



TRANE®

Installation Operation Maintenance

Series R Air-Cooled Helical Rotary Liquid Chillers

Model #: RTAC 5004 UP0N UAFN L1WY 1CDC NA6N N11C R0ES N
Serial #: U06K09951

Year: 2006
Size: 500 Tons



Models

RTAC 140-500 ton units (60 Hz)

RTAC 140-400 ton units (50 Hz)

Shipping Weight: 27,056 lbs.
Operating Weight: 27,516 lbs.

L: 45' 1" W: 7' 5" H 8'

January 2006

RTAC-SVX01F-EN

General Information

Table 2 General Data — 275- 500 Ton 60 Hz Units - Standard Efficiency

Size		275	300	350	400	450	500
Type		STD	STD	STD	STD	STD	STD
Compressor							
Quantity		3	3	3	4	4	4
Nominal Size	(tons)	85/85 100	100/100 100	120/120 100	100/100 100/100	120/120 100/100	120/120 120/120
Evaporator							
Water Storage	(gallons)	60	65	70	81	84	89
	(liters)	229	245	264	306	316	337
Min. Flow	(gpm)	309	339	375	404	422	461
	(l/sec)	20	21	24	26	27	29
Max. Flow	(gpm)	1134	1243	1374	1483	1548	1690
	(l/sec)	72	78	87	94	98	107
Condenser							
Quantity of Coils		8	8	8	8	8	8
Coil Length	(inches)	180/108	216/108	252/108	216/216	252/216	252/252
	(mm)	4572/2743	5486/2743	6401/4572	5486/5486	6401/5486	6401/6401
Coil Height	(inches)	42	42	42	42	42	42
	(mm)	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192
Number of Rows		3	3	3	3	3	3
Condenser Fans							
Quantity		10/6	12/6	14/6	12/12	14/12	14/14
Diameter	(inches)	30	30	30	30	30	30
	(mm)	762	762	762	762	762	762
Total Airflow	(cfm)	147340	165766	184151	221016	239456	257991
	(m ³ /hr)	250307	281610	312843	375471	406797	438285
Nominal Fan Speed	(rpm)	1140	1140	1140	1140	1140	1140
	(rps)	19	19	19	19	19	19
Tip Speed	(ft/min)	8954	8954	8954	8954	8954	8954
	(m/s)	45	45	45	45	45	45
Min Starting/Oper Ambient							
Std Unit	(Deg F)	25	25	25	25	25	25
	(Deg C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low Ambient	(Deg F)	0.0	0.0	0.0	0.0	0.0	0.0
	(Deg C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General Unit							
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of Independent Refrigerant Circuits		2	2	2	2	2	2
% Min. load		15	15	15	15	15	15
Refrigerant Charge	(lb)	365/200	415/200	460/200	415/415	460/415	460/460
	(kg)	166/91	188/91	209/91	188/188	209/188	209/209
Oil Charge	(gallons)	4.6/2.1	5.0/2.1	5.0/2.1	5.0/5.0	5.0/5.0	5.0/5.0
	(liters)	17.4/8	19/8	19/8	19/19	19/19	19/19
Base Length	(feet)	30	36	36	39	45	45

1. Data containing information on two circuits shown as follows: CKT1/CKT 2.

2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser.

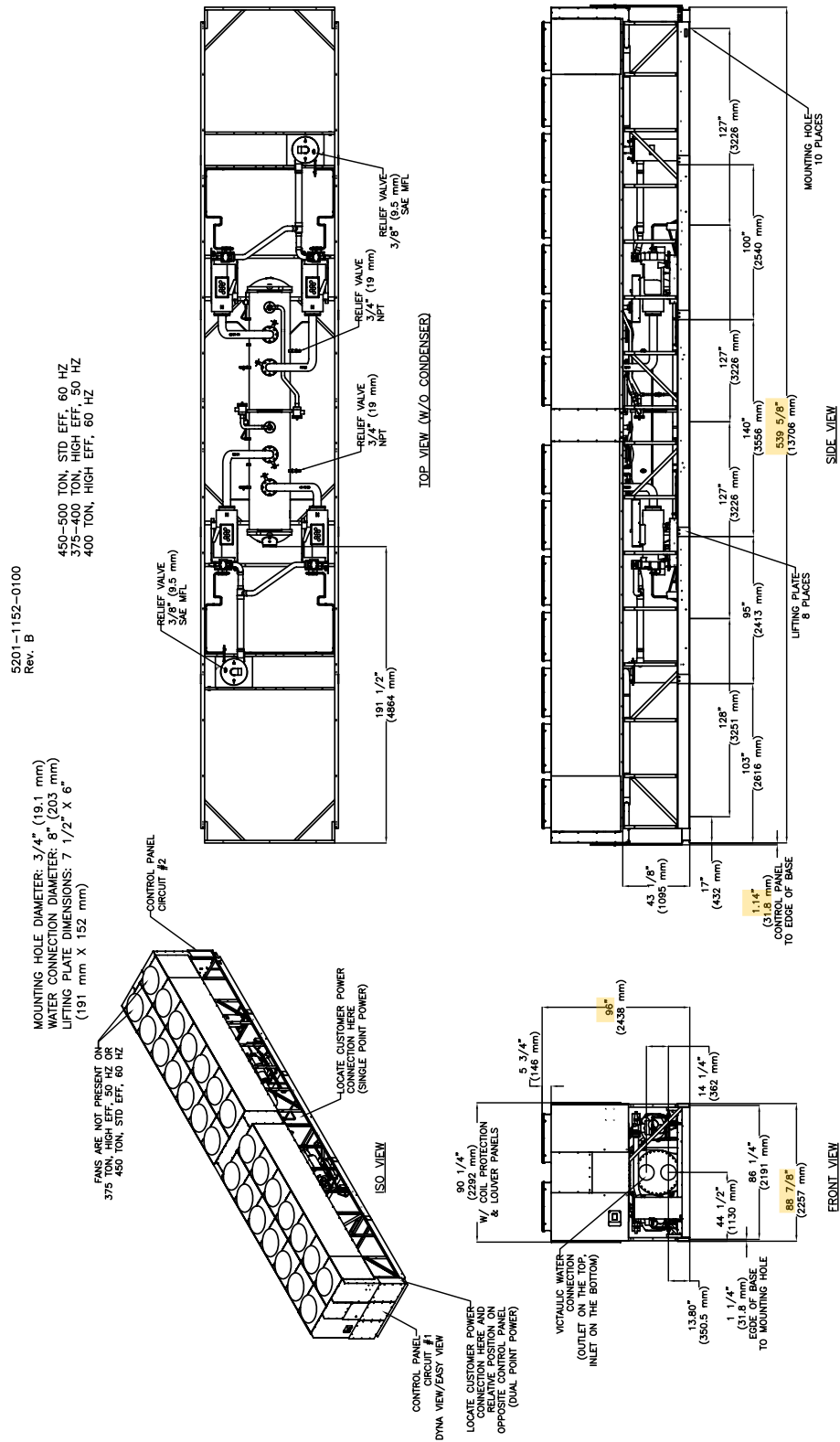


Figure 10

Unit Dimensions 450-500 Ton Standard Efficiency, 60 Hz and 375-400 Ton, High Efficiency, 50 Hz and 400 Ton High Efficiency, 60 Hz

RTAC 500 4 U P0 N U A F N L 1 W Y 1 C D C N A 6 N N 1 1 C R 0 E S N

Digit 1-4

Unit Model

RTAC Air Cooled Series R® chiller

Digit 5-7

Unit 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 200V/60Hz/3Ph power
K 220V/50Hz/3 Ph power
C 230V/60Hz/3Ph power
J 380V/60Hz/3Ph power
D 400V/50Hz/3Ph power
4 460V/60Hz/3Ph power
5 575V/60Hz/3Ph power

Digit 9

Manufacturing Location

U Pueblo
E Charnes

Digit 10-11

Design Sequence

XX Factory/ABU Assigned

Digit 12

Unit Type

N Std. Efficiency/Performance
H High Efficiency/Performance

Digit 13

Agency Listing

N No agency listing
U C/UL listing

Digit 14

Pressure Vessel Code

A ASME pressure vessel code
C Canadian code
D Australian code
L Chinese code
R Vietnamese code
S Special

Digit 15

Evaporator Temperature Range & Application Type

F Standard Temp. with Frz Prot
R Rem Evap. Std. Temp, No Frz Prot
G Low Temp, with Frz Prot

Digit 16

Evaporator Configuration

N Standard pass arrangement, insulated

Digit 17

Condenser Temperature Range

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

Digit 18

Condenser Fin Material

1 Standard aluminum slit fins
2 Copper fins, non-slit fins
4 Complete Coat aluminum fins

Digit 19

Condenser Fan/Motor Configuration

N Condenser fans with ODP motors
W Low Noise fans
T Condenser fans with TEAO motors

Digit 20

Compressor Motor Starter Type

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

Digit 21

Incoming Power Line Connection

1 Single point power connection
2 Dual point power connection (1/ckt)

Digit 22

Power Line Connection Type

T Terminals only
D Non-fused disconnect switch(es)
C Circuit Breaker(s), HACR-rated

Digit 23

Unit Operator Interface

E Easy-View operator interface
D Dyna-View operator interface

Digit 24

Remote Interface

N No remote interface
C Tracer Comm 3 interface
L Lon Talk Communication interface (LCI)

Digit 25

Control Input Accessories/Options

N No remote input
R Remote leaving water temp stpt
C Remote current limit setpoint
B Remote lvg. temp.setpoint and remote current limit setpoint

Digit 26

COOP

Control Output Accessories/Options

N No output options
A Alarm relay
C Ice making
D Ice making and alarm relay

Digit 27

Short Circuit Rating

0 No short circuit withstand rating
5 10000A SCR
4 35000A SCR
6 65000A SCR

Digit 28

Electrical Accessories and Export Packing

N No flow switches
F NEMA-1 flow switch - 150 psi
E Vapor Proof FS - 150 psi

Digit 29

Control Panel Accessories

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

Digit 30

Refrigerant Service Valves

1 Suction service valves

Digit 31

Compressor Sound Attenuator

Option
0 No sound attenuator
1 Factory installed sound attenuator

Digit 32

Appearance Options

N No appearance options
A Architectural louvered panels
C Half Louvers
G Access guards
B Access guards and half louvers
P Painted unit
L Painted unit with full louvered panels
H Painted unit with half louvered panels
K Painted unit with access guards
W Painted w/access guards and half louvers

Digit 33

Installation Accessories

N No installation accessories
R Neoprene isolators
F Flanged water connection kit
G Neoprene isolators and flange wtr conn kit

Digit 34

Factory Test

0 No factory run test
P Performance test
W Witness test

Digit 35

Label, and Literature Language

E English
G Chinese

Digit 36

Special Order

X Standard catalog configuration
S Unit has special order feature

Digit 37

Safety Devices

N None
X Standard

Installation - Mechanical

Storage

Extended storage of the outdoor unit prior to installation requires the following precautionary measures:

1. Store the outdoor unit in a secure area.
2. At least every three months (quarterly), check the pressure in the refrigerant circuits to verify that the refrigerant charge is intact. If it is not, contact a qualified service organization and the appropriate Trane sales office.
3. Close the discharge and liquid line isolation valves.

General

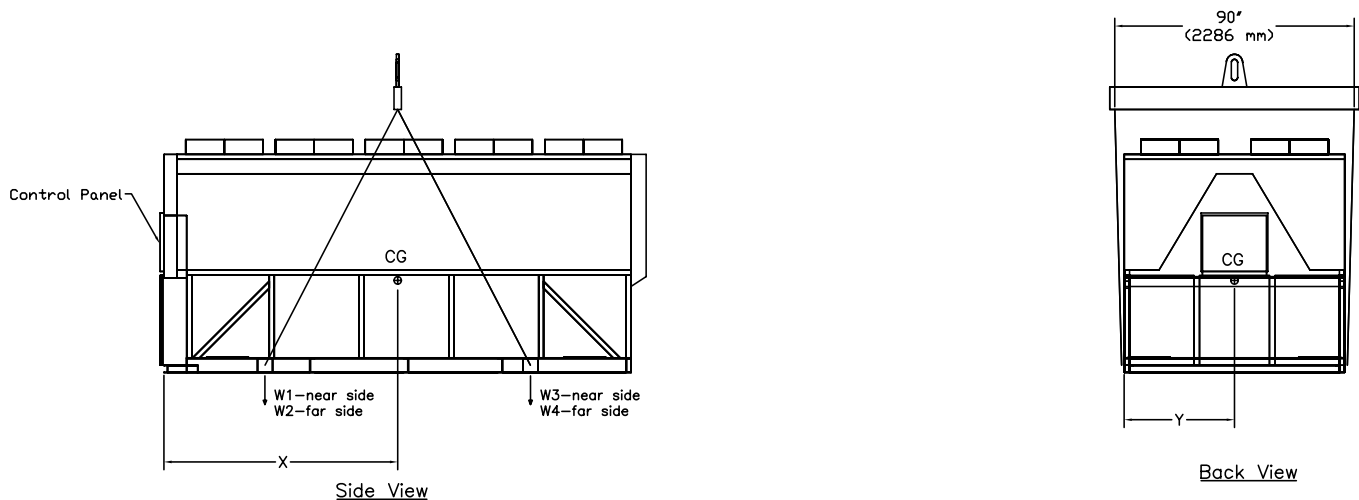
Report any damage incurred during handling or installation to the Trane sales office immediately.

Location Requirements

Setting the Unit

A base or foundation is not required if the selected unit location is level and strong enough to support the unit's operating weight as listed in Table 1 through Table 5 in the General Information section.

See Table 6 for lifting weights and center of gravity (CG) dimensions.



1. Lifting chains/cables will not be the same length. Adjust to keep unit level while lifting.
2. Do not fork lift unit.
3. Weights are typical for units with R-134a charge.

Figure 14 Lifting the Unit (Package and Remote) 15-21-foot Base



Installation - Mechanical

Table 6 Lifting Weights and CG Dimensions (Refer to Figure 14 - Figure 15)

	W1	W2	W3	W4	W5	W6	W7	W8	Shipping Weight	Xcg	Ycg
Unit	lbs kg	lbs kg	lbs kg	lbs kg	lbs kg	lbs kg	lbs kg	lbs kg	lbs kg	in mm	in mm
275 Ton 50 Hz Std Eff	3668 1665	3194 1450	3478 1579	3004 1364	3356 1524	2877 1306	NA NA	NA NA	19577 8888	172 4376	41 1046
275 Ton 60 Hz High Eff	3251 1476	2863 1300	3571 1621	3183 1445	3894 1768	3505 1591	NA NA	NA NA	20266 9201	203 5159	42 1064
275 Ton 60 Hz Std Eff	3345 1518	2936 1333	3351 1521	2942 1336	3356 1523	2947 1338	NA NA	NA NA	18876 8570	176 4473	42 1057
300 Ton 50 Hz High Eff	2955 1342	2628 1193	2892 1313	2565 1164	2822 1281	2495 1133	2759 1253	2432 1104	21548 9783	222 5644	42 1059
300 Ton 50 Hz Std Eff	3328 1511	2917 1394	3564 1618	3153 1431	3802 1726	3393 1540	NA NA	NA NA	20314 9222	201 5100	42 1059
300 Ton 60 Hz High Eff	2955 1342	2628 1193	2892 1313	2565 1165	2782 1263	2495 1133	2759 1253	2432 1104	21508 9765	222 5641	42 1062
300 Ton 60 Hz Std Eff	3456 1569	3074 1396	3615 1641	3233 1468	3774 1713	3393 1540	NA NA	NA NA	19572 8886	199 5044	42 1067
350 Ton 50 Hz High Eff	3278 1488	3258 1479	3179 1443	3159 1434	3075 1396	3055 1387	2977 1352	2957 1342	24936 11321	234 5951	44 1125
350 Ton 50 Hz Std Eff	3018 1370	2998 1361	2933 1332	2914 1323	2844 1291	2824 1282	2760 1253	2740 1244	23031 10456	235 5956	44 1125
350 Ton 60 Hz High Eff	3140 1426	3123 1418	3038 1379	3020 1371	2930 1330	2912 1322	2828 1284	2811 1276	23803 10806	234 5941	44 1125
350 Ton 60 Hz Std Eff	3374 1532	2998 1361	3772 1712	3367 1529	4172 1894	3767 1710	NA NA	NA NA	21450 9738	205 5197	42 1064
375 Ton 50 Hz High Eff	3393 1541	3372 1531	3278 1488	3257 1478	3108 1411	3086 1401	2986 1356	2965 1346	25444 11552	266 6754	44 1125
375 Ton 50 Hz Std Eff	3328 1511	3296 1496	3116 1414	3083 1400	2892 1313	2859 1298	2681 1217	2649 1202	23903 10852	229 5827	44 1123
400 Ton 50 Hz High Eff	3345 1519	3271 1485	3377 1533	3303 1499	3425 1555	3350 1521	3458 1570	3384 1536	26912 12218	274 6957	44 1115
400 Ton 50 Hz Std Eff	3299 1498	3279 1488	3201 1453	3180 1444	3098 1406	3077 1397	3001 1362	2939 1334	25073 11383	234 5951	44 1125
400 Ton 60 Hz High Eff	3345 1519	3271 1485	3377 1533	3303 1500	3425 1555	3350 1521	3458 1570	3384 1536	26913 12219	274 6955	44 1118
400 Ton 60 Hz Std Eff	3299 1498	3279 1489	3201 1453	3180 1444	3098 1406	3077 1397	3001 1362	2939 1334	25074 11383	234 5951	44 1125
450 Ton 60 Hz Std Eff	3423 1554	3402 1544	3307 1501	3286 1492	3137 1424	3116 1414	3015 1369	2994 1359	25678 11658	266 6754	44 1125
500 Ton 60 Hz Std Eff	3363 1527	3289 1493	3395 1541	3321 1508	3442 1563	3368 1529	3476 1578	3402 1544	27056 12283	274 6955	44 1115
Copper Fins											
140 Ton 50 Hz High Eff	2972 1348	3464 1571	3410 1547	3805 1726	NA	NA	NA	NA	13651 6192	90 2289	45 1140
140 Ton 50 Hz Std Eff	2961 1343	3450 1565	3392 1539	3786 1717	NA	NA	NA	NA	13589 6164	90 2286	45 1140
140 Ton 60 Hz High Eff	2969 1347	3460 1569	3404 1544	3799 1723	NA	NA	NA	NA	13631 6183	90 2289	45 1140
140 Ton 60 Hz Std Eff	2957 1341	3445 1563	3386 1536	3780 1715	NA	NA	NA	NA	13569 6155	90 2286	45 1140
155 Ton 50 Hz High Eff	4027 1827	4454 2020	3591 1629	4018 1823	NA	NA	NA	NA	16091 7299	108 2743	44 1128
155 Ton 50 Hz Std Eff	3074 1394	3472 1575	3518 1596	3819 1732	NA	NA	NA	NA	13883 6297	90 2286	44 1125
155 Ton 60 Hz High Eff	3915 1776	4428 2009	3448 1564	3961 1797	NA	NA	NA	NA	15752 7145	108 2736	45 1140