

# **DYNEO DD-600F Refrigerated - Heating Circulator**

DYNEO DD heating circulators for internal and external applications are equipped with closed bath tanks. The tanks are well insulated and include a coil for counter-cooling. An integrated drain tap makes emptying the tank safe and clean. The multilingual 3.5-inch color display and unique rotary knob provide for straightforward and intuitive operation.

Optional analog and digital interface

DYNEO thermostats can optionally be equipped with analogue and digital interfaces. To request the options, order number must be extended with .d for the digital and .a for the analog interface (9XXX XXXX.A / 9XXX XXX.D)





#### Your advantages

- USB connection
- · Removable ventilation grid
- · Space-saving cooling coil design provides more usable space in the bath tank
- For internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 27 I/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
- 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.

# **Technical data**

Available voltage	versions		Bath						
Order No.	9 021 704		Bath tank	Stainless steel					
Available voltage vers	sions:		Bath cover integrated						
9 021 704.01	100V/50-60Hz (Nei	ma N5-15 Plug)	Usable bath opening in. (W x L / D) 8.7 x 5.9 / 5.9						
9 021 704.02	115V/60Hz (Nema	N5-15 Plug)							
9 021 704.33	200-230V/50-60Hz 7/4 Plug Type F)	(Schuko Plug - CEE							
9 021 704.04	200-230V/50-60Hz BS1363A)	(UK Plug Type							
9 021 704.05	200-230V/50-60Hz 1011)	(CH Plug Type SEV							
9 021 704.33.chn	200-230V/50-60Hz	(Nema N5-15 Plug)							
Cooling			Other						
Cooling of compresso	or	1-stage Air	Classification	Classification III (FL)					
			Pump function	Pressure Pump					
			Pump type	Immersion Pump					
Electronics			Dimensions and volumes						
External pt100 sensor	r connection	integrated	Weight lbs	78.7					
Integrated programm	er	8x60 steps	Barbed fittings inner diameter 8/12 mm						
Temperature control		PID2	Dimensions in. $(W \times L \times H)$	13 x 18.5 x 27.2					



Absolute temperature calibration	3 Point Calibration	Filling volume I	5 7.5
Temperature displayTemperature display	3.5" TFT Display	Pump connections	M16x1 male
Temperature settingTemperature setting	Shaft Encoder		
Electronic Timer hr:min	99 59		
Temperature values			
Setting the resolution of the temperature display °C	0.01		
Working temperature range °C	-35 +200		
Temperature stability °C	±0.01		
Ambient temperature °C	+5.0 +40.0		

# Performance values

# 100V/50-60Hz (Nema N5-15 Plug)

100V	//50H					100V/60Hz										
Heatir	ng capa	acity k	W			(	0.8	Heating capacity kW					(	0.8		
Coolin	Cooling capacity (Ethanol)								Cooling capacity (Ethanol)							
°C	200	20	10	-10	-20	-30	°C	200	20	10	0	-10	-20	-30		
kW	0.6	0.6	0.54	0.5	0.33	0.19	0.07	kW	0.6	0.6	0.54	0.5	0.33	0.19	0.07	
Viscos	sity ma	x. cST	-			ļ	50	Viscos	sity ma	x. cST	-			į.	50	
Refrig	erant						R452A	Refrig	erant					ı	R452A	
Filling	volum	e g					150	Filling	volum	e g					150	
Globa	l Warm	ing Po	otential	for R	452A	:	2140	Global	Warm	ning Po	otential	for R	452A	2	2140	
Carbon dioxide equivalent t 0.321							0.321	Carbon dioxide equivalent t					(	0.321		
Pump capacity flow rate I/min 8 27							8 27	Pump capacity flow rate I/min 8 27					3 27			
Pump capacity flow pressure psi 1.5 10.2							1.5 10.2	Pump capacity flow pressure psi					-	1.5 10.2		

# 115V/60Hz (Nema N5-15 Plug)

115V/60Hz												
Heatir	ng capa	acity k	W				1					
Cooling capacity (Ethanol)												
°C 200 20 0 -10 -20 -30												
kW	0.6	0.6	0.44	0.27	0.16	0.04						
Viscos	sity ma	x. cST					50					
Refrig	erant						R449A					
Filling	volum	e g					150					
Globa	l Warm	ing Po	tentia	l for R4	149A		1397					
Carbo	n dioxi	de equ	ıivalen	t t			0.21					
Pump	capac	ity flov	v rate l	/min			8 27					
Pump	capac	ity flov	v press	sure ps	si		1.5 10.2					

# 200-230V/50-60Hz (Schuko Plug - CEE 7/4 Plug Type F)

200V/50Hz		200V/60Hz	
Heating capacity kW	1.5	Heating capacity kW	1.5



Coolin	na 0055	oity /F	thono	1)				Coolim	a 00ro	oity (r	-thona	1)			
	ng capa	• •			00	00			g capa	• •			00	00	
°C	200	20	0	-10	-20	-30		°C	200	20	0	-10	-20	-30	
kW	0.6	0.6	0.44	0.27	0.16	0.04		kW	0.6	0.6	0.44	0.27	0.16	0.04	
Viscos	sity ma	x. cST					50	Viscos	sity ma	x. cST	-				50
Refrig	erant						R449A	Refrig	erant						R449A
Filling	volum	e g					150	Filling	volum	e g					150
Globa	l Warm	ing Po	tentia	for R4	149A		1397	Global Warming Potential for R449A 1397							
Carbo	n dioxi	de equ	ıivalen	t t			0.21	Carbo	n dioxi	de equ	uivalen	t t			0.21
Pump	capac	ity flov	v rate l	/min			8 27	Pump	capac	ity flov	w rate l	/min			8 27
Pump	capac	ity flov	v press	sure ps	si		1.5 10.2	Pump capacity flow pressure psi							1.5 10.2
230V	//50H	Z						230V	/60H	Z					
Heatir	ng capa	acity k	W				2	Heatir	ıg capa	city k	W				2
Coolin	ng capa	acity (E	thano	l)				Coolin	g capa	city					
°C	200	20	0	-10	-20	-30		°C	200	20	0	-10	-20	-30	
kW	0.6	0.6	0.44	0.27	0.16	0.04		kW	0.6	0.6	0.44	0.27	0.16	0.04	
Viscos	sity ma	x. cST					50	Viscos	sity ma	x. cST	-				50
Refrig	erant						R449A	Refrig	erant						R449A
Filling	volum	e g					150	Filling	volum	e g					150
Globa	l Warm	ing Po	tentia	for R4	149A		1397	Global Warming Potential for R449A 13							1397
Carbo	n dioxi	de equ	ıivalen	t t			0.21	Carbon dioxide equivalent t 0.21							0.21
Pump	capac	ity flov	v rate l	/min			8 27	Pump capacity flow rate I/min 8 27							
Pumn	capac	ity flov	v press	sure ps	si		1.5 10.2	Pump	capac	ity flov	w pres	sure ps	si		1.5 10.:

# 200-230V/50-60Hz (UK Plug Type BS1363A)

200\	200V/50Hz								200V/60Hz						
Heati	ng capa	acity k	W				1.5	Heatin	g capa	city k	W				1.5
Cooli	ng capa	acity (E	thano	l)				Coolin	g capa	city (E	thano	l)			
°C	200	20	0	-10	-20	-30		°C	200	20	0	-10	-20	-30	
kW	0.6	0.6	0.44	0.27	0.16	0.04		kW	0.6	0.6	0.44	0.27	0.16	0.04	
Viscosity max. cST 50									ity ma	x. cST					50
Refrigerant R449A								Refrige	erant						R449A
Filling volume g 150								Filling	volum	e g					150
Global Warming Potential for R449A 1397								Global	Warm	ing Po	tentia	for R4	149A		1397
Carbon dioxide equivalent t 0.21								Carbo	n dioxi	de equ	ıivalen	t t			0.21
Pump	сарас	ity flo	w rate l	/min			8 27	Pump	capac	ity flov	v rate l	/min			8 27
Pump	сарас	ity flo	w press	sure ps	si		1.5 10.2	Pump capacity flow pressure psi 1.5 10.2						1.5 10.2	
230\	<b>/</b> /50H	lz						230V/60Hz							
Heati	ng capa	acity k	W				2	Heatin	g capa	city k	W				2
Cooli	ng capa	acity (E	thano	l)				Coolin	g capa	city (E	thano	l)			
°C	200	20	0	-10	-20	-30		°C	200	20	0	-10	-20	-30	
kW	0.6	0.6	0.44	0.27	0.16	0.04		kW	0.6	0.6	0.44	0.27	0.16	0.04	
Visco	sity ma	ıx. cST	-				50	Viscosity max. cST 50						50	
Refrigerant R449A								Refrigerant R449A					R449A		
Filling	y volum	e g					150	Filling volume g 150					150		
Globa	ıl Warm	ing Po	otentia	l for R4	149A		1397	Global Warming Potential for R449A 1397							
-															



Carbon dioxide equivalent t	0.21	Carbon dioxide equivalent t	0.21
Pump capacity flow rate I/min	8 27	Pump capacity flow rate I/min	8 27
Pump capacity flow pressure psi	1.5 10.2	Pump capacity flow pressure psi	1.5 10.2

# 200-230V/50-60Hz (CH Plug Type SEV 1011)

200V	//50H	Z						200V/60Hz							
Heatir	ng capa	city k	W				1.5	Heating capacity kW 1.5						1.5	
Coolir	ng capa	city (E	thano	l)				Cooling capacity (Ethanol)							
°C	200	20	0	-10	-20	-30		°C	200	20	0	-10	-20	-30	
kW	0.6	0.6	0.44	0.27	0.16	0.04		kW	0.6	0.6	0.44	0.27	0.16	0.04	
Visco	sity ma	x. cST					50	Viscos	ity ma	x. cST		50			
Refrig	efrigerant R449A								erant						R449A
Filling	Filling volume g 150								volum	e g					150
Globa	Global Warming Potential for R449A 1397								Warm	ing Po	tential	for R4	49A		1397
Carbon dioxide equivalent t 0.21								Carboi	n dioxi	de equ	ıivalen	t t			0.21
Pump	capaci	ity flov	v rate l	/min			8 27	Pump	capac	ty flov	v rate l	/min			8 27
Pump	capaci	ity flov	v press	sure ps	si		1.5 10.2	Pump capacity flow pressure psi 1.5 10.2							1.5 10.2
230\	//50H	Z						230V/60Hz							
Haatis	20 0000	city k	W				2	Heating capacity kW 2							2
3 - 1 - 3								Cooling capacity							
	ng capa			l)				Coolin	g capa	city					
	• •			l) -10	-20	-30		Coolin °C	g capa 200	city 20	0	-10	-20	-30	
Coolin	ng capa	icity (E	thano		-20 0.16						0	-10 0.27	-20 0.16		-
°C kW	ng capa 200	20 0.6	O 0 0.44	-10		0.04	50	°C	200 0.6	20 0.6	0.44			0.04	50
°C kW	ng capa 200 0.6 sity ma	20 0.6	O 0 0.44	-10		0.04		°C kW	200 0.6 sity ma	20 0.6	0.44			0.04	
°C kW Viscos Refrig	ng capa 200 0.6 sity ma	20 0.6 x. cST	O 0 0.44	-10		0.04	50	°C kW Viscos	200 0.6 Sity ma	20 0.6 x. cST	0.44			0.04	50
Cooling °C kW Viscos Refrig Filling	200 0.6 sity ma	acity (E 20 0.6 x. cST	0 0.44	-10 0.27	0.16	0.04	50 R449A	°C kW Viscos Refrige	200 0.6 lity ma erant volum	20 0.6 x. cST e g	0.44	0.27	0.16	0.04	50 R449A
Coolin°C kW Viscos Refrig Filling	200 0.6 sity ma	20 0.6 x. cST	0 0.44	-10 0.27	0.16	0.04	50 R449A 150	°C kW Viscos Refrige Filling	200 0.6 sity ma erant volum Warm	20 0.6 x. cST e g ing Po	0.44	0.27 for R4	0.16	0.04	50 R449A 150
°C kW Viscos Refrig Filling Globa Carbo	ng capa 200 0.6 sity ma erant volume	20 0.6 x. cST e g ing Po	0 0.44 otential	-10 0.27	0.16	0.04	50 R449A 150 1397	°C kW Viscos Refrige Filling Global	200 0.6 erant volum Warm	20 0.6 x. cST e g ing Po	0.44 otential	0.27 for R4	0.16	0.04	50 R449A 150 1397

# 200-230V/50-60Hz (Nema N5-15 Plug)

200\	//50H	lz						200V/60Hz							
Heati	ng capa	acity k	W				1.5	Heating capacity kW 1.5						1.5	
Cooling capacity (Ethanol)									Cooling capacity (Ethanol)						
°C	°C 200 20 0 -10 -20 -30								°C 200 20 0 -10 -20 -30						
kW	0.6	0.6	0.44	0.27	0.16	0.04		kW	0.6	0.6	0.44	0.27	0.16	0.04	
Visco	sity ma	x. cST	-				50	Viscos	ity ma	x. cST	-				50
Refrig	erant						R449A	Refrigerant R449					R449A		
Filling	volum	e g					150	Filling volume g 150					150		
Globa	l Warm	ning Po	otentia	l for R	149A		1397	Global	Warm	ing Po	otentia	l for R4	149A		1397
Carbo	n dioxi	de equ	uivalen	t t			0.21	Carbo	n dioxi	de equ	uivalen	t t			0.21
Pump	сарас	ity flov	w rate l	l/min			8 27	Pump	capac	ity flov	w rate l	/min		;	8 27
Pump capacity flow pressure psi 1.5 10.2								Pump capacity flow pressure psi 1.5 10.2					1.5 10.2		
230V/60Hz									230V/60Hz						



Heatir	ng capa	acity k	W				2	Heating capacity kW					:	2	
Coolir	ng capa	acity						Cooling capacity (Ethanol)							
°C	200	20	0	-10	-20	-30		°C	200	20	0	-10	-20	-30	
kW	0.6	0.6	0.44	0.27	0.16	0.04		kW	0.6	0.6	0.44	0.27	0.16	0.04	
Visco	sity ma	ıx. cS7	Г				50	Viscos	sity ma	x. cST					50
Refrig	erant						R449A	Refrigerant						- 1	R449A
Filling	volum	e g					150	Filling	volum	e g					150
Globa	l Warm	ing Po	otentia	l for R	149A		1397	Global	Warm	ing Po	tentia	for R4	149A		1397
Carbo	n dioxi	de eqı	uivalen	t t			0.21	Carbo	n dioxi	de equ	ıivalen	t t		(	0.21
Pump capacity flow rate I/min 8 27								Pump capacity flow rate I/min 8 27					8 27		
Pump capacity flow pressure psi 1.5 10.2								Pump capacity flow pressure psi 1.5 10.2					1.5 10.2		

# **All Benefits**



# More bath.

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



# 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.



### Solid.

Minimized energy loss through high-quality insulation.



#### Tidy.

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 CORIO 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



### Wide range.

Refrigerated and heating circulator in various combinations, circulator in various sizes.

Maximum flexibility through large selection of





°C



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.

Standard connection using the serial 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 control of the dynamic, access to all important control parameters for individual process optimization.



Stable. Mobile.