HVS, Hydro Variable System
Air cooled chiller

YDCC522H (-C) / YDCC972H (-C) / YOCC762H (-C) / YOCC1522H (-C)

A complete range from 15 kW up to 72 kW

Indoor water terminals: see page 86

Features

- Variable capacity compressor (10% to 100%)
- Constant water temperature
- Energy savings up to 35%
- BMS communication
- Easy selection software
- Low ambient operation standard
- Plate heat exchanger, no buffer tank needed
- Flexible in use
- No glycol required (split version)
- Integrated hydro kit (compact version)
- Water filter standard

Options / Accessories

- Condenser protection grilles
- High static pressure fans
- Anticorrosion epoxy coils
- Sound attenuation
- Softstarter kit
- DX unit (split version)
- Antifreeze heater for heat exchanger
- Interface card for LON Bus
- Anti vibration mounting
- Outdoor temperature sensor
- Valve kits
- Relay box for several FCU applications
- Fan coil load identification

Remote Central Controller

HVS Split & Compact version

YDCC522H (-C) / YDCC972H (-C) / YOCC762H (-C) / YOCC1522H (-C)

Technical features Compact version

Models			YDCC 522H-C	YDCC 972H-C	YDCC 1732 H-C	YDCC 2502 H-C
Performance	Cooling capacity c/o units	kW	15.0	28.0	50.0	72.0
	Total Input Power	kW	5	9	9.7 + 6.1	9.7 + 12.3
	Capacity steps	%	10 - 100	6 - 100	4 - 100	3 - 100
	Sound pressure level at 1 m	dB(A)	64	66	64	67
Compressor	Type		Digital Scroll	Digital Scroll & Scroll	Digital Scroll & 2 x Scroll	Digital Scroll & 3 x Scroll
	Quantity		1	2	3	4
Air side heat exchanger	Fans quantity		1	2	2 x 2	2 + 3
	Working ambient temperature		-20°C~45°C			
Water side heat exchanger	Type		Plate Heat Exchanger			
	Pump type		Circulators (3 speeds)			
	Water flow nominal	l/h	2 150	4 100	7 200	10 350
	Available pressure nominal (1)	kPa	81	67	67	64
	Water connections	inch	1 1/2"	2"	2" + 2"	2 1/2" + 2 1/2"
	Water connections type		Threated male			
Dimensions & Weight	Height	mm	1 350	1 350	2 x 1 350	1 350 + 1 350
	Width	mm	780	780	2 x 780	2 x 780
	Length	mm	1 330	1 500	1 500 + 1 330	1 500 + 1 980
	Weight cooling only	kg	310	400	435 + 285	400 + 700
Electrical supply	Voltage / Phases / Frequency	V/ph/hz	400 / 3 / 50+N			
Combinations			YDCC 522H-C	YDCC 972H-C	YDCC 972H-C + YOCC 762H-C	YDCC 972H-C + YOCC 1522H-C

Technical features Split version

Models			YDCC 522H	YDCC 972H	YDCC 1732 H	YDCC 2502 H
Performance	Cooling capacity c/o units	kW	15.0	28.0	50.0	72.0
	Total Input Power	kW	5	9	9.7 + 6.1	9.7 + 12.3
	Capacity steps	%	10 - 100	6 - 100	4 - 100	3 - 100
	Sound pressure level at 1 m	dB(A)	58	59	62	63
Compressor	Type		Digital Scroll	Digital Scroll & Scroll	Digital Scroll & 2 x Scroll	Digital Scroll & 3 x Scroll
	Quantity		1	2	3	5
Air side heat exchanger	Fans quantity		1	2	2 x 2	2 + 3
	Working ambient temperature		-20°C~45°C			
Refrigerant side	Refrigerant connections	mm	12 / 22	16 / 28	2 x 16 / 28	16 / 28 + 22 / 42
	Max refrigerant piping length	m	20			
	Max height difference	m	5			
Water side (Transformer Box)	Pump type		Circulators (3 speeds)			
	Available pressure nominal (1)	kPa	81	67	67	64
	Water connections (Threated male)	inch	1 1/2"	2"	2" + 2"	2 1/2" + 2 x 2"
Dimensions & Weight	H / W / L	mm	1350 x 780 x 1330	1350 x 780 x 1500	1350 x 780 x 2850	1350 x 780 x 3500
	Weight cooling only	kg	250	325	325 + 280	325 + 550
Electrical supply	Voltage / Phases / Frequency	V/ph/hz	400 / 3 / 50+N			
Combinations			YDCC 522 H	YDCC 972 H	YDCC 972 H + YOCC 762 H	YDCC 972 H + YOCC 1522 H

Nominal cooling capacity based on: leaving water temperature: +7°C - Ambient air temperature: 35°C DB *(1) At nominal water flow*

Technical features Transformer boxes

Models			YTBC			
			522	972	1732	2502
Cooling capacities	Total capacity	kW	15.0	28.0	50.0	72.0
	Water flow	l/h	2150	4100	7200	10350
Sound pressure level at 3 m free field		dB(A)	35	35	40	40
Electrical characteristics	Power supply	V/Ph/Hz	220 - 240 / 1 / 50		400 / 3 / 50	
	Power input -nominal	W	270	350	1100	1100
	Running current - nominal	A	1.8	2.0	3.1	3.1
Dimensions	Heigth	mm	1000	1000	1200	1200
	Width	mm	800	800	1000	1000
	Depth	mm	300	300	300	300
Net weight		kg	80	95	150	170
Refrigerant piping connections	Diameter (nominal)	mm	12 / 22	16 / 28	2 x 16 / 28	3 x 16 / 28

Nominal cooling capacity based on: Leaving water temperature: +6° C
Horizontal Transformer Boxes available upon request, for more information contact to Johnson Controls.

Compatibility table / Codes

System		15 kW	28 kW	50 kW	72 kW
Cooling only models		YDCC 522 H (-C)	YDCC 972 H (-C)	YDCC 1732 H (-C)	YDCC 2502 H (-C)
Transformer boxes (only for split version)					
Cooling only models		YTBC 522 H-V	YTBC 97 2H-V	YTBC 1732 H-V	YTBC 2502 H-V
Options (factory fitted) Quantity depends on combination selected. See previous table in "Combinations".					
Models		**YDCC 522 H (-C)**	**YDCC 972 H (-C)**	**YOCC 762 H (-C)**	**YOCC 1522 H (-C)**
DX Cooling only units (only split model)	DX-KIT-CO	DX-KIT-CO-S	DX-KIT-CO-L		
Condenser grid	CG	CGS-1	CGL-1	CGS-1	Contact YORK
High static pressure fans	HPF	HPF-522	HPF-972	HPF-762	HPF-1522
Anticorrosion Epoxy coils	ACF-1	•	•	•	•
Sound attenuation	CSI	CSI-522	CSI-972	CSI-762	CSI-1522
Softstarter kit	SSK	SSK-522	SSK-972	SSK-762	SSK-1522
Antifreeze heater for heat exchanger and internal piping	AFH-1	•	•	•	•
Fan coil load identification *	LI-1	•	•	With YDC_ unit	With YDC_ unit
Accessories (supplied loose)					
Remote central controller (mandatory) *		7004601		With YDC_ unit	With YDC_ unit
Interface card for LON Bus	LP-NET-102-000	•		With YDC_ unit	With YDC_ unit
Anti vibration mounting		AVM2	AVM2	AVM2	AVMx2
Outdoor temperature sensor	OTS-1	•	•	With YDC_ unit	With YDC_ unit

** The compressor is inactive when all fan coils are switched off. Operation starts again when at least one fan coil is switched on.*

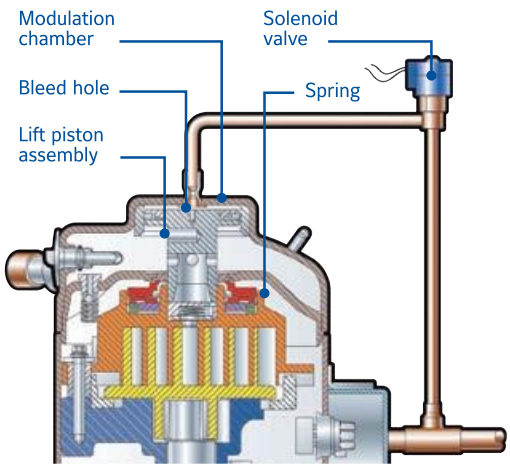
** It is mandatory to have one central controller for HVS unit*

Recommended combinations

Cooling capacity	YDCC522	YDCC972	YOCC762	YOCC1522	Transformer Box
15	1				1 x YTB 522
28		1			1 x YTB 972
50		1	1		1 x YTB 1732
72		1		1	1 x YTB 2502
87	1	1		1	1 x YTB 522 + 1 x YTB 2502
100		2	2		2 x YTB 1732
122		2	3		1 x YTB 1732 + 1 x YTB 2502
122		2	1	1	1 x YTB 1732 + 1 x YTB 2502
144		2		2	2 x YTB 2502
159	1	2		2	1 x YTB 522 + 2 x YTB 2502
172		3		2	1 x YTB 972 + 2 x YTB 2502
194		3	5		1 x YTB 1732 + 2 x YTB 2502
194		3	1	2	1 x YTB 1732 + 2 x YTB 2502
216		3		3	3 x YTB 2502

Digital Scroll Compressor

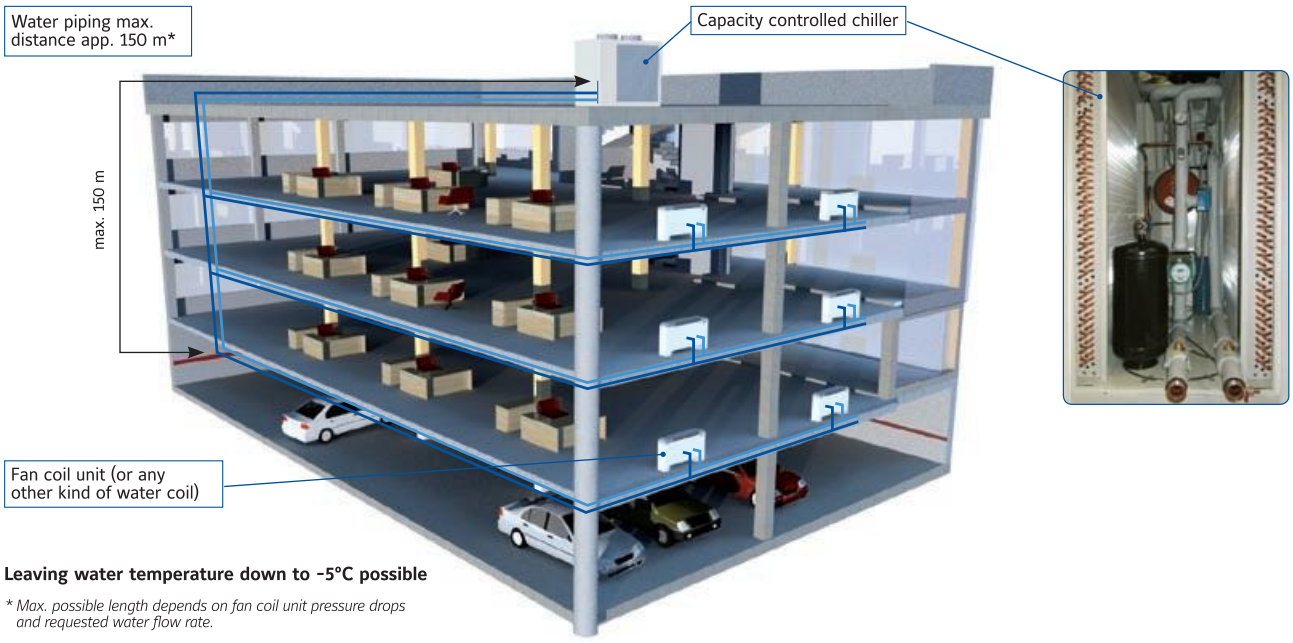
The Digital Scroll Compressor uses a simple and effective method to modulate the capacity of an AC, giving unparalleled performance in the modulation field. To modulate the capacity the Digital Scroll operates in two stages, the "loaded state" in which the compressor works as a normal Scroll compressor at full capacity and mass flow, and the "unloaded state", where there is not capacity and mass flow. During the "unloaded state" there is a separation between the scrolls. Once the scrolls separate, any gas passing through is no longer compressed. Changing the cycle time ("Loaded state" time and "Unloaded state" time) determines the capacity modulation of the compressor.



System Diagram Compact version

The HVS-system is available as a COMPACT version.
This version is particularly designed for process cooling applications for very low brine-temperatures (down to -5°C) but is also applicable for standard AC applications.
The HVS-COMPACT serie contains all hydronic components which normally are located in the transformer box.

The hydronic components are installed between the two coils (see picture) therefore the COMPACT version provides the same dimensions as the condensing unit of the SPLIT version does.
Water connections on the rear side of the unit (see picture).



Leaving water temperature down to -5°C possible

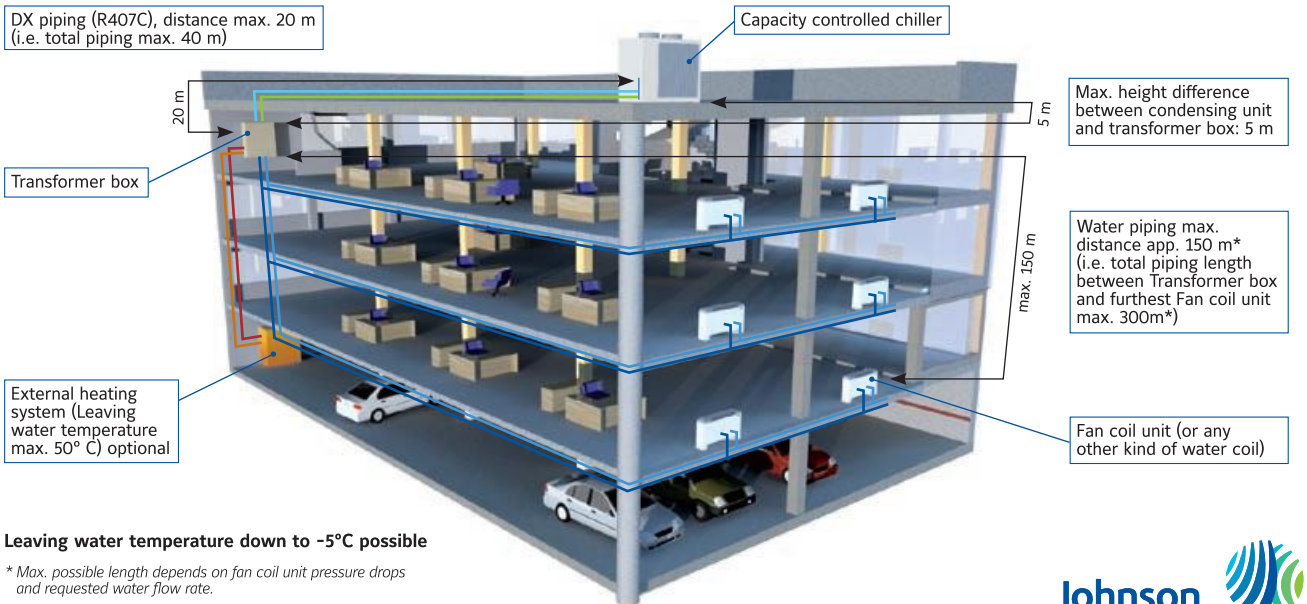
** Max. possible length depends on fan coil unit pressure drops and requested water flow rate.*

System Diagram Split version

HVS Digital is the latest generation of YORK's Air Conditioners for cooling and heating. These units use the Digital Scroll compressor technology that allows to adequate the capacity to the cooling or heating load. Thanks to this innovative technology our products reach many advantages for our customers.

- Energy saving up to 35% compared with conventional chillers.
- High comfort because of the unit is capable to adjust the water outlet temperature in a ±0,5°C, thereby it is possible for the users enjoy always a comfortable ambient temperature.
- Absence of Electromagnetic Interference, compared with a variable speed compressor, making the system easy and less sensitve.
- High reliability, as there is not necessary to use complicates electronic devices to get the right capacity.
- Not necessary to use buffer tank, thanks to the modulation control
- Not necessary to use glycol, as it is possible to use an intermediate transformer box as a remote evaporator.

And many other advantages that you can discover by yourself using HVS units.

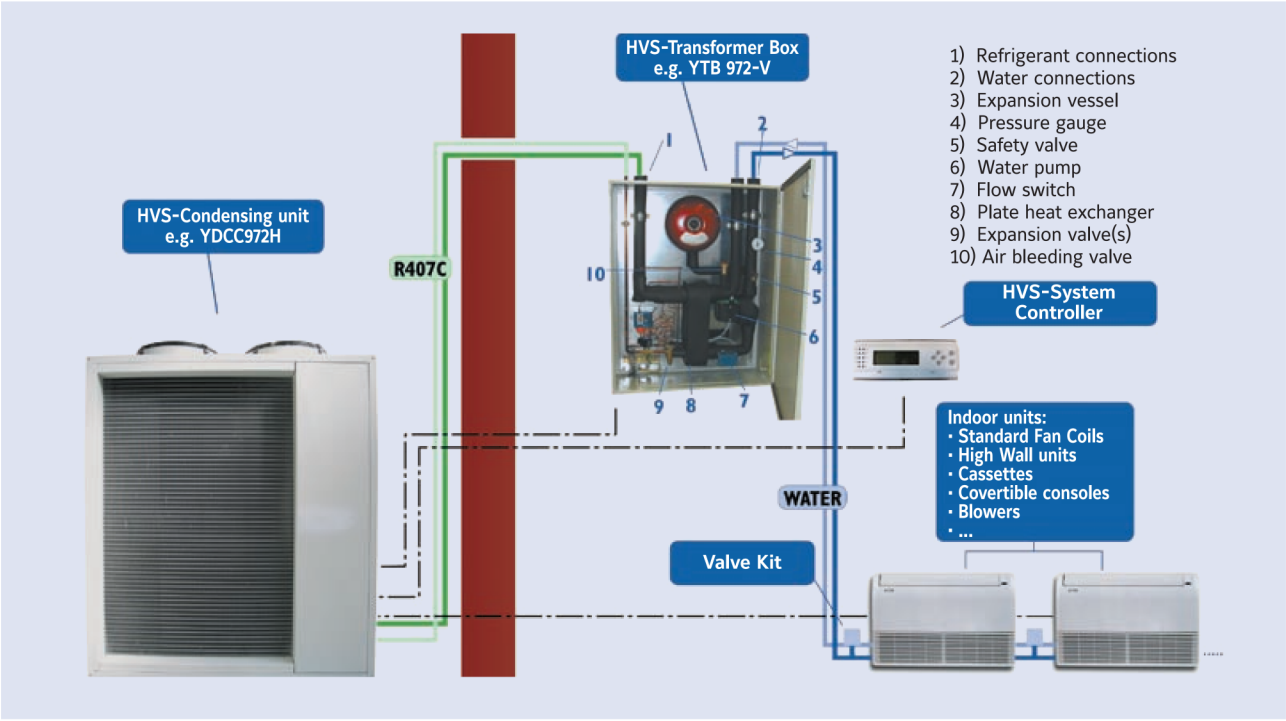


Leaving water temperature down to -5°C possible

** Max. possible length depends on fan coil unit pressure drops and requested water flow rate.*

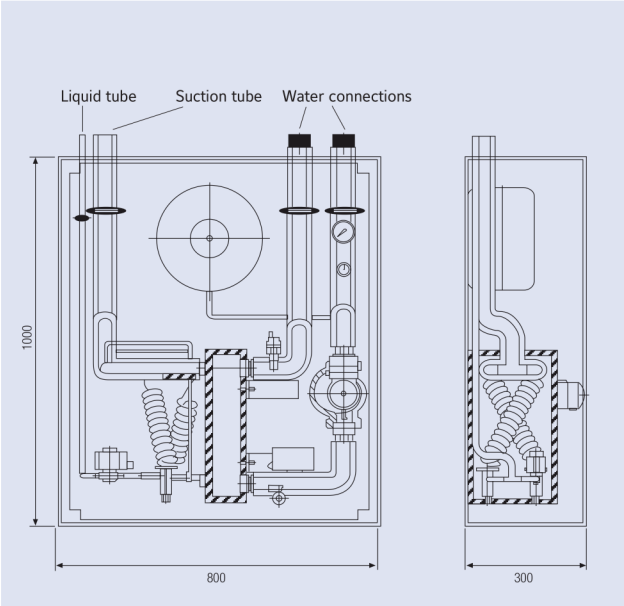
Johnson Controls

Split system overview



Transformer box dimensions

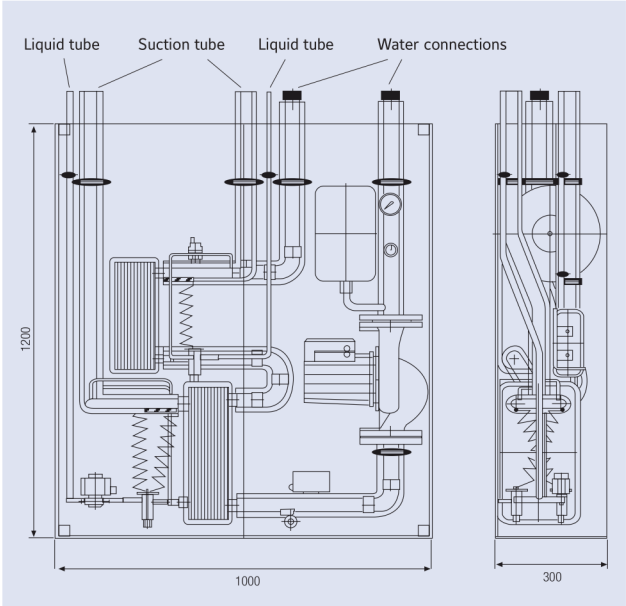
Transformer box YTB_522-V / YTB_972-V



All dimensions in mm. Drawings not a scale.

Unit	Water pipe connection	Refrigerant tubing diameter	Weight kg
YTB-522-V	1 1/2" threaded male	12 / 22	80
YTB-972-V	2" threaded male	16 / 28	95

Transformer box YTB_1732-V / YTB_2502-V

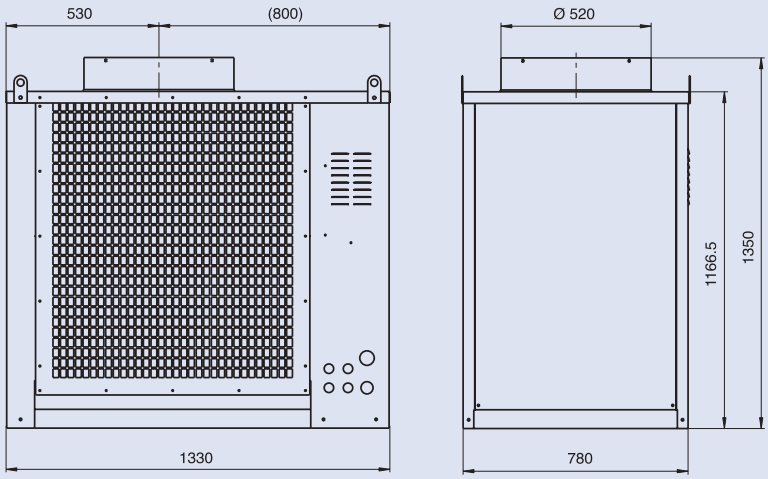


All dimensions in mm. Drawings not a scale.

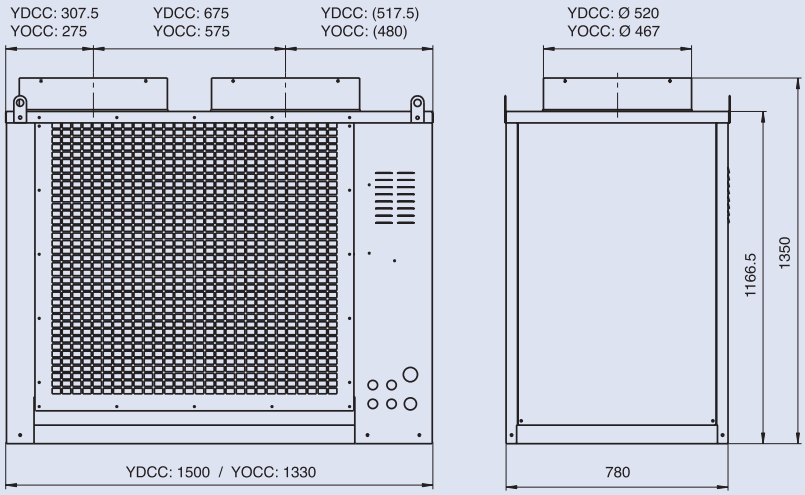
Unit	Water pipe connection	Refrigerant tubing diameter	Weight kg
YTB-1732-V	2" threaded male	2 x 16 / 28	150
YTB-2502-V	2 1/2" threaded male	3 x 16 / 28	170

Condensing unit dimensions

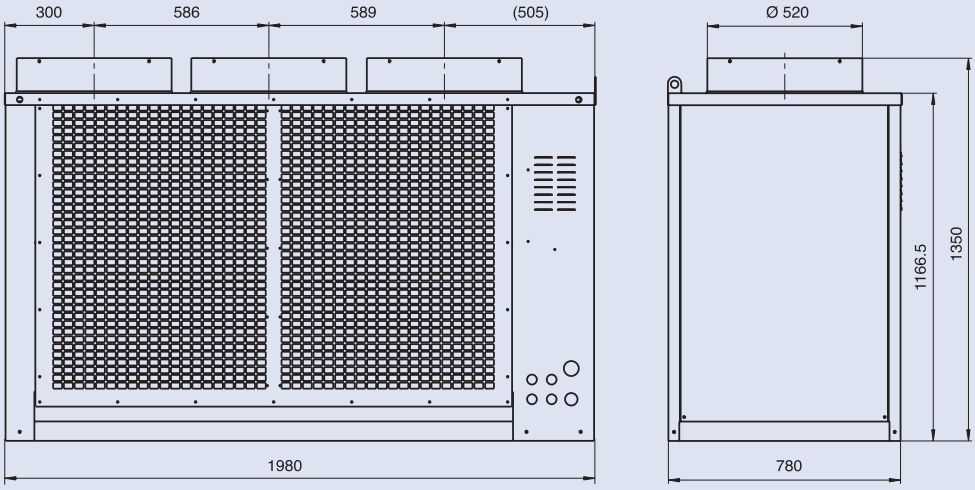
YDCC 522 (-C)



YDCC 972 (-C) / YOCC 762 (-C)



YOCC 1522 (-C)



All dimensions in mm. Drawings not a scale.