



Installation Operation Maintenance

CGAX/CXAX 015 - 060
Air-cooled scroll chillers and heat pumps
43-164 kW



CONQUEST

CG-SVX027C-GB
Original instructions

Model Number Description

Digit 1-4 — Chiller Model

CGAX = Cooling-only unit

CXAX = Heat pump unit

Digit 5-7 — Unit Nominal Tonnage

015

017

020

023

026

030

036

039

045

035

040

046

052

060

Digit 8 — Unit Voltage

E = 400V/3ph/50Hz

Digit 9 — Manufacturing Plant

1 = Europe

Digit 10-11 — Design Sequence

A = Factory assigned

0 = Factory assigned

Digit 12 — Efficiency Level

1 = Standard Efficiency (SE)

2 = High Efficiency (HE)

Digit 13 — Agency Listing

E = CE Certification

Digit 14 — Pressure Vessel Code

4 = Pressure Equipment Directive (PED)

Digit 15 — Condenser Temperature Range

A = Standard ambient (5°C/46°C)

C = Low ambient CGAX (-18°C/46°C) - CXAX cooling mode (-10°C/46°C)

Digit 16, 17 — Open for future options

Digit 18 — Freeze Protection (Factory-Installed Only)

X = Without freeze protection

2 = With freeze protection by heaters

3 = With freeze protection by pump activation

Digit 19, 20 — Open for future options

Digit 21 — Evaporator Application

A = Comfort application (5°C/20°C)

B = Process application (CGAX: -12°C/5°C;
CXAX: -10°C/5°C)

Digit 22 — Evaporator Water Connection

1 = Grooved pipe

3 = Grooved pipe, couplings and pipe stub

Digit 23 — Condensor

B = Standard Aluminum Fin coil for CXAX

E = Epoxy Aluminum Fin coil for CGAX

H = MCHE for CGAX

J = E-coated MCHE for CGAX

Digit 24 — Heat Recovery

X = None

2 = Partial Heat Recovery

Digit 25 — Open for future options

Digit 26 — Starter Type

A = Across-the-line starter

B = Solid State Soft Starter

Digit 27, 28, 29 — Open for future options

Digit 30 — Human Interface

A = Standard Display

B = Deluxe Display

X = Without Display

Digit 31 — Communication Options

X = without remote communication

1 = Modbus Interface

2 = LonTalk Interface

4 = BACnet Interface

Digit 32 — Customer Input/Output extension module

X = None

A = With (1A4)

Model Number Description

Digit 33 — Chiller Smart Sequencer

X = None

Digit 34 — Open for future options**Digit 35 — Pump management**

X = Without contactors and pumps

2 = Contactors for single pump external to the unit

4 = Contactor for twin pump external to the unit

5 = Single pump package low pressure

6 = Single pump package high pressure

7 = Twin pump package low pressure

8 = Twin pump package high pressure

Digit 36 — Pump Flow Control

X = Constant Flow (no pump flow control)

B = Manual Flow Setpoint on VFD

C = Variable primary Flow (constant delta T)

Digit 37 — Buffer Tank

X = No Tank

1 = With Tank

Digit 38 — Open digit for future options**Digit 39 — Installation Accessories**

1 = None

4 = Neoprene pads

Digit 40 — Open digit for future options**Digit 41 — Acoustical options**

2 = High external static pressure

3 = Standard

4 = Low Noise

Digit 42 — Condenser Protection

X = Without

A = Condenser Guard Grill

Digit 43 — Open digit for future options**Digit 44 — Literature language**

B = Spanish

C = German

D = English

E = French

H = Dutch

J = Italian

M = Swedish

N = Turkish

P = Polish

R = Russian

T = Czech

U = Greek

V = Portuguese

Y = Romanian

3 = Hungarian

Digit 45 — Under/Over Voltage Protection

X = None

1 = With

Digit 46 — Open for future options**Digit 47 — Customer witness performance test**

X = None

Digit 48 — Open for future options**Digit 49 — Supplementary Heat Control**

X = None

1 = With

Digit 50 — Special design

X = Standard

S = Special design

Table 1 - CGAX 015-036 General Data

		CGAX 015 SE-SN	CGAX 017 SE-SN	CGAX 020 SE-SN	CGAX 023 SE-SN	CGAX 026 SE-SN	CGAX 030 SE-SN	CGAX 036 SE-SN
Net Cooling Capacity (1)	(kW)	43	49	59	65	74	82	99
Total Power input in cooling (1)	(kW)	15	17	19	22	26	29	33
Unit electrical data (2) (3) (4)								
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
Power Cable Cross Section (max)	mm ²	35	35	35	35	35	35	150
Disconnect switch size	(A)	80	80	100	100	100	100	250
Digit 12=2 or Digit 12=1 and Digit 41=2								
Maximum Power input	(kW)	20.4	23.2	27.9	31.6	35.4	39.1	45.1
Unit rated amps	(A)	34.5	39.2	46.9	52.0	57.1	65.5	75.4
Unit start up amps (w/o soft starter - Digit 26=A) (4)	(A)	117.0	161.0	168.7	184.7	189.8	191.0	199.5
Unit start up amps (with soft starter - Digit 26=B) (4)		77.8	104.2	111.9	121.5	126.6	129.0	140.7
Power factor		0.868	0.866	0.870	0.888	0.902	0.870	0.873
Digit 12=1 and Digit 15=A								
Maximum Power input	(kW)	19.4	22.1	25.8	29.5	33.3	37.0	43.0
Unit rated amps	(A)	33.8	38.5	45.4	50.5	55.6	64.0	73.8
Unit start up amps (w/o soft starter - Digit 26=A) (4)	(A)	116.3	160.3	167.2	183.2	188.3	189.5	197.9
Unit start up amps (with soft starter - Digit 26=B) (4)		77.1	103.5	110.4	120.0	125.1	127.5	139.1
Power factor		0.845	0.846	0.836	0.861	0.880	0.847	0.854
Digit 12=1 and Digit 15=C								
Maximum Power input	(kW)	20.4	23.2	26.8	30.6	34.3	38.1	44.1
Unit rated amps	(A)	34.5	39.2	46.2	51.3	56.4	64.8	74.6
Unit start up amps (w/o soft starter - Digit 26=A) (4)	(A)	117.0	161.0	168.0	184.0	189.1	190.3	198.7
Unit start up amps (with soft starter - Digit 26=B) (4)		77.8	104.2	111.2	120.8	125.9	128.3	139.9
Power factor		0.868	0.866	0.854	0.875	0.892	0.859	0.864
Compressor								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7,5+7,5	7,5+10	10+10	10+13	13+13	15+15	12+12+12
Max Compr Power input Circuit 1/Circuit 2	kW	9,2 + 9,2	9,2+ 12	12 + 12	12 + 15,7	15,7 + 15,7	17,61 + 17,6	13,7 + 13,7 + 13,7
Rated Amps Circuit1 / Circuit 2 (4)	(A)	15,5 + 15,5	15,5 + 20,2	20,2 + 20,2	20,2 + 25,3	25,3 + 25,3	29,5 + 29,5	22,9 + 22,9 + 22,9
Locked Rotor Amps Circuit1 / Circuit 2 (4)	(A)	98 + 98	98 + 142	142 + 142	142 + 158	158 + 158	155 + 155	147 + 147 + 147
Motor RPM	(rpm)	2900	2900	2900	2900	2900	2900	2900
Oil sump heater Circuit1 / Circuit 2	(W)	0,17 / 0	0,17 / 0	0,17 / 0	0,17 / 0	0,17 / 0	0,17 / 0	0,25 / 0
Evaporator								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P80x66	P80x92	P80x92	P80x92	P120Tx76	P120Tx76	P120Tx104
Evaporator Water Content volume	(l)	3.8	5.3	5.3	5.3	9.2	9.2	12.5
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60,3	2" - 60,3	2" - 60,3	2" - 60,3	2" - 60,3	2" - 60,3	2" - 60,3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60,3	2" - 60,3	2" - 60,3	2" - 60,3	2" - 60,3	2" - 60,3	3" OD - 76,1
Hydraulic Module Components								
Single pump - Standard head pressure option								
Max available Head Pressure	(kPa)	96	100	86	113	120	110	103
Motor Power	(kW)	1.20	1.20	1.20	1.50	1.50	1.50	1.50
Rated Amps	(A)	2.44	2.44	2.44	3.50	3.50	3.50	3.50
Single pump - High head pressure option								
Max available Head Pressure	(kPa)	170	174	162	152	161	152	190
Motor Power	(kW)	2.30	2.30	2.30	2.30	2.30	2.30	3.00
Rated Amps	(A)	5.03	5.03	5.03	5.03	5.03	5.03	6.23
Twin pump - Standard head pressure option								
Max available Head Pressure	(kPa)	96	100	86	113	120	110	103
Motor Power	(kW)	1.20	1.20	1.20	1.50	1.50	1.50	1.50
Rated Amps	(A)	2.44	2.44	2.44	3.50	3.50	3.50	3.50
Twin pump - High head pressure option								
Max available Head Pressure	(kPa)	170	174	162	152	161	152	190
Motor Power	(kW)	2.30	2.30	2.30	2.30	2.30	2.30	3.00
Rated Amps	(A)	5.03	5.03	5.03	5.03	5.03	5.03	6.23
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optionnal water Buffer tank volume	(l)	324	324	324	324	324	324	444
Antifreeze Heater without pump package	(W)	120	120	120	120	120	120	180
Antifreeze Heater with pump package	(W)	280	280	280	280	280	280	340
Condenser								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m ²)	2.23	2.23	2.96	2.96	2.96	2.96	4.46

General Data

Table 1 - CGAX 015-036 General Data (continued)

		CGAX 015 SE-SN	CGAX 017 SE-SN	CGAX 020 SE-SN	CGAX 023 SE-SN	CGAX 026 SE-SN	CGAX 030 SE-SN	CGAX 036 SE-SN
Condenser Fan								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)	800						
Fan / motor Type	Propeller fan : Fixed speed AC motor / Variable speed - EC motor / HESP MAX SPEED							
Digit 12=2 or Digit 12=1 and Digit 41=2								
Fan / motor Type	EC motor / HESP MAX SPEED							
Airflow per fan	m ³ /h	13753	13718	12248	12231	12211	12193	13727
Max Power Input	Kw	1,95	1,95	1,95 + 1,95	1,95 + 1,95	1,95 + 1,95	1,95 + 1,95	1,95 + 1,95
Max Amps	A	3	3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3
Motor RPM	(rpm)	915	915	915	915	915	915	915
Digit 12=1 and Digit 15=A								
Fan / motor Type	Fixed speed AC motor / Variable speed - EC motor							
Airflow per fan	m ³ /h	13788	13828	12362	12362	12370	12375	13827
Max Power Input	Kw	0,89	0,89	0,89 + 0,89	0,89 + 0,89	0,89 + 0,89	0,89 + 0,89	0,89 + 0,89
Max Amps	A	2,22	2,22	2,22 + 2,22	2,22 + 2,22	2,22 + 2,22	2,22 + 2,22	2,22 + 2,22
Motor RPM	(rpm)	686	686	686	686	686	686	686
Digit 12=1 and Digit 15=C								
Fan / motor Type	Fixed speed AC motor / Variable speed - EC motor							
Airflow per fan	m ³ /h	13788	13828	12362	12362	12370	12375	13827
Max Power Input	Kw	1,95	1,95	1,95 + 0,89	1,95 + 0,89	1,95 + 0,89	1,95 + 0,89	1,95 + 0,89
Max Amps	A	3	3	3 + 2,22	3 + 2,22	3 + 2,22	3 + 2,22	3 + 2,22
Motor RPM	(rpm)	686	686	686	686	686	686	686
Airflow per Fan	(m ³ /h)	13788	13828	12362	12362	12370	12375	13827
Airflow per Fan HESP (915 RPM - 100Pa)	(m ³ /h)	13753	13718	12248	12231	12211	12193	13727
Power per Motor	(kW)	686	686	686	686	686	686	686
Partial Heat recovery (PHR) option								
Heat-Exchanger Type	Stainless steel Copper Brazed plate Heat exchanger							
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
Dimensions (7)								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Std Unit Height	(mm)	1524	1524	1524	1524	1524	1524	1524
LN or External SP unit - (Additional height configuration)	(mm)	+223	+224	+225	+226	+227	+228	+229
Water Buffer tank option - (Additional height configuration)	(mm)	+330	+330	+330	+330	+330	+330	+330
Weights								
Shipping Weight (3)	(kg)	519	531	574	579	608	621	853
Operating Weight (3)	(kg)	497	509	552	557	587	599	819
Option Additional shipping weight								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
Pump VFD option	(kg)	0						
Partial heat recovery option	(kg)	1.48	1.48	1.48	1.48	3.82	3.82	3.82
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
System data								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
Standard/Partial Heat Recovery Unit unit								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type (6)	OIL058E / OIL057E							

(1) Indicative performance at Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C - for detailed performances, on a given unit, consult Order Write Up.

(2) under 400V/3/50Hz.

(3) Rated Condition without Pump Package.

(4) Electrical & system data are indicative and subject to change without notice. Please refer to unit nameplate data.

(5) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

(6) OIL058E or OIL057E are European reference for POE oil and can be mixed in any proportion with OIL00078 or OIL 00080 (same oil with US reference on compressor nameplate).

(7) For dimensions details, dimensions of hydraulic connections, electrical connections, point load and specific features for heat recovery see submittals and diagrams which are supplied with every order.