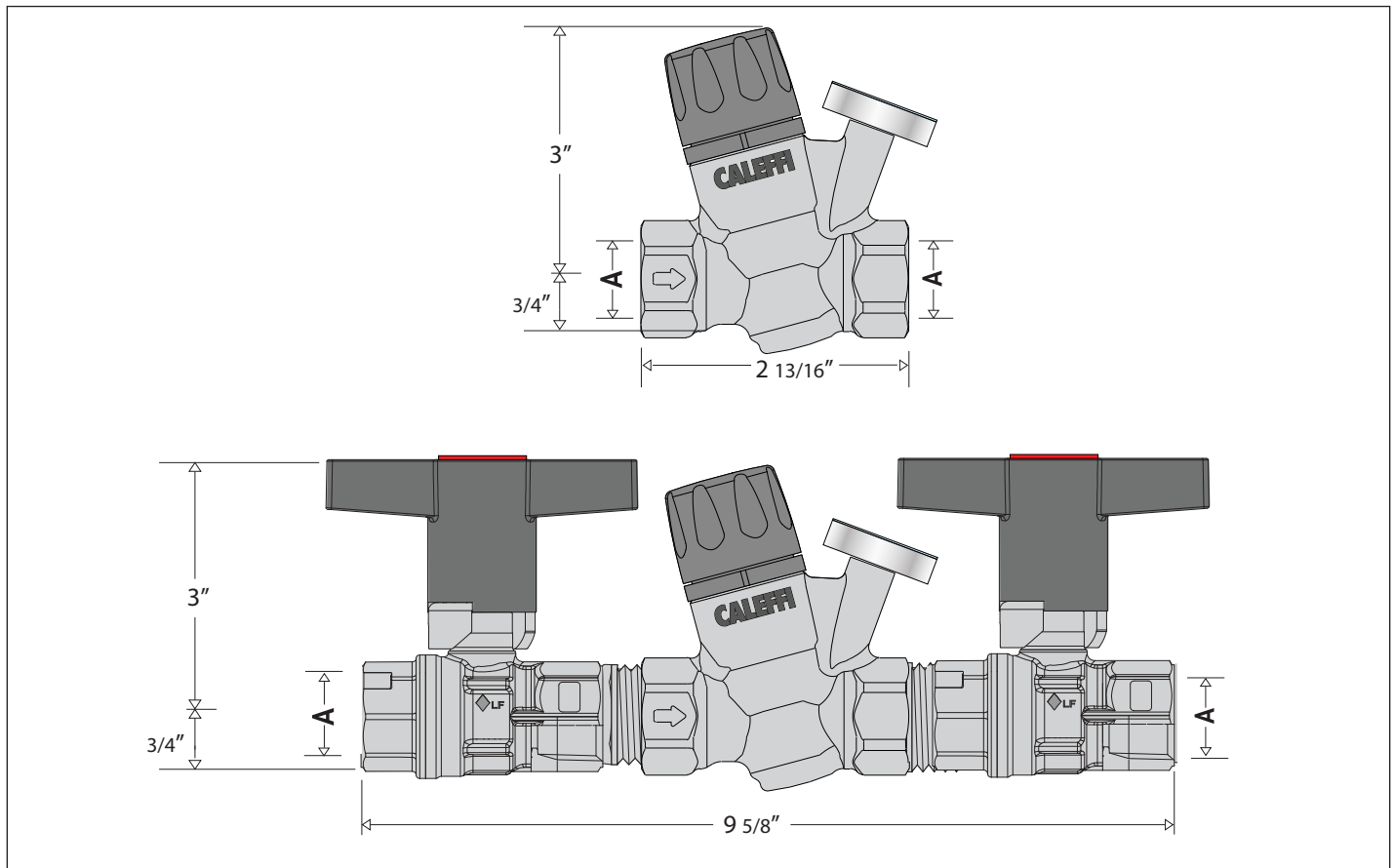
Technical specifications of insulation

Materials:	closed cell expanded PE-X
Thickness:	1/2 inch (13 mm)
Density: -internal part:	1.9 lb/ft ³ (30 kg/m ³)
-external part:	5.0 lb/ft ³ (80 kg/m ³)
Thermal conductivity (DIN52612):	
- at 32°F (0°C):	0.82 BTU · in/hr · ft ² · °F (0.0345 W/(m · K))
- at 105°F (40°C):	0.94 BTU · in/hr · ft ² · °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:

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

Dimensions



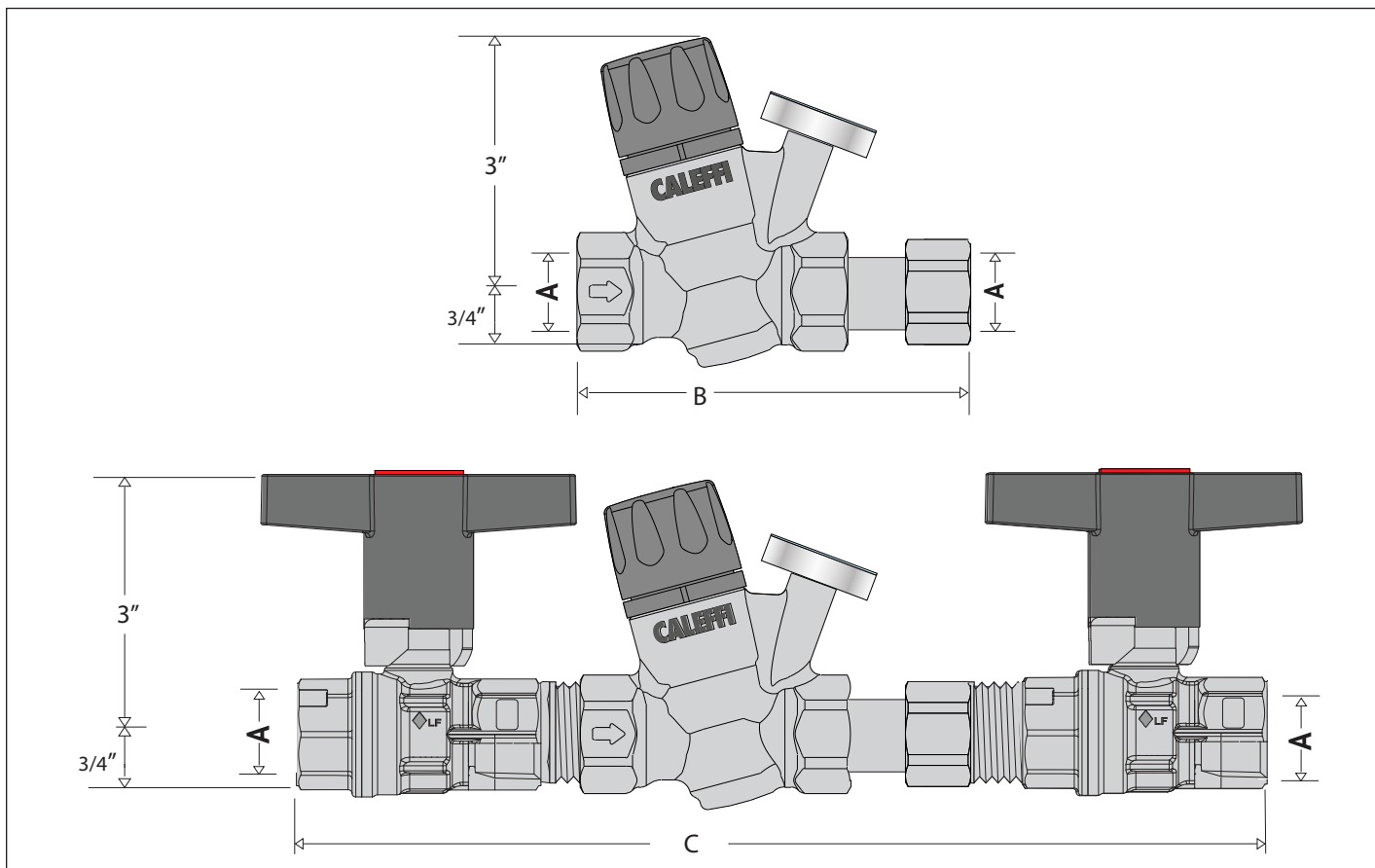
ThermoSetter 1164 series without check valve

Code*	A	Wt w/o ball valves lb (kg)	Wt with ball valves lb (kg)
116440A	½" NPT F	1.6 (0.7)	---
116440A 001	½" NPT F	---	2.6 (1.1)
116441A*	½" NPT F	1.7 (0.8)	---
116441A 001*	½" NPT F	---	2.7 (1.2)
116450A	¾" NPT F	1.6 (0.7)	---
116450A 001	¾" NPT F	---	3.6 (1.6)
116451A*	¾" NPT F	1.7 (0.8)	
116451A 001*	¾" NPT F		3.7 (1.7)

All codes in table do not include check valve.

*with integral outlet temperature gauge.

Dimensions



ThermoSetter 1164 series with check valve

Code*	A	B	C	Wt w/o ball valves lb (kg)	Wt with ball valves lb (kg)
116440AC	1/2" NPT F	4 13/16"	---	1.8 (0.8)	---
116440AC 001	1/2" NPT F	---	11 5/8"	---	2.8 (1.2)
116441AC*	1/2" NPT F	4 13/16"	---	1.9 (0.9)	---
116441AC 001*	1/2" NPT F	---	11 5/8"	---	2.9 (1.3)
116450AC	3/4" NPT F	5"	---	1.8 (0.8)	---
116450AC 001	3/4" NPT F	---	11 13/16"	---	3.8 (1.7)
116451AC*	3/4" NPT F	5"	---	1.9 (0.8)	---
116451AC 001*	3/4" NPT F	---	11 13/16"	---	3.9 (1.8)

All codes in this table DO include a check valve.
 *with integral outlet temperature gauge.

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 _____