

DYNEO DD-1001F-BF DYNEO DD Beer Forcing Test Refrigerated-Heating Circulating Bath

The JULABO Beer Forcing Test Bath in conjunction with a photometer determines the product life of beer before clouding. The simulated aging process is achieved through a programmable temperature profile, which is repeated, until the first clouding develops.

Your advantages

- Automatic cycles of temperature ramps simulate aging
- USB connection
- · Pre-programmed temperature profiles for forcing test
- · For internal and external applications
- Program modification possible at any time
- Removable ventilation grid
- Integrated meter for reproducible time sequence
- Space-saving cooling coil design yields more usable space in the bath tank
- Large bath opening with insert for 20 bottles, 0.5 liters each (Racks for other bottle sizes on request)
- Circulator for working temperatures from -95 °C from +200 °C
- · Removable Plexiglass® cover
- All products feature user-friendly, intuitive operation
- · Extra bright displays, easy to read from a distance
- · State-of-the-art control technology for quick and highly precise results
- Many professional functions for adjusting control parameters, temperature calibration, temperature profiles etc.
- · For internal and external applications
- · Powerful and infinitely adjustable pressure pump
- Flow rate 27 l/min, pressure 0.7 bar
- · Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- · Integrated programmer
- Integrated external Pt100 connection
- RS232 interface or analog interfaces (optional)
- · Powerful cooling machines
- · Optimized cooling coil design saves space in the bath tank
- · Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.



Available voltage versions			Bath		
Order No.	9 021 709		Bath tank	Stainless steel	
Available voltage versi	ions:		Bath cover	integrated	
9 021 709.04	230V/50-60Hz (Uk	(Plug Type BS1363A)	Usable bath opening cm (W x L / D)	35 x 41 / 30	
9 021 709.05	230V/50-60Hz (CH	H Plug Type SEV 1011)			
9 021 709.33	230V/50-60Hz (So Plug Type F)	huko Plug - CEE 7/4			
9 021 709.33.chn	230V/50-60Hz (CN	l Plug)			
Cooling			Other		
Cooling of compresso	r	1-stage Air	Classification	Classification III (FL)	
		Pump function		Pressure Pump	
			Pump type	Immersion Pump	
Electronics			Dimensions and volumes		
External pt100 sensor	connection	integrated	Weight kg	73.7	
Integrated programme	er	8x60 steps	Barbed fittings inner diameter	8/12 mm	





Temperature control	PID2	Dimensions cm (W × L × H)	45 x 64 x 95
Absolute temperature calibration	3 Point Calibration	Filling volume I	42 56
Temperature display	3.5" TFT Display	Pump connections	M16x1 male
Temperature setting	Shaft Encoder		
Electronic Timer hr:min	99 59		
Temperature values			
Setting the resolution of the temperature display $^{\circ}\text{C}$	0.01		
Working temperature range °C	-38 +100		
Temperature stability °C	±0.01		
Ambient temperature °C	+5 +40		

Performance values

230V/50-60Hz (UK Plug Type BS1363A)

200V	/50H	łz						200V	/60H	lz					
Heatin	ıg cap	acity k	W				1.5	Heatin	g capa	acity k\	N				1.5
Coolin	g cap	acity (E	thanol)				Cooling	д сара	acity (E	thanol)			
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30	
kW	1	0.95	0.85	0.6	0.32	0.12		kW	1	0.95	0.85	0.6	0.32	0.12	
Viscos	sity ma	ax. cST					50	Viscos	ity ma	x. cST					50
Refrige	erant						R449A	Refrige	rant						R449A
Filling	volum	ne g					170	Filling	volum	e g					170
Global	Warn	ning Po	tential	for R4	149A		1397	Global	Warm	ing Po	tential	for R4	149A		1397
Carbo	n diox	ide equ	ıivalen	t t			0.237	Carbor	ı dioxi	de equ	iivalent	t t			0.237
Pump	capac	ity flov	v rate I	/min		1	8 27	Pump	capac	ity flov	v rate l	/min			8 27
Pump	capac	ity flov	v press	sure ba	ar		0.1 0.7	Pump	capac	ity flov	v press	ure ba	ar		0.1 0.7
230V	//50H	łz						230V	/60H	z					
Heatin	ig cap	acity k	W				1.5	Heatin	g capa	acity k\	W				1.5
ricatii	• .									/-	thanol)			
		acity (E	thanol)				Cooling	g capa	acity (E	unanoi	,			
		acity (E 10	thanol) -10	-20	-30		°C	20	acity (E 10	0	-10	-20	-30	
Coolin	g cap	, ,	0	-10		-30 0.12				10		•	-20 0.32		
°C kW	g capa 20	10	0	-10		0.12	50	°C	20	10	0	-10		0.12	50
°C kW	g capa 20 1 sity ma	10 0.95	0	-10		0.12	50 R449A	°C kW	20 1 ity ma	10	0	-10		0.12	
°C kW Viscos	g capa 20 1 sity ma	10 0.95 ax. cST	0	-10		0.12		°C kW Viscos	20 1 ity ma	10 0.95 x. cST	0	-10		0.12	50
Coolin °C kW Viscos Refrige	g capa 20 1 sity ma erant volum	10 0.95 ax. cST	0.85	-10 0.6	0.32	0.12	R449A	°C kW Viscos Refrige	20 1 ity ma erant volum	10 0.95 ix. cST e g	0 0.85	-10 0.6	0.32	0.12	50 R449A
Coolin °C kW Viscos Refriga Filling Global	g capa 20 1 sity ma erant volum	10 0.95 ax. cST	0 0.85	-10 0.6	0.32	0.12	R449A 170	°C kW Viscos Refrige	20 1 ity ma erant volum Warm	10 0.95 ax. cST e g	0 0.85	-10 0.6	0.32	0.12	50 R449A 170
Coolin °C kW Viscos Refrigo Filling Global Carbon	g capa 20 1 sity ma erant volum Warm n diox	10 0.95 ax. cST ne g ning Po	0 0.85 otential	-10 0.6 for R ²	0.32	0.12	R449A 170 1397	°C kW Viscos Refrige Filling Global	20 1 ity ma erant volum Warm n dioxi	10 0.95 ix. cST e g ing Po de equ	0 0.85 etential	-10 0.6 for R4	0.32	0.12	50 R449A 170 1397

230V/50-60Hz (CH Plug Type SEV 1011)

200V/50Hz		200V/60Hz	
Heating capacity kW	1.8	Heating capacity kW	1.8



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	g capa	acity (E	thanol)				Coolin	g capa	acity (E	thanol)			
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30	
kW	1	0.95	0.85	0.6	0.32	0.12		kW	1	0.95	0.85	0.6	0.32	0.12	
Viscos	sity ma	ax. cST					50	Viscos	sity ma	ax. cST					50
Refrig	erant						R449A	Refrige	erant						R449A
Filling	volum	ie g					170	Filling	volum	ne g					170
Global	l Warm	ning Po	tential	for R	449A		1397	Global	Warm	ning Po	tential	for R	149A		1397
Carbo	n dioxi	ide equ	iivalen	t t			0.237	Carbo	n dioxi	ide equ	ıivalen	t t			0.237
Pump	capac	ity flov	v rate I	/min			8 27	Pump	capac	ity flov	v rate l	/min			8 27
Pump	capac	ity flov	v press	sure ba	ar		0.1 0.7	Pump	capac	ity flov	v press	sure ba	ar		0.1 0.7
230V	′/50H	lz						230V	/60H	łz					
Heatir	ng cap	acity k\	W				2	Heatin	g cap	acity k'	W				2
Coolin	ig capa	acity (E	thanol)				Coolin	g capa	acity (E	thanol)			
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30	
kW	1	0.95	0.85	0.6	0.32	0.12		kW	1	0.95	0.85	0.6	0.32	0.12	
Viscos	sity ma	ax. cST					50	Viscos	sity ma	ax. cST					50
Refrig	erant						R449A	Refrige	erant						R449A
Filling	volum	ie g					170	Filling	volum	ne g					170
Global	l Warm	ning Po	tential	for R	449A		1397	Global	Warm	ning Po	tential	for R	149A		1397
Carbo	n dioxi	ide equ	iivalen	t t			0.237	Carbo	n dioxi	ide equ	ıivalen	t t			0.237
ou.bo				/min			8 27	Pumn	canac	ity flov	v rate l	/min			8 27
Pump	capac	ity flov	v rate i	/111111			O 27	i dilip	oupuo	,		,			

230V/50-60Hz (Schuko Plug - CEE 7/4 Plug Type F)

200V/50Hz		200V/60Hz
Heating capacity kW	1.8	Heating capacity kW 1.8
Cooling capacity (Ethanol)		Cooling capacity (Ethanol)
°C 20 10 0 -10 -20 -3	80	°C 20 10 0 -10 -20 -30
kW 1 0.95 0.85 0.6 0.32 0.	12	kW 1 0.95 0.85 0.6 0.32 0.12
Viscosity max. cST	50	Viscosity max. cST 50
Refrigerant	R449A	Refrigerant R449A
Filling volume g	170	Filling volume g 170
Global Warming Potential for R449A	1397	Global Warming Potential for R449A 1397
Carbon dioxide equivalent t	0.237	Carbon dioxide equivalent t 0.237
Pump capacity flow rate I/min	8 27	Pump capacity flow rate I/min 8 27
Pump capacity flow pressure bar	0.1 0.7	Pump capacity flow pressure bar 0.1 0.7
230V/50Hz		230V/60Hz
Heating capacity kW	2	Heating capacity kW 2
Cooling capacity (Ethanol)		Cooling capacity (Ethanol)
°C 20 10 0 -10 -20 -3	80	°C 20 10 0 -10 -20 -30
kW 1 0.95 0.85 0.6 0.32 0.	12	kW 1 0.95 0.85 0.6 0.32 0.12
Viscosity max. cST	50	Viscosity max. cST 50
Refrigerant	R449A	Refrigerant R449A
Filling volume g	170	Filling volume g 170
Global Warming Potential for R449A	1397	Global Warming Potential for R449A 1397



Carbon dioxide equivalent t	0.237	Carbon dioxide equivalent t	0.237
Pump capacity flow rate I/min	8 27	Pump capacity flow rate I/min	8 27
Pump capacity flow pressure bar	0.1 0.7	Pump capacity flow pressure bar	0.1 0.7

230V/50-60Hz (CN Plug)

200V/50Hz	200V/60Hz
Heating capacity kW 1.8	Heating capacity kW 1.8
Cooling capacity (Ethanol)	Cooling capacity (Ethanol)
°C 20 10 0 -10 -20 -30	°C 20 10 0 -10 -20 -30
kW 0.1 0.95 0.85 0.6 0.32 0.12	kW 1 0.95 0.85 0.6 0.32 0.12
Viscosity max. cST 50	Viscosity max. cST 50
Refrigerant R449A	Refrigerant R449A
Filling volume g 170	Filling volume g 170
Global Warming Potential for R449A 1397	Global Warming Potential for R449A 1397
Carbon dioxide equivalent t 0.237	Carbon dioxide equivalent t 0.237
Pump capacity flow rate I/min 8 27	Pump capacity flow rate I/min 8 27
Pump capacity flow pressure bar 0.1 0.	7 Pump capacity flow pressure bar 0.1 0.7
230V/50Hz	230V/60Hz
Heating capacity kW 2	Heating capacity kW 2
Heating capacity kW 2 Cooling capacity (Ethanol)	Heating capacity kW 2 Cooling capacity (Ethanol)
3, 3	3 - 1 - 1
Cooling capacity (Ethanol)	Cooling capacity (Ethanol)
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30	Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12	Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12
Cooling capacity (Ethanol) C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12 Viscosity max. cST 50	Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12 Viscosity max. cST 50
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12 Viscosity max. cST 50 Refrigerant	Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12 Viscosity max. cST 50 Refrigerant R449A
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12 Viscosity max. cST 50 Refrigerant R449A Filling volume g 170	Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12 Viscosity max. cST 50 Refrigerant R449A Filling volume g 170
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12 Viscosity max. cST 50 Refrigerant R449A Filling volume g 170 Global Warming Potential for R449A 1397	Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 1 0.95 0.85 0.6 0.32 0.12 Viscosity max. cST 50 Refrigerant R449A Filling volume g 170 Global Warming Potential for R449A 1397

All Benefits



More bath.

Designed for more comfort. Thanks to the recessed cooling coil, the internal bath provides more space.



Solid

Minimized energy loss through high-quality insulation.



Space saving. Free up space.

Place your JULABO Circulator right next to an application, another unit, or wall. That saves space. This is made possible by eliminating vents and connections on the sides.



Tidv.

The special drain tap for easy draining of bath fluids without tools.





Condensation protection.

Superb design solution. Integrated ventilation directs air over the bath lid and minimizes condensation.



100% Checked.

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



Green technology.

Development consistently applied environmentally friendly materials and technologies.



JULABO. Quality.

Highest standards of quality for a long product life



Quick start.

Individual JULABO consultation and comprehensive manuals at your disposal.



Satisfied customers.

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



Services 24/7.

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



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 ±0.01...±0.02 °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.



Brilliance. In color.

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



USB.

Remote control made easy using the integrated USB interface.



Information. Everything clear.

Information in plain text on a large color screen.



RS232.

Connection using the optional RS232 interface.



Multi-lingual.

Operation in multiple languages.



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.



Programmer. Integrated.

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



Powerful. Adjustable.

Strong pressure pump, continuously adjustable.





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



Highest measuring accuracy

'Absolute Temperature Calibration' for manual compensation of a temperature difference, 3point calibration



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 heattransfer 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.