Tank Booster Pro

Installation Instructions

Heatguard Tank Booster 020

For Models 24643, 24643Z, 24644,
24832, 24639

FOR TANK BOOSTER PRO

Installer: Please provide the following information and leave these instructions with the client.

Installed by: _____

Date: _____

Pressure at valve: _____ PSI/kPa

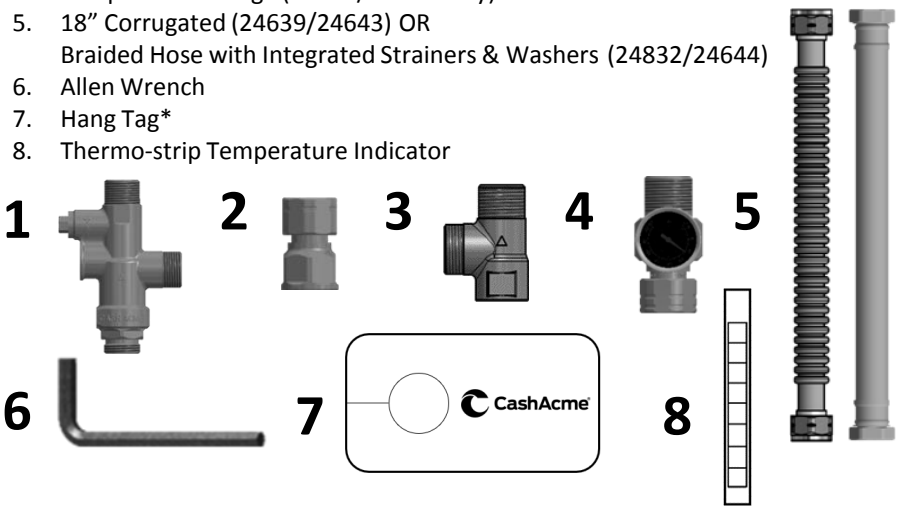
Mix Temp: _____ °F/°C

Leave a copy of these instructions with the client for future reference

Recommend to the client that the valve is checked annually to ensure its continued function.

BOX CONTENTS

1. Tank Booster Mixing Valve
2. Union Connector for Water Heater
3. Cold Water Tee
4. Temperature Gauge (24643/24644 only)
5. 18” Corrugated (24639/24643) OR
   Braided Hose with Integrated Strainers & Washers (24832/24644)
6. Allen Wrench
7. Hang Tag*
8. Thermo-strip Temperature Indicator



INSTALLATION GUIDELINES

Failure to comply with all aspects of these instructions may result in unsafe performance. All installations must comply with relevant State, Provincial and Local Authority requirements.

Delivery Temperature:
Every valve is factory set for 120°F (49°C) outlet temperature. It is recommended to set the water heater at 140°F.

To Achieve Maximum Hot Water Delivery Performance
To achieve maximum hot water delivery performance, the TANK BOOSTER must first be installed on the water heater in accordance with these instructions. Once installed, consult the water heater manufacturer's instructions and increase the temperature control device to around 140°F (60°C). Verify the outlet temperature of the TANK BOOSTER and adjust in accordance with these instructions. Ensure the cold and hot water are both running while the Tank Booster is being tested

Non Return (Check) Valves:
Non return valves are integrated in the cold and hot water inlets of the valve. For correct and safe system function, ensure that the check valve is clean of debris and functioning correctly.

To ensure delivery of the desired mixed water temperature at the outlet, the installer must adjust and verify the temperature at the outlet by carefully following instructions on the following page.

Flush the system thoroughly before fitting Tank Booster:
It is critical that all debris is flushed from the pipe-work prior to installing the valve. Not flushing the system properly is the most common cause of system difficulties.

Check:

- Measure and note all site parameters (pressure, temperature, etc.), and check against the specifications of the chosen valve. If the site conditions are outside those specified for the valve then they must be rectified prior to installing the valve.
- Valve MUST NOT be subjected to heat during installation as this may damage the valve internals.
- Valve MUST NOT be fitted on steam-supplied systems, but to water systems only.
- Valve MUST NOT be frozen. If the valve is installed in a situation where freezing is a possibility, then suitable insulation must be fitted to prevent damage to the valve.

DO NOT use excess thread sealant (in liquid, tape or other form) as this may cause the valve to fail.

CHECKING / SERVICING THE MIXING VALVE
The temperature should be checked at the same outlet as was used for commissioning in the first instance. If the temperature is more than 5°F (3°C) from the commissioning temperature, refer to the trouble shooting guide in Section 4.

There may be some variation in the temperature of the water from the thermostatic mixing valve due to seasonal temperature variations in the cold water supply.

The check valve can be easily accessed for cleaning by removing the unions.

- Scalding Risk: Water temperatures above 125°F (52° C) can cause severe burns, resulting in severe injury or death.
- Scalding risk can be reduced at 120°- 125°F (49° - 52° C), but even 120°F (49°C) water can cause scalding injuries (see chart on the next page):

INSTALLATION GUIDELINES

Temperature	Time for a Mild First Degree Burn	Time for Permanent Second Degree Burn
120°F (49°C)	3 Minutes	9 Minutes
122°F (50°C)	1 Minute	5 Minutes
126°F (52°C)	30 Seconds	90 Seconds
131°F (55°C)	5 Seconds	25 Seconds
140°F (60°C)	2 Seconds	5 Seconds
149°F (65°C)	1 Second	2 Seconds
154°F (68°C)	Instantaneous	1 Second

- Your water heater thermostat (temperature control) temperatures should never be turned above 120°F (49°C) without a properly installed, properly commissioned and functioning Thermostatic Mixing Valve.
- Do not leave children, the elderly, or the disabled unattended in a bathtub or shower.
- Never take hot water temperature for granted.
- Always hand-test hot water before using, especially when bathing infants and young children.
- Leaving a child unsupervised in the bathroom, even if only for a second, could cause serious injuries or death.
- Never allow small children to use a hot water tap or draw their own bath water.
- Your presence at all times is the best defense against accidents and scalding to children, the elderly, or the disabled.
- The temperature at which injury occurs varies with the person's age and the time of exposure. The slower response time of children, elderly, or disabled persons increases hazards for them.

CAUTION

Note that this thermostatic mixing valve is a **SAFETY VALVE**. We recommend that the valve is checked at least once per year to ensure its continued function. For installations with poor or unknown water quality, or other adverse supply conditions, it may be necessary to check the valve at more frequent intervals.

Warning: If the Tank Booster thermostatic valve is removed, decommissioned, or suspected of being faulty, immediately revert the water heater temperature setting to no higher than 120°F (49°C) in accordance with the water heater manufacturer's instructions.

- The Tank Booster is a temperature limiting valve. It must be installed and commissioned in accordance with manufacturer's instructions.

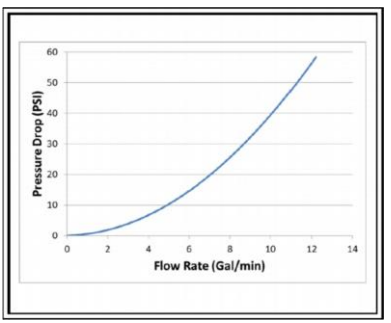
- Improper installation or maintenance can cause unsafe outlet water temperatures that can cause immediate injury or death.

TECHNICAL SPECS

Factory-set outlet temperature :	115 – 120°F (46 – 49°C)
Adjustable outlet temperature range :	90 – 130℉ (32 – 54°C)
Temperature, hot supply :	120 – 180°F (48.9 - 82°C)
Temperature, cold supply :	39 - 80°F (5 – 27°C)
Temperature stability (nominal) :	± 5℉ [1] (± 3 ℃)
Hydrostatic pressure :	150 psi max (1030 kPa)
Permitted supply pressure variation :	±20% (max) [2]
Flow rate @ 45psi pressure loss :	11 gpm (42 L/min)
Flow rate, minimum :	1 gpm (4 L/min)

Notes:

1. As tested in accordance with ASSE 1017.
2. Maximum permitted variation in either supply pressure in order to control the outlet temperature to within ±5°F. Excessive changes in supply pressures may cause changes in outlet temperature.



WARRANTY

Cash Acme Tank Booster consists of a thermostatic mixing valve, a corrugated stainless steel hose or braided hose, and a cold water tee.

- The thermostatic mixing valve has a five (5) year warranty.
- The hose has a two (2) year warranty.
- The cold water tee has a two (2) year warranty

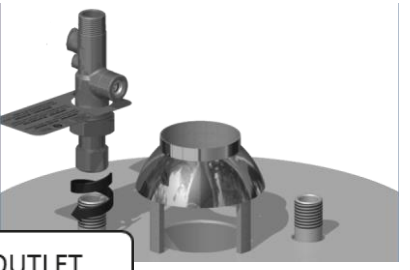
For terms and conditions, please visit www.cashacme.com

INSTALLATION

- Before connecting pieces to the water heater, it is important to consider the alignment needed to connect both the valve and the cold water tee to the hose.
- Isolate the water entering and exiting the water heater by closing nearby shut off valves or by draining pipe lines.

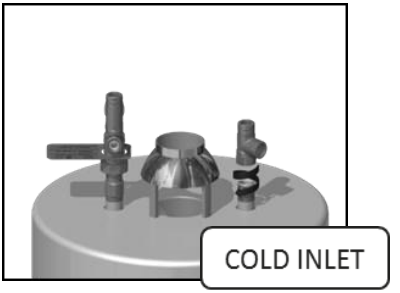
1 Connect the mixing valve to the water heater

Apply sealing tape to the hot and cold connections on the water heater. Thread the bottom of the mixing valve onto the union connector. Connect the mixing valve with union connector to the hot outlet of the water heater, aligning as required, and then tighten.



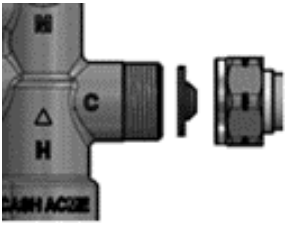
2 Connect the cold water tee to the water heater

Thread the cold water tee to the cold inlet of the water heater. Make sure that both the threads for the mixing valve and the cold water tee are facing the back of the water heater to allow easy installation of the hose.



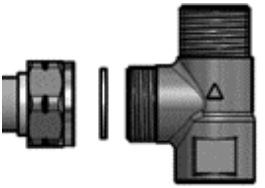
3 Connect the corrugated/braided hose to the mixing valve and the cold water tee

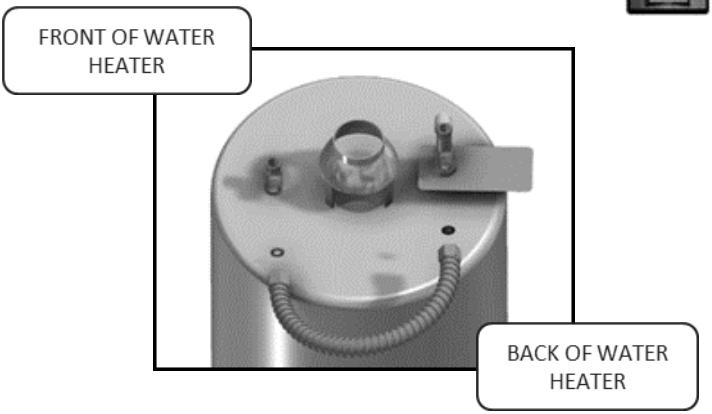
Connect the end of the flex hose with the strainer seal to the cold inlet on the mixing valve. This is marked on the valve with a "C". *(pictured right)*



INSTALLATION

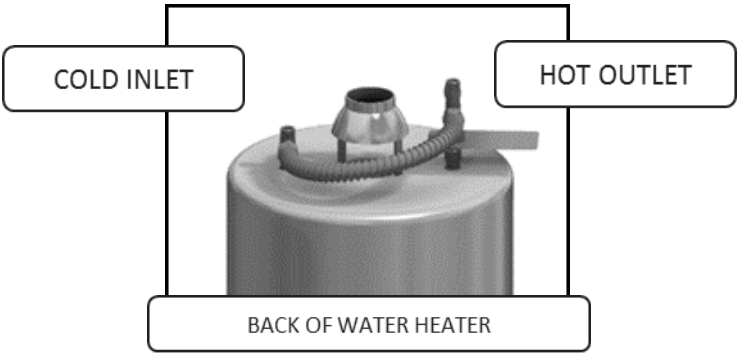
Connect the opposite side of the flex hose with the face seal to the side of the cold water tee as shown. *(pictured right)*





4A Connect the Tank Booster to the water supply

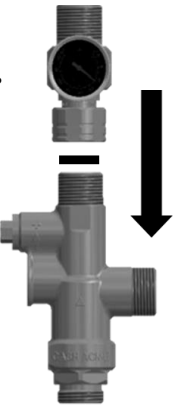
Connect the cold water supply line to the inlet of the cold water tee.
Connect the hot outlet line to the outlet of the mixing valve.



INSTALLATION

4B Installing the temperature gauge

Models 24643 & 24644 are packaged with a temperature gauge for connection to the outlet of the mixing valve. The gauge is sold separately for all other models.



Thread the union end of the temperature gauge to the threads on the outlet on top of the TankBooster Pro. Use the included washer to ensure a watertight seal.

Connect the other end of the gauge to your main water supply line.

5

Using a thermometer, test the mixed water temperature at the nearest outlet being supplied by the valve. This should be opened to allow a minimum flow rate of 1.5 GPM (6 L/min). Allow the water to run for at least one minute to ensure the mixed water temperature has settled.

Thermo-strip

The thermo-strip included in this kit may be used to indicate the outlet temperature of the mixing valve to the household.

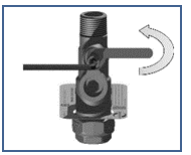
It shall not be used to set the outlet temperature of the mixing device; this must be performed as stated in the temperature setting instructions.

To install the thermo-strip, remove the adhesive backing and apply the thermo-strip to the mixing valve outlet pipe-work no less than 10" from the outlet connection.

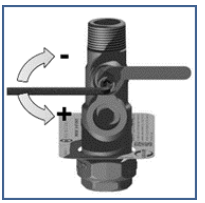
ADJUSTING THE TANK BOOSTER

Prior to setting the valve it is necessary for the hot water and cold water to be switched on and delivering hot water at the design temperature.

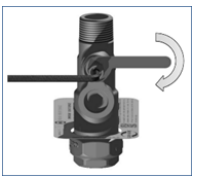
1. Holding the 3/16”Allen key (supplied), loosen the locking nut with a 7/16” wrench.



2. Using the wrench to support the locking nut and prevent it from rotating, turn the Allen key to adjust the outlet temperature – clockwise to reduce the temperature, counter clockwise to increase the temperature – until the desired temperature is reached. The valve must be flowing water while adjusting outlet temperature.

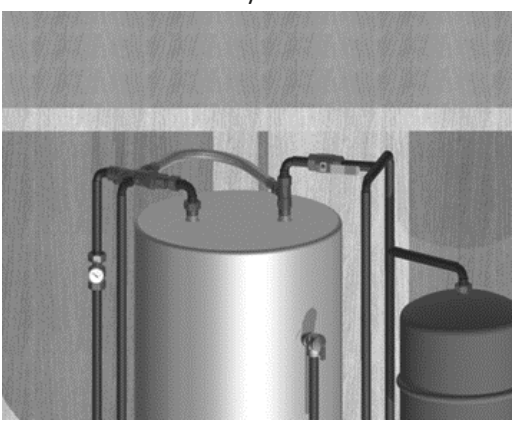


3. Holding the Allen key, tighten the locking nut with the wrench.



ALTERNATIVE INSTALLATION

The Tank Booster can be installed sideways if there is no clearance above the water heater.



TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
The desired mixed water temperature cannot be obtained or valve is difficult to set.	•Inlet temperatures are not within specific limits. •Hot and cold supplies are reversed. • Strainers are blocked.	•Ensure inlet temperatures are within the specified limits for the valve. •Refit the valve with Hot/Cold supplies fitted to the correct connections. • Clean strainers.
Mix temperature unstable or changing over time.	• Strainers are blocked. •Fluctuating supply pressures.	• Clean strainers. •Install pressure regulating valves on both hot and cold supplies.
Either full hot or full cold water flowing from outlet fixture.	• Valve is incorrectly set. •Hot and cold supplies are reversed. •Hot/Cold water has migrated to other inlet. • Refer also to point 1.	• Adjust mix temperature as required. •Refit the valve with Hot/Cold supplies fitted to the correct connections. •Check non-return valve is not fouled. Clean if necessary.
No flow from the valve outlet.	•Hot or cold water supply failure. • Strainers are blocked.	•Restore inlet supplies and check mix temperature. • Clean strainers.
Flow rate reduced or fluctuating.	• Strainers are blocked. •Fluctuating supply pressures.	• Clean Strainers. • Install pressure regulating valves.
Mixed water temperature does not change when temperature adjuster is altered.	•Hot and cold supplies are reversed.	•Refit the valve with Hot/Cold supplies fitted to the correct connections.
Hot water flows into the cold water system or vice versa.	• Non-return valves fouled.	•Clean non-returns ensuring debris is removed.
Valve is noisy.	• Excessive water velocity. • Valve sized incorrectly.	•Reduce water velocity (best achieved by fitting a pressure regulating valve). •Check valve specifications and ensure the appropriate valve is used for required flow.

INSTALLING WITH A RECIRCULATION SYSTEM

The Tank Booster Pro includes a recirculation port to allow return water from the system to be connected directly back into the mixing valve.

To use this recirculation port, remove the blanking plug on the Tank Booster Pro using an Allen key (3/8").

In order for the recirculation line to function properly, the return line should be piped into BOTH the recirculation port on the Tank Booster Pro AND back into the cold water supply going into the water heater.

Ensure check valves are installed at the proper points.

Installation of a thermal expansion device should be installed after the non return valve on the cold water supply prior to entering the water heater.*

NOTE: This diagram is a guideline only. Any installation of a recirculated system should be undertaken by a qualified tradesperson, and in accordance with the relevant codes and State, Provincial and Local Authority requirements. Performance of the system will be dependent on the other components specified within it. When installing a recirculation line, consider installing a bleeder valve to remove any excess air in the line prior to turning on the pump for the first time. Consult the pump manufacturer for further information.