



air



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HITACHI
Air conditioning solutions

TWO-STAGE CONDENSING UNIT

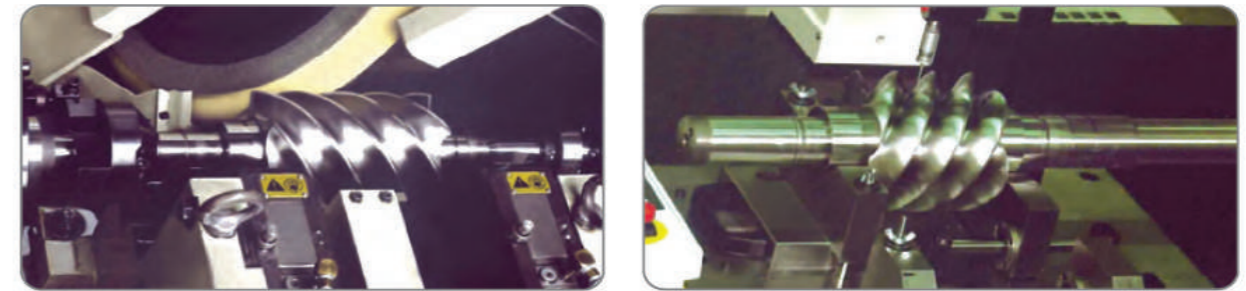


Hitachi Two-stage Compression Screw Condensing Units

Robust freezing capacity, low noise, low vibration, high efficiency and reliability. Hitachi two-stage compression screw condensing units are highly regarded in the Japanese Market

Ideal for food refrigeration, chemical manufacturing, environmental testing and other places that demand precise temperature control.

Latest / 56U Screw Tooth Profile Compressor



Adopts the exclusive 56U tooth profile screw compressor. The spirally machined tooth profile is extremely precise. The screw driven directly by the motor to compress the refrigerant with small vibration, low noise, and better durability.

KX-R501WST 220V 60Hz **Control Management**

Host Status	System Status																														
ON	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Status</th> </tr> </thead> <tbody> <tr><td>Discharge Pressure</td><td>MPa</td><td>2.090</td></tr> <tr><td>Oil Feed Pressure 1</td><td>Mpa</td><td>1.960</td></tr> <tr><td>Oil Feed Pressure 2</td><td>Mpa</td><td>1.860</td></tr> <tr><td>Middel Pressure</td><td>Mpa</td><td>0.810</td></tr> <tr><td>Suction Pressure</td><td>Mpa</td><td>1.104</td></tr> <tr><td>Discharge Temp.</td><td>°C</td><td>75.3</td></tr> <tr><td>Oil Feed Temp.</td><td>°C</td><td>46.5</td></tr> <tr><td>Suction Temp.</td><td>°C</td><td>0.3</td></tr> <tr><td>Evaporating Temp.</td><td>°C</td><td>-30.0</td></tr> </tbody> </table>	Parameter	Unit	Status	Discharge Pressure	MPa	2.090	Oil Feed Pressure 1	Mpa	1.960	Oil Feed Pressure 2	Mpa	1.860	Middel Pressure	Mpa	0.810	Suction Pressure	Mpa	1.104	Discharge Temp.	°C	75.3	Oil Feed Temp.	°C	46.5	Suction Temp.	°C	0.3	Evaporating Temp.	°C	-30.0
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<p>Operation Mode: Host Control Control Mode: External Signal Control</p> <p>Compressor Status OFF</p>																															
<p>Parameter User Screen Setting Inquire Emergency Operation</p> <p style="font-size: 8px;">2018-01-01 Mon. 08:00</p>																															

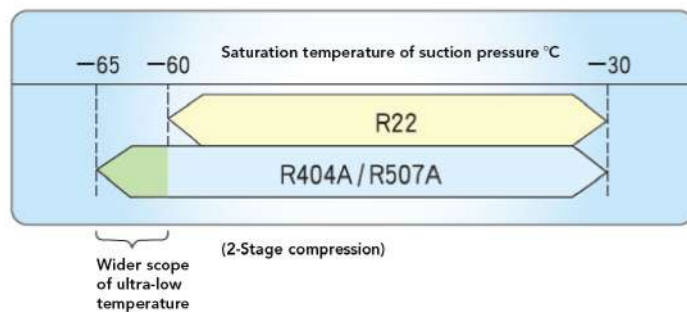
Humanized control and management / Adopt PLC+Touchscreen interface

Functions

It adopts the touchscreen interface which can instantly display the operation status (temperature, pressure) for more flexibility and convenience.



The Programmable Logical Controller (PLC) is used for precise logical control, maintaining a highly efficient, safe and stable operation of the machine. The operating condition can be fully recorded by a system manager.



R404A/R507A / Features of Screw Condensing Units

Adopt zero ODP refrigerant R404A/R507A Wider working scope

A lower saturation temperature for suction pressure is -65°C , which meets the requirements of ultra-low temperature applications.

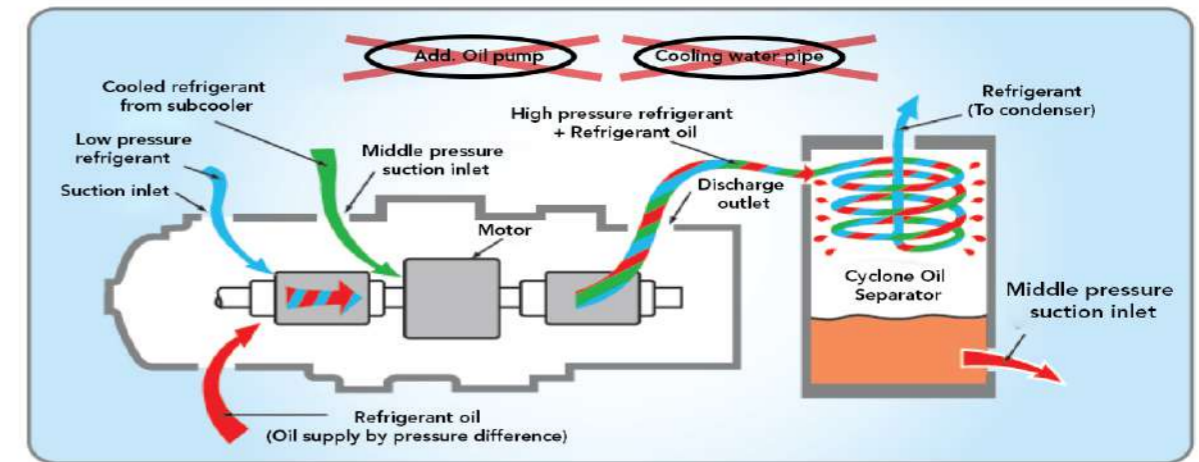
Refrigerant Oil has been packed in

Upon discharge from the factory, the initial required amount of refrigerant oil is packed.

high reliability

The maintenance interval for compressor disassembly is 24,000 hours or 5 years.

Latest / 56U Screw Tooth Profile Compressor



Refrigeration oil cooling system is used liquid refrigerant to cool down.

- No oil cooling water piping be required.
- No uneven distribution of cooling water.
- No problem of cooling water scaling.

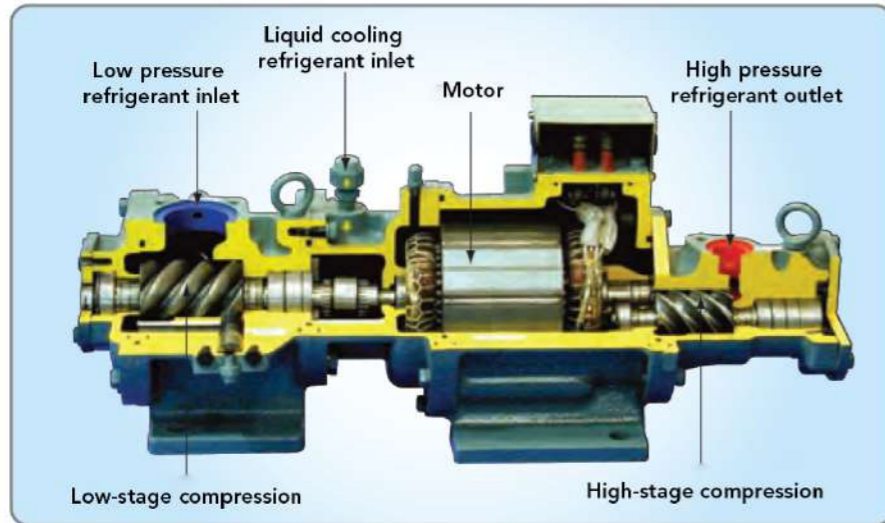
Water-cooled condenser designed for tropical climate using

- Condenser fouling coefficient for water side is $0.0002\text{m}^2\text{h}^{\circ}\text{C}/\text{kcal}$ (4 times of ARI recommended value).
- The cooling water inlet temperature can be allowed to be 34°C (JIS standard is 32°C).

Adopts Cyclone Oil Separator

- High separation efficiency (0.2% wt below) and can make the evaporator fully utilize its capacity.

High Reliability / Simplified and Precise 2-Stage Compressor



The compressor adopts rolling bearings which is suitable for pressure difference oil supply system with simplified and precise structure. There are no suction and discharge valves which greatly improve reliability. At the same time, the motor is placed in a semi-hermetic compressor without a shaft seal, therefore no need to worry about refrigerant leakage at the shaft seal.

The motor of the two-stage compressor is placed in the center, and both sides of its axis form a direct connection structure with the low-stage and high-stage screw rods. Since the motor is under special insulator to ensure the resistance of heat and refrigerant and be cooled by the bypass refrigerant which is from the subcooler. The cooling effect is great. There is no need for a leak-proof structure between the motor chamber and the compressor chamber like a water-cooled motor.

Satisfy Demands / More Applicable Places

Individual Quick Freezing I.Q.F

- Evaporating Temperature -50~-60 °C
- Chamber Temperature -35~-45 °C

- After processing, the fish at the fishing port are quickly frozen in batches and then moved to general freezers.
- After the raw eel is processed, steamed and grilled, it is quickly frozen and packaged for domestic and export sales.
- Slaughterhouse(Chicken,duck,goose,pork beef,mutton) quick freezing.
- Pizza,mochi,dumpling,dough,aquaculture.... . food etc., quickly freezing to styling, sterilize, vacuum packaging.

General Freezing

- Evaporating Temperature -30~-45 °C
- Chamber Temperature -20~-35 °C
- Area 150~500m².

- Prefabricated or quick freezing chamber.
- Freezing for seafood, shrimp, fish...etc..
- Storage for chemical, electronic, special materials.
- Low temperature storage and cold chain.

GENERAL DATA

Item (unit)		Type	KX-R301WST	KX-R501WST	KX-R752WST
Evaporating Temperature		°C	-65 ~ -30		
Power Supply		-	AC 3Φ, 220V/60Hz : AC 3Φ, 4W, 380V/60Hz		
RPM		-	3470		
Compressor	Type	-	3002SR-T	5002SR-HT	7502SR-HT
	High Stage Discharge	m ³ /h	66.7	101.3	134.8
	Low Stage Discharge	m ³ /h	165.6	251.5	355.1
Refrigerant		-	R404A or R507A (not mix)		
Refrigerant Oil	Type	-	フレオールα32N(FREOLα32N)		
	Initial Charge	L	15 (Charged)	20 (Charged)	
Capacity Control		%	100, 50 (Starting & Running)	100, 75, 50, 25 (Starting & Running)	100, 75, 50, 25 (Starting & Running)
Compressor	Power Supply	-	AC 3Φ, 220V/60Hz : AC 3Φ, 380V/60Hz		
	Starting Method	-	Y - Δ		
Operating Loop Power Supply		-	AC 1Φ, 220V/60Hz		
Condenser	Type	-	Shell and Tube		
	Inner Volume	L	100.7	118.7	131.7
	Fouling Factor	m ³ /h	0.0002m ² h °C /kcal (17.2x10 ⁻⁵ m ² °C /W)		
Auxiliary Devices		-	Oil Separator, Oil Cooler, Subcooler, Dryer		
Protection Devices		-	High & Low Pressure SW, Reverse Phase Protector, Discharge Temperature Protector, Operating Loop Fuse, Internal Protector(Compressor), Overcurrent Protector(Compressor), Oil Pressure Protector, Fusible Plug, Oil Temperature Overheat Protector		
Accessories		-	Paper Filter and O-Ring(Oil Filter), Steel Filter and Packing Ring(Suction Filter), User's Manual		
Piping Size	Gas Line	mm	50A Steel	65A Steel	80A Steel
	Liquid Line	mm	Φ25.4	Φ28.57	Φ31.75
	Condensing Water	-	FTP 2	FTP 2	FTP 3
Condensing Water Flow Rate		m ³ /h	11.4	27.6	28.8
Pressure Drop	Water Lost	m ³ /h	9.5/10.3/11.4/12.5/13.7	21.6/23.0/27.6/30.6/33.6	24.0/25.9/28.8/31.7/34.6
	Pressure Lost	mAq	2.5/2.8/3.5/4.3/5.2	5.2/5.9/8.1/9.7/11.4	2.6/3.1/3.6/4.1/4.6
Dimension(WxDxH)		mm	1350x1050x1375	1550x1150x1610	1725x1150x1670
Weight		kg	800	1250	1360

CAPACITY TABLE: (60Hz)

MODEL	Cooling Water Inlet Temperature		Evaporating Temperature							
			-65	-60	-55	-50	-45	-40	-35	-30
KX-R301WST	30	kW	9.1	12.9	16.7	20.4	26.0	31.6	39.3	46.9
		kcal/h	7,790	11,060	14,320	17,580	22,390	27,200	33,780	40,350
	32	kW	8.6	12.4	16.2	20.0	25.7	31.4	39.0	46.7
		kcal/h	7,380	10,650	13,930	17,200	22,080	26,970	33,550	40,130
	34	kW	8.3	12.1	15.9	19.7	25.4	31.1	38.7	46.3
		kcal/h	7,160	10,420	13,680	16,920	21,840	26,760	33,290	39,830
KX-R501WST	30	kW	15.1	21.4	27.7	34.1	43.4	52.7	65.5	78.2
		kcal/h	12,980	18,420	23,860	29,290	37,310	45,330	56,290	67,250
	32	kW	14.3	20.6	27.0	33.3	42.8	52.3	65.0	77.8
		kcal/h	12,290	17,750	23,210	28,660	36,800	44,950	55,910	66,870
	34	kW	13.9	20.2	26.5	32.8	42.3	51.8	64.5	77.2
		kcal/h	11,920	17,360	22,790	28,190	36,390	44,590	55,470	66,370
KX-R752WST	30	kW	22.3	32.3	42.3	52.2	66.4	80.6	100.0	119.4
		kcal/h	19,220	27,790	36,360	44,930	57,110	69,280	85,980	102,660
	32	kW	21.2	31.1	41.1	51.1	65.5	79.9	99.3	118.7
		kcal/h	18,190	26,780	35,370	43,960	56,330	68,690	85,390	102,070
	34	kW	20.5	30.4	40.4	50.3	64.8	79.2	98.5	117.8
		kcal/h	17,650	26,180	34,720	42,240	55,700	68,150	84,730	101,320

Notes: 1. The data is based on R404A
 2. Conditions: Suction superheat 15°C, standard cooling water flow rate (KX-R301WST: 11.4m³/h, KX-R501WST: 27.6m³/h, KX-R752WST: 28.8m³/h), Condenser fouling coefficient for water side is 0.0002m²h°C/kcal

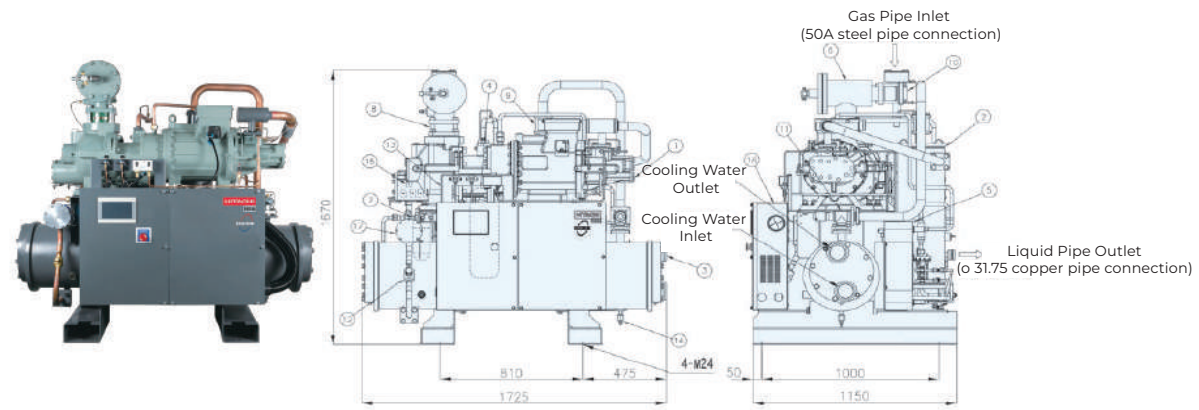
KX-R301WST

No.	Item	Remark	No.	Item	Remark
1	2-Stage Compressor	3002ST-T	10	Stop Valve (suction)	50A
2	Oil Separator		11	Stop Valve (discharge)	28.0
3	Condenser		12	Stop Valve	28.57
4	Subcooler		13	Pressure Gauge Panel	
5	Oil Cooler		14	Fusible Plug	
6	Suction Filter		15	Solenoid Valve (for capacity)	
7	Oil Filter		16	Electric Box	
8	Check Valve (suction)	50A	17	Dryer	
9	Check Valve (discharge)	1"			

KX-R501WST

No.	Item	Remark	No.	Item	Remark
1	2-Stage Compressor	3002ST-T	10	Stop Valve (suction)	50A
2	Oil Separator		11	Stop Valve (discharge)	28.0
3	Condenser		12	Stop Valve	28.57
4	Subcooler		13	Pressure Gauge Panel	
5	Oil Cooler		14	Fusible Plug	
6	Suction Filter		15	Solenoid Valve (for capacity)	
7	Oil Filter		16	Electric Box	
8	Check Valve (suction)	50A	17	Dryer	
9	Check Valve (discharge)	1"			

KX-R752WST



No.	Item	Remark	No.	Item	Remark
1	2-Stage Compressor	3002ST-T	10	Stop Valve (suction)	50A
2	Oil Separator		11	Stop Valve (discharge)	28.0
3	Condenser		12	Stop Valve	28.57
4	Subcooler		13	Pressure Gauge Panel	
5	Oil Cooler		14	Fusible Plug	
6	Suction Filter		15	Solenoid Valve (for capacity)	
7	Oil Filter		16	Electric Box	
8	Check Valve (suction)	50A	17	Dryer	
9	Check Valve (discharge)	1"			

