



SmartPlus®

HOT WATER RECIRCULATION

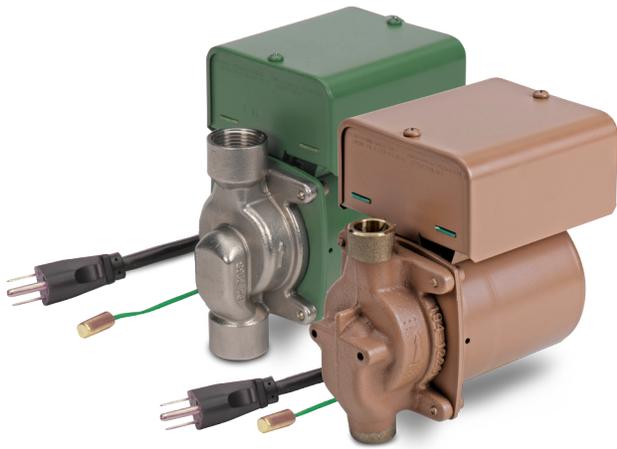
The smart way to instant **hot water** comfort.



Patent# US 8, 594, 853 B2



Taco®
Comfort Solutions™
 A Taco Group Company



SmartPlus®

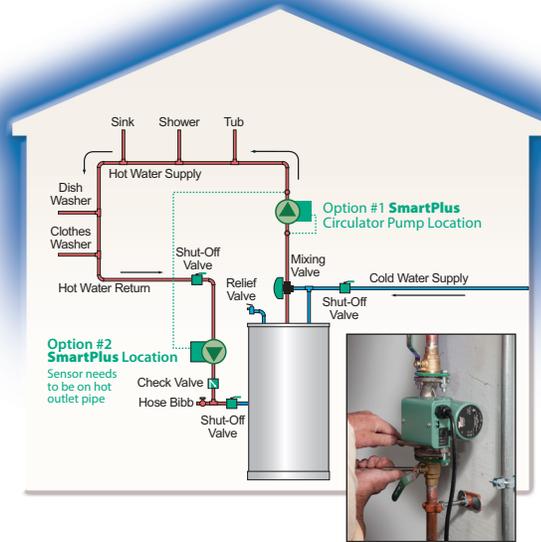
The Problem: Waiting for Hot Water

It's a common problem: turn on the faucet or shower for hot water, then wait for it to arrive. In fact, the wait can be up to two minutes in larger homes with multiple bathrooms and long runs of pipe between the plumbing fixtures and the water heater! With a Taco SmartPlus circulator in place, there's no more wait. Instant hot water!

Estimated Annual Water Savings

Pipe Type	Hot Water Supply Length (ft.)	Pipe Water Volume (gallons)	Daily Water Volume Wasted (gallons)*	Annual Water Volume Saved (gallons)
1/2" Copper Type "L"	100	1.2 per 100'	12	4,400
	150		18	6,600
	200		24	8,800
	250		30	11,000
3/4" Copper Type "L"	300	2.5 per 100'	36	13,200
	100		25	9,200
	150		37	13,700
	200		50	18,300
	250		62	23,000
	300	75	27,500	

* Assume average of 10 cycles per day.



Energy Down The Drain

Of course, all that "waiting water" contains some heat energy (BTU's), even if it's only room temperature. Wasting those BTU's and starting over with fresh, cold water to heat up requires even more heat energy. So in addition to wasting water, millions of BTU's and energy dollars are wasted, too.

Waiting Means Wasting

Waiting for hot water sends millions of gallons of cooled water down the drain each year. In fact, an average family of four wastes up to 12,000 gallons of water each year waiting for hot water.* Water conservation is so important that many US states and municipalities routinely impose watering bans and offer rebate incentives to help conserve this natural resource.

*Source: Dept. of Energy study.

How a Domestic Hot Water Recirculation System Works

A standard DHW system requires a dedicated return line from the furthest fixture back to the water heater. The return line is connected to a tee at the tank drain valve or to the tank's cold water supply line. A Taco SmartPlus circulator pump is installed on the hot water supply line, or on the hot water return line, and controlled by the SmartPlus electronic control board.

How the SmartPlus Circulator Works

The SmartPlus circulator has a mode select toggle switch on the electronic control board that allows for 2 operation modes. "Pulse" or "Smart" mode can be selected using the toggle switch located on the

FOR HOT WATER RECIRCULATION

electronic control board. A yellow LED indicates which mode is selected. All operation is automatic, no manual timer or temperature setting is required.

Pulse Mode

When set for Pulse mode, the SmartPlus circulator will run for 150 seconds every 10 minutes to maintain hot water at all fixtures.

Smart Mode

When set for Smart mode, the circulator will run in Pulse mode as above for the first 7 days. During the first 7 days, the SmartPlus will monitor and record the homes hot water usage pattern. For the next 7 days, the Smart-Plus will use the preceding week's usage pattern to cycle the pump. This process will be repeated every 7 days.

MATERIALS OF CONSTRUCTION

Stator Housing	Steel
Cartridge.....	Stainless Steel
Impeller.....	Noryl
Shaft.....	Ceramic
Bearings.....	Carbon
O-Ring.....	EPDM
Casing (Volute).....	Bronze, Sweat (003, 006) Stainless Steel, Threaded (006) Stainless Steel, flanged (008)

Features and Benefits

Vacation Function — After 36 hours of inactivity the pump will automatically TURN OFF and remain off until hot water usage is detected again.

Exercise Function — While in vacation mode the pump will cycle on once every 7 days and run for 10 seconds to prevent any corrosion or scale buildup.

Factory installed 6' line cord

Remote Sensor Included

Optional IFC® (Integral Flow Check)

Quiet, Efficient Operation

Unique Replaceable Cartridge Design-Field Serviceable

Self-Lubricating

No Mechanical Seal

Unmatched Reliability-Maintenance Free

Water Conservation — The average residence can save up to 12,000 gallons of water per year-water that normally goes down the drain while waiting for hot water.

Comfort and Convenience — Once the pump is set to the desired operating mode it never needs to be set again. Hot water is always available in seconds.

Efficiency — Smart/Pulse operation maximizes hot water comfort and energy savings

Reliability — SmartPlus provides quiet operation and industry leading electronics with Taco 003, 006 & 008 circulators for proven performance & dependability.

3 Year Warranty

LED Indicator lights

- GREEN — Power
- YELLOW — Mode
- RED — Sensor Connection



Choosing the Correct SmartPlus Circulator for the Job

Pump Selection Charts

This information is provided as a guide only. Find the table below that best describes the design you plan to use. Select the circulator based on the supply and return pipe size, pipe line length, and circulator model. Do not oversize the pump or high velocity noise and erosion corrosion of the system piping may result.

1/2" Supply and Return Lines

Model Number	Supply Pipe Maximum Length (ft.)	Total Maximum Pipe Length (ft.)
003	50	100
006	100	250
008	250	450
003-IFC*	25	100
006-IFC*	100	250
008-IFC*	250	450

*With Optional Integral Flow Check

3/4" Supply and Return Lines

Model Number	Supply Pipe Maximum Length (ft.)	Total Maximum Pipe Length (ft.)
003	50	200
006	150	300
008	300	600
003-IFC*	50	200
006-IFC*	150	300
008-IFC*	300	600

*With Optional Integral Flow Check

Assumptions

Flow = 1 GPM

Max. Velocity = 3 ft./sec.

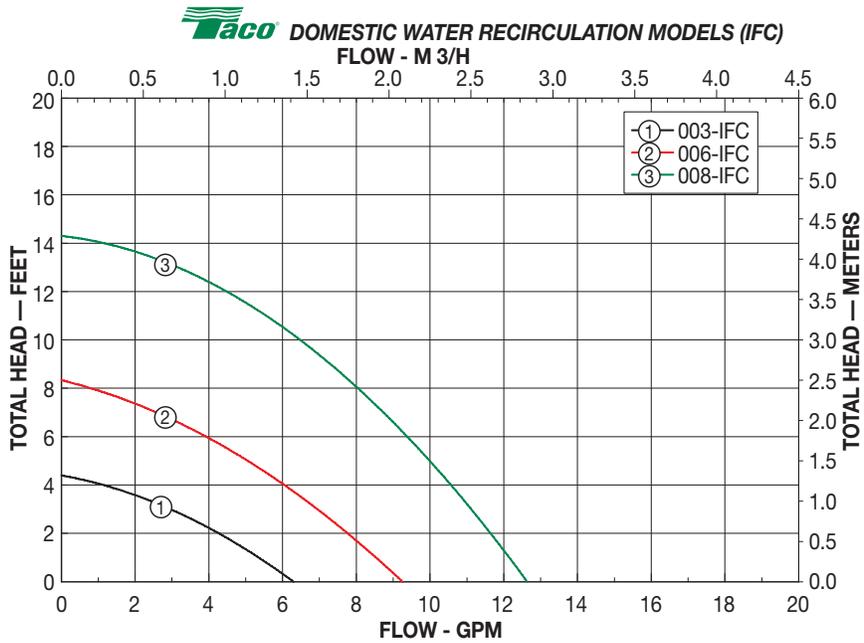
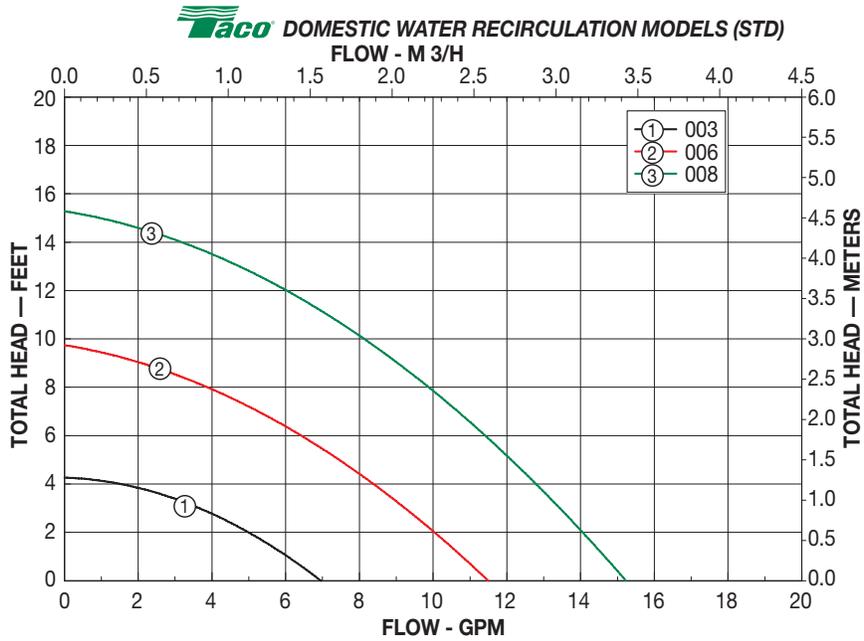
Allowances have been added for pressure drop of other typical system components

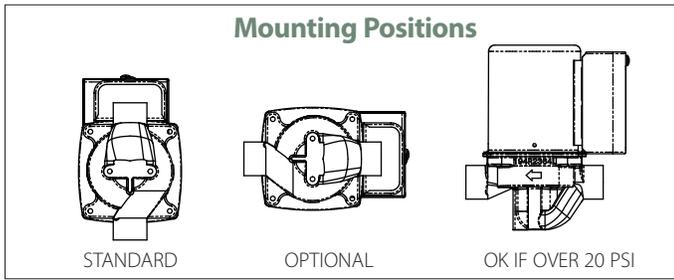
Type L Copper Tubing

Supply & Return Piping are equal in length



Performance Field Information - 60 Hz





- ### Model Nomenclature
- IQ – SmartPlus
 - B – Bronze
 - BC – Bronze, Panel Mount Tap
 - ST – Stainless Steel, 3/4" FNPT
 - SF – Stainless Steel, Flanged
 - IFC – Integral Flow Check

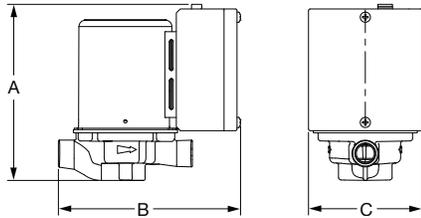
Performance Data

Model	Flow Range	Head Range
003	0 - 7 GPM	0 - 4.5 Feet
006	0 - 11.5 GPM	0 - 9.5 Feet
008	0 - 15 GPM	0 - 15 Feet
003-IFC	0 - 6 GPM	0 - 4.5 Feet
006-IFC	0 - 9 GPM	0 - 8.5 Feet
008-IFC	0 - 13 GPM	0 - 14.5 Feet

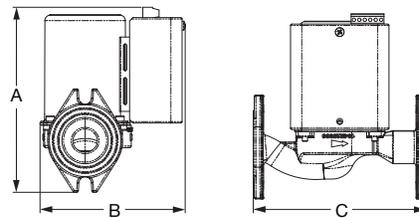
Electrical Data

Model	Volts	Hz	Ph	Amps	RPM	HP
003	115	60	1	0.45	3250	1/40
006				0.52		1/25
008				0.84		

Models 003 & 006



Model 008



Model	Connection	Casing	A		B		C		Ship Wt.	
			In.	mm.	In.	mm.	In.	mm.	lbs.	kg
003-IQB4	3/4" Sweat	Bronze	6-1/2	165	6	152	3-3/4	95	7.0	3.2
003-IQBC4	1/2" Sweat									
006-IQB4	3/4" Sweat									
006-IQBC4	1/2" Sweat									
003-IQBC4-IFC	3/4" Sweat		7-1/4	184						
003-IQBC4-1IFC	1/2" Sweat									
006-IQBC7-IFC	3/4" Sweat									
006-IQBC7-1IFC	1/2" Sweat									
006-IQST4	3/4" NPT	Stainless Steel	6-1/2	165	5-1/2	140	6-1/2	165	8.0	3.6
008-IQSF6	Flanged		7	177						
008-IQSF6-IFC	Flanged									

