Water Heater

STM-607W

Refer carefully to this manual before operation.

STM-W Series

■ Coding Principle

STM- xxxx W/PW - xx

- Option
- Water/High Temp.Water
- First Two Codes: Heater Power (kW)
  Last Two Codes: Pump Power ($\times 10^{-1}$HP)
- Shini Mould Temp. Contorllers
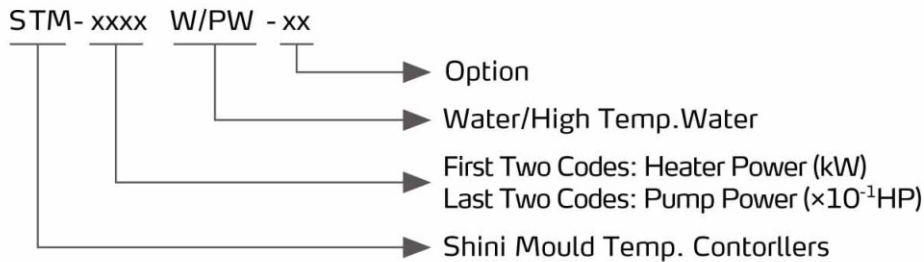
■ Features

- Controller adopts 3.2 " LCD for easy operation.
- Equipped with the design of 7-day automatic start/stop timer. LCD screen can be converted between Chinese and English. The unit of temperature can be converted between $^{\circ}$F and $^{\circ}$C.
- P.I.D. multi-stage temperature control system can maintain a mould temperature with an accuracy of ±0.5°C/0.9°F.
- Adopts high efficiency water cycle pump, which can meet the demands of temperature control for precise moulds and mould loop with minor diameter to achieve precise temperature control and high efficiency heat exchange.
- Multiple safety devices including power reverse phase protection, pump overload protection, overheat protection and low level protection that can automatically detect abnormal performance and indicate this via visible alarm.
- For standard STM-W, the heating temperature can reach 120°C/248°F.
- Equipped with high pressure protection, safety pressure relieving, automatic water supplying and air exhausting.
- Direct cooling with excellent refrigerating effect. Auto refilling device cools down the temperature to set value directly.
- Adopted Ethernet communication function to realize central monitoring online.

Control Panel


Internal Structure

■ Options

- Water manifolds and Teflon hose are optional.
- Displays of mold temperature and return water temperature of mold are optional.
- Buzzer is optional .Add "B"at the model behind.
- Magnepic Pump(Excluded for STM-3650 and STM-D models),add "M" at the end of the model code.
- Water-removing of air blowing (Excluded for STM-PW),add "A" at the end of the model code.

■ Application

STM-W series water heaters have both standard and high temperature models, which are used to heat up the mould and maintain temperature, also they can be used in other similar applications. High temperature water from the mould is returned to the cooling tank and cooled by either indirect cooling (For high temperature and high temperature plus pressure models) or direct cooling (For standard models). It is then pressurised by the high-pressure pump, sent to the heating tank and finally to the mould with a constant temperature. The newly applied temperature controller can maintain an accuracy of ±0.5°C/0.9°F.

■ Working Principle

High temperature water returns to the machine and then be pressured by pump to the heaters. After being heated, water will be forced to mould and continue the circle. In the process, if the water temperature is too high, the system will activate the solenoid valve to let cooling water cool down the temperature directly until the water is down to the system requirement. If the temperature keeps increasing and reach to the set point of EGO, system will sound high pressure alarm and stop operation; when system pressure is too high (reach set value of high pressure switch), alarm would sounds and machine halts; when cooling water pressure fails to reach the set value, pressure switch will send a signal of water storage to launch low pressure alarm and machine halts.
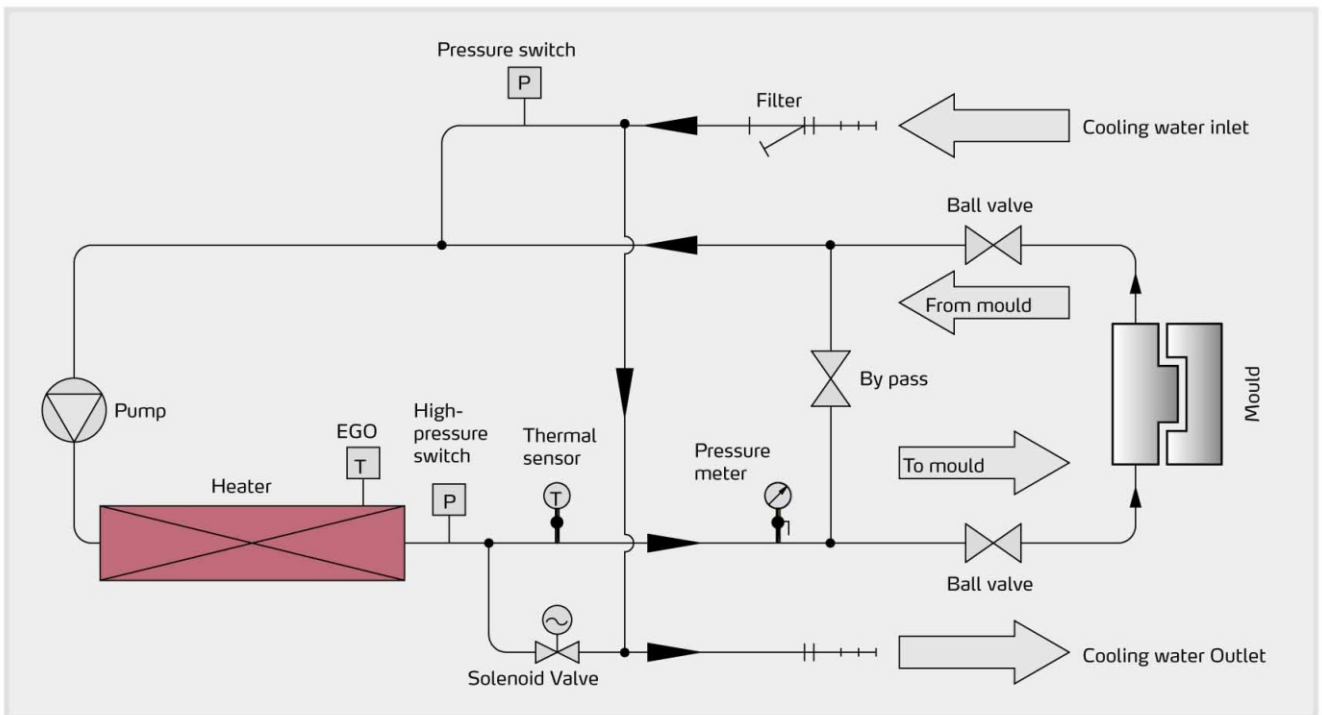
System flow for STM-W (Direct Cooling)

STM-W Series

■ **Specifications**

Model	STM-607W	STM-607WD	STM-910W	STM-910WD	STM-1220W	STM-2440W	STM-3650W
Max.Temp.				120°C/248°F(140°C/284°F)**			
Pipe Heater(kW)	6	6×2	9	9×2	12	24	36
Pump Power(kW) (50/60Hz)	0.55/0.63	2×0.55 / 2×0.63	0.75/0.92	2×0.75 / 2×0.92	1.5/1.9	2.8/3.4	3
Max. pump Flow (50/60Hz) L/min	27/30	2×27 / 2×30	42/50	2×42 / 2×50	74/84	90/90	100/100
Max. pump Flow (50/60Hz) gal/min	7.1/7.9	2×7.1 / 2×7.9	11/13.2	2×11 / 2×13.2	19.5/22	23.8/23.8	26.4/26.4
Max. pump Pressure(bar) (50/60Hz)	3.8/5	3.8/5	5.0/6.4	5.0/6.4	6.2/7.2	8.0/10.2	8.0/8.0
Heating Tank Number	1	2	1	2	1	2	3
Heating Tank Capacity L	3.0	2×3.0	3.0	2×3.0	3.0	7.4	17.7
Heating Tank Capacity gal	0.8	2×0.8	0.8	2×0.8	0.8	2.0	4.7
CoolingMethod				Direct			
Mould Coupling* (inch)	3/8 (2×2)	3/8 (4×2)	3/8 (2×2)	3/8 (4×2)	1 (1×2)	1 (1×2)	1 (1×2)
Inlet/Outlet (inch)	$^3/_4$ / $^3/_4$	$^3/_4$ / $^3/_4$	$^3/_4$ / $^3/_4$	$^3/_4$ / $^3/_4$	1 / 1	1 / 1	1 / 1
Dimensions (H×W×D) mm	605×320×740	655×590×760	605×320×745	655×590×760	615×320×775	820×360×963	980×467×1011
Dimensions (H×W×D) inch	23.6×12.5×28.9	25.5×23×29.6	23.6×12.5×29.3	25.5×23×29.6	24×12.5×30.2	32×14×37.6	38.2×18.2×39.4
Weight kg	55	95	60	105	69	140	150
Weight lb	121	209	132	231	151.8	308	330

Notes: 1) "D" stands for dual-heating zones, "*" stands for options.
2) When equipped with water-removing function of air blowing, model code should be followed by "A".
3) In order to maintain stable temp. of heat transfer media(120°C/248°F), cooling water pressure should be no less than 2kgf/cm² , but also no more than 5kgf/cm².
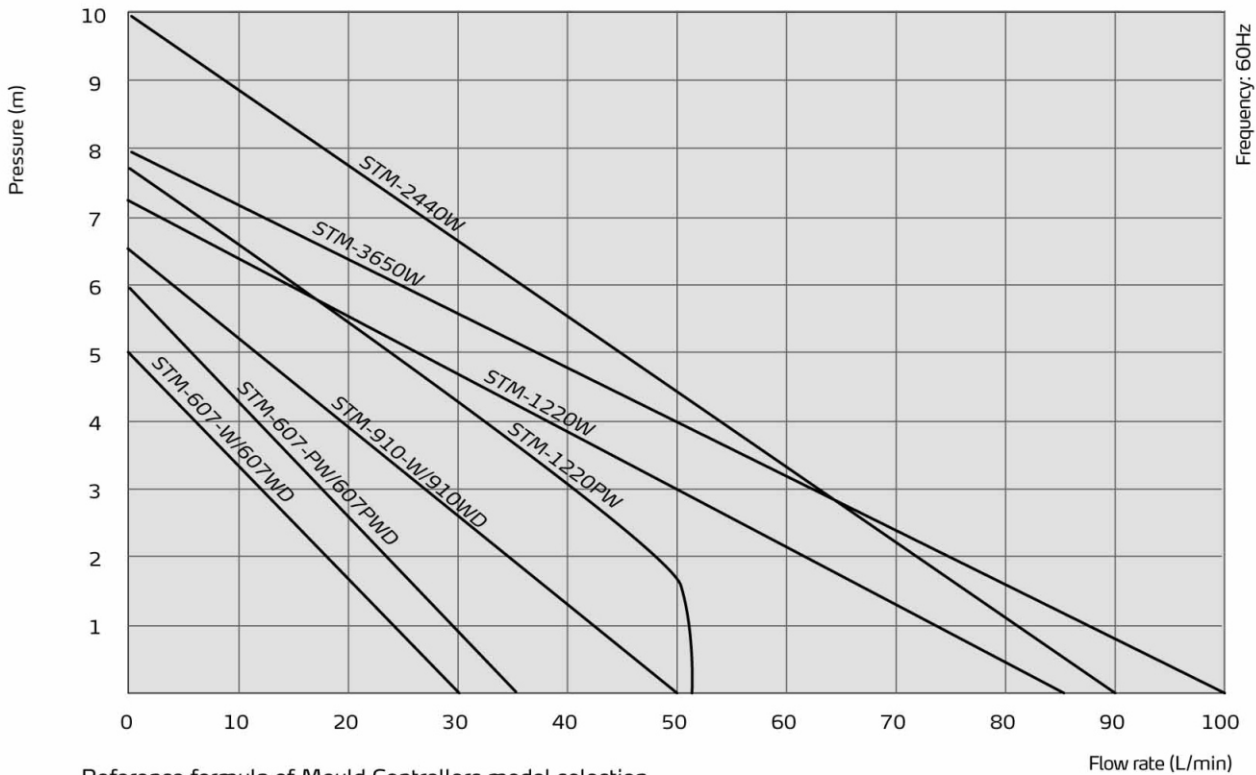4) Pump testing standard: Power of 50/60Hz, purified water at 20°C/68°F. (There is ±10% tolerance for either max. flowrate or max.pressure).
5) Power supply: 3Φ, 230/400/460/575VAC, 50/60Hz.
6) "**" stands for for heating the machine to 140°C/284°F, cooling water pressure should not be lower than 4kgf/cm².

We reserve the right to change specifications without prior notice.

■ Pump Performance

Pump performance chart — Pressure (m) vs Flow rate (L/min), Frequency: 60Hz. Curves: STM-2440W, STM-3650W, STM-1220W, STM-1220PW, STM-607-W/607WD, STM-607-PW/607PWD, STM-910-W/910WD.

Reference formula of Mould Controllers model selection

Heater Power (kW) = mould weight (kg) × mould specific heat (kcal/kg℃) × temperature difference between mould and environment (℃) × safety coefficient / heating duration / 860

Notes: safety coefficient range 1.3~1.5.

Flow Rate (L/min) = heater power (kW) × 860 / [heating medium specific (kcal/kg℃) × heating medium density (kg/L)× in/outlet temperature difference (℃)× time (60)]

Notes: Water specific heat =1kcal/kg℃ Heating medium oil specific heat =0.49kcal/kg℃ Water density =1kg/L
Heating medium oil density =0.842kg/L Time for heating=the time needed to heat from room temperature to set temperature

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