



Air Cooled Water Chiller With Centrifugal Fans

**CGCL 200 - 250 - 300 - 350 - 400 - 450 -
500 - 600**



CG-PRC009-E4

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Features and benefits

Installation

Mounting on site

The compact size of the CGCL simplifies the installation on site and its low wide profile allows it to pass easily through a door. The total area taken up by the unit is relatively small due to the reduced size. Anti-vibration pads are supplied as standard to avoid direct contact between the unit base and the mounting surface.

Water connections

The water connections are brought to the outside of the unit so that it is not necessary to remove or pierce the panels.

Electrical connections

Electrical cable gland located on the back of the panel allow for easy connection of the power cable. A flow detection system is mounted as standard in the factory. It is therefore not necessary to fit a Flow Switch on site.

A dry contact is available on the control module to control the water pump contactor. Space is available in the control panel to install the chilled water pump contactor(s). Water pump contactor can be installed by Trane as an option.

Reliable and quiet operation

Reliability

The use of the Scroll compressors ensures excellent reliability. Versus a reciprocating compressor, the Scroll has the following advantages.

- 64 % fewer parts.
- The Scroll compressor generates significantly less vibration therefore reducing the risk of discharge line failure.

Performance

The absence of dead volume at the end of the compression cycle ensures better performance. The absence of fragile moving parts, such as springs and valves, also means that this performance is maintained with time.

Part load performance

The Scroll compressor always operates at full load. The chiller capacity is a function of the number of compressors running. In this way the power factor is maintained at a high level even at low loads.

Low sound level

The Scroll compressor is significantly less noisy and generates less vibration than a reciprocating compressor. In addition, on sites where the noise level is critical, the compressors can be fitted with an optional sound attenuating enclosure.

Reduced maintenance

The Scroll compressor does not require routine maintenance due to the absence of fragile parts, such as springs and valves which require regular replacement.

Other standard features

- Thermal insulation of the water connections, and of the evaporator.
- Loss of water flow protection provided by a differential pressostat.
- Operation up to + 40°C external temperature.
- Shipped with rubber pads.
- Centrifugal fans which allow to obtain a static pressure up to 500 Pa.
- A resistance heater placed on the evaporator to avoid freeze-up risk. The heater is energized only if the external temperature is below + 2°C.
- Pressure transducers to obtain an optimal control of the fans and to allow to display the low and high refrigerant pressure.
- Modem connection.
- Electrical panel IP 55.

Control module SMM (Scroll Manager Module)

Leaving chilled water temperature control

The chilled water temperature is measured at the evaporator outlet. The SMM module compares this value with the setpoint and starts or stops the compressors following a PID algorithm.

Condensing pressure control

The SMM module controls the fan speed operating in a way which always optimizes the COP and avoid HP or LP cut out.

Control

The SMM module includes the following functions:

- Short cycle protection taking into account the frequency of compressor starts.
- Automatic restart after a power failure.
- Equalization of the number of starts and the operating hours of the compressors.
- Control of the chilled water pump.
- Control of the evaporator anti-frost heater.
- Control of all safety and protection.

Optimization

In order to reduce electricity consumption the SMM module can automatically adjust the chilled water temperature setpoint in relation to the outdoor temperature.

Communication

The SMM module can interface with different types communication systems. These systems simplify considerably the maintenance and can supply information on the operating conditions of the chiller.

Operator interface

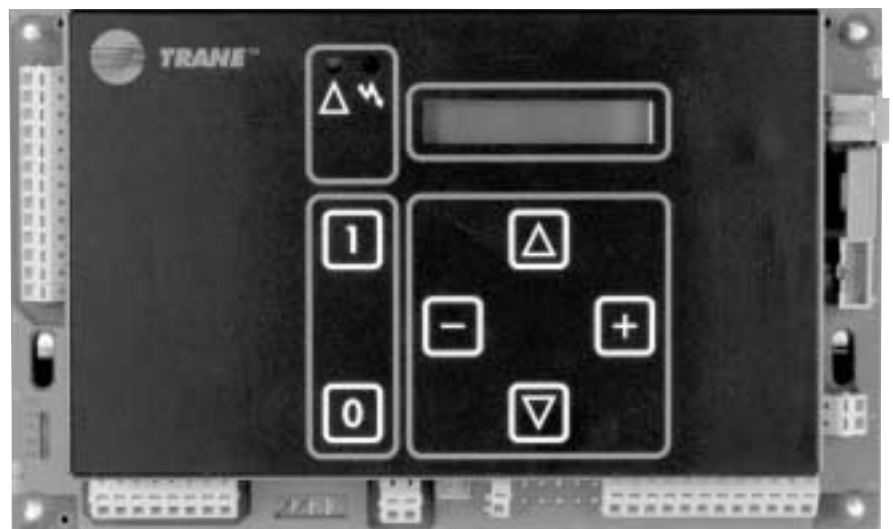
The SMM module includes a communication interface with a liquid crystal display. This interface provides an accurate assessment of the chiller operating conditions and facilitates a rapid diagnosis if a safety function is activated.

Remote control

The dry contacts and the analog inputs, provided as standard, allow for the remote control and surveillance of the chiller. If a safety function is activated an output via a dry contact is provided. Inputs are available to partially or completely stop the operation of the chiller. An analog input (4/20 mA or 0/10 V) allows for the adjustment of the chilled water temperature setpoint.

Remote control via serial link

It is possible to integrate the CGCL unit into a BMS via a serial link with an optional TCI-S communication card. The TCI-S allows to obtain a serial link type RS232 or RS485 with a Modbus protocol.



General Data

Table 1 - CGCL general data

		CGCL 200 R407C	CGCL 250 R407C	CGCL 300 R407C	CGCL 350 R407C	CGCL 400 R407C	CGCL 450 R407C	CGCL 500 R407C	CGCL 600 R407C
Performances (1)									
Cooling Capacity	kW	48.9	60.7	73.5	86.3	100.1	109.8	125.0	149.7
Power input	kW	19.9	24.7	28.0	34.7	42.7	47.0	50.6	59.7
Pressure drop	kPa	42	41	42	41	39	46	56	68
Main Power supply					400/3/50				
Sound Power Level 300 Pa	dB(A)	88	84	87	89	91	94	90	94
Sound Power Level 400 Pa	dB(A)	90	86	89	90	93	95	92	95
Sound Power Level 500 Pa	dB(A)	91	88	90	92	94	96	93	96
System Data									
Refrigerant Circuit				1				2	
Compressor									
Number		2		3			4		
Type		Scroll							
Model		10T+10T	10T+15T	2x15T	2x10T+15T	10T+2x15T	3x15T	2x(10T+15T)	4x15T
Speeds number		1	1	1	1	1	1	1	1
Motors Number		1	1	1	1	1	1	1	1
Nominal Amps	A	37	46	55	65	74	83	92	110
Starting Amps	A	138	193	202	212	221	230	239	257
Motor RPM	rpm	2900	2900	2900	2900	2900	2900	2900	2900
Heat Exchanger									
Number		1							
Type		Braze plate							
Model		V45-40	V45-50	V45-60	V45-70	V45-90	V45-90	DV47-102	DV47-134
Water volume (total)	l	4.7	5.9	7.0	8.2	10.5	10.5	12.3	16.1
Antifreeze Heater	W			65				130	
Water Connections									
Type: ISO R7						Male			
Diameter		1 1/2"				2"		2 1/2"	
Coil									
Type		Plate Fin							
Tube size	mm	9.52							
Tube type		Smooth							
Height	mm	914	1219		1219		1626		
Length	mm	1829	1829		2743		2743		
Face Area	m ²	1.67	2.23		3.34		4.46		
Rows		4.0	4.0		4.0		4.0		
Fins per inch (fpf)		180.0	180.0		180.0		180.0		
Control VA	VA	800							
Fan									
Type		Centrifugal							
Number		1	2		2			3	
Diameter	mm	AT 18-18							
Drive type		Pulley + Belt							
Speeds number		2							
Air flow	m ³ /h	Refer to table 2							
Static pressure	Pa	Refer to table 2							
Motors Number		1							
Motor	kW	Refer to table 2							
Nominal Amps	A	Refer to table 2							
Starting Amps	A	Refer to table 2							
Motor RPM (Low/ High)	rpm	Refer to table 2							
Dimensions									
Height	mm	1997		1997			1997		
Length	mm	2268		3230			3230		
Width	mm	866		866			1216		
Weight uncrated	kg	700	820	880	1080	1140	1200	1380	1500
Weight crated	kg	740	860	920	1130	1190	1250	1450	1570
System Data									
Refrigerant circuit		1	1	1	1	1	1	2	2
R407C Refrigerant Charge									
Circuit A	kg	12	15	15	23	23	23	15	15
Circuit B	kg	-	-	-	-	-	-	15	15

(1) Water temp 12/7°C outside air temp 35°C
(2) Without fan - refer to table 2 for fan amps



Condenser Fan Performance

Table 2 - CGCL Fan performance

Size	Airflow (m ³ /h)			Available Static Pressure (Pa)		
				300	400	500
CGCL 200	15300	High speed *	(kW)	0.75	1.1	1.1
		High Speed	(KW)	4.0	5.5	5.5
		Nominal Amps Low speed *	(A)	3.2	3.7	3.7
		Nominal Amps High speed	(A)	8.9	11	11
		Starting Amps *	(A)	14	12	12
CGCL 250	17800	High speed *	(kW)	0.75	1.1	1.5
		High Speed	(KW)	4.0	5.5	7.5
		Nominal Amps Low speed *	(A)	3.2	3.7	5.0
		Nominal Amps High speed	(A)	8.9	11	15.3
		Starting Amps *	(A)	14	12	17
CGCL 300	23800	High speed *	(kW)	1.5	1.5	2.8
		High Speed	(KW)	7.5	7.5	11.0
		Nominal Amps Low speed *	(A)	5.0	5.0	7.7
		Nominal Amps High speed	(A)	15.3	15.3	21.5
		Starting Amps *	(A)	17	17	33
CGCL 350	26800	High speed *	(kW)	1.5	2.8	2.8
		High Speed	(KW)	7.5	11.0	11.0
		Nominal Amps Low speed *	(A)	5.0	7.7	7.7
		Nominal Amps High speed	(A)	15.3	21.5	21.5
		Starting Amps *	(A)	17	33	33
CGCL 400	30600	High speed *	(kW)	2.8	2.8	3.8
		High Speed	(KW)	11	11	15
		Nominal Amps Low speed *	(A)	7.7	7.7	10.1
		Nominal Amps High speed	(A)	21.5	21.5	28.6
		Starting Amps *	(A)	33	33	43
CGCL 450	34500	High speed *	(kW)	3.8	3.8	4.8
		High Speed	(KW)	15.0	15.0	18.5
		Nominal Amps Low speed *	(A)	10.1	10.1	12.1
		Nominal Amps High speed	(A)	28.6	28.6	34.6
		Starting Amps *	(A)	43	43	45
CGCL 500	39100	High speed *	(kW)	2.8	3.8	3.8
		High Speed	(KW)	11.0	15.0	15.0
		Nominal Amps Low speed *	(A)	7.7	10.1	10.1
		Nominal Amps High speed	(A)	21.5	28.6	28.6
		Starting Amps *	(A)	33	43	43
CGCL 600	47600	High speed *	(kW)	4.8	4.8	5.3
		High Speed	(KW)	18.5	18.5	22.0
		Nominal Amps Low speed *	(A)	12.1	12.1	13.2
		Nominal Amps High speed	(A)	34.9	34.9	40.9
		Starting Amps *	(A)	45	45	48

*: Fan motor always start in Low speed

Unit nominal amps = nominal fan amps (according to static pressure) + compressor nominal amps

Unit starting amps = nominal fan amps (according to static pressure) + compressor starting amps

Pressure drop through condenser coil and air filter

Table 3 - Pressure drop

Unit	Airflow m ³ /h	Pressure drop (Pa)			
		Cds coil	AR300 filter	A150 Filter	M8 Filter
CGCL 200	15300	96	100	66	28
CGCL 250	17800	77	85	56	22
CGCL 300	23800	124	122	84	40
CGCL 350	26800	77	85	56	22
CGCL 400	30600	96	100	68	28
CGCL 450	34500	117	117	80	36
CGCL 500	39100	124	95	64	26
CGCL 600	47600	163	122	84	40

Application considerations

Application of this product should be within the catalogued waterflow and performance consideration.

Clearance requirements

The recommended clearances identified with unit dimensions should be maintained to assure adequate serviceability, maximum capacity and peak operating efficiency. Actual clearances that appear inadequate should be reviewed with the local TRANE representative.

Operating limits.

Table 4 - Operating limits R 407C

Min. outdoor air temperature	-5°C
Min. outdoor air temperature	+ 40°C
Min. leaving water temperature	-12°C (37% glycol)
Max. leaving water temperature	+ 12°C

Condenser fan configuration

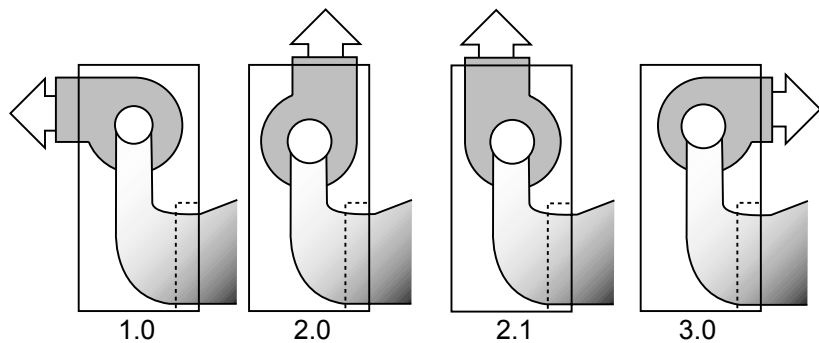


Figure 1 - Fan arrangement

Table 5

Unit	Configuration nbr			
	1.0	2.0	2.1	3.0
CGCL 200	Yes	Yes	No	Yes
CGCL 250	Yes	Yes	No	Yes
CGCL 300	Yes	Yes	No	Yes
CGCL 350	Yes	Yes	No	Yes
CGCL 400	Yes	Yes	No	Yes
CGCL 450	Yes	Yes	No	Yes
CGCL 500	Yes	Yes	Yes	No
CGCL 600	Yes	Yes	Yes	No

Performance Data

Table 6 - Cooling Capacities CGCL 200

% Ethylene Glycol	Leaving Chilled Water Temp.	Outdoor Ambient Temperature															
		25°C				30°C				35°C				40°C			
		Cap	Pl.	HP	LP	Cap	Pl.	HP	LP	Cap	Pl.	HP	LP	Cap	Pl.	HP	LP
kW	kW	bar	bar	kW	kW	Bar	bar	kW	kW	bar	bar	kW	kW	bar	bar		
37	-12°C	27.2	12.0	14.5	2.9	25.9	13.5	16.6	2.9	24.4	15.2	18.8	2.9				
33	-8°C	32.2	12.4	15.0	3.3	30.6	13.9	17.1	3.4	28.9	15.7	19.4	3.4	27.0	17.8	21.9	3.4
27	-4°C	37.7	12.8	15.6	3.8	35.8	14.3	17.7	3.8	33.8	16.2	20.0	3.9	31.6	18.4	22.6	3.9
20	0°C	43.6	13.2	16.2	4.3	41.5	14.9	18.4	4.4	39.1	16.8	20.7	4.4	36.6	19.0	23.4	4.4
10	4°C	49.9	13.7	16.9	4.9	47.4	15.4	19.1	4.9	44.8	17.4	21.5	5.0	42.0	19.7	24.2	5.0
0	5°C	51.7	13.8	17.1	5.1	49.2	15.6	19.3	5.1	46.4	17.6	21.8	5.1	43.5	19.9	24.4	5.2
0	6°C	53.2	14.0	17.3	5.2	50.6	15.7	19.5	5.2	47.8	17.7	22.0	5.3	44.8	20.1	24.6	5.3
0	7°C	54.8	14.1	17.5	5.4	52.1	15.9	19.7	5.4	49.2	17.9	22.2	5.4	46.1	20.2	24.9	5.5
0	8°C	56.4	14.2	17.7	5.5	53.6	16.0	19.9	5.5	50.7	18.1	22.4	5.6	47.5	20.4	25.1	5.6
0	9°C	57.9	14.4	17.8	5.7	55.1	16.1	20.1	5.7	52.1	18.2	22.6	5.7	48.8	20.6	25.3	5.8
0	10°C	59.5	14.5	18.0	5.8	56.6	16.3	20.3	5.8	53.5	18.4	22.8	5.9				
0	11°C	61.1	14.6	18.2	6.0	58.1	16.4	20.5	6.0	54.9	18.5	23.0	6.0				
0	12°C	62.6	14.7	18.4	6.1	59.6	16.6	20.7	6.1	56.3	18.7	23.2	6.2				

Table 7 - Cooling Capacities CGCL 250

% Ethylene Glycol	Leaving Chilled Water Temp.	Outdoor Ambient Temperature															
		25°C				30°C				35°C				40°C			
		Cap	Pl.	HP	LP	Cap	Pl.	HP	LP	Cap	Pl.	HP	LP	Cap	Pl.	HP	LP
kW	kW	bar	bar	kW	kW	Bar	bar	kW	kW	bar	bar	kW	kW	bar	bar		
37	-12°C	34.2	15.2	14.7	2.9	32.5	17.1	16.7	2.9	30.7	19.2	19.0	2.9				
33	-8°C	40.4	15.8	15.2	3.4	38.4	17.7	17.3	3.4	36.2	19.9	19.7	3.4	33.9	22.5	22.3	3.4
27	-4°C	47.2	16.4	15.8	3.8	44.9	18.3	18.0	3.8	42.3	20.7	20.4	3.9	39.6	23.4	23.1	3.9
20	0°C	54.4	17.0	16.5	4.3	51.7	19.1	18.8	4.4	48.9	21.5	21.2	4.4	45.8	24.2	23.9	4.4
10	4°C	62.1	17.7	17.3	4.9	59.1	19.9	19.5	4.9	55.8	22.4	22.0	5.0	52.2	25.2	24.8	5.0
0	5°C	64.3	17.9	17.5	5.1	61.1	20.1	19.8	5.1	57.7	22.6	22.3	5.1	54.1	25.5	25.1	5.2
0	6°C	66.2	18.1	17.7	5.2	62.9	20.3	20.0	5.2	59.4	22.8	22.5	5.3	55.7	25.7	25.2	5.3
0	7°C	68.0	18.3	17.9	5.4	64.7	20.5	20.2	5.4	61.1	23.1	22.7	5.4	57.3	26.0	25.5	5.5
0	8°C	69.9	18.4	18.1	5.5	66.5	20.7	20.4	5.5	62.8	23.3	22.9	5.6				
0	9°C	71.8	18.6	18.3	5.7	68.3	20.9	20.6	5.7	64.5	23.5	23.1	5.7				
0	10°C	73.7	18.8	18.4	5.8	70.1	21.1	20.8	5.8	66.2	23.7	23.4	5.9				
0	11°C	75.6	19.0	18.6	6.0	71.9	21.3	21.0	6.0	67.9	24.0	23.6	6.0				
0	12°C	77.5	19.2	18.9	6.1	73.7	21.5	21.2	6.1	69.6	24.2	23.8	6.2				

Cap = Cooling Capacity
 Pl. = Compressor Power Input
 HP = High Pressure
 LP = Low Pressure

Waterflow (l/s) = Cap/(4.18 x Dt), With Dt = Entering - Leaving Water Temperature (°C) and Cap (kW)



Performance Data

Table 8 - Cooling Capacities CGCL 300

% Ethylene Glycol	Leaving Chilled Water Temp.	Outdoor Ambient Temperature															
		25°C				30°C				35°C				40°C			
		Cap	PI.	HP	LP	Cap	PI.	HP	LP	Cap	PI.	HP	LP	Cap	PI.	HP	LP
kW	kW	bar	bar	kW	KW	Bar	bar	kW	kW	bar	bar	kW	kW	bar	bar		
37	-12°C	41.3	18.3	14.7	2.9	39.2	20.5	16.7	2.9	37.1	23.1	19.0	2.9				
33	-8°C	48.8	19.0	15.2	3.4	46.4	21.2	17.3	3.4	43.8	23.9	19.6	3.4	41.2	26.9	22.2	3.4
27	-4°C	56.9	19.7	15.8	3.8	54.2	22.0	17.9	3.8	51.2	24.7	20.3	3.9	48.1	27.8	22.9	3.9
20	0°C	65.6	20.4	16.4	4.3	62.5	22.9	18.6	4.4	59.1	25.7	21.0	4.4	55.5	28.8	23.7	4.4
10	4°C	74.9	21.2	17.1	4.9	71.3	23.8	19.4	4.9	67.5	26.7	21.8	5.0	63.4	29.9	24.5	5.0
0	5°C	77.5	21.5	17.3	5.1	73.8	24.0	19.6	5.1	69.8	26.9	22.0	5.1	65.6	30.2	24.7	5.2
0	6°C	79.8	21.7	17.5	5.2	76.0	24.2	19.7	5.2	71.9	27.2	22.2	5.3	67.5	30.5	24.9	5.3
0	7°C	82.1	21.9	17.7	5.4	78.2	24.5	19.9	5.4	74.0	27.4	22.4	5.4	69.4	30.7	25.1	5.5
0	8°C	84.4	22.1	17.8	5.5	80.3	24.7	20.1	5.5	76.0	27.7	22.6	5.6	71.4	31.0	25.4	5.6
0	9°C	86.7	22.3	18.0	5.6	82.5	24.9	20.3	5.7	78.1	27.9	22.8	5.7				
0	10°C	88.9	22.5	18.2	5.8	84.7	25.2	20.5	5.8	80.1	28.2	23.0	5.9				
0	11°C	91.2	22.7	18.4	5.9	86.8	25.4	20.7	6.0	82.2	28.4	23.2	6.0				
0	12°C	93.5	22.9	18.6	6.1	89.0	25.6	20.9	6.1	84.2	28.7	23.4	6.2				

Table 9 - Cooling Capacities CGCL 350

% Ethylene Glycol	Leaving Chilled Water Temp.	Outdoor Ambient Temperature															
		25°C				30°C				35°C				40°C			
		Cap	PI.	HP	LP	Cap	PI.	HP	LP	Cap	PI.	HP	LP	Cap	PI.	HP	LP
kW	kW	bar	bar	kW	KW	Bar	bar	kW	kW	bar	bar	kW	kW	bar	bar		
37	-12°C	48.2	20.9	14.4	2.9	45.9	23.4	16.4	2.9	43.3	26.4	18.6	2.9				
33	-8°C	57.1	21.6	14.9	3.4	54.3	24.2	16.9	3.4	51.3	27.2	19.2	3.4	48.1	30.8	21.7	3.4
27	-4°C	66.7	22.3	15.4	3.8	63.5	25.0	17.5	3.8	60.0	28.1	19.8	3.9	56.3	31.8	22.4	3.9
20	0°C	77.0	23.1	16.0	4.3	73.3	25.9	18.2	4.4	69.4	29.1	20.5	4.4	65.1	32.9	23.1	4.4
10	4°C	88.0	23.9	16.7	4.9	83.8	26.8	18.9	4.9	79.3	30.2	21.3	5.0	74.4	34.1	23.9	5.0
0	5°C	91.1	24.2	16.9	5.1	86.8	27.1	19.1	5.1	82.1	30.5	21.5	5.1	77.0	34.4	24.2	5.2
0	6°C	93.8	24.4	17.1	5.2	89.3	27.3	19.3	5.2	84.5	30.8	21.7	5.3	79.3	34.7	24.4	5.3
0	7°C	96.5	24.6	17.2	5.3	91.9	27.6	19.5	5.4	86.9	31.0	21.9	5.4	81.6	35.0	24.6	5.4
0	8°C	99.2	24.8	17.4	5.5	94.5	27.8	19.6	5.5	89.4	31.3	22.1	5.6	83.9	35.3	24.8	5.6
0	9°C	101.9	25.0	17.6	5.6	97.0	28.1	19.8	5.7	91.8	31.6	22.3	5.7	86.2	35.6	25.0	5.7
0	10°C	104.5	25.3	17.7	5.8	99.6	28.3	20.0	5.8	94.2	31.9	22.5	5.8	88.5	35.9	25.2	5.9
0	11°C	107.2	25.5	17.9	5.9	102.1	28.6	20.2	6.0	96.6	32.1	22.7	6.0	90.8	36.2	25.4	6.0
0	12°C	109.9	25.7	18.1	6.1	104.6	28.8	20.4	6.1	99.0	32.4	22.9	6.1				

Cap = Cooling Capacity
 PI. = Compressor Power Input
 HP = High Pressure
 LP = Low Pressure

Waterflow (l/s) = Cap/(4.18 x Dt), With Dt = Entering - Leaving Water Temperature (°C) and Cap (kW)

Performance Data

Table 10 - Cooling Capacities CGCL 400

% Ethylene Glycol	Leaving Chilled Water Temp.	Outdoor Ambient Temperature															
		25°C				30°C				35°C				40°C			
		Cap kW	Pl. kW	HP Bar	LP bar	Cap kW	Pl. kW	HP Bar	LP bar	Cap kW	Pl. kW	HP bar	LP bar	Cap kW	Pl. kW	HP bar	LP bar
37	-12°C	56.1	24.3	14.6	3.0	53.2	27.2	16.6	3.0	50.3	30.6	18.9	3.0				
33	-8°C	66.3	25.1	15.1	3.4	63.0	28.1	17.2	3.4	59.5	31.6	19.5	3.4	55.8	35.6	22.1	3.4
27	-4°C	77.5	26.0	15.7	3.9	73.7	29.1	17.8	3.9	69.7	32.7	20.2	3.9	65.3	36.9	22.8	3.9
20	0°C	89.5	27.0	16.3	4.4	85.2	30.2	18.5	4.4	80.5	33.9	20.9	4.5	75.5	38.2	23.5	4.5
10	4°C	102.2	28.1	17.1	5.0	97.2	31.4	19.2	5.0	91.9	35.3	21.7	5.0	86.2	39.6	24.4	5.1
0	5°C	105.7	28.4	17.2	5.1	100.6	31.8	19.5	5.2	95.1	35.6	21.9	5.2	89.2	40.0	24.6	5.2
0	6°C	108.8	28.6	17.4	5.3	103.5	32.1	19.7	5.3	97.9	36.0	22.1	5.3	91.8	40.4	24.8	5.4
0	7°C	111.9	28.9	17.6	5.4	106.5	32.4	19.8	5.5	100.7	36.3	22.3	5.5	94.5	40.7	25.0	5.5
0	8°C	115.0	29.2	17.8	5.6	109.4	32.7	20.0	5.6	103.5	36.6	22.5	5.6	97.1	41.1	25.2	5.7
0	9°C	118.1	29.5	18.0	5.7	112.4	33.0	20.2	5.8	106.3	37.0	22.7	5.8	99.7	41.5	25.4	5.8
0	10°C	121.2	29.7	18.2	5.9	115.3	33.3	20.4	5.9	109.0	37.3	22.9	5.9				
0	11°C	124.3	30.0	18.3	6.0	118.2	33.6	20.6	6.1	111.8	37.6	23.1	6.1				
0	12°C	127.3	30.3	18.5	6.2	121.1	33.9	20.8	6.2	114.5	38.0	23.3	6.2				

Table 11 - Cooling Capacities CGCL 450

% Ethylene Glycol	Leaving Chilled Water Temp.	Outdoor Ambient Temperature															
		25°C				30°C				35°C				40°C			
		Cap kW	Pl. kW	HP Bar	LP bar	Cap kW	Pl. kW	HP Bar	LP bar	Cap kW	Pl. kW	HP bar	LP bar	Cap kW	Pl. kW	HP bar	LP bar
37	-12°C	62.2	27.6	14.7	2.9	59.0	30.8	16.8	2.9	55.8	34.6	19.1	2.9				
33	-8°C	73.4	28.5	15.2	3.4	69.8	31.9	17.3	3.4	66.0	35.8	19.6	3.4	62.0	40.3	22.2	3.4
27	-4°C	85.6	29.6	15.8	3.8	81.5	33.0	18.0	3.8	77.1	37.1	20.3	3.9	72.4	41.7	22.9	3.9
20	0°C	98.6	30.7	16.5	4.3	93.9	34.3	18.6	4.4	88.8	38.5	21.0	4.4	83.4	43.2	23.7	4.4
10	4°C	112.3	31.9	17.1	4.9	107.0	35.7	19.4	4.9	101.2	40.0	21.8	4.9	95.0	44.8	24.5	5.0
0	5°C	116.2	32.3	17.3	5.0	110.6	36.1	19.6	5.1	104.6	40.4	22.0	5.1	98.3	45.2	24.7	5.1
0	6°C	119.5	32.6	17.5	5.2	113.8	36.4	19.8	5.2	107.6	40.7	22.2	5.2	101.1	45.6	24.9	5.3
0	7°C	122.9	32.9	17.7	5.3	116.9	36.7	19.9	5.3	110.6	41.1	22.4	5.4	103.9	46.0	25.1	5.4
0	8°C	126.2	33.2	17.9	5.5	120.1	37.1	20.1	5.5	113.6	41.5	22.6	5.5	106.7	46.4	25.3	5.6
0	9°C	129.5	33.5	18.0	5.6	123.2	37.4	20.3	5.6	116.6	41.9	22.8	5.7				
0	10°C	132.7	33.8	18.2	5.7	126.3	37.8	20.5	5.8	119.5	42.2	23.0	5.8				
0	11°C	136.0	34.1	18.4	5.9	129.4	38.1	20.7	5.9	122.4	42.6	23.2	5.9				
0	12°C	139.2	34.4	18.6	6.0	132.4	38.4	20.9	6.0	125.3	43.0	23.4	6.1				

Cap = Cooling Capacity
 Pl. = Compressor Power Input
 HP = High Pressure
 LP = Low Pressure

Waterflow (l/s) = Cap/(4.18 x Dt), With Dt = Entering - Leaving Water Temperature (°C) and Cap (kW)



Performance Data

Table 12 - Cooling Capacities CGCL 500

% Ethylene Glycol	Leaving Chilled Water Temp.	Outdoor Ambient Temperature															
		25°C				30°C				35°C				40°C			
		Cap	PI.	HP	LP	Cap	PI.	HP	LP	Cap	PI.	HP	LP	Cap	PI.	HP	LP
37	-12°C	69.3	30.3	14.6	2.9	65.9	33.9	16.6	2.9	62.3	38.2	18.9	2.9				
33	-8°C	82.1	31.3	15.1	3.4	78.1	35.0	17.2	3.4	73.9	39.4	19.5	3.4	69.4	44.6	22.1	3.4
27	-4°C	96.3	32.4	15.7	3.8	91.7	36.3	17.8	3.8	86.7	40.9	20.2	3.9	81.4	46.1	22.8	3.9
20	0°C	111.5	33.6	16.3	4.4	106.2	37.7	18.5	4.4	100.5	42.4	20.9	4.4	94.4	47.8	23.5	4.4
10	4°C	127.6	34.9	17.0	4.9	121.5	39.1	19.2	4.9	115.0	44.0	21.7	5.0	108.1	49.5	24.4	5.0
0	5°C	132.1	35.3	17.2	5.1	125.9	39.6	19.5	5.1	119.1	44.5	21.9	5.1	111.9	50.0	24.6	5.2
0	6°C	135.9	35.6	17.4	5.2	129.5	39.9	19.7	5.2	122.6	44.9	22.1	5.3	115.2	50.5	24.8	5.3
0	7°C	139.8	35.9	17.6	5.3	133.2	40.3	19.8	5.4	126.1	45.3	22.3	5.4	118.5	50.9	25.0	5.4
0	8°C	143.6	36.3	17.7	5.5	136.8	40.7	20.0	5.5	129.6	45.7	22.5	5.5	121.7	51.3	25.2	5.6
0	9°C	147.4	36.6	17.9	5.6	140.5	41.0	20.2	5.7	133.0	46.1	22.7	5.7	125.0	51.8	25.4	5.7
0	10°C	151.2	36.9	18.1	5.8	144.0	41.4	20.4	5.8	136.4	46.5	22.9	5.8				
0	11°C	154.9	37.3	18.3	5.9	147.6	41.7	20.6	5.9	139.7	46.9	23.1	6.0				
0	12°C	158.6	37.6	18.5	6.0	151.1	42.1	20.8	6.1	143.1	47.3	23.3	6.1				

Table 13 - Cooling Capacities CGCL 600

% Ethylene Glycol	Leaving Chilled Water Temp.	Outdoor Ambient Temperature															
		25°C				30°C				35°C				40°C			
		Cap	PI.	HP	LP	Cap	PI.	HP	LP	Cap	PI.	HP	LP	Cap	PI.	HP	LP
37	-12°C	84.3	37.0	14.8	2.9	80.1	41.4	16.9	2.9	75.8	46.5	19.2	3.0				
33	-8°C	99.8	38.3	15.4	3.4	94.9	42.9	17.5	3.4	89.8	48.1	19.8	3.4	84.5	54.2	22.4	3.4
27	-4°C	116.9	39.8	16.0	3.9	111.3	44.5	18.1	3.9	105.3	49.9	20.5	3.9	98.9	56.1	23.1	3.9
20	0°C	135.0	41.3	16.7	4.4	128.6	46.2	18.8	4.4	121.7	51.8	21.2	4.4	114.3	58.2	23.9	4.4
10	4°C	153.9	43.0	17.4	4.9	146.5	48.1	19.6	5.0	138.7	53.8	22.0	5.0	130.3	60.3	24.7	5.0
0	5°C	159.1	43.5	17.6	5.1	151.5	48.6	19.8	5.1	143.4	54.4	22.3	5.1	134.7	60.9	24.9	5.2
0	6°C	163.5	43.9	17.7	5.2	155.7	49.0	20.0	5.3	147.4	54.9	22.4	5.3	138.5	61.4	25.2	5.3
0	7°C	167.9	44.3	17.9	5.4	159.9	49.5	20.2	5.4	151.3	55.4	22.6	5.4	142.2	62.0	25.3	5.4
0	8°C	172.3	44.7	18.1	5.5	164.1	49.9	20.3	5.5	155.3	55.9	22.8	5.5				
0	9°C	176.6	45.1	18.2	5.6	168.1	50.4	20.5	5.7	159.1	56.3	23.0	5.7				
0	10°C	180.8	45.5	18.4	5.8	172.1	50.8	20.7	5.8	162.9	56.8	23.2	5.8				
0	11°C	184.9	45.9	18.6	5.9	176.0	51.2	20.9	5.9	166.6	57.3	23.4	5.9				
0	12°C	188.9	46.3	18.8	6.0	179.8	51.7	21.0	6.0	170.2	57.7	23.6	6.1				

Cap = Cooling Capacity
 PI. = Compressor Power Input
 HP = High Pressure
 LP = Low Pressure

Waterflow (l/s) = Cap/(4.18 x Dt), With Dt = Entering - Leaving Water Temperature (°C) and Cap (kW)

Performance Data

Table 14 - Evaporator Pressure Drop

P.D. (kPa)	Water flow (l/s)							
	CGCL 200	CGCL 250	CGCL 300	CGCL 350	CGCL 400	CGCL 450	CGCL 500	CGCL 600
10	1.155	1.449	1.736	1.912	2.282	2.282	2.500	2.700
20	1.631	2.045	2.447	2.809	3.343	3.343	3.561	3.853
40	2.301	2.886	3.448	4.129	4.898	4.898	5.074	5.499
60	2.815	3.530	4.215	5.172	6.125	6.125	6.241	6.771
80	3.248	4.072	4.860	6.068	7.177	7.177	7.228	7.848
100	3.629	4.550	5.427	6.868	8.116	8.116	8.100	8.800

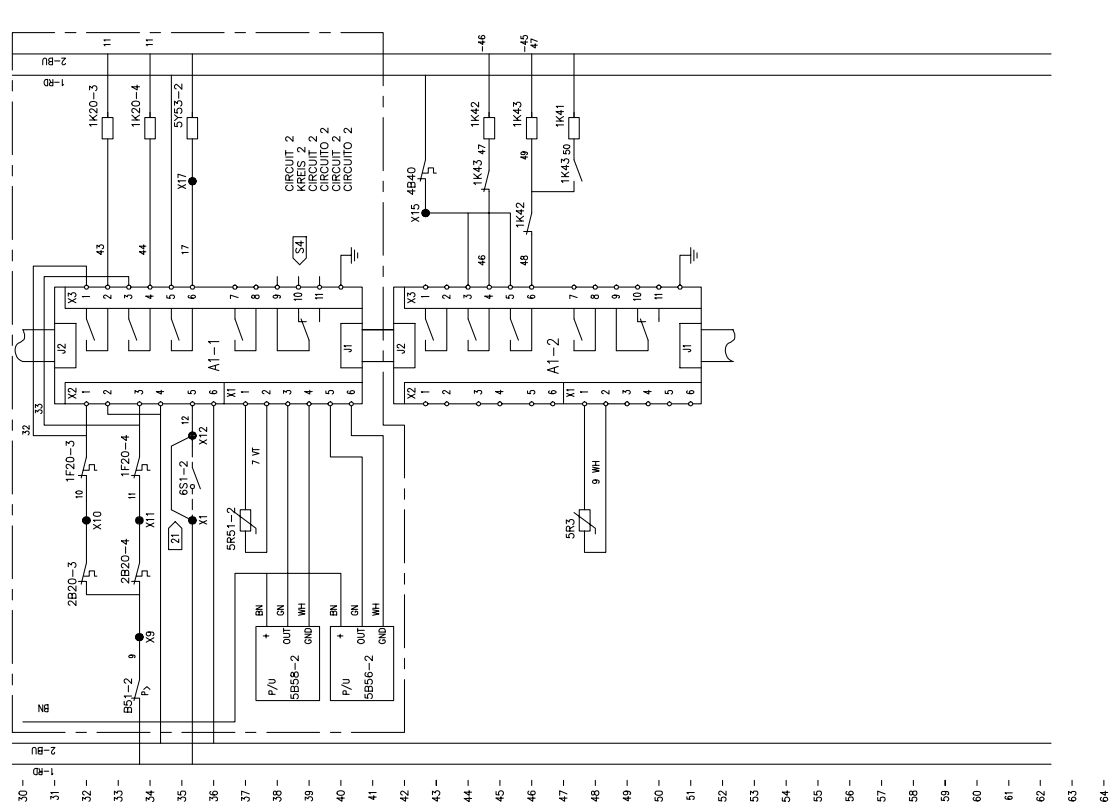
Selection with ethylen glycol

When ethylen glycol is added in the chilled water circuit the following adjustment factors have to be taken in account.

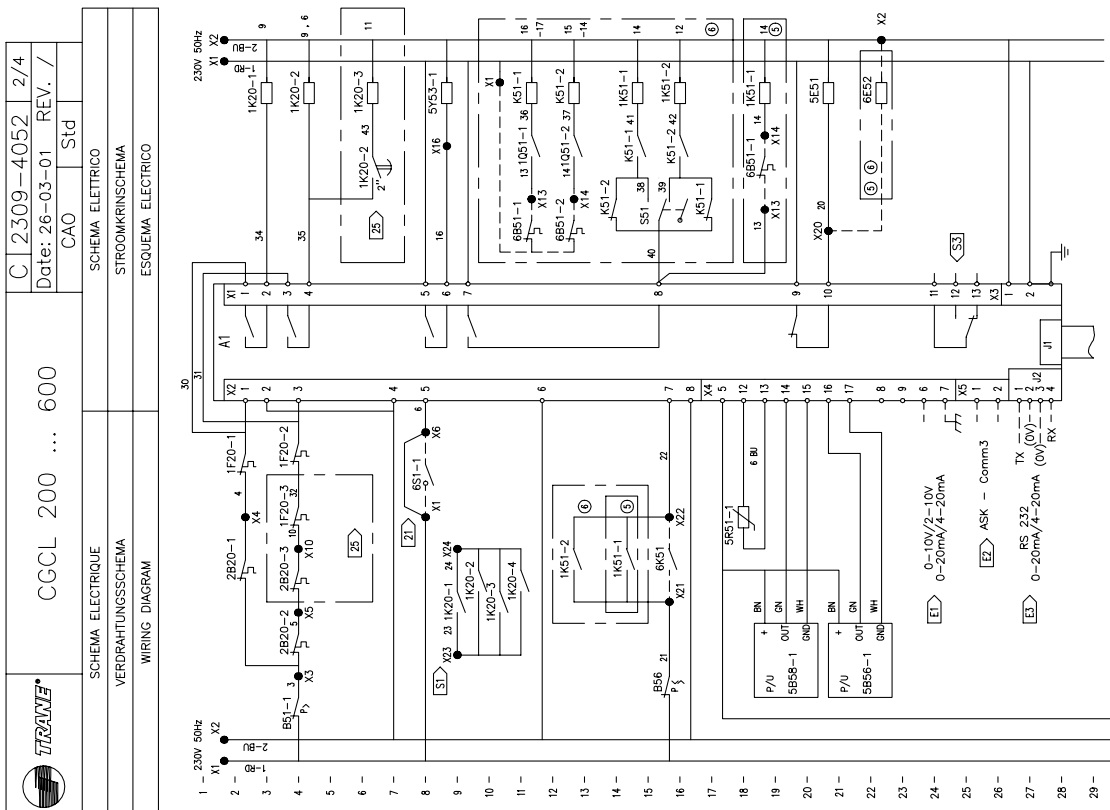
Table 15 - Ethylen glycol adjustment factors

LWTE	PCT EG (%)	Adjustment factors			
		Flow rate	Pressure drop	Power Input	Cooling Cap.
12	30	1.11	1.20	1.005	0.98
5	30	1.11	1.24	1.005	0.98
4	10	1.02	1.08	-	-
0	20	1.05	1.19	-	-
-4	27	1.08	1.29	-	-
-8	33	1.10	1.46	-	-
-12	37	1.12	1.62	-	-

Typical Wiring



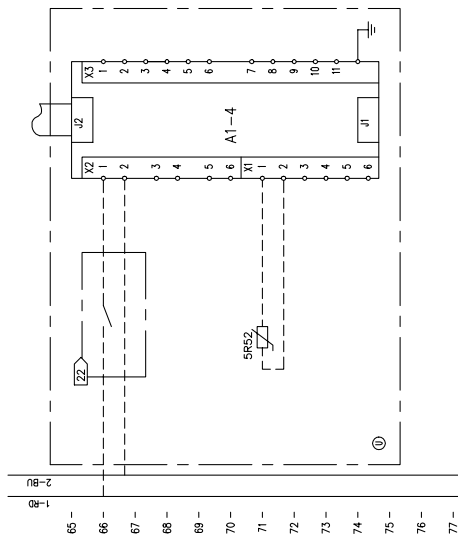
C 2309-4052 2/4



	CGCL 200 ... 600	C 2309-4052 2/4
	Date: 26-03-01 REV. /	CAO Std
SCHEMA ELETRICO		
STROOMKINSCHEMA		
ESQUEMA ELECTRICO		
SCHEMA ELECTRIQUE		
VERDRÄHTUNGSSCHEMA		
WIRING DIAGRAM		

Typical Wiring

	C 2309-4052 4/4	
	Date: 26-03-01	REV. /
CGCL 200 ... 600	CAO	Std
LEGENDE		
LEGENDE		
LEGENDE DESIGNATION		

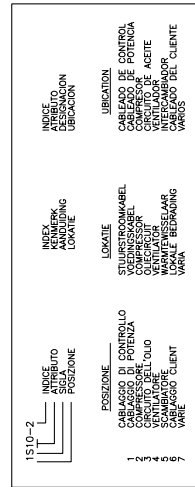


—	CABLAGGIO TRANE	BEDRADING DOOR TRANE	CABLEADO DE TRANE
- - -	CABLAGGIO CLIENTE	BEDRADING DOOR KLANT	CABLEADO DEL CLIENTE

- [20] UNITA STANDARD
- [21] ELIMINARE IL PONTICELLO SE SI UTILIZZA 6S1.
- [22] CONFERMA SETPOINT AUSILIARIO
- [25] UNITA 350-400-450
- [26] UNITA 350-400-460
- [27] UNITA 350-400-460
- [28] UNITA 350-400-460
- [29] UNITA 350-400-460
- [30] UNITA 350-400-460
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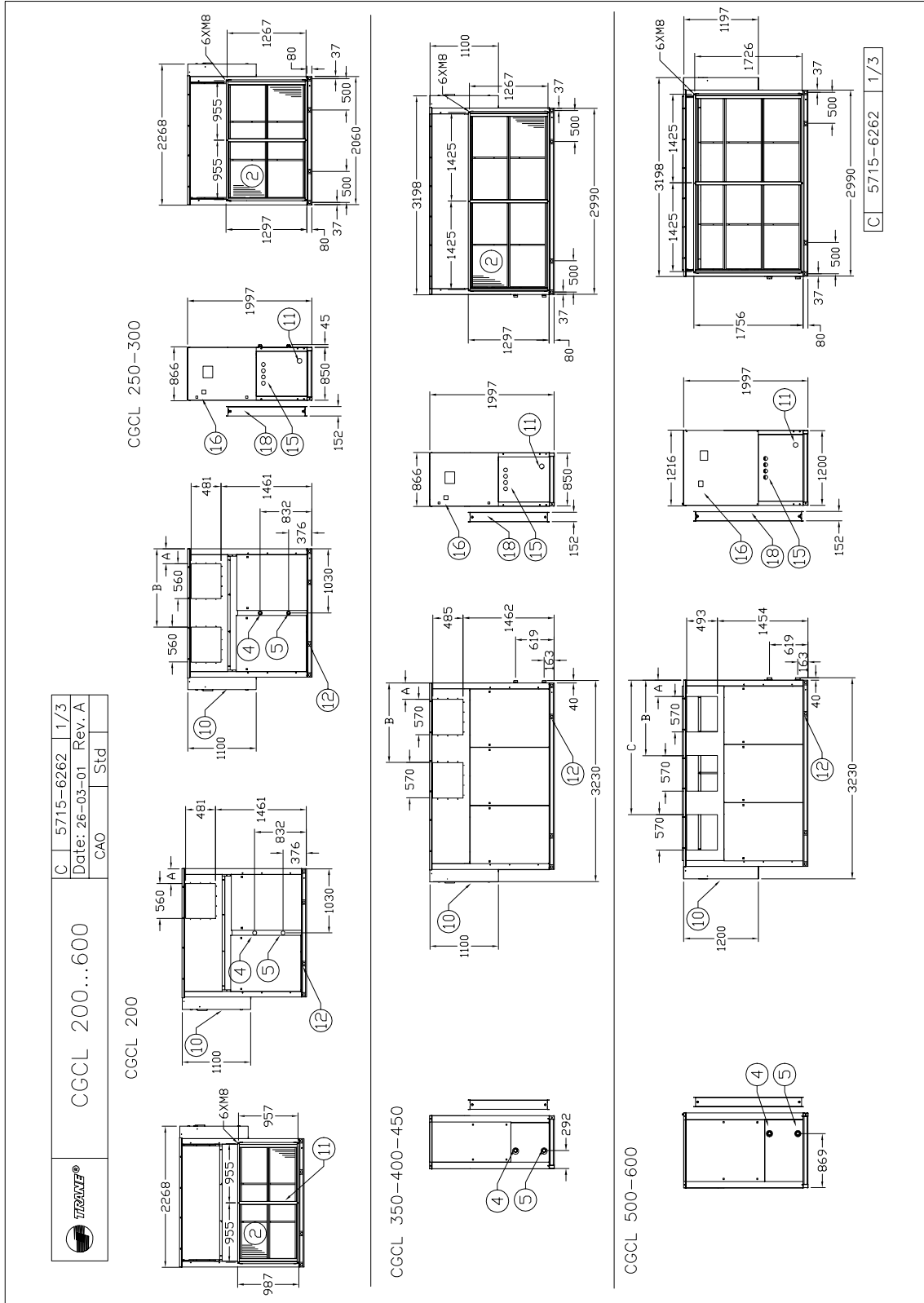
ITEM	ITALIANO	NEREDLANDS	ESPAÑOL
A1	MODULO DI CONTROLLO UNITA	ELEKTRONISCHE REGELEENHED	MODULO DE CONTROL UNIDAD
B1...	MODULO DI CONTROLLO UNITA	HOGEDRUKREGELEENHED	MODULO DE CONTROL UNIDAD
B6	PRESSOSTATO ALTA PRESSIONE	HOGEDRUKPRESSOSTAAT	PRESSOSTATO ALTA PRESSION
B66	CONTROLLO PORTATA ACQUA EVAP.	GEKOELDWATERDEBIETBEWEGING	CONTROL CAUDAL DE AGUA EVAP.
F1	FUSIBILE CONTROLLO	STUURSTROOMZEKERING	FUSIBLE DE CONTROL
K51	RELE POMPA DELL'ACQUA	WATERPOMPRELAYS	RELE BOMBA DE AGUA
S51	SELETORE POMPA DELL'ACQUA 1-2	KEUZESCHAKELAAR WATERPOMP 1-2	SELECTOR BOMBA DE AGUA 1-2
X...	MORSETTIERA DI CONTROLLO	STUURSTROOMKLEMMEN	BLOQUE TERMINAL DE CONTROL
1F12	FUSIBILE CONTROLLO	STUURSTROOMZEKERING	FUSIBLE CONTROL
1F20	RELE TERMICO COMPRESSORE	COMPRESSOR OVERBELASTINGSRELAYS	RELE TERMICO COMPRESSOR
1F25	FUSIBILE COMPRESSORE	COMPRESSORZEKERING	FUSIBLE COMPRESSOR
1K20	CONTATTATORE AVVAM. COMPRESSORE	COMPRESSOR STARTSCHAKELAAR	CONTACTOR ARRANQUE COMP.
1K41	CONTATTATORE MARCIA VENTILATORE	VENTILATOR STARTSCHAKELAAR	CONTACTOR MARCHA VENTILADOR
1K43	CONTATTATORE TRIANGOLO VENTILATORE	VENTIL. DRIEHOEK-ANLOOPSCHAKEL.	CONTACTOR TRIANGULO VENTILADOR
1K43	CONTATTATORE STELLA VENTILATORE	VENTILAT. SIER-ANLOOPSCHAKELAAR	CONTACTOR ESTRELLA VENTILADOR
1R3	CONTATTATORE POMPA ACQUA REFRIG.	REFRIGERAT. POMP. SCHAKELAAR	CONTACTOR BOMBA DE AGUA REFRIG.
1U0	TERMORELE	TEMPERAT. REFRIG. SCHAKELAAR	TERMOSTATO
1U1	TERMORELE	TEMPERAT. REFRIG. SCHAKELAAR	TERMOSTATO
1O41.42	SEZIONATORE VENTILATORE COND.	VEILIGHEIDSSCHAKEL. VENTILATOR	DISYUNTOR VENTILADOR COND.
1O51	SEZIONATORE POMPA ACQUA REFRIG.	VEILIGHEIDSSCHAK. GEKOELDWATERPOMP	DISYUNTOR BOMBA DE AGUA EVAP.
1I2	TRASFORMATORE	TRANSFORMATOR	TRANSFORMADOR
1X20	MORSETTIERA DI POTENZA	STUURSTROOMKLEEM	BLOQUE TERMINAL DE POTENCIA
2M20	COMPRESSORE	COMPRESSOR	COMPRESSOR
4B40	TERMOSTATO MOTORE VENTILATORE	VENTILATORMOTOR THERMOSTAAT	CAPSULA TERMICA VENTILADOR
4M40	MOTORE VENTILATORE	VENTILATORMOTOR	MOTOR VENTILADOR
5B56	TRASDUTTORE ALTA PRESSIONE	HOGEDRUKOPNEMER	TRANSDUCTOR DE ALTA PRESSION
5B58	TRASDUTTORE BASSA PRESSIONE	LAGEDRUKOPNEMER	TRANSDUCTOR DE BAJA PRESSION
5E51	RESISTENZA EVAPORATORE	VERDAMP. VERWARMINGSLEINT	RESISTENCIA EVAPORADORA
5R3	SONDA TEMPERATURA AMBIENTE	OMGEVINGSTEMPERATUURDRIFER	SONDA TEMPERATURA AMBIENTE
5R3	SONDA TEMPERATURA AMBIENTE	OMGEVINGSTEMPERATUURDRIFER	SONDA TEMPERATURA AMBIENTE
5R52	SONDA TEMP. ACQUA ENTRATA EVAP.	GEKOELDWATER-INTREDETEMPERATUUR	SONDA TEMP. ENTRADA AGUA EVAP.
5V33	ELETTROVALVOLA RAFFREDDAMENTO	KOELMIDDELMAGNEETKLEP	SOLENOIDE REFRIGERANTE
6B51	ERMOSTATO MOTORE POMPA DELL'ACQ.	WATERPOMPOMOTOR THERMOSTAAT	CAPSULA TERMICA BOMBA DE AGUA
6E52	RISCALDATORE MODULO IDRAULICO	VERWARMING HYDRAULISCHE MODULE	RESISTENCIA MODULO HIDRAULICO
6K51	CONTATTATORE POMPA ACQUA REFRIG.	GEKOELDWATERPOMPSCHAKELAAR	CONTACTOR BOMBA DE AGUA EVAP.
6M1	MOTORE POMPA ACQUA REFRIGERATA	GEKOELDWATERPOMPOMOTOR	MOTOR BOMBA DE AGUA EVAP.
6O10	INTERRUTTORE GENERALE	SCHIEDINGSSCHAKELAAR	INTERRUPTOR SECCIONADOR UNIDAD
6S1-1,2	COMMUTATORE MARCIA ARRESTO CIR.	AAV/UITSCHAKELAAR CIRCUIT	INTERRUPTOR M/P CIRCUITO

ITEM	OPZIONI	OPTIES	OPCIONES
5	AVVAM. POMPA ACQUA REFR.(SEMPLICE)	GEKOELDWATERPOMPSTART(SIMPLEX)	ARRANQUE BOMBA EVAP. (SIMPLE)
6	AVVAM. POMPA ACQUA REFR. (DOPIPIO)	GEKOELDWATERPOMPSTART(DUPELX)	ARRANQUE BOMBA EVAP. (DOBLE)
7	INTERRUTTORE GENERALE	MACHINE HOOFDSCHAKELAAR	INTERRUPTOR UNIDAD
8	TRASFORMATORE	TRANSFORMATOR	TRANSFORM. ALIMENT. CONTROL
9	MODULO OPZIONALE	OPTIEMODULE	MODULO OPCIONAL



C 2309-4052 4/4

Dimensional Data



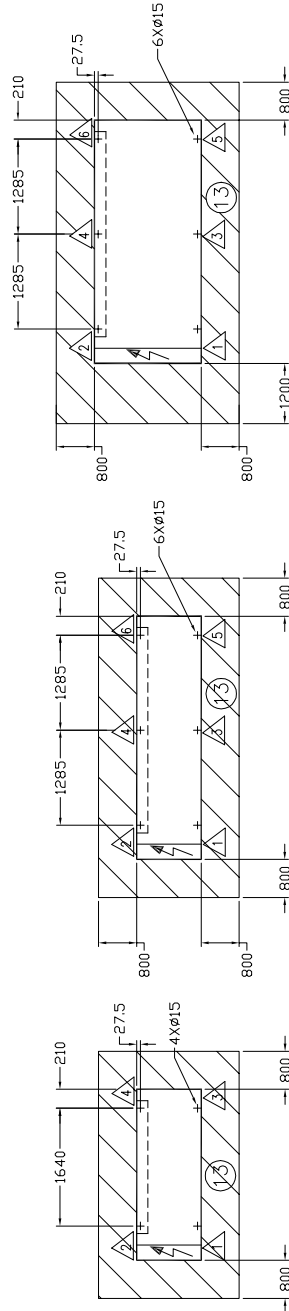
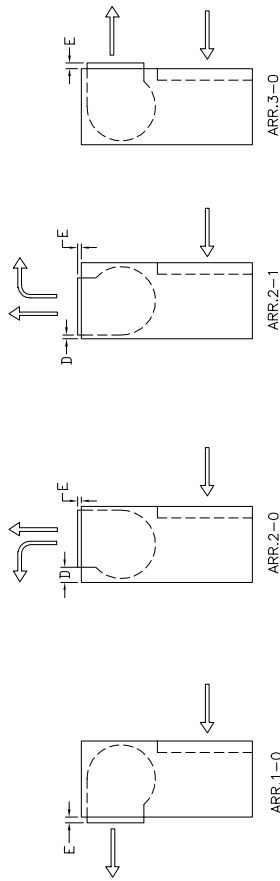
Dimensional Data

REFRIGERATEUR DE LIQUIDE / WASSERKUEHMASCHINEN / LIQUID CHILLERS
 REFRIGERATORI DI LIQUIDO / WATERKOELMACHINE / ENFRIADOR DE LIQUIDO

	CGCL 200...600		C	5715-6262	2/3
	Date: 26-03-01 Rev. A		CAO	Std	

SIZE	14	1	2	3	4	5	6	7	8	9
200	214	235	121	140	-	-	-	-	-	-
250	244	272	143	171	-	-	-	-	-	-
300	260	288	157	185	-	-	-	-	-	-
350	180	197	172	188	164	180	-	-	-	-
400	183	198	183	197	182	197	209	-	-	-
450	191	203	194	206	197	209	197	209	-	-
500	263	251	236	224	209	197	209	197	209	197
600	277	254	262	239	247	223	223	223	223	223

SIZE	1	2	3	4-5	6	7	8	9
200	10T+10T	4R	1	1 1/2	40	12	7.6	710
250	10T+15T	4R	2	(ISO R7)	50	15	10.4	830
300	15T+15T	4R	2	MALE	60	15	13.2	890
350	10T+10T+15T	4R	2	2"	70	23	14.2	1080
400	10T+15T+15T	4R	2	(ISO R7)	90	23	17	1140
450	15T+15T+15T	4R	2	MALE	90	23	19.8	1200
500	10T+15T	4R	3	2 1/2	102	15	10.4	1380
600	15T+15T	4R	3	(ISO R7)	134	15	13.2	1500




CGCL 200-250-300

CGCL 350-400-450

CGCL 500-600

C 5715-6262 2/3

Dimensional Data

 CGCL 200...600		C 5715-6262 3/3 Date: 26-03-01 Rev. A	
		CAO	Std
1	COMPRESSEUR	COMPRESSOR	1 COMPRESSORE
2	CONDENSEUR	CONDENSER	2 CONDENSATORE
3	NOMBRE DE VENTILATEURS	FANS	3 NUMERO DI VENTILATORI
4	CONNEXION ENTRE-EAU EVAPORATEUR	EVAPORATOR WATER INLET CONNECTION	4 COLLEGAMENTO ACQUA ENTRATA EVAPORATORE
5	CONNEXION SORTIE EAU EVAPORATEUR	EVAPORATOR WATER OUTLET CONNECTION	5 COLLEGAMENTO ACQUA USCITA EVAPORATORE
6	NOMBRE PLAQUES EVAPORATEUR	EVAPORATOR PLATES NUMBER	6 NUMERO DI PIASTRE EVAPORATORE
7	CHARGE FLUIDE FRIGORIFERE (KG)	REFRIGERANT CHARGE (KG)	7 REFRIGERANTE (KG)
8	CHARGE HUILE (LITRES)	OIL CHARGE (LITRES)	8 OLIO (LITRI)
9	POIDS EN FONCTIONNEMENT	OPERATING WEIGHT (KG)	9 PESO UNITA IN FUNZIONE (KG)
10	ARMOIRE ELECTRIQUE	ELECTRICAL PANEL	10 PANNELLO ELETTRICO
11	ACCES RACCORDEMENT CLIENT	POWER SUPPLY INLET	11 PASSAGGIO ALIMENTAZIONE ELETTRICA
12	POINT DE LEVAGE #40	RIGGING EYES #40	12 FORI DI SOLLEVAMENTO #40
13	ARE CONSELLEE POUR MAINTENANCE	MINIMUM CLEARANCE FOR MAINTENANCE	13 SPAZI MINIMI RICHIESTI PER LA MANUTENZIONE
14	CHARGE PAR POINT (KG)	WEIGHT PER POINT (KG)	14 CARICO DI PARTITO (KG)
OPTIONS / ZUBEHOER / OPTIONS / TOEBEHOREN / OPCIONES			
15	MANOMETRES	PRESSURE GAUGES	15 MANOMETRI
16	SECTIONNEUR PUISSANCE	POWER DISCONNECT SWITCH	16 SEZIONATORE DI POTENZA
17	ATTENUATEUR DE SON COMPRESSEUR	COMPRESSOR SOUND ATTENUATOR	17 SILENZIATORE DEL COMPRESSORE
18	BOITE A FILTRES	FILTER BOX	18 SCATOLA FILTRI
OPTIONS / ZUBEHOER / OPTIONS / TOEBEHOREN / OPCIONES			
15	MANOMETRES	MANOMETERS	15 MANOMETROS
16	SECTIONNEUR PUISSANCE	SCHALTSCHRAUK HAUPTSCHALTER	16 SECCIONADOR DE FUERZA
17	ATTENUATEUR DE SON COMPRESSEUR	SCHALLDÄMMENDE VERDICHTERVERKLEIDUNG	17 AMORTIGUADOR DE SONIDOS COMPRESOR
18	BOITE A FILTRES	FILTERRAHMEN	18 CAJA DE FILTROS

Mechanical Specifications

Cooling only chillers - CGCL

General

Units shall be assembled on heavy gauge steel mounting/lifting rails and shall be weather proofed. Unit shall include scroll compressors, plate fin condenser coil, brazed plate heat exchangers fans and motors, controls and operating charge of R407C refrigerant. Operating Range shall be between - 5°C and + 40°C in cooling as standard.

Casing

Unit casing shall be constructed of galvanized steel. Exterior surfaces shall be cleaned, phosphatized and finished with a weather-resistant textured polyester powder paint. Units surface shall be tested 500 hours in salt spray test. Units shall have removable end panels which allow access to all major components and controls.

Refrigeration System - Single Circuit

CGCL 200, 250, 300, 350, 400 and 450 units shall have a single refrigeration circuit. Each refrigeration circuit has an integral subcooling circuit. A refrigeration filter drier, expansion valve and check valves shall be provided as standard. Units shall have both a liquid line and suction gas line with gauge port. The refrigeration circuit is controlled by one thermostatic expansion valve. CGCL 200, 250, 300, 350, 400 and 450 units shall have scroll compressors with centrifugal oil pump providing positive lubrication to moving parts. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Temperature and current-sensitive motor overloads shall be included for maximum protection.

Refrigeration System - Dual Circuit

CGCL500 and 600 units shall have two separate and independent refrigeration circuits. Each refrigeration circuit shall have an integral subcooling circuit. A refrigeration filter drier shall be provided as standard. Units shall have both a liquid line and suction gas line with gauge ports. The refrigeration circuit is controlled by one thermostatic expansion valve. CGCL500 and 600 units shall have scroll compressors with centrifugal oil pump and provide positive lubrication to all moving parts. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Internal temperature and current-sensitive motor overloads shall be included for maximum protection. The refrigeration circuit is controlled by two thermostatic expansion valve.

Condenser Coil

Coils shall be smooth bore 9.52 mm copper tubes mechanically bonded to configured aluminum plate fin as standard. Coil shall be factory pressure and leak tested to 30 bar air pressure.

Evaporator

Shall be of the stainless steel brazed plates type. Evaporator shall include thermal insulation and anti-freeze protection. A differential pressure sensor shall ensure the water flow control.

Condenser Fan And Motor(s)

Forward inclined blades centrifugal fan, statically and dynamically balanced, providing a static pressure up to 500 Pa. Flexible duct between fan outlet and connection flange. Vertical or horizontal discharge, front or rear side of the unit. Life lubricated ball bearing, 1500 RPM motor, IP44 type with integrated thermal protection. Mechanical belt tension system.

Controls

Units shall be completely factory wired with microprocessor based control and contactor pressure lugs or terminal block for power wiring. Control wiring shall be 230V-volt control circuit which includes fusing and control transformer. Units shall include a fused disconnect device. Microprocessor shall control leaving water temperature, operating parameters, anti-short cycling, and anti-freeze protection of the evaporator. The liquid crystal display shall indicate leaving water temperature and codes of any fault. Dry contacts shall be available for remote signalling of operating modes and general faults.

Accessories

Hydraulic Module - Shall provide all components needed for a chilled water installation network: pump, buffer tank, expansion tank, shut-off and balancing valves, strainer electrical connections.



Notes

Notes

Safety recommendations

To avoid accidents and damage, the following recommendations should be observed during maintenance and service visits:

1. The maximum allowable pressures for system leak testing on low and high pressure side are given in the chapter "Installation". Always provide a pressure regulator.
2. Disconnect the main supply before any servicing on the unit.
3. Service work on the refrigeration system and the electrical system should be carried out only by qualified and experienced personnel.

Maintenance contract

It is strongly recommended that you sign a maintenance contract with your local Service Agency. This contract provides regular maintenance of your installation by a specialist in our equipment. Regular maintenance ensures that any malfunction is detected and corrected in good time and minimizes the possibility that serious damage will occur. Finally, regular maintenance ensures the maximum operating life of your equipment. We would remind you that failure to respect these installation and maintenance instructions may result in immediate cancellation of the warranty.

Training

The equipment described in this manual is the result of many years of research and continuous development. To assist you in obtaining the best use of it and maintaining it in perfect operating condition over a long period of time, the manufacturer has at your disposal a refrigeration and air conditioning service school. The principal aim of this is to give operators and technicians a better knowledge of the equipment they are using, or that is under their charge. Emphasis is particularly given to the importance of periodic checks on the unit operating parameters as well as on preventive maintenance, which reduces the cost of owning the unit by avoiding serious and costly breakdown.

The manufacturer has a policy of continuous product improvement, and reserves the right to alter any details of the products at any time without notice.

This publication is a general guide to install, use and properly maintain our products. The information given may be different from the specification for a particular country or for a specific order. In this event, please refer to your nearest office.

For additional information, contact:
Distributor/Installer stamp



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your local sales office or
e-mail us at comfort@trane.com



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Since The Trane Company has a policy of continuous product improvement, it reserves the right to change design and specifications without notice.

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