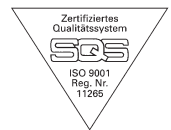
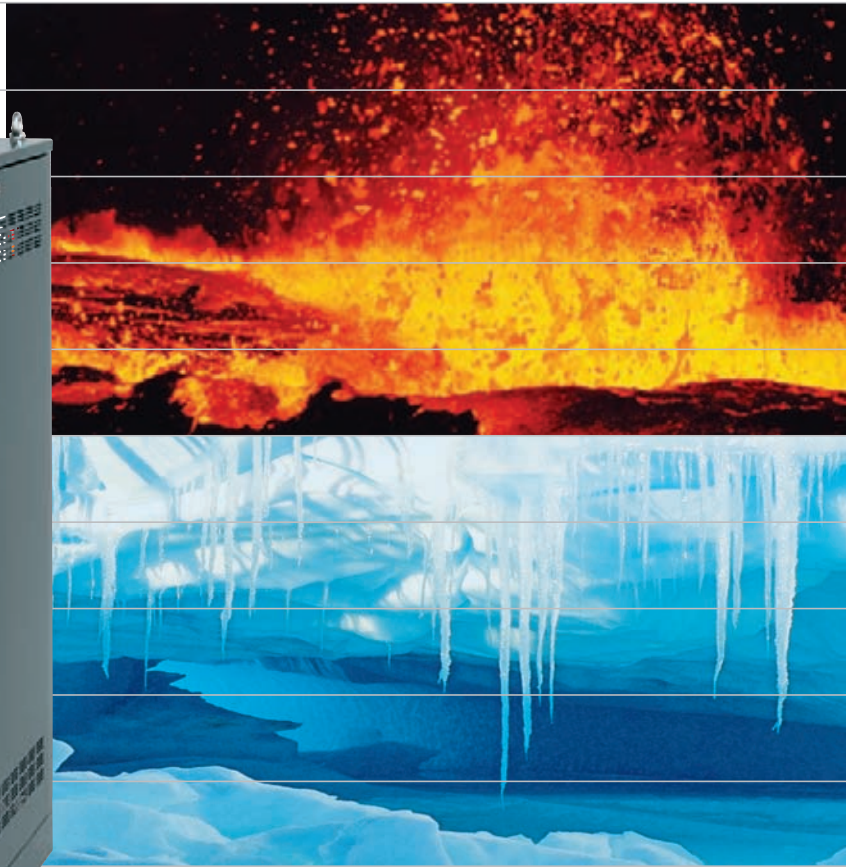


Temperature Control Technology

in short, a decisive increase
in quality and profitability!



SWISS MADE

Regloplas has specialized
in building **temperature
control units**
for more than 45 years.



This specialization brings significant advantages for the customer: the availability of extensive knowledge in consultation, development and application of units. Regloplas Swiss quality products are in successful use in over 50 countries.



Close cooperation between our clients, representatives and specialists result in successful designs truly suited to the applications.



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Temperature control units for water up to 90 °C or thermal oil up to 150 °C

Temperature control of injection moulds, extruders, rollers, vessels and other applications.

Additional advantages:

Minimal reject rates beginning at production start-up. Better cavity-filling performance. Closer tolerances. Minimizes warping and shrinkage. Better surface finish. Continuous high-quality production.



In the manufacture of injection moulded parts, correct mould temperatures can reduce reject rates by 24 % and improve productivity by up to 20 % (Research report by the Aachen Technical University/Germany).

Standard equipment

Electrical section

- RT32 controller, RT50 or RT60 control system
→ Optimal fit for practically every application.
- Electric control in accordance with IEC standards. Tropic-proof up to 90% humidity. Completely separated from the pumping section and protected against direct contact
→ Safe operation.

Mechanical section

- Tank made of stainless steel
→ Long service life.
- High-performance centrifugal pump and motor for circulation of the thermal oil even at low temperatures.
- Low thermal load of the fluid, short circulating time → Long service life of the heat transfer oil, good control performance.
- Heater elements for high corrosion resistance → Long service life.
- Filter in cooling water inlet.

Safety

- Safety thermostat → Protection against overheating.
- Automatic fluid level control
→ Protection against running dry.
- Acoustic common alarm (150 optional).

90smart
90S
90M
90XL
150smart
150S
150



Small-unit assembly: From standard units to special designs, Regloplas offers customised solutions.

Unit-specific equipment

Equipment	90smart	90S	90M	90XL	150smart	150S	150
Control system RT50 (options see page 17)	—	○	○	○	—	○	○
Control system RT60 (options see page 17)	●	—	—	—	●	—	—
Controller RT32 (options see page 17)	—	○	○/—	○/—	—	○	○
Solid-state Relay (SSR) instead of heating contactor	●	○	●	○	●	○	○
Electronic flow measurement	○	○	○	○	○	○	○
Manual shut-off valve in the inlet and outlet	—	○	○	●	—	○	○
Adjustable bypass for regulation of the flow rate in the consumer	—	—	—	●	—	—	—
Leak-free pump	●	●	○	○	●	●	●
Water circuit of non-rusting materials	●	●	●	○	●	●	●
Automatic water refill	●	●	●	●	●/—	—	○
Unit in IP54 protection degree	—	—	●	●	—	—	—
Direct cooling	—	—	●	●	—	—	—

● Standard equipment ○ Option — Not available ●/—; ○/— Unit-specific

Further options available upon request

Technical data		90smart	90S	90M	90XL	150smart	150S	150
Outlet temperature	max. °C	90	90	90	90	150 90	150 ²	150 ³
Heat transfer fluid		Water	Water	Water	Water	Oil Water	Oil	Oil
Filling quantity	l	6.5	6.0	2.8; 3.8 ¹	36.5	12.0	12.0	17.6
Expansion volume	l	3.2	3.4	1.0	5.5	4	4	6
Heating capacity at 400 V	kW	9	6; 9	10; 20	20; 40; 60	6	6	12
Cooling capacity	kW	24 76	38 58	200	200	28 31	28	58 70
at outlet temperature	°C	90 90	80 80	80	80	140 90	140	140 60
Cooler (K)		1 2	1 2	DK	DK	1 1	1	1 2
Diagram (Fig.)		1	1	2	2	3 1	3	3
Pump capacity/type				SG/SM				
Flow rate	max. l/min	TP20 60	TP20 TS22 60 70	71 73 75 30 60 100	IMZ-G 240	TP20 60	TP20 TS22 60 70	TP20 TS22 60 70
Pressure	max. bar	3.8	3.8 5.4	10 6 6	4.6	3.8	3.8 5.4	3.8 5.4
Power consumption	kW	0.5	0.5 1.1	1.0 1.0 1.5	2.8	0.5	0.5 1.1	0.5 1.1
Diagram (Fig.)		4	4	5	6	4	4	4
Control								
Measuring mode (standard)		RT60 Pt100	RT32 RT50 Pt100	RT32 RT50 Pt100	RT32 ⁴ RT50 Pt100	RT60 Pt100	RT32 RT50 Pt100	RT32 RT50 Pt100
Operating voltage (standard)	V/Hz	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE
Connections	Outlet/inlet Cooling water mains	G½" G¾"	G½" G½"	G¾" G¾"	G1½" IG G¾"	G½" G¾"	G½" G½"	M26 x 1,5 G½"
Dimensions W/H/D	mm	228/565/640	200/557/666	324/761/896	436/1357/1349	228/612/698	200/653/697	346/690/728
Weight	approx. kg	32	44	60	229	41	50	78
Colour	Grey	9006/7016						
Ambient temperature	max. °C	40						
Noise level	dB(A)	< 70						
Notes	¹ Heating capacity 20 kW ² Optional up to 180°C. Only with pump TS22H ³ Optional up to 200°C. Only with pump TS22H ⁴ 90XL only with 20 kW heating capacity					DK: Direct cooling G: Parallel thread IG: Female thread		

Cooling capacity P as a function of outlet temperature ϑ .

Cooling water data:

Inlet temperature 20 °C/90smart 15 °C.

Flow rates:

90S/1K; 150smart; 150S: 10 l/min

90smart; 90S/2K; 150: 20 l/min

90M; 90XL 36 l/min

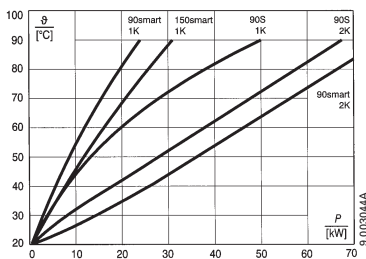


Fig. 1: Fluid water
90smart; 150smart; 90S

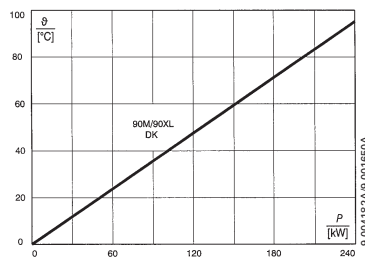


Fig. 2: Fluid water
90M; 90XL

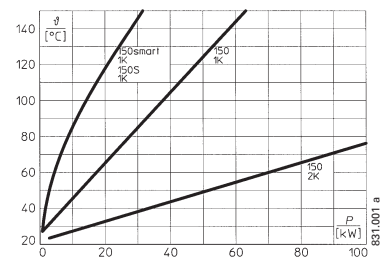


Fig. 3: Fluid oil
150smart; 150S; 150

Pump capacity. Flow rate V as a function of pressure p .
Bypass not included.

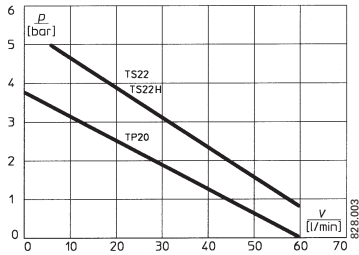


Fig. 4: 90smart; 90S; 150smart; 150S; 150

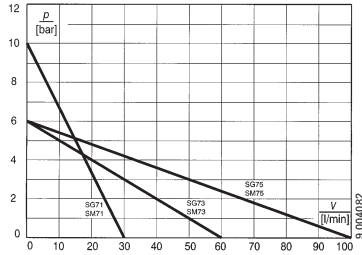


Fig. 5: 90M

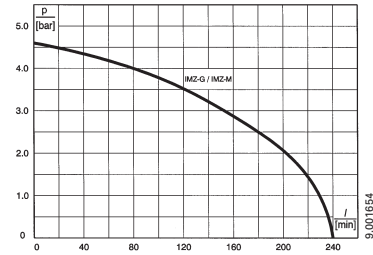


Fig. 6: 90XL

- 90smart
- 90S
- 90M
- 90XL
- 150smart
- 150S
- 150

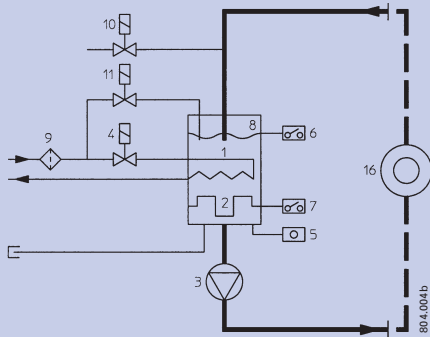


Fig. 7: Principle 90smart; 150smart. Water

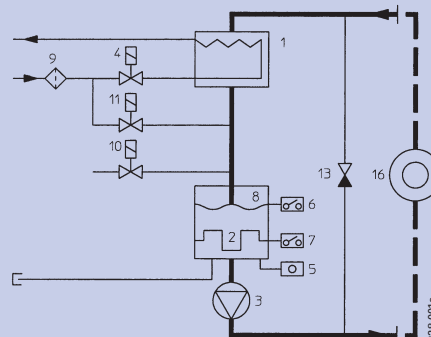


Fig. 8: Principle 90S

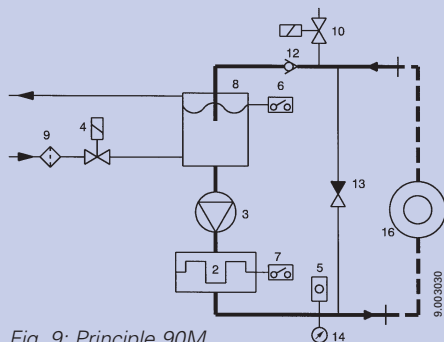


Fig. 9: Principle 90M

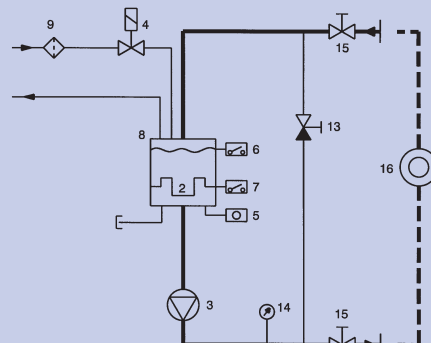


Fig. 10: Principle 90XL

- 1 Cooler
- 2 Heater
- 3 Pump
- 4 Solenoid valve, cooling
- 5 Temperature sensor
- 6 Level control
- 7 Safety thermostat
- 8 Tank
- 9 Filter, cooling water inlet
- 10 Solenoid valve, consumer drainage (option)
- 11 Solenoid valve, automatic water refilling
- 12 One-way check valve
- 13 Bypass
- 14 Pressure gauge
- 15 Manual valve
- 16 Consumer

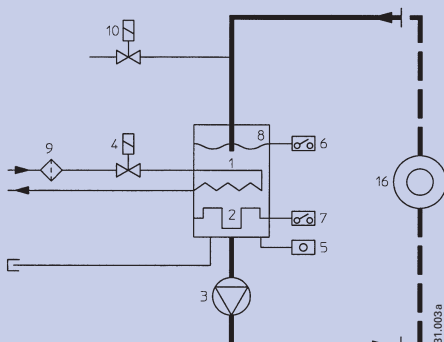


Fig. 11: Principle 150smart; 150S; 150. Oil

Pressurised-water temperature control units up to 160 °C

Temperature control of plastic injection moulds, diecasting dies, rollers, extruders, mixers and other applications.

Superior heat transfer has a direct effect upon the output of your production plant.



Pressurised water units can be implemented wherever there are advantages of water as a heat transfer fluid.

Patented low-scale cooling system "SK".

Standard equipment

Electrical section

- RT32 controller, RT50 or RT60 control system
→ Optimal fit for practically every application.
- Electric control in accordance with IEC standards. Tropic-proof up to 90% humidity. Completely separated from the pumping section and protected against direct contact
→ Safe operation.

Mechanical section

- Operating temperature independent of cooling water pressure
→ Flexible operation.
- All components exposed to water are made of non-ferrous materials (except pump for "SK" cooler and pump type IMZ). Tank made of stainless steel.
→ Long service life.
- Heating elements made of heat-resistant alloy Incoloy® for high corrosion resistance
→ Safe operation, long service life.
- Sturdy and powerful centrifugal pump high capacity
→ Quick compensation of disturbances, good regulating performance.
- Filter in cooling water inlet.
- One-way check valve in cooling water outlet
→ Reduces the possibility of scale in the cooler by back-flow water.
- Automatic water refill.

Safety

- Safety valve → Prevents excessive pressure in the unit.
- Pressure gauge for system pressure.
- Safety thermostat → Protection against overheating.
- Automatic fluid level control
→ Protection against running dry.
- Acoustic common alarm.

P140smart
P140S
P140M
P140XL
P160M(D)
P160XL



Quality assurance: At Regloplas, all units, whether standard or customised, undergo all phases of rigorous final testing.

Unit-specific equipment

Equipment	P140smart	P140S	P140M	P140XL	P160M(D)	P160XL
Control system RT50 (options see page 17)	—	○	●	●	●	●
Control system RT60 (options see page 17)	●	—	—	—	—	—
Controller RT32 (options see page 17)	—	○	—	—	—	—
Solid-state Relay (SSR) instead of heating contactor	●	○	●	○	●	○
Electronic flow measurement	○	○	○	○	○	○
Manual shut-off valve in the inlet and outlet	—	○	○	●	○	●
Adjustable bypass for regulation of the flow rate in the consumer	—	—	—	●	—	●
Leak-free pump	○	○	○	○	●	●
Patented low-scale cooling system "SK"	—	—	○	●	○	●
Pressure gauge for outlet pressure	—	—	●	●	●	●
Unit in IP54 protection degree	—	—	●	●	●	●
Direct cooling	—	○	—	—	—	—
Temperature regulated switchover indirect-direct cooling	—	○	○	○	○	○

● Standard equipment ○ Option — Not available

Further options available upon request

Technical data		P140smart	P140S	P140M	P140XL	P160M(D)	P160XL	
Outlet temperature	max. °C	140	140	140	140	160	160	
Heat transfer fluid		Water	Water	Water	Water	Water	Water	
Filling quantity	l	4	1	2.8; 3.8 ¹	36.5	2.8; 3.8 ^{1/3}	36.5	
Expansion volume	l	0.5	—	1.0	14.5	1.0 ³	14.5	
Heating capacity at 400 V	kW	9	6	10; 20	20; 40; 60	10; 20 ³	20; 40; 60	
Cooling capacity type	kW	35	35	67 86 68 94	115	67 ³ 86 ³ 82 ³ 111 ³	135	
at outlet temperature	°C	130	130	90 90 130 130	130	90 90 150 150	150	
Cooler (K)		1	1	1 2 SK 2SK	SK	1 2 SK 2SK	SK	
Diagram (Fig.)		1	1	2 2 2 2	3	2 2 2 2	3	
Pump capacity/type				SG/SM		SG/SM		
Flow rate	max. l/min	B501 SM51 45 45	B501 SM20 45 27	71 73 75 ² 30 60 100	IMZ-G 240	71 ³ 73 ³ 75 ^{2/3} 30 ³ 60 ³ 100 ³	IMZ-M 240	
Pressure	max. bar	6.0 7.0	6.0 4.5	10 6 6	4.6	10 ³ 6 ³ 6 ³	4.6	
Power consumption	kW	0.85 1.0	0.85 0.5	1.0 1.0 1.5	2.8	1.0 ³ 1.0 ³ 1.5 ³	2.8	
Diagram (Fig.)		4	4	5	6	5	6	
Control								
Measuring mode (standard)		RT60 Pt100	RT32 RT50 Pt100	RT50 Pt100	RT50 Pt100	RT50 Pt100	RT50 Pt100	
Operating voltage (standard)	V/Hz	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE	
Connections Outlet/Inlet		G½"	G½"	G¾"	G1½" IG	G¾"	G1½" IG	
Cooling water mains		G¾"	G½"	G¾"	G¾"	G¾"	G¾"	
Dimensions W/H/D	mm	228/612/706	215/548/620	324/761/896	436/1357/1349	324/761/896 406/1530/1010(D)	436/1357/1349	
Weight	approx. kg	45	45	80	275	85/170(D)	275	
Colour	Grey				9006/7016			
Ambient temperature	max. °C				40			
Noise level	dB(A)				< 70			
Notes		¹ Heating capacity 20 kW			D: Dual Zone unit			
		² Pump SG/SM75 with cooler 1K; SK not possible			G: Parallel thread			
		³ Per zone			IG: Female thread			
					SK: Low-scale cooler			

Cooling capacity P as a function of outlet temperature ϑ
Cooling water data: Inlet temperature +20 °C
Flow rates:
P140smart; P140S: 10 l/min
P140M; P160M(D): 20 l/min
P140XL; P160XL: 30 l/min

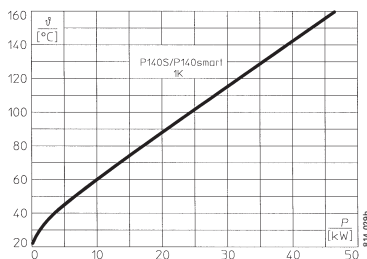


Fig. 1: P140smart; P140S

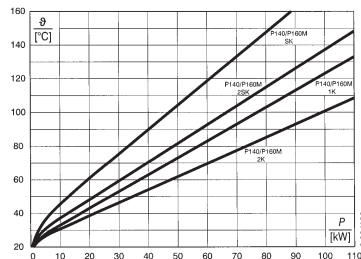


Fig. 2: P140M; P160M(D)

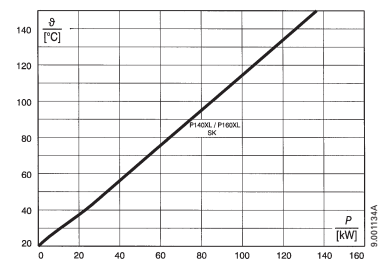


Fig. 3: P140XL; P160XL

Pump capacity. Flow rate V as a function of pressure p . Bypass not included.

P140smart
P140S
P140M
P140XL
P160M(D)
P160XL

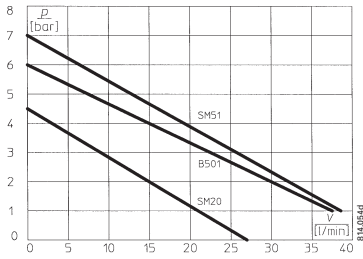


Fig. 4: P140smart; P140S

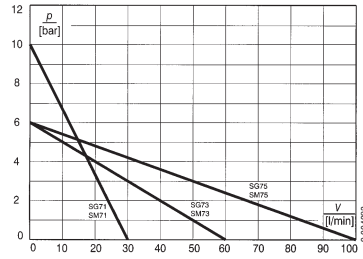


Fig. 5: P140M; P160M(D)

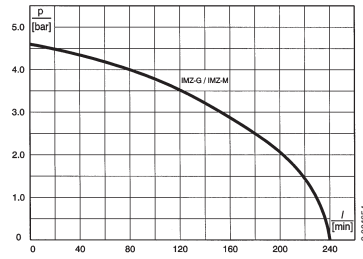


Fig. 6: P140XL; P160XL

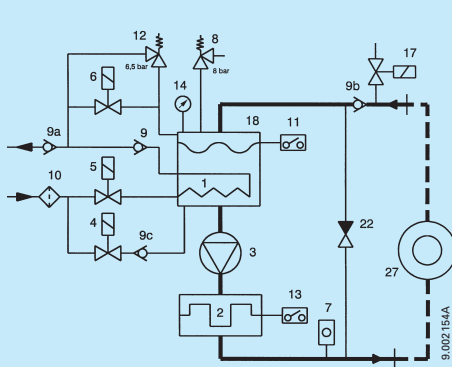


Fig. 7: Principle P140smart

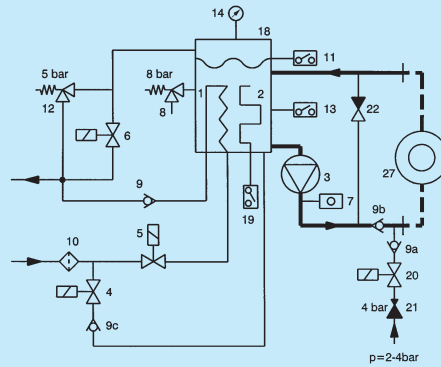


Fig. 8: Principle P140S

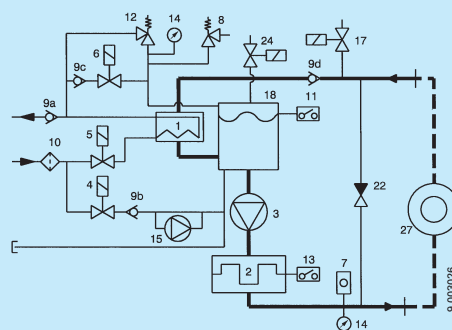


Fig. 9: Principle P140M, P160MD

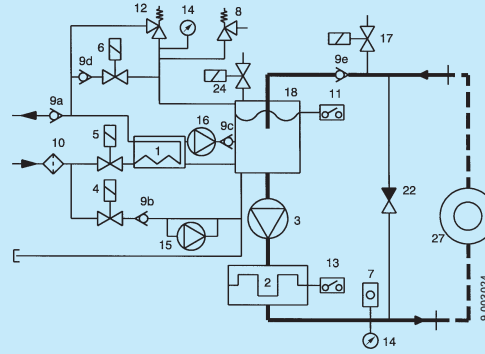


Fig. 10: Principle P140M, P160MD with cooler "SK"

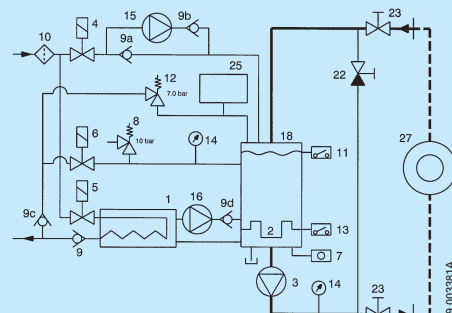


Fig. 11: Principle P140XL; P160XL with cooler "SK"

- 1 Cooler
- 2 Heater
- 3 Pump
- 4 Solenoid valve, automatic water refilling
- 5 Solenoid valve, cooling
- 6 Solenoid valve, pressure release
- 7 Temperature sensor
- 8 Safety valve
- 9 One way check-valve
- 10 Filter, cooling water inlet
- 11 Level control
- 12 Expansion valve
- 13 Safety thermostat
- 14 Pressure gauge
- 15 Filling pump (P160MID; P160XL). P140M; P140XL option
- 16 Cooling pump (cooler "SK")
- 17 Solenoid valve, consumer drainage (option)
- 18 Tank
- 19 Thermal cut-off
- 20 Blow out solenoid valve (option)
- 21 Pressure reducing valve
- 22 Bypass
- 23 Manual valve
- 24 Solenoid valve pressure release when unit "OFF".
- 25 Expansion vessel
- 26 --
- 27 Consumer

Temperature control units for thermal oil up to 350 °C

Temperature control of diecasting dies, extruders, rollers, mixers, vessels and other applications.



In the production of diecasting parts Regloplas temperature control units can reduce reject rates up to 80%, and make the die last up to 3 times longer, reducing heat-up time by as much as 30%.

Standard equipment

Electrical section

- RT50 control system → optimal fit for practically every application.
- Electric control in accordance with IEC standards. Tropic-proof up to 90% humidity. Completely separated from the pumping section and protected against direct contact → Safe operation.

Mechanical section

- Pump: With magnetic drive → Leak-free operation due to elimination of the mechanical seal.
High capacity → Quick compensation of disturbances, good regulating performance.
- Separate expansion vessel → Reduces oxidation as the circulating hot oil is separated from the atmosphere by the stationary oil in the expansion vessel. Also emission of combustible oils into the atmosphere is avoided.
- One-way check valve in cooling water outlet → Reduces the possibility of scale in the cooler by back-flow water.
- Filter in cooling water inlet.
- Bypass for internal circulation of the oil in case of insufficient flow, e.g. when the consumer is blocked → Avoids thermal overloading of the oil.

Safety

- Safety thermostat → Protection against overheating.
- Automatic fluid level control → Protection against running dry.
- Flow monitor → Protection against running dry and overheating of the oil.
- Pressure gauge in the outlet and inlet.
- Acoustic common alarm.

300S
300L(D)
350L



Mechanical assembly: Expertise and precision assure the high quality of our products.

Unit-specific equipment

Equipment	300S	300L(D)	350L
Control system RT50 (options see page 17)	•	•	•
Solid-state Relay (SSR) instead of heating contactor	○	•	○
Unit in IP54 protection degree	○	•	•
Second level	○	•	—
Cooler with bypass circuit → significantly better regulating behaviour, reduced possibility of scaling	—	○	•
Inert gas blanket → Longer oil life	—	—	○
Electronic flow measurement	○	○	○

• Standard equipment ○ Option — Not available

Further options available upon request

Technical data			300S	300L(D)	350L
Outlet temperature	max.	°C	300	300	350
Heat transfer fluid			Oil	Oil	Oil
Filling quantity		l	6	15 24	15-20
Expansion volume		l	7	20	20
Heating capacity at 400 V		kW	6	20; 40 ¹	24; 36
Cooling capacity		kW	70	160 ¹	110
at outlet temperature		°C	280	280	340
Cooler (K)			1	1 ¹	1
Diagram (Fig.)			1	1	2
Pump capacity/type			FM25	FM65	FM65
Flow rate	max.	l/min	45	90 ¹	90
Pressure	max.	bar	7.0	10.0 ¹	10.0
Power consumption		kW	1.0	2.8 ¹	2.8
Diagram (Fig.)			3	3	3
Control			RT50	RT50	RT50
Measuring mode (standard)			Pt100	Pt100	Pt100
Operating voltage (standard)		V/Hz	400/50, 3 PE	400/50, 3 PE	400/50, 3 PE
Connections Outlet/inlet			G½"	G¾" IG	DN20/PN40
Cooling water mains			G½"	G¾"	G¾"
Dimensions W/H/D		mm	316/756/897	436/1357/1442 546/1357/1442(D)	470/1467/1491
Weight	approx.	kg	87	246 365(D)	310
Colour	Grey	RAL	9006/7016		
Ambient temperature	max.	°C	40		
Noise level		dB (A)	< 70		
Notes			¹ Per zone		D: Dual zone unit G: Parallel thread IG: Female thread

Cooling capacity P as a function of outlet temperature ϑ .

Cooling water data:
Inlet temperature +20 °C
Flow rate per zone 20 l/min

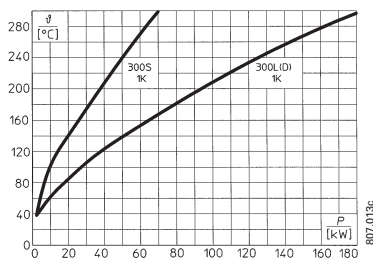


Fig. 1: 300S; 300L(D)

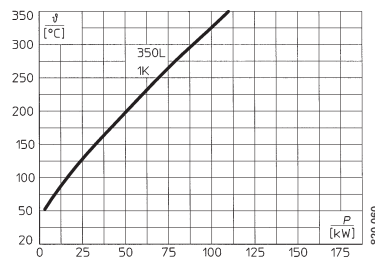


Fig. 2: 350L

Pump capacity. Flow rate V
as a function of manometric pressure p .

Bypass not included.

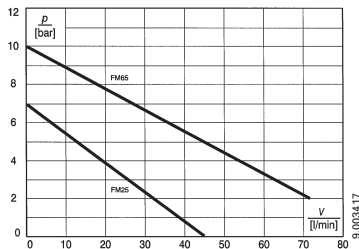


Fig. 3: Pump capacity

300S
300L(D)
350L

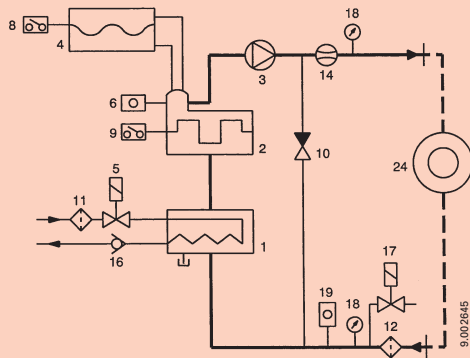


Fig. 4: Principle 300S, 300L(D)

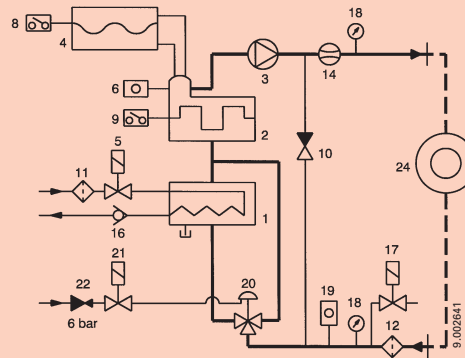


Fig. 5: Principle 300L(D) with
bypass circuit for the cooler

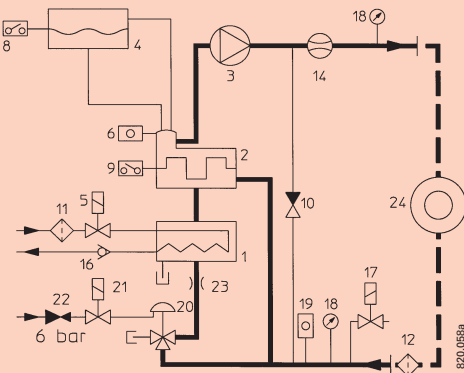


Fig. 6: Principle 350L with
bypass circuit for the cooler

- 1 Cooler
- 2 Heater
- 3 Pump
- 4 Expansion vessel
- 5 Solenoid valve, cooling
- 6 Outlet temperature sensor
- 7 --
- 8 Level control
- 9 Safety thermostat
- 10 Bypass
- 11 Filter cooling water inlet
- 12 Filter circuit (350L option)
- 13 --
- 14 Flow monitor
- 15 --
- 16 One-way check valve
- 17 Solenoid valve, consumer drainage (optional)
- 18 Pressure gauge
- 19 Inlet temperature sensor (optional)
- 20 Three-way valve (300L(D) option)
- 21 Solenoid valve compressed air
- 22 Pressure reducing valve
- 23 Diaphragm
- 24 Consumer

RT50 and RT60 control system, controller RT32

The RT50 control system ensures an optimal fit for practically every application. The RT60 control system and the RT32 controller are a simple, cost-effective solutions for a wide variety of applications.

All controllers are designed to avoid problems before they arise.



Modern automated manufacturing processes require data transfer between the temperature control unit and the production facility's central computer – just one of many applications for the RT50 and RT60 control system with data interface.



Equipment	RT50	RT60	RT32
Operation and control			
Seven-line clear-text LCD display. Choice of languages	●	—	—
Simultaneous readout of temperature set-point and actual values	●	●	●
Choice of temperature display (decimal place)	●	●	●
Temperature limit values (+/-) adjustable	●	●	○
Fluid temperature control	●	●	●
Control of the consumer temperature with cascade control for highest temperature constancy with 2 control circuits (consumer and fluid)	○	—	—
Set-point switch-over	●	—	—
External sensor connection for Pt100, J (Fe-CuNi), K (NiCr-Ni) or T (Cu-CuNi)	○	—	—
Leak-stop operation	○/—	●/—	●/○/—
Drainage of the fluid from the consumer by suction	○/—	●/○	●/○/—
Drainage of the fluid from the consumer by compressed air	○/—	—	○/—
Time switch	○	—	—
Flow rate measurement from 2 to 200 l/min for water and oil up to 350 °C	○	○	○
Inlet sensor (Pt100)	○	—	—
External control: set-point switchover, heating/cooling command	○	—	—
External control: set-point input, switching the unit on/off	○	○	—
Data interfaces	○	○	—
Scalable recorder outputs	○	○	—
Safety			
All disturbances in the unit are indicated on the display	●	●	—
Set-point "blockable" as protection against incorrect adjustment	●	—	—
Limitation of max. programmable set-point	●	●	●
Monitoring of upper and lower limit values	●	●	○
Unauthorized access to the programming levels prevented by a code	●	●	—
Automatic pump rotation correction	○	●	—
Sensor-failure monitoring	●	●	●
Automatic switch-over to the internal sensor (fluid) in the event of external sensor failure	○	—	—
Units with automatic water refilling: In order to limit the consequences of leakage (i.e. hose burst) the filling time per refill and the number of refills per hour is limited in order to protect the production installation against damage caused by water.	●	●	—
Common acoustic alarm	●	●	—
Service			
Indication of the service interval	●	●	—
Operating hours meter	●	●	—
Programmed data remains stored during replacement of electronic components	●	—	—

● Standard equipment ○ Option — Not available ●/—; ○/— Unit-specific

Further options available upon request

RT50
RT60
RT32

High-performance water cooling units with air-cooled condenser

For efficient cooling of moulds in the plastics industry, extruders, diecasting machines, reactors, rollers and other applications.



Standard equipment

Electrical section

- PLC-process control contains all the necessary operating and switching elements for fully automatic operation.
- Fully automatic function sequences → Simple to operate.

Mechanical section

- Cooling capacity 6.8 to 58 → Ensures optimal fit to the application in question.
- Refrigerant R407C (ozone free) or R22.
- Bypass with manual valve for adjusting the consumer flow rate.
- Easy to install; simple maintenance.
- High efficiency → economical operation.
- Compact design → low space requirement.

Safety

- Pressure switches for high and low gas pressure.
- Automatic level control of the cooling water.
- Automatic water refill.

The cooling units can be used wherever the consumer temperature must be lower than the temperature of the cooling water supply.

Unit-specific equipment

Equipment	RC2E7 RC2F9	RC2E11 RC2F12	RC2E20 RC2F20	RC2E30/Z RC2F35/Z	RC2E40/Z RC2F45/Z	RC2E60/Z RC2F60/Z
Minimal outlet temperature -10°C	○	○	○	○	○	○
Centrifugal fan	—	—	—	○	○	○
Centrifugal fan with speed control ^{1/2}	—	—	—	○	○	○
High pressure pump ¹	○	○	○	○	○	○

○ Option — Not available ¹ Larger frame ² Required for external installation of models RC2E30/Z and RC2E40/Z Further options available upon request

Models with air-cooled condenser and refrigerant R407C

Technical data		RC2E7	RC2E11	RC2E20	RC2E30/Z	RC2E40/Z	RC2E60/Z
Cooling capacity ¹	kW	6.8	10.4	18.8	28.0	38.5	58.0
Outlet temperature range	°C	(-8)+8...+20					
Ambient temperature	max. °C	+40					
Refrigerant		R407C					
Efficiency (COP)		4.9	5.0	4.9	5.1	5.1	5.0
Nominal compressor power	kW	1.4	2.1	3.8	5.5	7.6	11.6
Fan flow rate	m ³ /h	2500	7800	6600	15500	14300	16500
Pump Nominal flow	l/min at bar	20	30	55	80	110	170
		3.3	3.6	3.3	3.0	3.7	4.0
Capacity of internal tank	l	35	35	35	200	200	320
Operating voltage (standard)	V/Hz	400/50, 3 PE					
Power consumption (nominal/maximum)	kW	2.3/3.8	3.5/5.3	5.4/7.5	8.1/11.9	10.5/15.4	16.1/23.3
Connections Outlet/inlet		¾"	¾"	1"	1"	1½"	1½"
Dimensions W/H/D	mm	650/1200/850	650/1200/850	650/1200/850	900/1680/1500	900/1680/1500	1100/2000/1750
Weight net	kg	140	180	185	390	550	650
Colour	Grey RAL	9006/7016					
Noise level at 10 m distance	dB(A)	50	51	51	53	53	54
Notes	¹ At 15 °C outlet temperature (water with 30% glycol) and 25 °C ambient temperature Z: Galvanized version for external fitting						

Models with air-cooled condenser and refrigerant R22

Technical data		RC2F9	RC2F12	RC2F20	RC2F35/Z	RC2F45/Z	RC2F60/Z
Cooling capacity ¹	kW	8.4	11.9	17.6	32	45.5	55.5
Outlet temperature range	°C	(-8)+8...+20					
Ambient temperature	max. °C	+40					
Refrigerant		R22					
Efficiency (COP)		4.9	5.0	4.7	4.9	4.9	5.0
Nominal compressor power	kW	1.7	2.4	3.7	6.5	9.3	11.1
Fan flow rate	m ³ /h	2500	7800	6600	15500	14300	16500
Pump Nominal flow	l/min at bar	25	35	50	90	130	180
		3.2	3.4	3.5	4.0	3.6	4.1
Capacity of internal tank	l	35	35	35	200	200	320
Operating voltage (standard)	V/Hz	400/50, 3 PE					
Power consumption (nominal/maximum)	kW	2.9/4.3	3.8/5.6	5.2/7.4	9.2/13.0	12.1/19.0	14.4/20.6
Connections Outlet/inlet		¾"	¾"	1"	1"	1½"	1½"
Dimensions W/H/D	mm	650/1200/850	650/1200/850	650/1200/850	900/1680/1500	900/1680/1500	1100/2000/1750
Weight net	kg	150	190	270	430	570	750
Colour	Grey RAL	9006/7016					
Noise level at 10 m distance	dB(A)	50	51	51	53	53	54
Notes	¹ At 15 °C outlet temperature (water with 30% glycol) and 25 °C ambient temperature Z: Galvanized version for external fitting						

Models with water-cooled condenser available upon request

REG descaling unit and descaling agent REM93, corrosion inhibitor RK93 and system cleaner SR80

With the REG descaling unit, descaling agent REM93 for water and steam systems, corrosion inhibitor RK93 and system cleaner SR80 for oil circuits, Regloplas offers their customers optimal assistance for maintenance.



Descaling unit REG and descaling agent REM93 for cleaning of moulds and dies, cooling circuits and other systems operated with water or steam.

Corrosion inhibitor RK93 prevents corrosion, lime deposits and the formation of rust in water circuits.

System cleaner SR80 is a highly effective additive for cleaning heat transfer systems and other circuits contaminated by oil residue.

REG Descaling unit

- Incorporated heating → Minimal cleaning time.
- Simple connection to the encrusted circuit without dismantling of the installation → Operation without problems, time saving.
- Electric control in separate housing, heater protected against running dry, tank of plastic and cover of stainless steel → Safe and harmless operation.

REG
REM93
RK93
SR80

Technical data			REG
Operating temperature	°C		60
Tank capacity	l		12
Heating capacity	kW		0,8
Pump capacity			
Flow rate	max.	l/min	30
Delivery head	max.	bar	1.6
Power consumption	kW		1.2
Operating voltage (standard)	V/Hz		230/50; 60, 1 PNE
Connections			Nipples DN 16
Dimensions W/H/D	mm		305/610/455
Weight	ca.	kg	13
Colour			Grey
Accessories			2 hoses, length 2.5 m

REM93 Descaling agent

- Environmentally friendly and biodegradable.
- The combination of an organic acid with an inorganic activator results in a descaling agent that has the same effect as a strong acid: quickly and efficiently removes lime, scale, and rust deposits without damaging the equipment.
- Also suitable for tin and enamel.
- 1 kg REM93 removes approx. 0.5 kg lime.



At the Regloplas Test Center, any operating condition can be simulated and checked – under continuous testing.

Corrosion inhibitor RK93

- Temperature range $-10\text{ }^{\circ}\text{C}$ to $+180\text{ }^{\circ}\text{C}$.
- The additive helps prevent: electrolytic corrosion of all metals, dezincification of brass, lime deposits and adherence of hard rust particles.
- RK93 can be mixed with GLYCOL products and does not attack seals.
- Suitable for pressurised water systems.
- Economical to use.
- RK93 retains its properties over an extended period and forms a protective film on the contact surfaces, providing constant efficiency of the heat exchanger.

System cleaner SR80

- The additive removes oil-carbon residues and foreign contamination from metal surfaces. They circulate in the oil flow and are carried to the filter.
- The optimal cleaning effect is between 120 and $150\text{ }^{\circ}\text{C}$.
- The max. permissible operating temperature is $300\text{ }^{\circ}\text{C}$.
- The SR80 additive contains no solvents. It can be dissolved in all mineral oils and synthetic fluids.
- Application as a preventive or before changing the oil.

Interpreting Regloplas data

The following notes provide important information on interpreting the technical data and selecting Regloplas temperature control units.

Expansion of the heat transfer fluid

The value given in the table “Technical Data” must be higher than the volume increase due to temperature during operation.

When the installation is idle, some of the contents of the consumer may flow back to the control unit, depending on the set-up (difference in level between temperature control unit and consumer). In large-capacity consumers (e.g. rollers), the value specified ensures that the heat transfer fluid flowing back to the control unit can be accommodated.

Cooling capacity

Generally speaking knowing the maximum value alone is not enough to determine the capacity. We provide a diagram of the cooling capacity.

Pump capacity

Knowing the maximum values alone is not enough to determine the pump capacity. We provide the characteristic curve of the pump.

Control

Control accuracy. Short-term accuracy of the temperature control circuit (controlled system) is very difficult to pinpoint. The accuracy of the RT50/RT60 control system and the RT32 controller alone is better than ± 1 °C.

The accuracy of the temperature control circuit can vary considerably, depending on the strength and duration of the disturbances affecting the circuit.

For example:

- Production start-up
- Production interruption
- Changes in the injection cycle (injection moulding)
- Changes in the material and ambient temperature.

Cascade control: If the consumer is equipped with a sensor, the control system automatically switches to cascade control: Using two coupled controllers, the temperature of both the fluid and consumer is controlled. Cascade control enables optimal control of the consumer temperature, a critical factor in overall production quality.

Unit selection

Minimum data required:

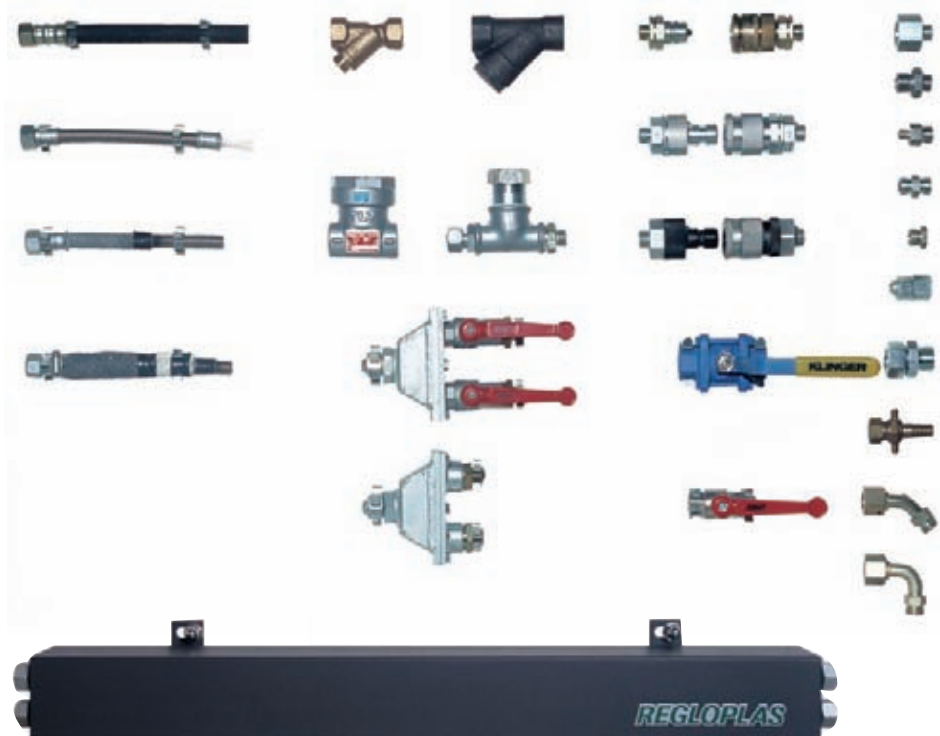
1. Set value temperature/temperature range of the consumer.
2. Weight or dimensions and material of the consumer.
3. Desired heat-up time in hours.
4. Quantity of processed material in kg/h and designation of the material.
5. Temperature of the material to be processed when it reaches the consumer (e.g. injection mould).
6. Max. cooling water temperature (if > 18 °C).

Regloplas accessories

Regloplas accessories cover all components for connecting the unit to the consumer, including heat transfer fluids, corrosion inhibitor and cleaners.

Regloplas accessories: Safety between temperature control unit and consumer.

Regloplas accessories are in exact accordance with our specifications – values that incorporate the experience gained over many years. Choose safety.



Fittings

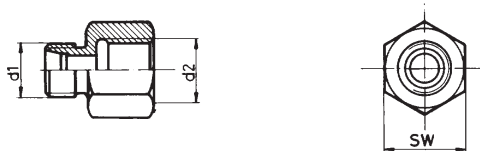
Dimensions in mm if not specified otherwise.
DN = Nominal width. SW = Spanner size.

*DIN 3863: tapered sealing.

1. Adapter

d1*	d2	DN	SW	Order No.
M 14x1.5	R 1/2"	6	27	301-080114
M 14x1.5	R 3/4"	6	32	301-080118
M 16x1.5	R 1/2"	10	27	301-080113
M 16x1.5	R 3/4"	10	32	301-080117
M 18x1.5	M 14x1.5*	10	22	301-080115
M 18x1.5	M 16x1.5*	10	22	301-080112
M 18x1.5	R 1/2"	10	27	301-080110
M 18x1.5	R 1/2"	10	27	302-080108**
M 18x1.5	R 3/4"	12	32	302-080105**
M 26x1.5	R 3/4"	16	32	302-080106**

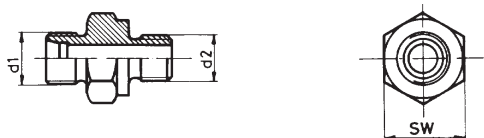
** Material 1.4301 (inox)



2. Adapter

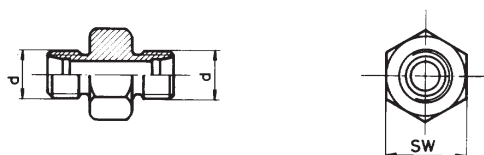
d1*	d2	DN	SW	Order No.
M 14x1.5	M 10x1*	5	14	300-080128
M 14x1.5	R 1/8"	5	17	301-080129
M 14x1.5	R 1/4"	6	17	300-080127
M 14x1.5	R 1/2"	6	27	301-080138
M 18x1.5	M 10x1*	6	19	301-080125
M 18x1.5	M 10x1.5*	6	19	301-080139
M 18x1.5	M 16x1.5*	10	22	301-080126
M 18x1.5	R 1/8"	6	19	301-080120
M 18x1.5	R 1/4"	7	19	301-080121
M 18x1.5	R 3/8"	10	22	301-080122
M 18x1.5	R 1/2"	10	27	302-080119**
M 18x1.5	R 3/4"	12	32	302-080107**
M 26x1.5	R 3/4"	16	32	301-080124

** Material 1.4301 (inox)



3. Adapter

d*	DN	SW	Order No.
M 16x1.5	8	19	301-080134
M 18x1.5	10	19	301-080130
M 26x1.5	16	32	301-080131



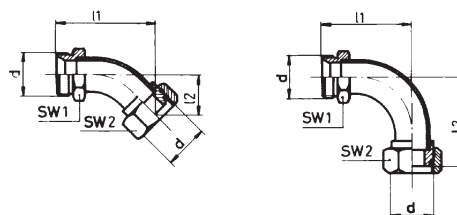
4. Dummy plug for hose fitting

d*	SW	Order No.
M 18x1.5	27	305-080140



5. Elbow with cap nut

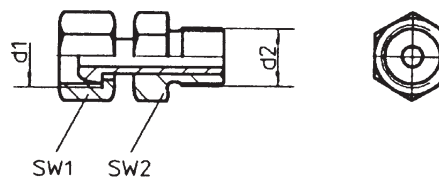
d*	α	DN	SW1	SW2	l1	l2	Order No.
M 18x1.5	45°	10	19	27	40	14	361-080150
M 18x1.5	90°	10	19	27	38	35	361-080151
M 26x1.5	90°	16	27	32	55	53	361-080153



6. Adapter with cap nut for filters, twin connectors, ball cocks, etc.

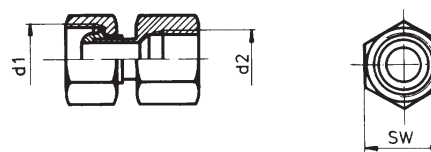
d1*	d2	DN	SW1	SW2	Order No.
M 18x1.5	R 3/8"	10	22	22	301-080164
M 18x1.5	R 1/2"	10	22	27	302-080166**
M 18x1.5	R 3/4"	10	22	32	302-080169**
M 26x1.5	R 3/4"	16	32	32	301-080167

** Material 1.4301 (rostfrei)



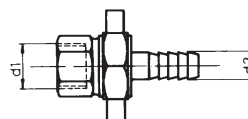
7. Adapter with cap nut for «Hasco» standard parts

d1*	d2	DN	SW	Order No.
M 18x1.5	M 14x1.5	10	22	301-080170
M 18x1.5	M 16x1.5	10	22	301-080171



8. Adapter for cooling water hoses

d1	d2	DN	Order No.
R 3/8"	14.5	13	300-080184
R 1/2"	17.5	16	300-080185



Further accessories on request

Hoses

1. Fabric-reinforced perbunane/neoprene hose for water up to 70 °C and oil up to 120 °C

d*	DN	l(m)	SW	Order No.
M 14 x 1.5	6	0.6	17	362-080213
M 14 x 1.5	6	2.5	17	362-080214
M 18 x 1.5	10	0.6	24	362-080211
M 18 x 1.5	10	2.5	24	362-080212

2. PTFE hose for water up to 200 °C and oil up to 250 °C. Stainless steel jacket.

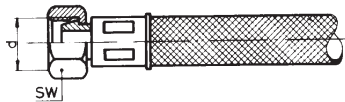
d*	DN	l(m)	SW	Min. perm. bending radius	Order No.
M 18 x 1.5	10	0.6	22	120	362-080250
M 18 x 1.5	10	2.5	22	120	362-080252
M 26 x 1.5	16	0.8	32	165	362-080251
M 26 x 1.5	16	2.5	32	165	362-080253

3. All-metal hose with steel jacket. For oil up to 350 °C. Without heat insulation.

d*	DN	l(m)	SW	Min. perm. bending radius	Order No.
M 18 x 1.5	10	0.6	22	140	362-080260
M 18 x 1.5	10	1.5	22	140	362-080264
M 18 x 1.5	10	2.5	22	140	362-080262
M 26 x 1.5	16	1	32	175	362-080261
M 26 x 1.5	16	2.5	32	175	362-080263

4. All-metal hose with braided steel jacket. For oil up to 350 °C. With heat insulation (no protection against contact).

d*	DN	l(m)	SW	Min. perm. bending radius	Order No.
M 18 x 1.5	10	2.5	22	155	362-080272
M 26 x 1.5	16	2.5	32	175	362-080273



Quick-connect couplings

1. Quick-connect coupling for water up to 100 °C and oil to 200 °C. Viton gasket. Shut-off in both directions.

d1*	d2	DN	l	Description	Order No.
M 18x1.5	38	8	69	Socket	465-080320
M 18x1.5	34	8	47	Plug	465-080321
M 26x1.5	38	16	71	Socket	465-080322
M 26x1.5	34	16	49	Plug	465-080323

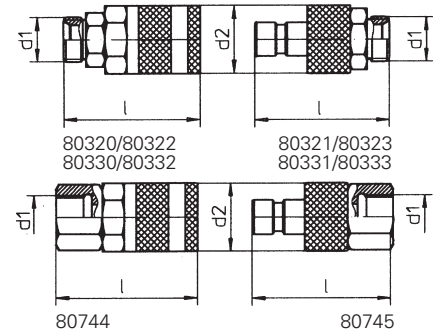
2. Quick-connect coupling for water up to 170 °C. EP gasket. Shut-off in both directions.

d1*	d2	DN	l	Description	Order No.
1/2"	40	12	81	Socket	465-080744
1/2"	40	12	79	Plug	465-080745

Further accessories on request

3. Quick-connect coupling for Oil up to 250 °C. Special gasket. Shut-off in both directions.

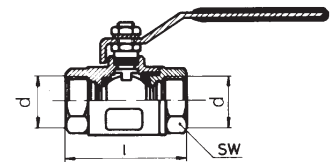
d1*	d2	DN	l	Description	Order No.
M 18x1.5	40	12	77	Socket	465-080330
M 18x1.5	40	12	78	Plug	465-080331
M 26x1.5	54	15	95	Socket	465-080332
M 26x1.5	54	15	94	Plug	465-080333



Ball cocks/Manifolds

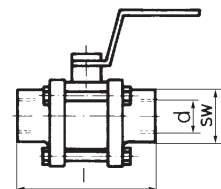
1. Ball cock for water and oil up to 160 °C. PTFE gasket.

d	DN	l	SW	Best.-Nr.
R 3/8"	10	50	21	351-080410
R 1/2"	12	62	26	351-080411
R 3/4"	20	71	31	351-080412
R 1 1/2"	40	110	55	351-080413



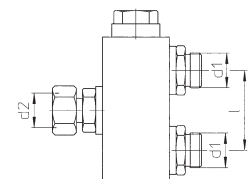
2. Ball cock for oil up to 300 °C.

d	DN	l	SW	Order No.
R 1/2"	15	85	32	351-080430
R 3/4"	20	95	41	351-080431



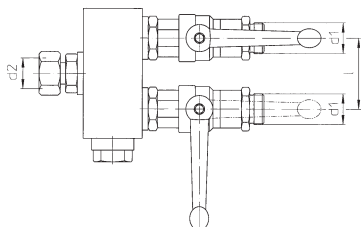
3. Twin connector without valves for water up to 160 °C and oil up to 300 °C.

d1*	d2*	DN	l	Order No.
M 18x1.5	M 18x1.5	10	60	351-080510
M 18x1.5	M 26x1.5	10	60	351-080511
M 26x1.5	M 26x1.5	16	60	351-080512



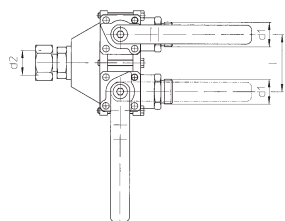
4. Twin connector with ball cocks for water and oil up to 160 °C.

d1*	d2*	DN	l	Order No.
M 18 x 1.5	M 18 x 1.5	10	60	351-080530
M 18 x 1.5	M 26 x 1.5	10	60	351-080531
M 26 x 1.5	M 26 x 1.5	16	60	351-080532



5. Twin connector with ball cock for oil up to 300 °C.

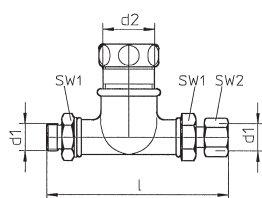
d1*	d2*	DN	l	Order No.
M 18 x 1.5	M 18 x 1.5	10	60	351-080540
M 18 x 1.5	M 26 x 1.5	10	60	351-080541
M 26 x 1.5	M 26 x 1.5	16	60	351-080542



Filling port

For corrosion inhibitor RK93 for models P140S; P140M and P160M(D).

d1	d2	SW1	SW2	L	Order No.
M 18x1.5	1"	27	22	119.5	361-080700



Filters

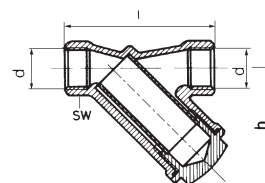
1. Angled filter for water and oil up to 160 °C. Approx. 0.25 mm mesh.

d	l	h	SW	Order No.
R 3/8"	55	40	21	352-100008
R 1/2"	58	40	21	352-100010
R 3/4"	70	50	27	352-100011
R 1"	87	60	32	352-100012
R 1 1/4"	96	68	36	352-100017
R 1 1/2"	106	75	40	352-100018

Further accessories on request

2. Angled filter for oil up to 300 °C. Approx. 0.56 mm mesh.

d	l	h	SW	Order No.
R 1/2"	90	60	36	352-064331
R 3/4"	110	75	41	352-064332



Flow meters

Type F150: For water and oil up to 150 °C. Range 2 to 50 l/min. G^{3/4}".

1. With control system RT50:
Order No. MP802 + MP800.
2. With controller RT32:
With separate display RDA50.
Order No. 153-065210 + 153-065215.

Type F181: For water and oil up to 180 °C. With control system RT50. Range 2 to 50 l/min. G^{1/2}".
Order No. MP824 + MP820.

Type F183: For water up to 180 °C. With control system RT50. Range 15 to 200 l/min. G¹".
Order No. MP823 + MP820.

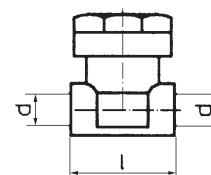
Type F351: For oil up to 350 °C. With control system RT50. Range 2 to 50 l/min. G^{3/4}".
Order No. MP822 + MP820.



Flow indicator

Flow indicator with ball, for water and oil up to 150 °C.

d	l	Best.-Nr.
R 1/2"	68	153-080710
R 3/4"	75	153-080711



**Interconnecting system
(insulating channels)**

Max. operating temperature 300 °C.
Max. pressure 16 bar.

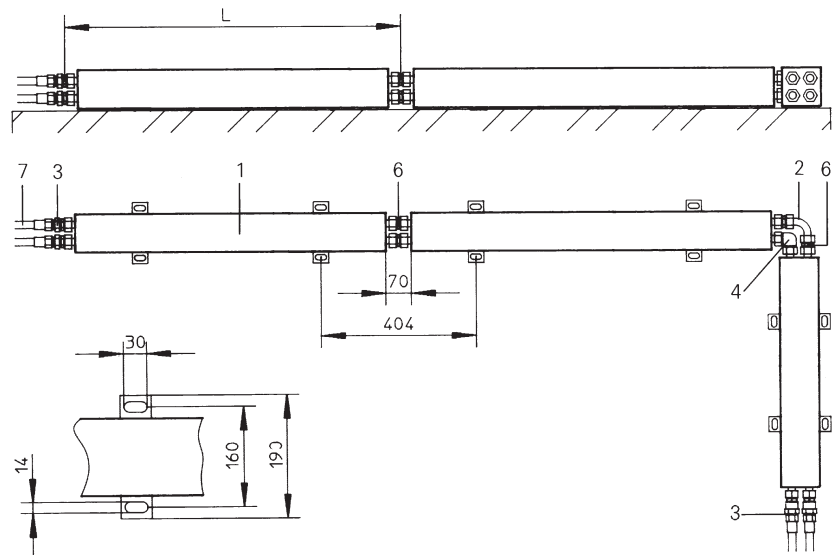
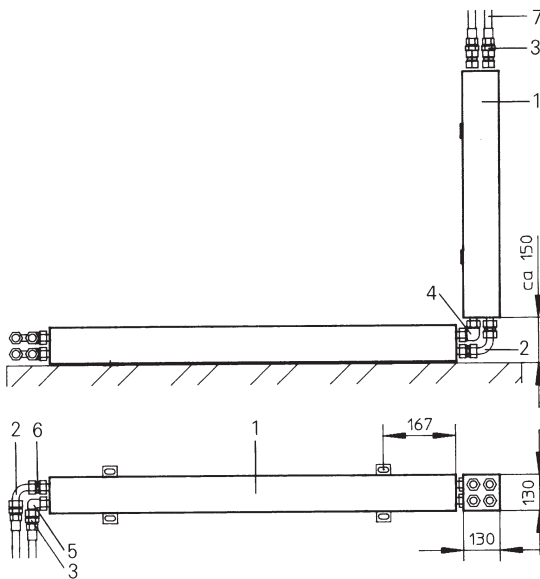
Item	Description	Order No.
1	Channel with 4 tubes, L = 1 m Channel with 4 tubes, L = 2 m Channel with 4 tubes, L = 2.5 m	480-080635 480-080636 480-080637
2	Elbow	480-039162
3	Adapter M 30/24° – M 26/60° for connections of channel to hose M 26 x 1.5	301-080809
3a	Adapter M 30/24° – M 18/60° for connection of channel to hose M 18 x 1.5	301-080816
4	Angled coupling W 22-PL for inter-connection of channel	305-068107
5	Angled coupling, EVW 22-PL for connection of channel to hose	305-068120
6	Straight coupling G 22-PL	305-068035
7	Hose M 26 x 1,5 bzw. M 18 x 1,5	Page 24, item 2-4

Advantages

- Reduction of heat losses over long distances between consumer and temperature control unit.
- Increased safety: Tubes are sturdier than hose lines.
- Savings in time and costs: Instead of building the installation yourself, a complete connection system including screw couplings, hoses, etc. is at your disposal.

Remarks

For safety reasons and in order to compensate for expansion due to heat, we recommend using heat-insulated all-metal flexible tubes for high temperatures between temperature control unit, insulating channel and insulating channel-consumer. Depending on the temperature, suitable heat-insulated plastic tubes can also be used.



Further accessories on request

Temperature sensors

Type	Resistance thermometer		Thermocouple		
	Standard	Variable mounting depth	Standard	Variable mounting depth	Mineral-insulated
Measuring element	1 x Pt100 (DIN)		J (Fe-CuNi) DIN or K (NiCr-Ni) DIN		
Continuous temperature	400 °C		400 °C		
Insulation of wire	Silicon-impregnated glass-fibre		Silicon-impregnated glass-fibre		
Shielding of cable	Steel braid		Steel braid		
Material of the measuring sleeve	St V 2 A	Brass	St V 2 A		
Dimensions	Fig. 1	Fig. 2	Fig. 1	Fig. 3	Fig. 5
Example for ordering	Standard-sensor Pt100 No. 151-046110	Sensor with variable mounting depth Pt100 No. 151-046120*	Standard-sensor J (Fe-CuNi) No. 151-046112 K (Ni-CrNi) No. 151-046062	Sensor with variable mounting depth J (Fe-CuNi) No. 151-046122* K (Ni-CrNi) No. 151-046063*	Mineral-insulated thermocouple J (Fe-CuNi) No. 151-046180 K (Ni-CrNi) No. 151-046185
Notes	* Bayonet coupling No. 151-046200 included (Fig. 4)				

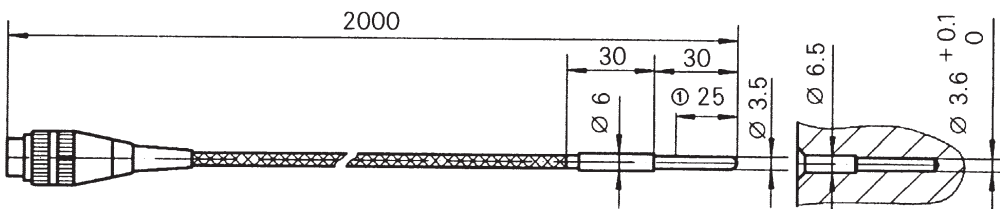


Fig. 1: Standard sensor (plug Pt100)
⊙ Active zone of sensor Pt100

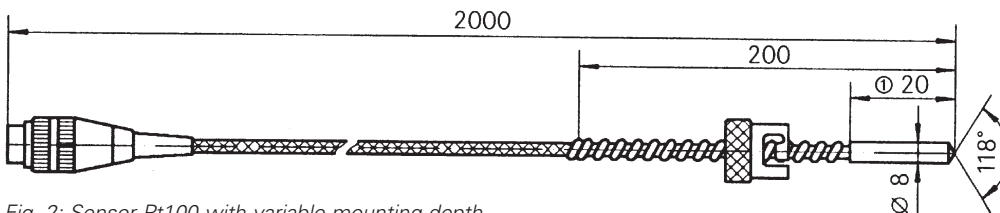


Fig. 2: Sensor Pt100 with variable mounting depth
⊙ Aktive zone

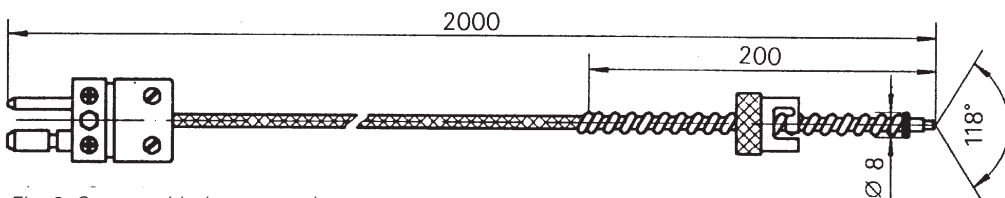


Fig. 3: Sensor with thermocouple

Further accessories on request

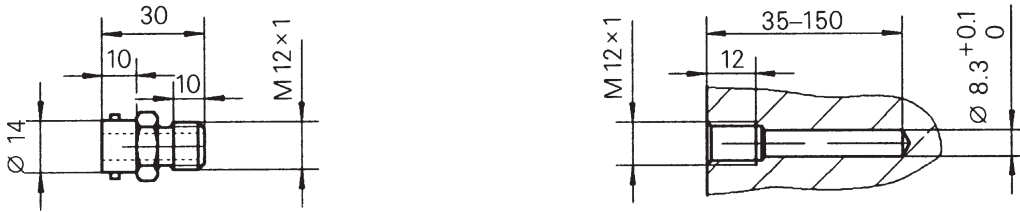


Fig. 4: Bayonet coupling and drilling scheme

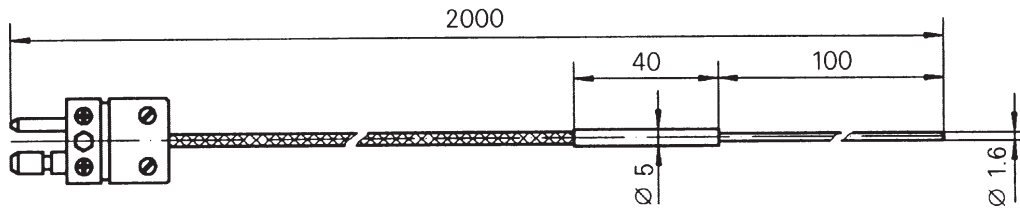


Fig. 5: Mineral-insulated thermocouple

Drilling diameter 1.7 mm

Accessories for interface

Cable and plug upon request.

Operating material

Heat transfer fluids

1. Synthetic thermal oil RO150. For units with max. outlet temperatures of 200 °C.

Unit	Order No.
20 l can	451-081014
200 l barrel	451-081015

2. Synthetic thermal oil RO300. For units with max. outlet temperatures of 340 °C.

Unit	Order No.
20 l can	451-081022
200 l barrel	451-081021

3. Synthetic heat transfer fluid RO200. For units with max. outlet temperatures of 200 °C. Cannot be mixed with thermal oil.

Unit	Order No.
20 l can	451-081030
200 l barrel	451-081031

Descaling agent RREM93

For descaling unit REG.

Unit	Order No.
1 kg	451-081211

Corrosion inhibitor RK93

For units with water as heat transfer fluid.

Unit	Order No.
1 l can	451-081125
5 l can	451-081126
30 l can	451-081129
Test set for checking concentration	451-081130

System cleaner SR80

For units with thermal oil as circulating fluid.

Unit	Order No.
1 l can	451-081310
5 l can	451-081311

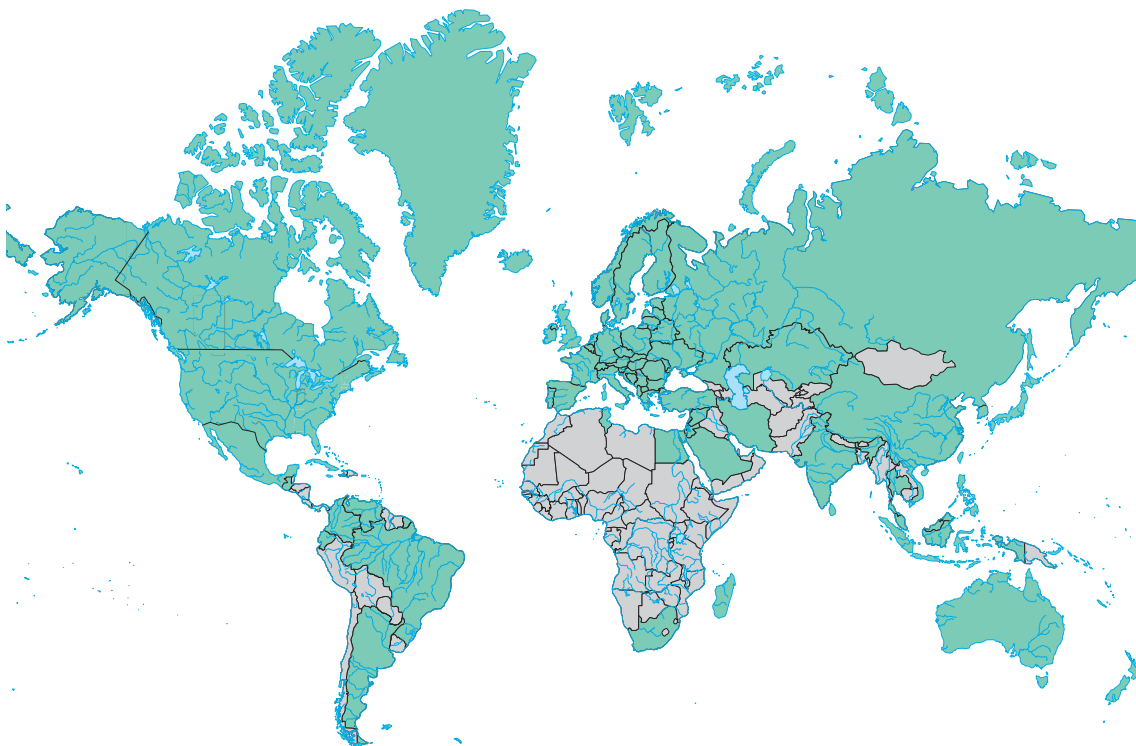
Further accessories on request

Since there is very little systematically compiled, technically relevant documentation on temperature control, we have provided it ourselves.



Regloplas' technical literature: Our books, Temperature Control by Means of Fluid Media, and Temperature Tables, are valuable tools for day-to-day practice.

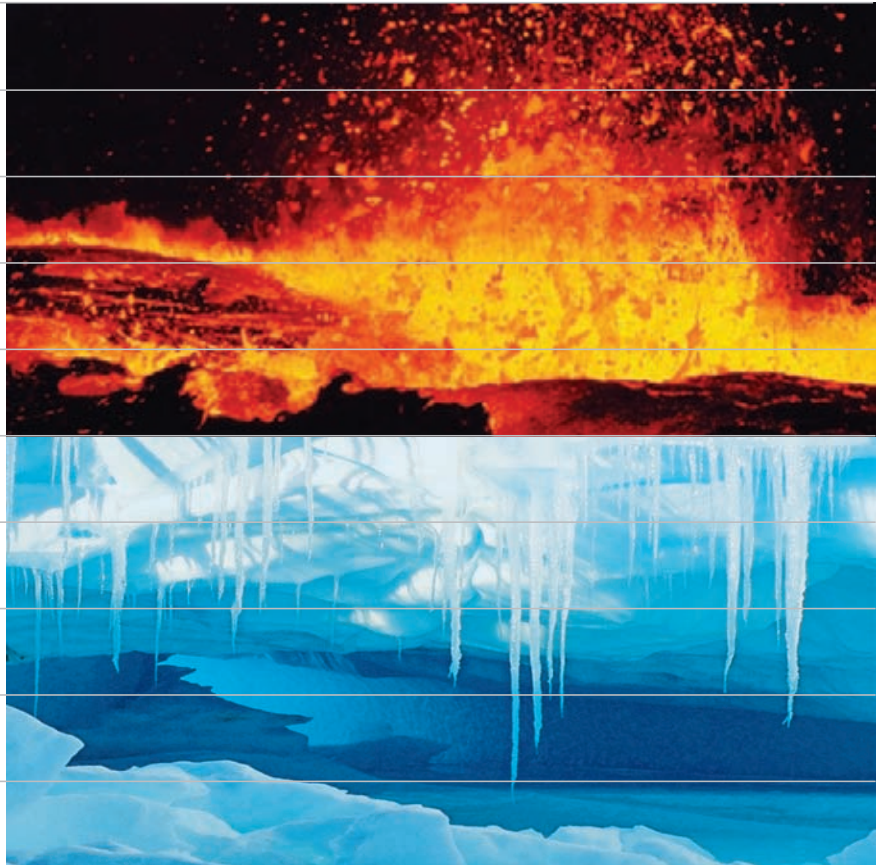
Regloplas - Your Partner, worldwide



■ We are represented locally in over 50 countries.

Temperature Control Technology

in short, a decisive increase
in quality and profitability!



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