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*This is a product
manufactured
in Switzerland*

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TT-390/2
16 / 24 kW

Temperature Control Unit

*For permanent temperatures up to 360°C with heat transfer oil
Heating capacity: 2 x 16 kW or 2 x 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.

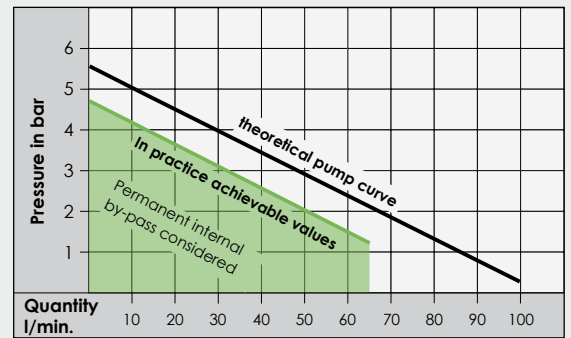


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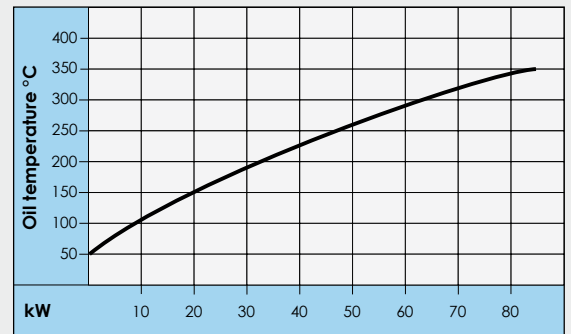
Technical data

	TT-390/2 Z or A	TT-390/2 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	2 x 16 kW	2 x 24 kW
<i>Switchable in stages</i>	2 x 8/8	2 x 8/16
Cooling capacity	90 kW per circuit 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	1 x 46 litres	1 x 46 litres
Filling amount	1 x 30 litres	1 x 42 litres
Expansion volume	1 x 36 litres	1 x 36 litres
Connections	¾" BSP female thread	
<i>Oil circuit</i>	inlet water filter 1" BSP female thread	
<i>Cooling water</i>	outlet 1" BSP male thread	
Dimensions (LxWxH)	1'240 x 720 x 1'400 mm, incl. castors	
Weight	approx. 335 kg empty	approx. 375 kg empty
Colour	silvergry 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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