

FRIGA-BOHN®

CO2LD SubLine

CO2 compressor rack
Cascade installation on glycol water loop

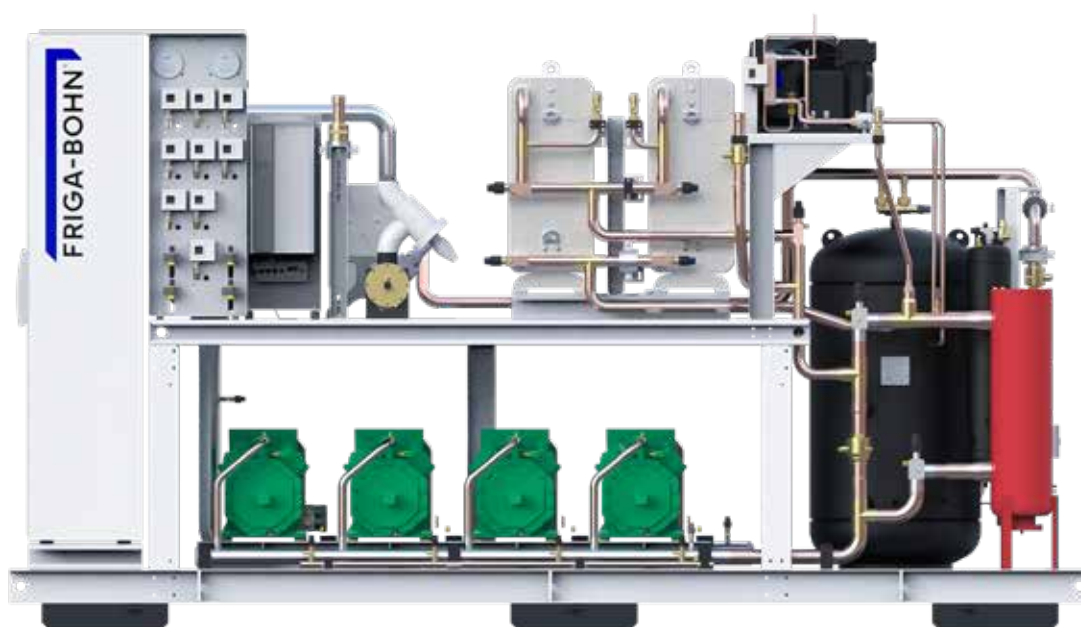
CO2



|||| LT 4 - 340 kW



- # **Modular unit** to best meet the needs of your application, available in two versions:
 - encased outdoor **CO**,
 - machine room **MR**.
- # **Compact** to save space.
- # Use of CO2, a natural refrigerant, for **more environmentally friendly** refrigeration.



OIL LINE (2 compressors or more)

- # Oil receiver with high and low indicator, shut-off valves and relief valve from 2 compressors.
- # Return with filter and oil indicator from 2 compressors.
- # Electronic level controller with shut-off valve per compressor from 2 compressors.
- # Non-adjustable differential valve for degassing the receiver connected to the LP manifold from 2 compressors.
- # Flexible connection for each compressor (copper oil collector starting from 3 compressors)

Size	Liquid Shock Absorber	Liquid-Vapor Heat Exchanger	Oil Separator	Oil Separator Bypass
XS	With internal heat exchanger	Not assigned	TURBOIL	Not available
S	With internal heat exchanger	Not assigned	TURBOIL	Not available
M	Standard	External heat exchanger	COALESCENT	Yes
L	With internal heat exchanger	Not assigned	TURBOIL	Not available
XL	Standard	External heat exchanger	COALESCENT	Yes

COMPRESSORS

- # Semi-hermetic reciprocating technology compressors equipped with:
 - Crankcase heater.
 - Suction and delivery shut-off valves.
 - HP and LP pressure ports with Schrader connector.
 - 4 cylinders with integrated IQ module

MANIFOLDS

- # A general filter unit or per compressor.
- # Aspiration:
 - Compressors 1 and 2, in copper
 - Compressors 3 and 4, stainless steel collector
- # Discharge:
 - Compressors 1 and 2, in copper
 - Compressors 3 and 4, copper collector

CONNECTION

- # 1 connecting valve on the suction side and the liquid outlet.

ELECTRICAL BOX

- # Factory-assembled with anti-vibration mounts
- # CAREL or DANFOSS control system
- # Emergency operation via pressure switch

CONTROL AND SAFETY DEVICES

- # Per compressor:
 - 1 HP cartridge pressure switch(s) with automatic reset per compressor.
 - INT safety thermistor box.
- # Per rack:
 - LP general safety pressure switch.
 - HP general safety pressure switch.
 - LP support pressure switches.
 - HP and LP pressure gage set diameter 100 mm class 1.
 - LP and HP sensors for normal operation regulator.
 - LP and HP sensors for back-up mode regulator.
- # Tank pressure maintenance unit (optional):
Condensing unit charged with R134a and connected to the CO2 liquid receiver via a plate unit exchanger.

OPTIONS

GMP Safety unit (delivered installed and connected)

LIQUID LINE

- # Vertical liquid receiver with shut-off valves.
- # Double safety shut-off valve with inverter switch.
- # Removable cartridge drier with valve for maintenance (1/4" SAE).
- # Optoelectronic level alarm mounted on liquid receiver (high and low level).
- # Plate liquid/steam exchanger.
- # Liquid indicator.
- # Suction valve and filter
- # Liquid separator tank
- # Drier bypass

OPTIONS

DES Braze plate desuperheater
RLS Oversized receiver
BSH Oil separator bypass (on coalescent)

HP circuit	45 bars
Liquid receiver	45 bars
Liquid line	45 bars
LT suction	30 bars



CONDENSER

- # Soldered plate heat exchanger.
- # Delivery in kit form of a flow controller and a glycol water thermostat.
- # Air superheater option (delivered separately) placed upstream of the plate condenser, including a mounted bypass valve.

OPTIONS

2CD 75/75% condensers

INSULATION

- # Thermal insulation of suction line and liquid line.

FRAME

- # Robust welded mechanical chassis
- # Structural validation carried out in static and dynamic conditions.

CO2LD MR_(A) 1N_(B) 2HSL_(C)

(A) CO2LD CO = encased outdoor rack - CO2LD MR = machine room rack

(B) Number of compressors

(C) Model of compressors

CO2LD Subline

Negative range

			1N / 2KSL	1N / 2JSL	1N / 3HSL	1N / 2GSL	2N / 2KSL	1N / 2FSL	2N / 2JSL	3N / 2KSL	1N / 2ESL	2N / 2HSL	1N / 2DSL	3N / 2JSL	2N / 2GSL	1N / 2CSL	1N / 2FSL
Power CO2*	kW		4,2	5,4	7	8,4	8,4	10,8	10,8	12,6	13,4	14	15,9	16,2	16,7	19,3	20,8
Power consumption*	kW		1,2	1,6	2	2,3	2,4	3	3,3	3,7	3,6	4	4,2	4,9	4,7	5,1	5,5
Compressor	Nb		1	1	1	1	2	1	2	3	1	2	1	3	2	1	1
Size			XS	XS	XS	XS	S	XS	S	L	XS	S	XS	L	S	XS	XS
Max. Input current	A		3,5	4,6	6	6,8	7	8,6	9,2	10,5	9,7	12	11,3	13,8	13,6	13,9	15,7
Receiver volume	l		45	45	45	45	60	45	60	60	60	60	60	60	60	60	94
Connection	Suction	Ø	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	7/8"	7/8"	5/8"	7/8"	7/8"	7/8"	7/8"	1"1/8
	Delivery	Ø	1/2"	1/2"	1/2"	1/2"	5/8"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
	Liquid	Ø	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	1/2"	3/8"	1/2"	1/2"	1/2"	1/2"	5/8"
Dimensions	L D H	mm	Contact us														
Weight		kg															

* Evaporating temperature: -35 °C / Condensing temperature: -3 °C - Total superheat 20K, useful 10K and subcool 3K, with a 60 Hz head compressor

Glycol water: Percentage of glycol = 40% - Regime -8/-4 °C

CO2LD Subline

Negative range

			3N / 2HSL	2N / 2FSL	3N / 2GSL	1N / 4ESL	2N / 2ESL	1N / 4DSL	2N / 2DSL	3N / 2FSL	1N / 4CSL	2N / 2CSL	3N / 2ESL	2N / 4FSL	3N / 2DSL	1N / 4VSL	2N / 4ESL
Power CO2*	kW		21	21,6	25,1	26,4	26,9	31,4	31,8	32,4	38,2	38,7	40,3	41,7	47,7	49,1	52,8
Power consumption*	kW		6	6	7	6,9	7,2	8,2	8,4	9	10	10,2	10,7	11	12,6	12,8	13,9
Compressor	Nb		3	2	3	1	2	1	2	3	1	2	3	2	3	1	2
Size			L	S	L	XS	S	XS	S	L	XS	S	L	S	L	XS	S
Max. Input current	A		18	17,2	20,4	18,9	19,4	22	22,6	25,8	26,7	27,8	29,1	31,4	33,9	33,5	37,8
Receiver volume	l		60	60	60	94	94	94	94	60	94	94	94	94	94	158	94
Connection	Suction	Ø	7/8"	7/8"	7/8"	1"1/8	1"1/8	1"1/8	1"1/8	7/8"	1"1/8	1"1/8	1"1/8	1"3/8	1"1/8	1"3/8	1"3/8
	Delivery	Ø	5/8"	7/8"	5/8"	5/8"	7/8"	7/8"	7/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1"1/8	7/8"
	Liquid	Ø	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	1/2"	5/8"	5/8"	5/8"	7/8"	5/8"	7/8"	7/8"
Dimensions	L D H	mm	Contact us														
Weight		kg															

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(A) CO2LD CO = encased outdoor rack - CO2LD MR = machine room rack

(B) Number of compressors

(C) Model of compressors

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Negative range

		4N / 2ESL	3N / 2CSL	1N / 2TSL	3N / 4FSL	2N / 4DSL	4N / 2DSL	1N / 4PSL	2N / 4CSL	4N / 2CSL	3N / 4ESL	1N / 4NSL	4N / 4FSL	3N / 4DSL	2N / 4VSL	4N / 4ESL
Power CO2*	kW	53,7	58	58,8	62,5	62,7	63,6	69,5	76,4	77,3	79,2	81,2	83,3	94,1	98,2	105,6
Power consumption*	kW	14,3	15,3	15,3	16,4	16,5	16,9	18	20	20,4	20,8	21	21,9	24,7	25,5	27,7
Compressor	Nb	4	3	1	3	2	4	1	2	4	3	1	4	3	2	4
Size		L	L	XS	XL	S	L	XS	S	L	XL	XS	XL	XL	M	XL
Max. Input current	A	38,8	41,7	40	47,1	44	45,2	48,3	53,4	55,6	56,7	55,5	62,8	66	67	75,6
Receiver volume	l	94	94	158	158	94	94	158	94	94	158	158	158	158	158	158
Connection	Suction	Ø	1"3/8	1"1/8	1"3/8	1"5/8	1"3/8	1"3/8	1"3/8	1"3/8	1"5/8	1"3/8	1"5/8	1"5/8	1"5/8	1"5/8
	Delivery	Ø	1"1/8	7/8"	1"1/8	1"1/8	7/8"	1"1/8	1"1/8	1"1/8	1"1/8	1"1/8	1"3/8	1"3/8	1"3/8	1"3/8
	Liquid	Ø	7/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1"1/8	1"1/8	1"1/8	1"1/8
Dimensions	L D H	mm														
Weight	kg	kg														
Contact us																

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Negative range

			3N / 4CSL	2N / 2CSL	4N / 4DSL	2N / 4PSL	3N / 4VSL	4N / 4CSL	2N / 4NSL	3N / 3TSL	4N / 4VSL	3N / 4PSL	4N / 4TSL	3N / 4NSL	4N / 4PSL	4N / 4NSL
Power CO2*		kW	114,6	117,7	125,4	139	147,3	152,8	162,5	176,5	196,5	208,5	235,4	243,7	278	325
Power consumption*		kW	30	30,6	32,9	36,1	38,3	40,1	42,1	45,8	51	54,1	61,1	63,1	72,1	84,2
Compressor		Nb	3	2	4	2	3	4	2	3	4	3	4	3	4	4
Size			XL	M	XL	M	XL	XL	M	XL	XL	XL	XL	XL	XL	XL
Max. Input current		A	80,1	80	88	96,6	100,5	106,8	111	120	134	144,9	160	166,5	193,2	222
Receiver volume		l	158	158	158	158	300	158	158	300	300	300	300	300	300	300
Connection	Suction	Ø	1"5/8	1"5/8	1"5/8	2"1/8	2"1/8	1"5/8	2"1/8	2"1/8	2"1/8	2"1/8	2"1/8	2"1/8	76,1	76,1
	Delivery	Ø	1"3/8	1"3/8	1"3/8	1"3/8	1"5/8	1"3/8	1"3/8	1"5/8	1"5/8	1"5/8	1"5/8	1"5/8	2"1/8	2"1/8
	Liquid	Ø	1"1/8	1"1/8	1"1/8	1"1/8	1"1/8	1"1/8	1"1/8	1"1/8	1"3/8	1"3/8	1"3/8	1"3/8	1"3/8	1"3/8
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