# Temperature control units for water up to 200 °F or thermal oil up to 300 °F.

Temperature control of injection moulds, extruders, rollers and storage tanks.

Further advantages:
Minimum reject rates beginning at production start-up. Better cavity-filling behaviour. Narrowest tolerances. Minimum warping and shrinkage. Better surface structure of the parts. In brief: Continuous high-quality production.


**In the manufacture of injection moulded parts, correct mould temperatures – ensured by Regloplas temperature control units – can reduce reject rates by 24% and improve productivity by up to 20% (Research report by the Aachen Technical University).**

## Standard equipment

- Controller RT 22 (model 150), RT 30 (models 90 S, 150 S) or control system RT 45 → Optimal fit for practically every application. For technical data see page 16.
- Tank and cover made of stainless steel → Long service life.
- All components exposed to water are made of non-rusting materials → Long service life.
- Fluid level acoustic alarm (except model 150).
- Sturdy and powerful leak-free centrifugal pump with generously dimensioned motor for circulation of the thermal oil even at low temperatures → Safe operation.
- Low thermal load of the fluid, small filling quantity, short circulating time → Long service life of the heat transfer oil, good regulating behaviour, economical operation.
- Specially-treated heater elements for high corrosion resistance → Safe operation, long service life.
- Safety cut-outs → No fuses to be replaced in case of failure (if heating cap. > 10 kW).
- Electric control in accordance with IEC standards. Degree of protection IP 40. Tropic-proof up to 90% humidity. Completely separated from the pumping section and protected against direct contact → Safe operation.
- Safety thermostat → Protection against overheating.
- Automatic fluid level control → Protection against running dry.
- Filter in water mains inlet.
- Fail-safe circuit in case of heat contactor malfunction. Current to the heater is interrupted by an overriding main contactor → Protection against overheating of unit.
- Suction and leak-stop operation (standard with controller RT 22 and RT 30).
- Castors.
- In accordance with the following standards:
  - EU Machine Guidelines 89/392/EEC.
  - Electrical equipment of industrial machines EN 60204-1, 1997.
  - EU Guidelines Electro-Magnetic Compatibility EN 50081-1, EN 50082-2.
  - Low voltage standards 73/23/EWG, 1997.
  - Low voltage switchgear and controlgear assemblies. Part 1. EN 60439-1, 1999.

  → High degree of operational reliability.

## Operational features

- Solid-state relay (SSR) instead of heating contactor.
- Automatic water refilling. Model 90 S standard.
- Internal/external sensor switch-over (only controller RT 22, RT 30/Pt 100).

## Selection of the unit

- Necessary data see page 21.

**90 S**
**150 S**
**150**

**Further options see control system RT 45, page 16.**

**Small-unit assembly: From standard units to special designs, Regloplas offers customised solutions.**

| Technical data | | | 90 S | 150 S | 150 | |
|---|---|---|---|---|---|---|
| **Outlet temperature** | max. | °F | 200 | 300 | 200 | 300 |
| **Heat transfer fluid** | | | Water | Oil | Water | Oil |
| Filling quantity | | Gal | 1.5 | 3 | 4.5 | 4.5 |
| Expansion volume | max. | Gal | 1 | 1 | 1.5 | 1.5 |
| **Heating capacity** at 400 V | | kW | 6; 9 | 6 | 12; 18 | 12 |
| **Cooling capacity** | | kW | 38 | 28 | 50 \| 70 | 58 \| 70 |
| at outlet temperature | | °F | 175 | 285 | 175 \| 105 | 285 \| 140 |
| Cooler (K) | | | 1 | 1 | 1 \| 2 | 1 \| 2 |
| Diagram (Fig.) | | | 1 | 2 | 1 | 2 |
| **Pump capacity/type** | | | TP 20 \| TS 22 | TP 20 \| TS 22 | TP 20 \| TS 22 | TP 20 \| TS 22 |
| Flow rate | max. | GPM | 16 \| 18 | 16 \| 18 | 16 \| 18 | 16 \| 18 |
| Pressure | max. | psi | 55 \| 78 | 55 \| 78 | 55 \| 78 | 55 \| 78 |
| Motor | | HP | 0.7 \| 1.5 | 0.7 \| 1.5 | 0.7 \| 1.5 | 0.7 \| 1.5 |
| Diagram (Fig.) | | | 3 | 3 | 3 | 3 |
| **Control** | | | RT 30 \| RT 45 | RT 30 \| RT 45 | RT 22 \| RT 45 | |
| Measuring mode (standard) | | | Pt 100 | Pt 100 | Pt 100 | |
| **Operating voltage** (standard) | | V/Hz | 220-575 V/60 Hz/3 PE | | | |
| **Connections** | | | | | | |
| Outlet/inlet | | | NPT 1/2" | NPT 1/2" | NPT 3/4" | |
| Cooling water mains | | | NPT 1/2" | NPT 1/2" | NPT 1/2" | |
| **Dimensions** W/H/D | | in | 8/22/26 | 8/25/27 | 14/27/28 | |
| **Weight** | approx. | lb | 95 | 110 | 170 | |
| **Color** | Gray | RAL | 9006/7016 | | 7035/7024 | |
| **Ambient temperature** | max. | °F | 105 | | | |
| **Noise level** | | dB(A) | < 70 | | | |

## Models

| Unit | Heating capacity (kW) | Pump | Cooler (K) | Control |
|---|---|---|---|---|
| **90 S** | **6; 9** | **TP 20; TS 22** | **1** | **RT 30; RT 45** |
| **150 S** | **6** | **TP 20; TS 22** | **1** | **RT 30; RT 45** |
| **150** | **12; 18*** | **TP 20; TS 22** | **1; 2** | **RT 22; RT 45** |

**Example for ordering** **90S/9/TP 20/1K/RT 45**

* Water

**Cooling capacity** $P$ as a function of outlet temperature $\vartheta$.

Cooling water data:
Inlet temperature 68 °F.
Flow rates 3 GPM; model 150: 5 GPM.

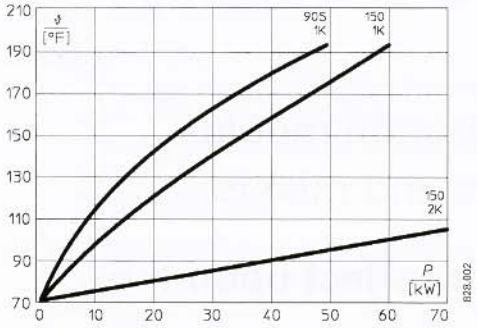


*Fig. 1: Fluid water*

**Pump capacity.** Flow rate $V$ as a function of pressure $p$.


*Fig. 3: Pump capacity*

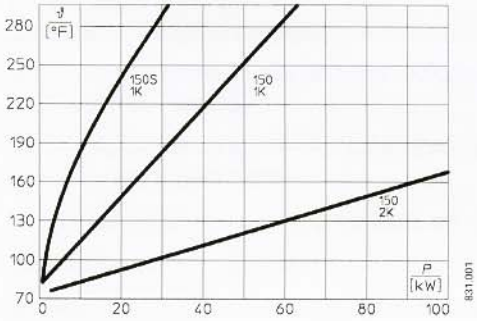


*Fig. 2: Fluid thermal oil*

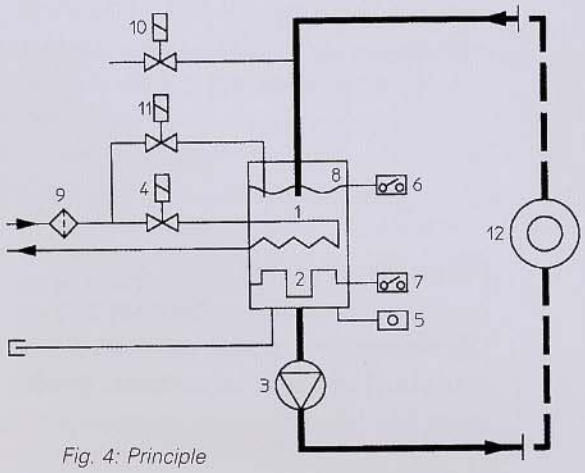


*Fig. 4: Principle*

1 *Cooler*
2 *Heater*
3 *Pump*
4 *Solenoid valve, cooling*
5 *Temperature sensor*
6 *Level control*
7 *Safety thermostat*
8 *Tank*
9 *Filter, water mains*
10 *Solenoid valve, consumer drainage (optional with control system RT 45)*
11 *Solenoid valve, automatic water refilling (optional model 150)*
12 *Consumer*