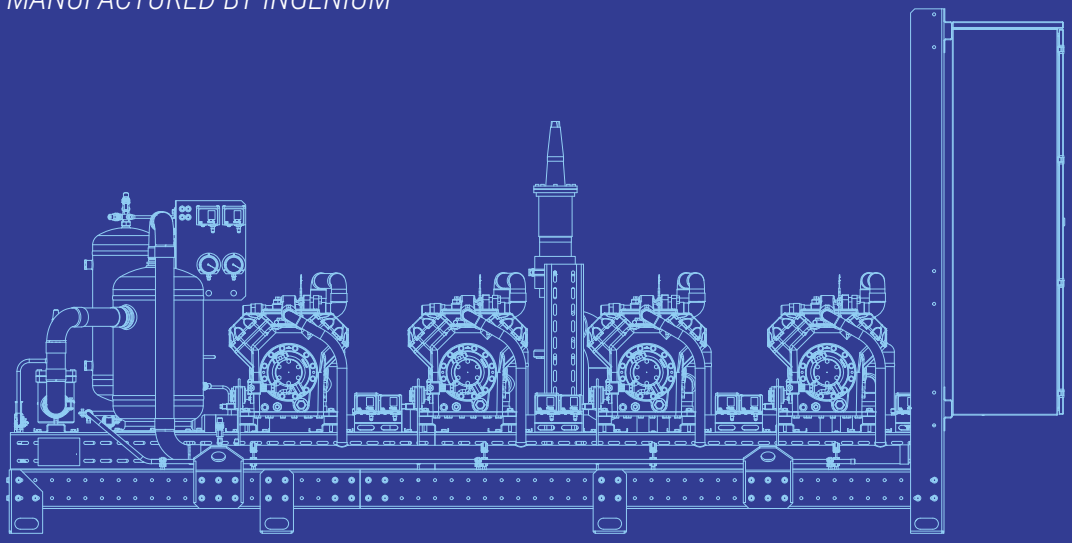
TECHNICAL CATALOGUE

INGENIUM

PRODUCT CATALOGUE

MANUFACTURED BY INGENIUM ™



ingenium-company.ru

REV. I. 08.2020

I-CU series cooling units

Semi-hermetic piston compressor type
units with cooling capacity from 1 kW to 460 kW

Semi-hermetic screw compressor type
units with cooling capacity from 12 to 1710 kW

Hermetic scroll compressor type
units with cooling capacity from 2 to 228 kW

Compressor-condenser unit
cooling capacity from 3 to 1500 kW

Heat pump unit
with capacity from 3 to 1500 kW

I-CC series cooling units

Liquid cooling systems - chillers

Semi-hermetic screw compressor type
units with cooling capacity from 65 to 1600 kW

Semi-hermetic piston compressor type
units with cooling capacity from 1,5 to 460 kW

Hermetic scroll compressor type
units with cooling capacity from 2 to 150 kW

I-RU series receiver units

I-PU series pumping units

Cooling units are completed with the original INGENIUM control panels

The company conforms ISO-2015 QMS

INGENIUM ™ equipment meets the EEU requirements

Field of Application

Food and Processing Industry
- *edible food and food raw material process cooling and freezing*
- *food storage maintenance (meat, poultry, fish, milk, cheese, vegetable oil, beer, beverages, bread, confectionary products and etc.)*
- *vegetable and fruit long-term CA-storage maintenance (vegetable and fruit storehouse type implementation)*
- *handling and storage*
- *process air-conditioning of manufacturing areas*

Chemical Industry
clean ethylene, propane, propylene content intake from petroleum and natural gas refinery, synthetic material and nitrogenous fertilizers industrial manufacturing

Construction
indoor climate control systems

Nuclear Industry
cooling units

Mining Industry
soil freezing in hole drilling process

Sports facilities
ice rinks and arenas, winter sports

Data processing centers
temperature control in enclosed space within desired limits

Logistics and Retail
low-temperature food storage facilities, distribution centers, wholesale distribution centers, hypermarkets, industrial freezers and freezing chambers

Pharmaceutical Industry
Industrial freezing facilities in drug manufacturing

Metallurgical engineering
cooling systems in processing: wet blast furnace gas cleaning system

Plastic products
plastic and polymeric materials processing, PET manufacturing, PVC processing, PAP manufacturing, plastic window profile, packing units, cooling systems in injection molding machines and process extrusion lines processing, calender rollers and extruders operating

Shipbuilding Industry
cooling units for fishery products freezing and storage maintenance

Nomenclature

Manufacturer (INGENIUM)	Production batch (Type of products)		Temperature characteristics	Quantity of compressor units		Compressor model	Oil type	Possible options		Refrigerant coolant
I	– CU	–	M	– N	x	4PES15	Y	XX...X		R507A

CU	compressor unit	H	high temperature	Y	synthetical
CC	liquid cooling systems	M	medium temperature		
RU	receiver units	L	low temperature		
PU	pumping units				

Compressor in stock

End-to-end options description

Option A – vibration dampers
- ***A1*** *– vibration isolators set for each compressor*
- ***A2*** *– vibrating bearings set under frame-mounted compressor unit*

Option B – economizer, liquid and steam injector
- ***B1*** *– mechanically controlled TEV economizer*
- ***B2*** *– electronically controlled TEV economizer*
- ***B3*** *– liquid injection system*
- ***B4*** *– steam injection system*

Option C – check valve
- ***C1*** *– discharge reinforced check valve for each compressor unit*
- ***C2*** *– discharge line check valve following the oil separator*

Option D – liquid level sensor
- ***D1*** *– refrigerant receiver LLS*
- ***D2*** *– refrigerant receiver LLS*
- ***D3*** *– oil receiver tank LLS*
- ***D4*** *– oil receiver tank HLS*
- ***D5*** *– oil separator chamber LLS*

Option E – control panel
- ***E1*** *– control cabinet without controller. Suitable for units without capacity control options*
- ***E2*** *– control cabinet with a controller for stepwise capacity regulation. Applies to options Q1 and Q2*
- ***E5*** *– ontrol cabinet with a controller for smooth performance control. Applies to option Q5*

Option F – cylinder heads blowdown fan

Option H – hot gas delivery line for operating the consumers defrosting system

Option K – oil cooling set
- ***K1*** *– ODAF system*
- ***K2*** *– thermosyphon-type oil cooling system*
- ***K3*** *– liquid-type oil cooling system*

Option L – heat insulated liquid separator on suction line for each compressor

Option M – high- and low-pressure gauge

Option O – oil separator chamber equipped with heater, shutoff valve, filter and inspection window
- ***O1*** *– oil level indication line equalization line*
- ***O2*** *– oil level electrically controlled adjusters*

Option P – high- and low-pressure switch on suction and discharge line manifold
- ***P1*** *– high pressure control switch for condensing fans cooling, single item*
- ***P2*** *– high pressure control switch for condensing fan cooling, two items*
- ***P3*** *– high pressure control switch for condensing fan cooling, three items*

Option Q – capacity control
- ***Q1*** *– compressor capacity regulation per one cylinder block (50..100%)*
- ***Q2*** *– compressor capacity regulation for two cylinder blocks (10..100%)*
- ***Q3*** *– master compressor capacity control for three cylinders' modules*
- ***Q4*** *– compressor capacity digital control*
- ***Q5*** *– frequency control of compressor capacity*
- ***Q6*** *– two master compressors' capacity frequency control unit*

Option R – receiver module and liquid channel
- ***R1*** *– receiver unit equipped with shutoff valves, one relief damper, filter drain, inspection window and liquid flow line frame-mounted shutoff valve*
- ***R2*** *– receiver unit equipped with shutoff valves, two relief dampers and three-way valve, as well as with filter drain, inspection window and liquid line frame-mounted shutoff valve*
- ***R3*** *– two relief dampers with three-way valve mounted on refrigerant receiver*

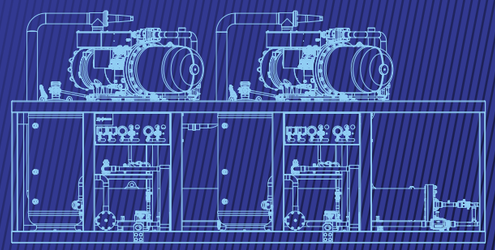
Option S – UV rays shielded insulation, IP55-compliant pressure switch protection, additional compressor crankcase heating

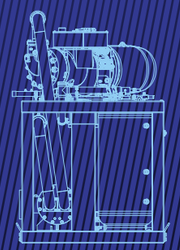
Option T – tubular electric heating element, heating
- ***T1*** *– refrigerant receiver heating system*

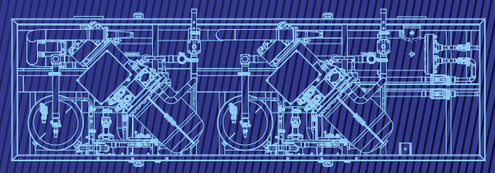
Option V – shutoff valves set

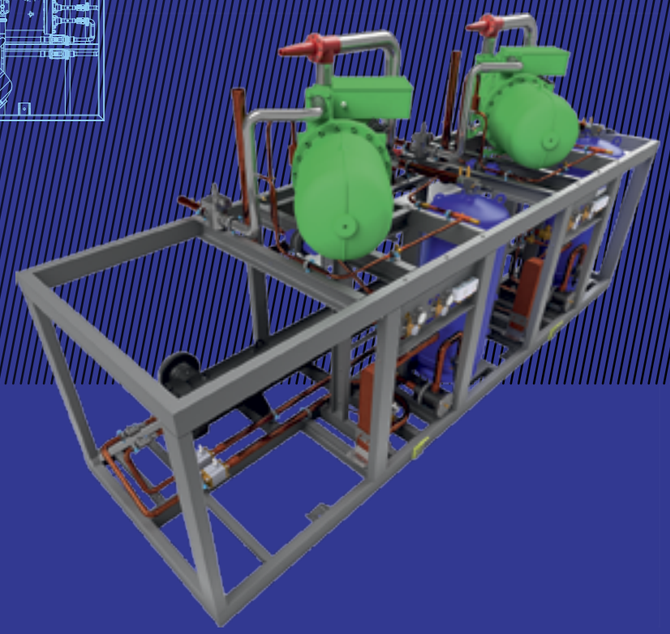
Option W – condensing pressure control system for discharge line

Semi-hermetic screw compressor type liquid chilling systems









SERIES
I-CC
«INGENIUM-COMPANY» MANUFACTURED REFRIGERATING UNITS

Liquid chilling systems item name

I-CC – M – 2 x CSH7573Y – B1E2MVW R507A

1 | 2 | 3 | 4 | 5 | 6

1. ***Unit type***
   I-CC *– Ingenium compressor chiller*
2. ***Temperature level***
   (evaporation temperature)
   L/M/H *– Low/Medium/High*
3. ***Compressor units' quantity***
   No number marking in case of single
4. ***Compressor unit short name***
   In case of different compressor types usage, the marking is indicated with " I "
5. ***Options***
   refer to "End-to-end options description"
6. ***Refrigerant used***
   (optional)

Semi-hermetic screw compressor type liquid chilling systems
(standard package + options)

Standard item list
Semi-hermetic screw compressor, series Compact, with shutoff valves on discharge line, engine protection gear, oil level control switch, capacity regulation system and high- and low- pressure safety switch per each compressor unit
Coolant receiver unit equipped with shutoff valves and relief damper, filter drained liquid flow line system, inspection window, shutoff valve, solenoid valve and electrically controlled TE-valve per each refrigerant circuit
Heat insulated shell-and-tube evaporator, flow switch, drainage and air exhaust service valves
Heat insulated suction duct system
Painted metal frame
Documentation set

Additional options

Item name	Marking
Mechanically controlled TEV economizer	B1
Electrically controlled TEV economizer	B2
Refrigerant receiver LLS	D1
Refrigerant receiver HLS	D2
Control panel	E
High- and low- pressure gauges	M
UV rays shielded insulation, IP55-compliant pressure switch protection, additional compressor crankcase heating	S
Refrigerant receiver heating system	T1
Shutoff valves set	V
Condensing pressure control system on the discharge line	W

Compressor units can be equipped with extra-standard items with additional options to be provided on request

Semi-hermetic screw compressor type liquid chilling systems

Low temperature chillers

R404A/R507A, t_k= 45°C, t_o= −17°C, SH=10K, SC=2K

Model	Cooling capacity, kW	Power consumption, kW	Maximum current rating, A	Overall dimensions, LxWxH, mm	Weight, kg	Oil receiver chamber volume, dm	Discharge line, mm	Condensing unit drain line, mm	Liquid flow line, mm	Refrigerant input-output, mm
I-CC-L-2xHSK6461 ECO	180,0	99,6	198,0	4200x1400x2000	2800	300	65	65	65	150
I-CC-L-2xHSK7451 ECO	215,0	125,0	250,0	4200x1400x2000	3100	300	80	80	80	150
I-CC-L-2xHSK7471 ECO	260,0	145,0	326,0	4200x1400x2000	3100	300	65	65	65	150
I-CC-L-2xHSK8551 ECO	321,0	205,0	362,0	4600x1600x2000	3750	300	80	80	80	150
I-CC-L-2xCSH8553 ECO	330,0	191,0	372,0	4600x1600x2000	3750	2 x 160	2 x 50	2 x 50	2 x 50	150
I-CC-L-2xCSH8573	315,0	210,0	494,0	4600x1600x2000	3800	2 x 160	2 x 50	2 x 50	2 x 50	150
I-CC-L-2xCSH8573 ECO	418,0	240,0	494,0	4600x1600x2000	3800	2 x 160	2 x 50	2 x 50	2 x 50	150

High temperature chillers

R404A/R507A, t_k= 45°C, t_o= 2°C, SH=10K, SC=2K

I-CU-H-HSK5343	88,6	28,1	53,0	3500x1200x1800	850	100	35	42	42	50
I-CU-H-HSK5353	103,1	32,6	59,0	3500x1200x1800	850	100	35	42	42	65
I-CU-H-HSK5363	117,1	36,6	67,0	3500x1200x1800	850	100	35	42	42	65
I-CU-H-HSK6451	138,3	40,7	80,0	3500x1200x1800	1200	160	42	54	54	65
I-CU-H-HSK6461	164,7	51,5	99,0	3500x1200x1800	1200	160	42	54	54	80
I-CU-H-HSK7451	202,0	59,8	125,0	3700x1200x1800	1550	160	54	54	54	80
I-CU-H-HSK7461	224,0	66,7	145,0	3700x1200x1800	1550	160	54	54	54	100
I-CU-H-HSK7471	244,0	74,8	163,0	3700x1200x1800	1550	160	54	54	54	100
I-CU-H-HSK8551	313,0	99,3	181,0	3800x1200x1800	1950	160	54	54	54	100
I-CU-H-HSK8561	354,0	110,7	217,0	3800x1200x1800	1950	160	54	54	54	100
I-CU-H-HSK8571	391,0	120,7	247,0	3800x1200x1800	1950	160	65	65	65	125
I-CU-H-HSK8581	444,0	136,1	278,0	3800x1200x1800	2100	300	65	80	80	125
I-CU-H-HSK8591	503,0	153,6	331,0	3800x1200x1800	2100	300	65	80	80	125

I-CU-H-2xHSK5343	177,2	56,2	108,0	4200x1400x2000	2450	160	42	54	54	80
I-CU-H-2xHSK5353	206,2	65,2	120,0	4200x1400x2000	2450	160	42	54	54	100
I-CU-H-2xHSK5363	234,2	73,2	136,0	4200x1400x2000	2800	160	54	54	54	100
I-CU-H-2xHSK6451	276,6	81,4	162,0	4200x1400x2000	2800	200	54	54	54	100
I-CU-H-2xHSK6461	329,4	103,0	200,0	4200x1400x2000	2800	200	54	54	54	100
I-CU-H-2xHSK7451	404,0	119,6	252,0	4200x1400x2000	3100	300	65	65	65	125
I-CU-H-2xHSK7461	448,0	133,4	292,0	4200x1400x2000	3100	300	65	65	65	125
I-CU-H-2xHSK7471	488,0	149,6	328,0	4200x1400x2000	3100	300	65	65	65	125
I-CU-H-2xHSK8551	626,0	198,6	364,0	4600x1600x2000	3750	300	80	80	80	150
I-CU-H-2xHSK8561	708,0	221,4	436,0	4600x1600x2000	3800	300	80	80	80	150
I-CU-H-2xHSK8571	782,0	241,4	496,0	4600x1600x2000	3800	300	80	80	80	150
I-CU-H-2xHSK8581	888,0	272,2	558,0	4600x1600x2000	3800	300	80	80	80	200
I-CU-H-2xHSK8591	1006,0	307,2	664,0	4600x1600x2000	3800	300	80	80	80	200

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