

WATER CHILLERS AND HEAT PUMPS

R 410 A

R 407 C

APPLICATIONS

RESIDENTIAL AND COMMERCIAL



The expertise and the excellence of a French designer and manufacturer since 51 years

HEAT PUMPS

- Hydraulic equipment integrated in all the models
- Very compact units
- 12 sizes in cooling only
- 12 sizes in heat pumps
- Intelligent regulation
- Best components selection

● Solution for the service sector

WATER CHILLERS

- PHRV 22 to 72
- + buffer tank with electrical heater integrated
- + water terminal units

● Residential solutions

See page 16 to 45

Water range

Water chillers

Air to Water with hydraulic module

CHG - 8 to 17 kW	156
CHGV - 21 to 78 kW	158

Heat Pumps

Air to Water with hydraulic module

PHRT - 7 to 16 kW	160
PHRV - 24 to 76 kW	162

WATER CHILLERS WITH HYDRAULIC EQUIPMENT

10 12 159
CHG 8/17



R 410 A

CHG from 8 to 17 kW

AIR TO WATER



- > Refrigerant fluid : R 410 A
- > Excellent EER
- > The lowest noise levels on the market
- > More compact units: 1 190 x 340 x 735 mm
1 190 x 340 x 1 235 mm

- **High quality components**

Scroll compressor with sound insulation – high performance heat exchanger with fins for the R 410 A – axial fan motor – heat exchanger with AISI 316 stainless steel plates and heat insulation, etc....

- **Hydraulic equipment**

- **Functions of the control system:**

- Reducing of the minimum water volume
- Adjustment of the condensation pressure
- Automatic control of the circulating pump (anti-freeze and anti-seize function)
- Defrosting adjusted according to the outdoor temperature
- Alarm management by means of event logging
- External communication via a serial interface (Protocol Modbus)

- **Other advantages:**

- Improved access to components
- Keypad/display fitted to the front panel
- Dividing bulkhead between the fan and the machinery compartment
- Option of removing the 'control' panel for a wider opening
- Stringent manufacturing inspections : Helium waterproof test, di-electrical and electrical test, hydraulic test,...

- **Standard equipment**

- Water flow switch
- Proportional head pressure control
- LP switch
- HP switch
- Hydraulic filter (connectable)
- Hydraulic equipment



Model		CHG 8	CHG 11	CHG 15	CHG 17
Code	230/1/50	CHG 085 F	-	-	-
	400/3N/50	CHG 087 F	CHG 117 F	CHG 157 F	CHG 177 F
Cooling capacity (kW)		Mono / Tri 8.10	11.00	13.70	16.30
Input power* (kW)		3.63 / 3.56	4.42	5.26	6.27
EER*		2.23 / 2.28	2.49	2.60	2.6
Water flow (m³/h)		1.40	1.91	2.34	2.81
Available head pump (kPa)		42	55	68	75
Refrigerant type		R 410 A	R 410 A	R 410 A	R 410 A
Number of refrigeration circuits		1	1	1	1
Number of compressors		1	1	1	1
Expansion tank volume (l)		2	2	2	2
Ø of male water connector		3/4"	1"	1"	1"
Sound power level (dBA)		65	67	67	67
Sound pressure level** (dBA)		37	39	39	39
Length	(mm)	1 190	1 190	1 190	1 190
Depth	(mm)	340	340	340	340
Height	(mm)	735	1 235	1 235	1 235
Weight	(kg)	87	120	123	130

* Brut value (without circulation pump)

** Sound pressure: this level corresponds to that of a unit installed outdoors (free sound field), on a reflective surface, with the measurement being taken at a distance of 10 m.

Nominal conditions

T outdoor air	+ 35°C
T water inlet	+ 12°C
T water outlet	+ 7°C

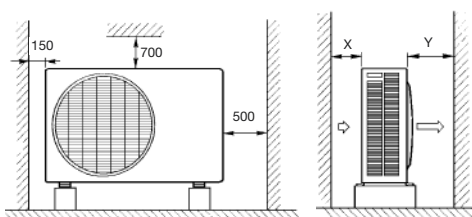
OPERATING LIMITS (pure water)

T outdoor air CHG 8 and 15	-10°C (DB) / +43°C (DB)	T water outlet maximum	+ 18°C (except CHG 17 : +20°C)
T outdoor air CHG 11	-7°C (DB) / +43°C (DB)	T water outlet minimum	+ 5°C
T outdoor air CHG 17	-4°C (DB) / +43°C (DB)		

ACCESSORIES

Type		Models	Code
Set of 2 flexible water pipes	length 1 m Ø 3/4"	CHG 8	70600054
	length 1 m Ø 1"	CHG 11/15/17	70600055
Insulated 35 liters tank (6 water inlets/outlets)		CHG 8/11/15/17	70600108
Single start-up kit		CHG 8	70550004
Remote control keyboard and display		CHG 8/11/15/17	70250055
RS 485 communication interface - MODBUS protocol (please consult us for protocol details)		CHG 8/11/15/17	70250056

PRECAUTIONS FOR INSTALLATION



Cotes en mm

	X	Y
CHG 8	150	1 000
CHG 11 - 15 - 17	250	1 000

WATER CHILLERS WITH HYDRAULIC EQUIPMENT

10 12 161
CHGV 22/40
10 12 167
CHGV 50/80

R 407 C

CHGV from 21 to 78 kW

AIR TO WATER



- > Performances
- > Quality
- > More compact units

• High quality components

Scroll compressor with sound insulation - air heat exchanger: copper tubes with aluminium fins - axial fan motor with variable speed control - heat exchanger with AISI 316L stainless steel plates and heat insulation, ...

• Hydraulic equipment

• Functions of the control system:

- Reducing of the minimum water volume
- Adjustment of the condensation pressure
- Automatic control of the circulating pump (anti-freeze and anti-seize function)
- Alarm management by means of event logging
- External communication via a serial interface (Protocol Modbus)

• Simplified operation and maintenance:

- Keypad/display fitted to the front panel
- Access panel to the electrical cabinet
- Access panels at the side and at the front
- Provision for HP and LP connections
- Holes to accommodate slings



706000110



706000120

Standard equipment

- ON/OFF main switch
- proportional head pressure control
- HP and LP switches
- water flow switch
- phase sequence tester
- hydraulic equipment (circulating pump with control valve, expansion tank, safety valve, air vent, water manometer, ...)
- hydraulic filter (connectable)
- condenser coil protection grille



CHGV 22 to 40



CHGV 50 to 80

Model		CHGV 22	CHGV 25	CHGV 32	CHGV 40
Code	400/3N/50	CHG 227 V	CHG 257 V	CHG 327 V	CHG 407 V
Cooling capacity (kW)		20.7	23.8	31	39
Input power* (kW)		8.3	10.40	13.40	14.80
EER*		2.49	2.29	2.31	2.64
Water flow (m ³ /h)		3.56	4.18	5.33	6.73
Available head pump (kPa)		210	170	200	135
Refrigerant type		R 407 C	R 407 C	R 407 C	R 407 C
Number of refrigeration circuits		1	1	1	1
Number of compressors		1	1	1	1
Expansion tank volume (l)		8	8	8	8
Ø of male water connector		1"1/4	1"1/4	1"1/4	1"1/4
Sound power level (dBA)		79	78	80	82
Sound pressure level** (dBA)		51	50	52	54
Length	(mm)	975	975	975	975
Depth	(mm)	1 050	1 050	1 050	1 050
Height	(mm)	1 175	1 175	1 175	1 425
Weight	(kg)	292	295	317	353

Model		CHGV 50	CHGV 64	CHGV 72	CHGV 80
Code	400/3N/50	CHG 507 V	CHG 647 V	CHG 727 V	CHG 807 V
Cooling capacity (kW)		47.6	62	67	78
Input power* (kW)		20.60	26.40	28.80	29.40
EER*		2.31	2.35	2.33	2.65
Water flow (m ³ /h)		8.21	10.66	11.52	13.43
Available head pump (kPa)		220	160	180	90
Refrigerant type		R 407 C	R 407 C	R 407 C	R 407 C
Number of refrigeration circuits		2	2	2	2
Number of compressors		2	2	2	2
Expansion tank volume (l)		18	18	18	18
Ø of male water connector		1"1/2	1"1/2	1"1/2	1"1/2
Sound power level (dBA)	LS	78	82	87	87
Sound pressure level** (dBA)	LS	50	54	59	59
Length	(mm)	1 955	1 955	1 955	1 955
Depth	(mm)	1 050	1 050	1 050	1 050
Height	(mm)	1 175	1 175	1 175	1 425
Weight	(kg)	500	534	556	606

* Gross value without hydraulic pump

**Sound pressure: this level corresponds to that of a unit installed outdoors (free sound field), on a reflective surface, with the measurement being taken at a distance of 10 m.

Nominal conditions

T outdoor air	+ 35°C
T water inlet	+ 12°C
T water outlet	+ 7°C

OPERATING LIMITS

T inlet air to condenser	Standard with head pressure control: - 10°C / + 45°C
Pure water outlet T:	+ 4°C / + 20°C

Consult Technibel for any special climatic conditions which differ significantly from the nominal conditions

ACCESSORIES

Type		Models	Code	
Remote control keyboard and display		CHGV 22 to 40	70250055	
		CHGV 50 to 80	70250057	
RS 485 communication interface - MODBUS protocol		CHGV 22 to 80	70250056	
Switch HP and LP		CHGV 22 to 40	70970007	
		CHGV 50 to 80	70970007 x 2	
Set of 2 flexible water pipe	length 1 m	Ø 1"1/4	CHGV 22 to 40	70600027
	length 1.5 m	Ø 1"1/2	CHGV 50 to 80	70600034
Set of 4 anti-vibration pads 25 mm thick			CHGV 22 to 80	70600035
150 liters Tank with 800 W anti-freeze resistance			CHGV 22 to 40	70600110
300 liters Tank with 800 W anti-freeze resistance			CHGV 50 to 80	70600120

WATER CHILLERS WITH HYDRAULIC EQUIPMENT

10 12 169
PHRT 7/16



See page 16 to 43 : residential solutions

- Refrigerant fluid: **R 410 A**
- **The best COP on the market**
- **The lowest noise levels on the market**
- **Compact units :**
 - 1 190 x 340 x 735 mm
 - 1 190 x 340 x 1 235 mm
- **High quality components:**
Scroll compressor with sound insulation – high performance heat exchanger with fins for the R 410 A – axial fan motor – heat exchanger with AISI 316 stainless steel plates and heat insulation, etc....
- **Hydraulic equipment:**
Circulating pump 3 speeds – Expansion tank – Safety valve – Air vent – Water manometer – Hydraulic filter
- **Functions of the control system:**
 - Elimination of the buffer receiver vessel
 - Adjustment of the condensation pressure
 - Automatic control of the circulating pump (anti-freeze and anti-seize function)
 - Defrosting adjusted according to the outdoor temperature
 - Alarm management by means of event logging
 - External communication via a serial interface (Protocol Modbus)

SAVINGS

PHRT from 7 to 16 kW

AIR TO WATER

55°

- > Heating and cooling
- > Water conditions 40/45°C in Heating (and 7/12°C in Cooling)
- > Operating limits: T outdoor air:-16°C in Heating (+43°C in Cooling)
T water outlet maximum:+55°C in Heating (+20°C in Cooling)



- **Other advantages:**
 - Keypad/display fitted to the front panel
 - Dividing bulkhead between the fan and the machinery compartment
 - Option of removing the "control" panel for a wider opening
 - Stringent manufacturing inspections: Helium water-proof test, di-electrical and electrical test, hydraulic test,...

Standard equipment

- Single start-up kit (PHRT 7/9/12 single-phase)
- water flow switch
- proportional head pressure control
- LP switch
- HP switch
- Hydraulic filter (connectable)
- Hydraulic equipment



Model	PHRT 7		PHRT 9		PHRT 12		PHRT 16	
Code	230/1/50 400/3N/50	PHRT 075 F -	PHRT 095 F PHRT 097 F	PHRT 125 F PHRT 127 F	-		PHRT 167 F	
			Mono/Tri	Mono/Tri				
Conditions :T water inlet/outlet 40/45°C and T air intake 7/6°C (DB/WB); net values								
Heating capacity (kW)		7.2	9.17 / 9.2	10.5 / 12.4	15			
Input power (kW)		2.65	3.19 / 3.19	3.62 / 4.06	4.92			
COP		2.72	2.87 / 2.88	2.9 / 3.05	3.05			
Conditions :T water inlet/outlet * /45°C and T air intake -7/-8°C (DB/WB); net values								
Heating capacity (kW)		4.6	5 / 5.05	5.88 / 6.8	8.51			
Input power (kW)		2.87	3.23 / 3.23	3.77 / 4.25	5.38			
COP		1.6	1.55 / 1.56	1.56 / 1.6	1.58			
Conditions :T water inlet/outlet * /55°C and T air intake 7/6°C (DB/WB); net values								
Heating capacity (kW)		6	8.25 / 8.3	9.38 / 11.7	13.6			
Input power (kW)		3.04	3.75 / 3.75	4.04 / 4.73	5.96			
COP		1.97	2.17 / 2.21	2.32 / 2.47	2.28			
Conditions :T water inlet/outlet 40/45°C and T air intake 7/6°C (DB/WB); gross values ; Eurovent								
Heating capacity (kW)		7.25	9.24 / 9.27	10.65 / 12.5	15.2			
Input power (kW)		2.56	3.12 / 3.1	3.48 / 4.1	4.83			
COP		2.83	2.96 / 2.99	3.06 / 3.05	3.15			
Conditions :T water inlet/outlet 30/45°C and T air intake 7/6°C (DB/WB); net values								
COP		3.33	3.4 / 3.44	3.66 / 3.84	3.94			
Water flow (m³/h)		1.19	1.58 / 1.55	1.87 / 2.16	2.7			
Available head pump (kPa)		57	47 / 47	66 / 53	68			
Conditions :T water inlet/outlet 12/7°C and T air intake 35°C (DB); gross values ; Eurovent								
COOLING Cooling capacity (kW)		5.90	7.10 / 7.10	8.56 / 9.00	11.40			
Input power (kW)		2.55	3.14 / 3.09	3.33 / 3.73	4.98			
EER		2.31	2.26 / 2.30	2.57 / 2.41	2.29			
Water flow (m³/h)		1.01	1.22 / 1.22	1.48 / 1.51	1.98			
Available head pump (kPa)		64	59 / 59	82 / 80	84			
Refrigerant type		R 410 A	R 410 A	R 410 A	R 410 A			
Number of refrigeration circuits		1	1	1	1			
Number of compressors		1	1	1	1			
Expansion tank volume (l)		2	2	2	2			
Ø of male water connector		3/4"	3/4"	1"	1"			
Sound power level [dBA]		65	65	67	68			
Sound pressure level** [dBA]		37	37	39	40			
Length (mm)		1 190	1 190	1 190	1 190			
Depth (mm)		340	340	340	340			
Height (mm)		735	735	1 235	1 235			
Weight (kg)		98	98	128	133			

*Sound pressure: this level corresponds to that of a unit installed outdoors (free sound field), on a reflective surface, with the measurement being taken at a distance of 10 m.

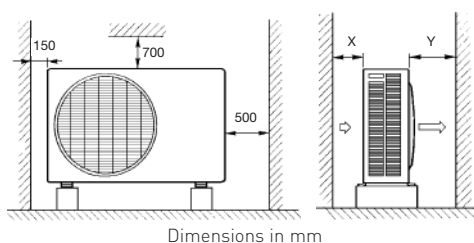
OPERATING LIMITS (pure water)

HEATING T outdoor air T water outlet maximum T water outlet minimum	- 16°C(DB) / + 43°C (DB) + 55°C + 25°C	COOLING T outdoor air T water outlet maximum T water outlet minimum	+ 10°C(DB) / + 43°C (DB) + 20°C + 5°C
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ACCESSORIES

Type	Models	Code
Set of 2 flexible water pipes length 1 m Ø 3/4"	PHRT 7 / 9	70600054
length 1 m Ø 1"	PHRT 12 / 16	70600055
Insulated 35 liters tank (6 water inlets/outlets)	PHRT 7 / 9 / 12 / 16	70600118
Insulated 70 liters tank (6 water inlets/outlets)	PHRT 7/9/12/16	70600218
Remote control keyboard and display	PHRT 7 / 9 / 12 / 16	70250055
communication interface - MODBUS protocol (please consult us for protocol details)	PHRT 7 / 9 / 12 / 16	70250056
Condensate tank heating cord kit	PHRT 7 / 9 / 12 / 16	70200055

PRECAUTIONS FOR INSTALLATION



Dimensions in mm

	X	Y
PHRT 7-9	150	1 000
PHRT 12 - 16	250	1 000

WATER CHILLERS WITH HYDRAULIC EQUIPMENT

R 407 C

10 12 162
PHRV 22/36
10 12 168
PHRV 44/72

PHRV from 24 to 76 kW
AIR TO WATER



- > Performances
- > Quality
- > Compact units



• **High quality components:**

Scroll compressor with sound insulation - Air heat exchanger: copper tubes with aluminium fins - Axial fan motor with variable speed control - Heat exchanger with AISI 316L stainless steel plates and heat insulation

• **Hydraulic equipment**

• **Functions of the control system**

- Elimination of the buffer receiver vessel
- Adjustment of the condensation pressure
- Automatic control of the circulating pump (anti-freeze and anti-seize function)
- Defrosting adjusted according to the outdoor temperature
- Alarm management by means of event logging
- External communication via a serial interface (Protocol Modbus)
- Output for controlling an additional device

Standard equipment

- ON/OFF main switch
- proportional head pressure control
- HP and LP switches
- water flow switch
- phase sequence tester
- hydraulic equipment (circulating pump with check valve, expansion tank, safety valve, air vent, water manometer, ...)
- hydraulic filter (connectable)
- condenser coil protection grille
- resistance case (for the compressor)

• **Simplified operation and maintenance:**

- Keypad/display fitted to the front panel
- Access panel to the electrical cabinet
- Access panels at the side and at the front
- Provision for HP and LP connections
- Holes to accommodate slings



70200240



70200240



70200480



PHRV 22 to 36



PHRV 44 to 72

Model		PHRV 22	PHRV 25	PHRV 32	PHRV 36
Code	400/3N/50	PHR 227 V	PHR 257 V	PHR 327 V	PHR 367 V
HEATING	Heating capacity (kW)	24	27.3	35.50	38.40
	Input power* (kW)	9	10.40	13.65	14.75
	COP*	2.67	2.63	2.62	2.60
	Water flow (m ³ /h)	4.21	4.68	5.94	7.20
	Available head pump (kPa)	185	145	140	95
COOLING	Heating capacity (kW)	20.8	25.8	30.3	33.5
	Input power* (kW)	8.85	9.70	13.55	14.55
	EER*	2.35	2.66	2.24	2.30
	Water flow (m ³ /h)	3.49	4.50	5.22	6.05
Available head pump (kPa)	215	160	200	165	
Refrigerant type		R 407 C	R 407 C	R 407 C	R 407 C
Number of refrigeration circuits		1	1	1	1
Number of compressors		1	1	1	1
Expansion tank volume (l)		8	8	8	8
Ø of male water connector		1"1/4	1"1/4	1"1/4	1"1/4
Sound power level (dBA)		79	78	80	82
Sound pressure level** (dBA)		51	50	52	54
Length	(mm)	975	975	975	975
Depth	(mm)	1 050	1 050	1 050	1 050
Height	(mm)	1 175	1 175	1 175	1 425
Weight	(kg)	303	305	327	363

Model		PHRV 44	PHRV 50	PHRV 64	PHRV 72
Code	400/3N/50	PHR 447 V	PHR 507 V	PHR 647 V	PHR 727 V
HEATING	Heating capacity (kW)	49	54	69.3	76
	Input power* (kW)	17.80	19	27	30.50
	COP*	2.75	2.84	2.57	2.49
	Water flow (m ³ /h)	8.42	9.29	11.92	12.89
	Available head pump (kPa)	215	180	150	120
COOLING	Heating capacity (kW)	40.6	52.6	60.60	65
	Input power* (kW)	17.7	21.20	27.10	29
	EER*	2.29	2.48	2.24	2.24
	Water flow (m ³ /h)	6.98	9.04	10.44	11.02
Available head pump (kPa)	250	200	210	200	
Refrigerant type		R 407 C	R 407 C	R 407 C	R 407 C
Number of refrigeration circuits		2	2	2	2
Number of compressors		2	2	2	2
Expansion tank volume (l)		18	18	18	18
Ø of male water connector		1"1/2	1"1/2	1"1/2	1"1/2
Sound power level (dBA)		78	76	80	85
Sound pressure level** (dBA)		50	48	52	57
Length	(mm)	1 955	1 955	1 955	1 955
Depth	(mm)	1 050	1 050	1 050	1 050
Height	(mm)	1 175	1 175	1 175	1 425
Weight	(kg)	516	520	554	626

* Brut value (without circulation pump)

** Sound pressure: this level corresponds to that of a unit installed outdoors (free sound field), on a reflective surface, with the measurement being taken at a distance of 10 m.

Nominal conditions

HEATING T outdoor air + 7°C (DB)
 T outdoor air + 6°C (WB)
 T water inlet + 40°C
 T water outlet + 45°C

COOLING T outdoor air + 35°C
 T water inlet + 12°C
 T water outlet + 7°C

Operating limits (pure water)

HEATING T water outlet maximum + 50°C
 T water outlet minimum + 30°C

COOLING T water outlet maximum + 15°C
 except PHRV 36 and 72 : 20°C
 T water outlet minimum + 4°C

Operating limits :
 please. see technical instructions

ACCESSORIES

Type	Models	Code
Remote control keyboard and display	PHRV 22 to 36	70250055
	PHRV 44 to 72	70250057
RS 485 communication interface - MODBUS protocol	PHRV 22 to 72	70250056
HP and LP gauges	PHRV 22 to 36	70970007
	PHRV 44 to 72	70970007 x 2
Set of 2 flexible water pipes	length 1 m Ø 1"1/4 PHRV 22 to 36	70600027
	length 1.5 m Ø 1"1/2 PHRV 44 to 72	70600034
Set of 4 anti-vibration pads 25 mm thick	PHRV 22 to 72	70600035
150 liters Tank with 800 W anti-freeze resistance	PHRV 22 to 36	70600110
300 liters Tank with 800 W anti-freeze resistance	PHRV 44 to 72	70600120
150 liters Tank + heating 24 kW	PHRV 22 to 36	70200240
300 liters Tank + heating 48 kW	PHRV 44 to 72	70200480