

TCO08-19 Minichiller

Industrial oil chillers

COOLING CAPACITY

900-1100 - 1600-1900 - 2200-2550 W



AXIAL FAN

Axial fan, complete with electrical protection and safety grille.

HYDRAULIC CIRCUIT

Hydraulic circuit with gear pump without tank, with maximum available pressure 20 bar, 0-25 bar pressure gauge, regulation temperature sensor. Hydraulic safety with safety low- and high-pressure pressure switch.

ELECTRICAL PANEL

With main breaker, fused motor protection with LED visual fault indicator, voltage presence light.

MANAGEMENT AND CONTROL

The TX110 control unit manages the chiller's operation, providing warnings including high/low temperature alarms and a general serious fault alarm, with the display indicating if this refers to the refrigeration or hydraulic circuit. An on-off contact allows the machine to be switched on remotely. Control disconnect switch for switching on the machine.

PAINT/COATING

Standard colour: RAL 7035 textured.

MAIN ACCESSORIES (ref. page 189)

- LTA - Operation at low ambient temperatures
- FP - Polyurethane air filter
- RU - Castors
- TD - Differential fluid temperature management (two sensors)
- BGC - Hot gas bypass for +/- 1 K temperature precision
- FL - Customer flow switch
- Non-standard paint/coating
- Satin AISI 304 stainless steel framework

STRUCTURE

In powder-coated steel sheet, RAL 7035 textured finish. Easily removed panels

COMPRESSOR

Hermetic reciprocating compressor, cooled by the refrigerant, complete with thermal cut-out.

REFRIGERATION CIRCUIT

Complete with charging port, drier filter, expansion valve, high- and low-pressure safety pressure switch, R134a refrigerant.

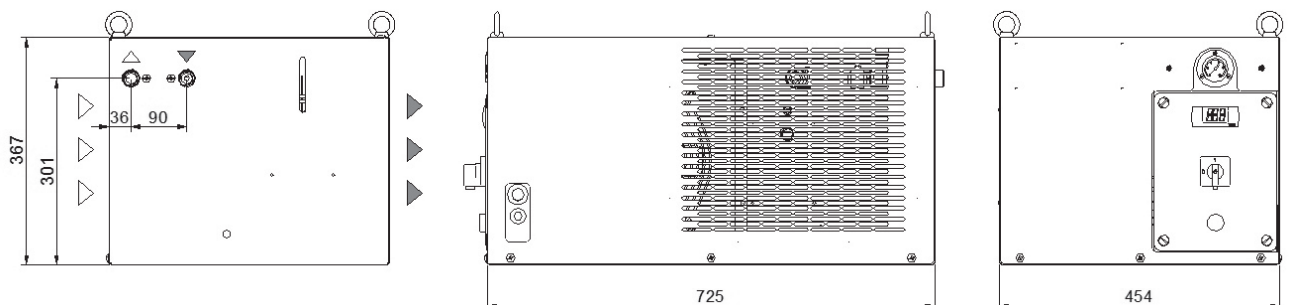
EVAPORATOR

Brazed stainless-steel plate model.

AIR CONDENSER

Finned high-efficiency copper tube condensing coil, complete with safety grille.

Dimensions



Model		TCO08		TCO12		TCO19	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
Rated Cooling Capacity*	W	900	1100	1600	1900	2200	2550
Ambient temperature operating limits	°C	+15 - +45					
Settable oil temperature range	°C	+25 - +40					
Fluid type		ISO VG 32					
Temperature precision	K	+/-2					
Refrigerant gas	HFC	R134a					
Power supply							
Supply voltage	V ph Hz	230V (+/-10%) 1ph 50/60Hz					
Secondary supply voltage	V AC	230					
Digital thermostat		TX110					
Compressor							
Compressor type		Reciprocating					
Quantity - Number of circuits	no.	1 - 1					
Max. power draw	kW	0.5	0.6	0.7	1.1	1.0	1.15
Max. current draw	A	2.8	3.1	4.1	4.3	6.0	6.5
Axial Fan							
Fan type		Axial					
Quantity	no.	1		1		1	
Air flow rate	m ³ /h	1000		1000		1000	
Max. power draw	W	150	190	150	190	150	190
Max. current draw	A	0.66	0.85	0.66	0.85	0.66	0.85
Standard Pump							
Pump type		Gear pump					
Quantity	no.	1		1		1	
Nominal fluid flow rate	l/min	10		10		10	
Nominal available head	bar	20		20		20	
Max. power draw	kW	0.55		0.55		0.55	
Max. current draw	A	4.0	4.2	4.0	4.2	4.0	4.2
Storage tank capacity (optional)	l	10					
IN/OUT liquid connections	inch	1/2"					
Net weight (approximate)***	kg	59		61		63	
Width	mm	725					
Depth	mm	454					
Height	mm	367					
Sound pressure level**	dB(A)	56		56		56	
IP rating	IP	44					
<p>* Data relating to operation under the following conditions: intake/outlet temperature 40/30°C, ISO VG 32 oil, ambient temperature 32°C. Cooling power refers to the evaporator unit.</p> <p>** Sound pressure level at 50Hz, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres from the ground, per ISO 3746.</p> <p>*** Weight includes pallets and packaging (where provided for), with refrigerant charge, without storage tank and axial fans.</p> <p>**** The electrical data refer to cos φ = 0.8.</p>							

Correction factors for calculating the cooling power												
Oil outlet temperature	Fo	°C	20	25	30	35						
		factor	0.82	0.92	1	1.05						
Ambient Temperature	Fa	°C				15	20	25	32	35	40	45
		factor				1.16	1.1	1.05	1	0.97	0.91	0.84
Oil type	Ft	type	ISO VG 10		ISO VG 22		ISO VG 32		ISO VG 46		ISO VG 68	
		factor	1.15		1.1		1		0.9		0.82	
Cooling power = Nominal cooling power x Fo x Fa x Ft												

TCO31-41 Minichiller HP

Industrial oil chillers

COOLING CAPACITY

3000/3450 - 3900/4450 W



AXIAL FAN

Axial fan, complete with thermal cut-out and safety grille.

HYDRAULIC CIRCUIT

Hydraulic circuit with gear pump without tank, with maximum available pressure 20 bar, 0-25 bar pressure gauge, regulation temperature sensor. Hydraulic safety with safety low- and high-pressure pressure switch.

ELECTRICAL PANEL

With main breaker, fused motor protection with LED visual fault indicator, voltage presence light.

MANAGEMENT AND CONTROL

The TX110 control unit manages the chiller's operation, providing warnings including high/low temperature alarms and a general serious fault alarm, with the display indicating if this refers to the refrigeration or hydraulic circuit. An on-off contact allows the machine to be switched on remotely. Control disconnect switch for switching on the machine.

PAINT/COATING

Standard colour: RAL 7035 textured.

MAIN ACCESSORIES (ref. page 189)

LTA - Operation at low ambient temperatures

FP - Polyurethane air filter

RU - Castors

TD - Differential fluid temperature management (two sensors)

BGC - Hot gas bypass for +/- 1 K temperature precision

FL - Customer flow switch

- Non-standard paint/coating

- Satin AISI 304 stainless steel framework

STRUCTURE

In powder-coated steel sheet, RAL 7035 textured finish. Easily removed panels

COMPRESSOR

Hermetic reciprocating compressor, cooled by the refrigerant, complete with thermal cut-out.

REFRIGERATION CIRCUIT

Complete with charging port, drier filter, expansion valve, high- and low-pressure safety pressure switch, thermostatic valve. R134a refrigerant.

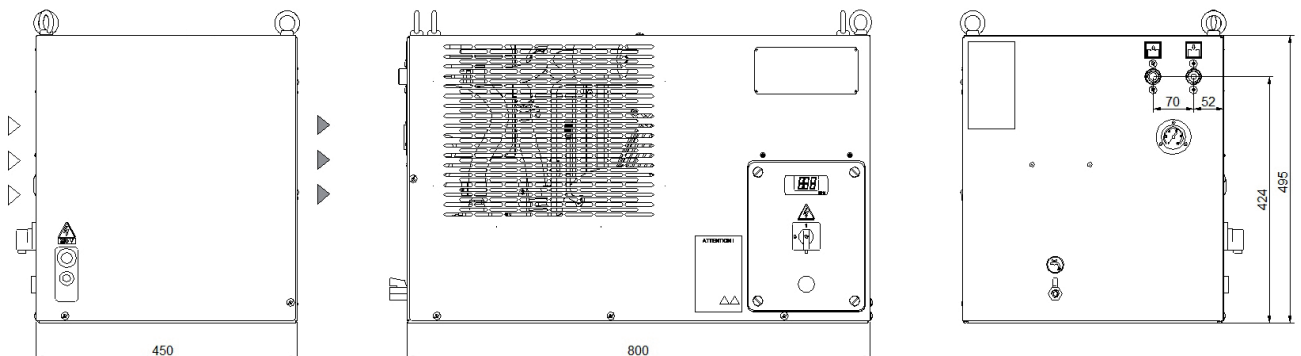
EVAPORATOR

Brazed stainless-steel plate model.

AIR CONDENSER

Finned high-efficiency copper tube condensing coil, complete with safety grille.

Dimensions



Model		TCO31		TCO41	
		50Hz	60Hz	50Hz	60Hz
Rated Cooling Capacity*	W	3000	3450	3900	4450
Ambient temperature operating limits	°C	+15 - +45			
Settable oil temperature range	°C	+25 - +40			
Fluid type		ISO VG 32			
Temperature precision	K	+/-2			
Refrigerant gas	HFC	R134a			
Power supply					
Supply voltage	V ph Hz	230V (+/-10%) 1ph 50/60Hz			
Secondary supply voltage	V AC	230			
Digital thermostat		TX110			
Compressor					
Compressor type		Reciprocating			
Quantity - Number of circuits	no.	1 - 1			
Max. power draw	kW	1.15	1.5	1.6	1.92
Max. current draw	A	6.1	8.1	7.2	8.4
Axial Fan					
Fan type		Axial			
Quantity	no.	1		1	
Air flow rate	m ³ /h	2300	2650	2300	2650
Max. power draw	W	180	250	180	250
Max. current draw	A	0.81	1.1	0.81	1.1
Standard Pump					
Pump type		Gear pump			
Quantity	no.	1			
Nominal fluid flow rate	l/min	10		10	
Nominal available head	bar	20		20	
Max. power draw	kW	0.55		0.55	
Max. current draw	A	4.0	4.2	4.0	4.2
IN/OUT liquid connections	inch	1/2"			
Net weight (approximate)***	kg	74		75	
Width	mm	800			
Depth	mm	450			
Height	mm	495			
Sound pressure level**	dB(A)	57	60	57	60
IP rating	IP	44			
<p>* Data relating to operation under the following conditions: intake/outlet temperature 40/30°C, ISO VG 32 oil, ambient temperature 32°C. Cooling power refers to the evaporator unit.</p> <p>** Sound pressure level at 50Hz, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres from the ground, per ISO 3746.</p> <p>*** Weight includes pallets and packaging (where provided for), with refrigerant charge, without storage tank and axial fans.</p> <p>**** The electrical data refer to cos φ = 0.8.</p>					

Correction factors for calculating the cooling power												
Oil outlet temperature	Fo	°C	20	25	30	35						
		factor	0.82	0.92	1	1.05						
Ambient Temperature	Fa	°C				15	20	25	32	35	40	45
		factor				1.16	1.1	1.05	1	0.97	0.91	0.84
Oil type	Ft	type	ISO VG 10		ISO VG 22		ISO VG 32		ISO VG 46		ISO VG 68	
		factor	1.15		1.1		1		0.9		0.82	
Cooling power = Nominal cooling power x Fo x Fa x Ft												

TCO15-36 Size 1

Industrial oil chillers

COOLING CAPACITY

1600-1900 - 2200-2550 - 3300-3900 W



AXIAL FAN

Axial fan, complete with thermal cut-out and safety grille.

HYDRAULIC CIRCUIT

Hydraulic circuit with gear pump without tank, with maximum available pressure 20 bar, pressure limiting valve calibrated at 10 bar, 0-25 bar pressure gauge, regulation temperature sensor. Hydraulic safety with safety low- and high-pressure pressure switch.

ELECTRICAL PANEL

With main disconnect switch, fused motor protection.

MANAGEMENT AND CONTROL

The TX110 control unit manages the chiller's operation, providing warnings including high/low temperature alarms and a general serious fault alarm, with the display indicating if this refers to the refrigeration or hydraulic circuit. An on-off contact allows the machine to be switched on remotely. Control disconnect switch for switching on the machine.

PAINT/COATING

Standard colour: RAL 7035 textured.

STRUCTURE

In powder-coated steel sheet, RAL 7035 textured finish. Easily removed panels

COMPRESSOR

Hermetic reciprocating compressor, cooled by the refrigerant, complete with electrical protection.

REFRIGERATION CIRCUIT

Complete with charging port, drier filter, thermostatic valve, high- and low-pressure pressure switch, R134a refrigerant.

EVAPORATOR

Brazed stainless-steel plate model.

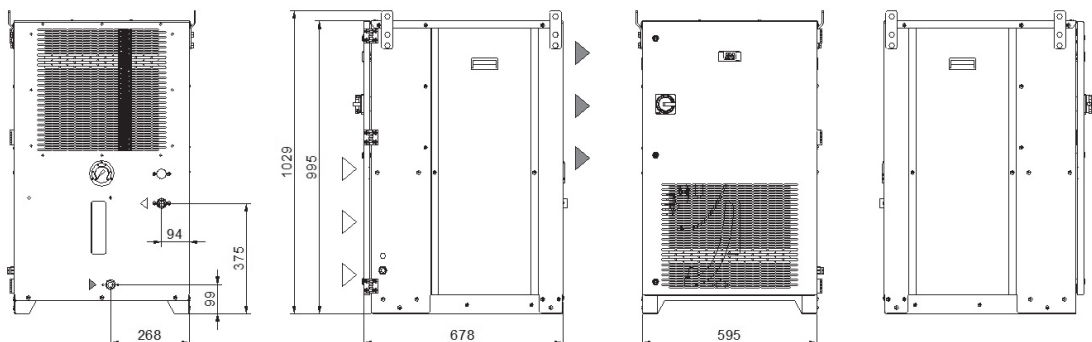
AIR CONDENSER

Finned high-efficiency copper tube condensing coil, complete with safety grille.

MAIN ACCESSORIES (ref. page 189)

- HR - Oil heating element
- LTA - Operation at low ambient temperatures
- FP - Polyurethane air filter
- RU - Castors
- TD - Differential fluid temperature management (two sensors)
- BGC - Hot gas bypass for +/- 1 K temperature precision
- FL - Customer flow switch
- Non-standard paint/coating
- Satin AISI 304 stainless steel framework

Dimensions



Model		TCO15		TCO22		TCO36	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
Rated Cooling Capacity*	W	1600	1900	2200	2550	3300	3900
Ambient temperature operating limits	°C	+15 - +45					
Settable oil temperature range	°C	+25 - +40					
Fluid type		ISO VG 32					
Temperature precision	K	+/-2					
Refrigerant gas	HFC	R134a					
Power supply							
Supply voltage	V ph Hz	230V (+/-10%) 1ph 50/60Hz					
Secondary supply voltage	V AC	230					
Digital thermostat		TX110					
Compressor							
Compressor type		Reciprocating					
Quantity - Number of circuits	no.	1 - 1					
Max. power draw	kW	1.03	1.06	1.15	1.5	1.73	2.2
Max. current draw	A	5.6	5.8	6.1	8.1	9.4	12
Axial Fan							
Fan type		Axial					
Quantity	no.	1					
Air flow rate	m³/h	2300 - 2650		2300 - 2650		2300 - 2650	
Max. power draw	kW	0.18	0.25	0.18	0.25	0.18	0.25
Max. current draw	A	0.81	1.1	0.81	1.1	0.81	1.1
Centrifugal Fan (optional)							
Fan type		Centrifugal					
Quantity	no.	1					
Air flow rate	m³/h	2100 - 2400		2100 - 2400		2100 - 2400	
Available head	Pa	250					
Max. power draw	kW	0.15	0.21	0.15	0.21	0.15	0.21
Max. current draw	A	0.35	0.37	0.35	0.37	0.35	0.37
Standard Pump							
Pump type		Gear pump					
Quantity	no.	1		1		1	
Nominal fluid flow rate	l/min	10		10		10	
Nominal available head	bar	20		20		20	
Max. power draw	kW	0.55		0.55		0.55	
Max. current draw	A	4.0	4.2	4.0	4.2	4.0	4.2
Storage tank capacity (optional)	l	30					
IN/OUT liquid connections	inch	3/4"					
Net weight (approximate)***	kg	130		132		132	
Width	mm	595					
Depth	mm	678					
Height	mm	995					
Sound pressure level**	dB(A)	57 - 60		57 - 60		57 - 60	
IP rating	IP	44					

* Data relating to operation under the following conditions: intake/outlet temperature 40/30°C, ISO VG 32 oil, ambient temperature 32°C. Cooling power refers to the evaporator unit.

** Sound pressure level at 50Hz, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres from the ground, per ISO 3746.

*** Weight includes pallets and packaging (where provided for), with refrigerant charge, without storage tank and axial fans.

**** The electrical data refer to cos φ = 0.8.

Correction factors for calculating the cooling power												
Oil outlet temperature	Fo	°C	20	25	30	35						
		factor	0.82	0.92	1	1.05						
Ambient Temperature	Fa	°C				15	20	25	32	35	40	45
		factor				1.16	1.1	1.05	1	0.97	0.91	0.84
Oil type	Ft	type	ISO VG 10		ISO VG 22		ISO VG 32		ISO VG 46		ISO VG 68	
		factor	1.15		1.1		1		0.9		0.82	
Cooling power = Nominal cooling power x Fo x Fa x Ft												

TCO22-55

Size 1 Three Phase

Industrial oil chillers

COOLING CAPACITY

2200 - 3300 - 4400 - 5300 W



AXIAL FAN

Axial fan, complete with thermal cut-out and safety grille

HYDRAULIC CIRCUIT

Hydraulic circuit with gear pump without tank, with maximum available pressure 20 bar, pressure limiting valve calibrated at 10 bar, 0-25 bar pressure gauge, regulation temperature sensor. Hydraulic safety with safety low- and high-pressure pressure switch.

ELECTRICAL PANEL

With main disconnect switch, relay motor protection, phase sequence relays.

MANAGEMENT AND CONTROL

The TX110 control unit manages the chiller's operation, providing warnings including high/low temperature alarms and a general serious fault alarm, with the display indicating if this refers to the refrigeration or hydraulic circuit. An on-off contact allows the machine to be switched on remotely. Control disconnect switch for switching on the machine.

PAINT/COATING

Standard colour: RAL 7035 textured.

STRUCTURE

In powder-coated steel sheet, RAL 7035 textured finish. Easily removed panels

COMPRESSOR

Hermetic reciprocating compressor, cooled by the refrigerant, complete with thermal cut-out.

REFRIGERATION CIRCUIT

Complete with charging port, drier filter, thermostatic valve, high- and low-pressure pressure switch, R134a refrigerant.

EVAPORATOR

With brazed stainless-steel plates with protection against freezing.

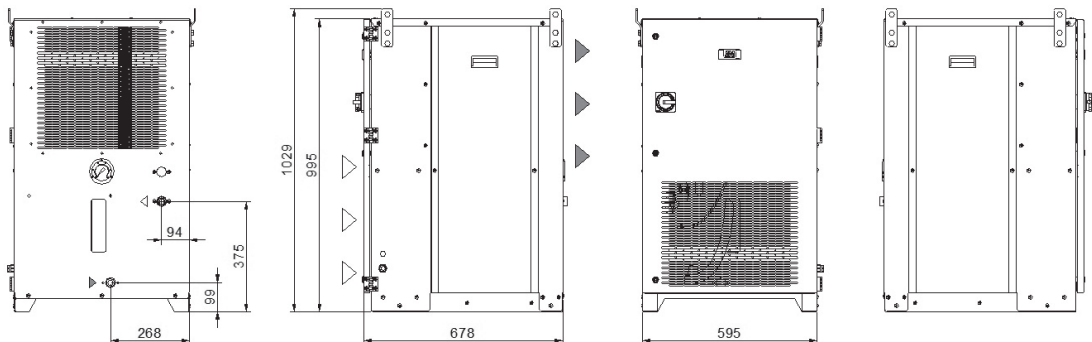
AIR CONDENSER

Finned high-efficiency copper tube condensing coil, complete with safety grille.

MAIN ACCESSORIES (ref. page 189)

- HR - Oil heating element
- LTA - Operation at low ambient temperatures
- FP - Polyurethane air filter
- RU - Castors
- TD - Differential fluid temperature management (two sensors)
- BGC - Hot gas bypass for +/- 1 K temperature precision
- FL - Customer flow switch
- Non-standard paint/coating
- Satin AISI 304 stainless steel framework

Dimensions



Model		TCO22	TCO36	TCO44	TCO55
Rated Cooling Capacity*	W	2200	3300	4400	5300
Ambient temperature operating limits	°C	+15 - +45			
Settable oil temperature range	°C	+25 - +40			
Fluid type		ISO VG 32			
Temperature precision	K	+/-2			
Refrigerant gas	HFC	R134a			
Power supply					
Supply voltage	V ph Hz	400V (+/-10%) 3ph 50Hz			
Secondary supply voltage	V AC	230			
Digital thermostat		TX110			
Compressor					
Compressor type		Reciprocating			
Quantity - Number of circuits	no.	1 - 1			
Max. power draw	kW	1.50	1.72	2.32	2.61
Max. current draw	A	2.71	3.10	4.2	4.7
Axial Fan					
Fan type		Axial			
Quantity	no.	1	1	1	1
Air flow rate	m ³ /h	2300	2300	2050	2050
Available head	Pa	250			
Max. power draw	kW	0.18	0.18	0.18	0.18
Max. current draw	A	0.81	0.81	0.81	0.81
Centrifugal Fan (optional)					
Fan type		Centrifugal			
Quantity	no.	1	1	1	1
Air flow rate	m ³ /h	2100 - 2400	2100 - 2400	2100 - 2400	2100 - 2400
Max. power draw	W	145 - 205	145 - 205	145 - 205	145 - 205
Max. current draw	A	0.35 - 0.37	0.35 - 0.37	0.35 - 0.37	0.35 - 0.37
Standard Pump					
Pump type		Gear pump			
Quantity	no.	1	1	1	1
Nominal fluid flow rate	l/min	10	10	20	20
Nominal available head	bar	20	20	20	20
Max. power draw	kW	0.75	0.75	1.1	1.1
Max. current draw	A	1.7	1.7	2.6	2.6
Storage tank capacity (optional)					
Storage tank capacity (optional)	l	30			
IN/OUT liquid connections	inch	3/4"			
Net weight (approximate)***	kg	132	134	136	138
Width	mm	595			
Depth	mm	678			
Height	mm	995			
Sound pressure level**	dB(A)	57	57	57	57
IP rating	IP	44			
<p>* Data relating to operation under the following conditions: intake/outlet temperature 40/30°C, ISO VG 32 oil, ambient temperature 32°C. Cooling power refers to the evaporator unit.</p> <p>** Sound pressure level, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres from the ground, per ISO 3746.</p> <p>*** Weight includes pallets and packaging (where provided for), with refrigerant charge, without storage tank and axial fans.</p> <p>**** The electrical data refer to cos φ = 0.8.</p>					

Correction factors for calculating the cooling power												
Oil outlet temperature	Fo	°C	20	25	30	35						
		factor	0.82	0.92	1	1.05						
Ambient Temperature	Fa	°C				15	20	25	32	35	40	45
		factor				1.16	1.1	1.05	1	0.97	0.91	0.84
Oil type	Ft	type	ISO VG 10		ISO VG 22		ISO VG 32		ISO VG 46		ISO VG 68	
		factor	1.15		1.1		1		0.9		0.82	
Cooling power = Nominal cooling power x Fo x Fa x Ft												

TCO56-A0 Size 2

Industrial oil chillers

COOLING CAPACITY

6000 - 8100 - 9200 - 10900 W



AIR CONDENSER

Finned high-efficiency copper tube condensing coil, complete with safety grille.

AXIAL FAN

Axial fan, complete with thermal cut-out and safety grille.

HYDRAULIC CIRCUIT

Hydraulic circuit with gear pump without tank, with maximum available pressure 20 bar, pressure limiting valve calibrated at 10 bar, 0-25 bar oil pressure gauge, regulation sensor.

ELECTRICAL PANEL

With main disconnect switch, relay motor protection, phase sequence relays.

MANAGEMENT AND CONTROL

The TX200 control unit manages the operation of the chiller and provides complete operator alarm diagnostics. An on-off contact allows the machine to be switched on remotely. Illuminated control selector. Possibility of remote display for machine regulation.

PAINT/COATING

Standard colour: RAL 7035 textured.

STRUCTURE

In powder-coated steel sheet, RAL 7035 textured finish. Easily removed panels

COMPRESSOR

Hermetic scroll compressor, cooled by the refrigerant, complete with thermal cut-out.

REFRIGERATION CIRCUIT

Complete with charging port, liquid receiver, drier filter, thermostatic valve, high- and low-pressure pressure switch, R134a refrigerant.

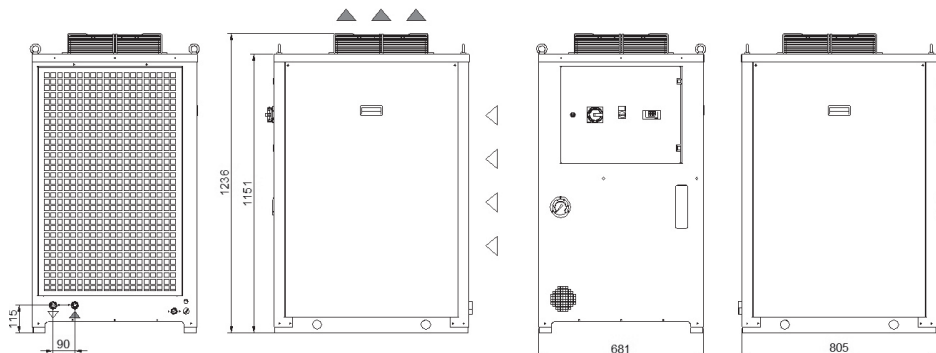
EVAPORATOR

With brazed stainless-steel plates and temperature sensor for protection against freezing.

MAIN ACCESSORIES (ref. page 189)

- HR - Oil heating element
- LTA - Operation at low ambient temperatures
- FP - Polyurethane air filter
- RU - Castors
- TD - Differential fluid temperature management (two sensors)
- BGC - Hot gas bypass for +/- 1 K temperature precision
- FL - Customer flow switch
- Non-standard paint/coating
- Satin AISI 304 stainless steel framework

Dimensions



Model		TCO56	TCO70	TCO91	TCOA0
Rated Cooling Capacity*	W	6000	8100	9200	10900
Ambient temperature operating limits	°C	+15 - +45			
Settable oil temperature range	°C	+25 - +40			
Fluid type		ISO VG 32			
Temperature precision	K	+/-2			
Refrigerant gas	HFC	R134a			
Power supply					
Supply voltage	V ph Hz	400V (+/-10%) 3ph 50Hz			
Secondary supply voltage	V	230-24 V AC			
Digital thermostat		TX200			
Compressor					
Compressor type		Scroll			
Quantity - Number of circuits	no.	1 - 1			
Max. power draw	kW	3.7	3.9	4.4	4.6
Max. current draw	A	5.4	6.7	7.2	7.5
Axial Fan					
Fan type		Axial			
Quantity	no.	1	1	1	1
Air flow rate	m ³ /h	2800	2800	2800	2800
Max. power draw	W	130	130	130	130
Max. current draw	A	0.6	0.6	0.6	0.6
Centrifugal Fan (optional)					
Fan type		Centrifugal			
Quantity	no.	1			
Air flow rate	m ³ /h	2800			
Available head	Pa	250		230	
Max. power draw	kW	0.60			
Max. current draw	A	2.3			
Standard Pump					
Pump type		Gear pump			
Quantity	no.	1	1	1	1
Nominal fluid flow rate	l/min	20	20	40	40
Nominal available head	bar	20	20	20	20
Max. power draw	kW	1.1	1.1	1.9	1.9
Max. current draw	A	3	3	4.6	4.6
Storage tank capacity (optional)	l	60			
IN/OUT liquid connections	inch	3/4"			
Net weight (approximate)***	kg	145	155	175	185
Width	mm	681			
Depth	mm	805			
Height	mm	1236			
Sound pressure level**	dB(A)	60	60	60	60
IP rating	IP	44			

* Data relating to operation under the following conditions: intake/outlet temperature 40/30°C, ISO VG 32 oil, ambient temperature 32°C. Cooling power refers to the evaporator unit.

** Sound pressure level, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres from the ground, per ISO 3746.

*** Weight includes pallets and packaging (where provided for), with refrigerant charge, without storage tank and axial fans.

**** The electrical data refer to cos φ = 0.8.

Correction factors for calculating the cooling power												
Oil outlet temperature	Fo	°C	20	25	30	35						
		factor	0.82	0.92	1	1.05						
Ambient Temperature	Fa	°C				15	20	25	32	35	40	45
		factor				1.16	1.1	1.05	1	0.97	0.91	0.84
Oil type	Ft	type	ISO VG 10		ISO VG 22		ISO VG 32		ISO VG 46		ISO VG 68	
		factor	1.15		1.1		1		0.9		0.82	
Cooling power = Nominal cooling power x Fo x Fa x Ft												