

INSTALLATION INSTRUCTIONS

Thermostatic Valves

Part #'s: J-TH34, J-TH12

Thermostatic Valves with Built in Diverter/Shut Off

Part #'s: J-TH34-686, J-TH34-688

Thermostatic Valve with Built in Volume Control

Part #'s: J-THVC12

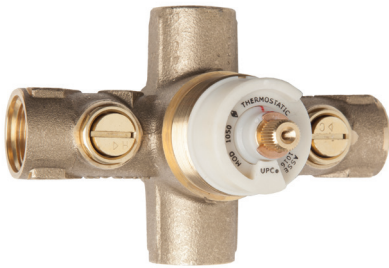
Diverter Valves

Part #'s: J-20682, J-20686, J-20688

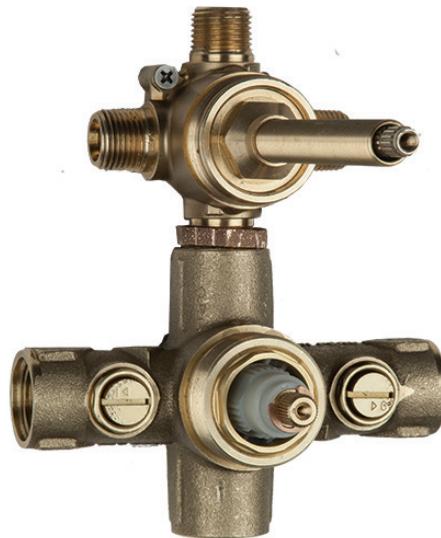
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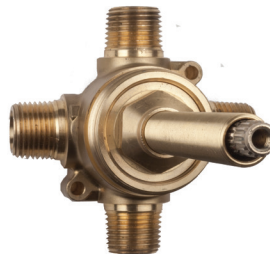
J-TH34 / J-TH12



J-TH34-686 / J-TH34-688



J-THVC12



J-20682 / J-20686 / J-20688

(1) ROUGH VALVE INSTALLATION (J-TH34 /J-TH12)

1. Position valve assembly so outer edge of finished wall is between min./max. thicknesses marked on rough in shield. See Fig. 1
2. Using appropriate fasteners, mount valve assembly to studs/blocking. See Fig. 1

INSTALLATION EXAMPLE

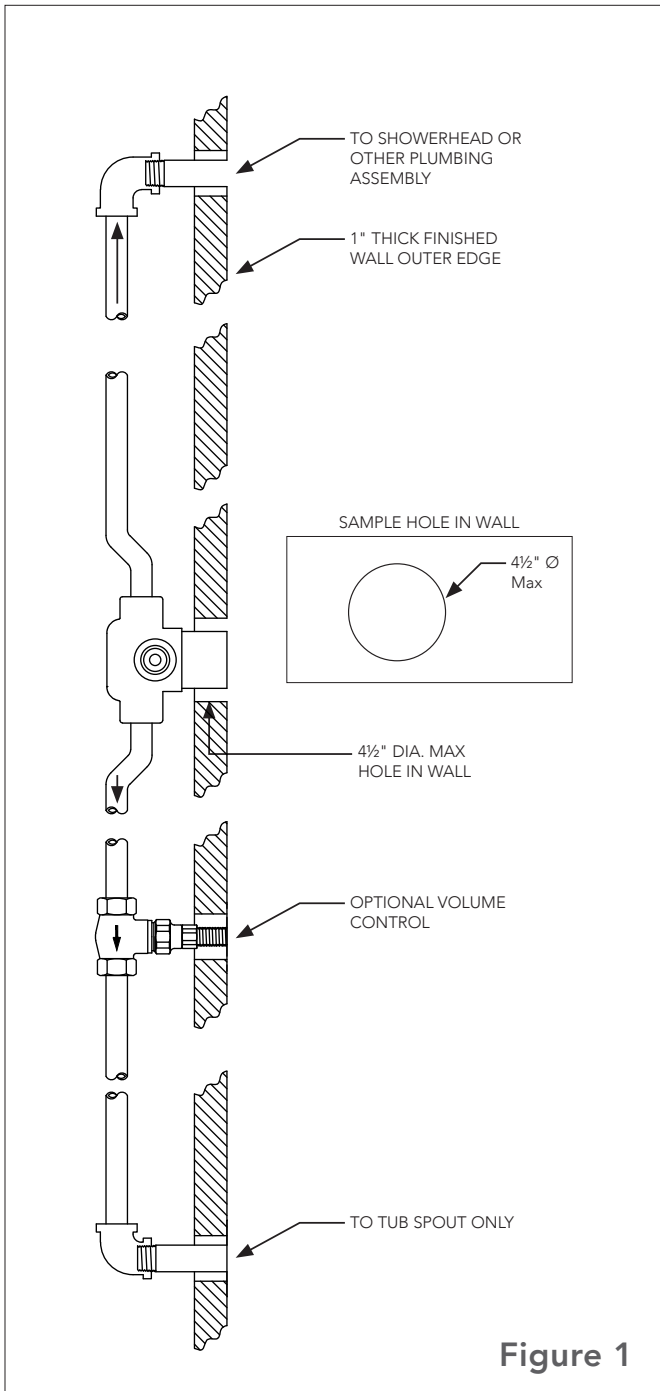
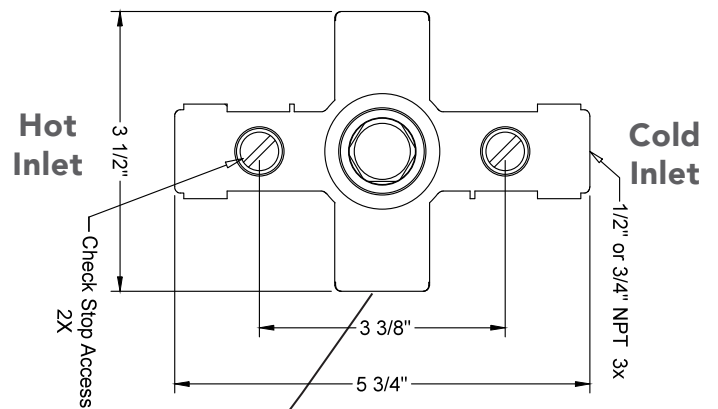
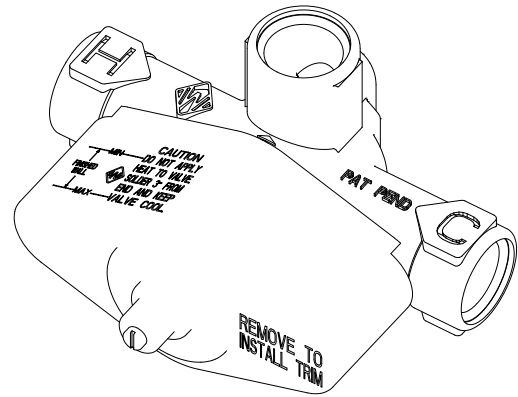


Figure 1

VALVE ROUGH-IN SHIELD

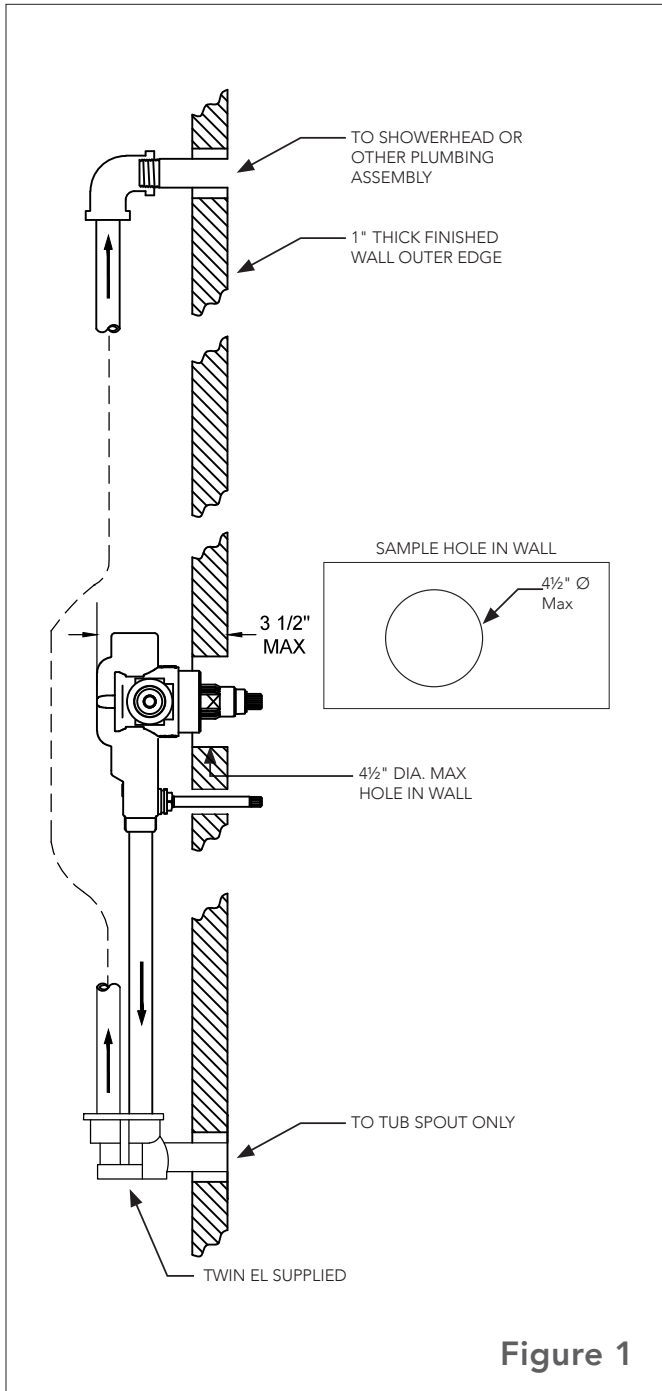


Extra Outlet requires volume control or plug (not supplied)

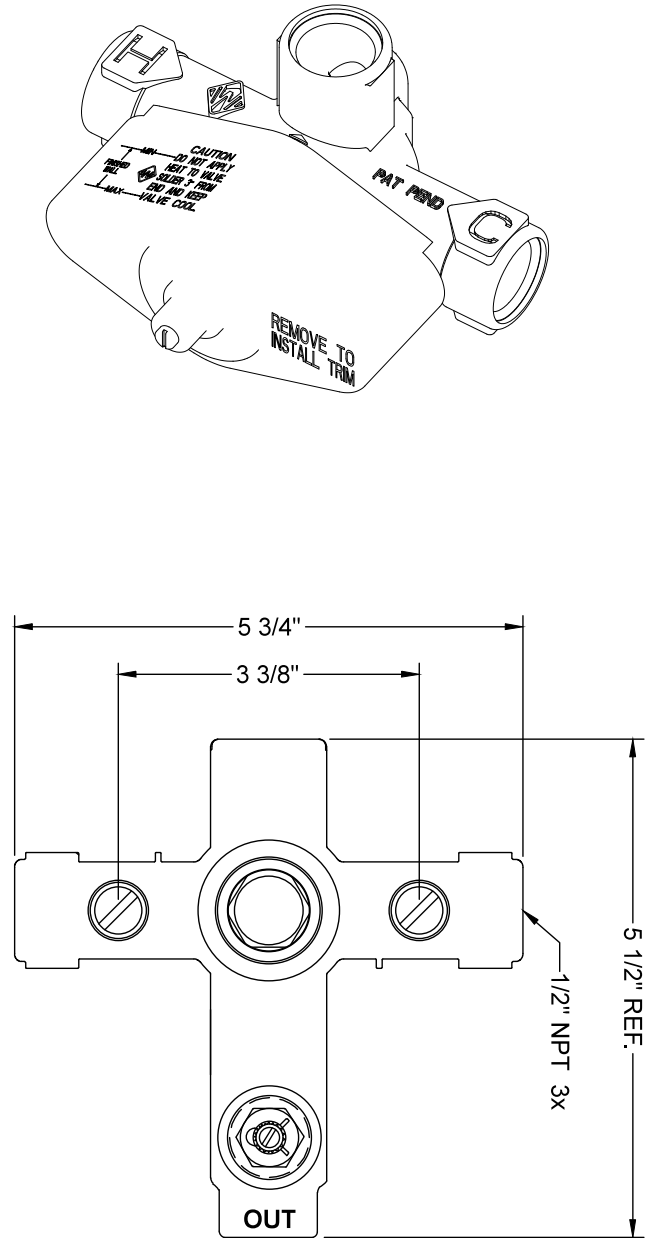
(1) ROUGH VALVE INSTALLATION (J-THVC12)

1. Position valve assembly so outer edge of finished wall is between min./max. thicknesses marked on rough in shield. See Fig. 1
2. Using appropriate fasteners, mount valve assembly to studs/blocking. See Fig. 1

INSTALLATION EXAMPLE



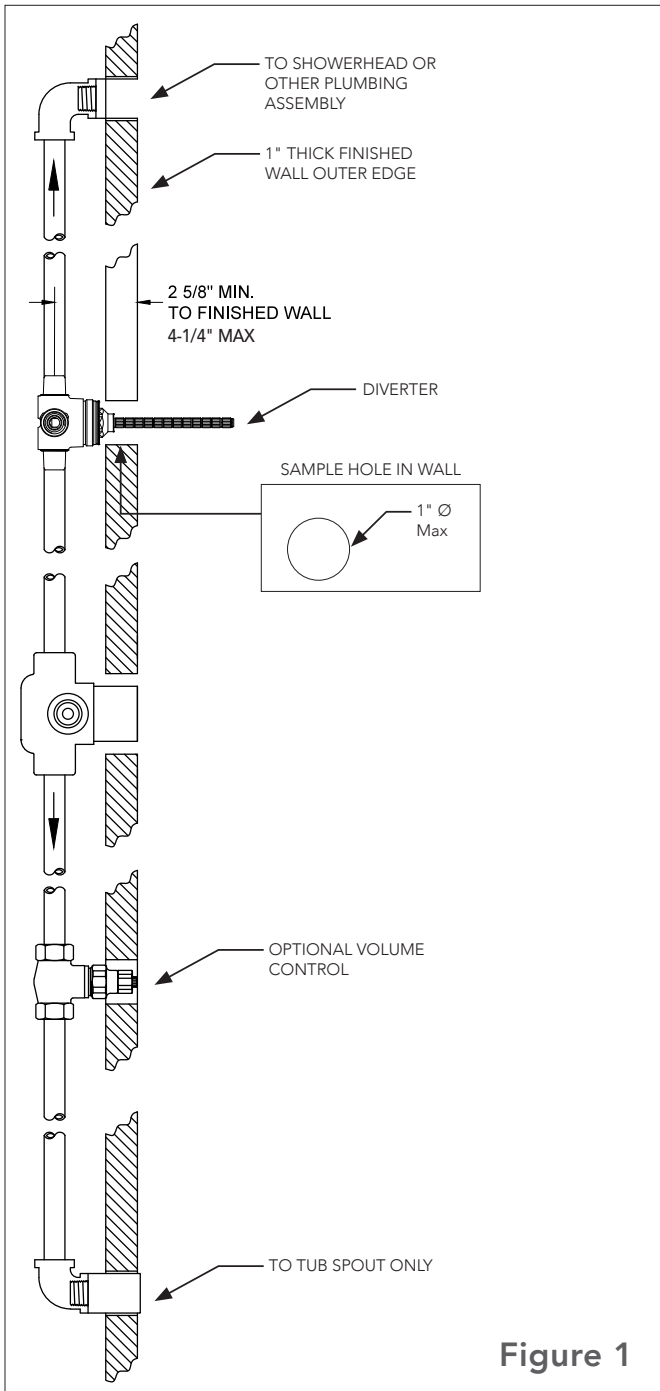
VALVE ROUGH-IN SHIELD



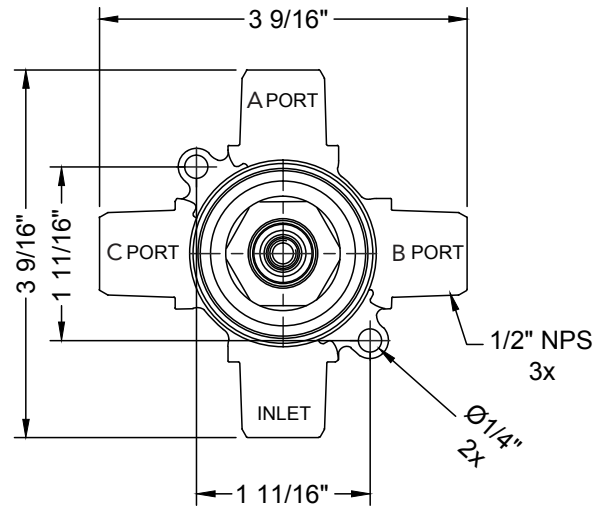
(1) ROUGH VALVE INSTALLATION (J-20682 / J-20686 / J-20688)

1. Position valve assembly per Fig. 1
2. Using appropriate fasteners, mount valve assembly to studs/blocking. See Fig. 1

INSTALLATION EXAMPLE



J-20686 / J-20688 / J-20682

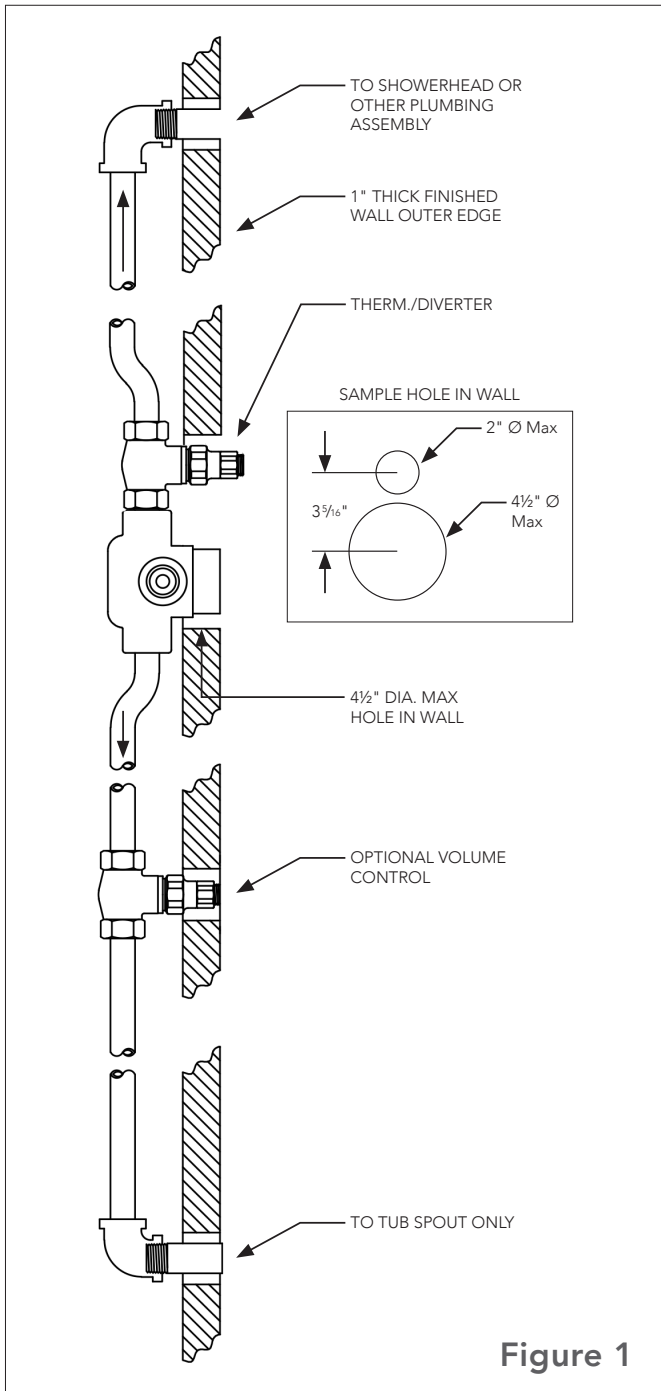


(1) ROUGH VALVE INSTALLATION (J-TH34-686/J-TH34-688)

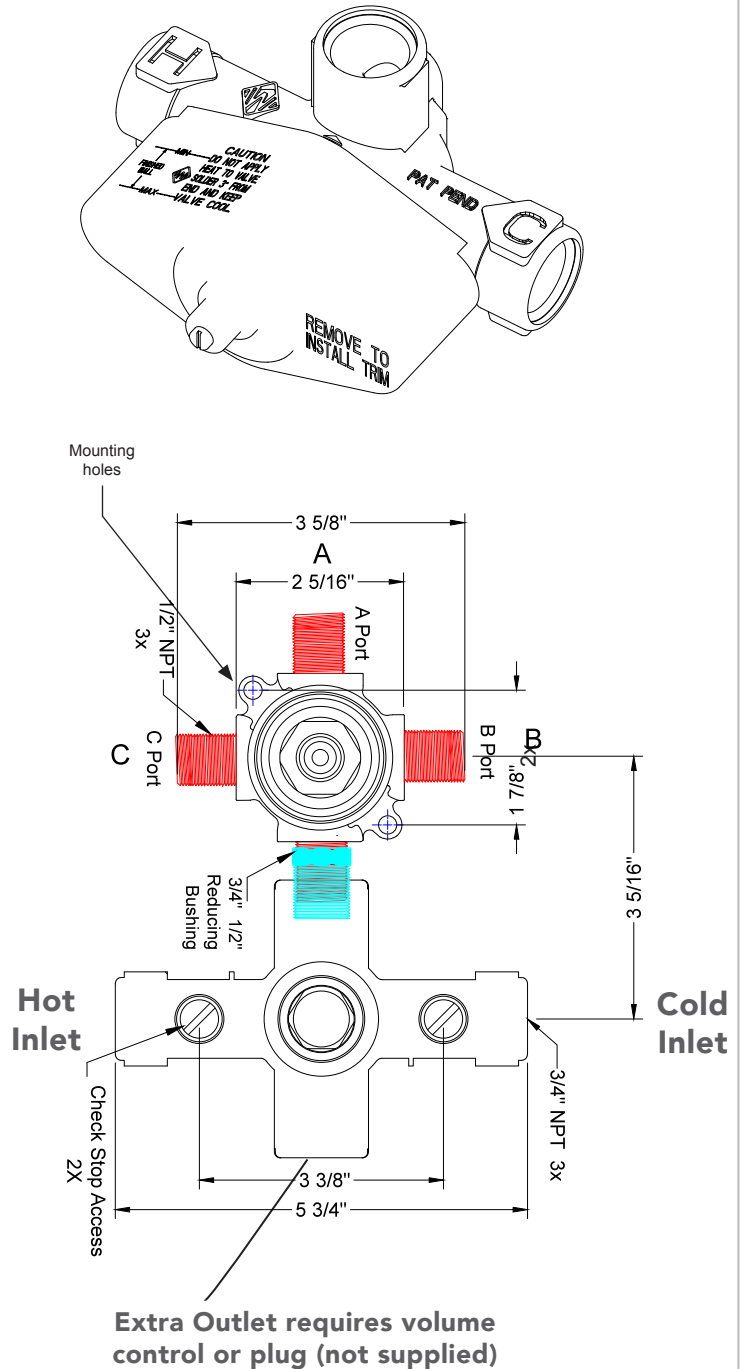
1. Position valve assembly so outer edge of finished wall is between min./max. thicknesses marked on rough in shield. See Fig. 1
2. Using appropriate fasteners, mount valve assembly to studs/blocking using mounting holes. See Fig. 1

Diverter and Thermostatic valve are factory sealed, do not separate!

INSTALLATION EXAMPLE



VALVE ROUGH-IN SHIELD



(2) VALVE DISASSEMBLY & PREPARATION

THIS STEP IS REQUIRED TO FACILITATE VALVE FLUSHING AND ELIMINATE THE RISK OF HEAT DAMAGE TO COMPONENTS WHILE SOLDERING

A. Cartridge removal (J-TH34, J-TH12, J-TH34-686, J-TH34-688, J-THVC12)

- i. Remove Phillips head screw and rough in shield. Do not discard screw or shield!
- ii. Note position of the limit stops (#6). This is the factory setting of max. temperature. Next, remove limit stops. Retain for reassembly.
- iii. Remove "C" clip (#5). Retain for reassembly.
- iv. Remove limit stop ring (#4). Retain for reassembly.
- v. Remove thermostatic cartridge locknut (#3) using 1¼" wrench. Retain for reassembly.
- vi. Remove thermostatic cartridge (#2). Pull outward and twist slightly to aid removal. Retain for reassembly.

B. Check stop removal (J-TH34, J-TH12, J-TH34-686, J-TH34-688, J-THVC12)

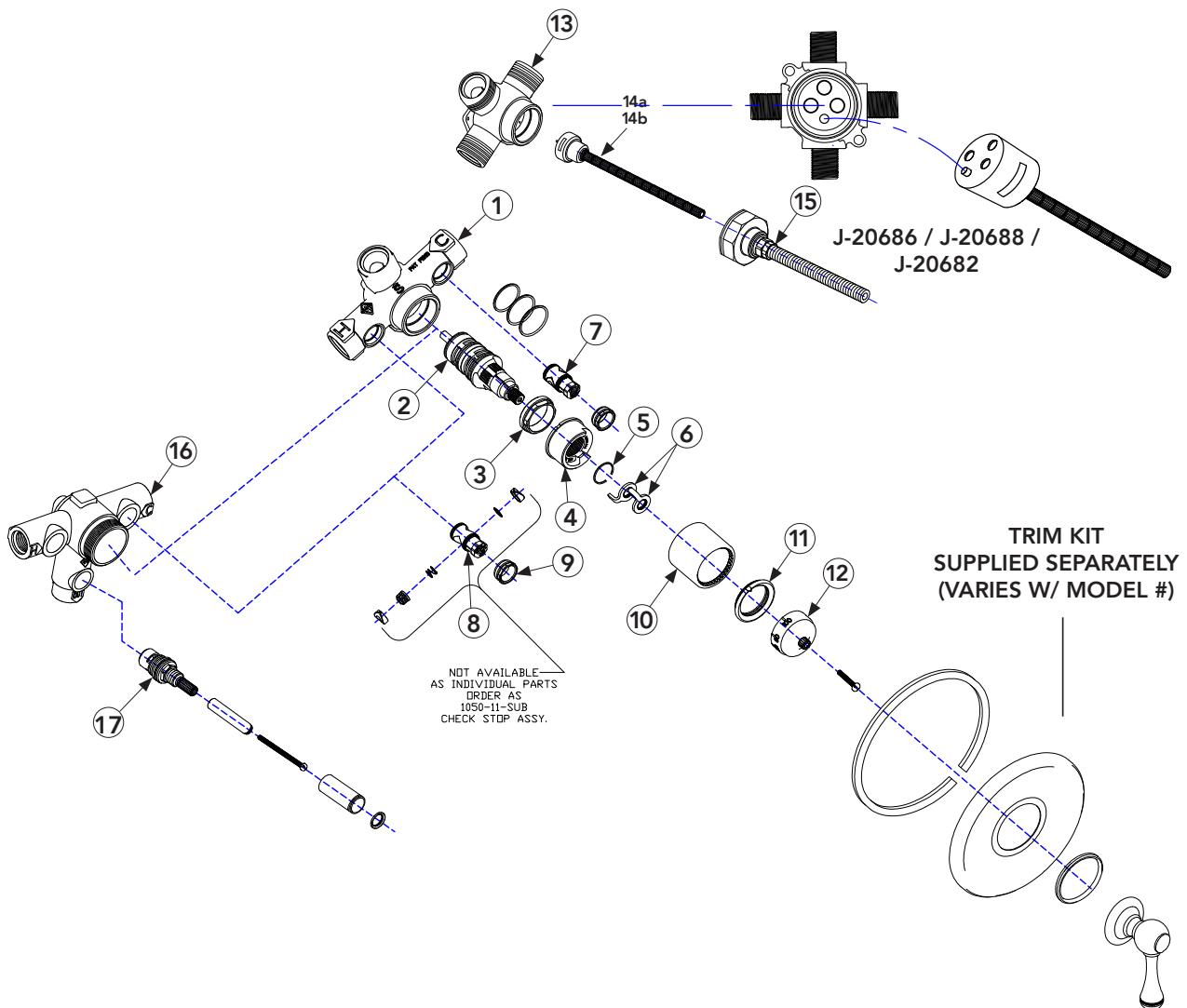
- i. Remove hot and cold check stop nuts (#9) using 13/16" wrench. Retain for reassembly.
- ii. Remove hot (8H) and cold (7c) check stop assemblies. Pull outward and twist slightly to aid removal. Retain for reassembly.

C. Diverter cartridge removal (J-TH34-686, J-TH34-688, J-20682, J-20686, J-20688)

- i. Remove diverter nut using 1" wrench. (#15 - J-20686 / J-20688 / J-20682)
- ii. Remove cartridge (#14a or #14b) (J-20682, J-20686, J-20688)

D. Volume control removal (J-THVC12 ONLY)

- i. Remove cartridge using 17mm wrench



ITEM	QUANTITY	DESCRIPTION	NOTES
1	1	Thermostatic Body	TH34-BODY-RGH
2	1	Thermostatic Cartridge	J-TH34-CART (¾") OR J-TH12-CART (½")
3	1	Thermostatic Cartridge Locknut	1050-3-RGH
4	1	Thermostatic Limit Stop Ring	2050-4-0
5	1	"C" Clip	
6	2	Limit Stops	1050-5-0
7	1	Cold Check Stop Assembly	1050-11-C-BR-RGH
8	1	Hot Check Stop Assembly	1050-11-H-BR-RGH
9	2	Check Stop Locknut	1050-12-RGH
10	1	Sleeve	Supplied w/ Trim Kit
11	1	Dial Pointer	Supplied w/ Trim Kit
12	1	Spline Adapter	Supplied w/ Trim Kit
13	1	Diverter Body	
14a	1	2 Way Diverter Cartridge	22404-CART-RGH
14b	1	3 Way Diverter Cartridge	15128-CART-RGH
15	1	Diverter Locknut Assembly	
16	1	Thermostatic with VC Body	THVC12-BODY-RGH
17	1	Thermostatic with VC Cartridge	304436-RGJ

SYSTEM REQUIREMENTS

- This thermostatic valve is designed for use with pressurized hot & cold water supplies only and **should not be used with low-pressure storage heating systems.**
- This valve was factory set to 100°F maximum at a pressure of 45 PSI. The actual temperature must be checked due to water temperature & pressure deviations.

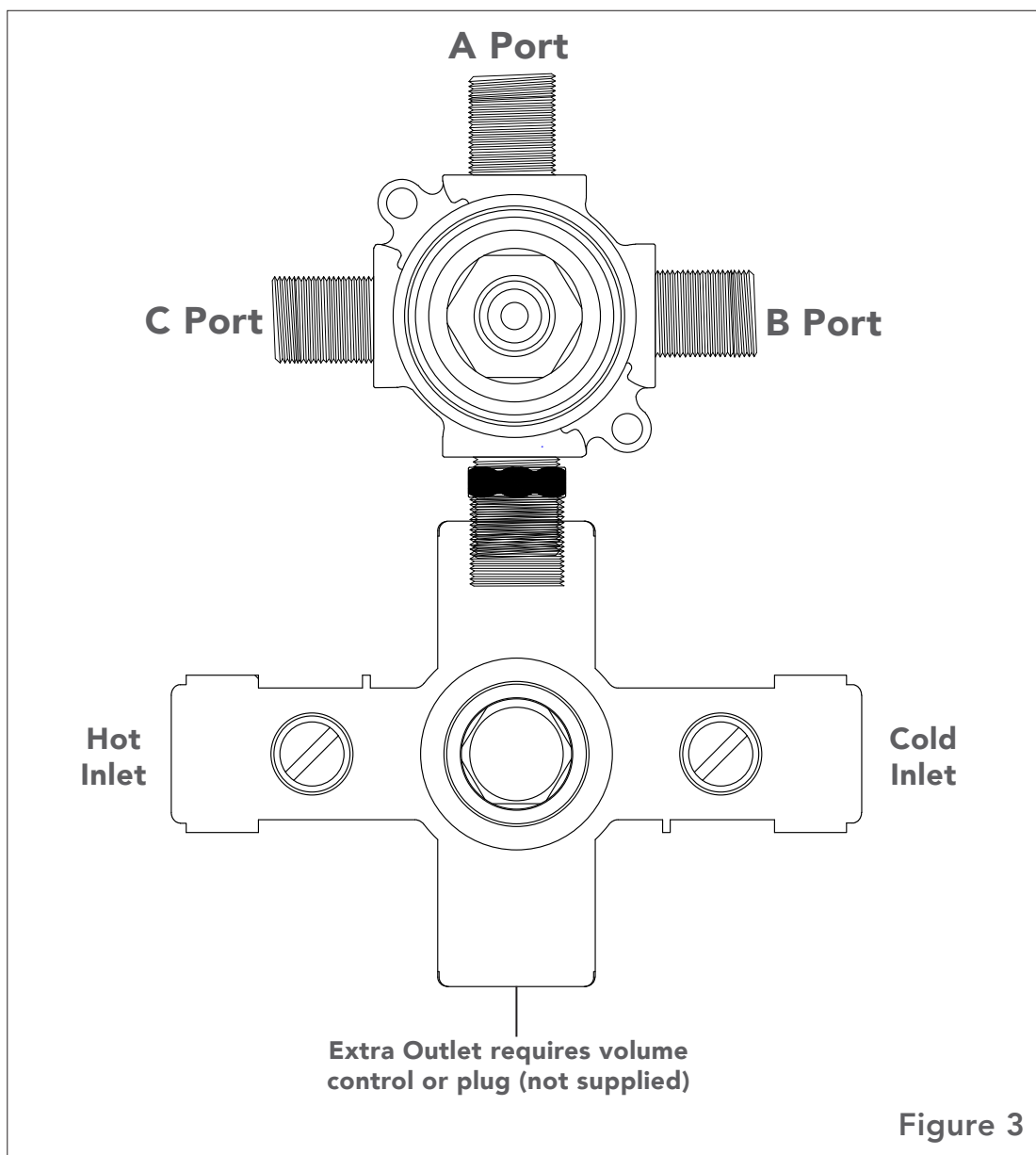
Pressure		1/2" Valve	1/2" NPT inlets and outlets
Recommended range-	30PSI - 70 PSI		
Temperature		3/4" Valve	3/4" NPT inlets and outlets
Hot water inlet-	165°F Max., 130°F Min.		
Marked dial range-	70°F - 120°F		
Safety stop-	Adjustable		

(3) PLUMB ROUGH USING APPROPRIATE FITTINGS

Diverter and Thermostatic valve are factory sealed, do not separate!

- A. Plumb hot and cold inlets on thermostatic body. Part #'s: J-TH34, J-TH12, J-TH34-686, J-TH34-688, J-THVC12. See Fig. 3
- B. If using lower port on thermostatic body, a separate volume control is required. If not, port must be plugged. See Fig. 3
- C. Select diverter ports to be used. A, B, C and plumb with appropriate fittings. Part #'s: J-TH34-686, J-TH34-688, J-20686 and J-20688. (Note: Port A is not used with the 2-way diverter) See Fig. 3

Note: Two way diverter can be used as a single outlet and volume control by capping B or C port. Three way diverter can be used as two way diverter by capping any single port or a volume control by capping any two ports.



(4) FLUSH SYSTEM

- A. Install flush adapters. See Fig. 4
- B. Turn on water, flush system for 30 seconds minimum.
- C. Turn off water and remove flush adapters.

Note: VALVE MUST BE FLUSHED TO AVOID DAMAGE TO INTERNAL PARTS!

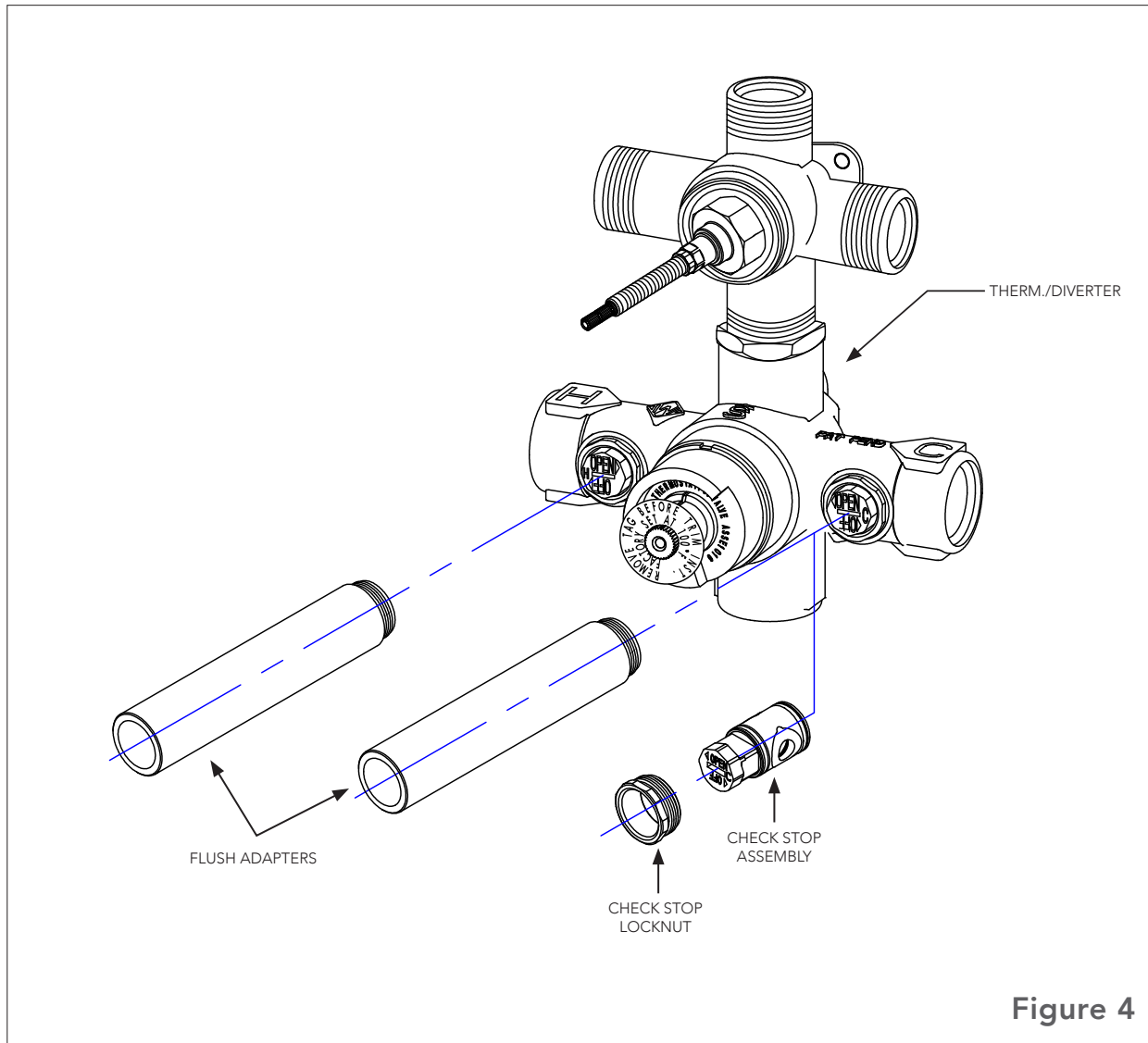


Figure 4

(5) Reassemble Thermostatic Valve & Diverter

- A. Reassemble in reverse order of steps in Fig. 2
- i. Inspect and remove any debris in diverter body.
 - ii. Insert diverter cartridge into body so protrusion on cartridge fits into holes in body located in the 6 o'clock position. See Fig. 2a
 - iii. Install diverter lock nut using 1" wrench, tighten nut.
 - iv. Inspect and remove any debris in the thermostatic valve body cartridge and check stop cavities.
 - v. Apply silicone grease to the o-rings on the thermostatic cartridge, insert cartridge into valve body rotating back and forth slightly. Orient cartridge with the notch up in the 12 o'clock position. See Fig. 5.
 - vi. Install thermostatic cartridge lock nut using 1¼" wrench, tighten nut.
 - vii. Reinstall hot and cold check stops, rotating back and forth lightly until seated.
 - viii. Install hot and cold check stop nuts using 13/16" wrench, tighten nuts.

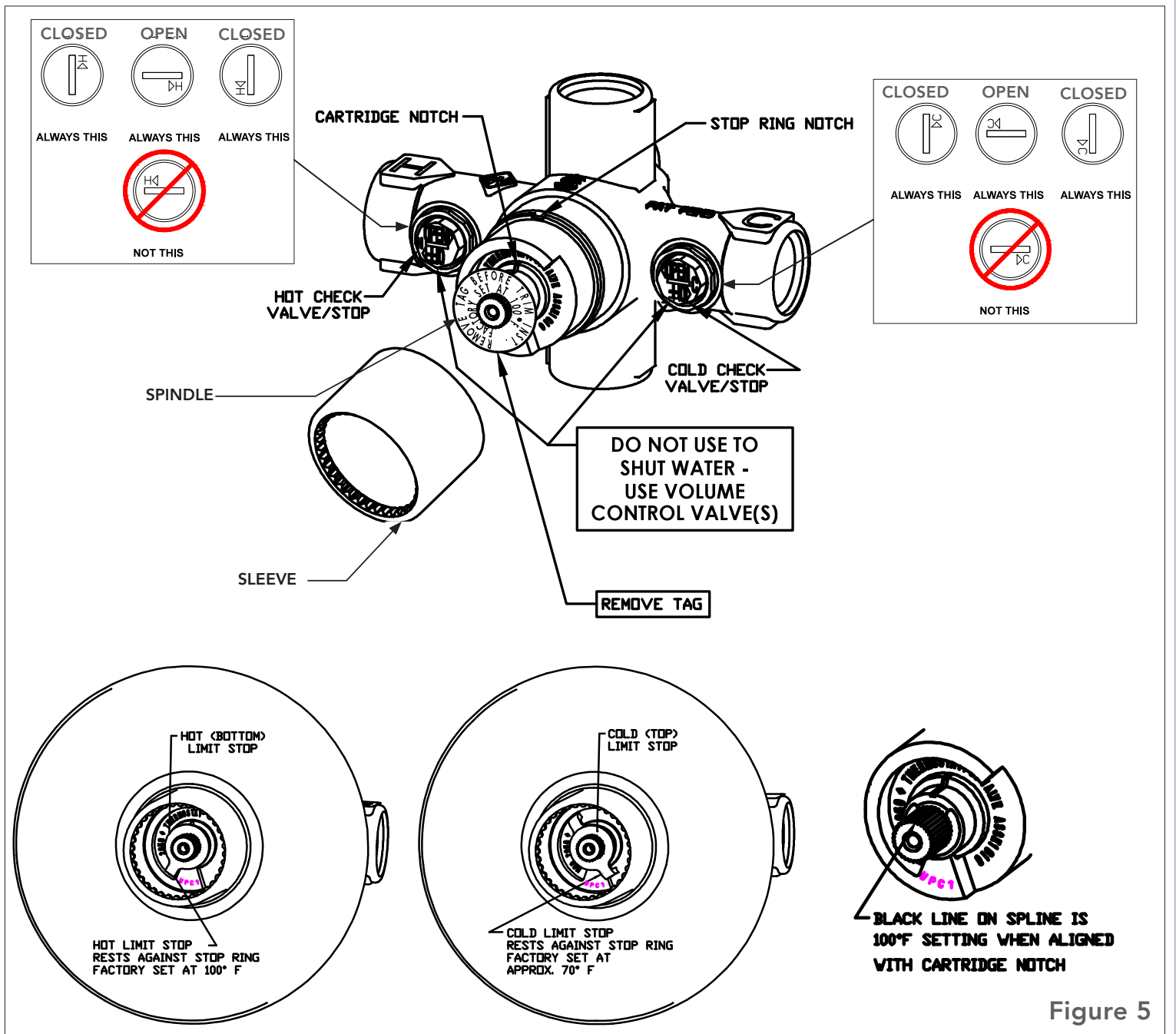


Figure 5

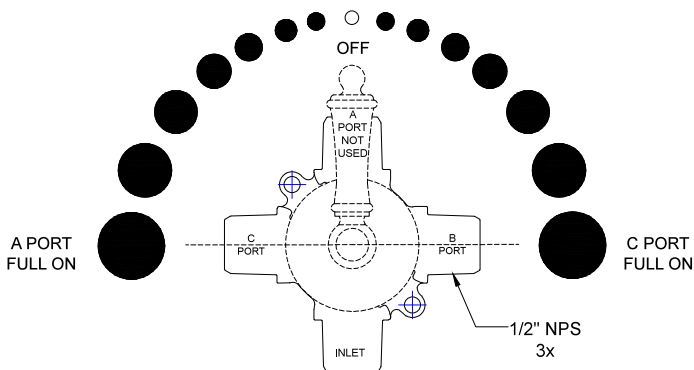
(6) System Check

- A. Close hot and cold check stops on thermostatic valve. See Fig. 5
- B. Set diverter control to off position. See Fig. 6
Do not turn on water yet! Diverter of volume control must be off or damage to check stop seals may occur.
- C. Close volume control on bottom thermostatic port (if applicable).
- D. Turn on hot and cold main water supply. Check for leaks, repair if necessary.
- E. Open hot and cold check stops. See Fig. 5
- F. Check for leaks, tighten locknuts if necessary or repair connections.
- G. Open diverter valve. Test all positions. See Fig. 6 for diverter operation.
- H. Open volume control on bottom of thermostatic valve body if applicable.
- I. Close hot and cold check stops during finished wall fabrication. See Fig. 5

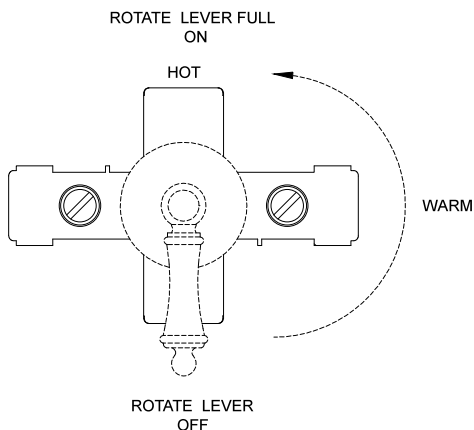
**2 WAY
J-TH34-686**

DIVERTER VALVE OPERATION

J-20686



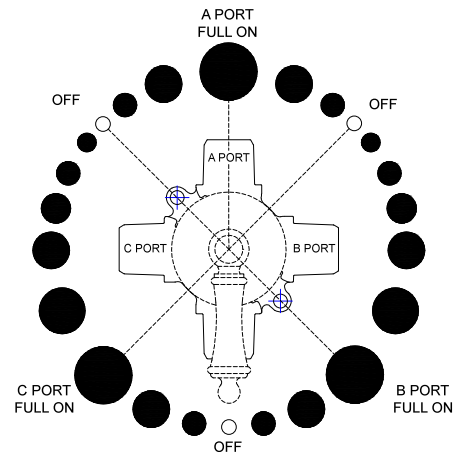
THERMOSTATIC TEMPERATURE CONTROL



**3 WAY
J-TH34-688**

DIVERTER VALVE OPERATION

J-20688



THERMOSTATIC TEMPERATURE CONTROL

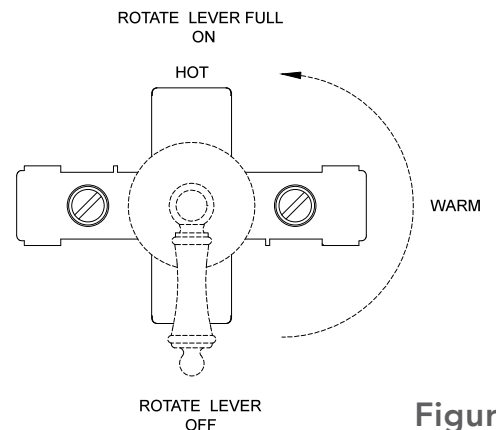
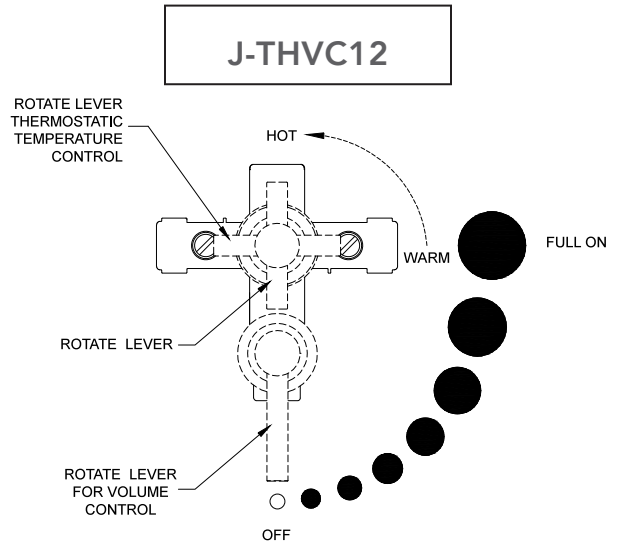
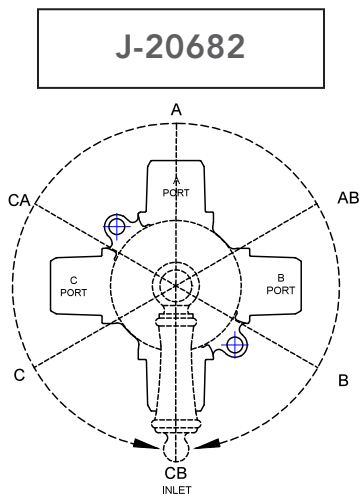


Figure 6

(6) System Check Continued



(7) Reinstall rough in shield

(8) Finished wall opening

- A. Minimum opening size opening to operate check stops, removing thermostatic and diverter cartridges is required.
- B. See Fig. 1 for maximum finished wall opening.

(9) Thermostatic valve set up

- A. Remove rough in shield and discard if trim is to be installed after valve setup.
- B. Remove max temp. tag and discard.
- C. Screw sleeve onto thermostatic valve body until it bottoms on stop ring, to retain stop ring. See Fig. 5
- D. Place diverter in off position and close volume control valves if used. See Fig. 8 for diverter operation
- E. Open hot and cold check stops, see Fig. 5.
- F. Open diverter to allow water flow, rotate thermostatic valve full counter clockwise and check water temperature with thermometer. Factory setting should be 100° maximum. See Fig. 6.
- G. Limit stop setup:
 - i. Remove limit stops, Fig. 5
 - ii. Open diverter to allow water flow, run water for 5 min. See Fig. 6.
 - iii. Measure water temperature while rotating spindle counterclockwise. Stop rotation at highest desired water temperature to stabilize for one minute, confirm desired setting. See Fig. 5 & 6.
 - iv. Replace hot limit stop so leg is resting against stop ring. See Fig. 5
 - v. Rotate spindle gently clockwise until water is cold and spindle stops rotating.
DO NOT ROTATE SPINDLE PAST STOP POSITION. THIS WILL DAMAGE THE CARTRIDGE!
 - vi. Replace cold limit stop so leg is resting against the stop ring. See Fig. 5.
 - vii. Turn off diverter valve. See Fig. 6.

(10) Dial Pointer, Trim and Handle Installation

- A. Push the dial pointer on to sleeve with pointer on top at 12 o'clock position. See Fig. 7.
- B. Turn on diverter valve to allow water to flow. Measure water temperature and adjust to 100°F.
- C. Install dial assembly on to spindle aligning the 100° to the dial pointer. See Fig. 7
- D. Place adhesive backed foam strip to back side of trim plate.
- E. Slide trim plate over sleeve against finished wall.
- F. Install handle to desired position using center screw or set screw, trims may vary.

(11) Valve Operation

- A. Diverter/Volume control operation. See Fig. 6
 - i. Two way diverter is off at 12 o'clock position full on "C" port a 9 o'clock position, full on "B" port at 3 o'clock position. Water volume increases as control moves toward full on positions. Control moves 180 degrees through full use.
 - ii. J-20688 Three way diverter is off in 2, 6, 10 o'clock positions. "C" port full on in 4 o'clock position. Control moves 360 degrees clockwise or counter clockwise through full operation. Water volume in creases as control moves toward full on positions. Valve has detents in full on and stop positions.
 - iii. J-20682 Three way diverter Control moves 360 degrees clockwise or counter clockwise through full operation. Six operating positions, 12 o'clock A full port; 2 o'clock A+B shared; 4 o'clock B full port; 6 o'clock B+C shared; 8 o'clock C full port; 10 o'clock A+C shared.
- B. Thermostatic valve operation. See Fig. 6
 - i. Temperature increases as control is moved counter clockwise.
 - ii. Use temperature dial as indicator.

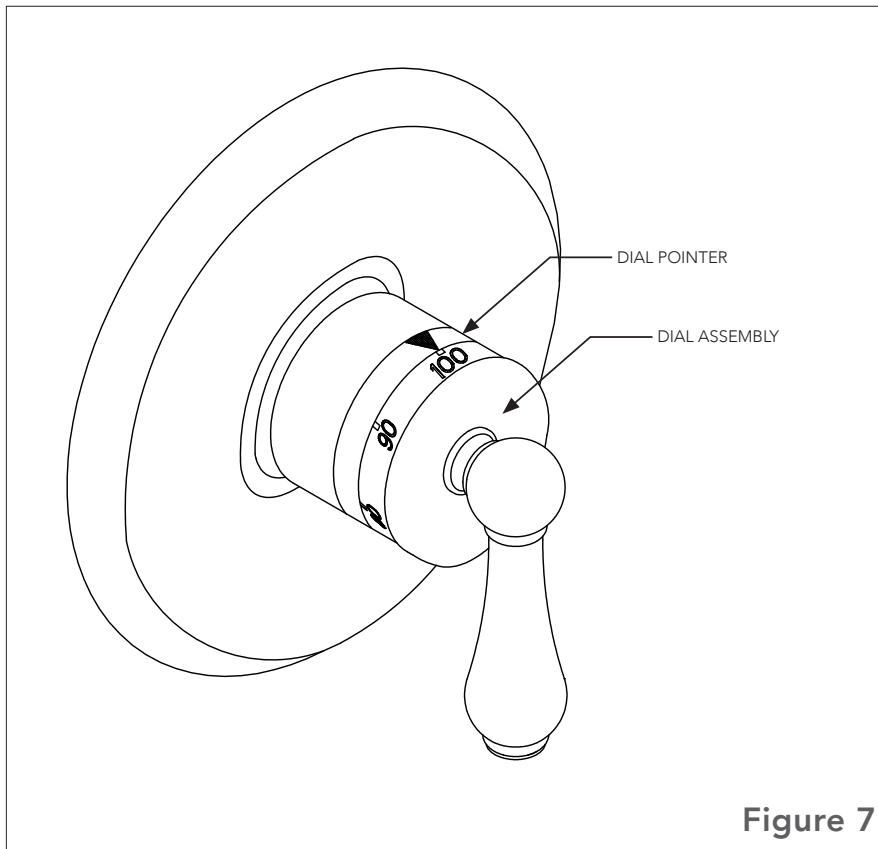


Figure 7

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Water leaks from shower head / tub spout when the volume control is shut off.	<p>The shower head is trapping water behind the faceplate.</p> <p>The volume control valve has been installed incorrectly.</p> <p>The ceramic disc in the cartridge of the volume control valve has been damaged.</p>	<p>Remove shower head and clean out the holes in the faceplate. Reinstall shower head.</p> <p>Arrow on side of volume control should be pointing away from the thermostatic valve. If arrow can not be seen, remove trim and cartridge. Look into the valve cavity. The location of the larger hole indicates the outlet of the volume control valve, the volume control is installed incorrectly. Refer to installation sheets for proper installation.</p> <p>Replace with a new cartridge</p>
Water is hot or cold but not mixing.	Thermostatic valve is installed upside down or the supply lines to the thermostatic valve are reversed.	Refer to installation sheets for proper installation.
Can not adjust water temperature properly.	<p>Check valves / stops are not opened all the way.</p> <p>Thermostatic cartridge is damaged.</p> <p>Debris in screens of thermostatic cartridge.</p> <p>Limit stops are not set properly.</p> <p>Dial assembly is not calibrated.</p> <p>Check valve (s) / stops are not opened all the way.</p>	<p>Remove trim and make sure the arrows on the check valve / stops are facing toward the center of the thermostatic valve.</p> <p>If cartridge spindle rotates more than 270° (DO NOT FORCE), replace cartridge.</p> <p>Remove thermostatic cartridge and clean screens.</p> <p>Refer to installation instruction for setting limit stops.</p> <p>Set water temperature with a thermometer and adjust dial assembly to reflect the measured temperature. Refer to installation sheet.</p> <p>Install with new check valve (s) / stop (s). Refer to check valves / stops removal and installation section of the installation sheets.</p>
Low flow of mixed water.	<p>Check valve (s) / stops have been damaged.</p> <p>Debris in screens of thermostatic cartridge.</p> <p>Check valves / stops are not opened all the way.</p>	<p>Install new check valves / stops. Refer to check valves / stops removal and installation section of the installations sheets</p> <p>Remove thermostatic cartridge and clean screens.</p> <p>Remove trim and make sure the arrows on the check valve / stops are facing toward the center of the thermostatic valve.</p>
Cold water in nearby faucet is lukewarm.	Check valve (s) / stops have been damaged or filled with debris.	Install new check valves / stops. Refer to check valves / stops removal and installation section of the installations sheets
Thermostatic valve is working properly, but the water is not hot enough, but water in nearby faucet is hot enough.	<p>Limit stops are not set properly.</p> <p>Boiler temperature not set high enough.</p>	<p>Refer to installation instruction for setting limit stops.</p> <p>Thermostatic valve has cold water mixing with the hot water at all times, so the water temperature on the boiler will need to be increased to get the desired temperature. CAUTION: increasing the temperature will affect all plumbing throughout the system.</p>

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CARE INSTRUCTIONS

In order to maintain the high quality finish of JACLO products, please adhere to the following product care instructions:

Cleaning JACLO products: For routine cleaning, simply use a soft damp cloth and common household soap, then rinse and dry. Proper care of your product is important because most water contains calcium that deposits on surfaces, forming unpleasant spots. This can be avoided by routine cleaning and drying after every use. Use only mild soap detergents. JACLO products may be periodically waxed with non abrasive compounds, such as Flitz® faucet wax.

Never use abrasive cleaners, bleach, disinfectants or cleaning products containing alcohol, ammonia, hydrochloric or phosphoric acids as they will damage the product finish.

Please note: Your product warranty may not be valid if the above cleaning guidelines are not followed.

WARRANTY

Residential Warranty: Your new plumbing fixture is warranted by JACLO INDUSTRIES, 129 Dermody Street, Cranford, NJ 07016. This warranty is extended to original consumer purchasers only. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

The product (including the finish on the product but excluding any custom finishes and any installation hardware not supplied by JACLO) is warranted to be free from defects in material or workmanship under normal use and service for the lifetime* of the fixture, so long as the original consumer purchaser owns it. JACLO's sole obligation under this or any other warranty is limited to repairing or replacing at JACLO's option, without labor, any part or parts of the fixture which fail to conform to such warranty.

JACLO WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES CAUSED BY A BREACH OF THIS OR ANY OTHER WARRANTY.

Some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation may not apply to you.

To secure warranty performance, the original consumer purchaser must have the fixture properly and professionally installed in accordance with all codes and installation instructions.

Items and actions that will void the JACLO warranty are:

- Abuse, misuse, neglect and accidental damage
- Improper cleaning, care and maintenance of the fixture
- Alteration of the fixture in any way including removal of a flow regulator/restrictor

All warranty claims must be made in accordance with the JACLO return policy (see below).

JACLO does not authorize any distributor, retailer or other person to modify this warranty or assume any liability on its behalf with respect to it. Any question regarding the operation of warranty should be addressed to JACLO's warranty department.

*Due to the unpredictable environment, all kitchen drains, strainers and garbage disposal flanges are warranted for the period of one year from date of purchase from an authorized JACLO dealer.

Un-lacquered Brass (ULB) is a living finish and is excluded from any finish warranty.

Commercial Warranty: JACLO offers the above warranty for a period of one year from date of purchase to purchasers of products for industrial, commercial, business and all non-private residential uses.



To learn more about JACLO's warranty, please visit [**jaclo.com**](http://jaclo.com)