



# Air-Cooled Series R™ Rotary Liquid Chiller

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**Model RTAC**

**140 to 500 Tons (60 Hz)**

**140 to 400 Tons (50 Hz)**

**Built For the Industrial and Commercial Markets**

Model #: RTAC 1704 UH0N UAFN N1NY 1TDN NN0N N11N N0EX N  
Serial #: U04E06109

Year: 2004  
Size: 170 Ton



Shipping Weight: 11,000 lbs.  
Operating Weight: 11,335 lbs.

L: 16' 5" W: 7' 5" H: 7' 10"

# Model Number Description

RTA C 170 4 U H0 N U A F N N 1 N Y 1 T D N N N 0 N N 1 1 N N 0EX N  
 1,2 3 4 5,6,7 8 9 10,11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

## 140-500 Tons

### Digits 1, 2 — Unit model

RT Rotary chiller

### Digit 3 — Unit type

A Air cooled

### Digit 4 — Development sequence

C First sequence

### Digit 5, 6 & 7 — Nominal capacity

140 140 Nominal tons  
 155 155 Nominal tons  
 170 170 Nominal tons  
 185 185 Nominal tons  
 200 200 Nominal tons  
 225 225 Nominal tons  
 250 250 Nominal tons  
 275 275 Nominal tons  
 300 300 Nominal tons  
 350 350 Nominal tons  
 375 375 Nominal tons  
 400 400 Nominal tons  
 450 450 Nominal tons  
 500 500 Nominal tons

### Digit 8 — Unit voltage

A 200/60/3  
 C 230/60/3  
 J 380/60/3  
 D 400/50/3  
 4 460/60/3  
 5 575/60/3

### Digit 9 — Manufacturing location

U Water Chiller Business Unit,  
 Pueblo, CO USA

### Digit 10, 11 — Design sequence

CO Factory Input

### Digit 12 — Unit basic configuration

N Standard efficiency/performance configuration  
 H High efficiency/performance configuration

### Digit 13 — Agency listing

N No agency listing  
 U UL/CUL listing

### Digit 14 — Pressure vessel code

A ASME pressure vessel code

### Digit 15 — Evaporator application

F Standard (40-60 F) leaving temp  
 G Low (Less than 40 F) leaving temp  
 R Remote (40-60 F) leaving temp

### Digit 16 — Evaporator configuration

N Standard pass arrangement, insulated

### Digit 17 — Condenser application

N Standard ambient range (25-115 F)  
 H High ambient capability (25-125 F)  
 L Low ambient capability (0-115 F)  
 W Wide ambient capability (0-125 F)

### Digit 18 — Condenser fin material

1 Standard aluminum slit fins  
 2 Copper fins  
 4 CompleteCoat epoxy coated fins

### Digit 19 — Condenser fan/motor configuration

N STD fans with ODP motors  
 T STD fans with TEAO motors  
 W Low noise fans

### Digit 20 — Compressor motor starter type

X Across-the-line starter  
 Y Wye-delta closed transition starter

### Digit 21 — Incoming power line connection

1 Single point power connection  
 2 Dual point power connection

### Digit 22 — Power line connection type

T Terminal block connection for incoming line(s)  
 D Non-fused disconnect switch(es) for incoming line(s)  
 C HACR rated circuit breaker(s) for incoming line(s)

### Digit 23 — Unit operator interface

E EasyView operator interface  
 D DynaView operator interface

### Digit 24 — Remote operator interface

N No remote interface  
 C Tracer Comm 3 interface  
 L LonTalk compatible (LCI-C) interface

### Digit 25 — Control input accessories/options

N No remote inputs  
 R Ext. evaporator leaving water setpoint  
 C Ext. current limit setpoint  
 B Ext. leaving water and current limit setpoint

### Digit 26 — Control output accessories/options

N No output options  
 A Alarm relay outputs  
 C Icemaking I/O  
 D Alarm relay outputs and icemaking I/O

### Digit 27 — Electrical protection options

0 No short circuit rating  
 5 10,000 Amp short circuit rating  
 4 35,000 Amp short circuit rating  
 6 65,000 Amp short circuit rating

### Digit 28 — Electrical accessories

N No electrical accessories  
 F Vapor proof flow switch – 150 psi  
 E Nema-1 flow switch –150 psi

### Digit 29 — Control panel accessories

N No convenience outlet  
 A 15A 115V convenience outlet (60Hz)

### Digit 30 — Service valves

1 With suction service valves

### Digit 31 — Compressor sound attenuation option

0 No compressor sound attenuation  
 1 Factory installed compressor sound attenuation  
 2 Field installed compressor sound attenuation

### Digit 32 — Appearance options

N No appearance options  
 A Architectural louvered panels  
 C Half louvers  
 G Access guards  
 B Access guards and half louvers

### Digit 33 — Installation accessories

N No installation accessories  
 R Neoprene in shear unit isolators  
 F Flange kit for water connections  
 G Neoprene isolators and flange kit



# General Data

**Table G-1. General data — 140-500 ton 60 Hz units - standard efficiency**

Size	140	155	170	185	200	225	250	275	300	350	400	450	500
Type	STD	STD											
<b>Compressor</b>													
Quantity (1)	2	2	2	2	2	2	2	3	3	3	4	4	4
Nominal Size (tons) @ 60 Hz	70/70	85/70	85/85	100/85	100/100	120/100	120/120	85-100	100-100	120-100	100-100	120-120 / 100-100	120-120 / 100-100
<b>Evaporator</b>													
Water storage (gallons)	29	32	33	35	39	38	42	60	66	71	81	87	93
(liters)	111	121	127	134	146	145	158	227	249	267	304	327	350
Minimum flow (gpm)	197	221	209	221	250	221	250	275	308	342	457	501	545
(L/s)	12	14	13	14	16	14	16	17	20	22	29	32	34
Maximum flow (gpm)	700	787	765	787	853	787	853	908	1070	1192	1656	1818	1979
(L/s)	44	50	48	50	54	50	54	57	68	75	105	115	125
<b>Condenser</b>													
Qty of coils	4	4	4	4	4	4	4	8	8	8	8	8	8
Coil length (inches)	156/156	180/156	180/180	216/180	216/216	252/216	252/252	180/108	216/108	252/108	216/216	252/216	252/252
(millimeters)	3962/3962	4572/3962	4572/4572	5486/4572	5486/5486	6401/5486	6401/6401	4572/2743	5486/2743	6401/4572	5486/5486	6401/5486	6401/6401
Coil height (inches)	42	42	42	42	42	42	42	42	42	42	42	42	42
(millimeters)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft	192	192	192	192	192	192	192	192	192	192	192	192	192
Number of rows	3	3	3	3	3	3	3	3	3	3	3	3	3
<b>Condenser fans</b>													
Quantity (1)	4/4	5/4	5/5	6/5	6/6	7/6	7/7	10/6	12/6	14/6	12/12	14/12	14/14
Diameter (inches)	30	30	30	30	30	30	30	30	30	30	30	30	30
(millimeters)	762	762	762	762	762	762	762	762	762	762	762	762	762
Total airflow (cfm)	77000	84542	92087	101296	110506	119725	128946	147340	165766	184151	221016	239456	257991
(m <sup>3</sup> /hr)	130811	143623	156441	172086	187732	203394	219059	250307	281610	312843	375471	406797	438285
Nominal fan speed (rpm)	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
(rps)	19	19	19	19	19	19	19	19	19	19	19	19	19
Tip speed (ft/min)	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954
(M/S)	45	45	45	45	45	45	45	45	45	45	45	45	45
<b>Minimum starting/operating ambient (2)</b>													
<b>Standard unit</b> (F)	25	25	25	25	25	25	25	25	25	25	25	25	25
(C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
<b>Low ambient</b> (F)	0	0	0	0	0	0	0	0	0	0	0	0	0
(C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
<b>General unit</b>													
Refrigerant	HFC-134a	HFC-134a											
No. of independent refrigerant circuits	2	2	2	2	2	2	2	2	2	2	2	2	2
% Minimum load	15	15	15	15	15	15	15	15	15	15	15	15	15
Refrigerant charge (1) (pounds)	175/175	185/175	185/185	215/185	215/215	235/215	235/235	335/195	385/195	430/215	385/385	430/385	430/430
(kilograms)	79/79	84/79	84/84	98/84	98/98	107/98	107/107	152/88	175/88	195/97	175/175	195/175	195/195
Oil charge (1) (gallons)	1.5/1.5	1.5/1.5	1.5/1.5	2.1/1.5	2.1/2.1	2.1/2.1	2.1/2.1	4.6/2.6	5.0/2.6	4.6/4.6	5.0/5.0	5.0/5.0	5.0/5.0
(liters)	5.7/5.7	5.7/5.7	5.7/5.7	5.7/7.9	7.9/7.9	7.9/7.9	7.9/7.9	17.4/9.8	18.9/9.8	17.4/17.4	18.9/18.9	18.9/18.9	18.9/18.9

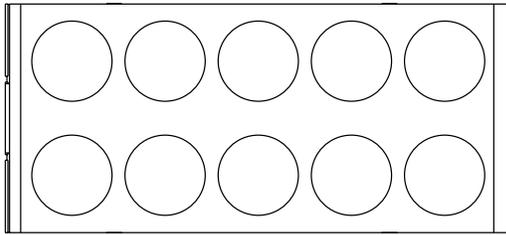
**Notes:**

1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

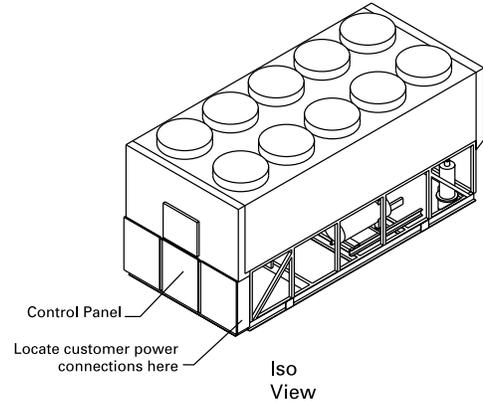
# Dimensional Data

Mounting Hole Diameter: 3/4 in (19.1mm)  
 Water Connection Diameter: 4 in (102mm)  
 Lifting Plate Dimensions: 6 x 5 1/2 in (152mm x 39mm)

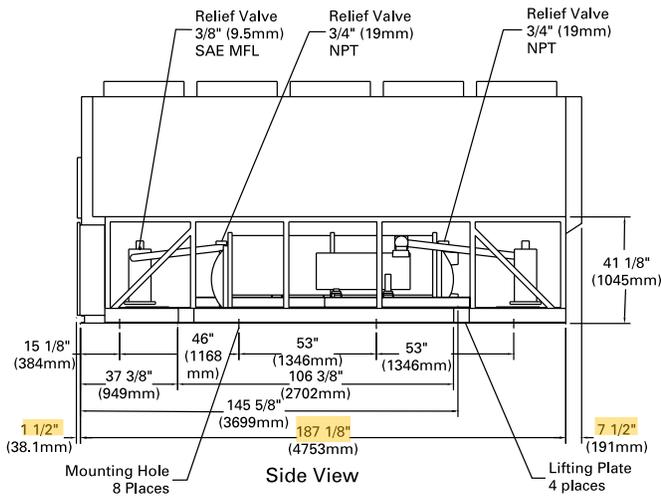
140-170 Ton, Std Eff, 50 & 60 Hz  
 140 Ton, High Eff, 50 & 60 Hz



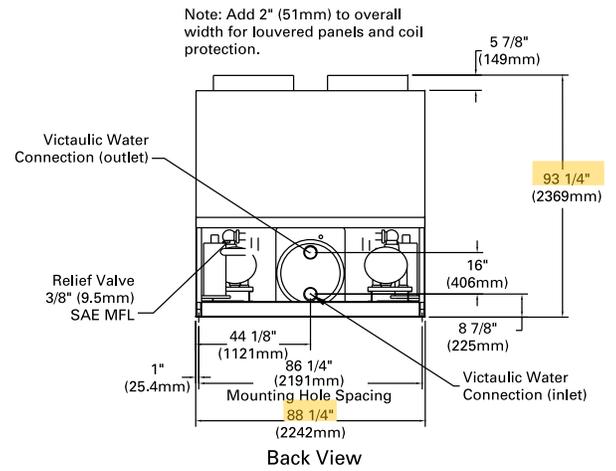
Top (Plan) View



Iso View



Side View



Back View

Minimum clearances are 4 feet to each side of the unit, 2 feet to the end opposite the control panel and National Electric Code Article 110-26 requirements for control panel clearances.



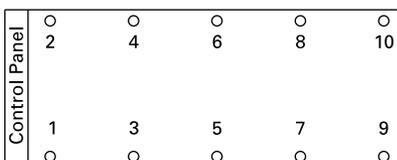
# Weights

**Table W-1 — Aluminum Fin Unit Weights (60 Hz Units)**

Unit Size	Units	Isolator Location										Operating Weight	Shipping Weight
		1	2	3	4	5	6	7	8	9	10		
RTAC 140 STD	lbs.	1479	1479	1414	1414	1340	1340	1265	1265	n/a	n/a	10993	10700
	kg	671	671	641	641	608	608	574	574	n/a	n/a	4986	4854
RTAC 140 HIGH	lbs.	1522	1522	1457	1457	1383	1383	1308	1308	n/a	n/a	11339	11000
	kg	690	690	661	661	627	627	593	593	n/a	n/a	5143	4990
RTAC 155 STD	lbs.	1519	1519	1446	1446	1363	1363	1279	1279	n/a	n/a	11214	10900
	kg	689	689	656	656	618	618	580	580	n/a	n/a	5087	4944
RTAC 155 HIGH	lbs.	1739	1739	1683	1683	1593	1593	1505	1505	n/a	n/a	13047	12700
	kg	789	789	763	763	723	723	683	683	n/a	n/a	5918	5761
RTAC 170 STD	lbs.	1519	1519	1456	1456	1383	1383	1311	1311	n/a	n/a	11335	11000
	kg	689	689	660	660	627	627	595	595	n/a	n/a	5142	4990
RTAC 170 HIGH	lbs.	1757	1757	1757	1702	1615	1615	1529	1529	n/a	n/a	13261	12900
	kg	797	797	797	772	733	733	694	694	n/a	n/a	6015	5851
RTAC 185 STD	lbs.	1778	1770	1724	1715	1637	1629	1551	1543	n/a	n/a	13346	13000
	kg	807	803	782	778	743	739	704	700	n/a	n/a	6054	5897
RTAC 185 HIGH	lbs.	1524	1517	1492	1484	1435	1427	1382	1374	1329	1322	14290	13900
	kg	691	688	677	673	651	647	627	623	603	600	6482	6305
RTAC 200 STD	lbs.	1803	1803	1747	1747	1659	1659	1571	1571	n/a	n/a	13561	13200
	kg	818	818	792	792	753	753	713	713	n/a	n/a	6151	5988
RTAC 200 HIGH	lbs.	1564	1564	1531	1531	1474	1474	1420	1420	1367	1367	14717	14200
	kg	709	709	694	694	669	669	644	644	620	620	6676	6441
RTAC 225 STD	lbs.	1587	1512	1556	1481	1499	1424	1447	1372	1395	1320	14591	14200
	kg	720	686	706	672	680	646	656	622	633	599	6618	6441
RTAC 225 HIGH	lbs.	1609	1609	1596	1596	1586	1586	1574	1574	1567	1567	15865	15447
	kg	730	730	724	724	719	719	714	714	711	711	7196	7007
RTAC 250 STD	lbs.	1575	1575	1542	1542	1484	1484	1430	1430	1376	1376	14817	14400
	kg	714	714	699	699	673	673	649	649	624	624	6721	6532
RTAC 250 HIGH	lbs.	1613	1613	1600	1600	1590	1590	1578	1578	1571	1571	15903	15485
	kg	732	732	726	726	721	721	716	716	713	713	7214	7024
RTAC 275 STD	lbs.	1992	1456	1938	1955	1873	1890	2255	1825	2187	1770	19142	18639
	kg	904	660	879	887	850	857	1023	828	992	803	8683	8455
RTAC 275 HIGH	lbs.	2379	2093	2329	2053	2293	2024	2261	1998	2235	1978	21082	20491
	kg	1079	949	1056	931	1040	918	1026	906	1014	897	9563	9295
RTAC 300 STD	lbs.	2158	1907	2212	1950	2251	1981	2285	2009	2313	2030	21096	20544
	kg	979	865	1003	885	1021	899	1036	911	1049	921	9569	9319
RTAC 300 HIGH	lbs.	2504	2228	2475	2198	2443	2166	2415	2138	2392	2116	22515	21923
	kg	1136	1011	1123	997	1108	982	1095	970	1085	960	10213	9944
RTAC 350 STD	lbs.	2417	2142	2409	2133	2402	2127	2397	2121	2392	2117	22658	22066
	kg	1096	972	1093	968	1090	965	1087	962	1085	960	10278	10009
RTAC 350 HIGH	lbs.	2055	2055	2898	2898	2799	2799	2647	2647	2443	2442	25684	25009
	kg	932	932	1315	1315	1270	1270	1201	1201	1108	1108	11650	11344
RTAC 400 STD	lbs.	2544	2544	2610	2609	2644	2644	2696	2696	2767	2767	26523	25847
	kg	1154	1154	1184	1183	1199	1199	1223	1223	1255	1255	12031	11724
RTAC 400 HIGH	lbs.	3007	2960	2986	2940	2966	2920	2946	2900	2926	2879	29430	28652
	kg	1364	1343	1354	1334	1345	1325	1336	1315	1327	1306	13349	12997
RTAC 450 STD	lbs.	2751	2751	2797	2798	2843	2844	2890	2890	2936	2936	28436	27710
	kg	1248	1248	1269	1269	1290	1290	1311	1311	1332	1332	12899	12569
RTAC 500 STD	lbs.	3030	2984	3010	2963	2989	2943	2968	2922	2948	2901	29658	28880
	kg	1374	1354	1365	1344	1356	1335	1346	1325	1337	1316	13453	13100

- Notes:  
 1. Operating weight includes refrigerant and water.  
 2. Shipping weight includes refrigerant.  
 3. All weights +/- 3%.

Unit Top (Plan) View



Unit Top (Plan) View

