Glycol chillers

Indirect commercial and industrial refrigeration systems

Easy installation

100 % natural solution

Hydraulic unit incorporated

INTARCON

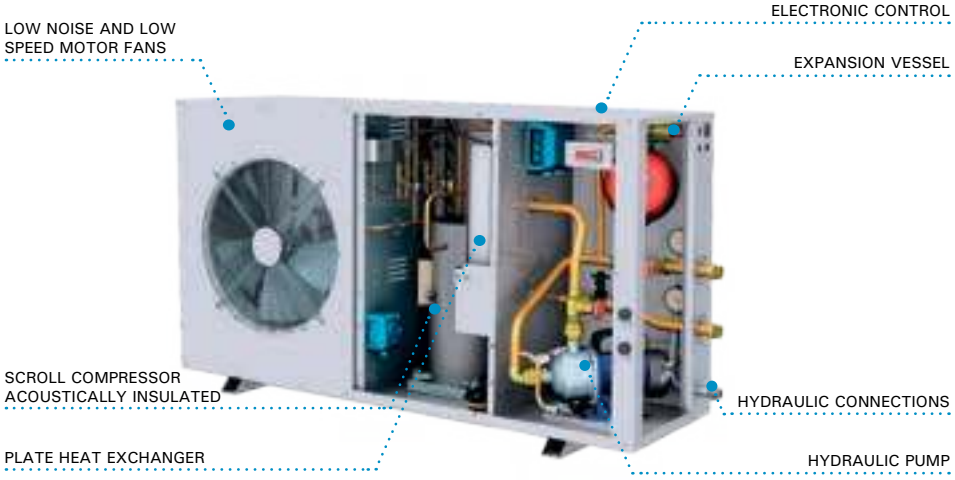
R-290 *Sigilus* | Chillers

- ❄ Tropicalised design for ambient temperature of 45 ºC.
- ❄ 100 % factory tested equipment.
- ❄ Acoustically insulated scroll compressor.
- ❄ Built-in hydraulic unit.

R-290 *Sigilus* is the range of chiller in silent air-condensed construction for commercial refrigeration applications, using a low propane charge as the primary refrigerant contained in the chiller, and water, glycol or brine as the secondary refrigerant for cold transport.

Features

- ▶ 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- ▶ R-290 refrigerant.
- ▶ Hermetic scroll compressor mounted on dampers and acoustically insulated, with internal clixon and crankcase heater.
- ▶ Large surface condensing coil, made of copper tubes and aluminium fins, with tropicalised sizing for ambient temperature of 50 ºC.
- ▶ Motor fan with proportional condensing pressure control by means of speed variation.
- ▶ Refrigeration circuit made of annealed copper tube equipped with ATEX high and low pressure switches, safety valves and filter.
- ▶ Hydraulic circuit made of copper pipe, with threaded connections, fill/drain valve, air vent, flow switch, thermometers and inlet/outlet pressure gauges.
- ▶ Built-in hydraulic module.
- ▶ Electric power and control panel, with general differential protection, motor fan circuit breaker and compressor circuit breaker and thermistor.
- ▶ Electronic control with digital control interface.
- ▶ Acoustic and light alarm.
- ▶ Leak detector in the compressor compartment.



Propane

Propane, or R-290, is a hydrocarbon used as a refrigerant in compact commercial and industrial refrigeration equipment. It has a low environmental impact and excellent thermodynamic properties.

- Global Warming Potential: GWP = 0.02 according to IPCC AR6
- Boiling point at 1.013 bar (ºC): -42.10
- Temperature slide (ºC): 0
- Safety classification: A3. Non-toxic but extremely flammable.

Scroll compressor

Hermetic scroll compressors are characterised by their great robustness and reliability of operation, and as they are cooled exclusively by the refrigerant gas, they provide effective soundproofing.

400 V-III-50 Hz | High temperature | Scroll compressor | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [1] I/O water temperature 12/7 °C	Input power (kW)	Max. input current (A)	Condenser Fan Ø (mm)	Condenser Air flow (m³/h)	Refrigerant charge (kg)	Water flow (m³/h)	Hydraulic connection	Weight (kg)	SPL dB(A) [3]
R-290	1x Scroll	**AWF-SD-6 017**	2 1/2	ZB17KCU	7.0	2.0	7.2	1x Ø 450	4 250	< 0.7	1.2	1"	140	23
		AWF-SD-6 025	4	ZB25KCU	9.8	2.8	9.2	1x Ø 450	4 250	< 0.7	1.7	1 1/4"	160	27
		AWF-SD-7 037	6	ZB37KCU	13.7	4.2	11.8	1x Ø 450	4 500	< 0.7	2.4	1 1/4"	190	29
		AWF-SD-7 049	8	ZB49KCU	17.0	5.3	19.8	2x Ø 450	7 000	< 0.7	2.9	1 1/2"	200	33

400 V-III-50 Hz | Positive temperature | Scroll compressor | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [2] I/O 35 % propylene glycol temperature -2/-8 °C	Input power (kW)	Max. input current (A)	Condenser Fan Ø (mm)	Condenser Air flow (m³/h)	Refrigerant charge (kg)	Glycol flow (m³/h)	Hydraulic connection	Weight (kg)	SPL dB(A) [3]
R-290	1x Scroll	**MWF-SD-6 017**	2 1/2	ZB17KCU	4.1	1.8	7.2	1x Ø 450	4 250	< 0.7	0.6	1"	140	23
		MWF-SD-6 025	4	ZB25KCU	5.8	2.5	9.2	1x Ø 450	4 250	< 0.7	0.9	1"	160	27
		MWF-SD-7 037	6	ZB37KCU	8.3	3.6	11.8	1x Ø 450	4 500	< 0.7	1.3	1 1/4"	190	29
		MWF-SD-7 049	8	ZB49KCU	10.4	4.6	19.8	2x Ø 450	7 000	< 0.7	1.6	1 1/4"	200	33

Options

- Protective grille for external coil.
- Polyurethane coating on the condensing coil.
- Voltage and phase failure control.

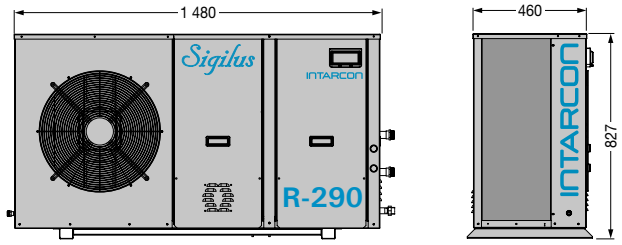
[1] Nominal performance high temperature: 35 °C ambient temperature with water inlet/outlet at 12/7 °C.

[2] Nominal performance positive temperature: 35 °C ambient temperature with glycol inlet/outlet at -2/-8 °C, with a propylene glycol concentration of 35 %.

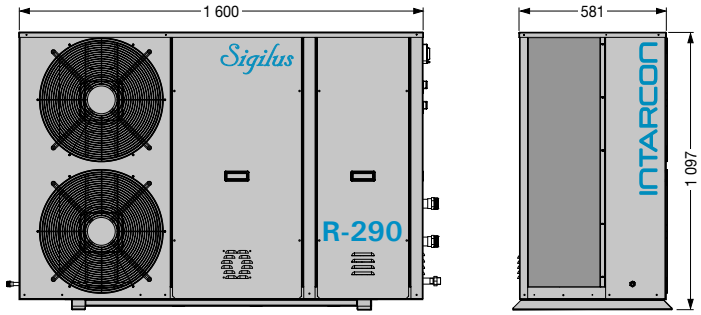
[3] Sound pressure level of the condenser referred to dB(A) sound pressure level, measured in the open field at 10 m distance.

Dimensions

6 series



7 series



Dimensions in mm.

intarCUBE R-290 | Chillers

- ❄ Natural refrigerant R-290.
- ❄ High energy efficiency.
- ❄ Easy installation.

Water, glycol or brine chiller for commercial and industrial refrigeration applications with reduced R-290 load, in footprint construction with built-in hydraulic unit.

Features

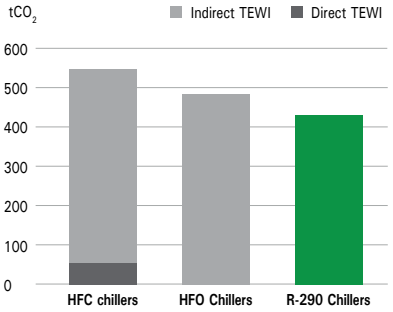
- 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-290 refrigerant.
- Self-supporting body made of galvanised steel sheet with polyester paint for outdoor use, with thermo-acoustic insulation of elastomeric foam. Side panels that can be opened around the entire perimeter.
- Separate compressor compartment with leak detector and ATEX extraction fan.
- Tandem or trio of scroll compressors for R-290 with acoustic insulation; or tandem of semihermetic compressors for R-290 with capacity control and unloaded start, with crankcase unloaded, with ATEX class crankcase heater.
- Refrigerating circuit made of annealed copper tube with soldered joints, filter drier, pressure filter drier, ATEX high and low pressure switches, pressure transducers and temperature probes.
- Condenser coil of copper microtube and aluminium fins.
- Electronic fans.
- Electrical control and power panel with magneno-thermal and differential protection independent of compressors, fans and pumps.
- Stainless steel plate evaporator with electronic expansion valve.
- Economiser by means of internal heat exchanger.
- Programmable Emerson electronic control unit with refrigeration control, condensing fan control with floating set point, pump control, etc.
- Built-in hydraulic group made of copper pipe with threaded connections, with glycol circulating pump with stainless steel body and impeller, and optional backing pump, expansion vessel, safety valve, mesh filter, thermometers and pressure gauges, air vent and drainage inlet (except series 8).
- Threaded hydraulic connections.

Natural refrigerant R-290

R-290 or propane is naturally occurring in the environment with virtually zero greenhouse effect (GWP = 0.02 according to IPCC AR6).

R-290 has excellent thermodynamic properties and high efficiency in refrigeration production.

The TEWI or overall global warming impact of R-290 chiller is 20 % lower than that of HFC, not only because of the zero direct effect, but also due to the higher energy efficiency.



TEWI over a 15-year life cycle of a 100 kW refrigeration chiller. Calculation of electricity consumption according to Ecodesign. Annual leakage rate of 5 %. Emission factor 0.15 kg CO_2/kWh.

Reduced refrigerant charge

intarCUBE chillers are designed with a reduced R-290 charge of less than 5 kg, respecting the refrigerant charge limits in publicly accessible premises.

Safety measures against the risk of explosive atmospheres are incorporated. R-290 is a flammable refrigerant, class A3, which is confined in a ventilated envelope in compliance with EN 378 standard.

400 V-III-50 Hz | High temperature | Scroll or semihermetic compressor | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [1] I/O water temperature 12/7 °C	Input power (kW)	Ecodesign SEPR [3]	Max. input current (A)	Condenser Fan Ø (mm)	Condenser Air flow (m³/h)	Water flow (m³/h)	Hydraulic connection	Weight (kg)	SPL dB(A) [4]
R-290	2x Scroll	**AWV-SD-6 0502**	8	2x ZB25KCU	**19.7**	6.0	6.9	19	2x Ø 450	9 000	3.4	1 1/2"	400	31
		AWV-SD-6 0742	12	2x ZB37KCU	**27.6**	9.1	6.8	26	2x Ø 450	9 000	4.7	2"	410	32
		AWV-SD-6 0982	16	2x ZB49KCU	**33.3**	11.9	6.4	34	2x Ø 450	9 000	5.7	2"	430	36
	3x Scroll	**AWV-SD-7 0753**	12	3x ZB25KCU	**29.7**	8.8	7.2	27	3x Ø 450	14 400	5.1	2"	550	32
		AWV-SD-7 1113	18	3x ZB37KCU	**41.7**	13.0	7.4	38	3x Ø 450	14 400	7.1	2"	570	34
		AWV-SD-7 1473	24	3x ZB49KCU	**50.4**	17.1	6.8	50	3x Ø 450	14 400	8.6	2 1/2"	640	38
	2x Semih.	**AWV-KD-8 0242**	24	2x S12-42AXH	**64.5**	21.5	6.9	45	2x Ø 630	21 000	11.0	2 1/2"	909	47
		AWV-KD-8 0302	30	2x S15-52AXH	**74.7**	26.9	6.7	59	2x Ø 630	21 000	12.8	2 1/2"	924	49
		AWV-KD-8 0402	40	2x S20-56AXH	**79.7**	31.0	6.7	73	2x Ø 630	21 000	13.6	2 1/2"	936	51

400 V-III-50 Hz | Positive temperature | Scroll or semihermetic compressor | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [2] I/O 35 % propylene glycol temperature -2/-8 °C	Input power (kW)	Ecodesign SEPR [3]	Max. input current (A)	Condenser Fan Ø (mm)	Condenser Air flow (m³/h)	Glycol flow (m³/h)	Hydraulic connection	Weight (kg)	SPL dB(A) [4]
R-290	2x Scroll	**MWV-SD-6 0502**	8	2x ZB25KCU	**12.0**	5.3	3.7	22	2x Ø 450	9 000	1.8	1 1/4"	400	31
		MWV-SD-6 0742	12	2x ZB37KCU	**17.3**	7.5	3.9	26	2x Ø 450	9 000	2.7	1 1/2"	410	32
		MWV-SD-6 0982	16	2x ZB49KCU	**21.2**	9.5	3.8	31	2x Ø 450	9 000	3.3	1 1/2"	430	36
	3x Scroll	**MWV-SD-7 0753**	12	3x ZB25KCU	**18.1**	7.8	3.8	33	3x Ø 450	14 400	2.8	1 1/2"	550	32
		MWV-SD-7 1113	18	3x ZB37KCU	**26.0**	11.1	4.1	38	3x Ø 450	14 400	4.0	2"	570	34
		MWV-SD-7 1473	24	3x ZB49KCU	**31.9**	13.9	4.2	43	3x Ø 450	14 400	4.9	2"	640	38
	2x Semih.	**MWV-KD-8 0242**	24	2x S12-42AXH	**38.9**	17.0	3.9	45	2x Ø 630	21 000	6.0	2"	909	47
		MWV-KD-8 0302	30	2x S15-52AXH	**45.4**	20.2	3.9	59	2x Ø 630	21 000	7.0	2"	924	49
		MWV-KD-8 0402	40	2x S20-56AXH	**48.6**	23.0	3.8	73	2x Ø 630	21 000	7.5	2"	936	51

Options

- Machine room version with EC radial fans for exhaust air ducting.
- Anti-corrosion treatment based on polyurethane coating for the condensing coil.
- Electronic control and spare driver.
- Network analyser.
- Silentblocks for equipment installation.
- Heat recovery (20 or 80 % heat from the condenser) for hot water generation.

[1] Nominal performance high temperature: 35 °C ambient temperature with water inlet/outlet at 12/7 °C.

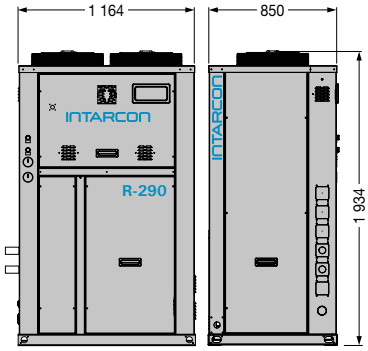
[2] Nominal performance positive temperature: 35 °C ambient temperature with glycol inlet/outlet at -2/-8 °C, with a propylene glycol concentration of 35 %.

[3] Seasonal performance factor (SEPR) according to Commission Regulation (EU) 2015/1095 and (EU) 2016/2281.

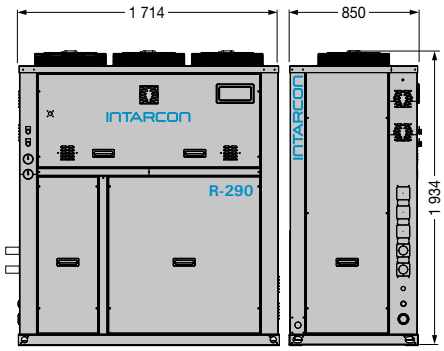
[4] Sound pressure level of the condenser referred to dB(A) sound pressure level, measured in the open field at 10 m distance.

Dimensions

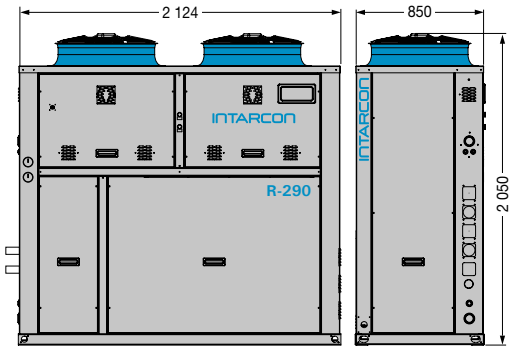
6 series



7 series



8 series



Dimensions in mm.

intarWatt R-290 | Chillers

- Built-in hydraulic unit.
- Low refrigerant charge R-290.
- No need for machine room.
- Plug & Play system.
- Optimised compact system, with minimum maintenance.

Water, glycol or brine chiller for outdoor industrial refrigeration applications.

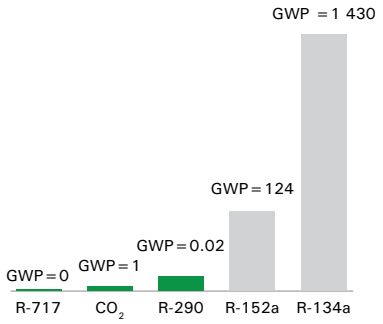
Features

- 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Reduce refrigerant charge of R-290.
- Manufactured with galvanised steel casing and polyester paint.
- Semihermetic compressor tandem for R-290 with capacity control and unloaded start, ATEX crankcase heater.
- Oil separator and oil balancing line.
- Micro-tube V condensing coil with aluminium fins and copper piping 7 mm copper pipes.
- Two electronic fans per V with variable speed.
- Plate heat exchanger with electronic expansion valve per module.
- Heat exchanger for liquid subcooling and suction superheating.
- Cooling circuit made of annealed copper tube with soldered connections, filter drier, ATEX high and low pressure switches, pressure transducers and temperature probes.
- Hydraulic circuit made of copper pipe with threaded connections, fill/drain valve, air vent, flow switch, thermometers and inlet/outlet pressure gauges.
- External IP55 electrical panel with extraction fan. Individual protection of compressors and fans.
- Dixell iPro control, with variable refrigeration control (digital compressor only), condensing pressure control with floating set point, and variable glycol flow control.

Natural, environmentally friendly and efficient refrigerant

R-290 or propane is a natural refrigerant with a very low greenhouse effect (GWP = 0.02 according to IPCC AR6), widely available on the market. It is a pure substance, with no evaporation slip, and has excellent thermodynamic performance, comparable only to ammonia (R-717) or difluoroethane (R-152a).

Glycol and brine are liquid, biodegradable, food grade secondary refrigerants.



R-290 is a low toxicity, but high flammability (class A3) refrigerant. The chiller comply with the safety requirements of the European standard EN-378:2016, especially with regard to refrigerant charge limitations in outdoor installations, or machine rooms.

Reliable cold distribution, free of refrigerant leaks

Cooling distribution is carried out by pumping glycol water or brine at low pressure through hydraulic piping, free of refrigerant leaks, with no risk of service interruption and low maintenance costs.

Variable glycol flow operation

Variable liquid flow control system adjust circulator pump speed to cooling demand and modulates the cooling capacity of the compressors according to the temperature and the glycol flow rate, to ensure a constant flow temperature.

400 V-III-50 Hz | High temperature | Semihermetic compressors | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) I/O water temperature 12/7 °C (1)	Input power (kW)	Max. input current (A)	Condenser Fan Ø (mm)	Condenser Air flow (m³/h)	Water flow (m³/h)	Hydraulic connection	Weight (kg)	SPL dB(A) (3)
R-290	2x Semihermetics	**AWW-KD-1 0502**	50	2x V25-71	111.5	34.3	79.1	2x Ø 800	46 000	19.2	DN80	1 128	50
		AWW-KD-1 0602	60	2x V30-84	126.9	39.9	90.9	2x Ø 800	46 000	21.8	DN80	1 137	53
		AWW-KD-1 0702	70	2x V35-103	145.8	48.0	95.8	2x Ø 800	44 000	25.0	DN80	1 267	52
		AWW-KD-1 0802	80	2x Z40-126	177.3	59.6	122.3	2x Ø 800	44 000	30.5	DN80	1 358	55
		AWW-KD-1 1002	100	2x Z50-154	202.8	72.6	153.0	2x Ø 800	44 000	35.0	DN100	1 375	55
	4x Semiherm.	**AWW-KD-2 1204**	120	2x2x V30-84	253.8	79.8	181.8	4x Ø 800	92 000	43.6	DN100	2 274	56
		AWW-KD-2 1404	140	2x2x V35-103	291.5	96.0	191.5	4x Ø 800	88 000	50.1	DN100	2 534	55
		AWW-KD-2 1604	160	2x2x Z40-126	354.5	119.2	244.6	4x Ø 800	88 000	60.9	DN125	2 716	58
		AWW-KD-2 2004	200	2x2x Z50-154	405.7	145.1	305.9	4x Ø 800	88 000	69.9	DN125	2 750	58
	6x Semih.	**AWW-KD-3 2106**	210	3x2x V35-103	437.3	144.0	287.3	6x Ø 800	132 000	75.1	DN125	3 801	57
		AWW-KD-3 2406	240	3x2x Z40-126	531.8	178.8	366.8	6x Ø 800	132 000	91.4	DN125	4 074	60
		AWW-KD-3 3006	300	3x2x Z50-154	608.5	217.7	459.0	6x Ø 800	132 000	104.9	DN150	4 125	60
	8x Se.	**AWW-KD-4 3208**	320	4x2x Z40-126	709.0	238.4	489.1	8x Ø 800	176 000	121.8	DN150	5 432	61
		AWW-KD-4 4008	400	4x2x Z50-154	811.3	290.3	611.9	8x Ø 800	176 000	139.8	DN150	5 500	61

400 V-III-50 Hz | Positive temperature | Semihermetic compressors | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) I/O 35 % propylene glycol temperature -2/-8 °C (2)	Input power (kW)	Max. input current (A)	Condenser Fan Ø (mm)	Condenser Air flow (m³/h)	Glycol flow (m³/h)	Hydraulic connection	Weight (kg)	SPL dB(A) (3)
R-290	2x Semihermetics	**MWW-KD-1 0502**	50	2x V25-71	68.1	28.1	79.1	2x Ø 800	46 000	10.6	2 1/2"	1 508	50
		MWW-KD-1 0602	60	2x V30-84	77.7	32.0	90.9	2x Ø 800	46 000	12.1	2 1/2"	1 514	53
		MWW-KD-1 0702	70	2x V35-103	85.2	38.5	95.8	2x Ø 800	44 000	13.2	DN80	1 524	52
		MWW-KD-1 0802	80	2x Z40-126	108.1	46.7	122.3	2x Ø 800	44 000	16.8	DN80	1 620	55
		MWW-KD-1 1002	100	2x Z50-154	118.4	58.9	153.0	2x Ø 800	44 000	18.4	DN80	1 628	55
	4x Semiherm.	**MWW-KD-2 1204**	120	2x2x V30-84	155.4	63.9	181.8	4x Ø 800	92 000	24.1	DN100	3 028	56
		MWW-KD-2 1404	140	2x2x V35-103	170.3	77.0	191.5	4x Ø 800	88 000	26.4	DN100	3 048	55
		MWW-KD-2 1604	160	2x2x Z40-126	216.1	93.4	244.6	4x Ø 800	88 000	33.5	DN100	3 240	58
		MWW-KD-2 2004	200	2x2x Z50-154	236.7	117.9	306.0	4x Ø 800	88 000	36.8	DN100	3 256	58
	6x Semih.	**MWW-KD-3 2106**	210	3x2x V35-103	255.5	115.5	287.3	6x Ø 800	132 000	39.6	DN100	4 572	57
		MWW-KD-3 2406	240	3x2x Z40-126	324.2	140.1	366.8	6x Ø 800	132 000	50.4	DN125	4 860	60
		MWW-KD-3 3006	300	3x2x Z50-154	355.1	176.8	458.9	6x Ø 800	132 000	55.1	DN125	4 884	60
	8x Se.	**MWW-KD-4 3208**	320	4x2x Z40-126	432.2	186.8	489.1	8x Ø 800	176 000	67.1	DN125	6 480	61
		MWW-KD-4 4008	400	4x2x Z50-154	473.5	235.7	611.9	8x Ø 800	176 000	73.5	DN125	6 512	61

Options

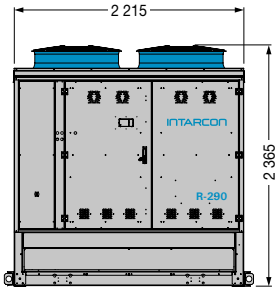
- Variable flow pump to control glycol flow.
- Anti-corrosion treatment based on polyurethane coating for the condensing coil.
- Electronic control and spare driver.
- Network analyser.
- Silentblocks for equipment installation.
- Heat recovery (20 or 80 % condenser heat) for hot water generation.
- Independent compressor compartment with leak detector and ATEX extraction fans.

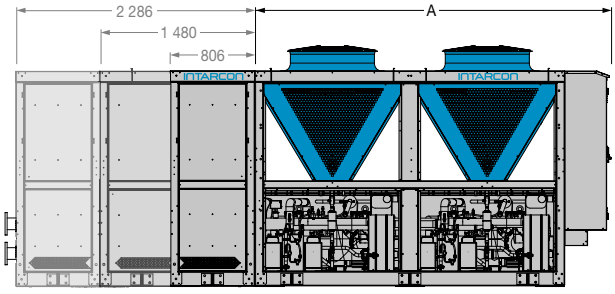
(1) Nominal performance high temperature: 35 °C ambient temperature with water inlet/outlet at 12/7 °C.

(2) Nominal performance positive temperature: 35 °C ambient temperature with glycol inlet/outlet at -2/-8 °C, with a propylene glycol concentration of 35 %.

(3) Sound pressure level of the condenser referred to dB(A) sound pressure level, measured in the open field at 10 m distance.

Dimensions





Pump set (*)

Dimensions (mm)	A
1 series	1 901
2 series	3 377
3 series	4 853
4 series	6 329

(*) Dimension of the additional module according to the configuration of the pump set of the equipment.

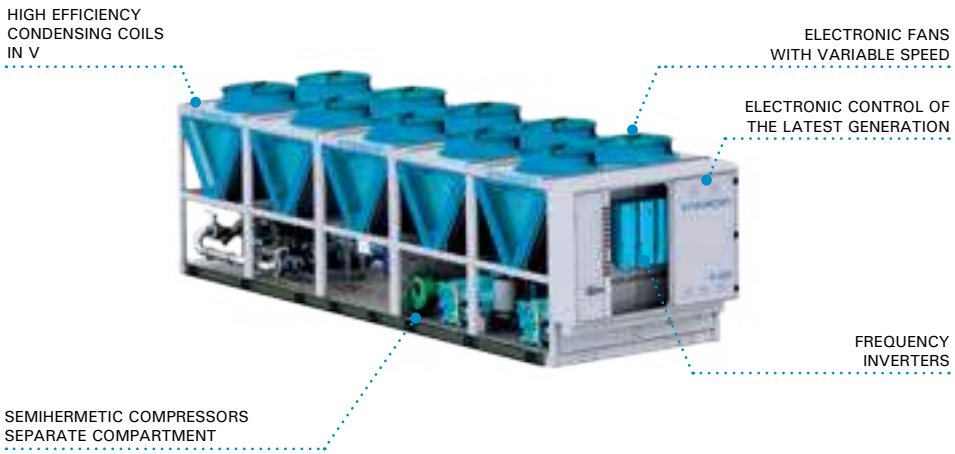
Full INVERTER R-290 chillers

- Full INVERTER compressors.
- Natural refrigerant R-290.
- High energy efficiency.
- Easy installation.

Glycol chillers for commercial and industrial refrigeration applications with reduced R-290 load and full INVERTER compressors.

Features

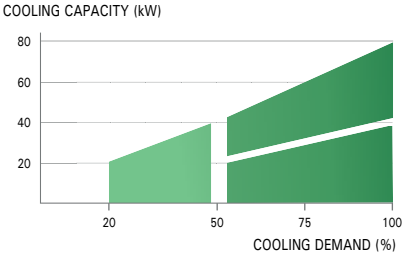
- 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Reduce refrigerant charge of R-290.
- Self-supporting body made of galvanised sheet steel with polyester weatherproof paint.
- Separate compressor compartment with leak detector and ATEX extraction fan (optional in WW series).
- Semihermetic R-290 compressors with unloaded start-up, with ATEX class crankcase heater, with Inverter drive in each compressor (Full INVERTER).
- Cooling circuit made of annealed copper tube with soldered connections, filter drier, ATEX high and low pressure switches, pressure transducers and temperature probes.
- Microchannel condenser coils with Polyester Powder Coating treatment.
- Variable flow electronic fans.
- Stainless steel plate evaporators with electronic expansion valve.
- Hydraulic circuit made of copper pipe with threaded connections, fill/drain valve, air vent, flow switch, thermometers and inlet/outlet pressure gauges.
- Watertight electrical control and power panel with independent protection for compressors, fans and pumps.
- Programmable Emerson electronic control unit with refrigeration control with floating set point (external signal 0-10 V), condensing fan control with floating set point, pump control, external signal for Silence mode, alarm light and acoustic leak detection light.



Full INVERTER

The Full INVERTER system provides precise control over the glycol supply temperature, in the face of a variable refrigeration demand.

This system controls sequentially and simultaneously the capacity of the compressors, varying the motor speed from 30 to 70 Hz, and avoiding starts and stops, with significant energy savings.



Reduced refrigerant charge

Full INVERTER WT series
R-290 < 5 kg/circ.

Full INVERTER WW series
R-290 < 10 kg/circ.

The R-290 chiller units are designed with multiple refrigerant circuits in parallel, with independent condensers.
Each circuit has a reduced refrigerant charge of R-290, to comply with the charge limits of the European standard EN378, to allow the chillers to be installed even outdoors in commercial establishment.

Category of the establishment	Location of equipment	
	Indoor (type 1)	Outdoor (type 3)
A. Public access	1.5 kg	5 kg
B. Supervised access	2.5 kg	10 kg
C. Restricted access	10 kg	No limit

400 V-III-50 Hz | High temperature | Semihermetic compressor Full INVERTER | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [1] I/O water temperature 12/7 °C [1]	Input power (kW)	Ecodesign SEPR [3]	Max. input current (A)	Condenser Fan Ø (mm)	Condenser Air flow (m³/h)	Water flow (m³/h)	Hydraulic connection	Weight (kg)	SPL dB(A) [4]
R-290	1x Semiherm.	**AWT-FD-1 0121**	12i	S12-42AXH Full Inverter	40.4	14.9	5.0	26	1x Ø 800	17 000	7.0	2"	830	48
		AWT-FD-1 0151	15i	S15-52AXH Full Inverter	44.6	17.2	5.1	33	1x Ø 800	17 000	7.6	2"	840	49
		AWT-FD-1 0201	20i	S20-56AXH Full Inverter	49.8	19.2	4.9	41	1x Ø 800	17 000	8.7	2"	850	50
		AWT-FD-1 0251	25i	V25-71AXH Full Inverter	55.1	22.5	5.5	42	1x Ø 800	17 000	9.5	2 1/2"	920	50
	2x Semihermetic	**AWT-FD-2 0242**	24i	2x S12-42AXH Full Inverter	80.8	29.7	5.0	52	2x Ø 800	34 000	14.0	2 1/2"	1 210	51
		AWT-FD-2 0302	30i	2x S15-52AXH Full Inverter	89.2	34.5	5.1	67	2x Ø 800	34 000	15.2	3"	1 220	52
		AWT-FD-2 0402	40i	2x S20-56AXH Full Inverter	99.6	38.5	4.9	81	2x Ø 800	34 000	17.4	3"	1240	53
		AWT-FD-2 0502	50i	2x V25-71AXH Full Inverter	110	45.1	5.5	83	2x Ø 800	34 000	18.9	3"	1 380	53
		AWW-FD-1 0502	50i	2x V25-71AXH Full Inverter	120	45.5	6.2	85	2x Ø 800	46 000	18.9	DN80	1 650	51
		AWW-FD-1 0702	70i	2x V35-103AXH Full Inverter	149	60.2	5.9	106	2x Ø 800	44 000	25.6	DN80	1 670	53
		AWW-FD-2 0802	80i	2x Z40-126AXH Full Inverter	220	77.6	6.4	144	4x Ø 800	92 000	37.7	DN100	2 940	56
		AWW-FD-2 1002	100i	2x Z50-168AXH Full Inverter	260	98.6	5.8	173	4x Ø 800	88 000	44.5	DN100	2 950	58
	3x Sh	**AWW-FD-3 1203**	120i	3x Z40-126AXH Full Inverter	360	116	6.4	215	6x Ø 800	138 000	61.7	DN125	4 400	58
		AWW-FD-3 1503	150i	3x Z50-168AXH Full Inverter	390	148	5.8	259	6x Ø 800	132 000	66.8	DN125	4 415	60
	4x	**AWW-FD-4 2004**	200i	4x Z50-168AXH Full Inverter	520	197	5.8	420	8x Ø 800	176 000	89.1	DN125	5 880	61

400 V-III-50 Hz | Positive temperature | Semihermetic compressor Full INVERTER | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [1] I/O 35 % propylene glycol temperature -2/-8 °C [2]	Input power (kW)	Ecodesign SEPR [3]	Max. input current (A)	Condenser Fan Ø (mm)	Condenser Air flow (m³/h)	Glycol flow (m³/h)	Hydraulic connection	Weight (kg)	SPL dB(A) [4]
R-290	1x Semiherm.	**MWT-FD-1 0121**	12i	S12-42AXH Full Inverter	24.6	12.6	3.6	26	1x Ø 800	17 000	3.8	2"	830	48
		MWT-FD-1 0151	15i	S15-52AXH Full Inverter	28.4	14.6	3.7	33	1x Ø 800	17 000	4.4	2"	840	49
		MWT-FD-1 0201	20i	S20-56AXH Full Inverter	30.2	16.3	3.6	41	1x Ø 800	17 000	4.6	2"	850	50
		MWT-FD-1 0251	25i	V25-71AXH Full Inverter	35.8	19.1	3.6	42	1x Ø 800	17 000	5.8	2"	920	50
	2x Semihermetic	**MWT-FD-2 0242**	24i	2x S12-42AXH Full Inverter	49.1	25.2	3.6	52	2x Ø 800	34 000	7.5	2 1/2"	1 210	51
		MWT-FD-2 0302	30i	2x S15-52AXH Full Inverter	56.8	29.2	3.7	67	2x Ø 800	34 000	8.7	2 1/2"	1 220	52
		MWT-FD-2 0402	40i	2x S20-56AXH Full Inverter	60.3	32.6	3.6	81	2x Ø 800	34 000	9.3	2 1/2"	1 240	53
		MWT-FD-2 0502	50i	2x V25-71AXH Full Inverter	71.6	38.2	3.6	83	2x Ø 800	34 000	11.6	2 1/2"	1 380	53
		MWW-FD-1 0502	50i	2x V25-71AXH Full Inverter	85.7	38.6	3.8	85	2x Ø 800	46 000	13.1	DN80	1 650	51
		MWW-FD-1 0702	70i	2x V35-103AXH Full Inverter	112	51.0	3.6	106	2x Ø 800	44 000	16.3	DN80	1 670	53
		MWW-FD-2 0802	80i	2x Z40-126AXH Full Inverter	145	65.8	3.7	144	4x Ø 800	92 000	22.2	DN100	2 940	56
		MWW-FD-2 1002	100i	2x Z50-168AXH Full Inverter	176	83.6	3.5	173	4x Ø 800	88 000	27.0	DN100	2 950	58
	3x Sh	**MWW-FD-3 1203**	120i	3x Z40-126AXH Full Inverter	217	99.0	3.7	215	6x Ø 800	138 000	33.3	DN100	4 400	58
		MWW-FD-3 1503	150i	3x Z50-168AXH Full Inverter	264	125.0	3.5	259	6x Ø 800	132 000	40.4	DN100	4 415	60
	4x	**MWW-FD-4 2004**	200i	4x Z50-168AXH Full Inverter	351	167.0	3.5	420	8x Ø 800	176 000	53.9	DN125	5 880	61

Options

- Partial heat recovery by plate heat exchanger (on request).
- Total heat recovery by parallel condensation on plate heat exchanger, with proportional 3-way valve (on request).
- Kit for low outdoor temperature operation (< -15°C) with pressure control valves, 5L liquid receiver, electrical panel heating.
- Coil made of copper microtube and aluminium fins, with optional polyurethane corrosion protection.
- Hydraulic group with glycol circulating pump with stainless steel body and impeller, expansion vessel, safety valve, mesh filter, thermometers and pressure gauges, air vent, drain port and service valves.
- Standby pump.
- Electronic controller and spare driver.
- Safety valve line.

[1] Nominal performance high temperature: 35 °C ambient temperature with water inlet/outlet at 12/7 °C.

[2] Nominal performance positive temperature: 35 °C ambient temperature with glycol inlet/outlet at -2/-8 °C, with a propylene glycol concentration of 35 %.

[3] Seasonal performance factor (SEPR) according to Commission Regulation (EU) 2015/1095 and (EU) 2016/2281.

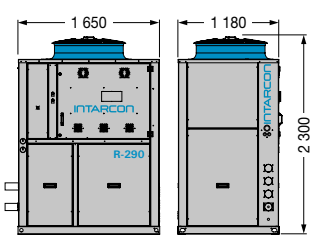
[4] Sound pressure level of the condenser referred to dB(A) sound pressure level, measured in the open field at 10 m distance.

Dimensions WW (mm)	A
1 series	1 901
2 series	3 377
3 series	4 853
4 series	6 324

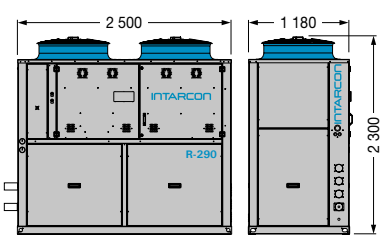
[*] Dimension of the additional module according to the configuration of the pump set of the equipment.

Dimensions

WT-1 series

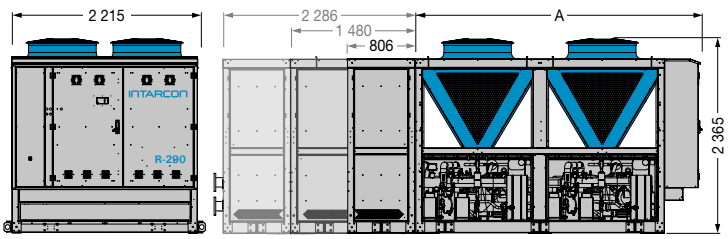


WT-2 series



Dimensions in mm.

WW series



Pump set [*]

Pump sets for WV series

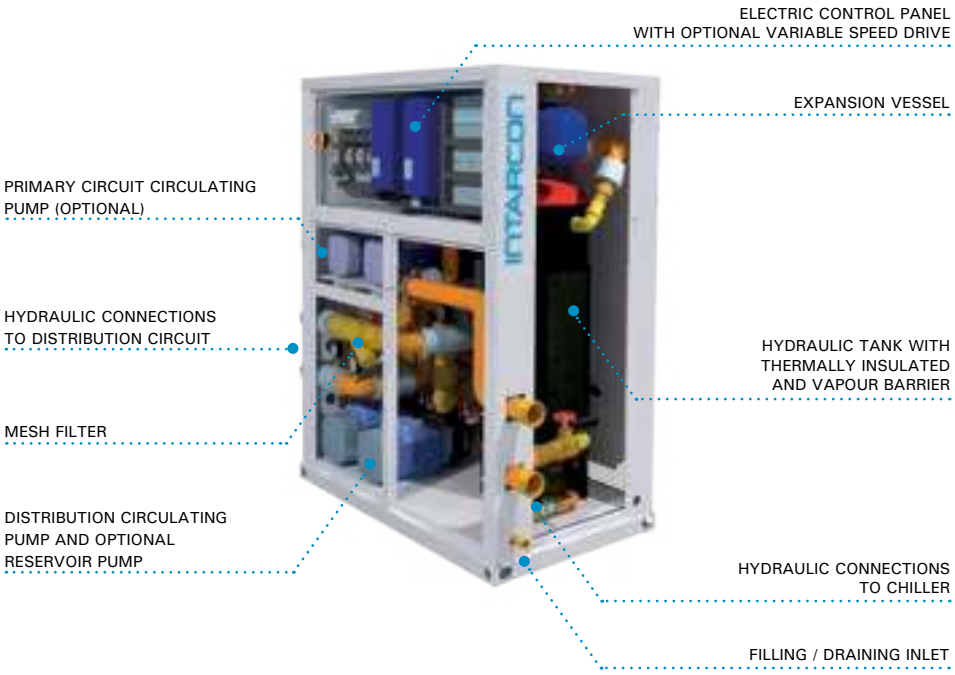
- Easily integrated modular construction.
- Optimised water and glycol assemblies.
- Reduced footprint.

Closed-circuit pump sets glycol, assembled in galvanised sheet steel bodywork and structure with polyester paint for outdoor installation.

Features

- 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Glycol circulating pump with stainless steel impeller and optional back-up pump.
- Buffer tank with high density polyurethane foam insulation and vapour barrier.
- Closed membrane expansion vessel.
- Mesh filter.
- Glycerine thermometers and pressure gauges.
- Air vent.
- Drain connection.
- Threaded hydraulic connections.
- Electrical control and power panel with magneto-thermal protection and independent differential for each pump, and electronic control unit for the management and rotation of secondary circuit pumps.

B version scheme

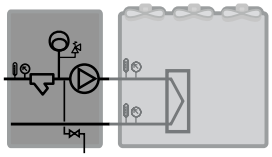


Versions

- A version

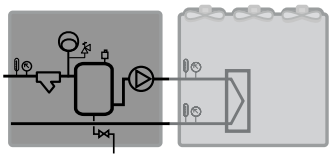
GV-AH-1: Primary pump set

Simple hydraulic unit with circulating pump, mesh filter and expansion vessel.



GV-AH-2: Primary pump set unit with buffer tank

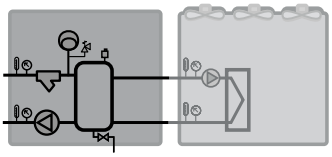
Pump set with medium or high pressure circulating pump at constant flow rate, for connection to one or more chillers.



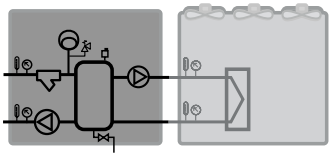
- B version

GV-BH-2: Secondary circuit pump set

Secondary circuit hydraulic unit, with buffer tank and medium or high pressure circulating pump at constant or variable flow rate (optional), for connection to one or more chiller equipped with primary circuit pump.



Optional: low-pressure primary pump in hydraulic unit, for connection to a chillers.



400 V-III-50 Hz | High temperature | Water

	Series / Model	Water flow (m^3/h) 7 °C [1]	Main pump (kW)	Available pressure (mwc) [3]	Inertia tank except 1 series (litres)	Expansion vessel (litres)	Hydraulic connection	Auxiliary primary pump B version (kW)	Service weight (kg)
WATER	**AGV-AH-2 006 AGV-BH-2 006**	3 to 6	1.1	30 to 20	100	5	2"	0.65	655
	AGV-AH-2 009 AGV-BH-2 009	6 to 9	1.5	25 to 20	100	5	2"	0.65	670
	AGV-AH-2 012 AGV-BH-2 012	9 to 12	1.5	23 to 16	100	5	2 1/2"	0.65	680
	AGV-AH-2 015 AGV-BH-2 015	12 to 15	2.2	28 to 23	200	8	2 1/2"	0.65	800
	AGV-AH-2 020 AGV-BH-2 020	15 to 20	2.2	27 to 18	200	8	3"	1.10	805
	AGV-AH-2 025 AGV-BH-2 025	20 to 25	4.0	24 to 17	200	15	3"	2.20	860

400 V-III-50 Hz | Positive temperature | Glycol

	Series / Model	Flow MPG 35 % (m^3/h) -8 °C [2]	Main pump (kW)	Available pressure (mwc) [3]	Inertia tank except 1 series (litres)	Expansion vessel (litres)	Hydraulic connection	Auxiliary primary pump B version (kW)	Service weight (kg)
GLYCOL	**MGV-AH-2 003 MGV-BH-2 003**	2 to 4	0.65	22 to 15	100	5	1 1/2"	0,46	600
	MGV-AH-2 004 MGV-BH-2 004	2 to 4	1.1	32 to 23	100	5	1 1/2"	0,46	615
	MGV-AH-2 005 MGV-BH-2 005	4 to 6	1.1	27 to 15	100	5	2"	0,65	650
	MGV-AH-2 006 MGV-BH-2 006	4 to 6	1.5	29 to 23	100	5	2"	0,65	675
	MGV-AH-2 008 MGV-BH-2 008	6 to 9	1.5	24 to 15	100	8	2"	0,65	680
	MGV-AH-2 009 MGV-BH-2 009	6 to 9	2.2	29 to 22	100	8	2"	0,65	690
	MGV-AH-2 012 MGV-BH-2 012	9 to 12	2.2	27 to 20	200	15	2 1/2"	1,10	800
	MGV-AH-2 015 MGV-BH-2 015	12 to 15	4.0	23 to 20	200	15	2 1/2"	1,10	840

Options

- Back-up main pump.
- Variable speed drive on main pump.
- Auxiliary back-up pump.
- Electronic control for heat recovery.

[1] Performance calculated for pumping water at 7°C.

[2] Performance calculated for pumping 35 % propylene glycol concentration at -8°C.

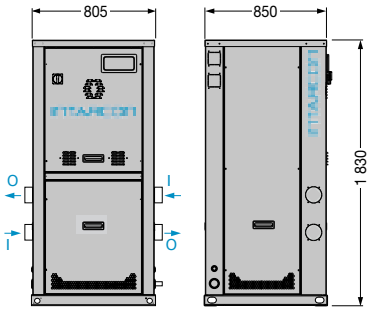
[3] Hydraulic pressure available for the distribution circuit and the chiller.

Primary circuit auxiliary pump

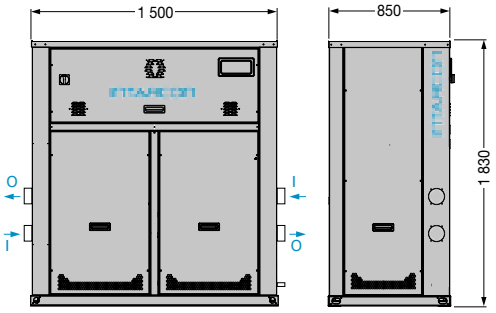
Auxiliary pump in the primary circuit is a low-pressure pump sized with an available pressure of about 10 mwc, enough to overcome the pressure drop of he exchanger of the chiller and a small section of piping.

Dimensions

1 series



2 series



Dimensions in mm.

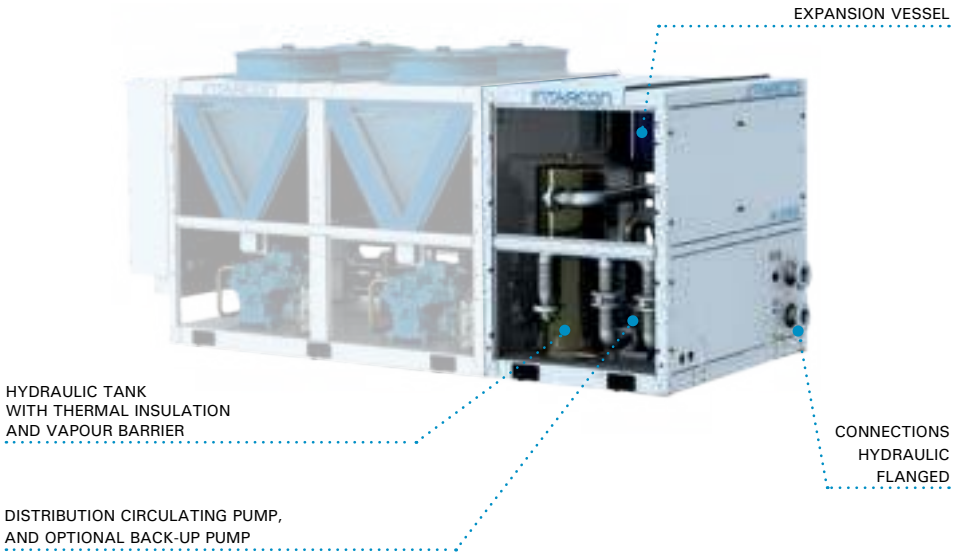
Pump sets for WW series

- Integrated modular construction.
- Optimised assemblies for water and glycol.
- Reduced footprint.

Pump sets for water or glycol in closed circuit, assembled in galvanised sheet steel bodywork and structure with polyester paint for outdoor installation and coupled to the chillers.

Features

- 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Glycol circulating pumps with stainless steel impeller and reserve pump.
- Buffer tank with high density polyurethane foam insulation and vapour barrier (depending on version).
- Closed membrane expansion vessel.
- Mesh filter.
- Glycerine thermometers and pressure gauges.
- Air vent.
- Drain inlet.
- Flanged hydraulic connections.
- Electrical control and power panel with magneto-thermal protection and independent differential for each pump, and electronic control unit for pump management and rotation.

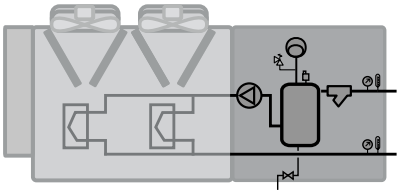


Versions

- A versions

  GW-AH: Primary pump set with tank

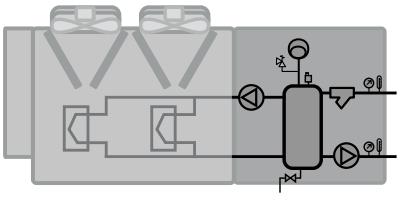
  Pump set with medium or high pressure circulating pump at constant flow rate, assembled together with the chiller.



- B versions

  GW-BH: Secondary pump set

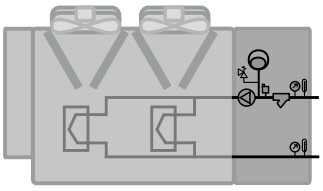
  Pump set with secondary circuit, buffer tank and medium or high pressure circulating pump at constant or variable flow rate (optional), with primary circuit pumps, assembled together with the chiller.



- N versions

  GW-NH: Pumping group

  Hydraulic unit with constant flow circulating pump.



400 V-III-50 Hz | High temperature | Water

	Series / Model	Water flow (m^3/h) 7 °C [1]	Main pump (kW)	Available pressure (mwc) [3]	Inertia tank except N version (litres)	Expansion vessel (litres)	Hydraulic connection	Auxiliary primary pump B version (kW)
WATER	AGW-AH-0 025 AGW-BH-1 025	10 to 30	3.0	25 to 15	200	8	DN80	1.1
	AGW-AH-0 030 AGW-BH-1 030	20 to 30	4.0	30 to 20	200	8	DN80	1.1
	AGW-AH-1 040 AGW-BH-1 040	25 to 40	4.0	20 to 15	200	15	DN100	1.5
	AGW-AH-1 050 AGW-BH-1 050	30 to 50	5.5	30 to 15	200	15	DN100	1.5
	AGW-AH-1 055 AGW-BH-1 055	40 to 55	7.5	30 to 20	200	24	DN100	2.2
	AGW-AH-1 070 AGW-BH-2 070	50 to 75	7.5	20 to 15	200	24	DN125	4.0
	AGW-AH-1 090 AGW-BH-2 090	60 to 90	11	25 to 15	500	35	DN125	4.0

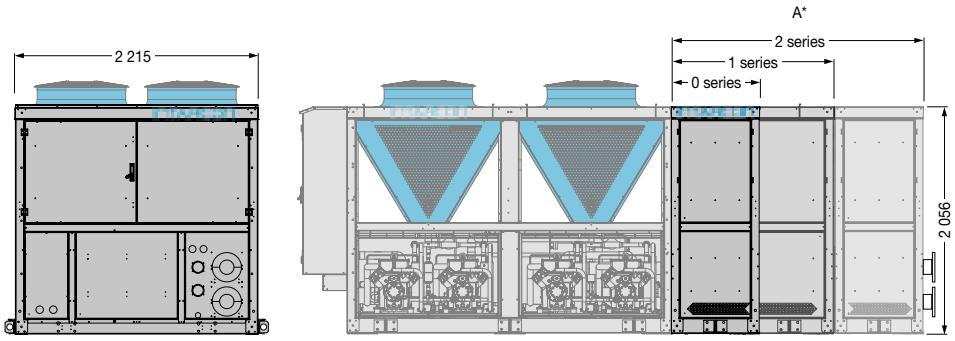
400 V-III-50 Hz | Positive temperature | Glycol

	Series / Model	Flow MPG 35 % (m^3/h) -8 °C [2]	Main pump (kW)	Available pressure (mwc) [3]	Inertia tank except N version (litres)	Expansion vessel (litres)	Hydraulic connection	Auxiliary primary pump B version (kW)
GLYCOL	MGW-AH-0 015 MGW-BH-1 015	10 to 15	4.0	30 to 20	200	24	2 1/2"	0.75
	MGW-AH-0 025 MGW-BH-1 025	10 to 25	3.0	25 to 15	200	24	DN80	1.1
	MGW-AH-1 030 MGW-BH-1 030	20 to 30	4.0	25 to 15	200	35	DN100	1.1
	MGW-AH-1 035 MGW-BH-1 035	25 to 35	4.0	20 to 15	200	35	DN100	1.5
	MGW-AH-1 045 MGW-BH-1 045	30 to 45	5.5	25 to 15	200	50	DN100	1.5
	MGW-AH-1 050 MGW-BH-1 050	35 to 50	7.5	30 to 20	200	50	DN100	2.2
	MGW-AH-1 060 MGW-BH-2 060	40 to 60	7.5	20 to 15	200	50	DN125	3.0
	MGW-AH-1 070 MGW-BH-2 070	50 to 70	11	25 to 15	500	50	DN125	3.0
	MGW-AH-1 085 MGW-BH-2 085	65 to 85	15	25 to 15	500	50	DN125	3.0

Options

- Back-up main pump.
- Variable speed drive on main pump.
- Auxiliary back-up pump.

Dimensions



Dimensions (mm)	A
0 series	806
1 series	1 480
2 series	2 286

* Pump set according to configuration.

Dimensions in mm.

[1] Performance calculated for pumping water at 7°C.

[2] Performance calculated for pumping 35 % propylene glycol concentration at -8°C.

[3] Hydraulic pressure available for the distribution circuit and the chiller.

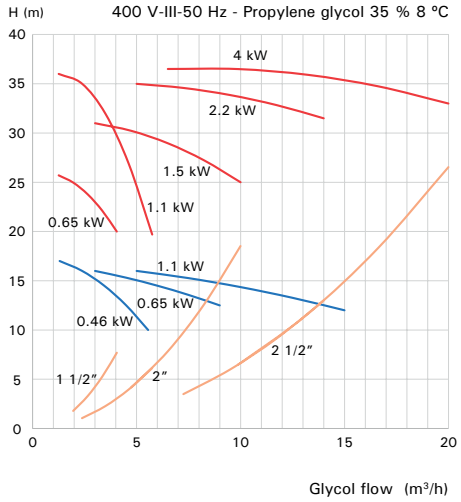
Auxiliary pump in the primary circuit

The auxiliary pump in the primary circuit is a low-pressure pump sized with an available pressure of about 10 mwc, enough to overcome the pressure drop of the exchanger of the chiller and a small section of piping.

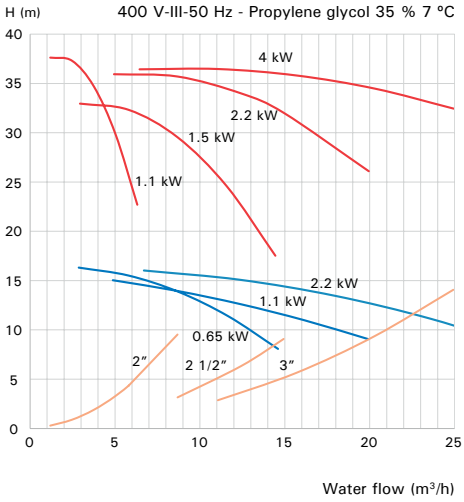
Pump sets

Characteristic curves

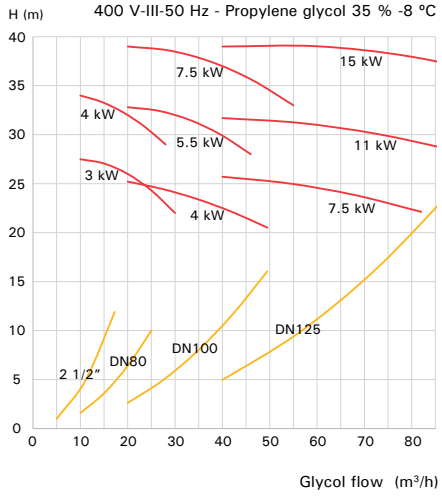
MWV series



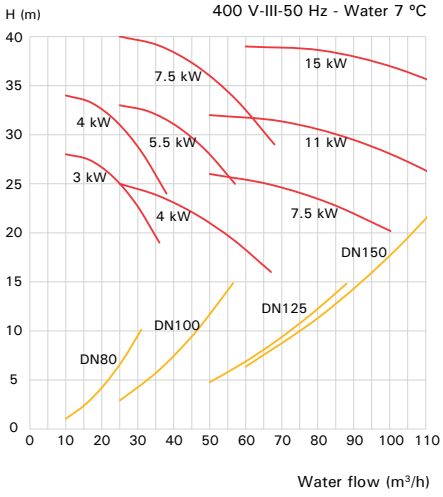
AWV series



MWW series



AWW series



— Main pump.

— Primary circuit booster pump.

— Pressure drop characteristic of the hydraulic unit.

The attached curves allow the operating point of the system to be checked on the basis of the pump characteristic curve and taking into account the internal pressure drop curve of the hydraulic unit.

In pump set with primary and secondary circuit (GV-BH and GW-BH versions), the hydraulic resistor of the chiller is compensated by the primary circuit pump.

For units with a single pumping unit (GV-AH and GW-AH version), the heater of the chiller must be taken into account and added to the available pressure required for the distribution circuit. The following values are recommended:

- WV series: 3-4 mwc.
- WW series: 4-5 mwc.

Example of selection

It is intended to select a pump set to be combined with the 35 % propylene glycol chiller, model MWW-FD-3 1503, with a cooling capacity of 260 kW at a temperature range of -2/-8 °C, it a glycol flow rate of 47.5 m³/h and an available pressure for the distribution circuit of 20 m/Wh.

For the required flow rate we are looking for the pump that results in a water column of 20 m between the characteristic curves of the pump and the DN100 pipe pump set, which corresponds to the hydraulic connections of the chiller. The 7.5 kW pump and DN100 connections characterise the pump set model MGW-BH-1 050.

Optionally, this hydraulic unit can be equipped with a primary circuit pump.