



TRANE **CUBE**



Air-Cooled Scroll Chillers and Air-to-Water Heat Pumps



Model CGB
Cooling capacity 16 - 50 kW

Model CXB
Cooling capacity 15 - 78 kW
Heating capacity 17 - 87 kW

TRANE
TECHNOLOGIES

Air-Cooled Scroll Chillers and Heat Pumps



Range description

- **CGB** chillers with/without hydraulic module
- **CGB-A** chillers with hydraulic module and built in water tank
- **CXB** heat pumps with/without hydraulic module
- **CXB-A** heat pumps with hydraulic module and built in water tank

Unit description

- Tandem scroll compressors
- Electronic expansion valve
- Self-adaptive defrosting system
- Axial fans with fan speed regulation for condensing control (EC fans on chillers sizes 033/036/039 and heat pumps sizes 045/050)
- Micro-channel condenser coils (CGB)
- Brazed plate heat exchanger with pressure differential switch and antifreeze protection electric heater
- Air side heat exchanger with seamless copper tubes and aluminium fins (CXB)
- Microprocessor-based controller to manage unit on/off mode, operating mode setting, parameters setting, and error code display
- Electrical panel with main disconnect switch
- Casing and panels in galvanised and painted steel
- Conto Termico compliance (Italy)
- All CXB heat pumps A+ or A++ Ecodesign efficiency class

Factory-mounted options

- Low ambient temperature kit, in cooling mode down to -10°C
- Low ambient temperature kit, in heating mode down to -15°C
- 3-way valve for domestic hot water (power supply and control included)
- Compressors sound attenuating jackets (low noise version)
- Soft-starter
- Control panel electric heater with thermostat
- Phase failure protection relay
- Epoxy coated condensing coils (CXB)
- E-coated condensing coils (CGB)
- EC fans
- Anti-freeze protection kit for hydraulic versions (recommended for operation with outdoor temperature between 0°C and -20°C)

Accessories

- Serial card with BACnet™ Protocol MS/TP or TCP/IP
- Serial card RS485
- Gateway Modbus
- Remote control panel
- Flow switch
- Automatic water filling
- Water strainer
- Water gauges/gas gauges
- Rubber anti vibration mounts
- Automatic circuit breakers
- Power supply without neutral 400V/3Ph/50Hz

Advantages

All units are designed in compliance with Ecodesign directive ErP 2009/125/EC relating to products intended for cooling, heating and domestic hot water production.

All CXB heat pumps are A+ or A++ Ecodesign efficiency class.

DYNAMIC LOGIC CONTROL manages the differential of the outlet water temperature in accordance to the speed variation, ensuring fewer compressor starts and energy savings.



DYNAMIC SET POINT allows to change the set point simultaneously to always achieve the conditions of best comfort and, above all, maximum energy saving.



Operating range		CGB	CXB cooling	CXB heating
Operating outdoor air temperature range (min./max.)	(°C)	5 (-10)*/45	5 (-10)*/43	-5 (-15)**/20
Leaving water temperature range (min./max.)	(°C)	-6/18	-7/18	28/55
Power supply	(V/Ph/Hz)	400/3+n/50		

* Temperatures within parentheses () can be achieved with low ambient air temperature kit.
 ** With low ambient air temperature kit including iPro controller.

Chiller version

General data

CGB	Unit size	017	020	025	028	033	036	039	045	050
Cooling according to EN 14511 (1)										
Total cooling capacity	kW	16.4	19.0	24.6	28.3	33.2	36.7	39.6	44.5	49.6
Total power input	kW	5.6	6.7	7.9	9.2	10.6	12.1	13.3	15.4	18.2
Total EER		2.93	2.83	3.11	3.08	3.13	3.04	2.99	2.89	2.72
Eurovent efficiency class		B	C	A	B	A	B	B	C	C
Water flow	m ³ /h	2.82	3.26	4.23	4.87	5.71	6.32	6.82	7.65	8.53
Water pressure drop	kPa	15.1	19.6	31.3	23.1	31.0	37.2	42.8	31.7	38.5
Seasonal efficiency according to EN 14825 (2)										
P rated	kW	16.4	19.0	24.6	28.3	33.2	36.7	39.6	44.5	49.6
η _{s, cooling}	%	166	165	161	161	161	161	161	161	163
SEER		4.22	4.20	4.10	4.10	4.10	4.10	4.10	4.10	4.15
Hydraulic module (optional)										
Available pump pressure	kPa	157	138	152	149	123	170	142	161	144
Water tank volume	l	100	100	100	100	100	100	100	100	100
Volume of expansion vessel	l	1	1	1	1	1	1	1	1	1
Compressors										
Number of compressors		2	2	2	2	2	2	2	2	2
Number of refrigerant circuits		1	1	1	1	1	1	1	1	1
Type of control / part load steps		Step control / 2 steps								
Minimum capacity step	%	50	50	50	50	50	50	50	45	39
Refrigerant charge (3)	kg	5.7	5.7	5.7	6.5	6.5	6.5	6.5	8.0	8.0
Oil charge	kg	2.5	2.5	2.5	2.5	3.3	3.5	3.5	6.3	6.3
Fans										
Number of fans	n	1	1	2	2	2	2	2	2	2
Air flow	m ³ /h	6000	6000	10200	10800	13800	15900	15900	17000	17000
Power input for each fan	kW	0.235	0.235	0.235	0.235	0.296	0.357	0.357	0.357	0.357
Absorbed current for each fan	A	0.55	0.55	0.55	0.55	1.06	1.57	1.57	1.57	1.57
Sound level (4)										
Sound pressure level at 10 m	db(A)	42	42	45	44	45	46	46	47	47
Sound pressure level at 10 m (low noise version)	db(A)	na	na	na	42	42	42	42	44	45
Dimensions and weight										
Length (A)	mm	1807	1807	1807	2061	2061	2061	2061	2061	2061
Width (B)	mm	779	779	779	779	779	779	779	779	779
Height (C)	mm	1687	1687	1687	1687	1687	1687	1687	1687	1687
Additional height for water tank	mm	381	381	381	381	381	381	381	381	381
Operating weight	kg	290	294	327	367	378	378	380	530	540
Operating weight (low noise version)	kg	-	-	-	374	385	385	387	541	551
Additional weight for water pump	kg	12	12	12	12	12	14	14	15.4	15.4
Additional weight for water tank	kg	190	190	190	195	195	195	195	195	195

- (1) Cooling: outdoor air temperature 35°C and chilled water temperature 12°C/7°C.
- (2) Ecodesign rating for comfort chiller - Fan coil application. Outdoor air temperature 35°C and chilled water temperature in/out: 12°C/7°C. η_{s,c}/SEER as defined in Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - REGULATION (EU) N° 2016/2281 of 20 December 2016.
- (3) Refrigerant charge values are not binding, please check the effective quantity of refrigerant shown on unit nameplate.
- (4) Sound data based on units without hydraulic module.



Standard unit controller

Heat Pump version



General data

CXB	Unit size	017	020	025	028	033	036	039	045	050	055	065	080	090
Cooling according to EN 14511 (1)														
Total cooling capacity	kW	15.1	17.0	22.0	25.2	28.5	31.1	33.3	40.4	45.0	50.1	57.8	71.2	78.4
Total power input	kW	5.8	6.9	8.4	9.9	11.9	14.0	15.5	16.6	19.7	17.8	21.8	25.0	28.5
Total EER		2.60	2.47	2.62	2.55	2.39	2.22	2.15	2.44	2.29	2.82	2.65	2.84	2.75
Water flow	m ³ /h	2.59	2.93	3.79	4.34	4.90	5.34	5.73	6.95	7.74	8.6	9.9	12.2	13.5
Water pressure drop	kPa	9.1	11.4	18.1	13.4	16.7	19.5	22.1	18.7	22.9	15.0	19.5	12.5	14.3
Heating according to EN 14511 (2)														
Total heating capacity	kW	17.4	20.1	26.5	31.0	35.7	39.6	42.5	48.6	54.4	57.1	66.5	79.0	87.4
Total power input	kW	5.4	6.1	8.0	9.1	10.5	12.0	12.9	15.0	17.0	17.4	21.2	24.9	28.0
Total COP		3.23	3.29	3.32	3.40	3.40	3.30	3.30	3.24	3.20	3.27	3.13	3.17	3.13
Water flow	m ³ /h	3.00	3.46	4.57	5.32	6.14	6.81	7.32	8.36	9.36	9.8	11.4	13.6	15.0
Water pressure drop	kPa	10.5	13.6	22.8	17.4	22.6	27.4	31.4	23.6	29.1	19.3	25.4	15.2	17.4
Seasonal efficiency, according EN 14825 (2)														
P rated	kW	15.0	18.0	23.0	27.0	31.0	35.0	37.0	39.8	44.7	48.6	53.5	67.7	69.6
η _s . heating	%	146	146	145	143	148	149	148	154	149	132	137	127	130
SCOP		3.73	3.73	3.70	3.65	3.78	3.80	3.78	3.93	3.80	3.38	3.49	3.24	3.33
Ecodesign efficiency class		A+	A+	A+	A+	A+	A+	A+	A++	A+	A+	A+	A+	A+
Hydraulic module (optional)														
Available pump pressure	kPa	169	157	172	168	155	224	208	182	170	167	157	185	173
Water tank volume	l	100	100	100	100	100	100	100	100	100	120	120	120	120
Volume of expansion vessel	l	1	1	1	1	1	1	1	1	1	5	5	5	5
Compressors														
Number of compressors		2	2	2	2	2	2	2	2	2	2	2	2	2
Number of refrigerant circuits		1	1	1	1	1	1	1	1	1	1	1	1	1
Type of control									Steps					
Number of part load steps		2	2	2	2	2	2	2	2	3	3	3	2	2
Minimum capacity step	%	50	50	50	50	50	50	50	45	38	38	43	50	50
Refrigerant charge (3)	kg	13	13	13	15	15	15	15	17	17	31.5	31.5	31.5	31.5
Oil charge	kg	2.5	2.5	2.5	2.5	3.3	3.5	3.5	6.3	6.3	6.3	6.6	6.9	7.2
Fans (5)														
Number of fans		1	1	2	2	2	2	2	2	2	1	1	2	2
Air flow	m ³ /h	6000	6000	9600	10400	10400	10400	10400	17000	17000	20800	20800	39000	39000
Power input for each fan (in chiller mode)	kW	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.357	0.357	1.9	1.9	3.8	3.8
Absorbed current for each fan	A	0.55	0.55	0.55	0.55	0.55	0.55	0.55	1.57	1.57	3.8	3.8	7.6	7.6
Sound level (4)														
Sound pressure level at 10 m	db(A)	42	42	45	44	45	46	46	47	47	49	50	52	53
Sound pressure level at 10 m (low noise version)	db(A)	na	na	na	42	42	42	42	44	45	48	49	51	51
Dimensions and weight														
Length (A)	mm	1807	1807	1807	2061	2061	2061	2061	2061	2061	2524	2524	2524	2524
Width (B)	mm	779	779	779	779	779	779	779	779	779	1038	1038	1038	1038
Height (C)	mm	1687	1687	1687	1687	1687	1687	1687	1687	1687	1995	1995	1995	1995
Additional height for water tank	mm	381	381	381	381	381	381	381	381	381	-	-	-	-
Operating weight	kg	328	331	365	385	396	396	398	580	590	726	737	809	815
Operating weight (low noise version)	kg	-	-	-	392	403	403	405	591	601	742	753	825	831
Additional weight for water pump	kg	12	12	12	12	12	14	14	15	15	21	21	24	24
Additional weight for water tank	kg	190	190	190	195	195	195	195	195	195	180	180	180	180

- (1) Cooling: outdoor air temperature 35°C and chilled water temperature 12°C/7°C. Heating: outdoor air temperature 7°C/90% RH and hot water 40/45°C
- (2) Ecodesign rating at low temperature heating conditions. Outdoor temperature: 7°C dry bulb/6°C wet bulb and hot water temperature in/out: 30°C/35°C. η_s,h / SCOP as defined in Ecodesign requirements for Space heaters with Prated < 400kW - REGULATION (EU) N° 813/2013 of 2 August 2013.
- (3) Refrigerant charge values are not binding, please check the effective quantity of refrigerant shown on unit nameplate.
- (4) Sound data based on units without hydraulic module.
- (5) CXB sizes 045/050 have standard EC fans.



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