



# Product Catalogue

## **DIAMOND® Self Contained**

Central Self-Contained

Air Conditioner 20 to 40 Ton - Air or Water

Remote Condenser CRCE/CRCB

50/60 Hz



# Introduction

**IMPORTANT:**

Dimensional measuring units on this catalog are on millimetres (mm). (Except for those locally referenced).

**Self Contained Diamond®**

Developed for commercial and industrial markets. All Self-Contained Diamond models were designed to provide simple installation and maintenance.



**Coil with 3/8" tubes**  
High efficiency TRANE Wavy-3B coils with 3/8" tubes

**Class G0 Filter**  
Standard

**Panel in Galvanized Steel**  
Standard

Self Contained Genius

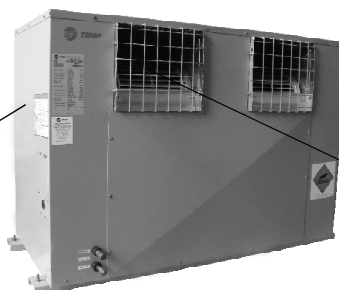
**Compressors Scroll**  
With 64% less moving parts than a reciprocating compressor .



**Forward-Curved Fan - Standard**  
Static Pressure (Optional)

**Filtering (Optional)**  
Use of filters in coils

Remote Condenser CRCE



**Panel in Galvanized Steel**  
Standard

**Forward-Curved Fan - Standard**  
Static Pressure (Optional)

Remote Condenser CRCB

# Contents

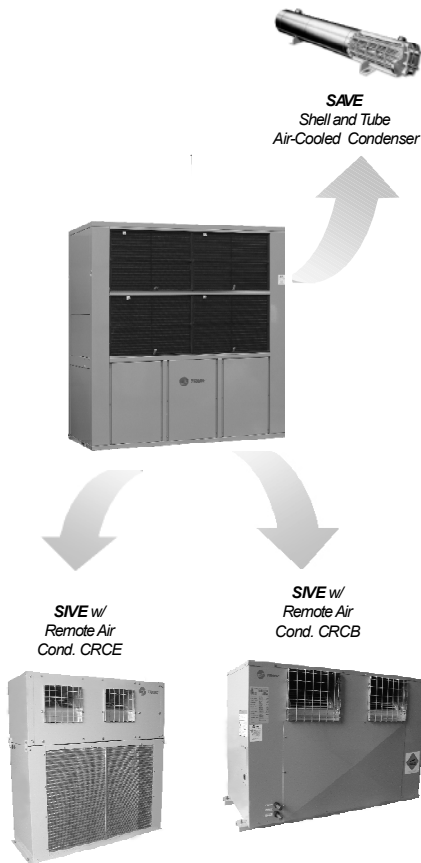
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# Features and Benefits

## Combinations Self Contained Diamond



**TRANE**, a worldwide leader company in air conditioning equipment and system technology, had developed the most advanced Self in the market:

### Diamond

The *Diamond* line was designed to meet the strict demands of the international market concerning durability, finish, safety, noise level and power consumption.

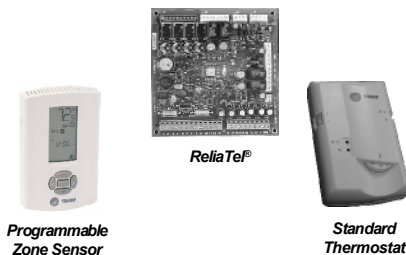
The main features are:

- Capacities from 20 to 40 Ton;
- 2 lines;
- SAVE, 20 to 40 Ton, with water-cooled condenser;
- SIVE, 20 to 35 Ton, with remote air-cooled condenser;
- 3 Control options: Standard Thermostat, Programable Thermostat, Micro-processed Control (ReliaTel®);
- Operates in the most extreme conditions required by *ARI (American Refrigeration Institute)* tests;
- Exclusive condensed water pan design. This pan was designed in such a way to prevent water accumulation, avoiding the formation of fungus and bacteria. The *Diamond* pan meets the ASHRAE standards for IAQ - Indoor Air Quality;

- Transmission options; one of them allows up to 70 mmca of external static pressure available
- Filtering (Standard, Simple or Double);
- 3 Heating options (Optional);
- Compressors Scroll;
- Independent refrigerating circuits;
- Capacity stages 100% and 50% (for machines equipped with one or two compressors, respectively);
- Forward-curved centrifugal fans;;
- Washable air filters, with electrostatic fabric, class ABNT G0, fixed in a steel wire frame
- Advanced protection and safety devices;

**Precautions against product corrosion It is recommended**, that air conditioning equipment shall not be installed in environments with a corrosive atmosphere such as acid or alkali gases and environments with a sea breeze. In need of installing air conditioning equipment in these areas, Trane of Brazil recommends the application of extra protection against corrosion, such as Phenolic protection or the application of ADSIL®. For more information, contact your local distributor.

## Trane Automation System



Tab. 01 - Line Description - Self Contained Diamond.

Capacity (TON)	Self Contained	
	Water - Cooled Condenser Shell and Tube	Remote Air - Cooled Condenser
20	SAVE200	SIVE200 + 2 x CRCB100 or 2 x CRCE100
25	SAVE250	SIVE250 + 2 x CRCB125 or 2 x CRCE125
30	SAVE300	SIVE300 + CRCB125 + CRCB150 or CRCE125 + CRCE150
35	SAVE350	SIVE350 + 2 x CRCB150 or 2 x CRCE150
40	SAVE400	Not available for this capacity

# Model Description

Tab. 02 - Model description for units SAVE 200 to 400 and SIVE 200 to 350.

BASIC PRODUCT DEFINITION														ACCESS. GENERAL				ACCESS. CIRC. FRIDGE						ACCESS. ELECTRIC						ACCESS. VENT.			SPE								
S	A	V	E	2	0	0	0	D	3	A	A	A	1	L	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S		
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	34	35	36	37	38	39	40	41	42

**Digits 1 - Product Line**  
S = Self Contained

**Digits 2 - Condenser Type**  
A = Water-Cooled Condenser  
I = Remote Air-Cooled Condenser

**Digits 3 - Cabinet Configuration**  
V = Vertical Cabinet

**Digit 4 - Project Sequence**  
E = E Project Sequence

**Digits 5, 6 e 7 - Nominal Capacity**  
200 = 20 Ton  
250 = 25 Ton  
300 = 30 Ton  
350 = 35 Ton  
400 = 40 Ton (Only SAVE)

**Digits 8 - Condenser Type**  
0 - Not Aplicable (Only SIVE)  
A - Water Condenser Tube & Tube (Only SAVE)  
B - Water Condenser Shell & Tube (Only SAVE)

**Digits 9 - Water Connection**  
D - Right  
E - Left

**Digits 10 - Electrical Supply**  
3 = 220/60/3  
4 = 440/60/3  
K = 380/60/3  
H = 380/50/3

**Digits 11 - Command Supply**  
A = 220V (Except 380V/50Hz/3f)  
B = 24V

**Digits 12 - Electrical Board (Type)**  
A = Standard (Eletro-mechanical)  
B = Microprocessed (RTRM)  
C = Microprocessed (RTRM + RTCI)  
D = Microprocessed (RTRM + RLCI)

**Digits 13 - Transmission Option**  
A ~ R = Transmission Option A ~ R (Check on catalog)

**Digits 14 - Type of air filter**  
1 = G0 electrostatic filter (no flat filter)  
2 = G1 metallic filter (no flat filter)  
B = G4 filter glass wool (w/ flat filter)  
C = G1 filter metalico + G4 glass wool (w/ flat filter)  
D = G0 Electrostatic filter + G4 glass wool (w/ flat filter)  
E = F5 Pleated 2" (w/ flat filter)  
F = G1 + F5 Pleated 2" (w/ flat filter)  
G = Filter G4 1" (w/ filter rack)  
H = F5 Pleated 2" (w/ filter rack)  
J = G4 + F5 Pleated 2" (w/ filter rack)

**Digit 15 - Market Region**  
L = Local Market (Brazil)  
E = Export (LAR)  
R = Export (Others)

**Digits 16, 17 - Service Digits**  
A0 = Service digits A0  
A1 = Service digits A1 (NOVO FORNECEDOR MOTOR)

**Digit 18 - Fan discharge position**  
0 = Rear Vertical/STD  
1 = Rear Horizontal

**Digit 19 - Wood Package**  
0 = No  
1 = Yes

**Digit 20 - Yellow Fin - Coil**  
0 = No  
1 = Yes (Only to the evaporator coil)

**Digit 21 - Tray type - Inox**  
0 = No  
1 = Yes

**Digits 22, 23 - Reserved**  
0 = Reserved (Not Aplicable)

**Digit 24 - High/Low pressure switch**  
0 = High and low without Automatic regulator  
1 = Manual and Automatic High Low without adjusting  
2 = Manual high and low with Automatic adjustment  
3 = High and low with manual adjustment

**Digit 25 - Service Valve**  
0 = No  
1 = Yes

**Digit 26 - Display of Liquid**  
0 = No  
1 = Yes

**Digit 27 - Manometro High / Low Pressure**  
0 = No  
1 = Yes

**Digit 28 - Refrigerant R407C**  
0 = No  
1 = Yes

**Digits 29, 30 - Reserved**  
0 = Reserved (Not Aplicable)

**Digit 31 - Electrical Heating**  
0 = No  
1 = Electrical Heating AQ1 (See Catalogue for Power)  
2 = Electrical Heating AQ2 (See Catalogue for Power)  
3 = Electrical Heating AQ3 (See Catalogue for Power)

**Digit 32 - Control (Thermostat)**  
0 = Without control (without thermostat)  
A = Standard Thermostat (Eletro-mechanical)  
B = Programable Thermostat

**Digit 33 - Power Factor Correction Capacitor**  
0 = No  
1 = Yes

**Digit 34 - Three Phase Monitor (STT)**  
0 = No  
1 = Yes

**Digit 35 - High Efficiency Motor**  
0 = No  
1 = Yes

**Digits 36, 37 - Reserved**  
00 = Reserved (Not Aplicable)

**Digit 38 - Fan w/ NTN Bearing + Elastic Glove**  
0 = No  
1 = Yes

**Digit 39 - Rotor Painted fan**  
0 = No  
1 = Yes

**Digits 40, 41 - Reserved**  
0 = Reserved (Not Aplicable)

**Digit 42 - Special Product Control Digit (SPE)**  
S = Standard Product (wo/ SPE)  
Z = Special Product (w/ SPE)



# Model Description

Tab. 03 - Model description for units CRCE/CRCB 050 to 150 for use with SIVE.

BASIC PRODUCT DEFINITION															GENERALS ACCESS.				REFRIG. ACCESS.			ELECTRICS ACCESS.				FAN ACCESS.			SPE				
C	R	C	B	0	5	0	3	1	A	0	L	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S
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				

**Digits 1, 2 and 3 - Product Line**  
CRC = Remote Condenser

**Digit 4 - Project Sequence**  
B = Remote Condenser One Cabinet  
E = Remote Condenser Modular Cabinet

**Digits 5, 6 e 7 - Nominal Capacity**  
050 = 5 Ton  
075 = 7.5 Ton  
100 = 10 Ton  
125 = 12.5 Ton  
150 = 15 Ton

**Digit 8 - Power Supply**  
3 = 220/60/3  
4 = 440/60/3  
K = 380/60/3  
H = 380/50/3

**Digit 9 - Circuit Quantity**  
1 = 1 Circuit  
2 = 2 Circuits (Only 10, 12.5 and 15Ton)

**Digit 10 - Available Static Pressure**  
A - PED = 0mmca  
B - PED = 2.5mmca  
C - PED = 5mmca

**Digit 11 - Air Filter Type (OnlyCRCE)**  
0 = Not Aplicable (CRCB)  
A = No Filter (Only CRCE)  
B = G1 metallic Filter (Only CRCE)  
C = G4 Glass Wool Filter (Only CRCE)

**Digit 12 - Unit Destiny**  
L = Local Market (Brazil)  
E = Export (LAR)  
R = Export (Others)

**Digits 13, 14 - Service Digit**  
A0 = Service Digit A0  
A1 = Service Digit A1  
A2 = Service Digit A2 (MCHX)  
A3 = Service Digit A3 (New supplier of motor)

**Digit 15 - Reserved**  
0 = Reserved (Not applicable)

**Digit 16 - Wood Package**  
0 = No  
1 = Yes

**Digit 17 - Coils with surface treatment**  
0 = without treatment (Coils Standard)  
1 = Yellow Fin (not applied to MCHX)  
2 = Treatment Phenolic  
3 = Treatment Adsil

**Digits 18, 19 - Reserved**  
00 = Reserved (Not applicable)

**Digit 20 - Condenser Control KVR + NRD**  
0 = No  
1 = Yes

**Digits 21, 22 - Reserved**  
0 = Reserved (Not applicable)

**Digit 23 - Power Factor Correction - Capacitor**  
0 = No  
1 = Yes

**Digit 24 - High Efficiency Motor**  
0 = No  
1 = Yes

**Digits 25, 26 - Reserved**  
0 = Reserved (Not applicable)

**Digit 27 - Fan w/ Bearing NTN + Elastic Glove**  
0 = No  
1 = Yes

**Digit 28 - Fan w/ Painted Rotor**  
0 = No  
1 = Yes

**Digit 29 - Reserved**  
0 = Reserved (Not applicable)

**Digit 30 - Special Product Digit Control**  
S = Standard Product (wo/ SPE)  
Z = Special Product (w/ SPE)

NOTE 1 - This option can be used ONLY if the machine is installed on indoor places

# General Data

SAVE/SIVE

Tab. 04 - General Data - Self Contained Diamond 200 to 400.

Model		SAVE / SIVE	SAVE / SIVE	SAVE / SIVE	SAVE / SIVE	SAVE
		200	250	300	350	400
Nominal Cap. <sup>(1)</sup>	Ton	20	25	30	35	40
Power Voltage	Volts	220 or 380 or 440 V				
Frequency	Hz	50/60 Hz				
Phase		Three-Phase - 3F				
Refrigerant		R-407C <sup>(2)</sup>				
No. Circuits		2	2	2	2	2
<b>Dimensions</b>						
Lenght	mm	1880	1880	2470	2470	2470
Depth	mm	850	850	980	980	980
Height	mm	2000	2000	2000	2000	2000
<b>Equipment Weight <sup>(3)</sup></b>						
Self Contained SAVE	kg	730	745	970	1030	1060
Self Contained SIVE	kg	600	668	800	860	-----
<b>Compressor</b>						
Type		Scroll				
Quantity		2	2	2	2	2
Capacity <sup>(4)</sup>		10	10	10 / 15	15	15 / 20
<b>Evaporator Coil</b>						
Rows		3	4	4	4	4
FPF (Fins per foot)		120	132	132	132	120
Finned type		Corrugated aluminum fins				
Finned face area	m <sup>2</sup>	1,71	1,71	2,37	2,37	2,37
<b>Evaporator Fan</b>						
Quantity		2	2	2	2	2
Type		Scroll				
Diam. x Lenght	mm	381 x 381	381 x 381	457 x 486	457 x 486	457 x 486
Standard Option	CV	3,0	3,0	3,0	3,0	3,0
Option 1	CV	5,0	5,0	5,0	5,0	5,0
Option 2	CV	7,5	7,5	7,5	7,5	7,5
Option 3	CV	10,0	10,0	10,0	10,0	10,0
Option 4	CV	-----	-----	15,0	15,0	15,0
Minimum Air Flow	m <sup>3</sup> /h	10800	10800	14400	14400	14400
Maximum Air Flow	m <sup>3</sup> /h	19400	19400	27000	27000	27000
<b>Water-Cooled Condenser (Shell&amp;Tube) - SAVE</b>						
Minimum Air Flow	m <sup>3</sup> /h	5,5	6,8	8,2	9,5	11
Maximum Air Flow	m <sup>3</sup> /h	16	20	23,8	27,8	31,8
Maximum Pressure Loss	mca	12	12	12	12	12
<b>Remote (w/ SIVE) and Air-Cooled Condenser CRCB</b>						
Model		CRCB 050	CRCB 075	CRCB 100	CRCB 125	CRCB 150
Nominal Cap. <sup>(1)</sup>	TR	5	7,5	10	12,5	15
<b>Coil</b>						
Rows		4	4	4	4	4
FPF (Fins per foot)		144	144	144	144	144
Finned type		Corrugated aluminum fins				
Finned face area	m <sup>2</sup>	0,54	0,83	0,99	1,38	1,72
<b>Fan</b>						
Quantity		1	1	2	2	2
Type		Scroll				
Diam. x Lenght	mm	321 x 321	321 x 321	270 x 270	321 x 321	321 x 321
Motor	CV	1	3	3	4	5
Air Flow	m <sup>3</sup> /h	5450	8315	9935	13930	17320
<b>Dimensions - Remote Condenser - CRCB</b>						
Lenght	mm	987	1241	1341	1646	1646
Depth	mm	631	631	631	714	714
Height	mm	890	890	941	1018	1247
Net Weight	kg	93	124	139	180	212

Note:

(1) Capacity are based on ARI 210 for equipments up to 5.0 Ton and ARI 340 for equipments exceeding 5.0 Ton.

(2) Refrigerant R-407C is not available to the line Self Contained Diamond - SAVE (Water-Cooled Condenser - Shell&Tube).

(3) Equipment weight refers to the Standard machine.



# General Data

CRCB/CRCE

Tab. 05 - General Data - Condensing Unit CRCE 050 to 150 for use with SIVE.

Model		050	075	100	125	150	
Nominal Cap. <sup>(1)</sup>	Ton	5	7,5	10	12,5	15	
Length	mm	993	1217	1491	1712	1712	
Depth	mm	560	560	560	560	560	
Height	mm	1393	1494	1545	1620	1849	
<b>Coil</b>							
Rows		3	3	3	3	3	
FPF (Fins per foot)	ft	192	192	192	192	192	
Finned Face Area	m <sup>2</sup>	0,55	0,83	0,99	1,39	1,72	
<b>Fan Motor</b>							
Quantity		1	1	1	1	1	
Motor	HP	1,5	3	4	4	5	
N° Phase		3	3	3	3	3	
Nominal Power	kW	1,17	2,18	2,83	2,83	3,48	
RLA <sup>(2)</sup>	A	3,85	7,94	9,28	9,28	11,20	
FLA <sup>(4)</sup>	A	4,81	9,93	11,60	11,60	14,00	
LRA <sup>(5)</sup>	A	22,42	77,45	87,00	87,00	106,40	
Rotation/N° Poles	RPM	1700 / 4	1710 / 4	1720 / 4	1720 / 4	1730 / 4	
Air Flow	m <sup>3</sup> /h	5500	8250	9950	13770	15750	
<b>Pipe Diameters</b>							
Number of Circuits		1	1	1	2	1	2
Liquid Line	in	1/2"	1/2"	5/8"	1/2"	5/8"	1/2"
Suction Line	in	5/8"	3/4"			C1: 3/4" C2: 5/8"	1/2"
Equipment Weight(3)	k						

Note:

(1) Capacity are based on ARI 210 for equipments up to 5,0 Ton and ARI 340 for equipments exceeding 5,0 Ton.

(2) Equipment weight refers to the Standard machine.

(3) RLA = Rated Load Amps (A) - 220V/60hz;

(4) FLA = Full Load Amps (A) - 220V/60hz;

(5) LRA = Locked Rotor Amps (A) - 220V/60hz.



# Filtering

The standard filtering is the electrostatic fabric filter, with the ABNT G0 filtering level.

Optionally, machines can be manufactured with other filtering levels, double filtering and double filtering using flat filter.

The models without flat filter have two frames; a 8-mm-thick frame and a 1"-thick frame. Models with flat filter have two 2"-thick frames each.

Motors for each transmission option are listed in the general data tables, performance tables or The transmission options associated to the standard filtering (ABNT G0).

In this item, consider that in each air flow, the established rotation (RPM) allows the maximum external static pressure shown. For these charts, the air filtering option G0 was the one considered.

For other filtering options, there will be a drop of the available external static pressure, corresponding to the difference of pressure between the desired option and the G0-filter pressure loss. The table below shows the pressure loss values for the many filtering options, for models with and without flat filter.

Tab. 06 - Pressure loss (mmca) with filtering

Nominal Cap. (Ton)	Air Flow (m3/h)	WITHOUT FLAT FILTER		WITH FLAT FILTER				
		Filtering		Filtering				
		G0	G1	G4	G1 + G4	G0 + G4	F5	G1 + F5
		Digit Model Number		Digit Model Number				
		1	2	B	C	D	E	F
20 / 25	10800	1,3	2,6	3,9	6,5	5,2	6,2	8,8
	12600	1,6	3,3	4,9	8,2	6,5	7,9	11,2
	14400	2,1	3,9	6,0	9,9	8,1	10,0	13,9
	16200	2,7	4,6	7,2	11,8	9,9	12,6	17,2
	18000	3,5	5,4	8,3	13,7	11,8	15,6	21,0
30 / 35/ 40	19400	4,0	6,0	9,2	15,2	13,2	18,3	24,3
	14400	1,2	2,5	3,7	6,2	4,9	5,9	8,4
	16200	1,4	3,0	4,4	7,4	5,8	7,0	10,0
	18000	1,7	3,4	5,1	8,5	6,8	8,4	11,8
	19800	2,0	4,0	5,9	9,9	7,9	10,0	14,0
	21600	2,4	4,4	6,7	11,1	9,1	11,8	16,2
	23400	3,0	5,0	7,5	12,5	10,5	13,9	18,9
	25200	3,5	5,5	8,3	13,8	11,8	16,2	21,7
27000	4,0	6,1	9,2	15,3	13,2	18,8	24,9	

Note:

(1) Pressure loss unit : mmca

(2) Description of filters WITHOUT FLAT FILTER.

- Filter G0 = Washable electrostatic fabric filter adapted to a 8-mm-thick frame.
- Filter G1 = Washable metal filter with 5 1"-thick metal screen layers .

(3) Description of filters WITH FLAT FILTER.

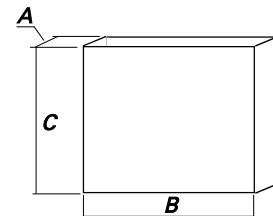
- Filter G1+G4 = Washable pre-filter with 3 metal screen layers and throwaway main filter glass wool .
- Filter G0+G4 = Washable electrostatic fabric filter and throwaway main filter glass wool .
- Filter G4 = Throwaway 2"-thick glass wool filter.
- Filter F5 = Pleated Filter, filter medium in pleated synthetic blanket, with 2"thick
- Filter G1 + F5 = Washable pre-filter with 3 thick metal screen layers and pleated filter

Tab. 07a - Filter dimensions (without flat filter)

DIAMOND WITHOUT FLAT FILTER			
Model	Filter	A x B x C (mm)	Qty.
200 / 250	G0	8 x 565 x 780	4
	G1	8 x 563 x 520	6
300 / 350 / 400	G0	8 x 565 x 717	6
	G1	8 x 563 x 537	8

Tab. 07b - Filter dimensions (with flat filter)

DIAMOND WITH FLAT FILTER			
Model	Filter	A x B x C (mm)	Qty.
200 / 250	G0	8 x 565 x 780	4
	G1	8 x 563 x 520	6
	G4	50 x 565 x 530	6
	F5	50 x 565 x 530	6
300 / 350 / 400	G0	8 x 565 x 717	6
	G1	8 x 563 x 537	8
	G4	50 x 565 x 545	8
	F5	50 x 565 x 545	8





# Filtering

Tab. 08 - Comparative Table Thick Filter

Thick Filter		
Nominal Efficiency (Thick Particles)	EN779	Ashrae 52.2
39%	G-1	MERV 1
50%		
59%		
60%		
64%		
65%	G-2	MERV 2
69%		MERV 3
70%		MERV 4
74%		MERV 4
75%		MERV 4
79%	G-3	MERV 5
80%		MERV 5
84%		MERV 6
85%		MERV 6
89%	G-4	MERV 6
>90%		MERV 6

Thin Filter		
Nominal Efficiency (Thin Particles)	EN779	Ashrae 52.2
20%	F-5	MERV 7
24%		MERV 8
25%		MERV 8
29%		MERV 8
30%		MERV 9
39%		MERV 9
40%		MERV 9
45%		MERV 9
50%		MERV 10
55%		MERV 10
59%	F-6	MERV 11
60%		MERV 11
65%		MERV 11

# Transmission Options Performance

## Transmission Options

Depending on the combination Flow X Static pressure, there are transmission options that can be used in machine models with nominal capacity of 20 to 40 Ton.

In order to know which transmission option should be used, refer to the transmission options performance chart. The list of options is shown in table on the right.

Adjustable pulleys up to 10 CV engine, for the 15 CV motor uses fixed pulley.

The following tables in this catalog show the transmission options performance for each machine.

Tab. 09 - Transmission options

Option	Motor Cap. (HP)	PM (mm)	PV (in)	Range RPM
A	3,0	80 a 110	12"	468 - 643
B	3,0	80 a 110	10"	565 - 777
C	3,0	125 a 159	16"	545 - 693
D	3,0	125 a 159	14"	625 - 795
E	5,0	125 a 159	16"	540 - 687
F	5,0	125 a 159	14"	620 - 788
G	5,0	125 a 159	11"	791 - 1006
H	7,5	125 a 159	14"	629 - 800
Y	7,5	125 a 159	11"	803 - 1021
J	7,5	125 a 159	9"	993 - 1263
K	10,0	125 a 159	14"	636 - 809
L	10,0	125 a 159	11"	812 - 1033
M	10,0	125 a 159	9"	1005 - 1278
N	15,0	160 ext	14"	812
W	15,0	170 ext	14"	862
P	15,0	190 ext	14"	964
Q	15,0	200 ext	14"	1014
R	15,0	210 ext	14"	1065

PM = Adjustment range for nominal diameter of evaporator motor sheave (mm)  
 PV = Nominal diameter of fan sheave (in)

Consider that in each air flow, the rpm established allows the maximum static pressure shown. For this chart, the static pressures available take into account the G0 filter option.

For other filtering options, there will be a drop in the static pressure available, corresponding to the difference between the pressure loss for the desired option and the pressure loss for the G0 air filter. In these cases, refer to loss pressure table.

Tab. 10 - Transmission option performance - SAVE/SIVE 200.

Option	Flow (m <sup>3</sup> /h)	External static pressure with air filter G0 (mmca)																												
		5		10		15		20		25		30		35		40		45		50		55		60		65		70		
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
A / B Motor 3,0HP	10800	508	1,14	579	1,40	646	1,69	702	2,00	780	2,40	830	2,70																	
	11400	544	1,36	612	1,66	677	1,99	740	2,33	801	2,68																			
	12000	578	1,62	643	1,93	706	2,27	767	2,62																					
	12600	610	1,90	673	2,22	732	2,56																							
	13200	641	2,18	701	2,52																									
	13800	670	2,50																											
14400	697	2,82																												
F / G Motor 5,0HP	10800									824	2,98	879	3,35	930	3,00	930	3,40	990	3,80	1030	4,00	1095	4,30							
	12000											931	3,70	967	4,44	979	4,05	1020	4,40											
	13200					758	2,88	814	3,25	867	3,64	918	4,03																	
	14400			753	3,18	806	3,55	858	3,93	907	4,33																			
	15600	748	3,48	799	3,87	849	4,26																							
	16800	795	4,00	830	4,40																									
18000	820	4,52																												
Y / J Motor 7,5HP	10800																			1090	5,10	1115	5,36	1180	4,90	1180	5,20	1210	5,66	
	12233																			1118	5,99	1160	6,70							
	13666											928	4,77	975	5,20	1020	5,65	1064	6,13	1073	5,57									
	15100																													
	16533					880	4,60	920	5,31	970	6,51																			
	17966	820	5,00	880	5,45	915	5,90	970	6,51																					
19400	885	6,00	908	6,51																										
M Motor 10HP	14400																													
	15233																													
	16066																													
	16900																													
	17733											1000	6,81	1050	7,50	1075	6,80	1105	7,18	1150	8,18	1179	7,14	1197	7,82	1230	8,34			
	18566							985	6,84	1015	7,33	1060	7,94	1110	8,60	1140	9,10	1170	8,99	1195	8,75	1230	9,24	1256	8,94					
19400			915	6,79	970	7,29	1005	7,84	1050	8,39	1090	8,91																		



# Pressure Loss Water-Cooled Condenser

## Water-Cooled Condenser (SAVE)

The water-cooled condensing unit model SAVE uses a Shell & Tube condenser. The hydraulic connection is supplied from factory on the right side but it can be changed in field, if necessary. The water pressure drop curve is showed in the chart below:

Fig. 01 - Tube & tube water-cooled condenser pressure loss (SAVE 20 to 40 Ton)

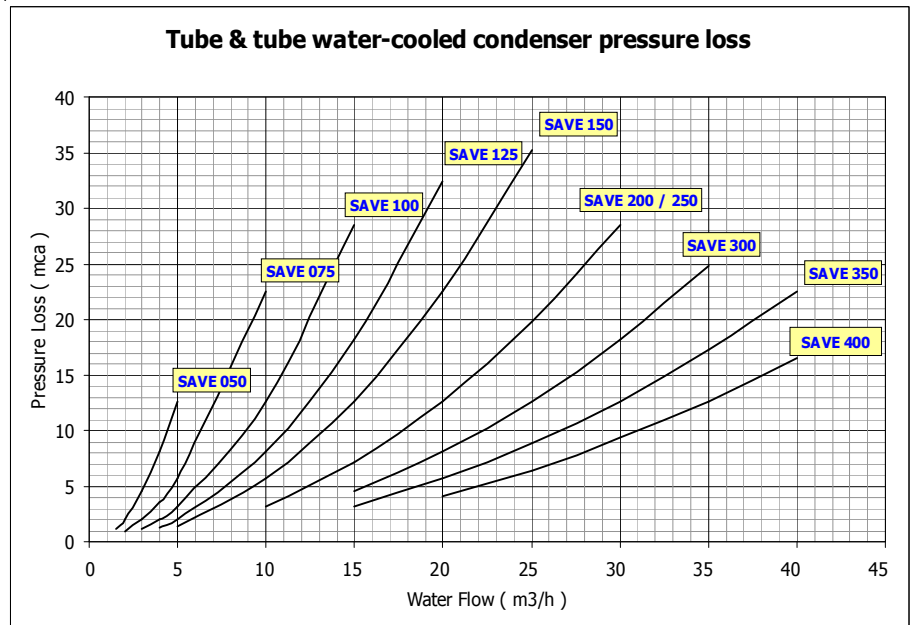
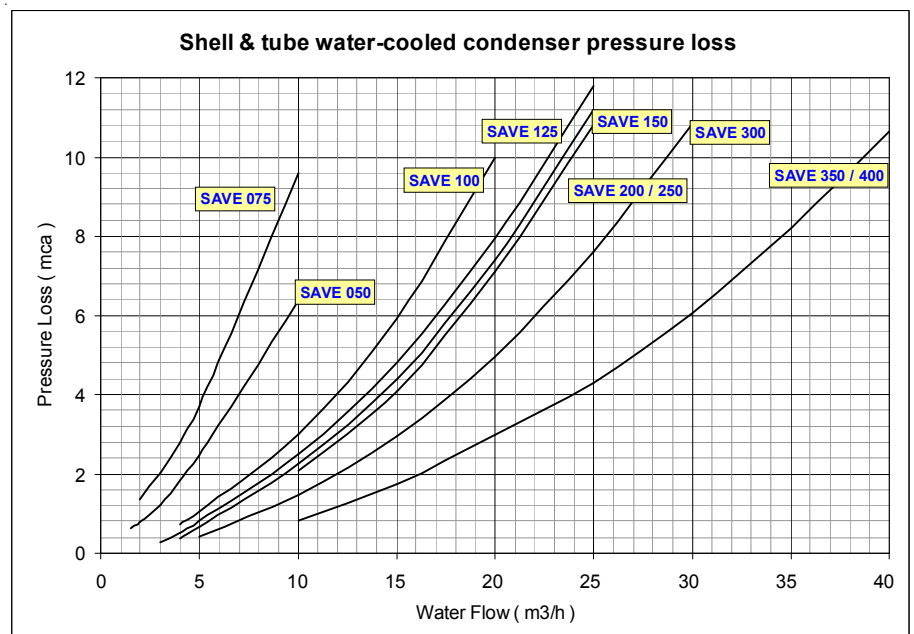


Fig. 02 - Shell & tube water-cooled condenser pressure loss (SAVE 20 to 40 Ton)





# Cooling Capacity

SAVE

Tab. 13 - Cooling Capacity SAVE 200 (in thousands of kcal/h)

Air Flow (m <sup>3</sup> /h)	TEAE (DB) (°C)	Condenser Entering Air Temperature (°C)																							
		24.0									29.5									35.0					
		Evaporator Entering Air Temperature (°C)																							
		16.0			19.5			23.0			16.0			19.5			23.0			16.0			19.5		
Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h		
10800	24.0	57.4	44.9	12.3	64.2	35.4	13.5	71.5	25.6	14.8	55.6	44.0	12.2	62.1	34.5	13.4	69.2	24.7	14.7	53.6	43.1	12.2	59.9	33.5	13.3
	27.0	57.4	52.6	12.3	64.1	43.1	13.4	71.4	33.3	14.8	55.6	51.7	12.2	62.1	42.2	13.4	69.1	32.5	14.6	53.7	50.6	12.2	59.9	41.3	13.3
	29.5	58.2	58.0	12.4	64.1	49.5	13.4	71.3	39.7	14.8	56.6	56.6	12.4	62.0	48.6	13.3	69.1	38.9	14.6	55.0	55.0	12.4	59.8	47.7	13.3
	32.0	60.7	60.7	12.8	64.0	55.9	13.4	71.3	46.1	14.7	59.2	59.2	12.8	62.0	55.0	13.4	69.0	45.2	14.6	57.5	57.5	12.9	59.9	54.0	13.3
13600	24.0	59.6	49.4	12.7	66.5	37.9	13.9	74.0	26.3	15.2	57.7	48.5	12.6	64.4	37.0	13.8	71.6	25.4	15.1	55.5	47.5	12.5	62.0	36.1	13.7
	27.0	60.0	58.2	12.7	66.5	47.2	13.9	73.9	35.6	15.2	58.2	57.0	12.7	64.3	46.3	13.8	71.5	34.7	15.1	56.3	55.7	12.6	62.0	45.3	13.7
	29.5	62.2	62.2	13.2	66.4	54.9	13.9	73.8	43.2	15.2	60.6	60.6	13.1	64.2	54.0	13.8	71.4	42.3	15.1	58.8	58.8	13.1	61.9	53.0	13.7
	32.0	65.1	65.1	13.6	66.7	62.3	13.9	73.8	50.9	15.2	63.4	63.4	13.6	64.6	61.2	13.8	71.4	50.0	15.1	61.6	61.6	13.6	62.4	60.1	13.8
17000	24.0	61.5	54.3	13.0	68.5	40.7	14.2	76.0	27.0	15.6	59.5	53.3	12.9	66.2	39.8	14.1	73.5	26.1	15.4	57.3	52.3	12.8	63.7	38.8	14.0
	27.0	62.9	62.9	13.2	68.5	51.7	14.2	76.0	38.0	15.6	61.2	61.2	13.2	66.2	50.8	14.1	73.5	37.1	15.4	59.3	59.3	13.2	63.7	49.8	14.0
	29.5	66.0	66.0	13.8	68.5	60.8	14.2	75.9	47.1	15.6	64.2	64.2	13.8	66.2	59.8	14.1	73.4	46.2	15.4	62.3	62.3	13.7	63.8	58.7	14.0
	32.0	69.1	69.1	14.4	69.4	68.5	14.4	75.9	56.1	15.6	67.3	67.3	14.3	67.4	67.0	14.3	73.3	55.2	15.4	65.3	65.3	14.3	65.3	65.3	14.2
19400	24.0	62.6	57.4	13.2	69.6	42.5	14.4	77.2	27.5	15.8	60.5	56.4	13.1	67.2	41.6	14.3	74.5	26.6	15.6	58.3	55.2	13.0	64.7	40.6	14.2
	27.0	64.9	64.9	13.6	69.5	54.7	14.4	77.1	39.6	15.8	63.1	63.1	13.6	67.2	53.7	14.3	74.5	38.7	15.6	61.1	61.1	13.5	64.6	52.7	14.1
	29.5	68.2	68.2	14.2	69.7	64.5	14.5	77.0	49.6	15.8	66.3	66.3	14.1	67.4	63.4	14.3	74.4	48.7	15.6	64.2	64.2	14.1	65.0	62.2	14.2
	32.0	71.4	71.4	14.8	71.4	71.4	14.8	77.0	59.6	15.8	69.5	69.5	14.7	69.4	69.4	14.7	74.4	58.7	15.6	67.4	67.4	14.6	67.3	67.3	14.6

Tab. 14 - Cooling Capacity SAVE 250 (in thousands of kcal/h)

Air Flow (m <sup>3</sup> /h)	TEAE (DB) (°C)	Condenser Entering Air Temperature (°C)																								
		24.0									29.5									35.0						
		Evaporator Entering Air Temperature (°C)																								
		16.0			19.5			23.0			16.0			19.5			23.0			16.0			19.5			23.0
Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h			
10800	24.0	63.0	49.7	12.7	70.4	38.6	14.0	78.3	27.4	15.4	60.9	48.7	12.6	68.0	37.6	13.9	75.7	26.5	15.2	58.6	47.6	12.6	65.5	36.6	13.8	
	27.0	63.2	57.5	12.8	70.3	46.6	14.0	78.3	35.4	15.3	61.2	56.4	12.7	68.0	45.6	13.9	75.7	34.4	15.2	59.0	55.2	12.6	65.4	44.5	13.8	
	29.5	64.8	63.7	13.1	70.2	55.0	14.0	78.2	43.7	15.3	63.1	61.9	13.0	67.9	54.0	13.9	75.6	42.8	15.2	61.2	60.1	13.0	65.4	52.9	13.8	
	32.0	67.8	66.6	13.6	70.4	62.2	14.0	78.1	51.1	15.3	66.0	64.8	13.6	68.1	61.2	13.9	75.6	50.1	15.2	64.1	62.9	13.5	65.7	60.0	13.8	
13600	24.0	65.4	55.1	13.1	72.9	41.7	14.4	81.0	28.2	15.8	63.2	54.1	13.1	70.4	40.7	14.3	78.2	27.3	15.6	60.8	52.9	13.0	67.7	39.7	14.2	
	27.0	66.2	63.8	14.3	72.8	51.4	14.4	80.9	37.8	15.8	64.1	62.5	13.2	70.3	50.3	14.3	78.2	36.8	15.6	62.0	60.8	13.2	67.6	49.3	14.1	
	29.5	69.5	68.2	13.8	72.9	61.5	14.4	80.9	48.0	15.8	67.6	66.3	13.8	70.4	60.4	14.3	78.1	47.0	15.6	65.4	64.3	13.8	67.8	59.3	14.2	
	32.0	72.7	71.4	14.4	73.6	69.7	14.6	80.8	56.9	15.8	70.8	69.5	14.3	71.2	68.4	14.4	78.0	55.9	15.6	68.6	67.4	14.3	68.8	66.9	14.3	
17000	24.0	67.6	61.0	13.5	75.0	45.2	14.8	83.2	29.1	16.2	65.3	59.8	13.4	72.3	44.2	14.6	80.2	28.1	16.0	62.8	58.5	13.3	69.5	43.1	14.5	
	27.0	69.7	68.5	13.9	74.9	56.7	14.8	83.1	40.6	16.2	67.7	66.5	13.8	72.3	55.7	14.6	80.2	39.6	16.0	65.5	64.3	13.8	69.5	54.6	14.5	
	29.5	73.7	72.4	14.6	75.3	68.4	14.8	83.0	52.7	16.2	71.6	70.3	14.5	72.8	67.3	14.7	80.1	51.7	16.0	69.3	68.0	14.4	70.1	65.9	14.6	
	32.0	77.3	75.9	15.2	77.2	75.8	15.2	83.0	63.4	16.2	75.1	73.7	15.1	75.0	73.7	15.1	80.1	62.4	16.0	72.7	71.4	15.0	72.7	71.4	15.0	
19400	24.0	68.9	64.5	13.8	76.1	47.4	15.0	84.3	29.6	16.4	66.6	63.2	13.6	73.3	46.4	14.8	81.3	28.7	16.2	64.1	61.7	13.5	70.4	45.3	14.6	
	27.0	71.9	70.6	14.3	76.0	60.2	15.0	84.2	42.4	16.4	69.8	68.5	14.2	73.3	59.2	14.8	81.2	41.4	16.2	67.5	66.2	14.1	70.4	58.1	14.6	
	29.5	76.1	74.7	15.0	76.8	72.6	15.1	84.2	55.8	16.4	73.8	72.5	14.9	74.3	71.2	15.0	81.2	54.9	16.1	71.4	70.1	14.8	71.6	69.6	14.8	
	32.0	79.8	78.3	15.6	79.8	78.3	15.6	84.2	67.7	16.4	77.5	76.1	15.5	77.4	76.0	15.5	81.2	66.6	16.1	75.0	73.6	15.4	75.0	73.6	15.4	

Note:

- TEAE = Evaporator entering air temperature
- BS = Dry Bulb
- BU = Wet Bulb
- VAC = Condenser Air Flow (m<sup>3</sup>/h)
- The values indicated refer to a "Delta T" of water in condenser of 5.5°C. For a different "Delta T", correct the values according to the correction factor table on the right.
- Capacities are gross capacities and do not include the effect of heat from the evaporator motor. For net capacities, subtract this effect.
- Heat generated by evaporator motor can be approx. obtained according to the formula BHP x 0.88 = MKcal/h
- Total gross and sensible capacities in MKcal/h.
- For operation with R407C, performance values must be corrected by the following values:  
 Total Cap. => 0.96  
 Sens. Cap. => 0.98  
 kW => 1.01

Delta T Water (°C)	Correction factors		
	VAC (m <sup>3</sup> /h)	Total cap. (kcal/h)	Sens. cap. (kcal/h)
2.5	2.21	1.01	1.01
4.0	1.39	1.01	1.01
5.5	1.00	1.00	1.00
7.0	0.79	0.99	1.00
8.5	0.66	0.99	1.00
10.0	0.56	0.98	0.99





# Cooling Capacity

SAVE

Tab. 17 - Cooling Capacity SAVE 400 (in thousands of kcal/h)

Air Flow (m <sup>3</sup> /h)	TEAE (DB) (°C)	Condenser Entering Air Temperature (°C)																											
		24.0									29.5									35.0									
		6.0			9.5			23.0			6.0			9.5			23.0			6.0			9.5			23.0			
Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h	Total Cap.	Sens. Cap.	VAC m <sup>3</sup> /h
14400	24.0	97.8	72.1	20.9	109.7	58.0	23.1	122.7	43.7	25.4	94.9	70.6	20.9	106.4	56.6	22.9	119.1	42.3	25.2	91.7	69.0	20.8	102.9	55.0	22.8	115.2	40.8	25.0	
	27.0	97.8	83.6	20.9	109.6	69.5	23.1	122.6	55.2	25.4	94.9	82.1	20.9	106.3	68.0	22.9	119.0	53.7	25.2	91.8	80.4	20.8	102.8	66.5	22.8	115.1	52.2	25.0	
	29.5	98.5	92.7	21.1	109.5	79.1	23.1	122.5	64.7	25.4	95.7	91.0	20.9	106.3	77.6	22.9	118.9	63.2	25.2	92.7	89.1	20.9	102.7	76.0	22.8	115.0	61.7	24.9	
	32.0	101.1	99.2	21.5	109.5	88.6	23.0	122.4	74.1	25.3	98.7	96.8	21.5	106.2	87.1	22.9	118.8	72.7	25.1	96.1	94.2	21.6	102.8	85.4	22.8	114.9	71.1	24.9	
20400	24.0	104.7	83.6	22.2	117.1	64.7	24.4	130.6	45.6	26.8	101.4	82.0	22.0	113.4	63.2	24.2	126.5	44.2	26.5	97.8	80.4	21.9	109.5	61.6	24.0	122.1	42.6	26.3	
	27.0	105.4	98.4	22.3	117.0	80.1	24.4	130.4	60.9	26.8	102.3	96.6	22.2	113.3	78.5	24.2	126.4	59.4	26.5	98.9	94.5	22.1	109.4	76.9	24.0	122.0	57.8	26.3	
	29.5	108.6	106.6	22.8	116.9	92.8	24.4	130.4	73.6	26.8	105.9	103.9	22.8	113.3	91.2	24.2	126.3	72.1	26.5	102.9	100.9	22.8	109.4	89.5	24.0	121.9	70.5	26.2	
	32.0	113.7	111.5	23.8	117.4	105.1	24.4	130.3	86.2	26.7	109.9	108.8	23.7	113.9	103.4	24.3	126.2	84.7	26.5	107.8	105.7	23.7	110.1	101.5	24.1	121.8	83.1	26.2	
23800	24.0	107.3	89.4	22.6	119.9	68.1	24.9	133.5	46.5	27.3	103.9	87.8	22.5	116.0	66.6	24.6	129.3	45.0	27.0	100.2	86.1	22.3	111.9	64.9	24.4	124.7	43.5	26.7	
	27.0	108.9	105.0	22.9	119.8	85.4	24.9	133.4	63.8	27.3	105.8	102.8	22.8	115.9	83.9	24.6	129.1	62.3	26.9	102.5	100.1	22.7	111.8	82.2	24.4	124.6	60.7	26.7	
	29.5	113.7	111.5	23.8	119.8	99.7	24.9	133.3	78.1	27.3	110.7	108.6	23.7	116.0	98.2	24.6	129.0	76.6	26.9	107.5	105.5	23.6	112.0	96.4	24.4	124.5	75.0	26.7	
	32.0	119.0	116.8	24.7	120.9	113.0	25.0	133.2	92.4	27.3	116.0	113.8	24.6	117.3	111.1	24.9	128.9	90.9	26.9	112.7	110.6	24.6	113.5	108.9	24.7	124.4	89.3	26.7	
27000	24.0	109.4	94.5	23.0	122.0	71.1	25.3	135.7	47.3	27.7	105.9	92.8	22.8	118.0	69.5	25.0	131.3	45.8	27.4	102.1	91.0	22.7	113.7	67.8	24.8	126.6	44.2	27.1	
	27.0	112.2	109.6	23.5	121.9	90.2	25.3	135.6	66.4	27.7	109.0	106.9	23.4	117.9	88.6	24.9	131.2	64.9	27.3	105.7	103.7	23.3	113.6	86.9	24.7	126.5	63.3	27.1	
	29.5	117.6	115.4	24.5	122.1	105.8	25.3	135.5	82.2	27.7	114.5	112.3	24.4	118.2	104.1	25.0	131.1	80.7	27.3	111.2	109.0	24.3	114.1	102.3	24.8	126.4	79.1	27.0	
	32.0	123.3	120.9	25.5	123.9	119.3	25.6	135.4	98.0	27.7	120.1	117.8	25.3	120.4	115.9	25.4	131.0	96.4	27.3	116.6	114.4	25.3	116.7	114.0	25.3	126.3	94.8	27.0	

Note:

- (1) TEAE = Evaporator entering air temperature
- (2) BS = Dry Bulb
- (3) BU = Wet Bulb
- (4) VAC = Condenser Air Flow (m<sup>3</sup>/h)
- (5) The values indicated refer to a "Delta T" of water in condenser of 5.5° C. For a different "Delta T", correct the values according to the correction factor table on the right.
- (6) Capacities are gross capacities and do not include the effect of heat from the evaporator motor. For net capacities, subtract this effect.
- (7) Heat generated by evaporator motor can be approx. obtained according to the formula BHP x 0,88 = MKcal/h
- (8) Total gross and sensible capacities in MKcal/h.
- (9) For operation with R407C, performance values must be corrected by the following values:  
 Total Cap. => 0.96  
 Sens. Cap. => 0.98  
 kW => 1.01

Delta T Water (°C)	Correction factors		
	VAC (m <sup>3</sup> /h)	Total cap. (kcal/h)	Sens. cap. (kcal/h)
2.5	2.21	1.01	1.01
4.0	1.39	1.01	1.01
5.5	1.00	1.00	1.00
7.0	0.79	0.99	1.00
8.5	0.66	0.99	1.00
10.0	0.56	0.98	0.99





# Cooling Capacity

SVE w/ CRCB

Tab. 18 - Cooling Capacity SIVE 200 with 2x CRCB 100 (in thousands of kcal/h)

Air Flow (m <sup>3</sup> /h)		TEAE (DB) (°C)		Condenser Entering Air Temperature (°C)																					
				29.5			35.0			40.5			46.0												
				Evaporator Entering Air Temperature - WB (°C)																					
		16.0		19.5		23.0		16.0		19.5		23.0		16.0		19.5		23.0							
		Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.						
14400	24.0	71.2	58.1	79.6	45.0	88.6	31.6	60.0	56.8	76.5	43.6	85.2	30.3	65.4	55.4	73.1	42.2	81.5	29.0	62.2	53.8	69.6	40.8	77.5	27.6
	27.0	71.5	68.4	79.5	55.6	88.6	42.3	68.9	66.9	76.4	54.3	85.1	41.0	66.1	65.1	73.0	52.9	81.4	39.6	63.2	63.0	69.5	51.4	77.4	38.2
	29.5	73.7	73.8	79.4	64.5	88.5	51.1	71.4	71.5	76.3	63.2	85.0	49.8	68.9	69.0	73.0	61.7	81.3	48.4	66.2	66.3	69.5	60.2	77.4	47.0
	32.0	77.1	77.3	79.6	73.1	88.4	59.9	74.8	74.9	76.6	71.6	85.0	58.6	72.2	72.3	73.5	70.0	81.2	57.2	69.4	69.5	70.1	68.2	77.3	55.8
20400	24.0	75.0	67.9	83.5	50.6	92.7	33.1	72.0	66.4	80.1	49.2	88.9	31.7	68.9	64.7	76.4	47.8	84.9	30.3	65.5	62.9	72.6	46.3	80.6	28.9
	27.0	77.4	77.6	83.5	64.7	92.7	47.1	74.8	74.9	80.0	63.3	88.8	45.8	72.0	72.1	76.4	61.9	84.8	44.4	69.0	69.1	72.5	60.4	80.5	42.9
	29.5	81.3	81.5	83.7	76.2	92.6	58.8	78.6	78.8	80.3	74.6	88.8	57.4	75.7	75.8	76.9	72.9	84.7	56.1	72.6	72.7	73.2	71.0	80.5	54.6
	32.0	85.2	85.4	85.2	85.3	92.5	70.4	82.4	82.6	82.4	82.5	88.7	69.1	79.4	79.6	79.4	79.5	84.6	67.7	76.2	76.3	76.2	76.3	80.4	66.2
23800	24.0	76.7	72.6	85.0	53.5	94.2	33.7	73.6	70.9	81.4	52.1	90.3	32.4	70.4	69.0	77.7	50.6	86.1	31.0	67.1	66.7	73.7	49.1	81.7	29.6
	27.0	80.3	80.5	84.9	69.4	94.1	49.6	77.6	77.7	81.4	68.0	90.2	48.3	74.6	74.7	77.7	66.0	86.0	46.9	71.4	71.5	73.7	64.9	81.6	45.4
	29.5	84.4	84.6	85.5	81.7	94.1	62.8	81.5	81.7	82.2	79.9	90.1	61.4	78.5	78.6	78.7	77.8	86.0	60.0	75.1	75.3	75.1	75.2	81.6	58.6
	32.0	88.6	88.7	88.5	88.7	94.0	75.9	85.6	85.7	85.6	85.7	90.1	74.5	82.3	82.5	82.3	82.5	86.0	73.0	78.9	79.1	78.9	79.0	81.7	71.4
27000	24.0	78.1	76.3	86.1	56.0	95.3	34.3	75.1	74.3	82.4	54.6	91.3	33.0	71.9	71.9	78.6	53.2	87.0	31.6	68.7	68.8	74.5	51.6	82.5	30.2
	27.0	82.6	82.8	86.0	73.5	95.2	51.8	79.7	79.9	82.4	72.0	91.2	50.5	76.6	76.7	78.7	70.5	86.9	49.1	73.3	73.4	74.7	68.7	82.5	47.6
	29.5	86.9	87.0	87.2	86.0	95.2	66.3	83.8	84.0	83.9	83.7	91.1	65.0	80.6	80.7	80.6	80.7	86.9	63.5	77.1	77.3	77.1	77.2	82.4	62.1
	32.0	91.1	91.3	91.1	91.3	95.2	80.7	88.0	88.2	88.0	88.1	91.2	79.2	84.6	84.8	84.6	84.7	87.0	77.7	81.0	81.2	81.0	81.2	82.7	76.0

Tab. 19 - Cooling Capacity SIVE 250 with 2 x CRCB 125 (in thousands of kcal/h)

Air Flow (m <sup>3</sup> /h)		TEAE (DB) (°C)		Condenser Entering Air Temperature (°C)																					
				29.5			35.0			40.5			46.0												
				Evaporator Entering Air Temperature - WB (°C)																					
		16.0		19.5		23.0		16.0		19.5		23.0		16.0		19.5		23.0							
		Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.						
14400	24.0	80.4	62.7	90.0	49.5	100.2	36.0	77.3	61.1	86.5	48.0	96.3	34.5	74.0	59.5	82.9	46.4	92.3	33.0	70.5	57.8	79.0	44.7	87.9	31.4
	27.0	80.4	73.3	89.9	60.2	100.1	46.7	77.4	71.7	86.4	58.7	96.3	45.2	74.2	70.0	82.8	57.0	92.2	43.6	70.8	68.1	78.9	55.4	87.9	42.0
	29.5	81.4	81.0	89.8	69.1	100.0	55.5	78.7	58.0	86.4	67.5	96.2	54.0	76.0	76.1	82.7	65.9	92.1	52.5	73.1	73.3	78.8	64.2	87.8	50.8
	32.0	84.8	85.0	89.8	77.9	100.0	64.3	82.3	82.4	86.4	76.3	96.1	62.8	79.5	79.7	82.8	74.6	92.0	61.2	76.6	76.7	79.0	72.8	87.7	59.6
####	24.0	85.2	72.8	95.1	55.3	105.5	37.5	81.8	71.2	91.2	53.7	101.2	36.0	78.2	69.4	87.1	52.0	96.7	34.4	74.4	67.6	82.9	50.3	92.0	32.8
	27.0	86.3	85.5	94.9	69.4	105.4	51.7	83.2	83.2	91.1	67.8	101.1	50.1	80.1	80.3	87.1	66.2	96.6	48.5	76.9	77.0	82.8	64.4	91.9	46.9
	29.5	90.2	90.4	94.9	81.1	105.3	63.3	87.2	87.4	91.1	79.5	101.1	61.8	84.1	84.2	87.1	77.8	96.6	60.2	80.7	80.9	83.0	75.9	91.8	58.5
	32.0	94.4	94.6	95.6	92.0	105.2	75.0	91.3	91.5	92.0	90.0	101.0	73.4	88.1	88.3	88.3	87.6	96.5	71.8	84.6	84.8	84.6	84.7	91.8	70.1
####	24.0	87.1	77.8	96.9	58.2	107.5	38.3	83.6	76.1	92.9	56.6	103.0	36.7	79.9	74.3	88.7	54.9	98.4	35.1	76.0	72.3	84.3	53.2	93.5	33.5
	27.0	89.5	89.7	96.9	74.1	107.4	54.2	86.5	86.7	92.9	72.5	102.9	52.6	83.2	83.4	88.7	70.8	98.3	51.0	79.8	79.9	84.2	69.1	93.4	49.3
	29.5	93.9	94.1	97.0	87.2	107.3	67.3	90.8	90.9	93.1	85.4	102.9	65.8	87.4	87.6	89.0	83.5	98.2	64.2	83.8	84.0	84.8	81.4	93.3	62.5
	32.0	98.4	98.5	98.5	98.0	107.2	80.5	95.1	95.3	95.1	95.2	102.8	78.9	91.6	91.8	91.6	91.7	98.1	77.3	87.9	88.1	87.9	88.1	93.2	75.6
####	24.0	88.7	82.2	98.3	60.7	108.9	38.9	85.1	80.3	94.2	59.1	104.3	37.3	81.3	78.3	89.9	57.5	99.6	35.7	77.4	76.0	85.3	55.7	94.6	34.1
	27.0	92.3	92.4	98.3	78.3	108.8	56.4	89.0	89.2	94.1	76.7	104.3	54.8	85.7	85.8	89.8	75.0	99.5	53.2	82.0	82.2	85.3	73.2	94.5	51.6
	29.5	96.8	97.0	98.7	92.3	108.7	70.9	93.5	93.7	94.7	90.4	104.2	69.3	90.0	90.2	90.7	88.2	99.4	67.7	86.2	86.4	86.5	85.6	94.4	66.0
	32.0	101.5	101.6	101.4	101.6	108.7	85.4	98.0	98.2	98.0	98.1	104.1	83.8	94.4	94.5	94.4	94.5	99.3	82.1	90.5	90.7	90.5	90.6	94.4	80.4

- Note:
- (1) TEAE = Evaporator entering air temperature
  - (2) BS = Dry Bulb
  - (3) BU = Wet Bulb
  - (4) VAC = Condenser Air Flow (m<sup>3</sup>/h)
  - (5) The values indicated refer to a "Delta T" of water in condenser of 5.5° C. For a different "Delta T", correct the values according to the correction factor table on the right.
  - (6) Capacities are gross capacities and do not include the effect of heat from the evaporator motor. For net capacities, subtract this effect.
  - (7) Heat generated by evaporator motor can be approx. obtained according to the formula BHP x 0.88 = MKcal/h
  - (8) Total gross and sensible capacities in MKcal/h.
  - (9) For operation with R407C, performance values must be corrected by the following values:  
 Total Cap. => 0.96  
 Sens. Cap. => 0.98  
 kW => 1.01



# Cooling Capacity

SIVE w/ CRCB

Tab. 20 - Cooling Capacity SIVE 300 with CRCB 125 + CRCB150 (in thousands of kcal/h)

Air Flow (m <sup>3</sup> /h)		Condenser Entering Air Temperature (°C)																							
		29.5						35.0						40.5						46.0					
		Evaporator Entering Air Temperature - WB (°C)																							
TEAE	DB	16.0		19.5		23.0		16.0		19.5		23.0		16.0		19.5		23.0		16.0		19.5		23.0	
(°C)	(°C)	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.
14400	24.0	71.2	58.1	79.6	45.0	88.6	31.6	60.0	56.8	76.5	43.6	85.2	30.3	65.4	55.4	73.1	42.2	81.5	29.0	62.2	53.8	69.6	40.8	77.5	27.6
	27.0	71.5	68.4	79.5	55.6	88.6	42.3	68.9	66.9	76.4	54.3	85.1	41.0	66.1	65.1	73.0	52.9	81.4	39.6	63.2	63.0	69.5	51.4	77.4	38.2
	29.5	73.7	73.8	79.4	64.5	88.5	51.1	71.4	71.5	76.3	63.2	85.0	49.8	68.9	69.0	73.0	61.7	81.3	48.4	66.2	66.3	69.5	60.2	77.4	47.0
	32.0	77.1	77.3	79.6	73.1	88.4	59.9	74.8	74.9	76.6	71.6	85.0	58.6	72.2	72.3	73.5	70.0	81.2	57.2	69.4	69.5	70.1	68.2	77.3	55.8
20400	24.0	75.0	67.9	83.5	50.6	92.7	33.1	72.0	66.4	80.1	49.2	88.9	31.7	68.9	64.7	76.4	47.8	84.9	30.3	65.5	62.9	72.6	46.3	80.6	28.9
	27.0	77.4	77.6	83.5	64.7	92.7	47.1	74.8	74.9	80.0	63.3	88.8	45.8	72.0	72.1	76.4	61.9	84.8	44.4	69.0	69.1	72.5	60.4	80.5	42.9
	29.5	81.3	81.5	83.7	76.2	92.6	58.8	78.6	78.8	80.3	74.6	88.8	57.4	75.7	75.8	76.9	72.9	84.7	56.1	72.6	72.7	73.2	71.0	80.5	54.6
	32.0	85.2	85.4	85.2	85.3	92.5	70.4	82.4	82.6	82.4	82.5	88.7	69.1	79.4	79.6	79.4	79.5	84.6	67.7	76.2	76.3	76.2	76.3	80.4	66.2
23800	24.0	76.7	72.6	85.0	53.5	94.2	33.7	73.6	70.9	81.4	52.1	90.3	32.4	70.4	69.0	77.7	50.6	86.1	31.0	67.1	66.7	73.7	49.1	81.7	29.6
	27.0	80.3	80.5	84.9	69.4	94.1	49.6	77.6	77.7	81.4	68.0	90.2	48.3	74.6	74.7	77.7	66.0	86.0	46.9	71.4	71.5	73.7	64.9	81.6	45.4
	29.5	84.4	84.6	85.5	81.7	94.1	62.8	81.5	81.7	82.2	79.9	90.1	61.4	78.5	78.6	78.7	77.8	86.0	60.0	75.1	75.3	75.1	75.2	81.6	58.6
	32.0	88.6	88.7	88.5	88.7	94.0	75.9	85.6	85.7	85.6	85.7	90.1	74.5	82.3	82.5	82.3	82.5	86.0	73.0	78.9	79.1	78.9	79.0	81.7	71.4
27000	24.0	78.1	76.3	86.1	56.0	95.3	34.3	75.1	74.3	82.4	54.6	91.3	33.0	71.9	71.9	78.6	53.2	87.0	31.6	68.7	68.8	74.5	51.6	82.5	30.2
	27.0	82.6	82.8	86.0	73.5	95.2	51.8	79.7	79.9	82.4	72.0	91.2	50.5	76.6	76.7	78.7	70.5	86.9	49.1	73.3	73.4	74.7	68.7	82.5	47.6
	29.5	86.9	87.0	87.2	86.0	95.2	66.3	83.8	84.0	83.9	83.7	91.1	65.0	80.6	80.7	80.6	80.7	86.9	63.5	77.1	77.3	77.1	77.2	82.4	62.1
	32.0	91.1	91.3	91.1	91.3	95.2	80.7	88.0	88.2	88.0	88.1	91.2	79.2	84.6	84.8	84.6	84.7	87.0	77.7	81.0	81.2	81.0	81.2	82.7	76.0

Tab. 21 - Cooling Capacity SIVE 350 with 2 x CRCB 150 (in thousands of kcal/h)

Air Flow (m <sup>3</sup> /h)		Condenser Entering Air Temperature (°C)																							
		29.5						35.0						40.5						46.0					
		Evaporator Entering Air Temperature - WB (°C)																							
TEAE	DB	16.0		19.5		23.0		16.0		19.5		23.0		16.0		19.5		23.0		16.0		19.5		23.0	
(°C)	(°C)	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.	Total Cap.	Sens. Cap.
14400	24.0	80.4	62.7	90.0	49.5	100.2	36.0	77.3	61.1	86.5	48.0	96.3	34.5	74.0	59.5	82.9	46.4	92.3	33.0	70.5	57.8	79.0	44.7	87.9	31.4
	27.0	80.4	73.3	89.9	60.2	100.1	46.7	77.4	71.7	86.4	58.7	96.3	45.2	74.2	70.0	82.8	57.0	92.2	43.6	70.8	68.1	78.9	55.4	87.9	42.0
	29.5	81.4	81.0	89.8	69.1	100.0	55.5	78.7	58.0	86.4	67.5	96.2	54.0	76.0	76.1	82.7	65.9	92.1	52.5	73.1	73.3	78.8	64.2	87.8	50.8
	32.0	84.8	85.0	89.8	77.9	100.0	64.3	82.3	82.4	86.4	76.3	96.1	62.8	79.5	79.7	82.8	74.6	92.0	61.2	76.6	76.7	79.0	72.8	87.7	59.6
#####	24.0	85.2	72.8	95.1	55.3	105.5	37.5	81.8	71.2	91.2	53.7	101.2	36.0	78.2	69.4	87.1	52.0	96.7	34.4	74.4	67.6	82.9	50.3	92.0	32.8
	27.0	86.3	85.5	94.9	69.4	105.4	51.7	83.2	83.2	91.1	67.8	101.1	50.1	80.1	80.3	87.1	66.2	96.6	48.5	76.9	77.0	82.8	64.4	91.9	46.9
	29.5	90.2	90.4	94.9	81.1	105.3	63.3	87.2	87.4	91.1	79.5	101.1	61.8	84.1	84.2	87.1	77.8	96.6	60.2	80.7	80.9	83.0	75.9	91.8	58.5
	32.0	94.4	94.6	95.6	92.0	105.2	75.0	91.3	91.5	92.0	90.0	101.0	73.4	88.1	88.3	88.3	87.6	96.5	71.8	84.6	84.8	84.6	84.7	91.8	70.1
#####	24.0	87.1	77.8	96.9	58.2	107.5	38.3	83.6	76.1	92.9	56.6	103.0	36.7	79.9	74.3	88.7	54.9	98.4	35.1	76.0	72.3	84.3	53.2	93.5	33.5
	27.0	89.5	89.7	96.9	74.1	107.4	54.2	86.5	86.7	92.9	72.5	102.9	52.6	83.2	83.4	88.7	70.8	98.3	51.0	79.8	79.9	84.2	69.1	93.4	49.3
	29.5	93.9	94.1	97.0	87.2	107.3	67.3	90.8	90.9	93.1	85.4	102.9	65.8	87.4	87.6	89.0	83.5	98.2	64.2	83.8	84.0	84.8	81.4	93.3	62.5
	32.0	98.4	98.5	98.5	98.0	107.2	80.5	95.1	95.3	95.1	95.2	102.8	78.9	91.6	91.8	91.6	91.7	98.1	77.3	87.9	88.1	87.9	88.1	93.2	75.6
#####	24.0	88.7	82.2	98.3	60.7	108.9	38.9	85.1	80.3	94.2	59.1	104.3	37.3	81.3	78.3	89.9	57.5	99.6	35.7	77.4	76.0	85.3	55.7	94.6	34.1
	27.0	92.3	92.4	98.3	78.3	108.8	56.4	89.0	89.2	94.1	76.7	104.3	54.8	85.7	85.8	89.8	75.0	99.5	53.2	82.0	82.2	85.3	73.2	94.5	51.6
	29.5	96.8	97.0	98.7	92.3	108.7	70.9	93.5	93.7	94.7	90.4	104.2	69.3	90.0	90.2	90.7	88.2	99.4	67.7	86.2	86.4	86.5	85.6	94.4	66.0
	32.0	101.5	101.6	101.4	101.6	108.7	85.4	98.0	98.2	98.0	98.1	104.1	83.8	94.4	94.5	94.4	94.5	99.3	82.1	90.5	90.7	90.5	90.6	94.4	80.4

Note:  
 (1) TEAE = Evaporator entering air temperature  
 (2) BS = Dry Bulb  
 (3) BU = Wet Bulb  
 (4) VAC = Condenser Air Flow (m<sup>3</sup>/h)  
 (5) The values indicated refer to a "Delta T" of water in condenser of 5.5°C. For a different "Delta T", correct the values according to the correction factor table on the right.  
 (6) Capacities are gross capacities and do not include the effect of heat from the evaporator motor. For net capacities, subtract this effect.  
 (7) Heat generated by evaporator motor can be approx. obtained according to the formula BHP x 0.88 = MKcal/h  
 (8) Total gross and sensible capacities in MKcal/h.  
 (9) For operation with R407C, performance values must be corrected by the following values:  
 Total Cap. => 0.96  
 Sens. Cap. => 0.98  
 kW => 1.01

# Electrical Data

50 Hz

Tab. 22 - Electrical Data - SAVE 200 to 400 ( 20 to 40 Ton) - 220V / 50 Hz

Modelo	Voltage		Compressor					Motor Evaporador					Cons. Total		Corrente Total			
	Volts	Ton	kW (nom.)	kW (máx.)	CNO	CMO	CRT	CV	kW (nom.)	kW (máx.)	CNO	CMO	CRT	kW (nom.)	kW (máx.)	CNO	CMO	Part.
200 / 250	220V	10,00	7,1	8,7	24,4	27,9	265,0	3,0	2,2	2,7	7,2	9,0	63,6	9,2	11,4	31,5	36,9	328,6
			10,00	7,1	8,7	24,4	27,9	265,0	5,5	3,8	4,8	13,1	16,4	129,6	10,9	13,4	37,5	44,3
		10,00	7,5	8,8	24,4	27,9	265,0	7,5	5,4	6,8	17,3	21,6	168,4	12,5	15,4	41,6	49,5	433,4
			10,0	7,0	8,8	20,9	26,1	220,2	14,1	17,5	45,2	54,0	485,2					
300	220V	15,00	10,8	13,4	37,8	43,7	380,0	3,0	2,2	2,7	7,2	9,0	63,6	9,2	11,4	31,5	36,9	328,6
			10,00	7,1	8,7	24,4	27,9	265,0	5,5	3,8	4,8	13,1	16,4	129,6	10,9	13,4	37,5	44,3
		10,00	7,5	8,8	24,4	27,9	265,0	7,5	5,4	6,8	17,3	21,6	168,4	12,5	15,4	41,6	49,5	433,4
			10,0	7,0	8,8	20,9	26,1	220,2	14,1	17,5	45,2	54,0	485,2					
350	220V	15,00	10,8	13,4	37,8	43,7	380,0	3,0	2,2	2,7	7,2	9,0	63,6	9,2	11,4	31,5	36,9	328,6
			15,00	10,8	13,4	37,8	43,7	380,0	5,5	3,8	4,8	13,1	16,4	129,6	10,9	13,4	37,5	44,3
		15,00	7,5	8,8	24,4	27,9	265,0	7,5	5,4	6,8	17,3	21,6	168,4	12,5	15,4	41,6	49,5	433,4
			10,0	7,0	8,8	20,9	26,1	220,2	14,1	17,5	45,2	54,0	485,2					
400	220V	2 x 10,00	14,1	17,3	48,7	55,8	530,0	3,0	2,2	2,7	7,2	9,0	63,6	9,2	11,4	31,5	36,9	328,6
			15,00	10,8	13,4	37,8	43,7	380,0	5,5	3,8	4,8	13,1	16,4	129,6	10,9	13,4	37,5	44,3
		15,00	7,5	8,8	24,4	27,9	265,0	7,5	5,4	6,8	17,3	21,6	168,4	12,5	15,4	41,6	49,5	433,4
			10,0	7,0	8,8	20,9	26,1	220,2	14,1	17,5	45,2	54,0	485,2					
400	220V	15,00	10,8	13,4	37,8	43,7	380,0	3,0	2,2	2,7	7,2	9,0	63,6	9,2	11,4	31,5	36,9	328,6
			15,00	10,8	13,4	37,8	43,7	380,0	5,5	3,8	4,8	13,1	16,4	129,6	10,9	13,4	37,5	44,3
		15,00	7,5	8,8	24,4	27,9	265,0	7,5	5,4	6,8	17,3	21,6	168,4	12,5	15,4	41,6	49,5	433,4
			10,0	7,0	8,8	20,9	26,1	220,2	14,1	17,5	45,2	54,0	485,2					

Tab. 23 - Electrical Data - SIVE 200 to 350 ( 20 to 35 Ton) with CRCE 050 to 150 - 220V / 50 Hz

Modelo	Voltage		Compressor					Motor Condensador					Motor Evaporador					Cons. Total		Corrente Total				
	Volts	Ton	kW (nom.)	kW (máx.)	CNO	CMO	CRT	CV	kW (nom.)	kW (máx.)	CNO	CMO	CRT	CV	kW (nom.)	kW (máx.)	CNO	CMO	CRT	kW (nom.)	kW (máx.)	CNO	CMO	Part.
200/250	220V	10	7,95	11,4	26,3	34,3	265,0	4,0	2,9	3,7	9,3	11,6	83,3	3,0	2,2	2,7	7,2	9,0	63,6	13,1	17,8	42,7	54,9	411,9
			10	7,95	11,4	26,3	34,3	265,0	4,0	2,9	3,7	9,3	11,6	83,3	5,5	3,8	4,8	13,1	16,4	129,6	14,7	19,8	48,6	62,3
		10	7,5	8,8	26,3	34,3	265,0	7,5	5,4	6,8	17,3	21,6	168,4	16,3	21,8	52,8	67,5	516,7						
			10,0	7,0	8,8	20,9	26,1	220,2	17,9	23,8	56,4	72,0	568,5											
300	220V	15	12,14	17,1	40,8	52,2	380,0	5,5	3,8	4,8	13,1	16,4	129,6	3,0	2,2	2,7	7,2	9,0	63,6	13,1	17,8	42,7	54,9	411,9
			10	7,95	11,4	26,3	34,3	265,0	4,0	2,9	3,7	9,3	11,6	83,3	5,5	3,8	4,8	13,1	16,4	129,6	14,7	19,8	48,6	62,3
		10	7,5	8,8	26,3	34,3	265,0	7,5	5,4	6,8	17,3	21,6	168,4	16,3	21,8	52,8	67,5	516,7						
			10,0	7,0	8,8	20,9	26,1	220,2	17,9	23,8	56,4	72,0	568,5											
350	220V	15	12,14	17,1	40,8	52,2	380,0	5,5	3,8	4,8	13,1	16,4	129,6	3,0	2,2	2,7	7,2	9,0	63,6	13,1	17,8	42,7	54,9	411,9
			15	12,14	17,1	40,8	52,2	380,0	5,5	3,8	4,8	13,1	16,4	129,6	5,5	3,8	4,8	13,1	16,4	129,6	14,7	19,8	48,6	62,3
		15	7,5	8,8	26,3	34,3	265,0	7,5	5,4	6,8	17,3	21,6	168,4	16,3	21,8	52,8	67,5	516,7						
			10,0	7,0	8,8	20,9	26,1	220,2	17,9	23,8	56,4	72,0	568,5											
350	220V	15	12,14	17,1	40,8	52,2	380,0	5,5	3,8	4,8	13,1	16,4	129,6	3,0	2,2	2,7	7,2	9,0	63,6	13,1	17,8	42,7	54,9	411,9
			15	12,14	17,1	40,8	52,2	380,0	5,5	3,8	4,8	13,1	16,4	129,6	5,5	3,8	4,8	13,1	16,4	129,6	14,7	19,8	48,6	62,3
		15	7,5	8,8	26,3	34,3	265,0	7,5	5,4	6,8	17,3	21,6	168,4	16,3	21,8	52,8	67,5	516,7						
			10,0	7,0	8,8	20,9	26,1	220,2	17,9	23,8	56,4	72,0	568,5											

Note:

- (1) RLA = Rated Load Amps (A)
- (2) FLA = Full Load Amps (A)
- (3) LRA = Locked Rotor Amps (A)
- (4) HP = Nominal Motor Power (HP)
- (5) RLA, FLA and LRA values in 380V, current in 220V should be divided by 1,73.
- (6) RLA, FLA and LRA values in 440V, current in 220V should be divided by 2.
- (7) Data according to conditions in standard ARI 210.
- (8) Voltage variation: +/- 10%
- (9) To determinate the size of electrical wiring, the Rated Load Amps in the table above should be used.
- (10) For units SIVE with CRCE, refer to general data table in this manual for the value composition or contact Trane Brazil.

# Electrical Data

**60 Hz**

Tab. 24 - Electrical Data - SAVE 200 to 400 ( 20 to 40 Ton) - 220V / 60 Hz

Model	Voltage		Compressor					Evaporator Motor					Total Cons.		Total Current			
	Volts	TR	kw (nom.)	kw (max.)	RLA	FLA	LRA	HP	kw (nom.)	kw (max.)	RLA	FLA	LRA	kw (Nom.)	kw (Max.)	RLA	FLA	LRA
200 / 250	220V	10,00 10,00	8,64 8,64	10,77 10,77	29,80 29,80	35,35 35,35	265,00 265,00	3,00	2,26	2,82	7,32	9,15	60,48	10,90	13,59	37,12	44,50	325,48
								5,00	3,58	4,48	11,61	14,51	110,57	12,22	15,25	41,41	49,86	375,57
								7,50	5,18	6,48	16,58	20,73	155,48	13,82	17,25	46,38	56,08	420,48
								10,00	6,73	8,42	21,04	26,30	205,14	15,37	19,19	50,84	61,65	470,14
300	220V	15,00 10,00	12,86 8,64	16,05 10,77	42,46 29,80	50,47 35,35	380,00 265,00	3,00	2,26	2,82	7,32	9,15	60,48	10,90	13,59	37,12	44,50	325,48
								5,00	3,58	4,48	11,61	14,51	110,57	12,22	15,25	41,41	49,86	375,57
								7,50	5,18	6,48	16,58	20,73	155,48	13,82	17,25	46,38	56,08	420,48
								10,00	6,73	8,42	21,04	26,30	205,14	15,37	19,19	50,84	61,65	470,14
								15,00	10,19	12,74	30,40	38,00	318,06	18,83	23,51	60,20	73,35	583,06
350	220V	15,00 15,00	12,86 12,86	16,05 16,05	42,46 42,46	50,47 50,47	380,00 380,00	3,00	2,26	2,82	7,32	9,15	60,48	10,90	13,59	37,12	44,50	325,48
								5,00	3,58	4,48	11,61	14,51	110,57	12,22	15,25	41,41	49,86	375,57
								7,50	5,18	6,48	16,58	20,73	155,48	13,82	17,25	46,38	56,08	420,48
								10,00	6,73	8,42	21,04	26,30	205,14	15,37	19,19	50,84	61,65	470,14
								15,00	10,19	12,74	30,40	38,00	318,06	18,83	23,51	60,20	73,35	583,06
400	220V	2 x 10,00 15,00	17,28 12,86	21,54 16,05	59,60 42,46	70,70 50,47	530,00 380,00	3,00	2,26	2,82	7,32	9,15	60,48	10,90	13,59	37,12	44,50	325,48
								5,00	3,58	4,48	11,61	14,51	110,57	12,22	15,25	41,41	49,86	375,57
								7,50	5,18	6,48	16,58	20,73	155,48	13,82	17,25	46,38	56,08	420,48
								10,00	6,73	8,42	21,04	26,30	205,14	15,37	19,19	50,84	61,65	470,14
								15,00	10,19	12,74	30,40	38,00	318,06	18,83	23,51	60,20	73,35	583,06

Tab. 25 - Electrical Data - SIVE 200 to 350 ( 20 to 35 Ton) with CRCB 050 to 150 - 220V / 60 Hz

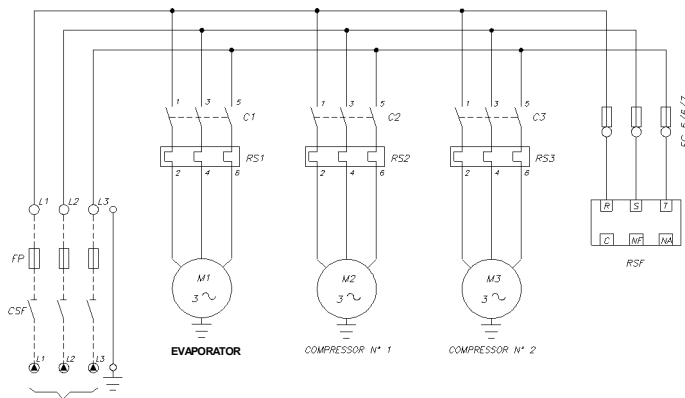
Model	Voltage		Compressor					Condenser Motor					Evaporator Motor					Total Cons.		Total Current				
	Volts	TR	kw (nom.)	kw (max.)	RLA	FLA	LRA	HP	kw (nom.)	kw (max.)	RLA	FLA	RLA	HP	kw (nom.)	kw (max.)	RLA	FLA	LRA	kw (Nom.)	kw (Max.)	RLA	FLA	LRA
200/250	220V	10 10	9,8 9,8	13,9 13,9	32,7 32,7	44,0 44,0	265,0 265,0	4,0 4,0	2,9 2,9	3,7 3,7	9,5 9,5	11,9 11,9	86,9 86,9	3,0	2,3	2,8	7,3	9,2	60,5	15,0	20,4	49,5	65,1	412,4
														5,0	3,6	4,5	11,6	14,5	110,6	16,3	22,0	53,8	70,4	462,4
														7,5	5,2	6,5	16,6	20,7	155,5	17,9	24,0	58,8	76,6	507,4
														10,0	6,7	8,4	21,0	26,3	205,1	19,5	26,0	63,2	82,2	557,0
300	220V	15 10	14,5 9,8	20,3 13,9	46,5 32,7	61,7 44,0	380,0 265,0	5,0 4,0	3,6 2,9	4,5 3,7	11,6 9,5	14,5 11,9	110,6 86,9	3,0	2,3	2,8	7,3	9,2	60,5	15,0	20,4	49,5	65,1	412,4
														5,0	3,6	4,5	11,6	14,5	110,6	16,3	22,0	53,8	70,4	462,4
														7,5	5,2	6,5	16,6	20,7	155,5	17,9	24,0	58,8	76,6	507,4
														10,0	6,7	8,4	21,0	26,3	205,1	19,5	26,0	63,2	82,2	557,0
														15,0	10,2	12,7	30,4	38,0	318,1	22,9	30,3	72,6	93,9	669,9
350	220V	15 15	14,5 14,5	20,3 20,3	46,5 46,5	61,7 380,0	5,0 380,0	3,6 3,6	4,5 4,5	11,6 11,6	14,5 14,5	110,6 110,6	3,0	2,3	2,8	7,3	9,2	60,5	15,0	20,4	49,5	65,1	412,4	
													5,0	3,6	4,5	11,6	14,5	110,6	16,3	22,0	53,8	70,4	462,4	
													7,5	5,2	6,5	16,6	20,7	155,5	17,9	24,0	58,8	76,6	507,4	
													10,0	6,7	8,4	21,0	26,3	205,1	19,5	26,0	63,2	82,2	557,0	
													15,0	10,2	12,7	30,4	38,0	318,1	22,9	30,3	72,6	93,9	669,9	

Note:  
 (1) RLA = Rated Load Amps (A)  
 (2) FLA = Full Load Amps (A)  
 (3) LRA = Locked Rotor Amps (A)  
 (4) HP = Nominal Motor Power (HP)  
 (5) RLA, FLA and LRA values in 380V, current in 220V should be divided by 1,73.  
 (6) RLA, FLA and LRA values in 440V, current in 220V should be divided by 2.  
 (7) Data according to conditions in standard ARI 210.  
 (8) Voltage variation: +/- 10%  
 (9) To determinate the size of electrical wiring, the Rated Load Amps in the table above should be used.  
 (10) For units SIVE with CRCE, refer to page 07 in this manual for the value composition or contact Trane do Brasil.

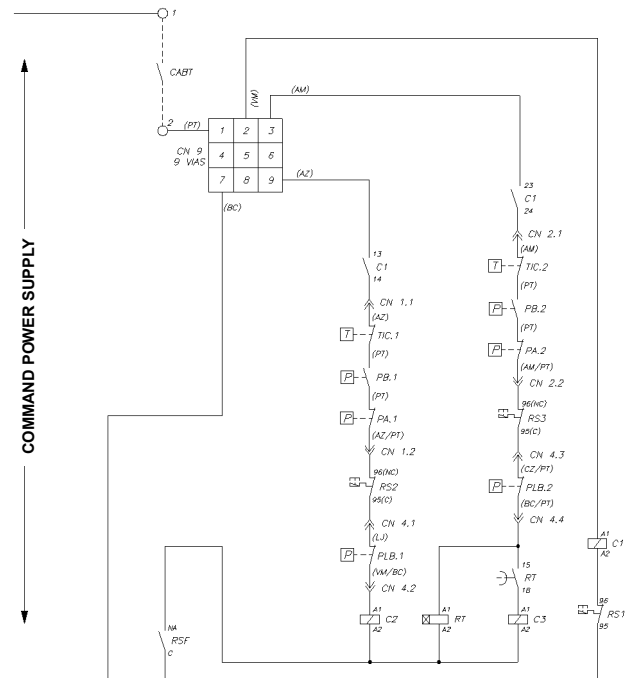
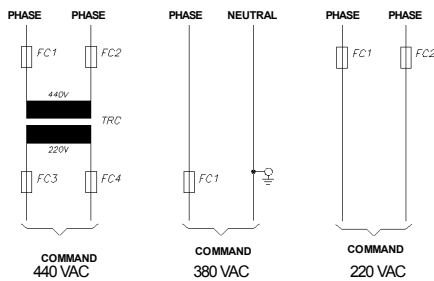
# Wiring Diagram

SAVE

Fig. 03 - Power and command wiring diagram - SAVE 200 to 350



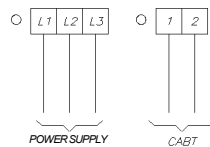
### Command power supply option



### Legend

- MR/PT Brown cable with black strip
- MR Brown cable
- VM Red cable
- BC White cable
- P Black cable
- AZ/PT Blue cable with black strip
- AZ Blue cable
- CABT Tower pump auxiliary contact
- IOL Internal compressor thermostat
- PB Low pressure switch
- PA High pressure switch
- CN Multi-path connector
- TRC Command transformer
- RS Overload relay
- C Power contactor
- M Motor
- FC Command fuse
- FP Power fuse
- CSF Power disconnect switch

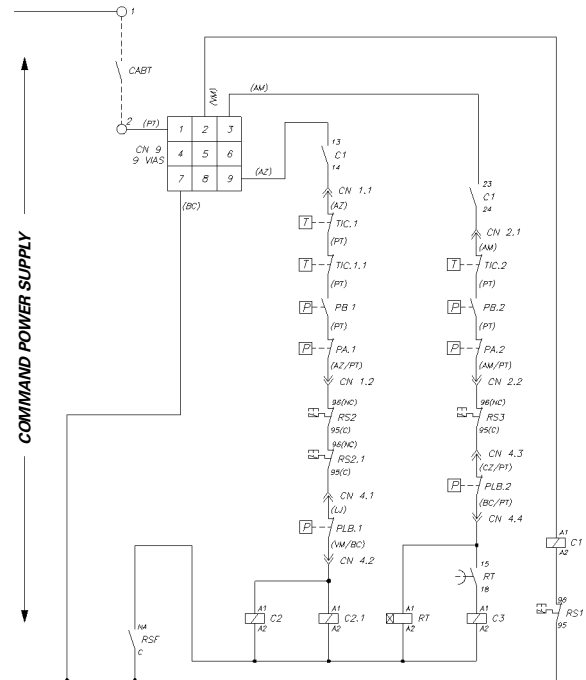
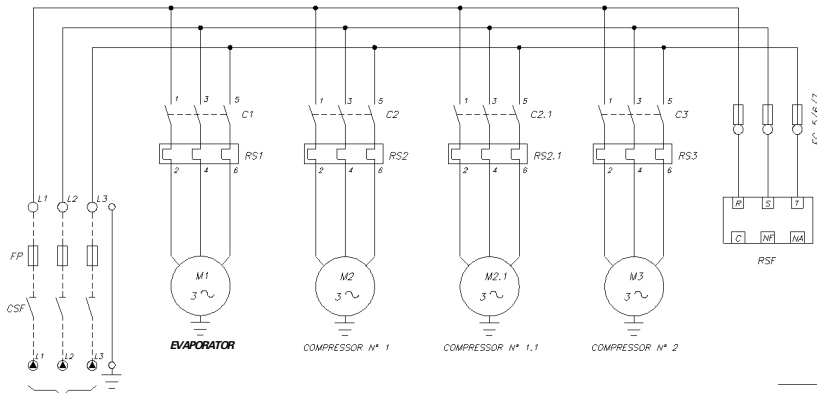
- CONNECTOR IN UNIT PANEL
- WIRING BY TRANE DO BRASIL
- - - - WIRING BY CLIENT (CONTRACTOR)



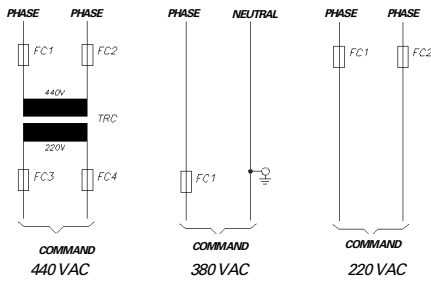
# Wiring Diagram

SAVE

Fig. 04 - Power and command wiring diagram - SAVE 400



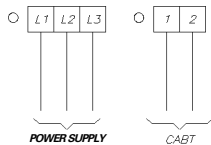
### Command power supply option



### Legend

- MR/PT Brown cable with black strip
- MR Brown cable
- VM Red cable
- BC White cable
- P T Black cable
- AZ/PT Blue cable with black strip
- AZ Blue cable
- CABT Tower pump auxiliary contact
- IOL Internal compressor thermostat
- PB Low pressure switch
- PA High pressure switch
- CN Multi-path connector
- TRC Command transformer
- RS Overload relay
- C Power contactor
- M Motor
- FC Command fuse
- FP Power fuse
- CSF Power disconnect switch

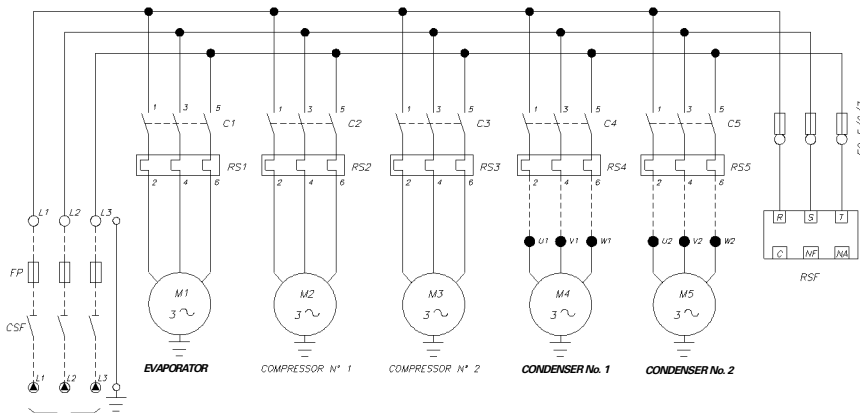
- CONNECTOR IN UNIT PANEL
- WIRING BY TRANE DO BRASIL
- - - - WIRING BY CLIENT (CONTRACTOR)



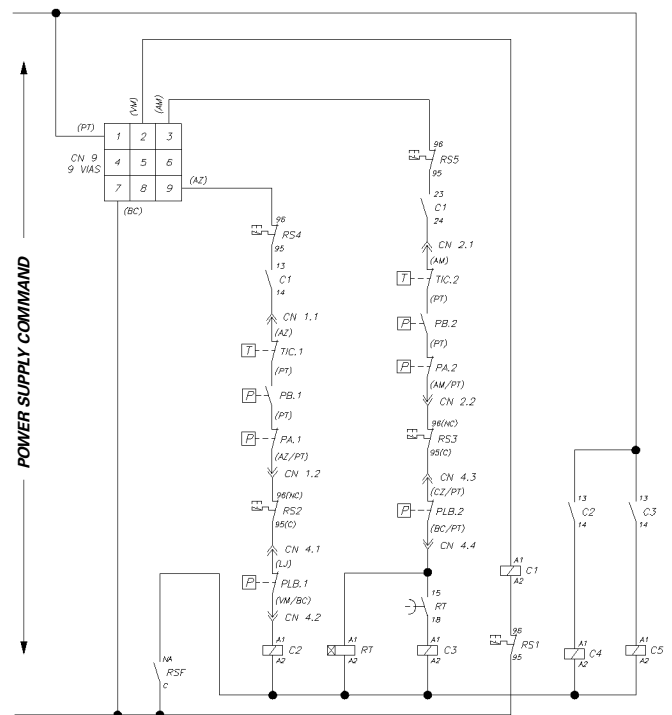
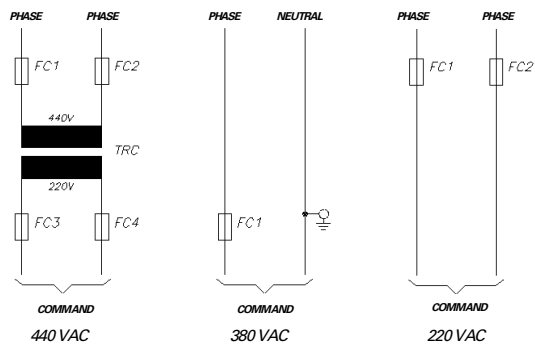
# Wiring Diagram

SVE

Fig. 05 - Power and command wiring diagram - SIVE 200 to 350



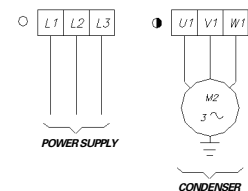
## Command power supply option



## Legend

- MR/PT Brown cable with black strip
- MR Brown cable
- VM Red cable
- BC White cable
- P T Black cable
- AZ/PT Blue cable with black strip
- AZ Blue cable
- CABT Tower pump auxiliary contact
- IOL Internal compressor thermostat
- PB Low pressure switch
- PA High pressure switch
- CN Multi-path connector
- TRC Command transformer
- RS Overload relay
- C Power contactor
- M Motor
- FC Command fuse
- FP Power fuse
- CSF Power disconnect switch

- Ⓢ CONNECTOR IN REMOTE CONDENSER
- CONNECTOR IN UNIT PANEL
- WIRING BY TRANE DO BRASIL
- - - WIRING BY CLIENT (CONTRACTOR)
- - - COMPONENTS IN REMOTE CONDENSER





# Controls

ReliaTel®

Self Contained DIAMOND features 3 control options:

### Standard Thermostat

All units are supplied with a control thermostat. This thermostat can be installed remotely or at the equipment, according to customer needs.



### Programmable Thermostat (TP)

TP is indicated for small facilities, with few devices. TP programming is very simple! TP has a liquid crystal display that allows the visualization of time, day of the week, program selected and room temperature. Up to 4 different setpoints can be programmed for each day of the week. Through the "timed-override" key, the user can extend the equipment operation beyond the programmed schedules. The main advantage of TP is the power economy, as the devices turn on and off at the programmed times.



### ReliaTel®

ReliaTel is the name given to second-generation microprocessed controls developed by Trane/American Standard. The control ReliaTel® is used in cooling units of the type self contained Diamond with capacity from 20 to 40 Ton. The microprocessed controller was approved by our customers in thousands of applications worldwide. An unit using microprocessors offers superior comfort, incomparable trust and a much greater flexibility than conventional systems.

ReliaTel® has greater flexibility, is more compact, has additional improvements for system reliability, among other advantages. A lot of what ReliaTel® does will be familiar to service technicians accustomed to the previous controllers. Tests and troubleshooting are similar and, in many cases, equal to the previous controllers. However, there are some significant differences, and it is important that the service professional uses the correct material for the unit in which the service is being executed.

### ReliaTel® Refrigeration Module (RTRM)

Each Module ReliaTel® is a communication control. All ReliaTel units use a RTRM. It can be controlled directly by any of the following items:

- Zone Sensor Module
- Programmable Zone Sensor
- Conventional thermostat

#### Note:

Unlike the previous controller, a conventional thermostat does not require any type of interface. It can be connected directly to RTRM.



RTRM provides the primary unit control; these are its main features and benefits:

**High Reliability:** Reduction of electromechanical components in the Electric Frame.

**Direct Digital Control:** The Proportional-Integral control allows a much more accurate temperature control of the conditioned room (greater comfort and reduction of power consumption).

**Test Mode:** The controller allows to the operator to perform easy and fast tests in order to verify component operation (fans and compressors).

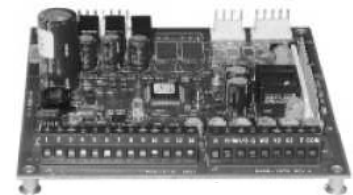
**Easy Diagnoses Detection:** The operator will be able to easily detect operational problems in the unit.

**Elimination of Compressor Cycling:** The controller allows a minimum period of 3 minutes with compressor turned-on and 3 minutes with compressor turned off, thus assuring the appropriate return of the oil to the compressor and preventing the compressor from burning out due to excessive cycling.

**Compressor Operation Sequencing:** The controller will sequence compressors according to the number of starts and operation hours of the compressors, in order to equalize their use.

### Communication Interface Module COMM3/4 (RTCI)

Module RTCI allows the ICS (Integrated Comfort System) communication between a ReliaTel® unit and Trane ICS systems TRACER SUMMIT and TRACKER.





# Controls

## Tracker / VariTrac

### Tracker

It is a microprocessed controller that automatically controls several devices divided in comfort zones and manages the illumination of your building, also allowing the sending of air conditioning system alarms to a central office at any hour of the day or night. The communication with the devices is made through a comm5 network (open protocol LON TALK). Several functions are possible:

**Time Programming:** In Tracker you can define the programming for the whole year, with up to 10 schedules. One or more devices may be included in a schedule, and temporary overrides are possible.

**Interface with Operator:** Using a touch-screen, with a visual interface that is very easy to operate. The operator will pass through the screens in an intuitive way, oriented by menus.

**Software (optional):** Allows local or remote access (dial-up or LAN) to Tracker. The operator can access all functions available in the display and also exclusive functions for digital output programming (MP503), alarm customization and printing. It is not necessary for basic system configuration.



*Programa Tracker (optional)*

**Optimized Start:** TRACKER analyzes the most economical way to turn on the devices, so that in the programmed time you have the temperature desired.

**Demand Limit:** Automatically controls the limits programmed for power consumption in the installation. An important economy along the years turns the cost of TRACKER irrelevant.

**Control of Third-Party Devices:** With controller ZN517 you can incorporate third-party devices to the TRACKER network, allowing their inclusion in time scheduling, alarm monitoring, etc.

**Input/Output Control:** With the I/O module MP503, you can configure by software additional functions of illumination control, visual and audible alarms, condensing pumps, towers, etc.

**Auto-configuration Function:** TRACKER, as soon as it is powered, recognizes all devices connected to the network and configure them in a standard schedule, which can be customized later.

**Simple installation:** Diamond and TRACKER are supplied from factory programmed and tested and the interconnection between them is made through a simple twisted-pair cable. For more details, refer to TRACKER-specific literature.

**Alarm Log:** Any occurrence is identified in the TRACKER panel and stored, and can be transmitted remotely via telephone or LAN.

### VariTrac

This is a Trane system for variable air flow, usually used in small facilities. The circulating air flow in the equipment is constant and supplied air flow in each room is variable, through the use variable air flow boxes. In order that the circulating air flow in the equipment is constant, there is(are) bypass duct(s) that returns to the equipment the air flow that was not supplied to the conditioned rooms. VariTrac Boxes have a microprocessed controller. This controller regulates the exact amount of air to be supplied to the room in order to maintain constant supply temperatures. VariTrac boxes are also required in the bypass duct(s) of the system. For the VariTrac system control, a controller called Central Control Panel (CCP) should be used. Speed and temperature sensors should be installed in the bypass duct. The controller programming is made by Trane.

For more information about Trane automation system, contact the BASD team at Trane do Brazil:  
E-mail: [mkt.brasil@irco.com](mailto:mkt.brasil@irco.com)

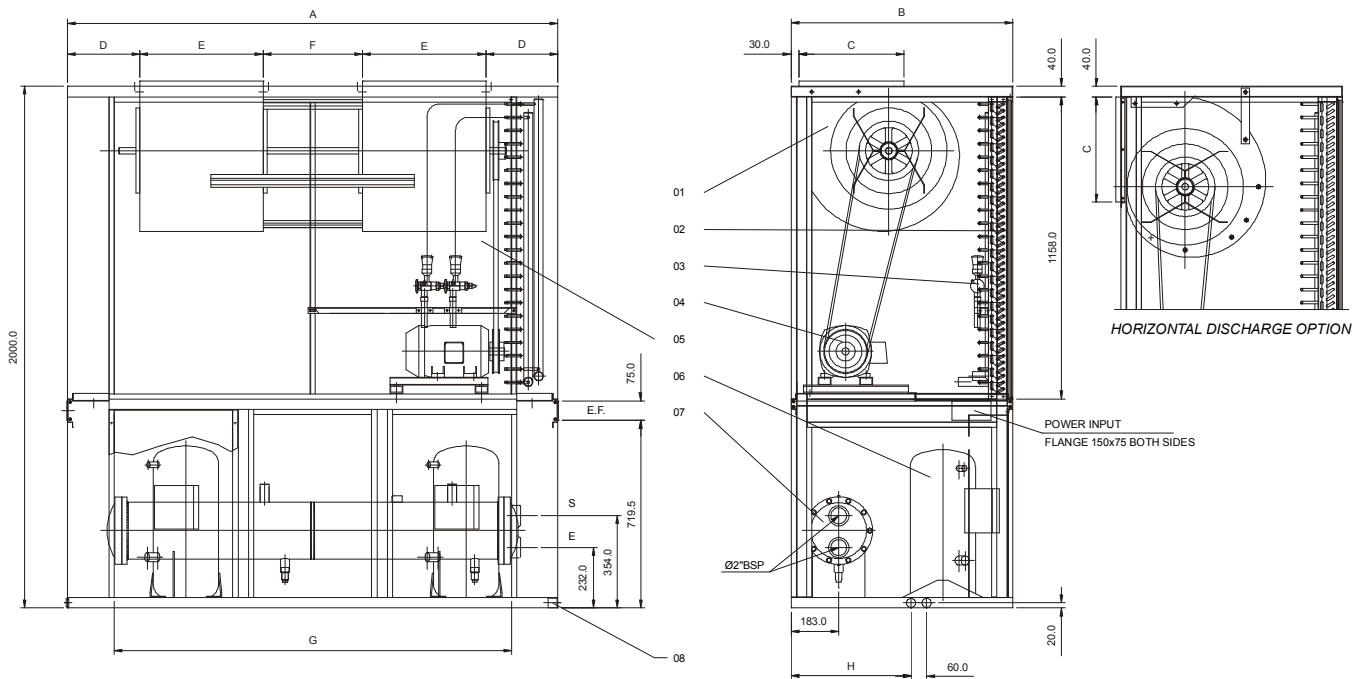


**TRACKER**

# Dimensions

SAVE  
Shell & Tube

Fig. 06 - Dimensions SAVE 200 to 400



- 1 Double-suction centrifugal fan
- 2 Evaporator coil
- 3 Thermostatic Expansion Valve
- 4 Three-phase electrical motor
- 5 Filters
- 6 Compressor Scroll
- 7 Shell and Tube Condenser
- 8 Drain ø1/2" BSP (both sides)

Tab. 26 - Dimensions SAVE 200 to 400.

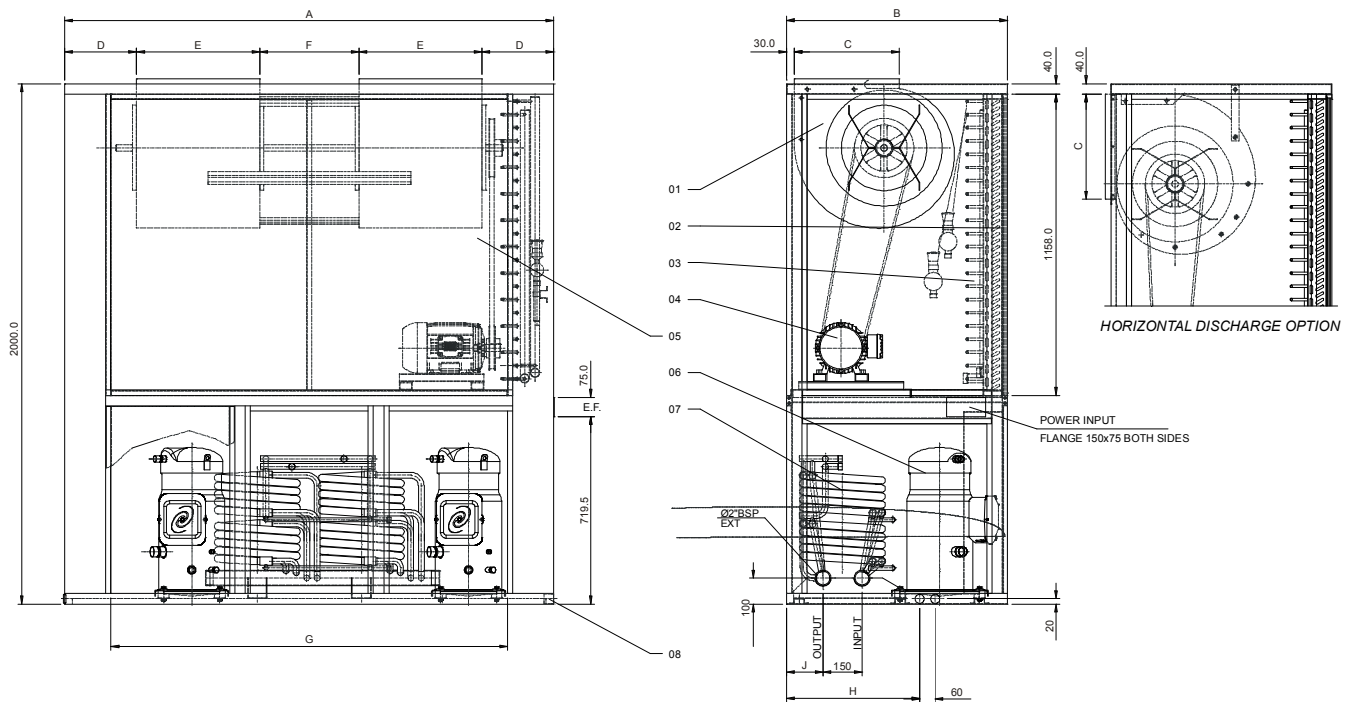
MODEL	A	B	C	D	E	F	G	H	WEIGHT (Kg)
200	1880	850	403	276.5	473	381	1524	510	730
250	1880	850	403	276.5	473	381	1524	510	745
300	2470	980	478	449.5	557	457	2114	590	970
350	2470	980	478	449.5	557	457	2114	590	1030
400	2470	980	478	449.5	557	457	2114	590	1060

Note:  
Unit: mm

# Dimensions

SAVE  
Tube & Tube

Fig. 07 - Dimensional SAVE 200 to 400.



- 1 Double-suction centrifugal fan
- 2 Evaporator coil
- 3 Thermostatic Expansion Valve
- 4 Three-phase electrical motor
- 5 Filters
- 6 Compressor Scroll
- 7 Tube and tube condenser
- 8 Drain ø1/2" BSP (both sides)

Tab. 27 - Dimensions SIVE 200 to 350.

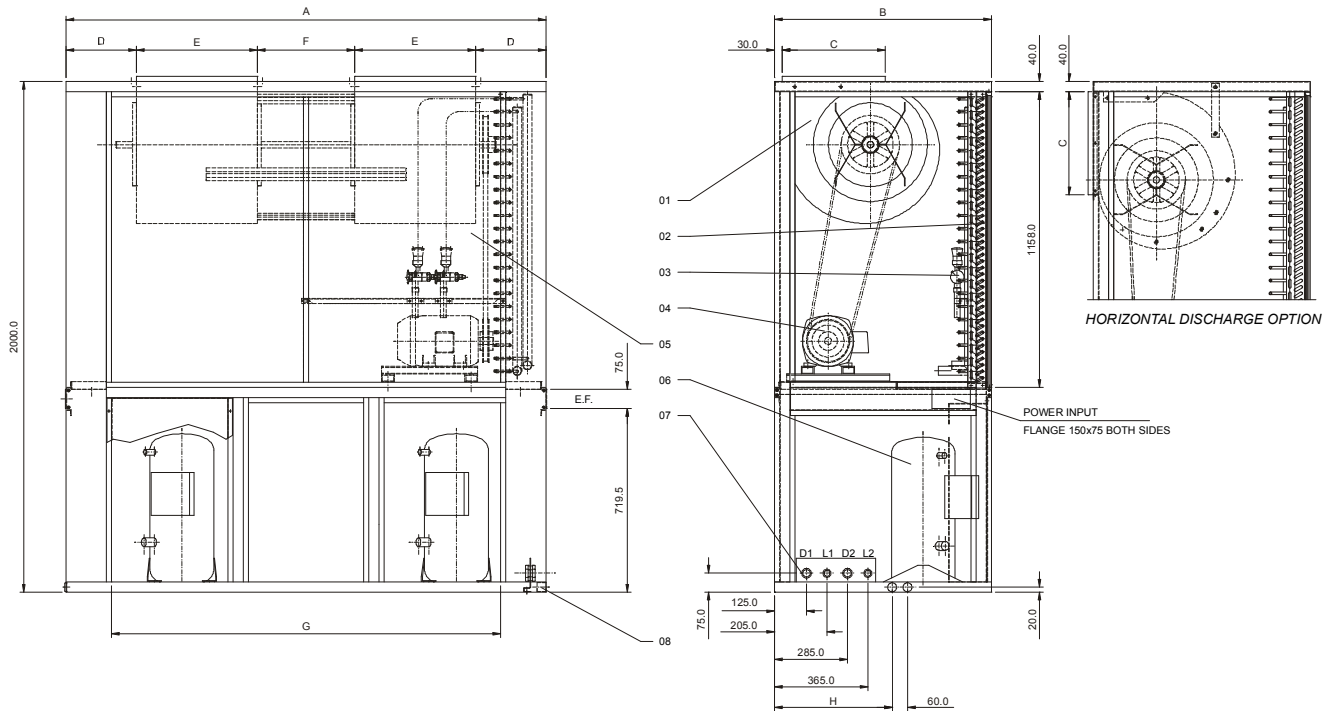
MODEL	A	B	C	D	E	F	G	H	J
200	1880	850	403	276.5	473	381	1524	510	140
250	1880	850	403	276.5	473	381	1524	510	140
300	2470	980	478	449.5	557	457	2114	590	160
350	2470	980	478	449.5	557	457	2114	590	160
400	2470	980	478	449.5	557	457	2114	590	160

Note:  
Unit: mm

# Dimensions

SVE

Fig. 08- Dimensions SVE 200 to 350.



- 1 Double-suction centrifugal fan
- 2 Evaporator coil
- 3 Thermostatic Expansion Valve
- 4 Three-phase electrical motor
- 5 Filters
- 6 Compressor Scroll
- 7 Drilling for the crossing of lines (dir/esq)
- 8 Drain  $\varnothing 12''$ BSP (both sides)

Tab. 28 - Dimensions SIVE 200 to 350.

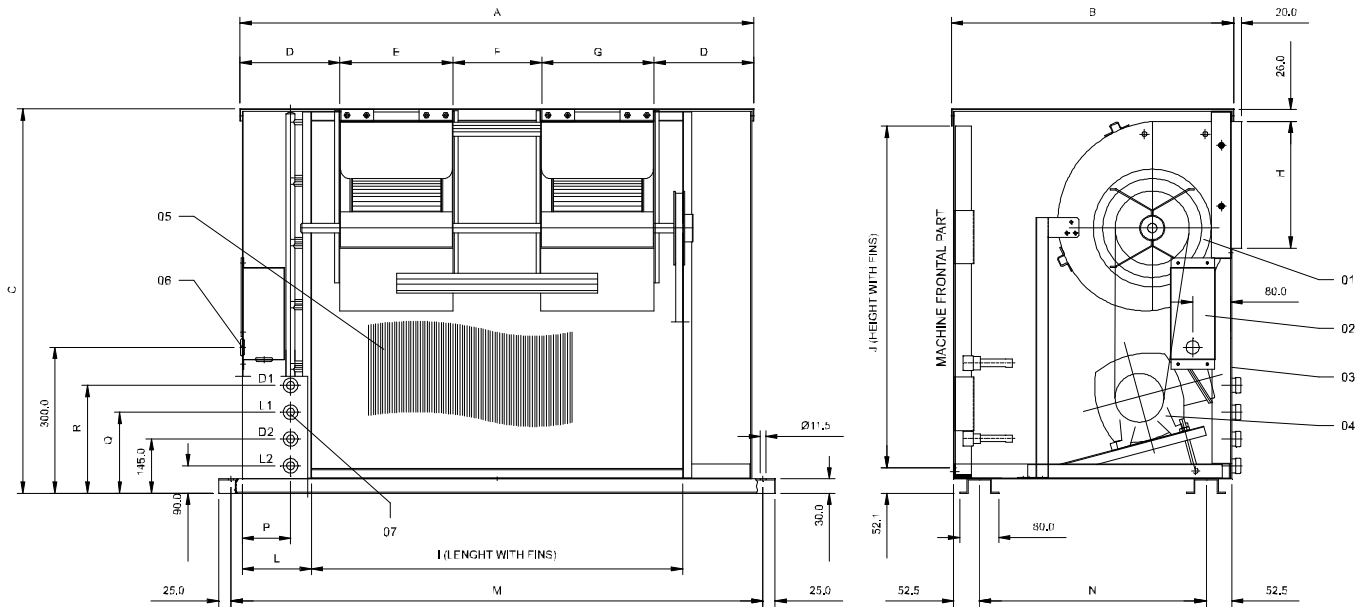
MODEL	A	B	C	D	E	F	G	H	D1	L1	D2	L2	WEIGHT (Kg)
200	1880	850	403	276.5	473	381	1524	510	7/8"	5/8"	7/8"	5/8"	600
250	1880	850	403	276.5	473	381	1524	510	1.1/8"	5/8"	1.1/8"	5/8"	610
300	2470	980	478	449.5	557	457	2114	590	1.1/8"	7/8"	1.1/8"	5/8"	800
350	2470	980	478	449.5	557	457	2114	590	1.1/8"	7/8"	1.1/8"	7/8"	860

Note:  
Unit: mm

# Dimensions

CRCB

Fig. 09 - Dimensions CRCB 050 to 150.



- 1 Double-suction centrifugal fan
- 2 Terminal box
- 3 Maintenance cover
- 4 Three-phase electrical motor
- 5 Condensing coil
- 6 Cable passage Ø27 for power inlet
- 7 Refrigeration connections (single position)

Tab. 29 - Dimensions CRCB 050 to 150.

MODEL	A	B	C	D	E	F	G	H	I	J	L	M	N	P	Q	R	ØL1	ØD1	ØL2	ØD2
050	987	631	890	295.5	396	-	-	341	762	711	110	1029	521	132	-	-	1/2"	5/8"	-	-
075	1241	631	890	422.5	396	-	-	341	1016	816.5	110	1283	521	132	-	-	1/2"	3/4"	-	-
100 C/2	1341	631	941	222.5	333	230	333	289	1143	863.5	97	1383	521	159	200	255	1/2"	5/8"	1/2"	5/8"
125 C/2	1646	714	1018	299.5	396	255	396	341	1473	940	84	1688	604	236	200	255	1/2"	3/4"	1/2"	5/8"
150 C/2	1646	714	1247	299.5	396	255	396	341	1473	1168.5	84	1688	604	236	200	255	1/2"	3/4"	1/2"	3/4"

Note:  
Unit: mm

# Dimensions

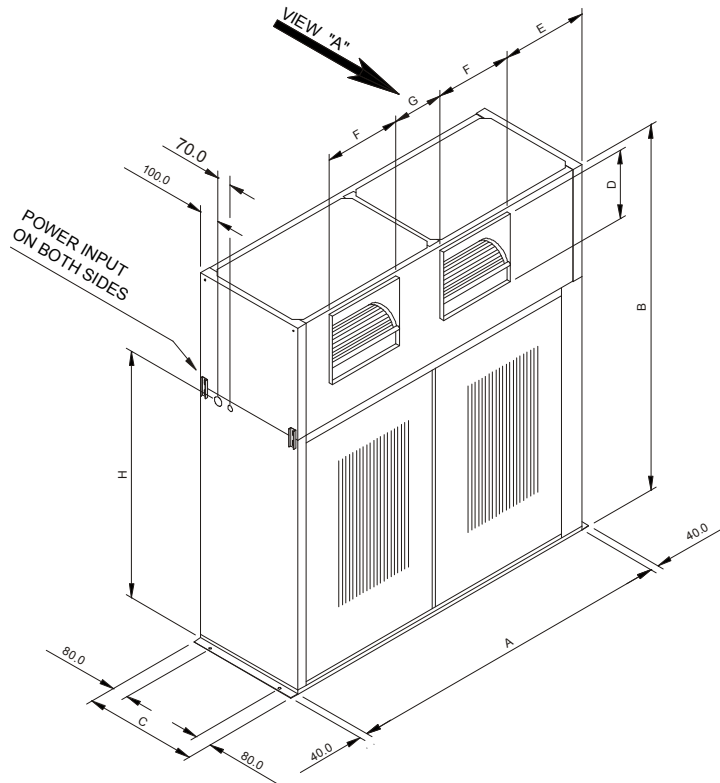
CRCE

Fig. 10 - Dimensions CRCE 050 to 150.

Tab. 30 - Dimensions CRCE

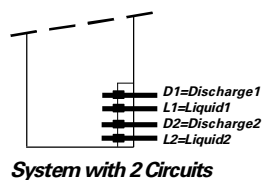
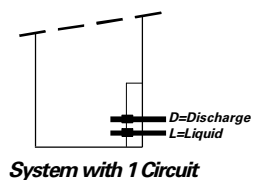
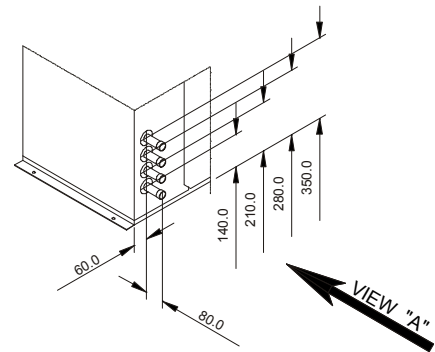
Dimension	Model				
	050	075	100	125	150
A	922	1146	1420	1640	1640
B	1373	1474	1525	1600	1829
C	560	560	560	560	560
D	341	341	290	341	341
E	374	480	402	432	432
F	386	386	326	386	386
G	---	---	230	255	255
H	778	879	930	1005	1234
K	813	914	965	1040	1269
L	560	560	560	560	560

Note:  
Unit:mm



Tab. 31 - Connection dimensions CRCE

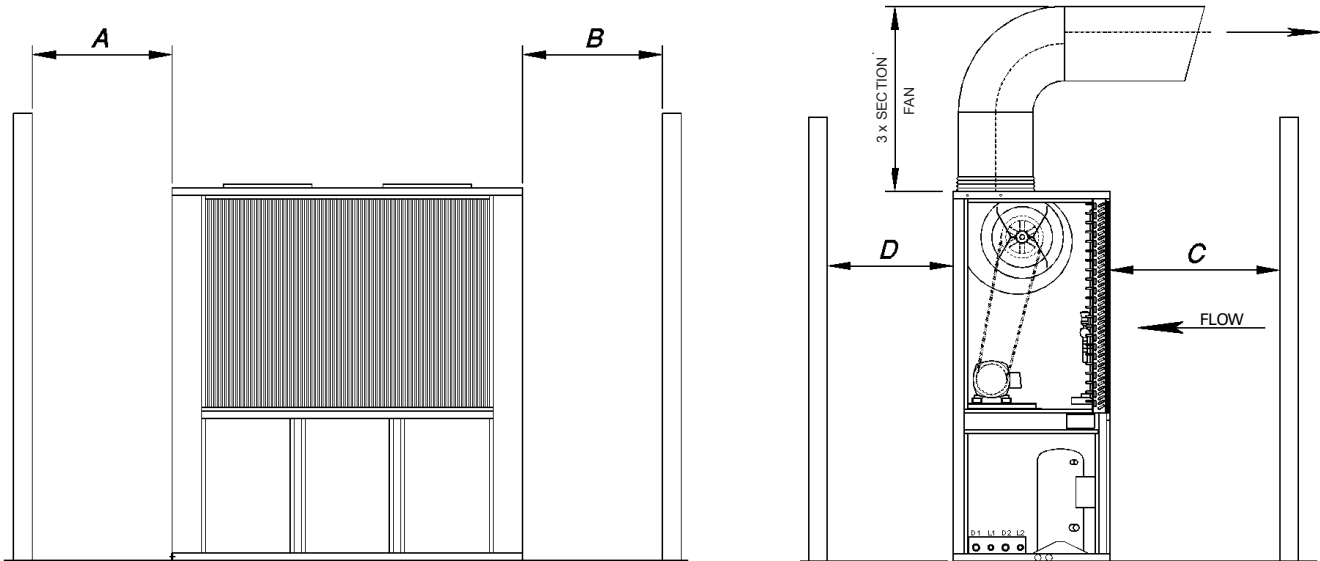
Connection (inches)	Models CRCE							
	050	075	100C/1	100C/2	125C/1	125C/2	150C/1	150C/2
D1	---	---	---	5/8"	---	3/4"	---	3/4"
L1	---	---	---	1/2"	---	1/2"	---	1/2"
D2/D	5/8"	3/4"	7/8"	5/8"	1 1/8"	5/8"	1 1/8"	3/4"
L2 / L	1/2"	1/2"	5/8"	1/2"	5/8"	1/2"	7/8"	1/2"



Note:  
Unit: mm

# Maintenance and Cleaning Clearances

Fig. 11 - Recommended maintenance and cleaning clearances - Diamond 20 to 40Ton

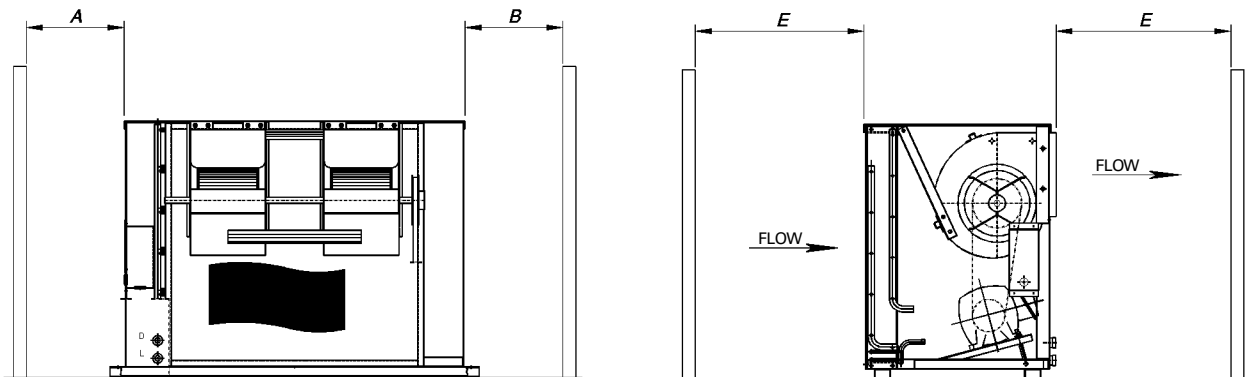


Tab. 32 - Dimensions - Diamond

Model	A	B	C	D
SAVE200/250	750	1880	1200	650
SAVE300/350/400	750	2470	1200	650
SIVE200/250	750	750	1200	650
SIVE300/350	750	750	1200	650

Note: Unit: mm

Fig. 12 - Recommended maintenance and cleaning clearances CRCB and CRCE 5 to 15 Ton



Tab. 33 - Dimensions CRCB/CRCE

Model	A	B	E
CRCB 100/125/150	750	750	2500
CRCE 100/125/150	750	750	2500

Note: Unit: mm

# Mechanical Specification

## Cabinet

There are two cabinet sizes, one for 20 to 25 Ton machines and the other for 30, 35 and 40 Ton machines. The cabinet has inferior and superior trays, sustaining columns and removable covers fastened by screws. All fastenings are made through screws or rivets. Made in galvanized steel, with thermal-acoustic isolation Bidin, which, besides being an optimum thermal isolant, is also a good acoustic isolant and do not cause fiber hauling. For water condensation machines, (model SAVE), the hydraulic connections are supplied from factory on the right side, when facing the machine from the filter. This assembly can be reversed upon client request. This inversion can be made in field. For remote air condensation machines (model SVE), refrigeration connections are supplied from factory on the left side and it is not possible to revert them in field. Power supply connections are located on the sides and are available on both sides. Drains are available in left. Refrigeration connections of condensing units CRCB and CRCE are supplied from factory mounted on the right side, when facing the unit in front of the coil. This assembly can be reversed upon client request.

## Painting

The cabinet is supplied from factory painted in Trane gray. The parts are submitted to a modern phosphatization process and later to powder-painting with a POLYESTER-based resin, which provides Trane equipment with high resistance. After this process, the parts are cured in an oven at 200°C, providing a final and resistant 85-micron coating.

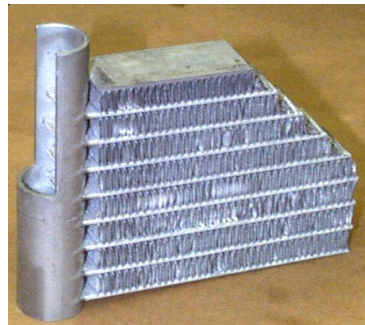
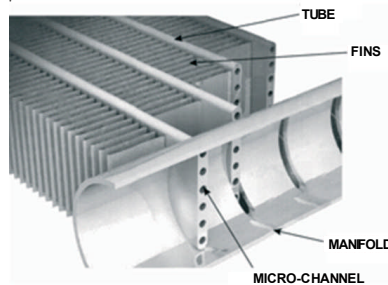
## Coils

All evaporator and condensing coils use 3/8"-OD tubes and high-efficiency aluminum fins, model Trane Wavy 3B, mounted in evaporator coils with 120 foot fins. The copper tubes are mechanically expanded to achieve a perfect contact between fin and tube. The condensing coils using the new technology called "Micro-channel" (MCHX),

consisting of three main components: tube Micro-Channel plates having a plan, fins located between alternating layers of two types of tubes and manifolds "soft drinks". All components made of aluminium.

Evaporator coils are tested at a 300 PSIG pressure and condensing coils at 400 PSIG.

The condensed water pan has an exclusive design that meets ASHRAE standards for internal air quality.



## Water-cooled condenser (SAVE)

The "Shell & Tube" water-cooled condensers are manufactured with copper tubes with integral fins, expanded on steel mirrors, with rifled holes, assuring perfect sealing, mounted in a steel case with cast iron covers, removable for easy cleaning, protected by finish coating. Designed, tested and checked according to ASME standards, for operating pressures of 300 PSIG on the refrigerating side and 150 PSIG on water side.

## Compressor Scroll

These are very efficient compressors, that have no valves and are extremely resistant to slugging. They have 64% less moving parts than a reciprocal compressor with equal capacity. Their operation is extremely smooth and silent.

## Fans

Forward-curved type centrifugal fans, made in galvanized steel with statically- and dynamically-balanced rotors. The evaporator group is sized to supply up to 70 mmca of external static pressure.

## Air filters

The standard unit is supplied with washable filters, of electrostatic fabric, class G0, fixed in a steel wire frame.

## Protection and Safety Devices

The equipment is protected by high and low pressure switches with automatic reset and fixed adjustment, internal compressor thermostat with automatic reset, current overload relay for the compressor and thermal overload relay for fan motors.

Water-cooled condensers are protected by plug fuse.

## Standard Thermostat

All units are supplied with a control thermostat. This thermostat can be installed remotely or at the equipment, according to customer needs.



## Tests

The *DIAMOND* line is supplied from factory tested. The standard tests include visual inspection and basic production test.

## Inspection Valves

All units have 1/4" NU Schrader inspection valves in liquid, suction and discharge lines.



# Mechanical Specification

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## Remote Condenser CRCB / CRCE

CRCB / CRCE units are composed by heat exchanger and centrifugal fans . The unit CRCB is mounted in a single structural module. Units CRCE are basically composed by two modules: the heat exchanger module and the fan module, thus allowing the units CRCE the horizontal or vertical discharge option.

## Cabinet

Units CRCB, CRCE are manufactured in galvanized steel panels, painted in Trane gray.

## Painting

The cabinet of units CRCB and CRCE is supplied from factory painted in Trane gray. The parts are submitted to a modern phosphatization process and later to powder-painting with a POLYESTER-based resin, which provides Trane equipment with high resistance. After this process, the parts are cured in an oven at 200°C, providing a final and resistant 85-micron coating.

## Nominal Capacities

Units CRCB and CRCE have the following nominal capacities:

CRCB/CRCE 050 - 5.0 Ton  
CRCB/CRCE 075 - 7.5 Ton  
CRCB/CRCE 100 - 10.0 Ton  
CRCB/CRCE 125 - 12.5 Ton  
CRCB/CRCE 150 - 15.0 Ton

## Power Voltage

Units TRCE can be supplied with power voltage of 220 or 380 or 440 V, frequency of 50 or 60 Hz, three-phase and command voltage of 220 V, and optionally with command 24V.



**CRCB**



**CRCE**

# Mechanical Specification

## Opcionals

### Return Grill

Grill in anodized aluminum profile with vertical fins. Vertical grills allow an excellent air distribution in the coil. Recommended for room machines.

### Heating Resistances

The resistances have a galvanized steel structure and diam 85 mm stainless steel tubular resistance. The following table shows the available electrical heating options for each model.

Model (Ton)	AQ1* (kW)	AQ2* (kW)	AQ3* (kW)
20	9,0	18,0	27,0
25	9,0	18,0	27,0
30	12,0	24,0	36,0
35	12,0	24,0	36,0
40	15,0	30,0	45,0

\*NOTE: All options are 2 stages.

### Electrical Frame

Trane offers as an option electrical frames for heating resistances.

#### Important

*When electrical heating options are ordered, the frames are supplied separately and are coupled to the devices.*

### Service Valve

Service valve for liquid, suction and discharge lines.

### Condensing Pressure Controller

Set with pressure-controlled valves for condensing pressure control in machines with air condensation. The liquid tank completes this option.

### Refrigerant R-407 C

The units offer as standart refrigerant R- 407C.

*Note: Refrigerant R-407C is not available for the line Self Contained Diamond - SAVE (Water-cooled condenser - Shell&Tube).*

### Power Supply Voltage

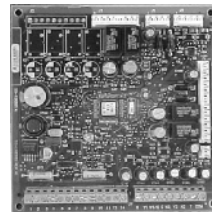
Self Contained Diamond units offer the following power supply voltages: 220V or 380V or 440 V, three-phase, 60 Hz. Trane also provides, as an option, the command voltage in 24 V.

### Controls

Programmable Thermostat  
Microprocessed control ReliaTel®  
Tracker Controller



**Programmable  
Zone Sensor**



### Packing

Special wood box packing.

### Filtering

Simple: Washable metal filter with 3 layers.

Double: many double combinations can be made. Refer to loss pressure table in this catalogue.

### Tests

Trane do Brasil offers the following in-factory tests: basic production test with inspector, operation test , with or without the presence of an inspector.

### Liquid Sight Glass

Auxiliary component for maintenance, Indicates the presence of moisture in the equipment refrigeration piping.

### Piping

Diamond units have as an option service valves in suction, liquid and discharge lines.

### Capacitor

For power factor correction.

### Static Pressure and Filtering

Units CRCB/CRCE and TRCE have as an option 2,5 mmca or 5,0 mmca static pressure, for special applications. Units also feature as an option a filtering system for condenser coils. The filtering options are:

- Class G1 filter - 3 screens
- Class G2 filter - glass wool.

# Mechanical Specification

## Options

### Stainless Steel Drain Pan

Highly durable stainless steel drain pan which improves air quality due to the complete absence of oxidation. Material used: steel AISI 430.

### High Pressure Switch (PRMA)

The PRMA is a small switch used in refrigeration and air conditioning applications, equipped with a 6 amps, manual reset connector, highly reliable in many types of applications. Thanks to its reduced dimensions and weight, the switch can be set up directly into the refrigeration circuits where it is required to control the pressure. The switch is available with pressure settings and connections defined by the customer. These features provide an economy of space usage and installation costs.



### High/Low Pressure Gauge

High and Low Pressure gauges are offered as optional external instruments on the Self Contained Diamond unit for the purpose of monitoring operating pressures. It contains a horizontal link 63mm dia. threaded 1/4 NPT connection, charged with glycerin, brass container and body, with white dial and glass display.



### Three-Phase Voltage Supervisor (STT)

The three-phase voltage supervisor (STT) was designed seeking quality, low cost and space saving on electrical panels. It monitors minimum and maximum voltage on monophasic, biphasic and triphasic networks, with restart inhibits, time delay (in shutdown), hysteresis (fixed) and angular asymmetry between phases.

Electrical connections employ a screw where the electrical contact is housed within an enclosed system that will guarantee high electrical insulation, and insure the integrity of the screw-type connection.

The box is made with of ABSV0 "auto-extinguishable" material and contains front view leds indicating this characteristic.

Applications

- Monitoring of minimum and maximum voltage
- Asymmetric angle
- Phase loss (without delayed action of shutdown "snapshot")
- Phase sequence
- Self-Protection relay



### High Efficiency Motor

A high efficiency motor of up to 91.7% efficiency at full load, reduces power consumption of the installation, adding additional benefits by providing lower operating costs and aiding in the preservation of the environment.

### Bearing Fan NTN + Elastic Glove

- Elastic Glove

Aids in the maintenance of units installed in confined spaces using duplex or triplex fans, on the total length of a long, single shaft. With the elastic coupling, the shaft is divided into two or three parts, which facilitates its removal and therefore excluding the need of removing the drive from its installation position or the need to completely disassemble the entire fan. Furthermore, it offers a better distribution of loads on bearings, and it allows the use of a set of two bearings for each section for casing / rotor, as opposed to only three bearings on the single shaft. So if a misalignment occurs, shock loads and vibrations are better absorbed.

- Bearings: cast iron (NTN Bearing)

Are required whenever you apply flexible coupling in order to allow perfect alignment of the double or triple divided axis.

### Fan with Painted Rotor

Electrostatic powder paint coating of the rotor has excellent mechanical properties and good resistance to aggressive environment (industrial and salty environments, etc.), reducing the probabilities of corrosion, providing longer life to the fan. It also features low surface roughness, which facilitates the cleaning of fans to meet the Clean Air Act requirements.



# Conversion Table

<b>To convert from:</b>	<b>To:</b>	<b>Multiply By:</b>	<b>To convert from:</b>	<b>To:</b>	<b>Multiply By:</b>
<b>Length</b>			<b>Velocity</b>		
Feet (ft)	meters (m)	0,30481	Feet per minute (ft/min)	meters per second (m/s)	0,00508
Inche (in)	milimeters (mm)	25,4	Feet per second (ft/s)	meters per second (m/s)	0,3048
<b>Area</b>			<b>Energy, Power and Capacity</b>		
Square feet (ft <sup>2</sup> )	square meters(m <sup>2</sup> )	0,93	British Termal Units (BTU)	Kilowatt (kW)	0,000293
Square inche(in <sup>2</sup> )	square milimeters(mm <sup>2</sup> )	645,2	British Termal Units (BTU)	Kilocalorie (kcal)	0,252
			Tons (refrig. Effect)	Kilowatt (kW)	3,516
			Tons (refrig. Effect)	Kilocalorie per hour (kcal/h)	3024
			Horsepower (HP)	Kilowatt (kW)	0,7457
<b>Volume</b>			<b>Pressão</b>		
Cubic feet (ft <sup>3</sup> )	cubic meters(m <sup>3</sup> )	0,0283	Feet of water (ft.H <sub>2</sub> O)	Pascal (Pa)	2990
Cubic Inches (in <sup>3</sup> )	cubic milimeters (mm <sup>3</sup> )	16387	Inches os water (in.H <sub>2</sub> O)	Pascal (Pa)	249
Gallons (gal)	litres (L)	3,785	Pounds per square inch (PSI)	Pascal (Pa)	6895
Gallons (gal)	cubic meters (m <sup>3</sup> )	0,003785	Pounds per square inch (PSI)	Bar ou kg/cm <sup>2</sup>	6,895 x 10 <sup>-2</sup>
<b>Flow</b>			<b>Peso</b>		
Cubic feet / min (cfm)	cubic meters / second (m <sup>3</sup> /s)	0,000472	Ounces (oz)	Kilograms (kg)	0,02835
Cubic feet / min (cfm)	cubic meters / hour (m <sup>3</sup> /h)	1,69884	Pounds (lbs)	Kilograms (kg)	0,4536
Gallons / min (GPM)	cubic meters / hour (m <sup>3</sup> /h)	0,2271			
Gallons / min (GPM)	litres / second (L/s)	0,06308			

Temperature		
°C	°C ou F	°F
-40,0	-40	-40
-39,4	-39	-38,2
-38,9	-38	-36,4
-38,3	-37	-34,6
-37,8	-36	-32,8
-37,2	-35	-31
-36,7	-34	-29,2
-36,1	-33	-27,4
-35,6	-32	-25,6
-35,0	-31	-23,8
-34,4	-30	-22
-33,9	-29	-20,2
-33,3	-28	-18,4
-32,8	-27	-16,6
-32,2	-26	-14,8
-31,7	-25	-13
-31,1	-24	-11,2
-30,6	-23	-9,4
-30,0	-22	-7,6
-29,4	-21	-5,8
-28,9	-20	-4
-28,3	-19	-2,2
-27,8	-18	-0,4
-27,2	-17	1,4
-26,7	-16	3,2
-26,1	-15	5
-25,6	-14	6,8
-25,0	-13	8,6
-24,4	-12	10,4
-23,9	-11	12,2
-23,3	-10	14
-22,8	-9	15,8
-22,2	-8	17,6
-21,7	-7	19,4
-21,1	-6	21,2
-20,6	-5	23
-20,0	-4	24,8
-19,4	-3	26,6
-18,9	-2	28,4
-18,3	-1	30,2
-17,8	0	32
-17,2	1	33,8
-16,7	2	35,6
-16,1	3	37,4
-15,6	4	39,2

Temperature		
°C	°C ou F	°F
-15,0	5	41
-14,4	6	42,8
-13,9	7	44,6
-13,3	8	46,4
-12,8	9	48,2
-12,2	10	50
-11,7	11	51,8
-11,1	12	53,6
-10,6	13	55,4
-10,0	14	57,2
-9,4	15	59
-8,9	16	60,8
-8,3	17	62,6
-7,8	18	64,4
-7,2	19	66,2
-6,7	20	68
-6,1	21	69,8
-5,6	22	71,6
-5,0	23	73,4
-4,4	24	75,2
-3,9	25	77
-3,3	26	78,8
-2,8	27	80,6
-2,2	28	82,4
-1,7	29	84,2
-1,1	30	86
-0,6	31	87,8
0,0	32	89,6
0,6	33	91,4
1,1	34	93,2
1,7	35	95
2,2	36	96,8
2,8	37	98,6
3,3	38	100,4
3,9	39	102,2
4,4	40	104
5,0	41	105,8
5,6	42	107,6
6,1	43	109,4
6,7	44	111,2
7,2	45	113
7,8	46	114,8
8,3	47	116,6
8,9	48	118,4
9,4	49	120,2

Temperature		
°C	°C ou F	°F
10,0	50	122
10,6	51	123,8
11,1	52	125,6
11,7	53	127,4
12,2	54	129,2
12,8	55	131
13,3	56	132,8
13,9	57	134,6
14,4	58	136,4
15,0	59	138,2
15,6	60	140
16,1	61	141,8
16,7	62	143,6
17,2	63	145,4
17,8	64	147,2
18,3	65	149
18,9	66	150,8
19,4	67	152,6
20,0	68	154,4
20,6	69	156,2
21,1	70	158
21,7	71	159,8
22,2	72	161,6
22,8	73	163,4
23,3	74	165,2
23,9	75	167
24,4	76	168,8
25,0	77	170,6
25,6	78	172,4
26,1	79	174,2
26,7	80	176
27,2	81	177,8
27,8	82	179,6
28,3	83	181,4
28,9	84	183,2
29,4	85	185
30,0	86	186,8
30,6	87	188,6
31,1	88	190,4
31,7	89	192,2
32,2	90	194
32,8	91	195,8
33,3	92	197,6
33,9	93	199,4
34,4	94	201,2

Temperature		
°C	°C ou F	°F
35,0	95	203
35,6	96	204,8
36,1	97	206,6
36,7	98	208,4
37,2	99	210,2
37,8	100	212
38,3	101	213,8
38,9	102	215,6
39,4	103	217,4
40,0	104	219,2
40,6	105	221
41,1	106	222,8
41,7	107	224,6
42,2	108	226,4
42,8	109	228,2
43,3	110	230
43,9	111	231,8
44,4	112	233,6
45,0	113	235,4
45,6	114	237,2
46,1	115	239
46,7	116	240,8
47,2	117	242,6
47,8	118	244,4
48,3	119	246,2
48,9	120	248
49,4	121	249,8
50,0	122	251,6
50,6	123	253,4
51,1	124	255,2
51,7	125	257
52,2	126	258,8
52,8	127	260,6
53,3	128	262,4
53,9	129	264,2
54,4	130	266
55,0	131	267,8
55,6	132	269,6
56,1	133	271,4
56,7	134	273,2
57,2	135	275
57,8	136	276,8
58,3	137	278,6
58,9	138	280,4
59,4	139	282,2

Temperature		
°C	°C ou F	°F
60,0	140	284
60,6	141	285,8
61,1	142	287,6
61,7	143	289,4
62,2	144	291,2
62,8	145	293
63,3	146	294,8
63,9	147	296,6
64,4	148	298,4
65,0	149	300,2
65,6	150	302
66,1	151	303,8
66,7	152	305,6
67,2	153	307,4
67,8	154	309,2
68,3	155	311
68,9	156	312,8
69,4	157	314,6
70,0	158	316,4
70,6	159	318,2
71,1	160	320
71,7	161	321,8
72,2	162	323,6
72,8	163	325,4
73,3	164	327,2
73,9	165	329
74,4	166	330,8
75,0	167	332,6
75,6	168	334,4
76,1	169	336,2
76,7	170	338
77,2	171	339,8
77,8	172	341,6
78,3	173	343,4
78,9	174	345,2
79,4	175	347
80,0	176	348,8
80,6	177	350,6
81,1	178	352,4
81,7	179	354,2
82,2	180	356
82,8	181	357,8
83,3	182	359,6
83,9	183	361,4
84,4	184	363,2



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