TURBOGEL - RBD/RBM

Turbogel

Water temperature control unit, double and single zone, with booster pumps.

Turbogel is a high efficiency thermoregulation unit, specially designed for high water flows and an accurate temperature control.

Digitally-synchronized with the molding machine, allows for researching and recording the best setting of flow rate and temperature for each zone, optimizing product quality with the minimum cycle cooling time.

Range available in 6 models for the dual zone version and 8 models for the single zone version, with heating capaci-ty from 6 to 48 kW.

Available with two versions of process pumps

- SP = standard pressure, high flow pumps
- HP = high pressure, high flow pumps

The choice of components, the assembly procedures and the rigorous final testing of 100% of the production gua-rantee continuous operation with maximum reliability, even in the most difficult conditions.

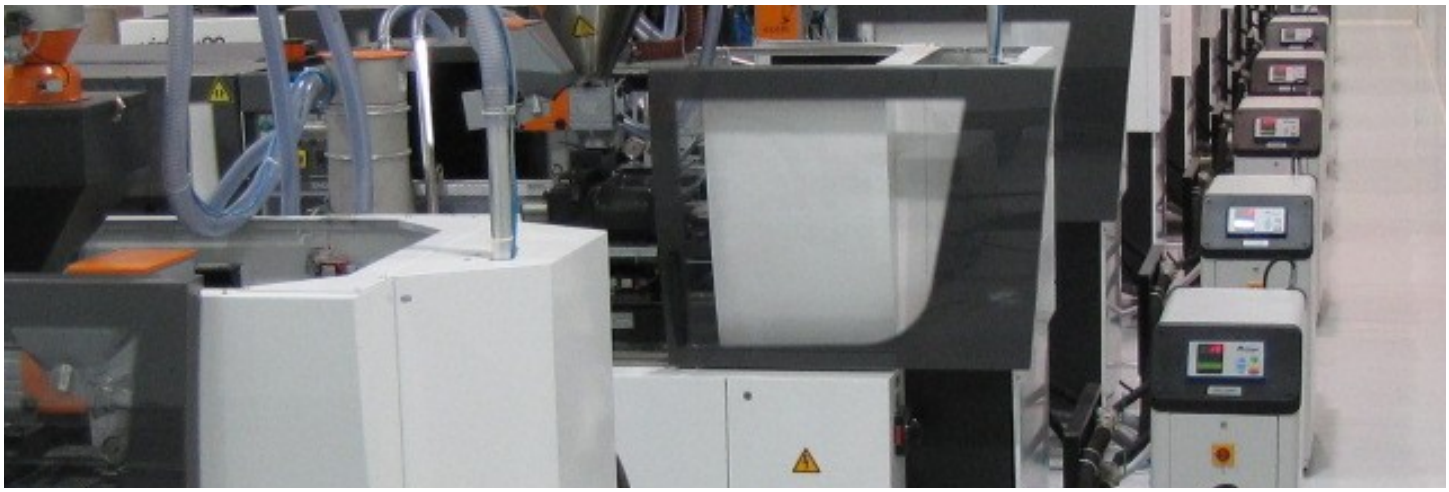
Turbogel

Main advantages

- Synchronization with the process
- Cycle time reduction up to 50%
- High cooling capacity
- High precision
- Available mold drain kits
- Web-monitoring interface
- Temperature, flow and pressure digital readings (IN/ OUT)

Options and accessories

- Mold drain kits: Hydraulic kit to allow automatic draining of the mold / user.
- Serial interface: Different serial interface protocols for IMM communication.
- Y strainer kit: Standard up to RBM130 and RBD130 included.
- Visual alarm: In addition to the acoustic alarm fitted as standard, a visual alarm is also available on request.
- Special versions with inverter on the pump on request.



Turbogel - RBD/RBM

Mold temperature control

- The mold temperature has a considerable influence on the quality of the molded piece and on the work cycle

Optimization of the production process

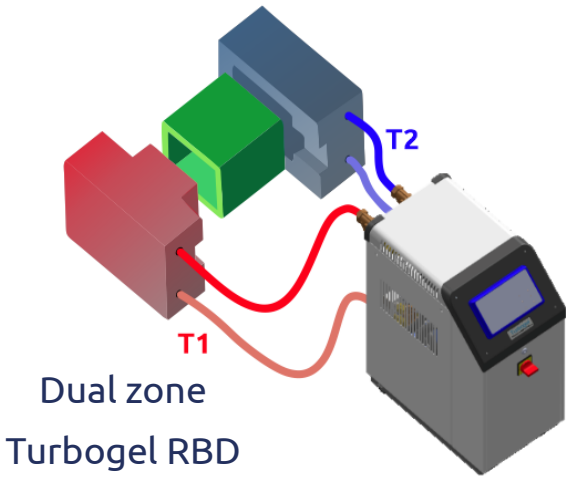
- Production capacity (cycle reduction, waste and dead time)
- Product quality (better aesthetics and consistent dimensional stability)
- Reduction in operating costs (reduction of scrap and energy savings)

Benefits for the process

- Perfect repeatability and high productivity
- Possibility of searching and storing the best cooling conditions
- Complete independence in setting work parameters
- **Pressure - flow - temperature control of each individual process**
- Precision in process temperature control
- **High cooling efficiency and minimal temperature differencial on the mold**
- High reliability
- **Maximum integration between Turbogel, machine and operator**

Benefits for the user

- **Low energy consumption and fast start-up**
- **Low pump energy consumption**
- Low losses related to thermal losses in the environment
- **Reduction of dead times for mold changeover and preheating**
- Low maintenance costs (simple and fast)



Dual zone

Turbogel RBD

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Turbogel - RBD/RBM

Standard functions

- Large character temperature reading display and a large alphanumeric management screen
- Multilingual interface
- Delivery temperature reading
- Reading of delivery and return pressure (for each zone)
- Water flow reading (for each zone)
- Calculation of pressure and flow differential
- Metric/IP system selectable from standard user panel
- Remote start/stop function
- High/low pressure differential protection
- Probe protection (interrupted and/or short-circuited)
- Prolonged signaling of set point deviation
- Automatic start-up venting and filling sequence
- Cooling control with motorized modulating valve (one for each zone)
- High efficiency process pump for each zone
- Filter on cooling water inlet (up to RB 130 included)
- Filter on water return from the process (up to RB 130 included)
- By-pass for standard pressure regulation (up to RB 130 included)
- Acoustic alarm
- Heavy duty caster for pivot handling

Main features

Water distribution equipment

- One or two process pumps with special high-performance mechanical seal in terms of flow rate and durability
- Wide range of flow rates
- Low surface load Incoloy heating elements and safety thermostat for resistances
- Temperature control system with proportional modulating valve for each zone, for precise temperature control
- Automatic start-up venting and filling sequence

Electrical and control equipment

- Electrical panel complete with door interlock switch
- Microprocessor controller developed according to Frigel specifications
- Possibility of installing the most well-known interface systems for communication with production machines and centralized supervision
- Complete monitoring of the hydraulic circuit using pressure and temperature sensors
- Complete display on the message display, in selected language
- Proportional-integral control logic for temperature control with error lower than ±1°C
- Procedures for loading and emptying the mold circuit
- Standard acoustic alarm
- Provision for installation of optical alarms, also remotable

Frame

- Made of folded metal sheet and painted with epoxy powder
- Removable panels
- Compact design and fitted with casters

Turbogel - RBD/RBM

Technical and dimensional data

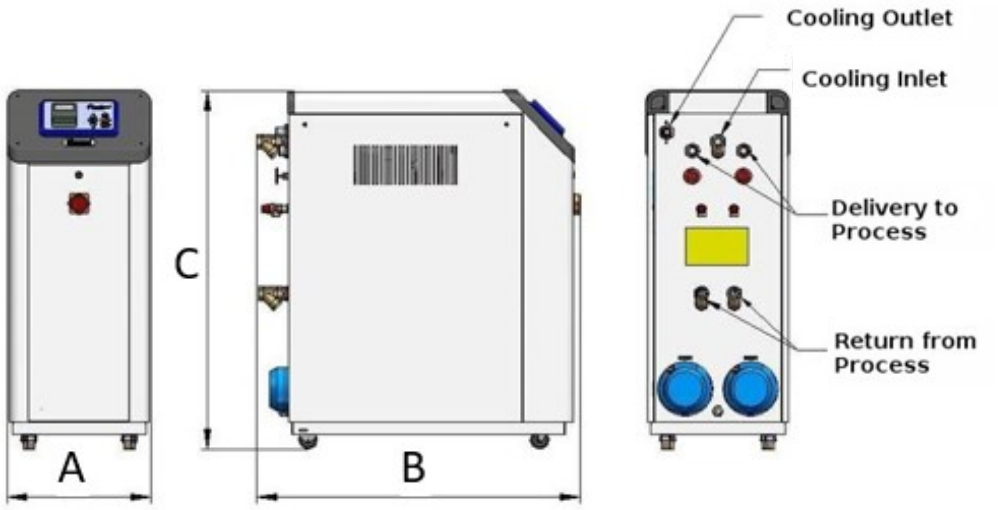
RBD - 50Hz

Turbogel - RBD								
Model			**18/12**	**40/12**	**80/12**	**130/24**	**210/24**	**450/48**
Power supply voltage and frequency			400V±10%/3/50Hz					
Heating capacity	kW		6+6			12+12		24+24
Motorized valve	Kv		1,0	2,5	5,0	10,0	16,0	25,0
	ø		G ½"		G ¾"	G 1"	G 1 ¼"	G 1 ½"
Standard process pump (*)	kW		0,45	0,75	1,5	1,8	3	5,5
High pressure process pump (*)	kW		-	-	1,5	2,2	5,5	7,5
Total max electrical load and FLA	Standard pump	kW	13	14	16	28	31	60
		A	21	23	26	45	48	91
	High pressure pump	kW	-	-	16	29	36	64
		A	-	-	26	47	57	99
Process connections			G 1"	2 X G 1 ½"			2 X 3" Victaulic	
Cooling connections			G ½"	2 X G 1"			2 X 2" Victaulic	
Net weight with SP pump	Kg		80	112	115	125	360	465
Net weight with HP pump	Kg		-	-	125	140	375	480
Sound level	dB(A) 10 m		< 42	< 42	< 42	< 42	< 42	45
Filter on cooling return			included				optional	

(*) Unit with two process pumps - data for each pump
Pumps rated up to 35% of Glycol

Available supply voltage: 400V±10%/3/50Hz; 460V±10%/3/60Hz; 380V±10%/3/60Hz;

Machine dimensions							
Model		**18/12**	**40/12**	**80/12**	**130/24**	**210/24**	**450/48**
A	mm	360	460			960	
B	mm	590	800			1.140	
C	mm	840	950			1.470	
Weights and dimensions refer to units in basic configuration, without added options							



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Turbogel - RBD/RBM

Technical and dimensional data

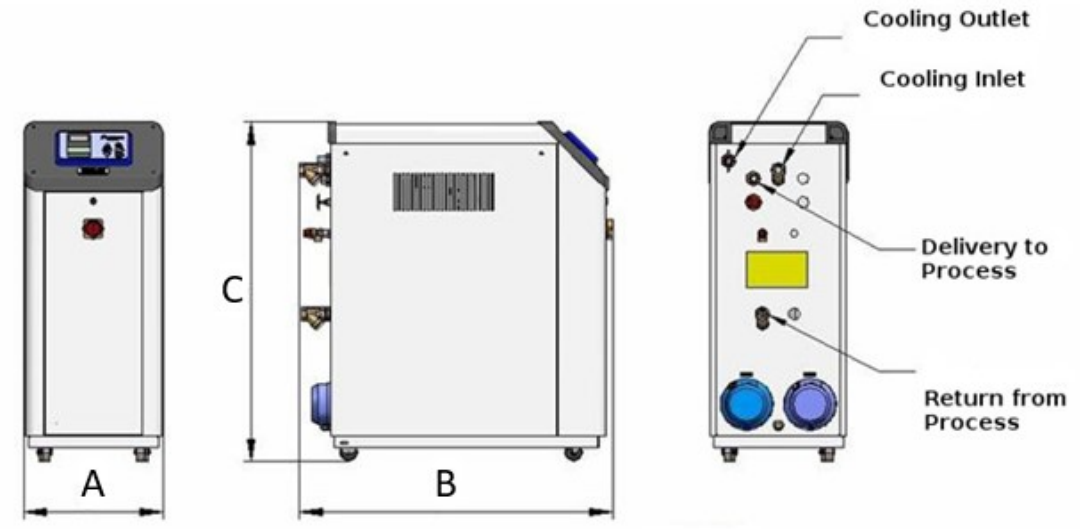
RBM - 50Hz

Turbogel - RBM									
Model			**18/6**	**40/6**	**80/6**	**130/12**	**210/12**	**450/24**	**900**	**1800**
Power supply voltage and frequency			400V±10%/3/50Hz							
Heating capacity	kW		6			12		24	-	
Motorized valve	Kv		1,0	2,5	5,0	10,0	16,0	25,0	38,0	63,0
	ø		G ½"		G ¾"	G 1"	G 1 ¼"	G 1 ½"	G 2"	DN65 (2 ½")
Standard process pump (*)	kW		0,45	0,75	1,5	1,8	3	5,5	11	18,5
High pressure process pump (*)	kW		-	-	1,5	2,2	5,5	7,5	11	18,5
Total max electrical load and FLA	Standard pump	kW	7	7	8	14	16	30	12	30
		A	11	12	13	23	24	46	21	33
	High pressure pump	kW	-	-	8	15	18	32	23	38
		A	-	-	13	24	29	50	40	66
Process connections			G 1"	G 1 ½"			3" Victaulic		4" Victaulic	6" Victaulic
Cooling connections			G ½"	G 1"			2" Victaulic		3" Victaulic	4" Victaulic
Net weight with SP pump	Kg		50	55	70	70	220	240	360	450
Net weight with HP pump	Kg		-	-	75	78	235	255	390	480
Sound level	dB(A) 10 m		< 42	< 42	< 42	< 42	< 42	45	51	51
Filter on cooling return			included				optional			

(*) Unit with two process pumps - data for each pump
Pumps rated up to 35% of Glycol

Available supply voltage: 400V±10%/3/50Hz; 460V±10%/3/60Hz; 380V±10%/3/60Hz

Machine dimensions									
Model		**18/6**	**40/6**	**80/6**	**130/12**	**210/12**	**450/24**	**900**	**1800**
A	mm	360	370			550		550	
B	mm	590	700			1.070		1.500	
C	mm	840	840			1.420		1.420	
Weights and dimensions refer to units in basic configuration, without added options									



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Turbogel - RBD/RBM

Process pumps curves

50Hz

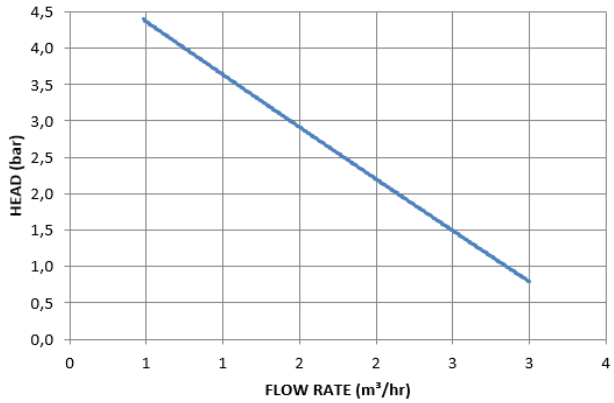
RBM single zone - single pump

RBD dual zone - two pumps

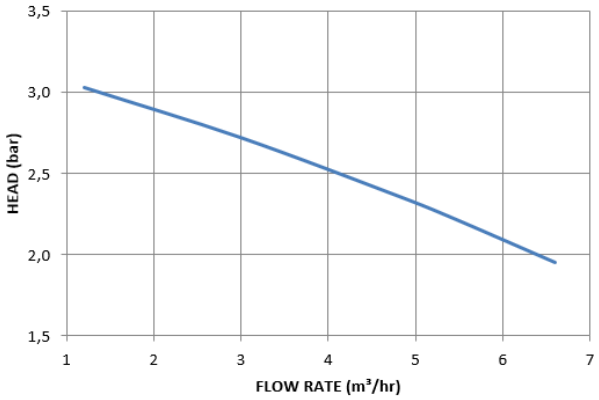
HP - HIGH PRESS

SP - STD PRESS

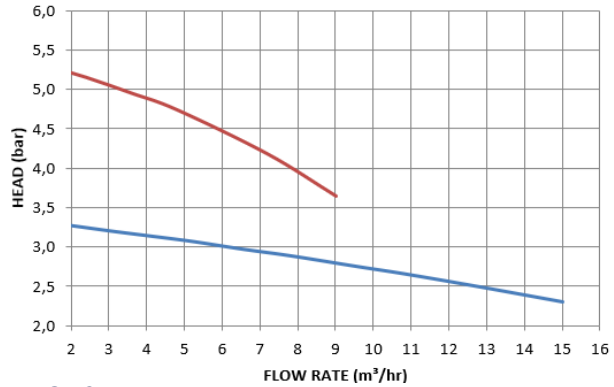
RB_18



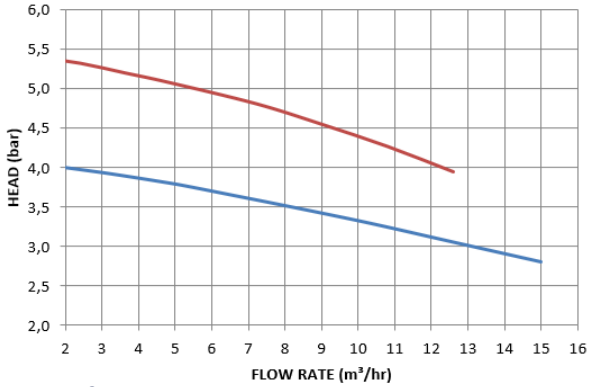
RB_40



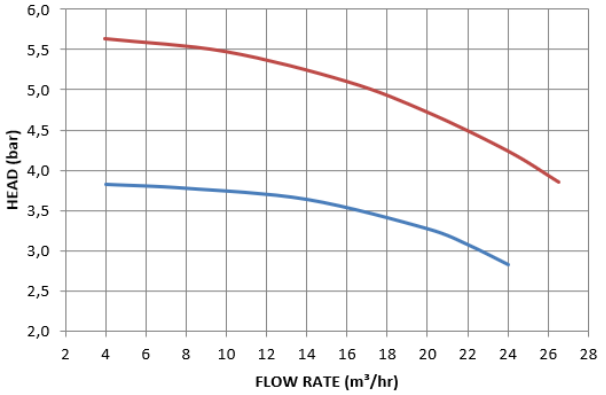
RB_80



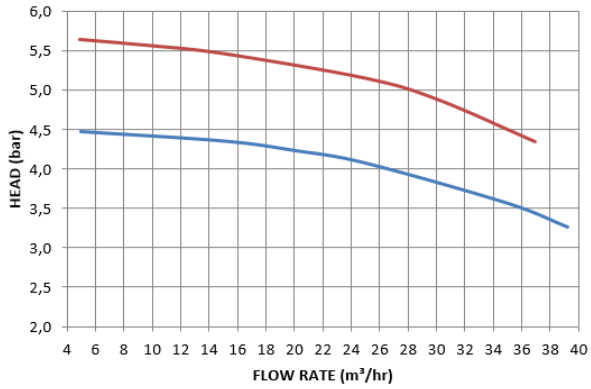
RB_130



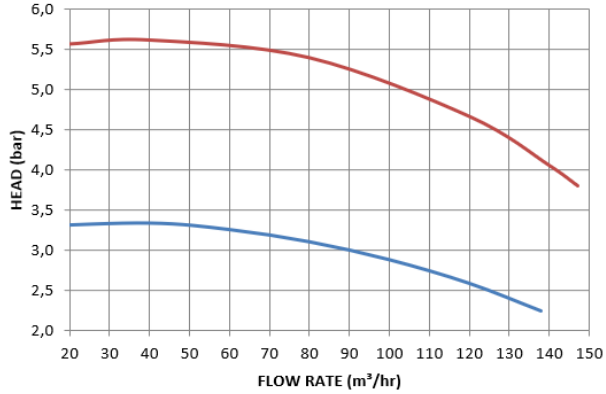
RB_210



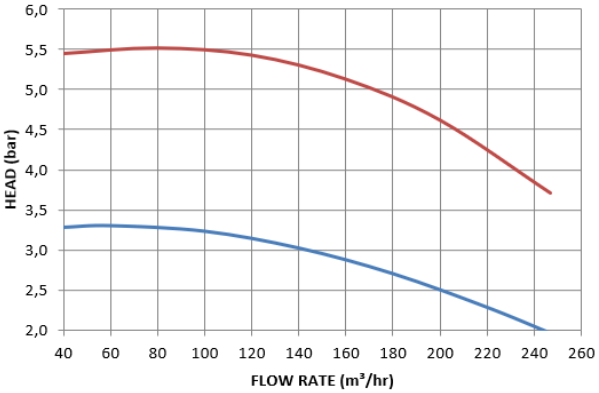
RB_450



RBM900



RBM1800



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Turbogel - RBD/RBM

Technical and dimensional data

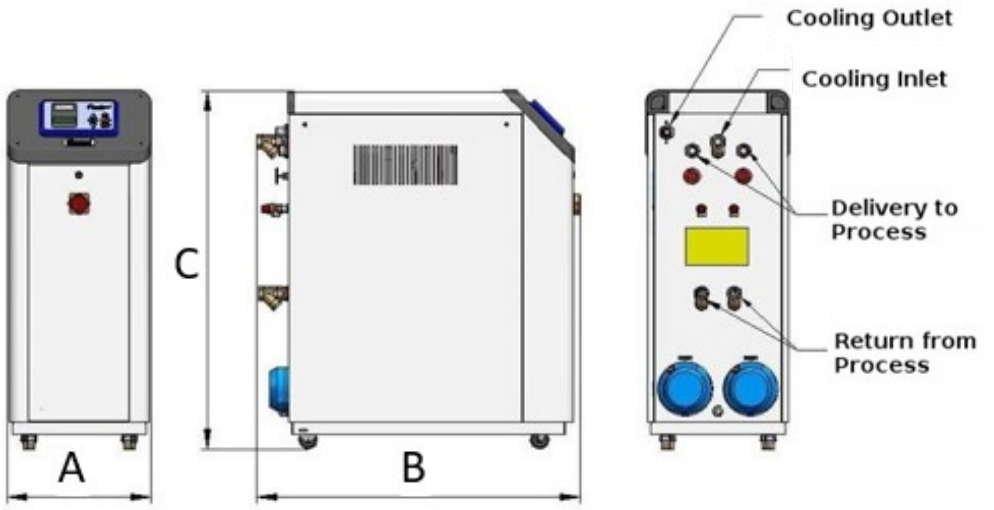
RBD - 60Hz

Turbogel - RBD								
Model			**18/12**	**40/12**	**80/12**	**130/24**	**210/24**	**450/48**
Power supply voltage and frequency			460V±10%/3/60Hz					
Heating capacity	kW		6+6			12+12		24+24
Motorized valve	Kv		1,0	2,5	5,0	10,0	16,0	25,0
	ø		G ½"			G 1"	G 1 ¼"	G 1 ½"
Standard process pump (*)	kW		0,45	0,75	1,5	2,2	3	5,5
High pressure process pump (*)	kW		-	-	1,5	2,2	5,5	7,5
Total max electrical load and FLA	Standard pump	kW	14	15	16	29	31	60
		A	23	20	25	39	42	80
	High pressure pump	kW	-	-	16	29	36	64
		A	-	-	23	39	50	88
Process connections			G 1"	2 X G 1 ½"			2 X 3" Victaulic	
Cooling connections			G ½"	2 X G 1"			2 X 2" Victaulic	
Net weight with SP pump	Kg		80	112	115	125	360	465
Net weight with HP pump	Kg		-	-	125	140	375	480
Sound level	dB(A) 10 m		< 42	< 42	< 42	< 42	< 42	45
Filter on cooling return			included				optional	

(*) Unit with two process pumps - data for each pump
Pumps rated up to 35% of Glycol

Available supply voltage: 400V±10%/3/50Hz; 460V±10%/3/60Hz; 380V±10%/3/60Hz;

Machine dimensions							
Model		**18/12**	**40/12**	**80/12**	**130/24**	**210/24**	**450/48**
A	mm	360	460			960	
B	mm	590	800			1.140	
C	mm	840	950			1.470	
Weights and dimensions refer to units in basic configuration, without added options							



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Turbogel - RBD/RBM

Technical and dimensional data

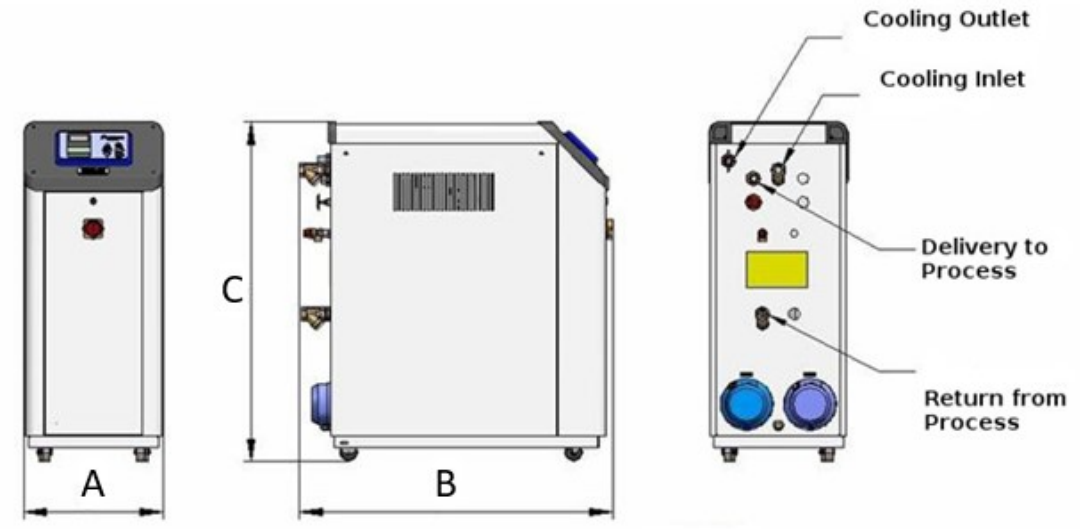
RBM - 60Hz

Turbogel - RBM									
Model			**18/6**	**40/6**	**80/6**	**130/12**	**210/12**	**450/24**	**900**	**1800**
Power supply voltage and frequency			460V±10%/3/60Hz							
Heating capacity	kW		6			12		24	-	
Motorized valve	Kv		1,0	2,5	5,0	10,0	16,0	25,0	38,0	63,0
	ø		G ½"			G 1"	G 1 ¼"	G 1 ½"	G 2"	DN65 (2 ½")
Standard process pump (*)	kW		0,45	0,75	1,5	2,2	3	5,5	11	18,5
High pressure process pump (*)	kW		-	-	1,5	2,2	5,5	7,5	22	37
Total max electrical load and FLA	Standard pump	kW	7	7	8	15	16	30	23	23
		A	10	10	12	20	21	40	34	34
	High pressure pump	kW	-	-	8	15	18	32	23	38
		A	-	-	13	20	28	44	34	56
Process connections			G 1"	G 1 ½"			3" Victaulic		4" Victaulic	6" Victaulic
Cooling connections			G ½"	G 1"			2" Victaulic		3" Victaulic	4" Victaulic
Net weight with SP pump	Kg		50	55	70	70	220	240	360	450
Net weight with HP pump	Kg		-	-	75	78	235	255	390	480
Sound level	dB(A) 10 m		< 42	< 42	< 42	< 42	< 42	45	51	51
Filter on cooling return			included				optional			

(*) Unit with two process pumps - data for each pump
Pumps rated up to 35% of Glycol

Available supply voltage: 400V±10%/3/50Hz; 460V±10%/3/60Hz; 380V±10%/3/60Hz

Dimensioni macchina									
Modello		**18/6**	**40/6**	**80/6**	**130/12**	**210/12**	**450/24**	**900**	**1800**
A	mm	360	370			550		550	
B	mm	590	700			1.070		1.500	
C	mm	840	840			1.420		1.420	
Weights and dimensions refer to units in basic configuration, without added options									



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Turbogel - RBD/RBM

Process pumps curves

60Hz

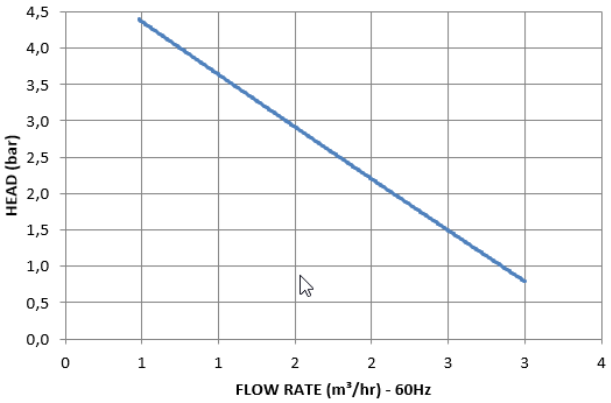
RBM single zone - single pump

RBD dual zone - two pumps

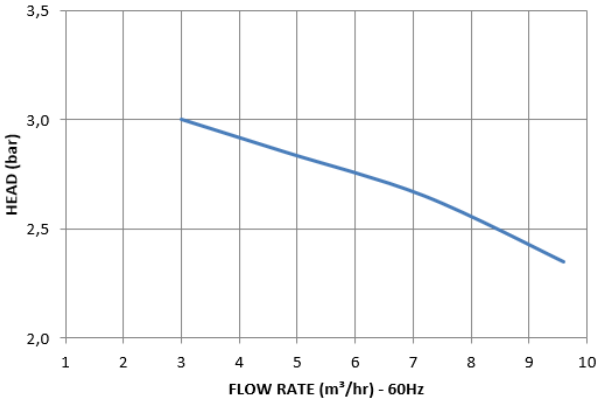
HP - HIGH PRESS

SP - STD PRESS

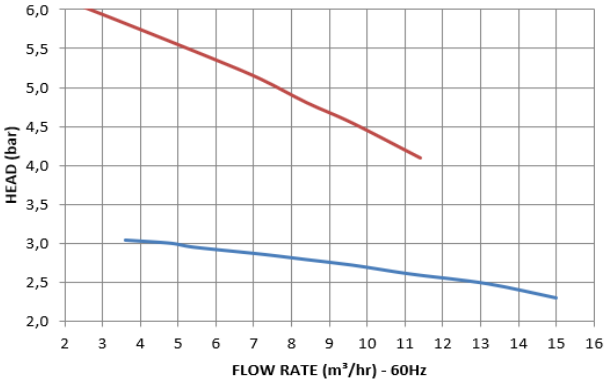
RB_18



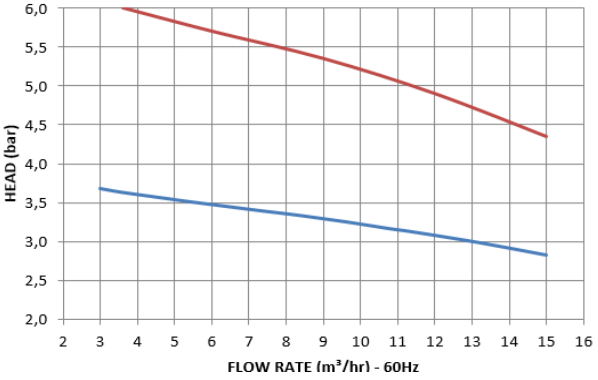
RB_40



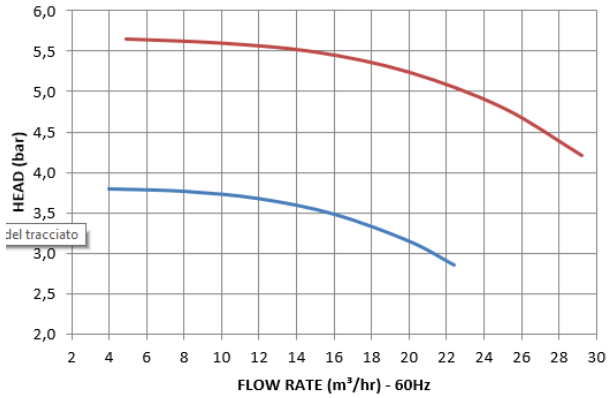
RB_80



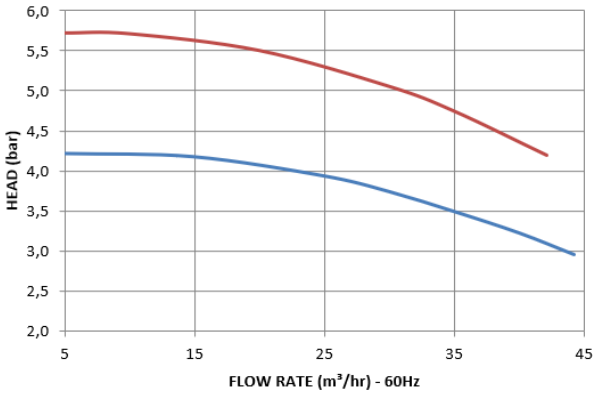
RB_130



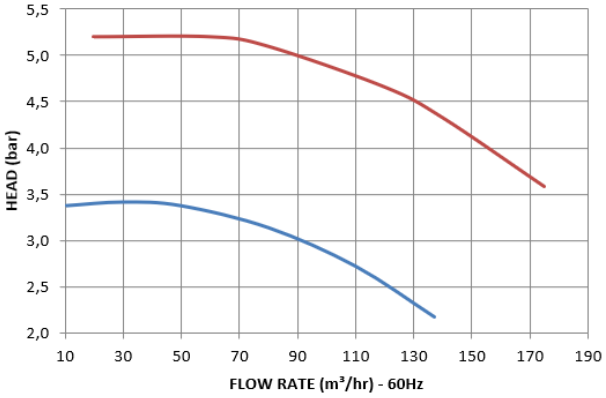
RB_210



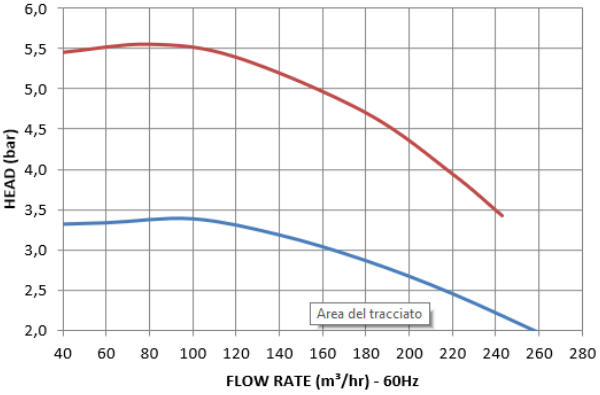
RB_450



RBM900



RBM1800



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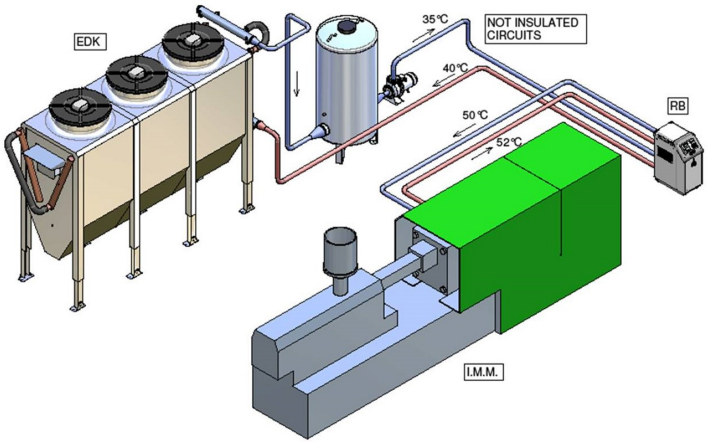
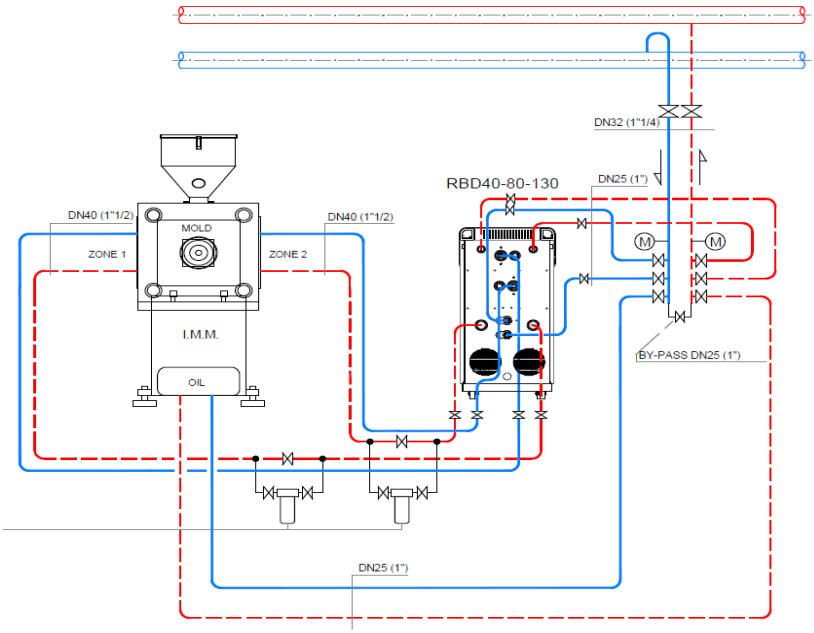
Turbogel - RBD/RBM

Connection example



Typical scheme of an adiabatic system for cooling of injection molding machine with **Turbogel** dedicated to the mold



Typical connection diagram of a **RBD Series Turbogel** to the injection molding and to the centralized circuit

Order code

N	R	B	M	0	1	8	N	S	1

Product name

M= mono
D = duo

Cooling zone

018	130	Mono
040	210	
080	450	
018	130	Duo
080	210	
130	450	

Size

N = not present
R = with heater/s

Heater/s

S = standard pressure
H = high pressure

Process pump type

0 = 400V-50Hz
1 = 460V-60Hz
3 = 380V-60Hz

Power supply as voltage/ frequency combination

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