Thermogel TD

High Precision Temperature Controllers

PROFILE:

- Working fluid — Water
- Working temperature up to max. : — 90°C
- Models: — Single zone (M) Double zone (D)
- Configuration: — Direct cooling, heating with electric heaters
- Applications: — Injection moulding, blow moulding, extrusion.

ADVANTAGES:

- High flow rate (ΔT = 2°C)
- High Cooling capacity
- High product precision
- Minimum running costs
- Simple and safe use
- Maximum repeatability and process efficiency

SPECIFICATIONS:

- **CONTROL PANEL**

Interface is easy and simple to use.
The Display shows the temperature level in big types and there is a wide alphanumeric operating screen.

- **MICROPROCESSOR**

Monitoring of several parameters (operating pressure and temperature). Temperature control with precision of ±0,3°C, The temperature variation is tune-up following a proportional-integral logic.
Permanent digital read-out of the process water temperature and pressure. Messages are shown in the selected language among the five available.

- **CONTROL AND ELECTRICAL CIRCUIT**

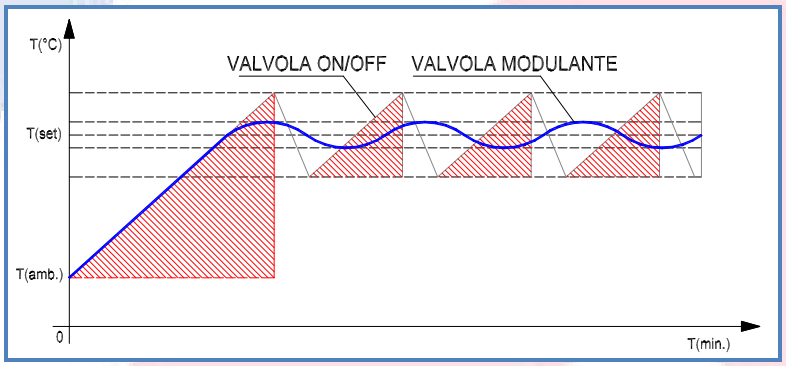
Electrical panel EN 60204/1, IP 55 certified with shut-off switch .
Procedures are completely automatic for loading and unloading mould circuit.
Main alarms: no flow, high and low pressure in the circuit, short circuit or disconnection of any probe, temperature warning for prolonged deviation from the set-point. Acoustic alarm, prearranged optic alarm, which can be also remote-installed.

- **INTERFACEABILITY**

Serial protocol for production machines of the most famous trademarks. Signal retransmission and remote-set analogue signals.

- **HYDRAULIC CIRCUIT**

High-performance stainless steel pumps, with special seal and tropicalized motor (up to +60°C).
Pressure adjustment by-pass device. Manual or automatic loading. A kit for the automatic draining of the unit circuit is available.
The internal hydraulic circuit consists of 100% of stainless materials so to ensure maximum life.
Safety valve.
Temperature control system consisting of a modulating adjusting valve: precision and energy saving.



- **FRAME**

Made of steel painted with epoxy powder, removable panels, installation on rotating wheels.

- **AVAILABLE RANGE**

Heating power is 6 and 12kW by means of Incoloy® low surface load heating elements.

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Frigel Intelligent Process Cooling

TECHNICAL FEATURES

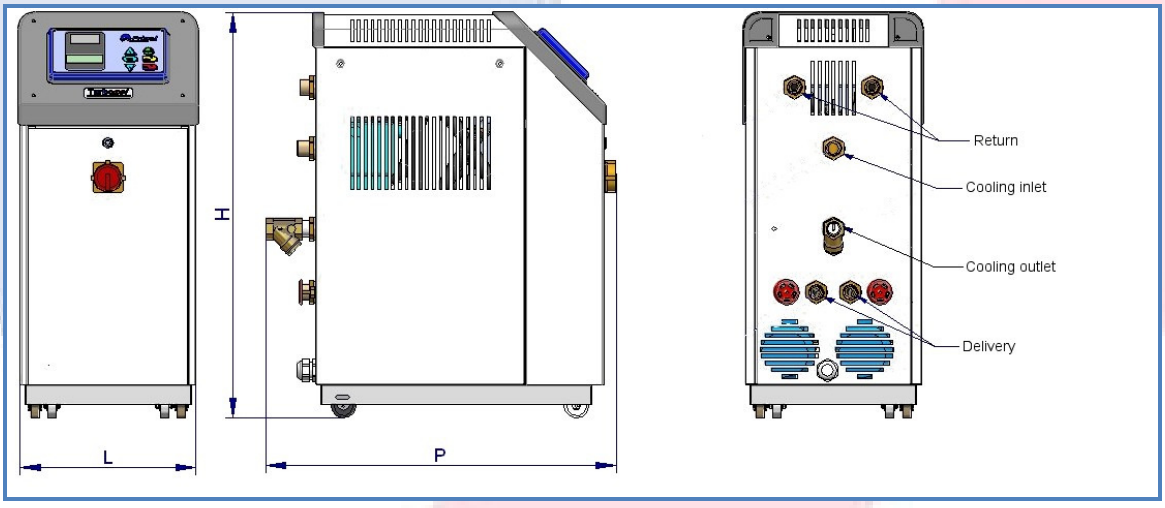
Thermo*gel*		TDM		TDD	
Model		**90/6**	**90/12**	**90/12**	**90/24**
Circulating medium	-	water			
Maximum temperature	°C	90			
Temperature accuracy	°C	± 0,3			
Heating capacity	kW	6	12	12	24
Cooling system	D/I	Direct			
Specific cooling capacity (*)	kW/°C	5	10	5	10
Control valve	-	Proportional			
Process Pumps Standard (**)	kW	0,45	0,75	0,45	0,75
	l/min	30	70	30	70
	bar	2,5	2,5	2,5	2,5
Nominal Values	kW (50Hz)	6	13	13	26
	A 400V 50Hz	11	20	21	41
	A 220V 60Hz	20	35	39	70
	A 380V 60Hz	11	20	22	39
Sound level	dB(A) 10mt.	20	20	20	20
Connections to process	in/out	1"		1"	
Connections to cooling	in/out	1/2"		1"	
Lenght x depth - L x P	cm	26 x 54	26 x 54	36 x 59	45 x 70
Height - H	cm	66	66	83	95
Net weight	kg	50	55	80	90

(*) Cooling capacity each °C of temperature difference between process and cooling water at 2 bar of pressure

[**] Unit with two process pumps - Data for each pump.

Power supply = 400 Volt ± 15% 50Hz (available 220V±15% 60Hz; 380V±10% 60Hz ; 460V±15%; 60Hz UL listed)

Turbogel "Options and Accessories"		
Description	**Code**	**Options**
Remote temperature probe kit (7 meters Cable)	KTP	option
Interface kit with connector (5 meters Cable)	KSL	option
Timer kit	KTM	option
Remote set point (4-20mA)	KRR	option
Visual alarm	KAV	option
Remote start/stop function		standard
Auto-cooling function		standard
Delivery and return tempature visualization		standard
Delivery and return pressure visualization		standard
5 languages selection (ITA-ING-FRA-TED-SPA)		standard
Automatic filling		standard
Suction + drain functions kit		standard
Peripherical pump with special seal		standard
Pressure By-pass regulation		standard
Cooling control with proportional modulating valve		standard
Safety valve		standard
Flow alarm		standard
High and low pressure alarm		standard
Probe alarm		standard
Audible alarm		standard
Set point alarm		standard



Ordering Code Example: TDD90/12	**TD**	**D**	**90**	**12**
	TD Direct Cooling	M Single Zone D Double zone	Max Working Temperature	kW of Heating Elements