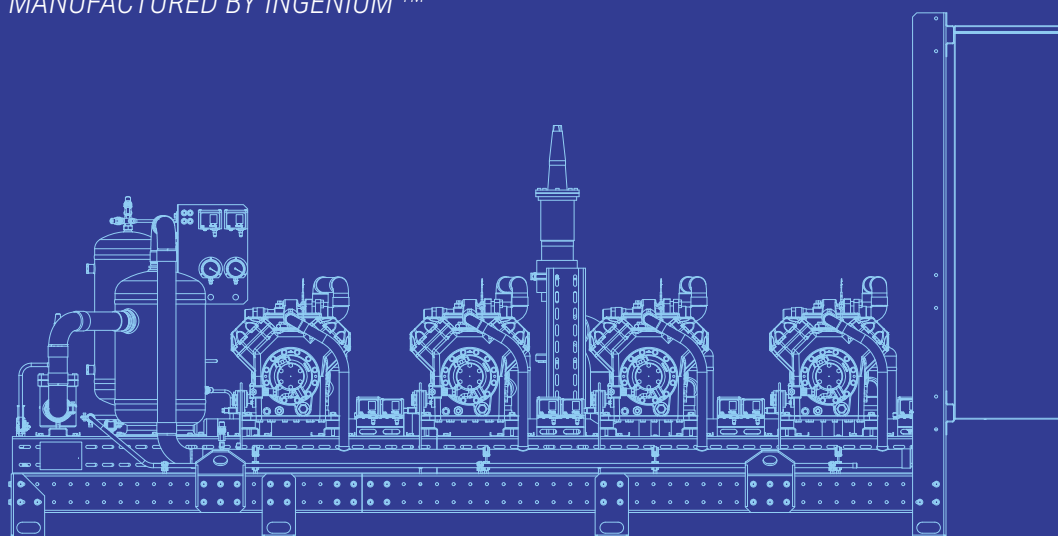


TECHNICAL CATALOGUE



PRODUCT CATALOGUE

MANUFACTURED BY INGENIUM™



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

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

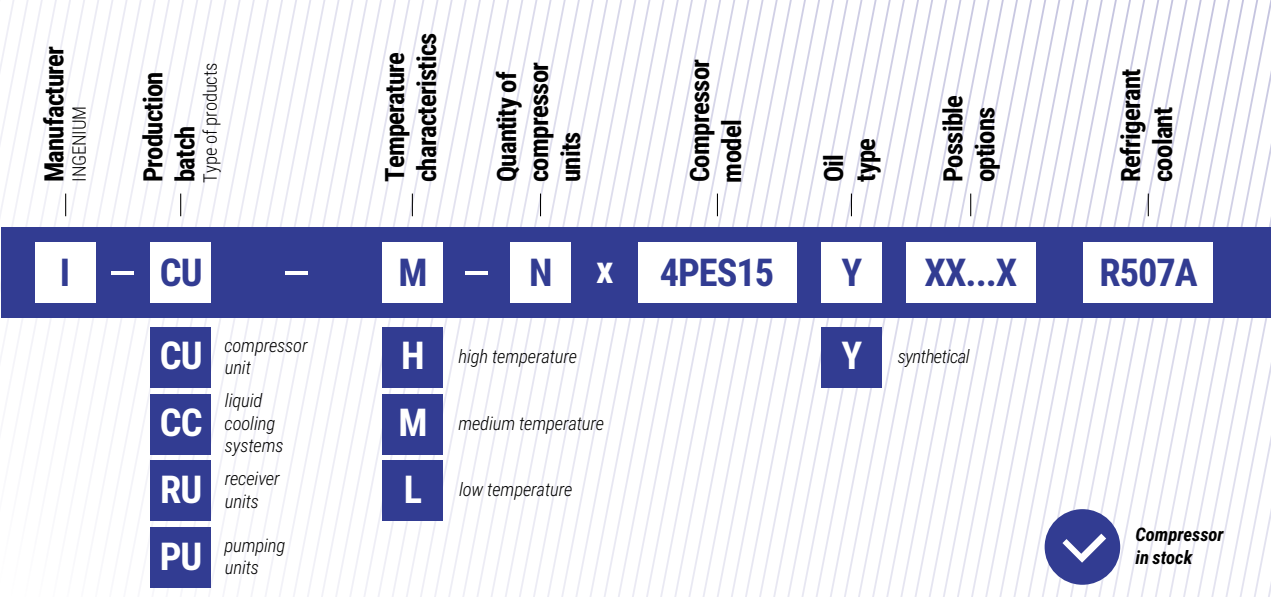
Pharmaceutical Industry
Industrial freezing facilities in drug manufacturing

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

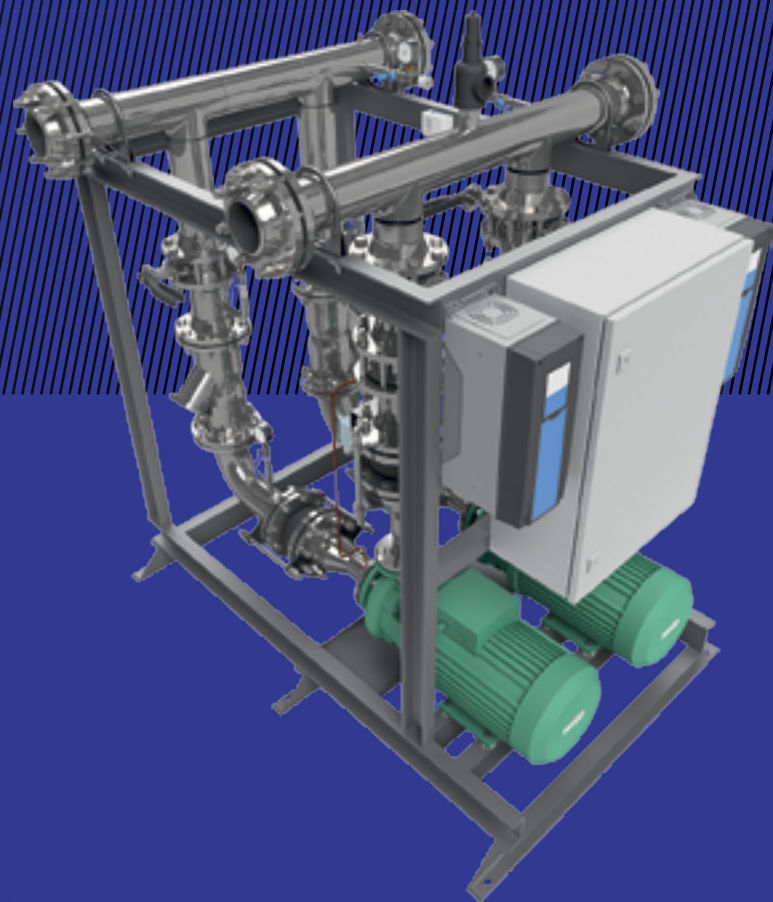
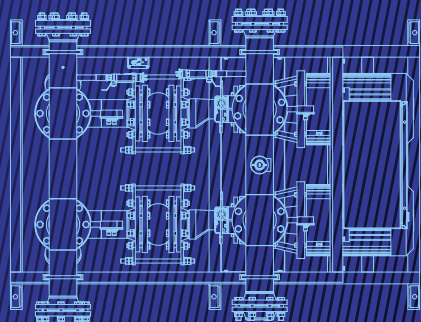
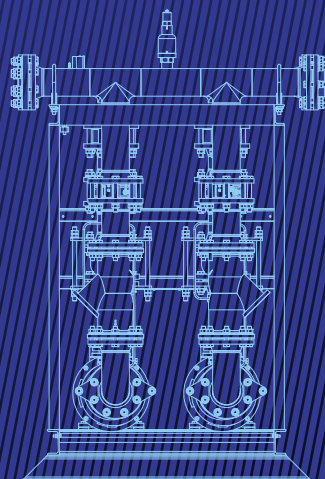
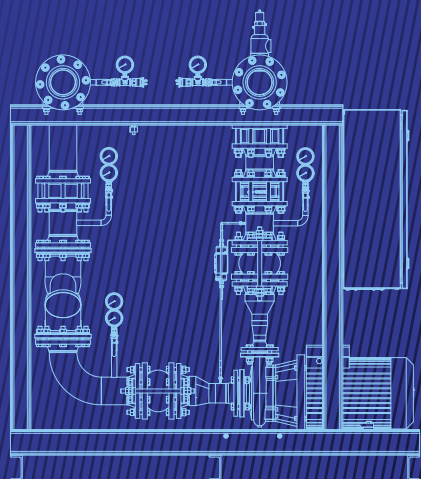
Nomenclature



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 – onrol 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**

Pumping units



Pumping units item name

I-PU – 1/2 x BL65/170-4/2 – EQ5

1 2 3 4

- 1. Unit type
I-PU – Ingenium pumping unit
- 2. Pumping units' quantity
Operating unit / pumping units in total
No number marking in case of single
- 3. Pumping unit short name
In case of different pump types usage, the marking is indicated with "I"
- 4. Options
refer to "End-to-end options description"

Pumping units (standard package + options)

Standard item list	
Centrifugal pump	
Check valve, shutoff valve, heat insulated discharge line for each pumping unit	
Shutoff valve, gauze filter, heat insulated suction line for each pumping unit	
Pressure differential switch and drainage / air exhaust service valves per each pumping unit	
Heat insulated suction and discharge manifold for one pumping unit and multi pumping units	
High- and low- pressure gauge	
Painted metal frame	
Documentation set	
Additional options	
Item name	Marking
Control panel	E
Frequency regulation unit for master pump capacity control	Q5

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

Pumping units

One-pump unit type

Unit model	Overall dimensions, LxWxH, mm	Refrigerant input-output, mm	Weight, kg
I-PU-0..1	700x400x1000	Дy15	40
I-PU-1..2	700x400x1000	Дy20	44
I-PU-2..4	800x500x1100	Дy25	77
I-PU-4..7	900x500x1100	Дy32	94
I-PU-7..10	1000x500x1100	Дy40	120
I-PU-10..16	1000x600x1300	Дy50	172
I-PU-16..25	1000x600x1300	Дy65	182
I-PU-25..35	1100x700x1700	Дy80	228
I-PU-35..60	1250x700x1700	Дy100	388
I-PU-60..85	1400x700x1800	Дy125	473
I-PU-85..130	1550x800x2000	Дy150	605
I-PU-130..220	1800x900x2300	Дy200	982

Two-pump unit type

Unit model	Overall dimensions, LxWxH, mm	Refrigerant input-output, mm	Weight, kg
I-PU-0..1	700x700x1000	Дy20	80
I-PU-1..2	700x700x1000	Дy32	89
I-PU-2..4	800x900x1100	Дy40	155
I-PU-4..7	900x900x1100	Дy50	190
I-PU-7..10	1000x1000x1100	Дy65	243
I-PU-10..16	1000x1100x1300	Дy80	349
I-PU-16..25	1000x1100x1300	Дy100	370
I-PU-25..35	1100x1300x1700	Дy125	465
I-PU-35..60	1250x1300x1700	Дy150	790
I-PU-60..85	1400x1300x1800	Дy200	964
I-PU-85..130	1550x1400x2100	Дy250	1232
I-PU-130..220	1800x1500x2400	Дy300	1999

Three-pump unit type

Unit model	Overall dimensions, LxWxH, mm	Refrigerant input-output, mm	Weight, kg
I-PU-0..1	700x1100x1000	Дy20	121
I-PU-1..2	700x1100x1000	Дy32	133
I-PU-2..4	800x1450x1100	Дy40	233
I-PU-4..7	900x1450x1100	Дy50	286
I-PU-7..10	1000x1700x1100	Дy65	366
I-PU-10..16	1000x2100x1300	Дy80	525
I-PU-16..25	1000x2100x1300	Дy100	558
I-PU-25..35	1100x2100x1700	Дy125	699
I-PU-35..60	1250x2100x1700	Дy150	1187
I-PU-60..85	1400x2100x1800	Дy200	1447
I-PU-85..130	1550x2200x2100	Дy250	1850
I-PU-130..220	1800x2300x2400	Дy300	2999



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