

Heating and Cooling Unit

TT-708 Y

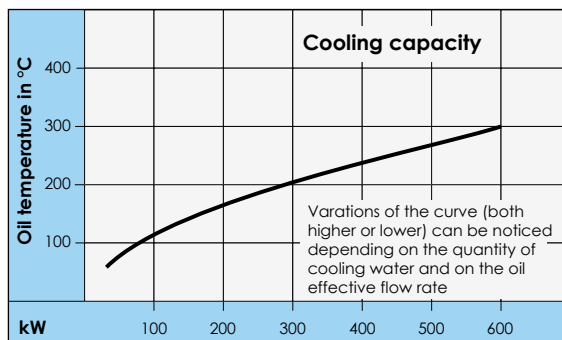
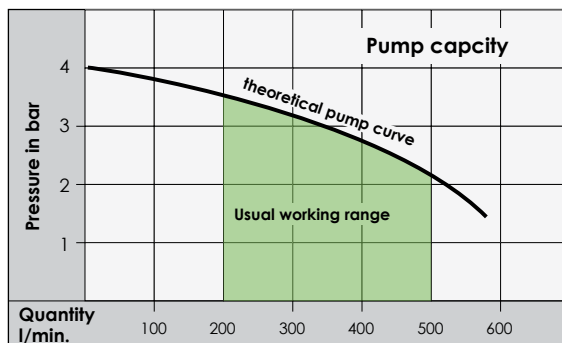
Temperature range 80°C up to 300°C
Heating capacity 72 kW / 120 kW / 144 kW

Operational use:
rollers, plates, double walled vessels and other heavy duty use



Features included

- Self-optimizing temperature controller with digital display of the set and actual temperature. With high precision regulation in $1/10^{\circ}$ range; can be adjusted to read °C or °F.
- Automatic temperature control - difference between set and actual temperature activates an alarm.
- Digital flow indication with control of the minimum flow.
- Lime scale free heat exchanger.
- 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.
- Heating with automatic cascade connection.
- With regulation of pressure.
- Safety devices:
 - 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.



Operating principle

Closed hot oil circuit with overlaying cold oil receiver in a large expansion tank. Long life expectancy of the oil with no cracking, due to low watt density heating elements and a high flow rate. A drip pan under the expansion tank prevents the unit from getting dirty if it is filled incorrectly. This model is designed for highest temperatures and optimum safety.

Heat exchanger

The lime scale free heat exchanger is a special construction made of stainless steel and is also produced by TOOL-TEMP. The possibility to dismantle the heat exchanger grants fast and easy cleaning, although this will not be necessary during the first operating years.



TOOL-TEMP

Technical data

There are 3 different models available

Temperature range	up to 300°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 <i>Switchable in stages</i>	72 kW 16/16/16/8/8/8	120 kW on request	144 kW 32/32/32/16/16/16
Cooling capacity	approx. 600 kW - see diagram cooling capacity		
Pump capacity	motor 7.5 kW max. 4 bar / approx. 200 - 500 l/min - see diagram pump capacity		
Expansion tank capacity	130 litres	130 litres	130 litres
Filling amount	100 litres	200 litres	200 litres
Expansion volume	120 litres	120 litres	120 litres
Frequency inverter for regulation of pressure	yes	yes	yes
Connections <i>Oil circuit</i>	Flange connection DN 50 flange-outside Ø 165 mm, with 4 holes Ø 18 mm on a screw hole circle of 125 mm recommended sealing: 100 x 60 x 2 mm		
<i>Cooling water circuit</i>	1½" BSP female thread (required water pressure 1.5 - 4 bar)		
Dimensions (L×W×H)	2'150 × 1'300 × 1'950 mm		
Weight (empty)	approx. 1'100 kg	approx. 1'270 kg	approx. 1'270 kg
Colour	silver grey RAL 7001		

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

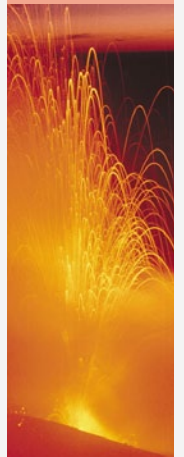
- RS-485, RS-232, Current Loop 20 mA, CAN-bus, Profibus
- Incl. all existing machine protocols

Temperature difference monitoring

Indication of up to three temperatures

Analog interfaces

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



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