

***motivair***<sup>®</sup>  
COOLING SOLUTIONS



## MPC-W Water-Cooled Chillers

15- 136 Tons

OUR BUSINESS IS COOLING YOURS<sup>®</sup>

[motivaircorp.com](http://motivaircorp.com)





# COMPACT WATER-COOLED CHILLERS

## When maximum uptime and lowest TCO matter most

### RELIABILITY

The MPC-W range of chillers is manufactured using the highest quality components. All components must pass a rigorous test cycle before being selected for production use.

All MPC-W chillers are certified by ETL to be in compliance with UL and CSA standards and are CE certified. The combination of innovative design, premium components, and universal certification yields a final product worthy of the most demanding cooling applications.

### FLEXIBILITY

Process cooling and HVAC heat loads are dynamic and sometimes unpredictable. The MPC-W range offers capacity control models with one, two, and four compressors allow for staging in conjunction with cycling.

Motivair's MPC-W chillers have the most compact foot print available in today's market. The chiller range fits through standard width doors and is able to fit in a standard freight elevator to add to the ease of installation.

To further enhance system efficiency, explore the 100% series heat recovery option to provide simultaneous heating and cooling for your HVAC system. Heat recovery can be utilized for VAV re-heat as well as boiler pre heat. Hot water temperatures are available up to 140°F.

### LOWEST TOTAL COST OF OWNERSHIP

MPC-W chillers are designed for simplicity and ease of use.

- Microprocessor & PLC controls
- Single Point Power
- Electronic expansion valve
- Optional series heat recovery
- Optional water source heat pump operation
- Optional integrated pump
- Optional integrated tank
- Optional sound attenuation

# Advanced Controls

## THE MICROPROCESSOR

The standard Motivair microprocessor controller is a very powerful, yet user-friendly device. It offers a wide range of standard controls and alarms to suit any chiller application. It can control up to 4 stages of cooling in the chiller.

Optional communication features include a serial card connection to a remote PC and a full-feature, remote wall-mounting controller, connected via an RS485 cable up to 500 feet away.

For those applications requiring up to 8 cooling stages, and/or a higher level of remote communication, the PC05 advanced PLC system is available from the MPC 2200 and above.

Standard Features & Alarms	XR-30C	Micro Chiller 2SE	PC05
Highly visible digital display	x	x	x
Multi-character LCD display			x
Remote start/stop relay		x	x
General alarm relay		x	x
Supply water temp. display	x	x	x
Return water temp. display		x	x
Adjustable water set point	x	x	x
Adjustable alarm set points	x	x	x
°F/°C adjustable	x	x	x
Manual alarm reset	x	x	x
High refrigeration pressure alarm		x	x
Low refrigeration pressure alarm		x	x
Freeze alarm	x	x	x
Phase/Voltage alarm		x	x
High water temperature alarm	x	x	x
Low water temperature alarm	x	x	x
Adjustable anti-compressor short cycle feature		x	x
Low water/glycol flow alarm		x	x
Compressor overload alarm		x	x
RS 232/RS 485 communication		consult factory	x
Ethernet communication			x
LON, BACNET, MODBUS communication		consult factory	x
Optional remote wall mount controller		x	x

MPC model	Standard	Optional
MPC 0005-0010	XR-30C	N/A
MPC 0150-0300	XR-30C	Micro Chiller 2SE
MPC 0500-1500	Micro Chiller 2SE	N/A
MPC 2200-9000	Micro Chiller 2SE	PC05



Micro Chiller 2SE



PC05 Display



PC05 Board

All MPC-W controllers feature a plug-in wiring harnesses, so they can be quickly and easily changed without tools.

# Application Defined Features & Options



## WATER-COOLED CHILLERS

The MPC-W chillers can be applied to a wide range of commercial and industrial applications. Some common applications for MPC-W chillers include:

- Multipurpose HVAC
- IT Rooms
- Pharmaceutical Mfg.
- Oncology Machines
- Surgical Suites
- MRI Machines
- CT Scan Machines
- Plastics Processing
- Printing Processes
- Hydraulic Cooling
- Welding Machines
- Lasers
- Metal Spraying
- Food Processing



## COMPACT FOOTPRINT

The Motivair MPC-W chillers contain one or multiple scroll compressors, an electronic expansion valve, brazed plate evaporator(s), brazed plate condenser(s), filter dryer (per circuit), and a full charge of R-410a refrigerant. Market demand for optimum efficiency and space optimization makes the MPC-W the ideal choice for your water cooled chiller application.

Motivair's extensive list of available options makes a tailored selection easier than ever. Include a storage, tank and circulation pump combined with chiller single point power to significantly reduce your cost of installation while maximizing available space.



## SCROLL COMPRESSORS

Multiple high efficiency scroll compressors with R-410A refrigerant.

Designed to operate at high efficiency across the entire operating range with lower sound and vibration than traditional compressors. Unique scroll compressor design allows for resistance to liquid slugging. VFD options available on select models.



## FEATURES

- Industry's smallest footprint
- R-410A environmental friendly refrigerant
- High efficiency, stainless steel, brazed plate evaporators
- High efficiency, stainless steel, brazed plate condensers
- Condenser water regulating valve
- Robust industrial mainframe
- Removable access panels for easy service & maintenance
- Powerful, easy to use, non-proprietary micro-processors - "plug & play"
- Standard high-pressure and low-pressure refrigeration gauges 5 tons and above.

## ADDITIONAL FEATURES

- Total Series Heat Recovery
- Water Source Heat Pump
- Desuperheater
- Low leaving fluid (20°F)
- Laser (+/- 1°F) temperature controls
- Simplex or Duplex pump package
- Castors for portability
- Optional shell and tube evaporator
- Optional shell and tube condenser
- Optional thermal storage reservoir
- Optional remote air cooled condenser



MPC-W SPECIFICATIONS

UNIT MODEL	MPCW	2200	2800	3000	3500	4000	4500	5000	5500	5800	6000	6500	6800	8000	8500	9000	9200	9500	9800
SCROLL COMPRESSOR																			
Cooling Capacity*	Tons	16.2	18.7	22.0	24.1	27.9	32.7	37.4	42.5	47.5	53.9	62.1	65.8	74.9	83.7	93.3	103.2	120.6	136.5
Refrigerating Circuit	Qty	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2
Scroll Compressor	Qty	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4
Capacity Steps Per Compressor	Qty	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4
EVAPORATOR TYPE	Type	Braze Plate																	
Evaporator Quantity	Qty.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pressure Drop	PSI	7.4	6.2	3.8	4.5	5.9	4.6	5.9	5.1	6.4	6.5	6.7	3.0	3.9	4.9	5.9	7.4	7.4	7.4
Water Flow	GPM	43.1	49.3	58.6	63.8	74.0	86.7	99.5	112.7	125.9	143.1	165.1	175.7	199.4	222.8	247.4	273.9	320.1	362.8
CONDENSER TYPE	Type	Braze Plate																	
Condenser Quantity	Qty.	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2
Pressure Drop	PSI	6.2	2.2	2.9	3.5	3.2	4.5	4.5	5.8	7.4	5.8	6.7	2.8	3.6	4.5	5.7	7.0	6.2	8.0
Water Flow	GPM	51.1	58.6	68.7	76.2	88.1	103.0	118.9	134.7	151.0	170.4	195.9	103.5	118.0	132.5	148.8	164.2	191.1	216.2
SERIES HR TYPE	Type	Braze Plate																	
Series HR Quantity	Qty.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Capacity Heat recovery in series	Tons	15.6	17.9	21.0	23.2	26.8	31.5	36.2	41.2	46.1	52.0	59.9	63.1	72.2	81.1	90.6	100.5	116.7	132.2
In/out Water Temperature	°F	104°/115°																	
Water Flow	GPM	40.4	46.3	54.4	60.0	69.2	81.5	85.2	105.7	118.9	134.8	155.0	136.9	156.7	176.1	198.1	218.8	255.4	287.1
Pressure Drop	PSI	3.9	1.3	1.9	2.2	2.3	2.8	2.8	3.6	4.6	3.6	4.2	4.6	6.1	7.5	3.6	4.4	5.9	6.2
Cooling capacity active recovery	Tons	14.4	16.5	19.4	21.2	24.6	29.0	33.1	37.5	42.0	48.0	55.2	58.4	66.2	73.9	82.5	91.7	107.3	121.2
“MPC-W NOISE DATA (No Pump) Sound Pressure Level @ 3ft”	dB(A)	64	63	65	65	66	72	72	71	74	74	74	75	75	74	77	77	77	81
Electrical supply	V/Ph/Hz	460/3/60																	
Max abs. Current	Amps	40	49	51	57	69	75	81	87	95	103	120	143	155	167	183	183	233	267
Max LRC	Amps	123	139	147	150	178	215	266	272	319	327	365	282	340	352	407	407	478	512
OPTIONAL PUMP (EVAPORATOR)																			
Available Pump Pressure (external to chiller) PSI		28.9	27.1	24.7	24.2	23.2	21.8	27.8	26.7	23.1	27.4	24.2	28.3	24.7	21.2	27.1	26.3	22.9	28.9
Pump Power	HP	2	2	2	3	3	3	4	4	4	5	5	5	5	5	7	10	10	12
Pump Current	Amps	2.9	2.9	2.9	4.1	4.1	4.1	5.7	5.7	5.7	6.8	6.8	6.8	6.8	6.8	9.8	12.8	12.8	15.7
MPC-W WITHOUT ACCESSORIES - DIMENSIONS & WEIGHTS																			
MPC-W Length	in	39.4	39.4	39.4	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	118.1	118.1	118.1	118.1	118.1	118.1	118.1
MPC-W Width	in	19.7	19.7	19.7	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	34.6	34.6	34.6	34.6	34.6	34.6	34.6
MPC-W Height	in	47.2	47.2	47.2	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	72.8	72.8	72.8	72.8	72.8	72.8	72.8
Weight (Shipping)	lbs	880	990	1089	1166	1430	1540	1683	1859	2090	2420	2750	3256	3366	3696	3784	4136	4356	4730
MPC-W SERIES HR-DIMENSIONS & WEIGHTS																			
MPC-W Length	in	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	149.6	149.6	149.6	149.6	149.6	149.6	149.6
MPC-W Width	in	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	41.5	41.5	41.5	41.5	41.5	41.5	41.5
MPC-W Height	in	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	80.7	80.7	80.7	80.7	80.7	80.7	80.7
Weight (Transport)	lbs	946	1122	1232	1298	1606	1694	1870	2046	2266	2706	3080	4400	4510	4840	4950	5060	5104	5170
MPC-W WITH PUMP -DIMENSIONS & WEIGHTS																			
MPC-W Length	in	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	118.1	118.1	118.1	118.1	118.1	118.1	118.1
MPC-W Width	in	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	34.6	34.6	34.6	34.6	34.6	34.6	34.6
MPC-W Height	in	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	72.8	72.8	72.8	72.8	72.8	72.8	72.8
Weight (Transport)	lbs	1,124	1,279	1,323	1,499	1,896	2,006	2,337	2,513	2,668	2,910	3,086	3,638	3,924	4,189	4,519	4,696	4,850	5,247

(1) Cooling mode: evaporator water temperature in/out 12/7°C; Condenser water temperature in/out 30/35°C  
(2) Free field sound pressure level taken at 1 m from the unit and 1.5 m from its base, compressors side and full operating unit without hydronic module. The sound pressure level may change according to the various installation and has a +/- 3 dB(A) tolerance according to ISO 3744. © 2023 Motivair Corporation. Motivair reserves the right to modify specifications without notice. Reproduction of this brochure in whole or in part is prohibited.

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## COOLING SOLUTIONS



### **MLC & MLC-FC**

60-500 tons air-cooled, water-cooled & split system chillers for industrial or HVAC applications. Available Integrated Free-Cooling.



### **MLC-SC AIR-COOLED SCROLL CHILLERS**

100 – 285 tons air-cooled with scroll compressors to accommodate a wide range of operating points and customization for today's advanced industrial manufacturing and mission critical environments. Available Integrated Free-Cooling.



### **PTS**

Pump/Tank Stations for chillers and cooling systems. Standard and custom designs available.



### **MFC**

Closed loop dry-coolers for process cooling and remote "Free-Cooling" applications.



### **CHILLED DOOR<sup>®</sup> RACK COOLING SYSTEM**

Advanced server rack cooling system fits any standard or OEM computer rack. Removes up to 75 kW of server heat per door.



### **CDU**

The Coolant Distribution Unit (CDU) provides 100% sensible cooling up to 1.25MW, depending on the model. For use with the ChilledDoor<sup>®</sup> or other IT cooling systems.

5900 Genesee Street  
Lancaster, NY 14086  
Tel: 716-691-9222