

Working principle:

Closed hot oil circuit with integral cold oil receiver in a large expansion tank. Oil cracking is impossible. Long life expectancy of oil due to low loaded heating elements and a high flow rate. A drip pan under the expansion tank prevents the unit from getting dirty if it gets filled incorrectly. This model is designed for highest temperatures and optimum safety.

- **No cracking of the thermal oil**
Due to low loaded heating elements and a closed hot oil circuit with integral cold oil receiver.
- **Leak free pumps**
There is the choice between the standard pump with axial face seal and triple sealing system (Model Z) or the pump with seal less magnetic drive (Model A).
- **Lime scale free heat exchanger**
The cooling water gets drained out of the heat exchanger automatically after the cooling stops.
- **Digital interfaces**
As using another temperature controller, all known interfaces can be individually chosen. Please see separate leaflet.

TOOL-TEMP AG Switzerland - headquarters and manufacturer



TOOL-TEMP product range

Temperature control units approx. 60 models for the plastic industry, for the die casting industry, for the pharma industry and the chemistry - from 3 kW up to 144 kW heating capacity

Water chillers from 5 kW up to 500 kW cooling capacity

Conditioning baths for polyamide parts



Mould heating- and cooling unit

TT-388

For permanent temperatures up to 360°C with heat transfer oil
Heating capacity of 16 kW, 24 kW, 32 kW and 48 kW

With electronic flow control

Single-circuit and double-circuit units

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 unit with digital display of the set and actual temperature. With high precision regulation in $1/10^\circ$ range.
- 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.
- Automatic temperature control.
- Heating switchable in stages - the unnecessary heating capacity will switch off automatically.
- Lime scale free heat exchanger made of stainless steel.
- 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.
- Safety devices:
 - Automatic level control for dry run protection.
 - Separate mechanical safety thermostat and electronic temperature limiter installed in the controller.
 - Main switch, automatic cutouts, transformer and motor protection switch.
- Horn in case of failure.
- Castors.

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Technical data

Model
Heating capacity
Switchable in stages
Temperature range
Temperature control
Temperature measurement at the mould
Flow control
Leakstopper and mould drain
Cooling capacity
Pump capacity
Pressure mode
Vacuum mode
Model Z
Model A
Expansion tank capacity
Filling amount
Expansion volume
Connections
Oil circuit
Cooling water
Dimensions in mm
Length x Width x Height
 3 x 380 - 600 V
 3 x 200 - 230 V
Weight (empty)
Colour

Single-circuit units

TT-388 Z or A	TT-388 Z or A	TT-388 Z or A	TT-388 Z or A
16 kW	24 kW	32 kW	48 kW
8/8/16 kW	8/16/24 kW	8/24/32 kW	8/8/16/16/48 kW
up to 360°C with Marlotherm SH / up to 270°C with mineral thermal oil.			
self-optimizing, electronic microprocessor controller MP-888 with digital display of the set and actual value. Automatic temperature monitoring.			
yes	yes	yes	no
electronically, with digital display and automatic control of the minimum flow.			
yes	yes	yes	no
approx. 40 kW	approx. 40 kW	approx. 40 kW	approx. 70 kW
motor 1.8 kW			
max. 5,5 bar / max. 100 l/min.			
vacuum max. 9 mH ₂ O			
pump with axial face seal and triple sealing system			
pump with seal less magnetic drive			
21 litres	21 litres	46 litres	46 litres
15 litres	21 litres	27 litres	70 litres
16 litres	16 litres	36 litres	36 litres
<i>3/4" female thread</i>	<i>3/4" female thread</i>	<i>3/4" female thread</i>	<i>1" female thread</i>
<i>1" male thread</i>	<i>1" male thread</i>	<i>1" male thread</i>	<i>1" male thread</i>
1300 x 480 x 1400	1300 x 480 x 1400	1300 x 480 x 1500	1300 x 720 x 1400
1300 x 480 x 1400	1300 x 480 x 1400	1300 x 480 x 1500	-
approx. 205 kg	approx. 215 kg	approx. 235 kg	approx. 345 kg
Silver grey RAL 7001	Silver grey RAL 7001	Silver grey RAL 7001	Silver grey RAL 7001

Double-circuit units

TT-388/2 Z or A	TT-388/2 Z or A
2 x 16 kW	2 x 24 kW
2 x 8/8/16 kW	2 x 8/16/24 kW
yes	yes
approx. 40 kW	approx. 40 kW
<i>3/4" female thread</i>	<i>3/4" female thread</i>
<i>1" male thread</i>	<i>1" male thread</i>
1300 x 720 x 1400	1300 x 720 x 1400
1300 x 720 x 1400	-
approx. 335 kg	approx. 375 kg
Silver grey RAL 7001	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.

All models can be delivered with digital interfaces. All known interface possibilities can be set in the controller MP-794 or MP-988. Therefore no special inserting cards are necessary. Our controllers already contain approx. 30 different digital interfaces.

Electronic temperature controller MP-888

The electronic controller can be adjusted to indicate °C or °F. The analogue interfaces 0 – 5 V, 0 – 10 V and 4 – 20 mA are standard included in the controller – there is **no additional price** for them.

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



Set temperature / required temperature
 Adjustable in 1/10° range

Actual temperature / effective temperature displayed in 1/10° range

Indication of flow rate in different units, possible are litres per minute with 1/10 litres display. Switchable from English gallons to American gallons. As soon as the flow falls below a minimum, the alarm is activated.

Flow control with automatic or manual pre-adjusted mode:
 Automatic: The electronic flow control measures the actual flow, generates automatically a minimum flow and as soon as the flow falls below this value, the alarm will be activated.
 Manual: The minimum flow can be adjusted manually. As soon as the flow falls below this value, the alarm will be activated.

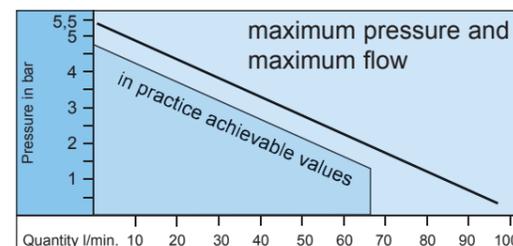
The "heart" of the unit

Pump model Z:

High temperature pump developed and produced by TOOL-TEMP for temperatures up to 400°C. Pump shaft with three bearings and special lubrication. We guarantee a leak free system and a leak free pump, also if the unit works at the maximum temperature. The unit does not have to be cooled down before switching off.

Pump model A:

The same pump but with a seal less magnetic drive. Developed and produced by TOOL-TEMP.



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 few operating years.

