"Standard" Heater

STM-607WE
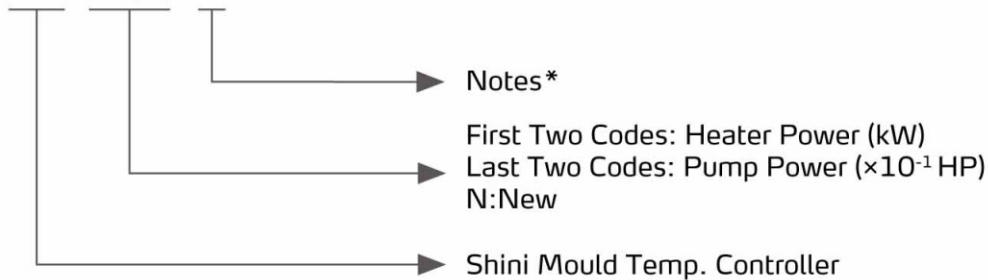
Refer carefully to this manual before operation.

■ Coding Principle

STM- xxx(N) - xx

→ Notes*

→ First Two Codes: Heater Power (kW)
Last Two Codes: Pump Power (×10⁻¹ HP)
N:New

→ Shini Mould Temp. Controller

Notes: *
E=Medium is Oil With Standard Model
WE=Medium is Water with Standard Model

■ Features

Standard configuration

- P.I.D. multi-stage temperature control system can maintain a mould temperature with an accuracy of ±1℃/1.8°F.
- Adopt high efficiency high temperature pump to achieve high efficient 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.
- STM-E is equipped with low level protection.
- STM-WE is equipped with water inlet low pressure protection, system high pressure protection, automatic air exhaust and water supplying.

STM-E Inner Structure

Accessory option

- Water manifolds, Teflon hose and transfer oil are optional.

■ Application

STM-E (WE) series are applicable for heating up moulds and maintaining temperature, and they also can be used in other similar applications. Firstly, these series adopt different cooling methods to cool down media, then media are conveyed to the moulds after pressurized by pump and heated up by electrical heated tube. The optimal design renders water be heated up to 120℃/248°F and oil up to 200℃/392°F.

Working Principle

The high temperature oil returns to the heater through pipe and then be pressured by pump to mold after being heated. This cycle repeats. In the process, if the temp. is too high, the system will activate the solenoid valve to let cooling water lower the temperature indirectly until the it reaches the system requirement. If the temperature keeps increasing and reaches the set point of EGO, the system will alarm and stop operation. The system will sound low level alarm and stop working if oil level falls down below the set point.
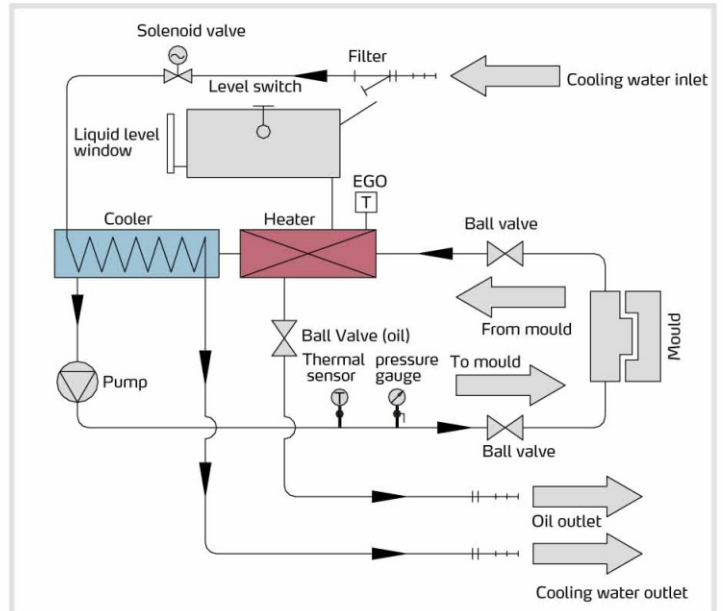
System Flow for STM-607E (Indirect Cooling)

The high temperature water returns from the mould to the temperature controller machine is pressurized by pump and conveyed to the heaters. After being heated, it will be again flow to the mould to maintain the temperature, and this circle repeats. In the process, if water temperature is too high, system will activate the solenoid valve to let cooling water directly cool down the high temperature water to maintain constant temperature. If the temperature keeps increasing and reaches to the set point of EGO, machine starts high temperature alarm and halts; if system pressure is too high and reaches the set value of high pressure switch, system will launch high pressure alarm and 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.
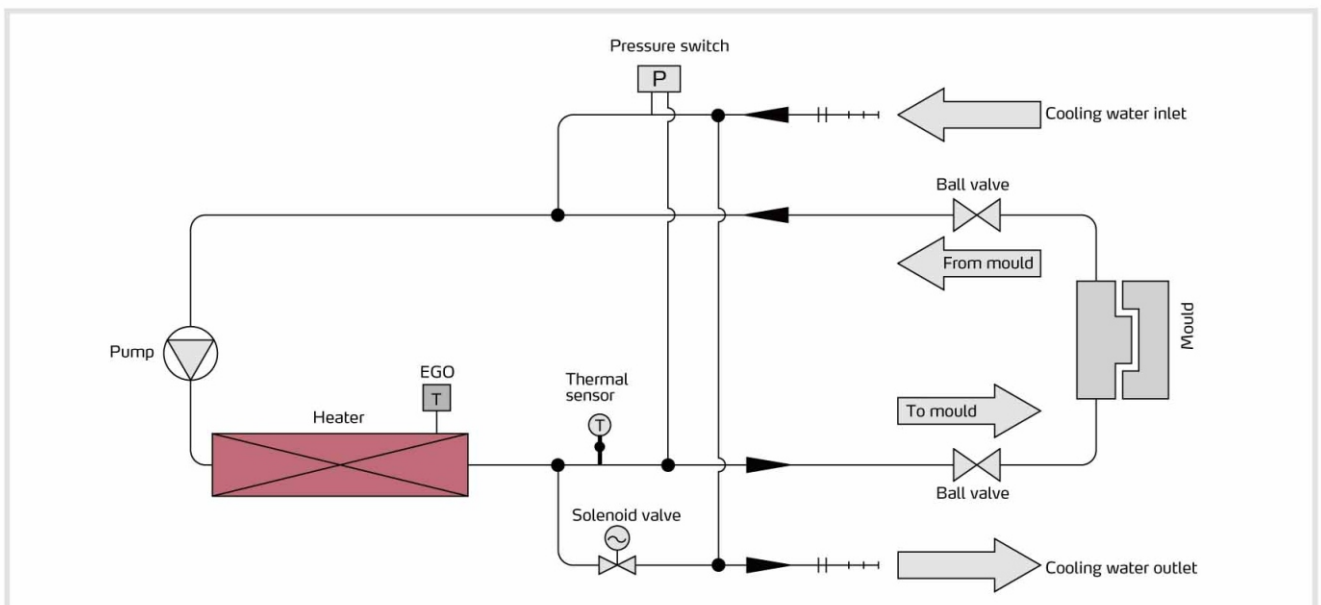
System Flow for STM-607N-WE (Direct Cooling)

STM-E Series

■ Specifications

Model		STM-607E(Oil)	STM-607N-WE(Water)
Max. Temp.		200°C/392 °F	120°C/248°F
Pipe Heater (kW)		6	
Pump Power (kW)		0.55	
Max. pump Flow	L/min	27	
	gal/min	7.1	
Max. pump Pressure (bar)		3.8	
Heating Tank Number		1	
Main/Sub. Oil Tank	L	6.0 / 3.3	-
	gal	1.6 / 0.9	-
Water Heating Tank Capacity	L	-	3.0
	gal	-	0.79
Cooling Method		Indirect	Direct
Mould Coupling* (inch)		3/8 (2×2)	
Inlet/Outlet (inch)		3/4 / 3/4	
Dimensions (H × W × D)	mm	686×325×563	575×285×505
	inch	27×12.7×22.2	22.4×11.1×19.7
Weight	kg	49	38
	lb	108	83.8

Notes: 1) Pump testing standard: Power of 50/60Hz, purified water at 20°C/68°F.
(There is ±10% tolerance for both max. flow rate and max. pressure).
2) "*" stands for options.
3) Power supply: 3Φ, 230/400/460/575VAC, 50/60Hz.

Pump Performance Curve

Frequency: 60Hz

STM-607E/607N-WE

Pressure (bar) / Flow rate (L/min)
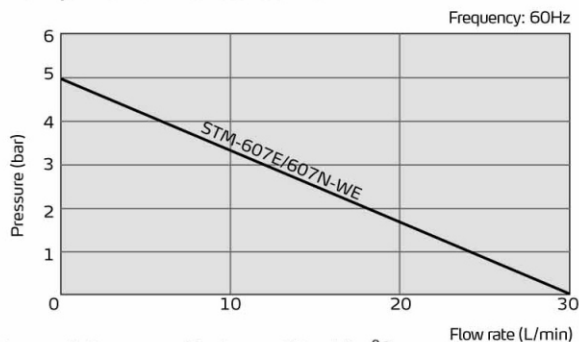
Notes: Water specific heat =1kcal/kg°C
Heating medium oil specific heat =0.49kcal/kg°C
Water density =1kg/L
Heating medium oil density =0.842kg/L
Time for heating=the time needed to heat from room temperature to set temperature

Reference formula of Mould Controllers model selection

Heater Power (kW) = mould weight (kg) × mould specific heat (kcal/kg°C) × temperature difference between mould and environment (°C) × 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°C) × heating medium density (kg/L)× in/outlet temperature difference (°C)× time (60)]

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