Oil Heaters

STM-910

Coding Principle

STM - xxxx - xx

→ Note*

→ First Two Codes: Heater Power (kW)
Last Two Codes: Pump Power (10^{-1} HP)

→ Shini Mold Temp. Contorllers
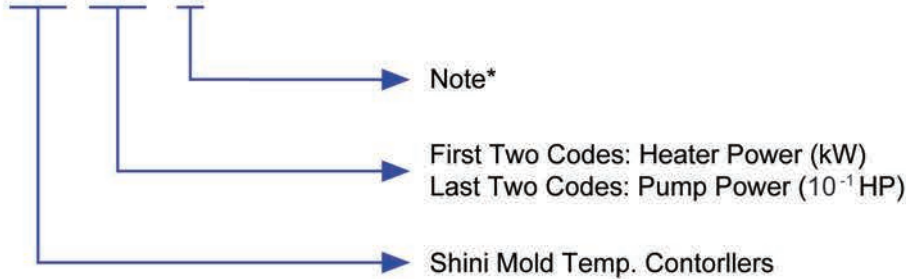
Note*:

D=Dual-heating Zones   HT=High Temperature Model
CE=CE Conformity

STM-910-D

Features

Standard configuration

- P.I.D. multi-stage temperature control system can maintain a mould temperature with accuracy of ±0.5℃.

- Adopts high efficiency high temperature 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 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.

- Pipe heaters are made of stainless steel.

- For standard STM, the heating temperature can reach 200℃, while for STM-HT, it can reach 300℃.

- Inside tank of STM-HT is made of high pressure resistance stainless steel to prevent any explosion.

STM-1215HT

Accessory option

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

- Among the Standard Oil Mould Controllers STM, all models can opt for magnetic pump. (except STM-3650 series)

Control Panel

Application

STM series oil heaters have both the standard and high temperature models, which are used to heat up the mould and maintain temperature, although they can be used in other similar applications. High temperature oil from the mould is returned to the cooling tank and cooled by indirect cooling. It is then pressurised by the high-pressure pump, sent to the heating tank and finally to the mould with a constant temperature. With our optimised design, It can reach a maximum of 200℃ and the OMRON temperature controller can maintain an accuracy of ±0.5℃.

■ Working Principle

The high temperature oil returns to the machine and then be pressured by pump to the heaters. After being heated, oil will be forced to the mould and continue the circle. In the process, if the oil temperature is too high, system will activate the solenoid valve to let cooling water cool down high temperature oil indirectly until the temperature is down to the system requirement. If the temperature keeps increasing and reaches to the set point of EGO, the system will sound alarm and stop operation. The system will have low level alarm and stop working if oil level falls down below the set point.
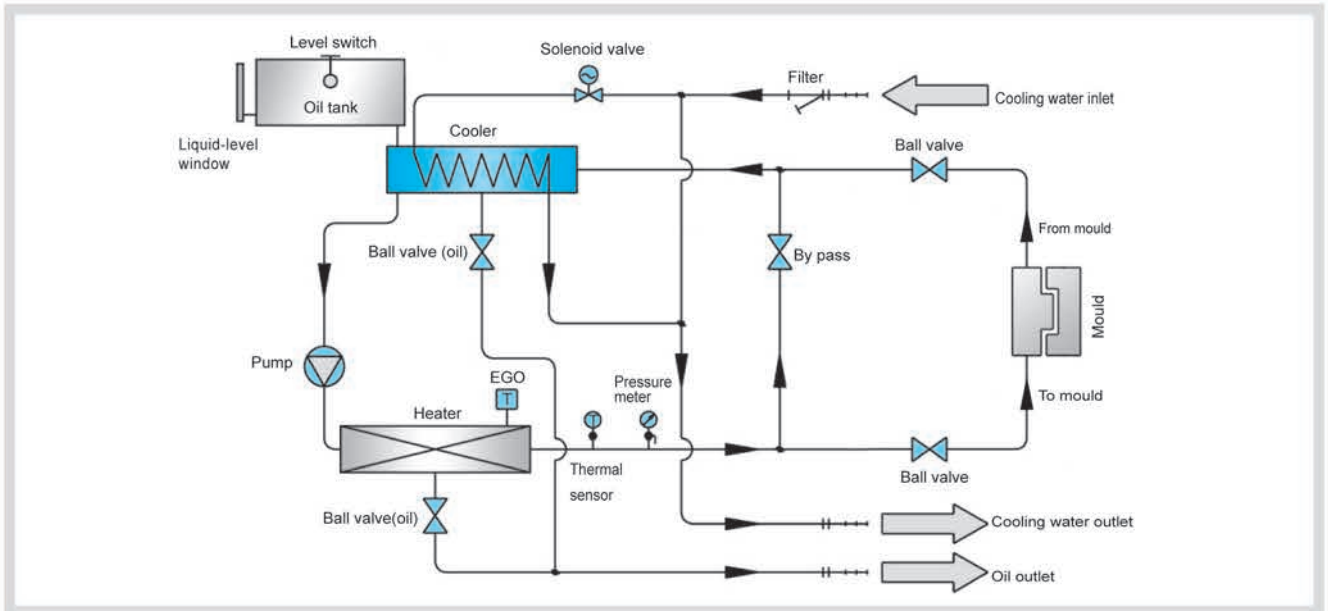
System flow for STM
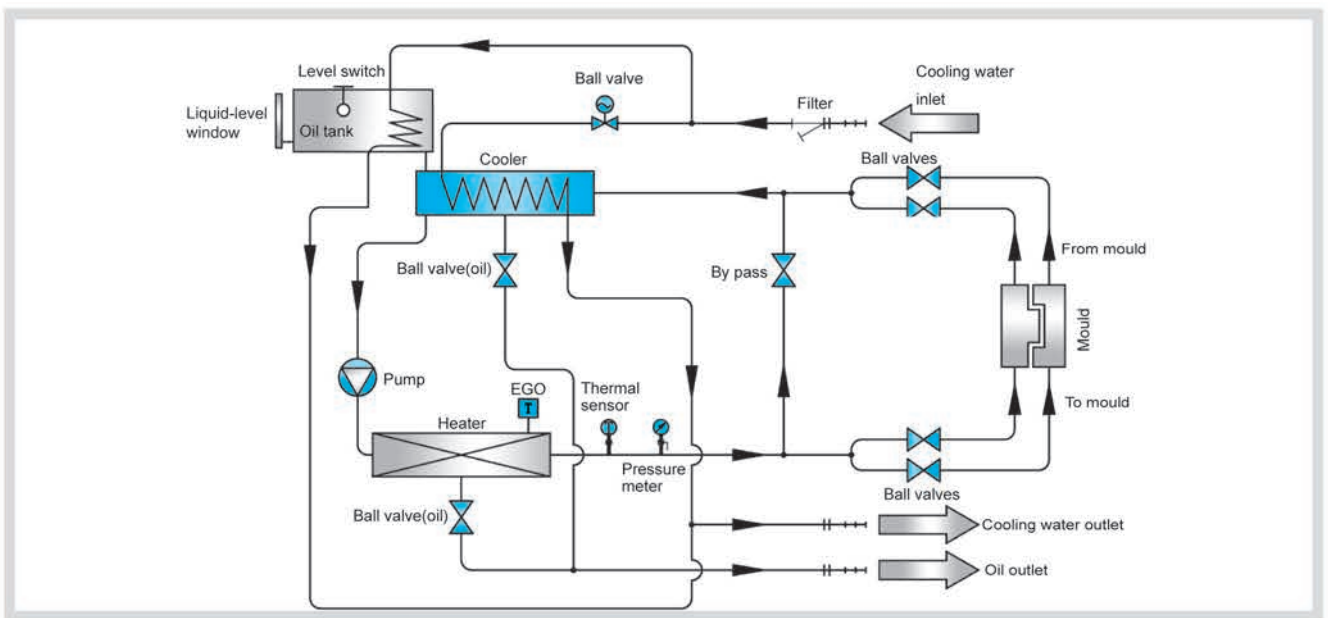
System flow for STM-HT

■ Specifications

Model	Max. Temp.	Pipe Heater (kW)	Pump Power (kW) (50/60Hz)	Max. pump Flow (L/min) (50/60Hz)	Max. pump Pressure (bar) (50/60Hz)	Heating Tank Number	Main/Sub. Oil Tank (L)	Cooling Method	Mould Coupling* (inch)	Inlet/Outlet (inch)	Dimensions (mm) (H × W × D)	Weight (kg)
STM-607		6	0.55 / 0.63	27 / 30	3.8 / 5	1	6 / 3.2		3/8 (2 × 2)	3/4 / 3/4	635 × 280 × 740	65
STM-607-D		6 × 2	2×0.55 / 2×0.63	2×27 / 2×30	3.8 / 5	2	2 × 6 / 2 × 3.2		3/8 (4 × 2)	3/4 / 3/4	655 × 560 × 740	130
STM-910		9	0.75 / 0.92	42 / 50	5.0 / 6.4	1	6 / 3.2		3/8 (2 × 2)	3/4 / 3/4	635 × 280 × 740	70
STM-910-D	200℃	9 × 2	2×0.75 / 2×0.92	2×42 / 2×50	5.0 / 6.4	2	2 × 6 / 2 × 3.2		3/8 (4 × 2)	3/4 / 3/4	655 × 560 × 740	140
STM-1220		12	1.5 / 1.9	74 / 84	6.2 / 7.2	1	6.8 / 11.8		3/8 (4 × 2)	1 / 1	795 × 340 × 845	100
STM-2440		24	2.8 / 3.4	90 / 90	8.0 / 10.2	2	11 / 16	Indirect	1 (1 × 2)	1 / 1	900 × 390 × 935	145
STM-3650		36	4 / 4	100 / 100	8.0 / 8.0	3	14 / 16		1¼ (1 × 2)	1¼ / 1¼	900 × 385 × 980	155
STM-907-HT		9	0.5 / 0.63	28 / 34	4.8 / 6.5	1	6 / 6		3/8 (2 × 2)	3/4 / 3/4	695 × 280 × 740	75
STM-1215-HT	300℃	12	1.0 / 1.1	58 / 63	5.8 / 6.8	1	6.8 / 16		1 (1 × 2)	1 / 1	795 × 340 × 820	100
STM-2440-HT		24	2.8 / 3.43	100 / 100	8 / 9	2	16 / 25		1 (1 × 2)	1 / 1	1050 × 515 × 910	190

Note: 1) "*" stands for options.
    2) "D" stands for dual-heating zones. "HT" stands for high temperature model.
    3) Pump testing standard: Power of 50/60Hz，purified water at 20℃. (There is ±10% tolerance for either max. flowrate or max. pressure).
    4) Power supply: 3Φ, 230 / 400 / 460 / 575VAC, 50 / 60Hz.

We reserve the right to change specifications without prior notice.

Pump Performance

Frequency：60Hz
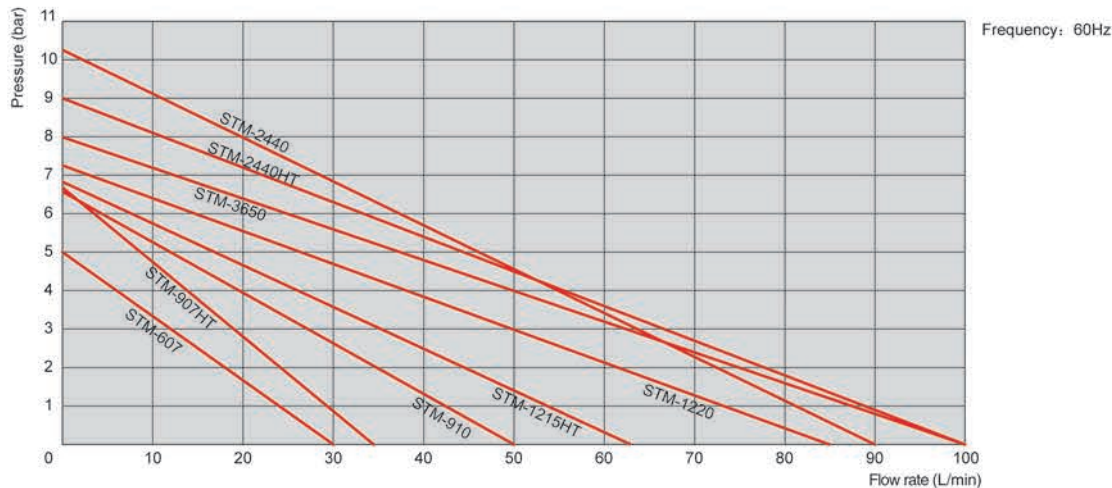
Reference formula of Mould Controllers model selection

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

Note: safety coefficient can select a value from 1.3 to 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)]

Note: Water specific heat =1kcal/kg℃
    Heating medium oil specific heat =0.49kcal/kg℃
    Water density =1kg/L
    Heating medium oil density =0.842kg/L