

Product data sheet

DYNEO DD-450F Refrigerated / heating circulator

New temperature control technology for demanding applications

Refrigerated circulators of the DYNEO series distinguish themselves with a great price-performance ratio. The instruments offer high heating/cooling capacities for short heat-up and cool-down times. The refrigerated circulators work precisely and reliably even at higher ambient temperatures up to +40 °C. Either in basic research, in material testing or in technical systems – the DYNEO refrigerated circulators offer functional solutions for every requirement and budget.

With natural refrigerant

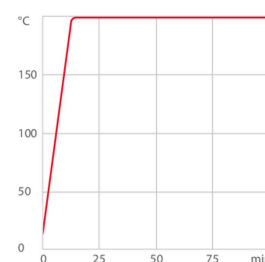
The DYNEO DD-450F is available with natural refrigerant.
Order No. 9 021 714.N1



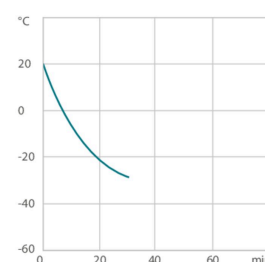
Product Features

- ✓ Optimized cooling coil design saves space in the bath tank
- ✓ powerful and infinitely adjustable pressure pump
- ✓ Flow rate 27 l/min, pressure 0.7 bar
- ✓ easy switching between internal and external circulation
- ✓ large color TFT display, multilingual interface
- ✓ central rotary knob (controller) simplifies operation
- ✓ Integrated programmer
- ✓ Integrated external Pt100 connection

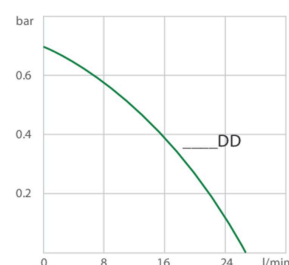
Heat-up time Medium: Thermal



Cool-down time Medium: Ethanol



Pump capacity Medium: Water



Available options

Interfaces

Digital interface
Digital interface for controlling the circulator via RS232.



Analogue interface
Analog interface includes Standby, Reg-Eprog and alarm output for DYNEO circulators.



Performance values

230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)	
Heating capacity kW	2
Viscosity max. cSt	50
Pump capacity flow pressure l/min	8 ... 27
Pump capacity pressure bar	0.1 ... 0.7
Power consumption A	13
Voltage Tolerance %	230V -10 / +5

Refrigerant variants

Order number including voltage version (230V/50Hz)

9021714.N1.33

Cooling capacity 1 (Ethanol)

°C	20	0	-10	-20	-30
kW ¹	0.44	0.37	0.27	0.16	0.06

Note about natural refrigerants:

Temperature control units using natural refrigerants are often subject to regulatory requirements regarding the installation site, operation, transport or disposal of the units. If you have any questions, we will be happy to advise you.

Refrigerant stage 1

Refrigerant R290

Filling weight g 33

Global Warming Potential for R290 3

Carbon dioxide equivalent t 9.9E-5

Order number including voltage version (230V/50Hz)

9021714.S1.33

Cooling capacity 1 (Ethanol)

°C	20	0	-10	-20	-30
kW ¹	0.44	0.37	0.27	0.16	0.06

Refrigerant stage 1

Refrigerant R449A

Filling weight g 70

Global Warming Potential for R449A 1397

Carbon dioxide equivalent t 0.09779

¹ Performance specifications measured in accordance with DIN 12876. Cooling capacities up to 20 °C measured with ethanol; over 20 °C with thermal oil unless otherwise specified. Performance specifications apply at an ambient temperature of 20 °C. Performance values may differ with other bath fluids.

Technical data

Available voltage versions

Order No. 9021714

Available voltage versions:

9021714.N1.01	100V 50/60Hz (Nema N5-15 Plug) (R290)
9021714.S1.01	100V 50/60Hz (Nema N5-15 Plug) (R449A)
9021714.N1.02	115V 60Hz (Nema N5-15 Plug) (R290)
9021714.S1.02	115V 60Hz (Nema N5-15 Plug) (R449A)
9021714.N1.33	200-230V 50/60Hz (Schuko Plug - CEE 7/4 Plug Type F) (R290)
9021714.S1.33	200-230V 50/60Hz (Schuko Plug - CEE 7/4 Plug Type F) (R449A)
9021714.N1.33.chn	200-230V 50/60Hz (CN Plug) (R290)
9021714.S1.33.chn	200-230V 50/60Hz (CN Plug) (R449A)
9021714.N1.04	200-230V 50/60Hz (UK Plug Type BS1363A) (R290)
9021714.S1.04	200-230V 50/60Hz (UK Plug Type BS1363A) (R449A)
9021714.N1.05	200-230V 50/60Hz (CH Plug Type SEV 1011) (R290)
9021714.S1.05	200-230V 50/60Hz (CH Plug Type SEV 1011) (R449A)

Cooling

Cooling of compressor

1-stage Air

Bath

Bath tank

Stainless steel

Bath cover

integrated

Usable bath opening cm (W x L / D)

13 x 15 / 15

Electronics

Interfaces	Alarm output optional, REG/EPROG optional, RS232 optional, Standby-Input optional, USB
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External pt100 sensor connection	integrated
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Integrated programmer	8x60 steps
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Temperature control	PID3
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Absolute temperature calibration	3 Point Calibration
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Temperature display	3.5" TFT Display
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Temperature setting	Shaft Encoder
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Electronic Timer h:min	00:00 ... 99:59
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Dimensions and volumes

Weight kg	27.4
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Barbed fittings inner diameter mm	8/12 mm
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Total dimensions cm (W x L x H)	23 x 40 x 65
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Filling volume l	3 ... 4
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Pump connections	M16x1 male
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Temperature values

Setting the resolution of the temperature display °C	0.01
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Working temperature range °C	-30 ... +200
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Temperature stability °C	±0.01
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Ambient temperature °C	+5 ... +40
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Temperature display resolution °C	0.01
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Other

Classification	Classification III (FL)
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IP Code	IP 21
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Pump function	Pressure Pump
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Pump type	Immersion Pump
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User Interface Language	Chinese, English, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish
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Included in delivery

2 Barbed fittings for tubing 8 and 12 mm ID. (Pump connections M16x1 male)
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All Benefits



Handle with ease.

Makes day-to-day work easy.
Comfortably move your JULABO Circulator around by using the ergonomic handles (front and rear).



Highly precise

PID Temperature control with drift compensation and adjustable control parameters, temperature stability $\pm 0.01 \dots \pm 0.02 \text{ }^{\circ}\text{C}$



Wide range.

Refrigerated and heating circulator in various combinations, circulator in various sizes. Maximum flexibility through a large selection of accessories.



Turn. Push. Go.

Easy operation of all parameters using the central controller.



USB.

Remote control made easy using the integrated USB interface.



RS232.

Connection using the optional RS232 interface.



Analog I/O.

Analog interfaces for integration into process control systems (optional).



Process stability.

Early warning - visual and acoustic - of critical states increases process stability.



ATC3. Calibration.

'Absolute Temperature Calibration' for compensating a physically caused temperature difference, 3-point calibration.



Connection. Easy.

Inclined pump connections (M16×1) facilitate the connection of applications. Each unit includes 2 barbed fittings of 8/12 mm diameter each.



100 % Cooling capacity

'Active Cooling Control' for cooling available throughout the entire working temperature range, fast cool-down even at higher temperatures



Brilliance. In color.

Large color display with vivid luminance is easy to read, even from a large distance.



Information. Everything clear.

Information in plain text on a large color screen.



Multi-lingual.

Operation in multiple languages.



Programmer. Integrated.

The integrated internal programmer makes it possible to automatically run temperature time profiles.



Powerful. Adjustable.

Strong pressure pump, continuously adjustable.



Temperature. Under control.

External Pt100 sensor connection for precise measurement and control directly in the external application.



Fill level. Monitored.

Fill level indicator on the display for heat-transfer liquid.



Process. Under control.

Full regulation of the dynamics control, access to all important control parameters for individual process optimization.



Stable. Mobile.

Rubber feet keep JULABO Circulators standing firm. Larger and more powerful units also have integrated rollers for easy handling.



Services 24/7.

Around the clock availability. You can find suitable accessories, data sheets, manuals, case studies, and more at www.julabo.com.



Quick support

If an error occurs, the integrated Black-Box function permits fast diagnosis by the JULABO service team



Satisfied customers.

11 subsidiaries and more than 100 partners worldwide guarantee fast and qualified JULABO support.



100% Checked.

100% testing. 100% quality. Each JULABO Circulator undergoes thorough quality testing before leaving the factory.



Quick start.

Individual JULABO consultation and comprehensive manuals at your disposal.