

MSC Scroll Liquid Chillers



- 15 – 60 Tons
- Water-Cooled or Split System
- Optional Heat Recovery
- Optional Tank & Pumps
- Specialized HVAC Systems
- Industrial Process Cooling

motivair[™]

COOLING SOLUTIONS

www.motivaircorp.com



The Motivair MSC water-cooled scroll chillers are designed for use in both the commercial and industrial markets. Built with the latest scroll compressor technology, controlled with either microprocessors or advanced PLC's and designed in a way that minimizes floor space, the MSC chillers provide a reliable and versatile cooling solution for a wide range of applications.

MSC CHILLER FEATURES & BENEFITS

RELIABILITY & EFFICIENCY

Proven reliable & efficient hermetic scroll compressors are incorporated in a compact, water-cooled package for industrial and commercial refrigeration. Compressors installed in pairs, in 1 or 2 independent refrigeration circuits, allow staged starting and turn-down for operational savings on variable heat loads. Standard equipment includes single or dual-circuit shell & tube evaporators (ASME stamp available) and 1 or 2 shell & tube cleanable water cooled condensers fitted with water regulation valves.

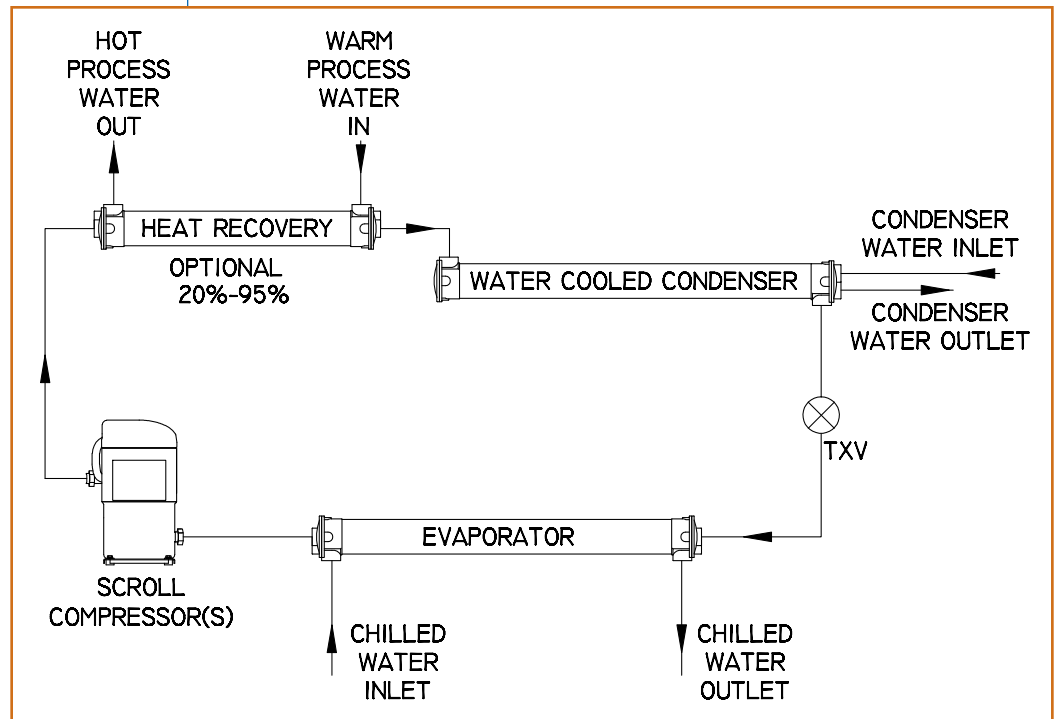
NEMA 4 control panel includes: non-fused interlocked disconnect switch, fuses, overloads, contactors and microprocessor controller for all unit functions & alarms.

Standard refrigeration equipment on all models includes suction & discharge compressor service valves, HP/LP gauges & safety switches, liquid line solenoid valve, filter-dryer, thermal expansion valve and complete refrigeration charge (except condenser-less models which are shipped with Nitrogen holding charge).

AVAILABLE OPTIONS

MSC chillers are available with several important and beneficial options to cover a wide range of applications:

- Partial or total series heat recovery is available for all models with the addition of a brazed plate or shell & tube heat recovery heat exchanger. (See below)
- Condenser-less chillers are available for use with remote air-cooled condensers. Contact Motivair for correct selection.
- Hot gas bypass option is available on one refrigerant circuit for low load operation without compressor cycling.
- Insulated, closed storage tank and 1 or 2 primary circulation pumps, all mounted in a single factory package, pre-piped and wired, ready for immediate operation.
- Noise suppression packages are available in 2 sound levels for operation down to 55 dBA.
- Standard microprocessor controls provide flexibility & security in operation while the optional PLC provides access to remote control via optional Ethernet/Bacnet/LON plug-in board.
- Standard refrigerant is R-407C. Also available are R-22, R-134a, and R-410 in 2008.



Optional Heat Recovery Circuit

TAKE CONTROL OF YOUR MSC CHILLER...

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 a higher level of remote communication, the PC02 advanced PLC system is available.



Micro Chiller



PC02 Display



PC02 Board

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

MSC model	Standard	Optional
MSC 1500-7200	Micro	PC02

MSC PUMP/TANK STATIONS

INTEGRATED OR STAND ALONE PUMP/TANK STATIONS

All MSC models can be supplied with internal simplex or duplex pumps, and a closed storage tank. Some chillers require an external pumping station and storage tank, which can be supplied separately by Motivair.

Motivair designs and builds a full range of stand alone pump stations and tank/pump station packages (See Pump Station brochure). Because every large cooling system is typically unique, Motivair designs and builds each pumping station to order.



Stand Alone
TPS 7.5 TNK

Available options include:

- Simplex, duplex or triplex pumps
- Stainless steel water circuit
- Automatic pump change over
- Visible & audible alarms
- Flow meters
- Baffled tanks
- Automatic water make-up
- Pressure & temperature gauges
- Isolation & check valves
- NEMA 4 control box
- VFD pump speed control
- High pressure pump option
- Redundant pump packages

MSC SPECIFICATIONS

WATER-COOLED	MSC	1500	2200	3000	3500	4000	5000	6000	7200
Cooling Capacity (1)	BTU/h	198,070	235,635	293,690	358,575	413,215	474,685	580,550	710,320
Optional Heating Capacity (2)	BTU/h	210,944	250,951	311,310	380,994	440,074	499,368	613,641	756,491
Nominal Flow	GPM	40	47	59	72	83	96	117	144
Evaporator Pressure Drop	PSI	4	3	4	3	4	3	4	3
Chilled Water Connections	NPT	1"1/2	2"1/2	2"1/2	2"1/2	2"1/2	3"	3"	4"
Compressor Qty.	Qty.	2	2	2	2	4	4	4	4
Refrigeration Circuits	Qty.	1	1	1	1	2	2	2	2
Capacity Steps	Qty.	2	2	2	2	4	4	4	4
Electrical Supply	V/P/Hz	460/3/60							
Current	FLA	25.7	29.3	33.5	41.0	50.6	58.6	66.4	82.0
	MCA	28.9	32.9	37.7	46.1	53.8	62.2	70.5	87.2
	MOP	41.8	47.6	54.4	66.7	66.4	76.9	87.2	108.0
Condenser Water @ 85°F (3)	GPM	50	59	73	90	103	119	145	179
Condenser Water Connections	Inches	2"	2"	2"	2"	2"	2"	2"	2"
Noise level (Sound Pressure)(4)	dB(A)	73	73	75	75	76	76	78	78
Weight - Transport	Lbs.	1,345	1,367	1,466	1,521	1,984	2,028	2,249	2,403
Weight - Operating	Lbs.	1,411	1,422	1,521	1,587	2,072	2,116	2,359	2,579
Standard Dimensions									
Length - A-	Inches	76.7	84.6	92.5	84.6	84.6	84.6	94.5	104.3
Width - B-	Inches	31.9	31.9	31.9	31.9	31.9	31.9	31.9	32.7
Height -C-	Inches	55.1	55.1	55.1	55.1	59.0	59.0	59.0	65.0

(1) Water-Cooled rating for 54°F EWT; 44°F LWT; 85°F condenser cooling water

(2) Series heat recovery with EWT, 115 F; LWT, 105 F

(3) Condenser water flow based on 10 F rise across condenser

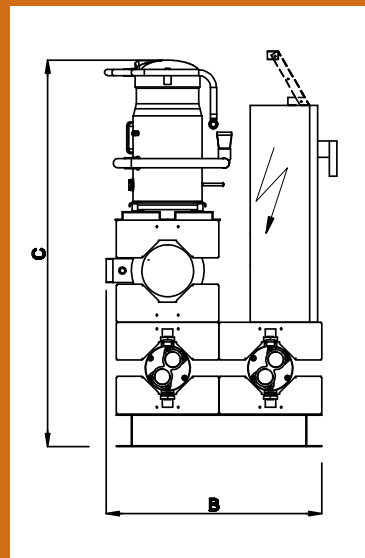
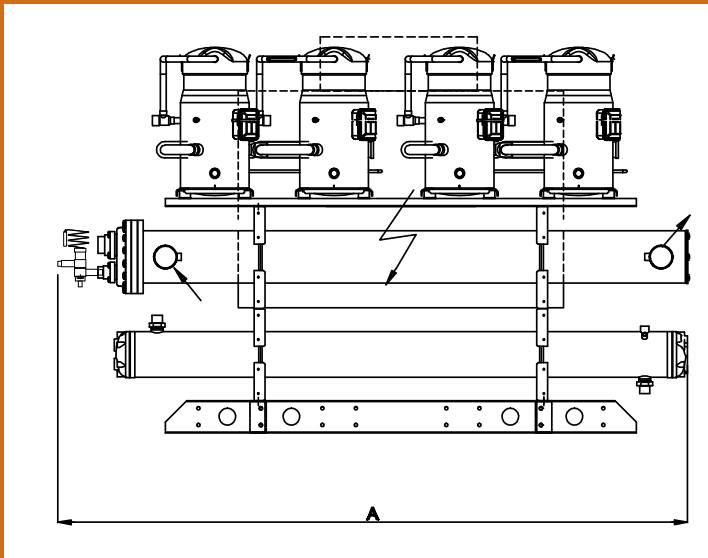
(4) Sound pressure rating measured in an open field, 3 feet from the ground, 5' from chiller

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MSC CAPACITY CORRECTION CHART

Capacity Correction Factors (cf)	(Multiply catalog capacities by correction factors)							
Chilled Water Temp. (°F)	23	32	40	45	50	55	60	
cf1 °F	0.63	0.77	0.93	1	1.1	1.2	1.3	
Condenser Water temp. (°F)	75	80	85	90	95	100	105	
cf2 °F (MLC-A)	1.06	1.03	1	0.96	.93	.9	.87	
Glycol % (by weight)	0	10	20	30	40	50		Consult Motivair
cf4	1	0.99	0.98	0.97	0.96	0.94		

DIMENSIONS



APPLICATION, INTEGRATION & SOLUTIONS FOR ALL YOUR COOLING NEEDS:



MLC

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



MHR

60-500 ton air cooled or water-cooled chillers with simultaneous heat recovery.



MPC

1/2-50 ton packaged air-cooled or water-cooled chillers for Industrial cooling, Medical cooling or custom HVAC applications. Includes integrated microprocessor, pump station, and storage reservoir.



CTC

10-200 ton low temperature process chillers with integrated pump/tank stations.



PTS

Pump/Tank Stations for chillers and cooling systems.



MOT & MEC

Open draft or closed loop evaporative cooling towers for process cooling or HVAC applications.



MFC

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

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25 John Glenn Drive

Amherst, NY 14228

Tel: 716-689-0222

Fax: 716-689-0073

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