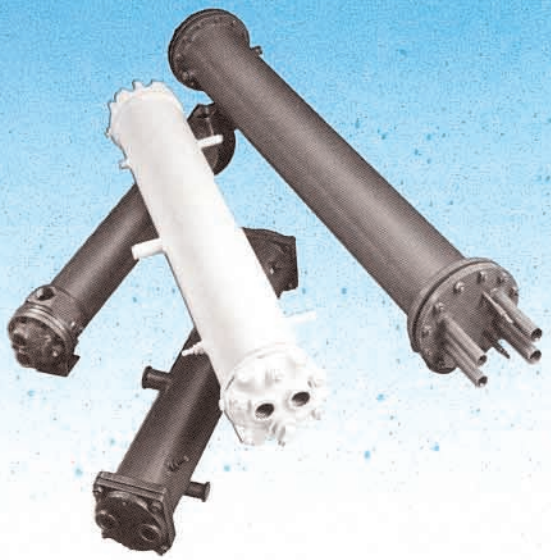
#4
Shell & Tube Chiller Barrels & Condensers

1-800-USA-COIL
(1-800-872-2645)
FAX: (610) 296-9763 • www.usacoil.com

Chiller Barrels and Condensers: Superior design, quality and reliability — all at USA.

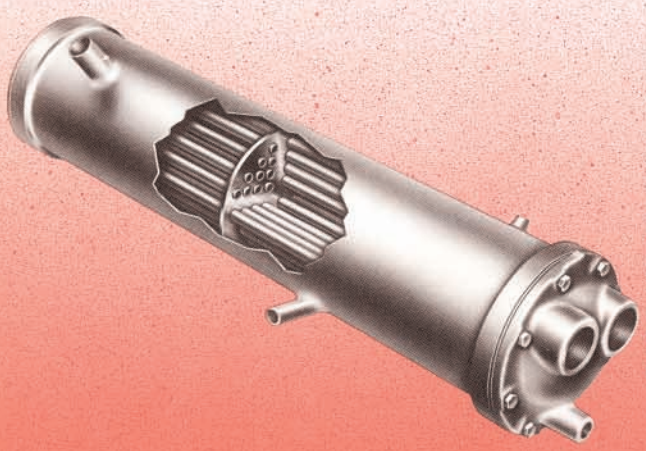


USA Coil & Air has been a leading manufacturer of quality heat exchange products for many years. We are recognized throughout the HVAC Industry for superior design and reliability for all our products. We stock almost all of the units that we build, and can offer you immediate shipment in case of emergency.

Many applications require modifications to standard units. USA builds all our units to any special materials that you require. We also encourage you to contact USA Coil & Air for any special performance requirements that you may have. USA offers a staff of local representatives, or you can contact the factory directly at our toll free number **800-872-2645**.

Chiller Barrels from USA Coil & Air are the new generation of "direct expansion" type liquid coolers. Our Chiller Barrel is designed for optimum heat transfer rates, and features rolled-in tubes with removable heads. Shell side baffling is selected for highest operating efficiencies and low fluid pressure drops.

USA builds 16 models from 5 tons to 250 tons, and most of these sizes are available from stock. You can usually substitute a USA barrel for any existing barrel that you may have. Our dimensions are similar to most manufacturer's units that are commercially available, and very few modifications to your system are required.



Water Cooled Condensers from USA Coil & Air are compact, high-capacity shell and tube units. They're ruggedly constructed, easily serviced, and perform efficiently with minimal size requirements. We build our units for a wide variety of commercial and industrial applications.

USA builds 23 sizes of HVAC Condensers from 5 tons to 225 tons. We also build 20 sizes of "cupro-nickel" condensers from 5 tons to 131 tons. These are designed for corrosion resistance to brackish water, salt water, or any water that would cause corrosion on the tube side.

TABLE OF CONTENTS

1 Chiller Barrels

Construction and Design Features

STOCK STANDARD UNITS

USA offers 16 standard models of chiller barrel in stock. Choose from 5 tons to 250 tons that cover the entire comfort cooling range. When you need a replacement unit in an emergency, you can depend on USA to supply what you need quickly.

MODERN TUBE MATERIALS

USA Coil & Air LC evaporators utilize the latest technology tubing engineered specifically for refrigerant evaporation. Special enhancements produce exceptional performance and efficiency. Refrigerant boils readily against the surface, reducing the overall vessel size and cost. The new generation of LC vessels feature heavy-duty ring and cover head fabrications and 3/4" OD tube materials to perform reliably in the most demanding industrial or HVAC applications.

MODIFICATIONS

Vessels are available in "Direct Expansion" or "Flooded" designs in standard or special materials and nozzle orientations. Evaporators can be made from all 316 stainless steel for directly cooling acids or other corrosive liquids. If your application calls for something special, just ask.

CONTROLLED VELOCITIES

DX evaporators are carefully engineered to provide excellent heat transfer rates, effective refrigerant boiling and provide assured oil carry through. Shell circuits are engineered to provide high performance with a low pressure drop to conserve the required pumping power. Vessels can be engineered for very high chilled water flows for specific applications such as ice-rinks.

MULTI-CIRCUIT FLEXIBILITY

Vessels are available with up to four separate circuits, depending on diameter. Multiple circuit vessels can be engineered for equal circuit capacity with refrigerant connections on one end of the vessel or unequal circuit capacity with connections on opposite ends to ease piping of multiple compressor systems.

CONSTRUCTION SPECIFICATIONS

SHELLS - steel pipe to ASME specification. Shells are shot blasted and cleaned prior to assembly.
TUBES - Copper high performance enhanced design roller expanded into multiple-grooved tube sheet.
TUBE SHEET - Flange quality steel to ASME specifications. Precision machined for excellent sealing.
BAFFLES - Hot-rolled steel for enhanced strength and reliability. Engineered for correct fit to reduce tube wall damage from high velocity fluids.
HEADS - Fabricated to ASME specifications using steel ring and cover design with superior gas distribution.
CONNECTIONS - Fluid connections 3" IPS and smaller terminate as MPT type. Fluid connections 4" IPS and larger terminate in 150 lb. ANSI raised face. Refrigerant connections are steel and bored to ODS of copper tubing. Thermowell, vent and drains are provided.
CODES - The refrigerant side is constructed to the latest edition of the ASME Section VIII Div. 1 code and stamped accordingly. Refrigerant side pressure is designed for 250 PSI at 100°F. Shell side design pressure is 150 PSI at 120°F. Both circuits are tested at 1.25 times the design pressure under water and dried prior to sealing.
FINISH - Exterior surfaces are cleaned and painted with a medium gray enamel paint.
INSULATION - optional 3/4" Armaflex® insulation in single or double thickness is available.

STANDARD UNITS

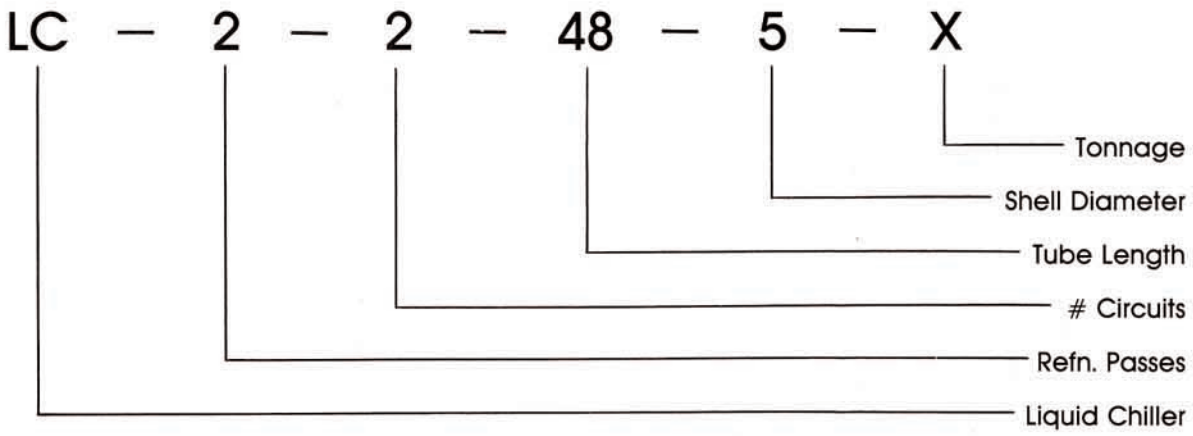
CONDENSED PERFORMANCE TABLE - R-22 @ 35°F SAT. SUCTION, .00025F.F.						
MODEL 'LC'	NOMINAL TONS 1 TON=12,000 BTU	ACTUAL BTU'S	GPM 2.3 PER TON	WATER PRESSURE DROP PSI	ENTERING WATER TEMP.	LEAVING WATER TEMP.
LC-4-1-365-5	5	51,159	12.0	1.0	54	45.5
LC-4-1485-7 1/2	7.5	86,024	18.0	2.7	54	44.5
LC-4-1-605-10	10	117,824	24.0	6.1	54	44.3
LC-4-1-606-15	15	175,920	36.0	5.8	54	44.3
LC-4-2-488-20	20	236,230	48.0	2.7	54	44.3
LC-4-2-608-25	25	308,453	60.0	5.3	54	43.8
LC-2-2-728-30	30	348,510	72.0	4.8	54	44.3
LC-2-2-848-40	40	471,608	96.0	9.6	54	44.3
LC-2-2-8410-50	50	588,962	120.0	2.8	54	44.3
LC-2-2-9610-60	60	739,972	144.0	4.6	54	43.8
LC-2-2-10810-75	75	907,633	180.0	8.7	54	44.0
LC-2-2-9612-100	100	1,192,991	240.0	7.6	54	44.1
LC-2-2-12014-125	125	1,512,504	300.0	6.6	54	44.0
LC-2-2-12016-150	150	1,849,146	360.0	5.7	54	43.8
LC-2-2-12018-200	200	2,468,446	480.0	8.1	54	43.8
LC-2-2-12020-250	250	3,098,762	600.0	7.4	54	43.8

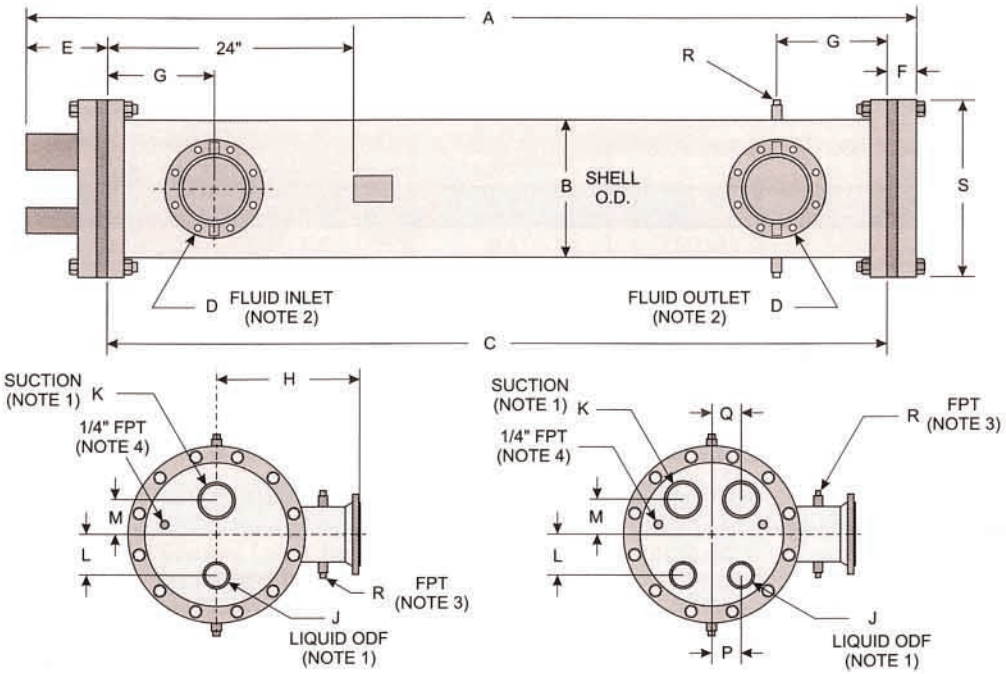
1 Ton = 12,000 BTU/HR

For performances other than R-22 @ 35°F suction, please contact factory.

NOMENCLATURE

CHILLER BARREL MODEL NUMBER



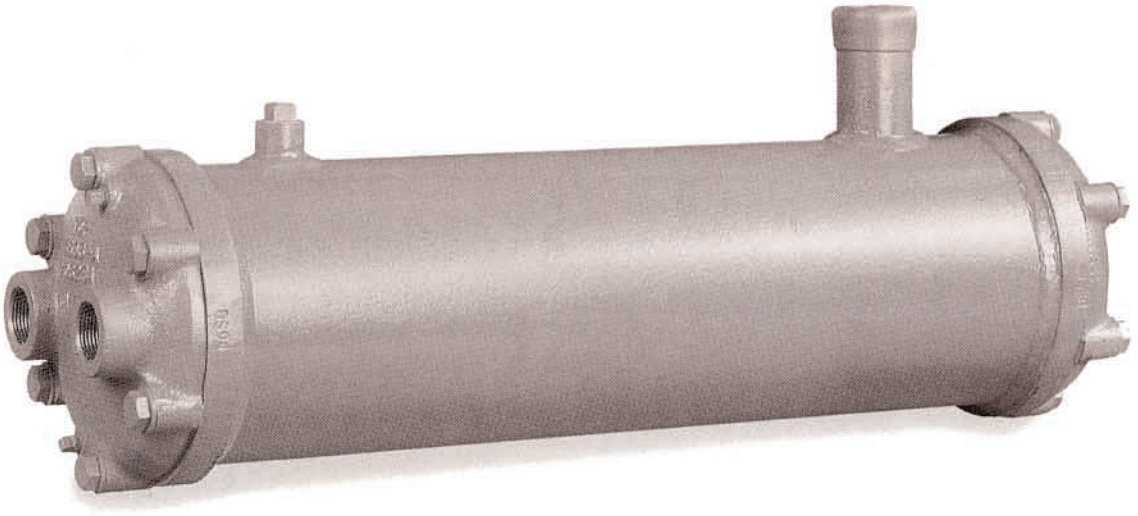


1. Suction and liquid connections are steel
2. Fluid connections are MPT thru 3" diameter. Larger sizes are 150 Lb. raised face flanges.
3. Bottom connection only on 3" MPT and smaller fluid connection models.
4. External equalizer connection.
5. On units ordered with 3/4" insulation, add thickness to appropriate dimensions.
6. Port sizes in table are correct for model shown. Refer to factory for other circuits and port sizes.

CAPACITIES AND DIMENSIONS

MODEL NO.	NOM TON	A	B	C	D	E	F	G	H	J ODF	K ODF	L	M	P	Q	R	S	WT. LBS
LC-4-1-365-5	5	44 5/8	5 1/2	35 5/8	2	7 9/16	1 7/16	3 3/16	8 5/8	5/8	1 1/8	1 3/4	1 3/4	-	-	3/4	8 1/2	150
LC-4-1-485-7 1/2	7.5	56 5/8	5 1/2	47 5/8	2	7 9/16	1 7/16	3 3/16	8 5/8	5/8	1 1/8	1 3/4	1 3/4	-	-	3/4	8 1/2	175
LC-4-1-605-10	10	68 5/8	5 1/2	59 5/8	2	7 9/16	1 7/16	3 3/16	8 5/8	5/8	1 1/8	1 3/4	1 3/4	-	-	3/4	8 1/2	200
LC-4-1-606-15	15	68	6 5/8	59 5/8	2 1/2	6 15/16	1 7/16	3 7/16	9 3/16	7/8	1 3/8	2 1/8	2 1/8	-	-	3/4	9 3/4	265
LC-4-2-488-20	20	56 7/8	8 5/8	47 5/8	3	7 11/16	1 9/16	3 7/8	10 3/16	1 1/8	1 3/8	3	3	1 7/16	1 7/16	3/4	11 3/4	330
LC-4-2-608-25	25	68 7/8	8 5/8	59 5/8	3	7 11/16	1 9/16	3 7/8	10 3/16	1 1/8	1 3/8	3	3	1 7/16	1 7/16	3/4	11 3/4	380
LC-2-2-728-30	30	80 1/4	8 5/8	71 5/8	3	7 11/16	1 9/16	3 7/8	10 3/16	1 3/8	2 1/8	2	1 5/8	1 3/4	2 1/8	3/4	11 3/4	415
LC-2-2-848-40	40	92 1/4	8 5/8	83 5/8	3	7 11/16	1 9/16	3 7/8	10 3/16	1 3/8	2 1/8	2	1 5/8	1 3/4	2 1/8	3/4	11 3/4	490
LC-2-2-8410-50	50	93	10 3/4	83 5/8	4	7 7/16	1 15/16	4 1/2	11 5/8	1 3/8	2 5/8	2 3/4	1 3/4	2	2 11/16	3/4	14 3/8	725
LC-2-2-9610-60	60	105	10 3/4	95 5/8	4	7 7/16	1 15/16	4 1/2	11 5/8	1 3/8	2 5/8	2 3/4	1 3/4	2	2 11/16	3/4	14 3/8	780
LC-2-2-10810-75	75	117	10 3/4	107 5/8	5	7 7/16	1 15/16	5 1/16	11 5/8	1 3/8	2 5/8	2 3/4	1 3/4	2	2 11/16	3/4	14 3/8	845
LC2-2-9610-100	100	105 3/8	12 3/4	95 5/8	5	7 3/4	2 3/16	5 3/4	12 5/8	1 5/8	2 5/8	3 1/4	1 3/4	2 1/2	2 3/4	3/4	16 3/8	1055
LC-2-212014-125	125	130 1/2	14	119 5/8	6	8 1/4	2 11/16	5 3/4	13 1/4	1 5/8	3 1/8	3 3/4	3	2 5/8	3 1/8	3/4	17 1/2	1510
LC-2-2-12016-150	150	131 1/2	16	119 5/8	8	8 7/8	3 3/16	7 1/16	14 1/4	2 1/8	3 1/8	4	3	3	3 1/4	3/4	19 1/2	1805
LC-2-2-12018-200	200	131 1/2	18	119 5/8	8	8 11/16	3 3/16	7 1/16	15 1/4	2 1/8	3 5/8	4 3/4	3 1/2	3 1/4	3 7/8	3/4	21 1/2	2310
LC-2-212020-250	250	132 1/2	20	119 5/8	8	9 3/16	3 11/16	8 3/8	16 1/4	2 1/8	3 5/8	5	4 1/4	3 1/2	4 3/8	3/4	23 1/2	2850

Water Cooled Condensers 2



STANDARD DESIGNS

USA Coil & Air condensers are available from standard designs for fresh or sea water duty. SWC models feature high-efficiency tube surfaces. They are available from 5 to 20 nominal tons of duty and are manufactured in large quantities using Demand-Flow-Manufacturing to provide the lowest cost per ton available and consistent quality.

MODERN TUBE MATERIALS

USA Coil & Air SWC Condensers utilize the latest technology tubing available. Years of research and development, combined with thorough testing in our own labs has resulted in the highest efficiency condensers available. All condensers are manufactured with enhanced 3/4" diameter tubing to provide heavy wall construction and ease of service from commonly available tube cleaning devices. SWC vessels are available with mounting brackets and purge ports as required.

MODIFICATIONS

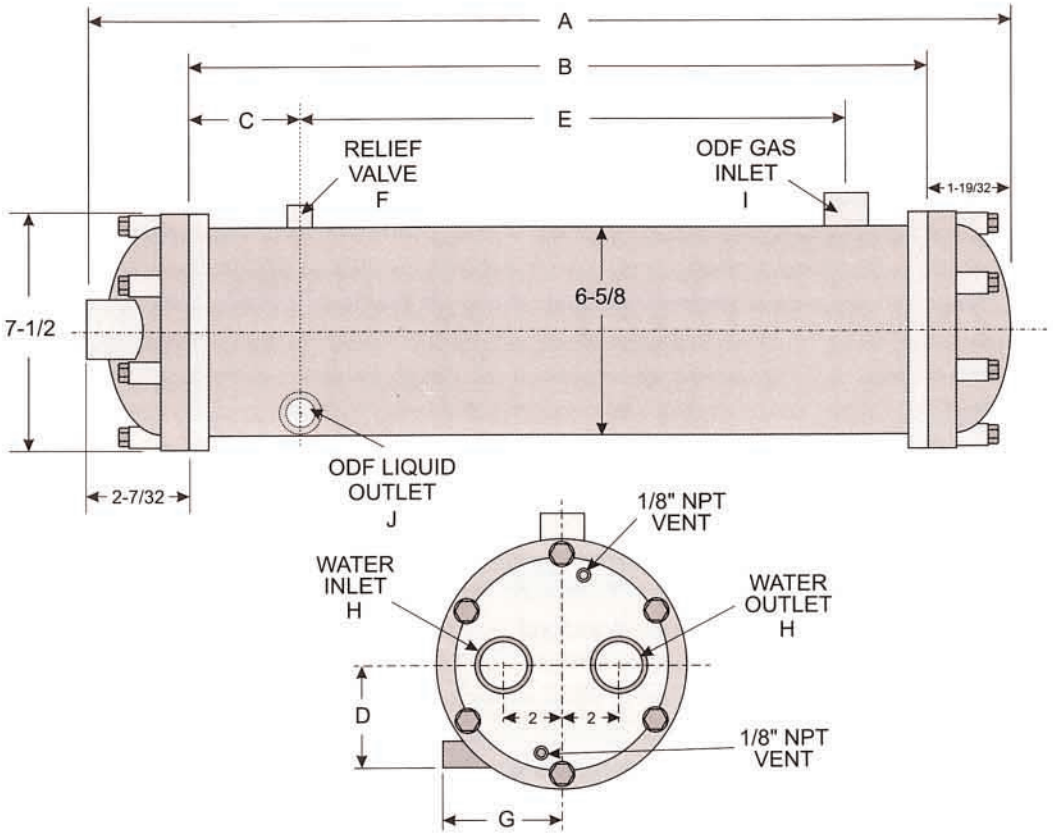
Vessels are available with special materials of construction as required. Condensers can be made with stainless steel, copper-nickel or other materials of construction for increased life with poor quality cooling water. Vessels can be equipped with Cupro-Nickel tubes and tube sheets or titanium tubes for sea water duty. If your application calls for something special just ask.

MULTI-CIRCUIT FLEXIBILITY

Special condensers are available with dual circuits by welding two shells together end-to-end. This allows the use of one water circuit to reduce piping costs. Each circuit has its own ASME code stamp.

CONSTRUCTION SPECIFICATIONS

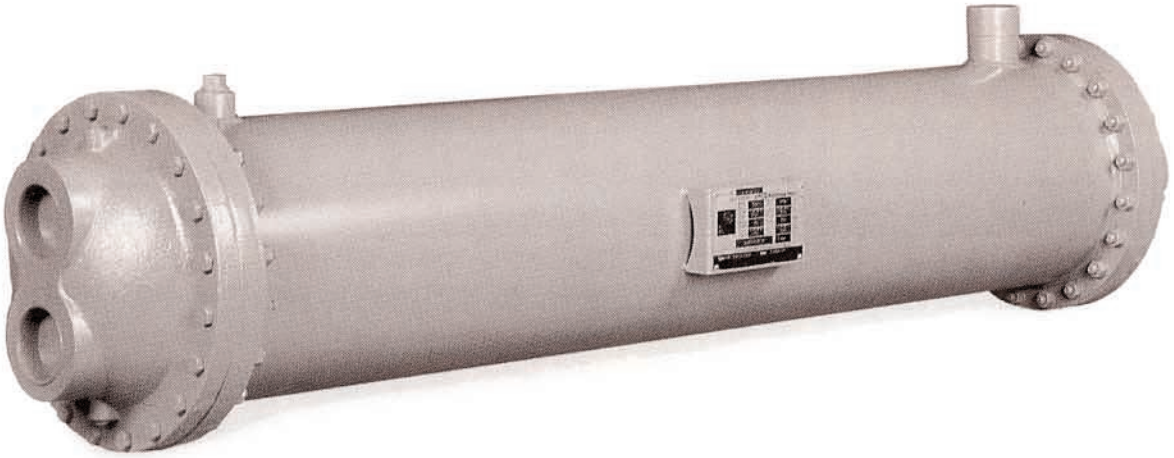
SHELLS - steel pipe to ASME specification. Shells are shot blasted and cleaned prior to assembly.
TUBES - Copper high performance enhanced design roller expanded into multiple-grooved tube sheet. Other materials available for corrosive duty.
TUBE SHEET - Flange quality steel to ASME specifications. Precision machined for excellent sealing.
TUBE SUPPORTS - Quality steel manufactured to close tolerance to minimize vibration.
HEADS - Nodular iron multi-pass design for controlled cooling water velocity.
CONNECTIONS - All water side connections are female pipe thread. Refrigerant connections are steel and bored to ODS of copper tubing. Relief, vent and drain connections are provided.
CODES - The refrigerant side is constructed to the latest edition of the ASME Section VIII Div. 1 code and stamped accordingly. Refrigerant side pressure is designed for 350 PSI minimum at 250°F. Water side design pressure is 300 PSI at 150°F. Both circuits are tested at 1.25 times the design pressure.
FINISH - Exterior surfaces are cleaned and painted with a high quality enamel primer.



DIMENSIONAL DATA - INCHES													
MODEL	NO. OF TUBES	TONS	PASS	A	B	C	D	E	F-FPT	G	H-FPT	I-ODF	J-ODF
SWC-6-246-5	22	5	6	27 9/16	23 3/4	3 1/2	2	16 3/8	1/2	4 13/16	1	1 5/8	1 1/8
SWC-6-246-7½	22	7 1/2	6	27 9/16	23 3/4	3 1/2	2	16 3/8	1/2	4 13/16	1	1 5/8	1 1/8
SWC-4-366-10	24	10	4	39 9/16	35 3/4	3 1/2	2	28 3/8	1/2	4 13/16	1 1/4	1 5/8	1 1/8
SWC-4-486-15	30	15	4	51 9/16	47 3/4	3 1/2	2	40 3/8	1/2	4 13/16	1 1/4	1 5/8	1 1/8
SWC-4-486-20	36	20	4	51 9/16	47 3/4	3 1/2	2	40 3/8	1/2	4 13/16	1 1/4	1 5/8	1 1/8

CONDENSED PERFORMANCE TABLE - R-22@105°F CONDENSING TEMP., 85°F ENT. WATER, .00025 F.F. WATER COOLED CONDENSERS									
	MODEL #	NOM. TONS	*ACTUAL TOTAL HEAT OF REJECTION BTUH	GPM 3 GPM/TON	WATER PRESSURE DROP PSI	NUMBER OF PASSES	EFFECTIVE SURFACE SQ. FT.	PUMP DOWN CAPACITY	SHIPPING WEIGHT LBS.
5 THRU 20 TONS	SWC-6-246-5	5	87,846	15.0	4.8	6	6.1	17	100
	SWC-6-246-7 1/2	7 1/2	119,864	22.5	7.3	6	7.5	15.7	105
	SWC-4-366-10	10	174,765	30.0	5.1	4	11.8	24.1	130
	SWC-4-486-15	15	273,709	45.0	11.0	4	17.6	31.2	160
	SWC-4-486-20	20	353,820	60.0	13.4	4	21.9	27.1	170

Water Cooled Condensers 2



STANDARD DESIGNS

USA Coil & Air condensers are available from standard designs for fresh or sea water duty. These models feature high-efficiency tube surfaces and are available from 25 to 400 nominal tons of duty. They are manufactured in large quantities to provide the lowest cost per ton available and consistent quality.

MODERN TUBE MATERIALS

USA Coil & Air Condensers utilize the latest technology tubing available. Years of research and development, combined with thorough testing in our own labs has resulted in the highest efficiency condensers available. All condensers are manufactured with enhanced 3/4" diameter tubing to provide heavy wall construction and ease of service from commonly available tube cleaning devices.

MODIFICATIONS

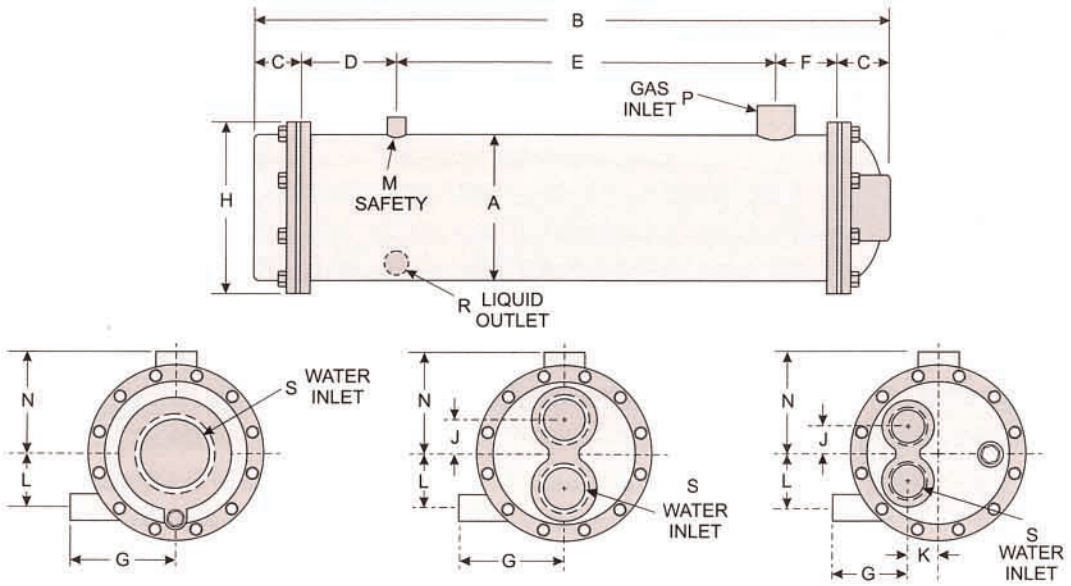
Vessels are available with special materials of construction as required. Condensers can be made with stainless steel, copper-nickel or other materials of construction for increased life with poor quality cooling water. Vessels can be equipped with Cupro-Nickel tubes and tube sheets or titanium tubes for sea water duty. If your application calls for something special just ask.

MULTI-CIRCUIT FLEXIBILITY

Special condensers are available with dual circuits by welding two shells together end-to-end. This allows the use of one water circuit to reduce piping costs. Each circuit has its own ASME code stamp.

CONSTRUCTION SPECIFICATIONS

SHELLS - steel pipe to ASME specification. Shells are shot blasted and cleaned prior to assembly.
TUBES - Copper high performance enhanced design roller expanded into multiple-grooved tube sheet. Other materials available for corrosive duty.
TUBE SHEET - Flange quality steel to ASME specifications. Precision machined for excellent sealing.
TUBE SUPPORTS - Quality steel manufactured to close tolerance to minimize vibration.
HEADS - Cast iron or fabricated steel built to ASME specifications.
CONNECTIONS - All water side connections are FPT except 12" 1-pass, 14" and 16" models which have flanges. Refrigerant connections are steel and bored to ODS of copper tubing. Relief, vent and drain connections are provided. Numerous nozzle orientations are available to facilitate ease of packaging.
CODES - The refrigerant side is constructed to the latest edition of the ASME Section VIII Div. 1 code and stamped accordingly. Refrigerant side pressure is designed for 350 PSI minimum at 250°F. Water side design pressure is 150 PSI at 150°F. Both circuits are tested at 1.25 times the design pressure.
FINISH - Exterior surfaces are cleaned and painted with a high quality enamel primer.



DIMENSIONAL DATA																		
MODEL	TONS	PASS	A	B	C	D	E	F	G	H	J	R-ODF	P-ODF	M-ODF	S	L	N	LBS. WT.
WC-606-25	25	2	6 5/8	63 13/16	2 1/32	3 1/2	52 3/8	3 7/8	4 13/16	7 1/2	1 1/2	1 1/8	1 5/8	1/2	2	2 5/8	6 5/16	170
WC-606-30	30	2	6 5/8	63 13/16	2 1/32	3 1/2	52 3/8	3 7/8	4 13/16	7 1/2	1 1/2	1 3/8	2 1/8	1/2	2	2 5/8	6 5/16	195
WC-608-40	40	2	8 5/8	66	3 1/8	3 1/2	52 3/8	3 7/8	5 13/16	9 11/16	1 7/8	1 3/8	2 1/8	1/2	2 1/2	3 13/16	7 5/16	300
WC-728-50	50	2	8 5/8	78	3 1/8	3 1/2	64 3/8	3 7/8	5 13/16	9 11/16	1 7/8	1 3/8	2 1/8	1/2	2 1/2	3 13/16	7 5/16	340
WC-6010-65	65	2	10 3/4	69 1/8	4 11/16	3 3/4	52	4	6 7/8	13 3/4	2 1/4	1 5/8	2 5/8	1/2	3	4 1/4	8 3/8	460
WC-7210-75	75	2	10 3/4	81 1/8	4 11/16	3 3/4	64	4	6 7/8	13 3/4	2 1/4	1 5/8	2 5/8	1/2	3	4 1/4	8 3/8	475
WC-6012-90	90	2	12 3/4	69	4 5/8	4 3/16	50 15/16	4 5/8	7 7/8	15 3/4	2 5/8	1 5/8	2 5/8	3/4	4	5 1/4	9 3/8	590
WC-7212-110	110	2	12 3/4	81	4 5/8	4 3/8	62 7/16	4 15/16	7 7/8	15 3/4	2 5/8	2 1/8	3 1/8	3/4	4	5 1/16	9 3/8	665
WC-9612-140	140	1	12 3/4	108	6 1/8	4 3/8	86 7/16	4 15/16	7 7/8	15 3/4	-	2 1/8	3 1/8	3/4	6‡	5 1/16	9 3/8	855
WC-9612-150	150	1	12 3/4	108	6 1/8	4 3/8	86 7/16	4 15/16	7 7/8	15 3/4	-	2 1/8	3 1/8	3/4	6‡	5 1/16	9 3/8	890
WC-12012-200	200	1	12 3/4	132	6 1/8	4 3/8	110 3/16	5 3/16	7 7/8	15 3/4	-	2 1/8	3 5/8	3/4	6‡	5 1/16	10	1060
WC-6014-140	140	2	14	69	5 1/8	4 3/8	50 7/16	4 15/16	8 1/2	17 7/8	4 1/2	2 1/8	3 1/8	3/4	4‡	5 9/16	10	895
WC-7214-165	165	2	14	81	5 1/8	4 3/8	62 7/16	4 15/16	8 1/2	17 7/8	4 1/2	2 1/8	3 5/8	3/4	4‡	5 9/16	10	1410
WC-9614-210	210	1	14	115 3/8	9 11/16	4 5/8	85 11/16	5 7/16	8 1/2	17 7/8	-	2 5/8	4 1/8	3/4	6§	5 7/16	10	1240
WC-12014-270	270	1	14	139 3/8	9 11/16	4 5/8	109 11/16	5 7/16	8 1/2	17 7/8	-	2 5/8	4 1/8	3/4	6§	5 7/16	10	1420
WC-12014-290	290	1	14	139 3/8	9 11/16	4 5/8	109 11/16	5 7/16	8 1/2	17 7/8	-	2 5/8	4 1/8	3/4	6§	5 7/16	11	1480
WC-6016-200	200	2	16	69	5 1/8	4 5/8	49 11/16	5 7/16	9 1/2	19 7/8	5	2 1/8	3 5/8	3/4	5‡	6 1/2	11	1220
WC-7216-210	210	2	16	81	5 1/8	4 7/8	61 3/16	5 11/16	9 1/2	19 7/8	5	2 5/8	4 1/8	3/4	5‡	6 7/16	11	1190
WC-7216-230	230	2	16	81	5 1/8	4 7/8	61 3/16	5 11/16	9 1/2	19 7/8	5	2 5/8	4 1/8	3/4	5‡	6 7/16	11	1360
WC-9616-300	300	1	16	120 1/2	12 3/8	4 7/8	84 5/8	6 1/4	9 1/2	19 7/8	-	3 1/8	5 1/8	3/4	8§	5 7/8	11	1723
WC-12016-360	360	1	16	144 1/2	12 3/8	4 7/8	108 5/8	6 1/4	9 1/2	19 7/8	-	3 1/8	5 1/8	3/4	8§	5 7/8	11	1825
WC-12016-400	400	1	16	144 1/2	12 3/8	4 7/8	108 5/8	6 1/4	9 1/2	19 7/8	-	3 1/8	5 1/8	3/4	8§	5 7/8	11	2085

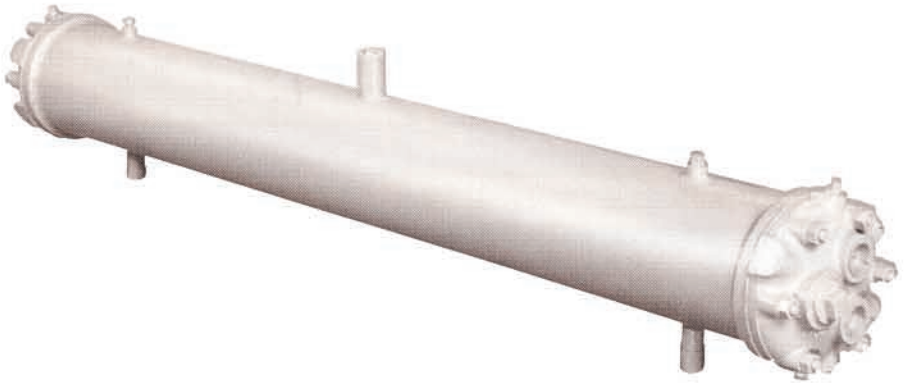
Nominal tons capacity based on 14,400 BTUH per ton, 85° condenser water. 10° range with R-22 service at 105° condensing temperature.
Comprehensive rating tables are available for R-22, R-134a and R-404a. Windows 95™ selection software available.
Pump-down capacity is based on 80% of free shell volume with R-22 at 90°F per ARI.
Capacity includes .00025 additive fouling, .0005 total fouling factor.

CONDENSED PERFORMANCE TABLE - R-22@105°F CONDENSING TEMP., 85°F ENT. WATER, .00025 F.F. WATER COOLED CONDENSERS									
	MODEL #	NOM. TONS	*ACTUAL TOTAL HEAT OF REJECTION BTUH	GPM 3 GPM/TON	WATER PRESSURE DROP PSI	NUMBER OF PASSES	EFFECTIVE SURFACE SQ. FT.	PUMP DOWN CAPACITY	SHIPPING WEIGHT LBS.
25 THRU 400 TONS	WC-2-606-25	25	371,578	75.0	4.7	2	22.3	39.3	185
	WC-2-606-30	30	437,433	90.0	5.2	2	26.1	35.9	195
	WC-2-608-40	40	608,148	120.0	4.4	2	37.1	70.4	300
	WC-2-728-50	50	770,641	150.0	7.5	2	45.0	84.8	340
	WC-2-6010-65	65	944,411	195.0	5.2	2	55.7	111.2	460
	WC-2-7210-75	75	1,155,961	225.0	7.6	2	67.5	134.2	475
	WC-2-6012-90	90	1,312,300	270.0	6.0	2	78.0	158.5	590
	WC-2-7212-110	110	1,645,749	330.0	9.6	2	94.5	191.5	665
	WC-1-9612-140	140	2,027,076	420.0	2.1	1	127.5	257.7	855
	WC-1-9612-150	150	2,187,086	450.0	2.1	1	139.6	246.6	890
	WC-1-12012-200	200	2,967,634	600.0	4.1	1	175.6	309.8	1060
	WC-2-6014-140	140	2,037,996	420.0	5.6	2	120.7	160	895
	WC-2-7214-165	165	2,518,541	495.0	8.4	2	146.2	194	1410
	WC-2-6016-200	200	2,902,774	600.0	5.5	2	170.9	201	1220
	WC-1-9614-210	210	3,086,369	630.0	2.3	1	197.3	261	1240
	WC-2-7216-210	210	3,196,181	630.0	7.9	2	184.5	264	1190
	WC-2-7216-230	230	3,544,948	690.0	7.8	2	206.9	244	1360
	WC-1-12014-270	270	3,922,026	810.0	4.8	1	229.2	345	1420
	WC-1-12014-290	290	4,224,263	870.0	4.9	1	248.4	328	1480
	WC-1-9616-300	300	4,374,171	900.0	2.2	1	279.2	328	1723
	WC-1-12016-360	360	5,298,332	1080.0	4.2	1	313.3	447	1825
	WC-1-12016-400	400	5,935,269	1200.0	4.2	1	351.5	412	2085

* 1 Ton = 14,400 BTU/H

3 Cupro-nickel Industrial/ Marine Condensers

Construction and Design Features - All Units



STANDARD DESIGNS

USA Coil & Air Cupro-nickel Industrial/Marine condensers are available from standard designs for sea water duty. Standard Cupro-nickel condensers are available from 5 to 330 nominal tons of duty and are manufactured in large quantities to provide the lowest cost per ton available. Non-standard marine condensers are available to meet virtually any chiller application.

MODERN TUBE MATERIALS

USA Coil & Air Condensers utilize the latest technology tubing available. Years of research and development, combined with thorough testing in our own labs has resulted in the highest efficiency condensers available. All condensers are manufactured with 3/4" diameter 90/10 Copper-Nickel tubing to provide heavy wall construction and ease of service from commonly available tube cleaning devices.

MULTI-CIRCUIT FLEXIBILITY

Special condensers are available with dual circuits by welding two shells together end-to-end. This allows the use of one water circuit to reduce piping costs. Each circuit has its own ASME code stamp.

MODIFICATIONS

USA Coil & Air refrigeration heat exchangers are available with special materials of construction as required. Fresh water condensers can be made from stainless steel for increased life with poor quality cooling water. Vessels can be equipped with Cupro-nickel tubes and tube sheets or titanium tubes for sea water duty. If your application calls for something special, just ask.

CONSTRUCTION SPECIFICATIONS

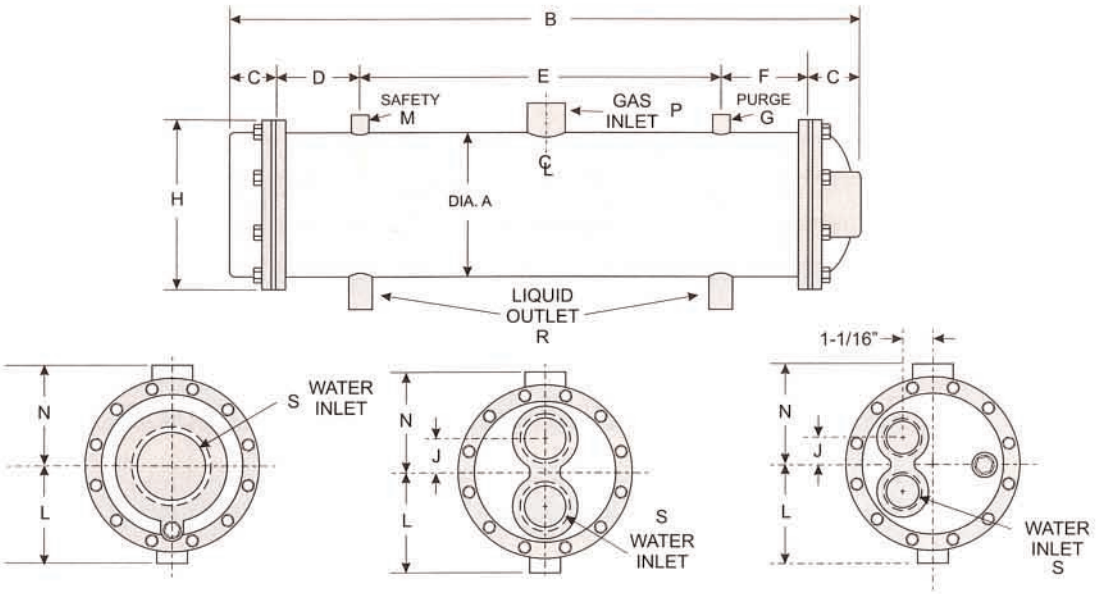
SHELLS - Steel pipe to ASME specification. Shells are shot blasted and cleaned prior to assembly.
TUBES - 90/10 Copper-Nickel high performance enhanced design roller expanded into grooved tube sheet.
TUBE SHEET - 90/10 Copper-Nickel to ASME specifications. Precision machined for excellent sealing.
TUBE SUPPORTS - Quality steel manufactured to close tolerance to minimize vibration.
HEADS - Cast bronze to withstand the corrosive effects of sea water duty. Single-pass 14" & 16" heads are fabricated from steel and epoxy coated.
CONNECTIONS - All water side connections are FPT except 12" 1-pass, 14" and 16" models which have flanges. Refrigerant connections are steel and bored to ODS of copper tubing. Relief, vent and drain connections are provided.
CODES - The refrigerant side is constructed to the latest edition of the ASME Section VIII Div. 1 code and stamped accordingly. Refrigerant side dual-rated for 450 psi at 150°F or 305 psi at 250°F. Water side design pressure is 150 PSI at 150°F. Both circuits are tested at 1.25 times the design pressure.
FINISH - Exterior surfaces are cleaned and painted with a high quality enamel primer.

CONDENSED PERFORMANCE TABLE - R-22@105°F CONDENSING TEMP., 85°F ENT. WATER, .00025 F.F. MARINE CONDENSERS								
MODEL#	NOM. TONS	*ACTUAL TOTAL HEAT OF REJECTION BTUH	GPM	WATER PRESSURE DROP PSI	NUM. PASSES	EFFECTIVE SURFACE SQ. FT.	REF. VOLUMN	SHIPPING WEIGHT POUNDS
MWC-4-246-5	5	77,797	15	1.1	4	6.8	16.5	97
MWC-4-246-7 1/2	7 1/2	112,818	22.5	1.4	4	9.5	13.9	107
MWC-4-366-15	15	217,081	45	6.3	4	15	21.2	142
MWC-4-486-20	20	305,380	60	12.8	4	20.5	28.6	175
MWC-2-606-25	25	361,519	75	3.5	2	26	36.0	210
MWC-2-726-30	30	447,594	90	5.5	2	31.5	43.4	244
MWC-2-608-35	35	509,378	105	3.3	2	37.1	70.4	310
MWC-2-728-45	45	653,912	135	5.9	2	45	84.8	357
MWC-2-6010-50	50	746,616	150	3.0	2	55.7	111.2	480
MWC-2-7210-65	65	966,257	185	5.6	2	67.5	134.2	550
MWC-2-6012-70	70	1,045,262	210	3.6	2	78	158.5	670
MWC-2-9610-85	85	1,333,578	255	11.1	2	91.1	180.2	695
MWC-2-9612-130	130	1,940,742	390	14.9	2	127.5	257.7	960
MWC-1-9612-110	110	1,617,768	330	1.3	1	127.5	257	990
MWC-2-7214-140	140	2,085,242	420	6.0	2	146.2	194	1100
MWC-1-12012-150	150	2,206,176	450	2.7	1	160.5	323	1155
MWC-2-9614-200	200	2,991,997	600	13.8	2	197.3	261	1400
MWC-1-12014-220	220	3,340,665	660	2.8	1	248.3	328	1510
MWC-1-9616-230	230	3,464,416	690	1.2	1	279.2	328	1488
MWC-2-9616-275	275	4,196,147	825	12.6	2	279.2	328	1488
MWC-1-12016-330	330	4,846,888	990	2.8	1	351.5	412	1805

* 1 Ton = 14,400 BTU/H

3 Cupro-nickel Industrial/ Marine Condensers

Dimensional Data



DIMENSIONAL DATA																			
MODEL	TONS	PASS	A	B	C	D	E	F	G	H	J	L	M FPT	N	P ODF	R ODF	S NPT	PUMP DOWN	WGT. LBS.
MSWC-4-246-5	5	4	6 5/8	27 13/16	2 1/32	5 7/8	12	5 7/8	1/2	7 1/2	1 7/16	6 5/16	1/2	6 5/16	1 3/8	5/8	1 1/2	16	100
MSWC-4-246-7 1/2	7 1/2	4	6 5/8	27 13/16	2 1/32	5 7/8	12	5 7/8	1/2	7 1/2	1 7/16	6 5/16	1/2	6 5/16	1 3/8	5/8	1 1/2	13	107
MSWC-4-366-15	15	4	6 5/8	39 13/16	2 1/32	5 7/8	24	5 7/8	1/2	7 1/2	1 7/16	6 5/16	1/2	6 5/16	1 3/8	7/8	1 1/2	21	142
MSWC-4-486-20	20	4	6 5/8	51 13/16	2 1/32	5 7/8	36	5 7/8	1/2	7 1/2	1 7/16	6 5/16	1/2	6 5/16	1 3/8	7/8	1 1/2	28	175
MSWC-2-606-25	25	2	6 5/8	63 13/16	2 1/32	5 7/8	48	5 7/8	1/2	7 1/2	1 1/2	6 5/16	1/2	6 5/16	1 5/8	7/8	2	36	210
MSWC-2-726-30	30	2	6 5/8	75 13/16	2 1/32	5 7/8	60	5 7/8	1/2	7 1/2	1 1/2	6 5/16	1/2	6 5/16	1 5/8	1 1/8	2	43	244
MSWC-2-608-35	35	2	8 5/8	66	3 1/8	7 7/8	44	7 7/8	1/2	9 11/16	1 7/8	7 5/16	1/2	7 5/16	2 1/8	1 1/8	2 1/2	70	310
MSWC-2-728-45	45	2	8 5/8	78	3 1/8	7 7/8	56	7 7/8	1/2	9 11/16	1 7/8	7 5/16	1/2	7 5/16	2 1/8	1 3/8	2 1/2	84	357
MSWC-2-6010-50	50	2	10 3/4	69	4 11/16	7 7/8	44	7 7/8	1/2	13 3/4	2 1/4	8 3/8	3/4	8 3/8	2 1/8	1 5/8	3	111	480
MSWC-2-7210-65	65	2	10 3/4	81	4 11/16	7 7/8	56	7 7/8	1/2	13 3/4	2 1/4	8 3/8	3/4	8 3/8	2 5/8	1 5/8	3	134	550
MSWC-2-6012-70	70	2	12 3/4	69	4 5/8	7 7/8	44	7 7/8	1/2	15 3/4	2 5/8	9 3/8	1	9 3/8	2 5/8	1 5/8	3	158	670
MSWC-2-9610-85	85	2	10 3/4	105 1/8	4 11/16	7 7/8	80	7 7/8	1/2	13 3/4	2 1/4	8 3/8	3/4	8 3/8	2 5/8	1 5/8	3	180	695
MSWC-1-9612-110	110	1	12 3/4	108	6 1/8	7 7/8	80	7 7/8	1/2	15 3/4	-	9 3/8	1	9 3/8	3 1/8	2 1/8	6‡	257	990
MSWC-1-9612-130	130	2	12 3/4	105	4 5/8	7 7/8	80	7 7/8	1/2	15 3/4	2 5/8	9 3/8	1	9 3/8	3 1/8	2 1/8	3	257	960
MSWC-2-7214-140	140	2	14	81	5 1/8	7 7/8	56	7 7/8	1/2	17 7/8	4 1/2	10	1	10	3 1/8	2 1/8	4‡	194	1100
MSWC-1-12012-150	150	1	12 3/4	132	6 1/8	7 7/8	104	7 7/8	1/2	15 3/4	-	9 3/8	1	9 3/8	3 1/8	2 1/8	6‡	323	1155
MSWC-2-9614-200	200	2	14	105	5 1/8	7 7/8	80	7 7/8	1/2	17 7/8	4 1/2	10	1	10	3 1/8	2 1/8	4‡	261	1400
MSWC-1-12014-220	220	1	14	139 3/8	9 11/16	7 7/8	104	7 7/8	1/2	17 7/8	-	10	1	10	3 5/8	2 1/8	6§	328	1740
MSWC-1-9616-230	230	1	16	120 1/2	12 3/8	7 7/8	80	7 7/8	1/2	19 7/8	-	11	1	11	3 5/8	2 1/8	8§	328	1750
MSWC-2-9616-275	275	2	16	105	5 1/8	7 7/8	80	7 7/8	1/2	19 7/8	5	11	1	11	5 1/8	3 1/8	5‡	328	1780
MSWC-1-12016-330	330	1	16	144 1/2	12 3/8	7 7/8	104	7 7/8	1/2	19 7/8	-	11	1	11	5 1/8	3 1/8	8§	412	2095

Nominal tons capacity based on 14,400 BTUH per ton, 85° condenser water. 10° range with R-22 service at 105° condensing temperature.
Comprehensive rating tables are available for R-22, R-134a and R-404a. Windows 95™ selection software available.
Pump-down capacity is based on 80% of free shell volume with R-22 at 90°F per ARI.
Capacity includes .00025 additive fouling, .0005 total fouling factor.