



Astro HWR

Hot water recirculation solutions

NSF 372



SOLUTION OUTLINE

FILE NO: 10.13
DATE: JULY 2021

SUPERSEDES: 10.13
DATE: NOVEMBER 2018

**INSTANT
HOT WATER**

**NO WAITING
& NO WASTE**

BENEFITS

**3
YEAR
WARRANTY**

Complete packaged product

Plug and play installation

**Covers a wide range of applications
from 1200 - 3500 sq ft**

OPPORTUNITIES TO ADD VALUE

Customers are looking for reliable hot water recirculation solutions that deliver instant comfort and adhere to industry codes. The Astro Hot Water Recirculation system from Armstrong includes everything contractors and building owners want:

A complete, dependable solution

Compliance with code requirements and minimized environmental impact

Low installed cost

Easy installation, with no call-backs required for adjustment

IMMEDIATE VALUE & LASTING SATISFACTION

The Astro Hot Water Recirculation (HWR) system from Armstrong is the perfect solution to help contractors build your installed base and add long-term satisfaction for your customers. It's a 'no hassle' HWR system with great performance flexibility.

CHOOSE YOUR TYPE

The **Astro Express system** for homes or buildings where no dedicated recirculation lines are available

Use **HWR** solutions where dedicated recirculation lines are used

THREE-SPEED SWITCH



UPGRADED COMFORT & EFFICIENCY

FOR OWNERS

The Astro HWR system eliminates the wasted water and the wait time, delivering hot water to the tap in 3-5 seconds. Looking beyond the luxury of instant hot water, the Astro HWR system helps home owners/ buildings owners with:

Minimal inconvenience on installation

Easy adjustment of settings

Performance reliability based on a long-proven product design and construction

FOR CONTRACTORS

For contractors, the Astro HWR offers even more value:

Simplified ordering

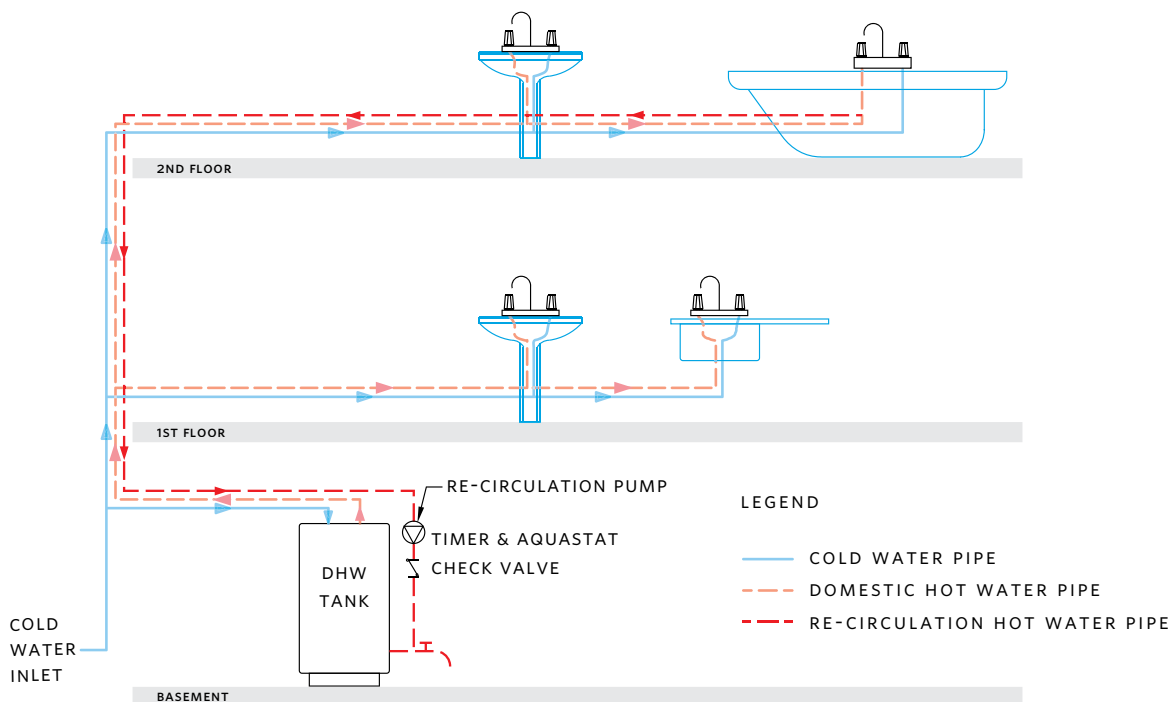
Sizes to serve a wide range of home or buildings designs

Easy installation with no requirement for specialized tools or materials

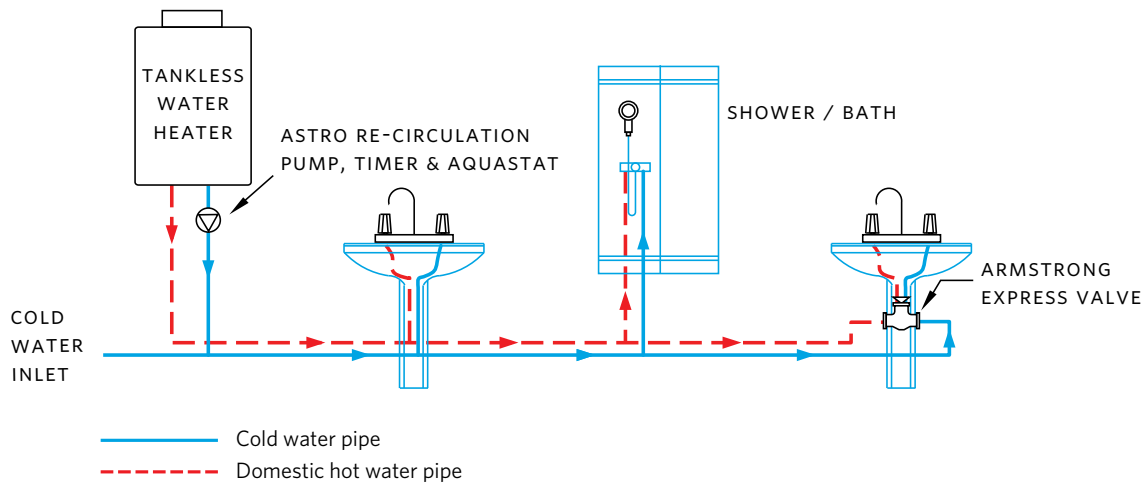
HOW IT WORKS: HWR

In normal operation, the Astro 2 automatically starts recirculating water throughout the hot water distribution system whenever the timer enables activation. The timer can be set for one or more activation periods per day. An activation period consists of up to 96, 15-minute intervals. The timer includes manual on and off overrides to normal automatic operation. Some models are

equipped with an Aquastat, intended for use on metallic piping. The Aquastat enables operation only when the sensed water temperature is below 85°F (25°C). Once activated, the circulator operates until either the water temperature reaches 105°F (41°C), or the current timed activation period ends.

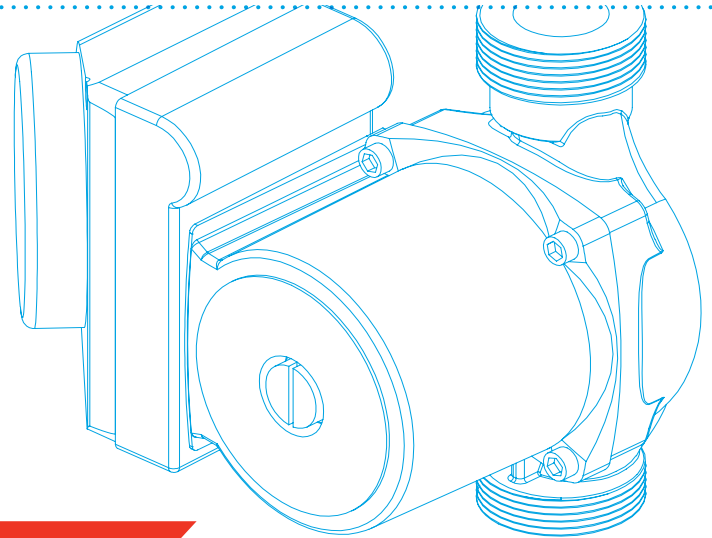


INSTALLATION OF THE ASTRO EXPRESS WITH A TANKLESS WATER HEATER



VALUE-BASED DESIGN CHOICES

Astro HWR systems offer a complete set of performance features including:



Three different product versions - 24/7 operation, pre-set timer for operation and pre-set timer plus aquastat (for temperature activation)

45° mounting of integrated timer - front facing for easy access

Plug-and-play product design fabricated as a complete, assembled package (timer, aquastat and circulator) with no requirement for assembly or internal wiring

Compatibility with both tankless and tanked residential hot water solutions

Performance that permits installation in applications with up to 250 ft piping runs from tank to outlet

TECHNICAL DATA

Power connection: 6.0 ft (1.8 m) power cord, molded duplex plug with ground

Environment: Indoor use only

Max. working pressure: 150 psi (1034 kPa)

Ambient temperature: 39°F (4°C) to 104°F (40°C)

Max. water temperature: 230°F (110°C)

Low temperature switchpoint: 85°F (29°C) ± 10%

High temperature switchpoint: 105°F (40°C) ± 10%

Clock/timer: 12-hour analog clock with AM/PM indication

Timer settings: Individual mechanical toggle for each 15 minute interval in the 24 hour cycle

Manual override: Three position slide switch; on/auto/off

*High/low temperature switchpoints are as presented on pipe surface with the Aquastat (TA models only)

PUMP WITH 24-HOUR TIMER, AQUASTAT & LINE CORD			
MODEL	PART NO.	CONNECTION	SIZE
Astro 220SSU050S-TA*	110223B-140	Sweat	½"
Astro 220SSU075S-TA*	110223B-141	Sweat	¾"
Astro 220SSU-TA	110223B-144	NPSM union	1¼"
Astro 225SSU-TA	110223B-145	NPSM union	1¼"
Astro 230SS-TA	110223B-148	2-bolt flange	
Astro 250SS-TA	110223B-149	2-bolt flange	

PUMP WITH 24-HOUR TIMER, AND LINE CORD			
MODEL	PART NO.	CONNECTION	SIZE
Astro 220SSU050S-T*	110223B-240	Sweat	½"
Astro 220SSU075S-T*	110223B-241	Sweat	¾"
Astro 220SSU-T	110223B-244	NPSM union	1¼"
Astro 225SSU-T	110223B-245	NPSM union	1¼"
Astro 230SS-T	110223B-248	2-bolt flange	
Astro 250SS-T	110223B-249	2-bolt flange	

PUMP WITH LINE CORD			
MODEL	PART NO.	CONNECTION	SIZE
Astro 220SSU050S-LC*	110223-340	Sweat	½"
Astro 220SSU075S-LC*	110223-341	Sweat	¾"
Astro 220SSU-LC	110223-344	NPSM union	1¼"
Astro 225SSU-LC	110223-345	NPSM union	1¼"
Astro 230SS-LC	110223-348	2-bolt flange	
Astro 250SS-LC	110223-349	2-bolt flange	

*Union pump with sweat hardware kit.

MODEL SELECTION

MODEL	LENGTH OF PIPE FROM THE DHW TANK TO THE FURTHEST FIXTURE
Astro 220SSU TA/T/LC	Up to 60 ft (18.2 m)
Astro 230SS/ TA/T/LC	100 ft to 150 ft (30.5 m to 45.7 m)
Astro 250SS/TA/T/LC	150 ft to 250 ft (45.7 m to 76.2 m)

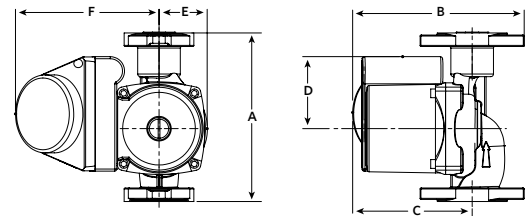
*Above table applies to hot water re-circulation systems in residential buildings with one kitchen and two bathrooms. For residential applications with more than two bathrooms, choose the next largest size of circulations.

Dimensions and weights

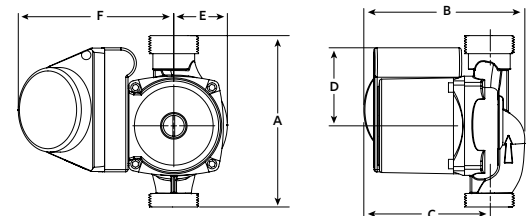
MODEL	A	B	C	D	E	F
Astro 2 sweat	5.00 (127)	5.46 (139)	4.59 (117)	2.72 (69)	1.87 (48)	5.43 (138)
Astro 220SSU** union	5.98 (152)	5.62 (143)	4.38 (111)	2.72 (69)	1.87 (48)	5.43 (138)
Astro 220SSU** flanged	6.38 (162)	6.49 (165)	4.52 (115)	2.72 (69)	1.82 (46)	5.43 (138)

Note: all dimensions are in inches (mm)

ASTRO 230SS/250SS FLANGED



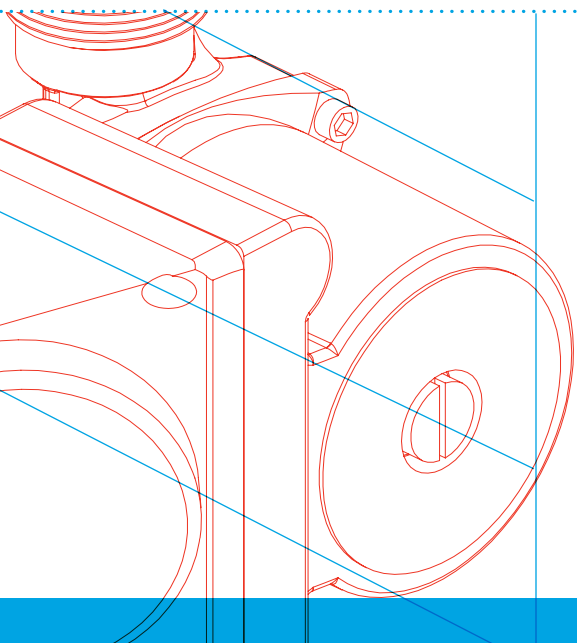
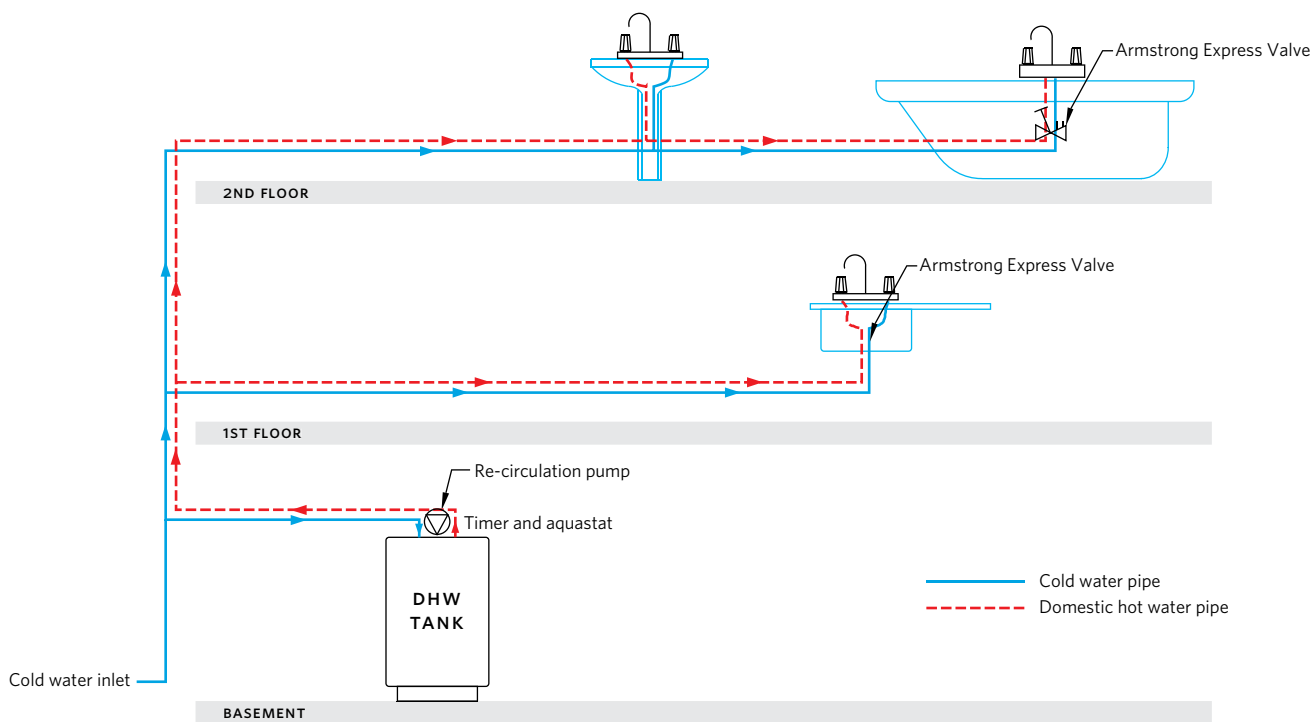
ASTRO 220SSU/225SSU UNION



HOW IT WORKS: ASTRO EXPRESS SYSTEM

The Astro Express System is designed for a 2 pipe plumbing system (one hot and one cold) and to deliver the convenience and comfort of Hot Water as soon as you open the tap. The patented Astro Express Valve is thermostatically controlled and will allow cooled water in the hot water supply side to be pushed back down the cold water lines until hot water reaches the valve. The Valve requires no external power and is installed at the furthest fixture

from the water heater, while the Astro Circulator is conveniently located near the water heater where electric power is readily available. The Astro Express System includes a timer (with multiple activation periods) so that maximum energy savings can be achieved by only running the recirculation loop at times when it is most likely needed.



ACCESSORIES

You can customize your installation with these components:

TIMER

OLD 810223-130

Kit includes box and timer

Fits Astro Circulators made prior to 2015



NEW 810223B-130

Kit includes replacement and timer

For all Astro Circulators made in 2015 or later



ASTRO EXPRESS VALVE

You can use up to five valves on one system for long branches off the primary distribution system

561100LF-001



Made from lead-free bronze and NSF 372 certified

AQUASTAT CONTROLS

Mounts to copper pipe only

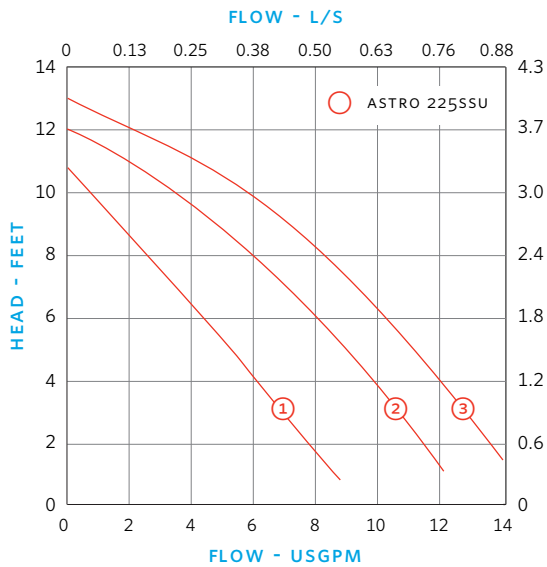
PART NUMBERS

MODEL	PART NUMBER
½" Aquastat	110123-120
¾" Aquastat	110123-121

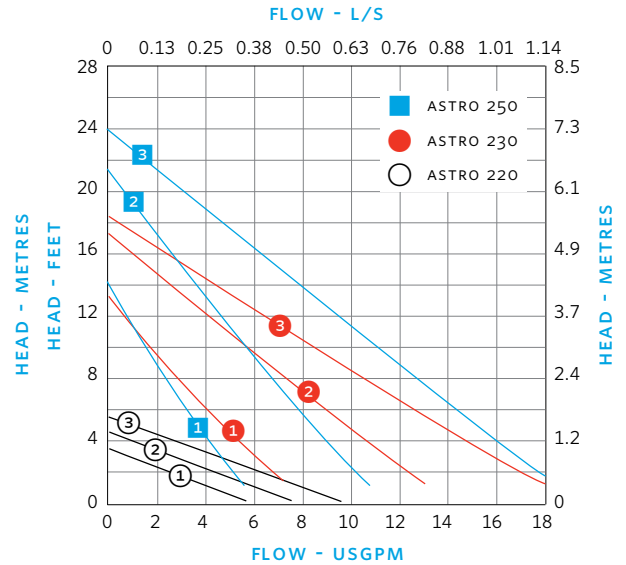


Performance curves

ASTRO 225SSU



ASTRO 220, 230, 250



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