

MAGIO MS-900F Refrigerated / heating circulator

As with all circulators from the MAGIO range, the refrigerated circulators stand out thanks to their premium quality, high performance and intuitive operation. The devices offer extra strong pressure and suction pumps, thus fulfilling the highest demands for temperature control of external applications. Whether in basic research, material testing or technical systems – the MAGIO refrigerated circulators offer high-tech solutions for high customer requirements.

High resolution TFT touch display

The modern TFT touch display gives you all the important information at a glance. Three large, predefined main screens clearly display data and graphics with various application priorities. Menu navigation is self-explanatory, arranged by relevance to daily operations and easy to operate with the touch of a finger. The in-built help function provides detailed support in case of additional questions.



Product features

- Ideal for demanding external applications
- Simple control of complex applications
- Continuously adjustable, extremely powerful pressure / suction pump
- Flow rate 16 ... 31 I / min, pressure 0.24 ... 0.92 bar, suction 0.03 ... 0.4 bar
- Large, high-resolution TFT touch display with multilingual user interface
- Parts being in contact with the medium made of stainless steel
- Integrated programmer
- Integrated external Pt100 connection
- USB connection
- RS232 interface for online communication
- Ethernet
- analog interfaces (accessory)
- Class III (FL) according to DIN 12876-1
- Modbus
- Profibus DP (Accessory)
- RS232/RS485 interface for online communication
- Connections for solenoid valve

Technical data

Available voltage	e versions	Bath					
Order No.	9 032 706	Bath tank	Stainless steel				
Available voltage ver	rsions:	Bath cover	integrated				
9 032 706.02	115V/60Hz (Nema N5-20 Plug)	Usable bath opening in. (W x L / D)	10.2 x 13.8 / 7.9				
9 032 706.05	200-230V/50-60Hz (CH Plug Type SEV 1011)						
9 032 706.04	200-230V/50-60Hz (UK Plug Type BS1363A)						
9 032 706.33	200-230V/50-60Hz (Schuko Plug - CEE 7/4 Plug Type F)						
9 032 706.33.chn	200-230V/50-60Hz (CN Plug)						
Cooling		Other					
Cooling of compress	sor 1-stage Air	Classification	Classification III (FL)				
		IP Code	IP 21				

IP Code IP 21 Pump function Pressure Suction Pump type Immersion Pump



Electronics

External pt100 sensor connection	integrated
Integrated programmer	8x60 steps
Temperature control	ICC
Absolute temperature calibration	10 Point Calibration
Temperature displayTemperature display	7" TFT Touchscreen
Temperature settingTemperature setting	Touchscreen
Electronic Timer hr:min	00:00 99:59



Dimensions and volumes	
Weight Ibs	121
Dimensions in. ($W \times L \times H$)	15.4 x 24.4 x 29.5
Filling volume l	21 30
Pump connections	M16x1 male



Temperature values

Setting the resolution of the temperature display °C0.01Working temperature range °C-38 +200.0Temperature stability °C+/-0.01Ambient temperature °C+10.0 +40.0
Temperature stability °C +/-0.01
Ambient temperature °C+10.0 +40.0
Temperature display resolution °C 0.01



Performance values

115V/60Hz (Nema N5-20 Plug)

115V	115V/60Hz										
Heatir	ng capa	acity k\	N				1				
Coolin	ig capa	acity (E	thano	I)							
°C	20	10	0	-10	-20	-30					
kW	0.9	0.85	0.8	0.52	0.31	0.11					
Viscos	sity ma		70								
Refrig	erant						R449A				
Filling	volum	e g					220				
Global	l Warm	ning Po	tentia	l for R4	49A		1397				
Carbo	n dioxi	de equ	ivalen	tt			0.307				
Pump	capac	ity flov	rate	/min			16 31				
Pump	capac	ity flov	/ pres	sure ps	si		3.5 13.3				
Maxim	านm รเ	uction p	osi				-0.45.8				
Power							16 A				

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

200V,	/50H	lz						200V	/60H	z					
Heating	g capa	acity k\	Ν				1.6	Heating capacity kW 1.6						1.6	
Cooling	g capa	acity (E	thano	l)				Cooling capacity (Ethanol)							
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30	
kW	0.9	0.85	0.8	0.52	0.31	0.11		kW	0.9	0.85	0.8	0.52	0.31	0.11	
Viscos	ity ma	ax. cST				-	70	Viscosity max. cST							70
Refrige	Refrigerant R4					R449A	Refrige	erant						R449A	
Filling volume g 220							220	Filling	volum	e g					220
Global Warming Potential for R449A 1397							1397	Global	Warm	ing Po	tentia	l for R4	149A		1397
Carbon dioxide equivalent t 0.307							0.307	Carbo	n dioxi	de equ	ivalen	tt			0.307
Pump capacity flow rate I/min 16 31						16 31	Pump	capac	ity flow	rate l	/min			16 31	
Pump capacity flow pressure psi 3.5 13.3						3.5 13.3	Pump capacity flow pressure psi							3.5 13.3	
Maxim	um sı	uction p	osi			-	-0.45.8	Maximum suction psi							-0.45.8
Power							10 A	Power							10 A
230V	/50H	lz						230V/60Hz							
Heating	g capa	acity k\	N			:	2	Heating capacity kW 2							
Cooling	g capa	acity (E	thano	l)				Cooling capacity (Ethanol)							
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30	
kW	0.9	0.85	0.8	0.52	0.31	0.11		kW	0.9	0.85	0.8	0.52	0.31	0.11	_
Viscos	ity ma	ax. cST					70	Viscos	sity ma	ıx. cST					70
Refrige	erant					I	R449A	Refrige	erant						R449A
Filling	volum	ie g				:	220	Filling volume g							220
Global	Warm	ning Po	tentia	l for R4	149A		1397	Global Warming Potential for R449A							1397
Carbon	n dioxi	ide equ	ivaler	nt t		(0.307	Carbon dioxide equivalent t							0.307
Pump	сарас	ity flov	v rate	l/min			16 31	Pump capacity flow rate I/min							16 31
Pump	сарас	ity flov	v pres	sure ps	si	;	3.5 13.3	Pump capacity flow pressure psi3.5 13.3							



Maximum suction psi	-0.45.8	Maximum suction psi	-0.45.8
Power	10 A	Power	10 A

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

200V/50Hz		200V/6	60Hz					
Heating capacity kW	1.6	Heating	capacity	κW				1.6
Cooling capacity		Cooling capacity (Ethanol)						
°C 20 10 0 -10 -20 -3	0	°C	20 10	0	-10	-20	-30	
kW 0.9 0.85 0.8 0.52 0.31 0.	11	kW (0.9 0.8	0.8	0.52	0.31	0.11	_
Viscosity max. cST	70	Viscosity	ty max. cS	Т				70
Refrigerant	R449A	Refrigera	ant					R449A
Filling volume g	220	Filling vo	olume g					220
Global Warming Potential for R449A	Global W	Warming F	otentia	l for R4	149A		1397	
Carbon dioxide equivalent t	0.307	Carbon c	dioxide eo	luivaler	nt t			0.307
Pump capacity flow rate I/min	16 31	Pump ca	apacity flo	w rate	l/min			16 31
Pump capacity flow pressure psi	Pump ca	apacity flo	w pres	sure ps	si		3.5 13.3	
Maximum suction psi	-0.45.8	Maximur	IM suction	psi				-0.45.8
Power	12 A	Power						12 A
230V/50Hz		230V/6	60Hz					
			111				~	
Heating capacity kW	2	Heating	capacity	KVV				2
Heating capacity kW Cooling capacity (Ethanol)	2	•	capacity capacity		l)			2
		Cooling			l) -10	-20	-30	2
Cooling capacity (Ethanol)	0	Cooling of	capacity	(Ethanc 0	-10	-20 0.31	-30	_
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -3	0	Cooling of 2 °C 2 kW 0	capacity 20 10	Ethanc 0 0.8	-10	-	-30 0.11	_
°C 20 10 0 -10 -20 -3 kW 0.9 0.85 0.8 0.52 0.31 0.35	0	Cooling of 2 °C 2 kW 0	capacity 20 10 0.9 0.8 ty max. cS	Ethanc 0 0.8	-10	-	-30 0.11	
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -3 kW 0.9 0.85 0.8 0.52 0.31 0.7 Viscosity max. cST Viscosity max. cST Cooling capacity (Ethanol) Cooling capacity (Et	0 11 70	Cooling of °C 2 kW 0 Viscosity	capacity 20 10 0.9 0.8 ty max. cS	Ethanc 0 0.8	-10	-	-30 0.11	70
°C 20 10 0 -10 -20 -3 kW 0.9 0.85 0.8 0.52 0.31 0.7 Viscosity max. cST Refrigerant	0 11 70 R449A	Cooling of °C 2 kW 0 Viscosity Refrigera	capacity 20 10 0.9 0.8 ty max. cS	Ethanc 0 0.8 T	-10 0.52	0.31	-30 0.11	70 R449A
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -3 kW 0.9 0.85 0.8 0.52 0.31 0.7 Viscosity max. cST Refrigerant Filling volume g	0 11 70 R449A 220	Cooling of °C 2 kW 0 Viscosity Refrigera Filling vo Global W	capacity 20 10 0.9 0.8 ty max. cS ant olume g	Ethanc 0 0.8 T	-10 0.52	0.31	-30 0.11	70 R449A 220
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -3 kW 0.9 0.85 0.8 0.52 0.31 0.5 Viscosity max. cST Filling volume g Global Warming Potential for R449A	0 1 70 R449A 220 1397	Cooling of °C 2 kW 0 Viscosity Refrigera Filling vo Global W Carbon of	capacity 20 10 0.9 0.8 ty max. cS ant olume g Varming F	Ethanco 0 5 0.8 T Potentia juivaler	-10 0.52 I for R4	0.31	-30 0.11	70 R449A 220 1397
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -3 kW 0.9 0.85 0.8 0.52 0.31 0.7 Viscosity max. cST Refrigerant Filling volume g Global Warming Potential for R449A Carbon dioxide equivalent t 4	0 11 70 R449A 220 1397 0.307	Cooling of °C 2 kW 0 Viscosity Refrigera Filling vo Global W Carbon c Pump ca	capacity 20 10 0.9 0.85 ty max. cS rant olume g Varming F dioxide eq	(Ethano 0 5 0.8 T Potentia Juivaler	-10 0.52 I for R4 It t I/min	0.31 149A	-30 0.11	70 R449A 220 1397 0.307
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -3 kW 0.9 0.85 0.8 0.52 0.31 0.3 Viscosity max. cST Viscosity max. cST Filling volume g Global Warming Potential for R449A Carbon dioxide equivalent t Pump capacity flow rate l/min	0 1 70 R449A 220 1397 0.307 16 31	Cooling of °C 2 kW 0 Viscosity Refrigera Filling vo Global W Carbon of Pump ca	capacity 20 10 0.9 0.8 ty max. cS ant olume g Warming F dioxide ec apacity flo	Ethanco 0 0.8 T Potentia Juivaler ow rate	-10 0.52 I for R4 It t I/min	0.31 149A	-30 0.11	70 R449A 220 1397 0.307 16 31

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

200V/50Hz							200V/60Hz								
Heating capacity kW 1.6						1.6	Heating capacity kW					1.6			
Cooling capacity (Ethanol)							Coolin	ig capa	acity (E	thano	I)				
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30	
kW	0.9	0.85	0.8	0.52	0.31	0.11		kW	0.9	0.85	0.8	0.52	0.31	0.11	
Visco	Viscosity max. cST 70						Viscosity max. cST 70						70		
Refrig	erant						R449A	Refrigerant						R449A	
Filling	volum	ie g					220	Filling volume g 220						220	
Globa	l Warm	ning Po	tentia	l for R4	149A		1397	Global Warming Potential for R449A 1397						1397	
Carbon dioxide equivalent t 0.307						Carbon dioxide equivalent t 0.307					0.307				
Pump	сарас	ity flow	v rate	l/min			16 31	Pump capacity flow rate I/min						16 31	

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Pump	capac	ity flov	v pres		3.5 13.3					
Maxim	าum รเ	uction p	osi				-0.45.8		N	
Power							15 A			
230V/50Hz										
Heatir	ig capa	acity k\		2		Н				
Coolin			С							
°C	20 10 0 -10 -20 -25						-30		°	
kW	0.9	0.85	0.8	0.11	0.04		k			
Viscos	sity ma	ax. cST					70			
Refrig	erant						R449A			
Filling	volum	e g					220			
Global	Warm	ning Po	tentia	l for R4	149A		1397		G	
Carbo	n dioxi	de equ	iivalen	t t			0.307		С	
Pump	сарас	ity flov	v rate	l/min			16 31		P	
Pump	сарас	ity flov	v pres	sure ps	si		3.5 13.3			
Maxim	num si	uction p	osi				-0.45.8			
Power							16 A		P	

Pump	capac	ity flow	/ press	sure ps	si		3.5 13.3
Maxim	ium su	iction p	osi				-0.45.8
Power							15 A
230V	/60H	z					
Heatin	g capa	acity kV		2			
Coolin	g capa	acity (E	thanol)			
°C	20	10	0	-10	-20	-30	
kW	0.9	0.85	0.8	0.52	0.31	0.11	
Viscos	ity ma	x. cST					70
Refrige	erant						R449A
Filling	volum	e g					220
Global	Warm	ing Po	tential	for R4	149A		1397
Carbor	n dioxi	de equ	ivalen	tt			0.307
Pump	capac	ity flow	/ rate l	/min			16 31
Pump	capac	ity flow	/ press	sure ps	si		3.5 13.3
Maxim	ium su	iction p	osi				-0.45.8
Power							16 A

200-230V/50-60Hz (CN Plug)

200	200V/50Hz										
Heatir	ng capa	acity k\	N				1.6	Н			
Coolin	ig capa	acity (E	thano	I)				С			
°C	20	10	0	-10	-20	-30		°(
kW	0.9	0.85	0.8	0.52	0.31	0.11		k			
Viscos	sity ma	ax. cST					70	V			
Refrig	erant		R449A	R							
Filling	volum	ie g		220	F						
Globa	l Warm	ning Po		1397	G						
Carbo	n dioxi	ide equ	ivalen	it t			0.307	С			
Pump	сарас	ity flov	v rate	l/min			16 31	Ρ			
Pump	capac	ity flov	v pres	sure ps	si		3.5 13.3	Ρ			
Maxin	าum รเ	uction p	osi				-0.45.8	Ν			
Power							13 A	Ρ			
230V	//50H	lz						2			
Heatir	ng capa	acity k\	N				2	Н			
Coolin	ig capa	acity (E	thano	I)				С			
°C	20	10	0	-10	-20	-30		°(
kW	0.9	0.85	0.8	0.52	0.31	0.11		k			
Viscos	sity ma	ax. cST					70	V			
Refrig	erant						R449A	R			
Filling	volum	ie g					220	F			
Globa	l Warm	ning Po	tentia	l for R4	149A		1397				
Carbo	n dioxi	ide equ	ivaler	t t			0.307				
Pump	сарас	ity flov	v rate	l/min			16 31	Ρ			
Pump	сарас	ity flov	v pres	sure ps	si		3.5 13.3	Ρ			

200V/60Hz								
Heating capacity kW							1.6	
Cooling capacity (Ethanol)								
°C	20	10	0	-10	-20	-30		
kW	0.9	0.85	0.8	0.52	0.31	0.11		
Viscosity max. cST 70								
Refrigerant							R449A	
Filling volume g							220	
Global Warming Potential for R449A							1397	
Carbon dioxide equivalent t							0.307	
Pump capacity flow rate I/min							16 31	
Pump capacity flow pressure psi							3.5 13.3	
Maximum suction psi							-0.45.8	
Power							13 A	
230V/60Hz								
Heating capacity kW							2	
Cooling capacity (Ethanol)								
Coolin	g capa	acity (E	thano	I)				
Coolin °C	g capa 20	acity (E 10	thano 0	l) -10	-20	-30		
					-20 0.31	-30 0.11		
°C kW	20 0.9	10	0 0.8	-10			70	
°C kW	20 0.9 sity ma	10 0.85	0 0.8	-10			70 R449A	
°C kW Viscos	20 0.9 sity ma	10 0.85 ax. cST	0 0.8	-10				
°C kW Viscos Refrige Filling	20 0.9 sity ma erant volum	10 0.85 ax. cST	0	-10 0.52	0.31		R449A	
°C kW Viscos Refrige Filling Global	20 0.9 sity ma erant volum Warm	10 0.85 ax. cST	0 0.8 tential	-10 0.52	0.31		R449A 220	
°C kW Viscos Refrige Filling Global Carbon	20 0.9 sity ma erant volum Warm n dioxi	10 0.85 ax. cST e g ning Po	0 0.8 tential ivalen	-10 0.52 I for R4 t t	0.31		R449A 220 1397	



Maximum suction psi	-0.45.8
Power	14 A

-0.4 ... -5.8

14 A

All Benefits



100% Checked.

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



Intelligent temperature control.

Intelligent cascade control - automatic and self-optimizing adaptation of the PID control parameters with external stability of +/- 0.05 °C.

Individual JULABO consultation and

comprehensive manuals at your disposal.



Services 24/7.

Quick start.

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



Touch display. Perfect operation.

With the touch display, the user always has an overview of all values and functions. The intuitive and multilingual menu structure enables perfect control.



Maximum safety.

Classification III according to DIN12876-1 enables safe operation, even with flammable fluids. Automatic switch-off in the event of high temperature or low liquid level.



Multi-lingual. Operation in multiple languages.



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



Green technology. Development consistently applied environmentally friendly materials and technologies.



JULABO. Quality. Highest standards of quality for a long product life.



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



Highest measuring accuracy

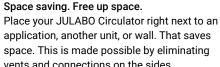
'Absolute Temperature Calibration' for manual compensation of a temperature difference, 10-point calibration



Many interfaces.

Straight-forward remote control, data management, and integration into process structures. USB, Ethernet, RS232, SD card, and alarm off are permanently integrated. Further interfaces available as accessories.

Space Place applic



vents and connections on the sides.
Programmer. Integrated.
The integrated internal programmer i



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



Fill level. Monitored. Fill level indicator on the display for heattransfer liquid.





Process stability.

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



Stable. Mobile.

Everything made of stainless steel.

Quality and material compatibility at the

highest level. All parts in contact with the

medium are entirely made of stainless steel.



Energy-saving. The high-quality insulation of all relevant

Full control of the dynamic, access to all

important control parameters for individual

Process. Under control.

process optimization.



components saves energy.



Wide range.

Analog I/O.

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

Analog interfaces for integration into process



Connection. Easy.

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



Most powerful pump.

The integrated pressure/suction pump with performance values of 0.9 bar and -0.4 bar is the most powerful in its class and continuously adjustable.



Condensation protection.

control systems (optional).

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