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*This is a product
manufactured
in Switzerland*
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Temperature Control Unit

*For permanent temperatures up to 360°C with heat transfer oil
Heating capacity: 16 kW or 24 kW*

Operational use:

Moulds in the die casting industry, small rollers and plates

Features included

- Digital flow indication with control of the minimum flow.
- Self-optimizing temperature controller with digital display of the set and actual temperature. With high precision regulation in $\frac{1}{10}^{\circ}$ range; can be adjusted to read °C or °F.
- Automatic temperature control.
- Reversing switch for temperature controlling at the mould.
- Leakstopper device – unit can be used in pressure or vacuum mode. No medium is lost at leaking tools, therefore ensuring continuous production.
- Automatic mould drain.
- Heating switchable in stages – the unnecessary heating capacity will switch off automatically.
- Lime scale free heat exchanger.
- Leak free high temperature pump with axial face seal or with seal less magnetic drive.
- Hot oil circuit with by-pass, which ensures internal circulation if valves are closed.
- Expansion tank with a drip pan.
- No oil cracking because of special construction of the heating elements.
- Safety devices:
 - Automatic level control for dry run protection.
 - Electronic temperature limiter in the controller and separate mechanical safety thermostat.
 - Main switch, transformer and motor protection switch.
 - Horn in case of failure.
- All failures are visually indicated.
- Unit on castors.

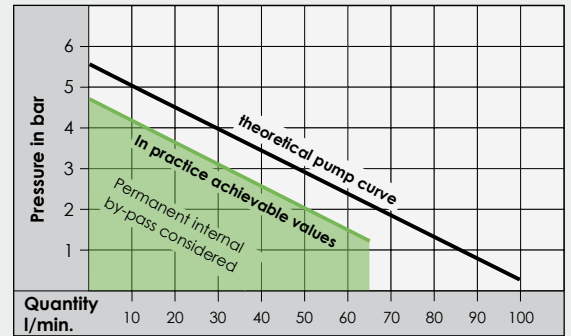


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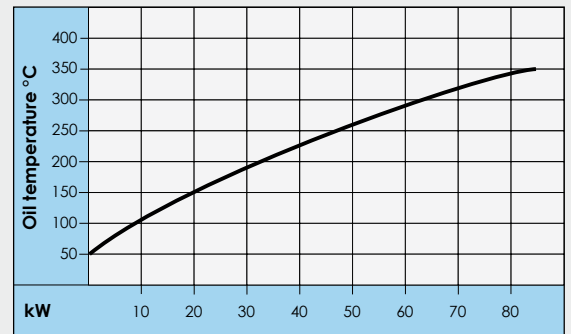
Technical data

	TT-390 Z or A	TT-390 Z or A
Temperature range	up to 360°C with heat transfer oil TOOL-THERM SH-3	
Temperature control	self-optimizing, electronic microprocessor controller MP-888 with digital display of the set and actual value. Automatic temperature monitoring.	
Flow control	electronically, with digital display and automatic control of the minimum flow.	
Heating capacity	16 kW	24 kW
<i>Switchable in stages</i>	8/8	8/16
Cooling capacity	90 kW at 360°C circulating temperature	
Pump capacity	motor 1,8 kW	
<i>Pressure mode</i>	max. 5,5 bar / max. 100 l/min.	
<i>Vacuum mode</i>	vakuu max 8 mH ₂ O	
<i>Model Z</i>	pump with axial face seal and triple bearing system	
<i>Model A</i>	pump with seal less magnetic drive	
Temperature measurement at the mould	yes	yes
Leakstopper and mould drain	yes	yes
Expansion tank capacity	21 litres	21 litres
Filling amount	15 litres	21 litres
Expansion volume	16 litres	16 litres
Connections	Oil circuit ¾" BSP female thread Cooling water 1" BSP male thread	
	inlet water filter	1" BSP female thread
	outlet non-return valve	1" BSP female thread
Dimensions (LxWxH)	1'240 x 480 x 1'400 mm, incl. castors	
Weight	approx. 205 kg empty	approx. 215 kg empty
Colour	silvergrey RAL 7001	

Pump diagram



Cooling diagram



All possible voltages are available from 3 x 200 V to 3 x 600 V and 50/60 Hz. The units are available conform to UL/CSA specifications. For the USA market the units are equipped with NPT-thread connections and the controller is adjusted to indicate °F.

Electronic temperature controllers

The electronic controllers MP-888 and MP-988 can be operated to read °C or °F. The analog interfaces 0-5 V, 0-10 V and 4-20 mA are standard included in the controllers - **without additional costs**.

The self-optimizing feature on these controllers allows a very high regulating accuracy even at high temperatures and adheres to the set temperatures independently of the consumer size.

Flow control:

The indication of the flow rate is possible in litres or gallons per minute. As soon as the flow falls below a minimum, the alarm is activated.

Standard controller MP-888



Set temperature (required temperature)
 Actual temperature (effective temperature)
 Indication of the flow

Analog interfaces

- 0 - 5 V, 0 - 10 V, 4 - 20 mA

Digital interface controller MP-988 (Optional)



Digital interface

- RS-485, RS-232, Current Loop 20 mA, CAN-bus, Profibus
- Incl. all existing machine protocols

Temperature difference monitoring

Indication of up to three temperatures

Analog interfaces

- 0 - 5 V, 0 - 10 V, 4 - 20 mA

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