

Hitachi Reciprocating Compressor Catalog



HITACHI
Inspire the Next

Hitachi Compressor (Thailand), Ltd.

General Information

Profile

Name	: Hitachi Compressor (Thailand), Ltd. (HCTL)
Address	: 1/65 Moo 5, Rojana Industrial Park, Tambol Kanham, Amphur U-Thai, Ayutthaya 13210 Thailand
Established	: September 1993, under BOI promotion, with technical license of Hitachi, Ltd.
Registered capital	: 440 million Baht
Shareholders	: Hitachi Appliances, Inc. 100%
Land area	: 36 rai (58,120 m ²)
Employee	: 1,100 persons
Nature of business	: Production & Sales of Reciprocating type of compressor
Production capacity	: 2.5 million pieces per year
Certificate	: ISO 9001 certified on 7 August 1998 ISO 14001 certified on 4 November 1999 OHSAS 18001 certified on 27 November 2001

Products

Hitachi Hermetic Compressors are products born out of many years of research. All models are acclaimed by customers as not only being highly reliable, but also highly efficient.

For the wide range of applications, there is also a wide range of models including those for low temperature use and high temperature use.

All production processes are under the control of high technology and know-how developed by Hitachi, Ltd. in Tokyo, Japan. All products are CFC-free to help preserve our global environment.

Major Applications

Refrigerator-Freezer, Commercial refrigerator, Showcase, Water cooler, Ice maker.



Environmentally Friendly Products



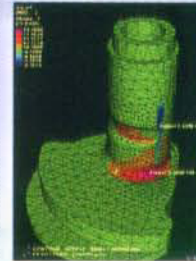
*"To the future in harmony with nature"
Environmental Slogan*

Technology & Innovation

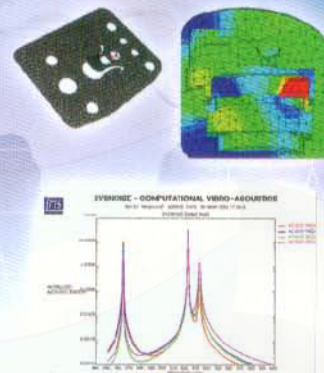
Hitachi Compressor (Thailand), Ltd. (HCTL), a member in Hitachi group, has received kind cooperation from Hitachi Japan. Hitachi Compressor (Thailand), Ltd. (HCTL) is one of the most leading companies manufacturing the Hermetic, non-CFCs compressor.

Our compressors are manufactured using modern technology under the brand name of "HITACHI". As a member of the Hitachi group in Japan, Hitachi Japan is pleased to support research and development and apply its technological base for help design and energy saving products with high efficiency and reliability to the customers satisfaction worldwide.

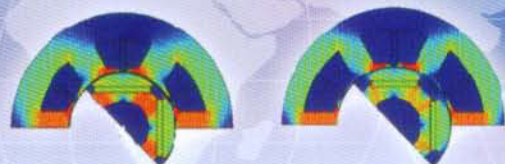
I would like to remind all HCTL staff of "Customer satisfaction" as being the main focus in our business operation and so that we can drive to the status of "Hitachi recognized worldwide" as mentioned in our motif.



Stress Analysis



Noise and Vibration Analysis



Magnetic Field of Motor Analysis

High-Quality Inspection



Quality Product

To be capable of delivering high quality products with optimal service to customers, HCTL strictly follows the guidelines of the ISO 9001 system. In the future, HCTL pledges to cooperate with all staff to maintain ISO 9001 standards of operation. This in turn ensures our capability to manufacture and deliver reliable products for total customer satisfaction.



ISO 9001



ISO 14001



ISO 18001

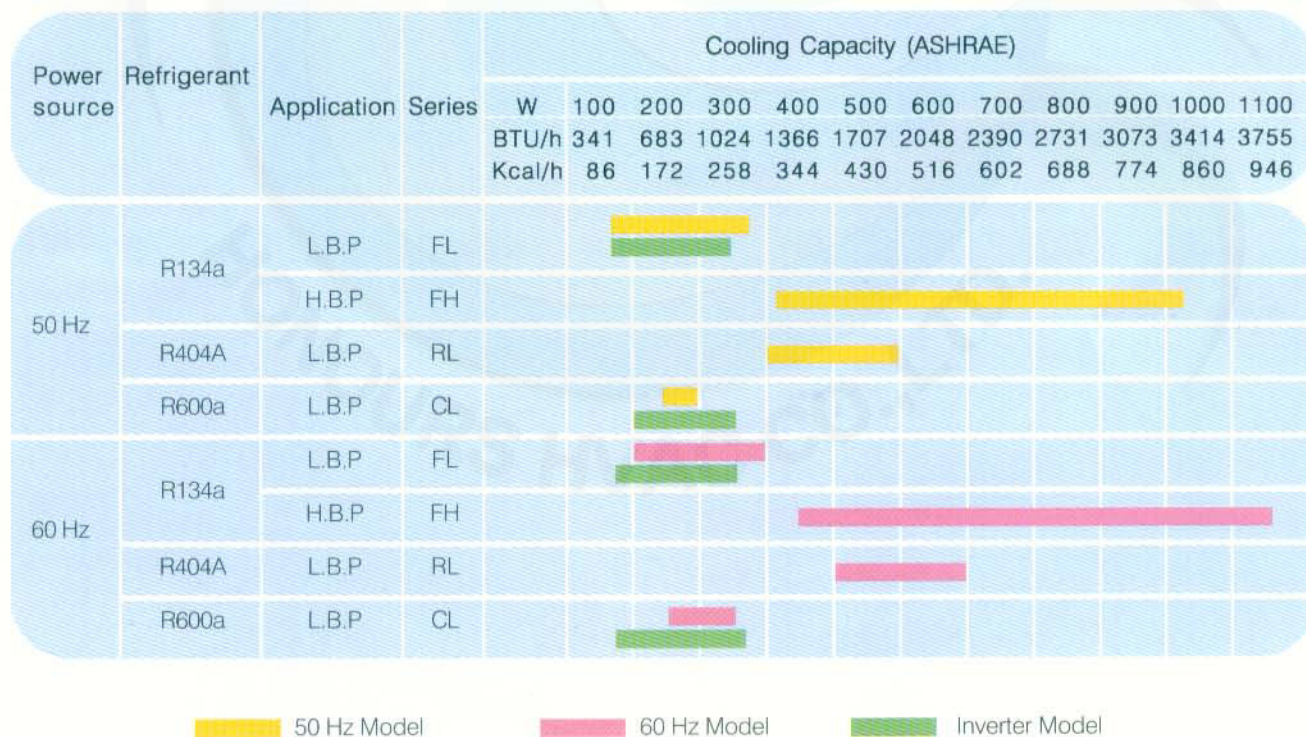
Product Range

Our Wide Selection Corresponds Fully to Market Needs Series and Cooling Capacity

Refrigerant	Application	Series	Nominal	Power	Evap. Temp. Range (°C)	Cooling	Capacity (W)
			(W)	(HP)		50Hz	60Hz
R134a	L.B.P	F series	65~200	1/12~1/3	-30~-5	78~250	90~295
	H.B.P		65~250	1/12~1/3	-10~+10	320~890	360~1000
R404A	L.B.P	R series	300~450	1/2	-30~-5	340~500	400~580
R600a	L.B.P	C series	110~120	1/7~1/4	-30~-5	84~280	

L.B.P : Low Back Pressure
H.B.P : High Back Pressure

Product Range



Product Using

- Refrigerator/Fridge
- Commercial Refrigerator
- Showcase
- Water Dispenser
- Water Cooler
- Ice Maker
- Ice cream cabinet



Refrigerator



Commercial Refrigerator



Showcase



Water Cooler & Ice Maker



Ice Cream Cabinet

Product Line-up



FL SERIES



RL SERIES



CL SERIES

Detail of Label

F L 14 62 - S B

Series name/Refrigerant

F = R134a
R = R404A
C = R600a

Application category

L = Low back pressure
H = High back pressure

Nominal power (Output)

Sign	Output(W)	Sign	Output(W)
04	45	15	150
05	55	16	160
06	65	17	170
07	75	18	180
08	85	20	200
10	100	25	250
11	110	35	350
12	125	40	400
14	140	45	450

Development

A - Z = With oil charge
1 - 9 = With out oil charge

Nominal voltages / Power source

Sign	Phase/voltage/frequency	Sign	Phase/voltage/frequency
H	1Ø 100 V 50/60 Hz	S	1Ø 220 ~ 240 V 50 Hz
P	1Ø 110 V 120 V 60 Hz	* D	1Ø 100 V 50/60 Hz
U	1Ø 127 V 60 Hz	T	3Ø 200 V 50/60 Hz
R	1Ø 200 ~ 220 V 60 Hz		

Displacement

Sign	Displacement(Cm ³)	Sign	Displacement(Cm ³)
24	2.4	62	6.2
28	2.8	68	6.8
34	3.4	75	7.5
39	3.9	88	8.8
45	4.5	97	9.7
52	5.2	11	11.0
57	5.7		

Performance Datasheet

Hitachi Hermetic Compressors

FL Series

STANDARD MODEL

Application & Refrigerant LBP R134a

Model	Nominal Power		F	Cooling Capacity			D	Cooling			O	Wg	Motor Type	Power Source					Dimension
	HP	W		Hz	W	Kcal/h		N	Oil	Fan				1	2	3	4	5	
														H	P	R	S	T	Type - H
FL0634	1/12	65		50	78	67	266				200	6.8		•			•		Type1-165
				60	90	77	307							•	•	•			
FL0739	1/10	75		50	95	82	324					7.8		•			•		
				60	108	93	368							•	•	•			
FL0845	1/8	85		50	105	90	358				270	8.1	RSIR	•			•		Type1-179
				60	118	101	403						RSCR	•	•	•			Type2-180
FL1052		100		50	120	103	409	•				8.3	CSIR	•			•		
	1/6			60	140	120	478							•	•	•			
FL1157		110		50	135	116	461				240	8.7		•			•		
				60	158	136	539							•	•	•			Type1-195
FL1262		125		50	150	129	512	•			320	9.5		•			•		Type2-200
	1/5			60	170	146	580							•	•	•			
FL1675		160		50	185	159	631		•	•	300	10.6		•			•		Type3-211
				60	210	181	717							•	•	•			
FL1888	1/4	180		50	215	185	734		•	•	300	11.1		•			•		Type4-216
				60	250	215	853							•	•	•			

Note All data covered by this catalog are given as general information only.

Since we are constantly improving our product, the specification and availability are subject to change with out notice.

Test Conditions (ASHRAE Condition)	Low back pressure (FL, RL, CL Series)	High back pressure (FH Series)
Evaporating Temperature	-23.3°C (-10°F)	7.2°C (45°F)
Condensing Temperature	54.4°C (130°F)	54.4°C (130°F)
Liquid Temperature	32.2°C (90°F)	46.1°C (115°F)
Return gas Temperature	32.2°C (90°F)	35°C (95°F)
Ambient Temperature	32.2°C (90°F)	35°C (95°F)
Power Source	Rated Voltage	

F= Frequency 1= 1ø100v
D= Displacement 2= 1ø100~120v
O= Oil Charge 3= 1ø200~220v
N= Natural 4= 1ø200~240v
Wg= Weight 5= 3ø200~240v

RSIR = Resistance Start Induction Run
RSCR = Resistance Start Capacitor Run
CSIR = Capacitor Start Induction Run
CSR = Capacitor Start and Run
IR = Induction Run

Hitachi Hermetic Compressors

HIGH EFFICIENCY MODEL

Application & Refrigerant LBP R134a

Model	Nominal Power		F	Cooling Capacity			D	Cooling			O	Wg	Motor Type	Power Source					Dimension							
	HP	W		Hz	W	Kcal/h		BTU/h	N	Oil				Fan	1	2	3	4		5						
	HP	W	Hz	W	Kcal/h	BTU/h	cm3				cm3	Kg			H	P	R	S	T	Type - H						
FL1152	1/6	110	50	132	113	450	5.19	•			270	8.3	RSCR RSIR	•			•			Type1-179						
			60	155	133	529					•	•		•			Type2-180									
FL1257	1/5	125	50	150	129	512	5.70				240	9.5		•			•					Type2-180				
			60	175	151	597					•	•		•												
FL1462		140	50	160	138	546	6.23				320	10.5		•			•				Type2-188					
			60	180	155	614					•	•		•			Type2-195									
FL1568	1/5	150	50	185	159	631	6.80				•			300	10.6	RSIR	•			•			Type2-200			
			60	210	180	717									•	•	•									
FL1875	1/4	180	50	210	181	717	7.47										10.8	RSIR	•			•		•	Type5-196	
			60	245	211	836												RSCR	•	•	•			Type5-216		
FL2088	1/3	200	50	250	215	853	8.83										300	11.1	CSR	•			•		•	Type5-216
			60	295	254	1007												IR	•	•	•					

FH Series

STANDARD MODEL

Application & Refrigerant HBP R134a

Model	Nominal Power		F	Cooling Capacity			D	Cooling			O	Wg	Motor Type	Power Source					Dimension	
	HP	W		Hz	W	Kcal/h		BTU/h	N	Oil				Fan	1	2	3	4	5	Type - H
																				H
FH0634	1/12	65	50	320	275	1092	3.42				200	6.8	RSCR	•			•		Type1-165	
			60	360	310	1228								•	•	•				
FH0739	1/10	75	50	375	323	1280	3.94				270	7.8		•			•		Type1-179	
			60	430	370	1467								•	•	•				
FH1045	1/6	100	50	450	387	1535	4.50				8.1	RSIR	•			•		Type4-211		
			60	520	447	1774							•	•	•					
FH1552	1/5	150	50	520	447	1774	5.19				8.3	CSIR	•			•				
			60	600	516	2047							•	•	•					
FH2075	1/4	200	50	760	654	2593	7.47				350	11.0	CSIR	•			•			
			60	880	757	3003								•	•	•				
FH2588	1/3	250	50	890	765	3037	8.83				11.0	CSIR	•			•	•			
			60	1000	860	3412							•	•	•					

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Evaporating Temperature	-23.3°C (-10°F)	7.2°C (45°F)
Condensing Temperature	54.4°C (130°F)	54.4°C (130°F)
Liquid Temperature	32.2°C (90°F)	46.1°C (115°F)
Return gas Temperature	32.2°C (90°F)	35°C (95°F)
Ambient Temperature	32.2°C (90°F)	35°C (95°F)
Power Source	Rated Voltage	

F= Frequency	1= 1ø100v
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O= Oil Charge	3= 1ø200~220v
N= Natural	4= 1ø200~240v
Wg= Weight	5= 3ø200~240v

RSIR = Resistance Start Induction Run
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CSIR = Capacitor Start Induction Run
CSR = Capacitor Start and Run
IR = Induction Run

Performance Datasheet

Hitachi Hermetic Compressors

RL Series

STANDARD MODEL

Application & Refrigerant LBP R404A

Model	Nominal Power		F	Cooling Capacity			D	Cooling			O	Wg	Motor Type	Power Source					Dimension						
	HP	W		Hz	W	Kcal/h		BTU/h	cm ³	N				Oil	Fan	cm ³	Kg	1		2	3	4	5		
																								H	P
<u>RL3062</u>	1/2	300	50	340	292	1160	6.23		●	●	280	11.1	CSR	●				●	Type4-211						
			60	400	343	1365								●	●	●		●							
<u>RL3568</u>		350	50	380	327	1297	6.80							●				●							
			60	450	387	1535								●	●	●		●							
<u>RL4075</u>		400	50	420	361	1433	7.47						IR	●				●							
			60	480	413	1638								●	●	●		●							
<u>RL4588</u>		450	50	500	430	1706	8.83							●				●							
			60	580	499	1979								●	●	●		●							

* These models are for standrad power sources.

We produce models for other power sources upon request.

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Power Source	Rated Voltage	

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Wg= Weight	5= 3ø200~240v

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RSCR = Resistance Start Capacitor Run
CSIR = Capacitor Start Induction Run
CSR = Capacitor Start and Run
IR = Induction Run

CL Series

STANDARD MODEL

Application & Refrigerant LBP R600a

Model	Nominal Power		F	Cooling Capacity			D	Cooling			O	Wg	Motor Type	Power Source					Dimension		
	HP	W		Hz	W	Kcal/h		BTU/h	cm3	N				Oil	Fan	1	2	3		4	5
CL1188	1/7	110	50	147	126	501	8.8	•			240	9.5	RSCR					Type2-180			
			60	175	151	597								•							
CL1297	1/6	120	50	137	125	494	9.7						•	370	11.0	RSCR				•	Type2-188
			60	169	145	576										CSR	•				Type5-216

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Test Conditions (ASHRAE Condition)	Low back pressure (FL, RL, CL Series)	High back pressure (FH Series)
Evaporating Temperature	-23.3°C (-10°F)	7.2°C (45°F)
Condensing Temperature	54.4°C (130°F)	54.4°C (130°F)
Liquid Temperature	32.2°C (90°F)	46.1°C (115°F)
Return gas Temperature	32.2°C (90°F)	35°C (95°F)
Ambient Temperature	32.2°C (90°F)	35°C (95°F)
Power Source	Rated Voltage	

F= Frequency	1= 1ø100v
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IR = Induction Run

Hitachi Hermetic Compressors

FL Series

INVERTOR MODEL

Application & Refrigerant LBP R134a

Model	Speed range	Capacity range	D	Cooling			O	Wg	Motor Type	Dimension
				N	Oil	Fan				
	rpm	W	cm ³				cm ³	Kg		Type - H
FL1557	25~80	86~225	5.7			•	220	7.4	DC	Type2-188
FL1875	27~70	120~255	7.5				220	9.0		

<Test condition

R134a model	H/L=40/-30 deg C	ASHRAE	CECOMAF
Evaporating temperature	-30.0°C (-22.0°F)	-23.3°C (-10°F)	-25.0°C (-13.0°F)
Condensing temperature	40.0°C (104.0°F)	54.4°C (130°F)	55.0°C (131.0°F)
Gas superheated to	32.0°C (89.6°F)	32.2°C (90°F)	32.0°C (89.6°F)
Liquid sub cooled to	32.0°C (89.6°F)	32.2°C (90°F)	55.0°C (131.0°F)
Ambient temperature	32.0°C (89.6°F)	32.2°C (90°F)	32.0°C (89.6°F)

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D= Displacment O= Oil Charge N= Natural Wg= Weight

CL Series

INVERTOR MODEL

Application & Refrigerant LBP R600a

Model	Speed range	Capacity range	D	Cooling			O	Wg	Motor Type	Dimension
				N	Oil	Fan				
	rpm	W	cm ³				cm ³	Kg		Type - H
CL1597	25~71	70~195	9.7				270	7.8	DC	Type3-156
CL1610	25~80	83~236	10.3	•		•		8.6		

<Test condition

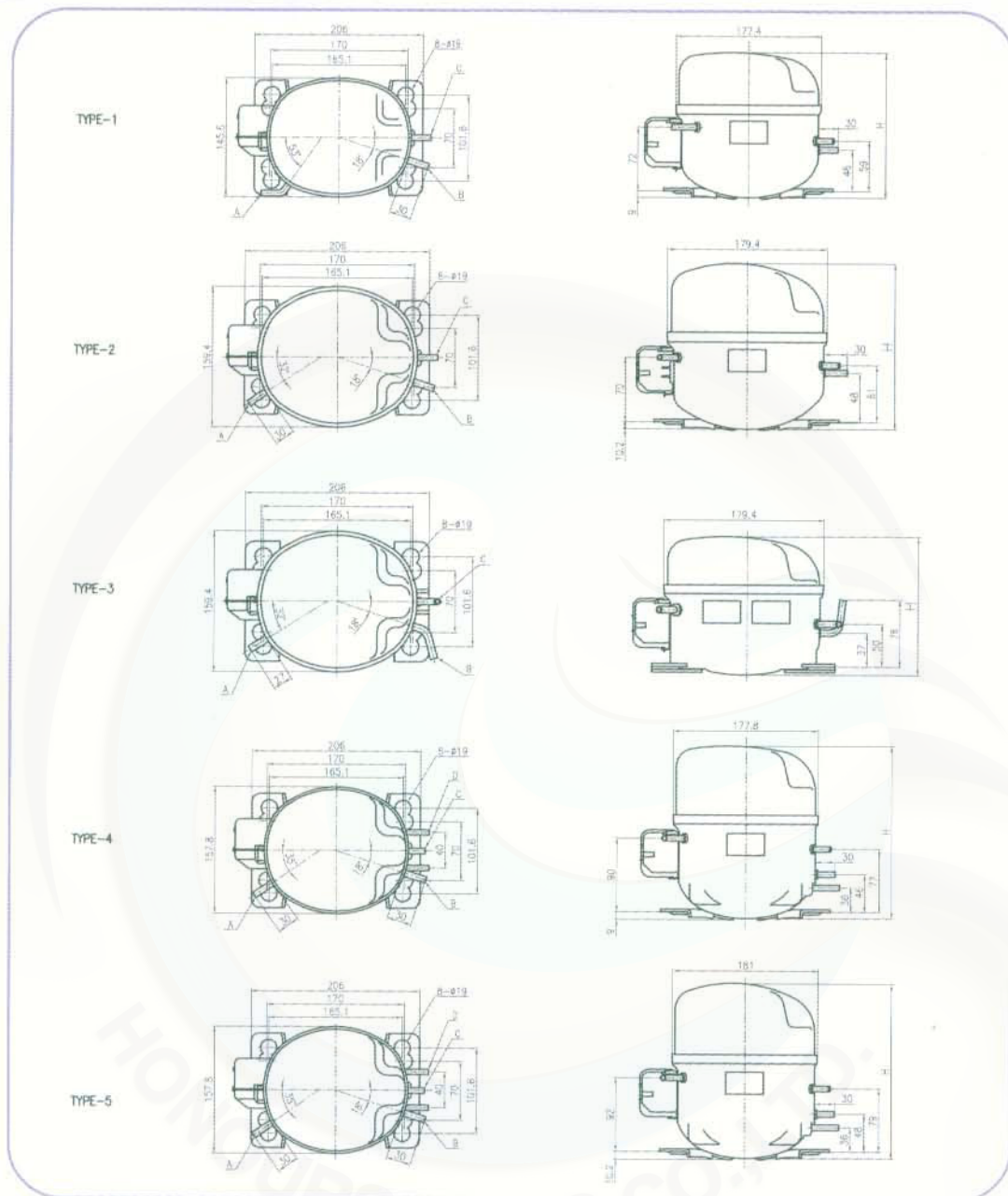
R134a model	H/L=40/-30 deg C	ASHRAE	CECOMAF
Evaporating temperature	-30.0°C (-22.0°F)	-23.3°C (-10°F)	-25.0°C (-13.0°F)
Condensing temperature	40.0°C (104.0°F)	54.4°C (130°F)	55.0°C (131.0°F)
Gas superheated to	32.0°C (89.6°F)	32.2°C (90°F)	32.0°C (89.6°F)
Liquid sub cooled to	32.0°C (89.6°F)	32.2°C (90°F)	55.0°C (131.0°F)
Ambient temperature	32.0°C (89.6°F)	32.2°C (90°F)	32.0°C (89.6°F)

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D= Displacment O= Oil Charge N= Natural Wg= Weight

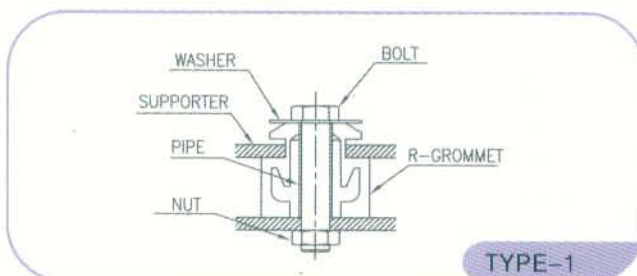
Dimension



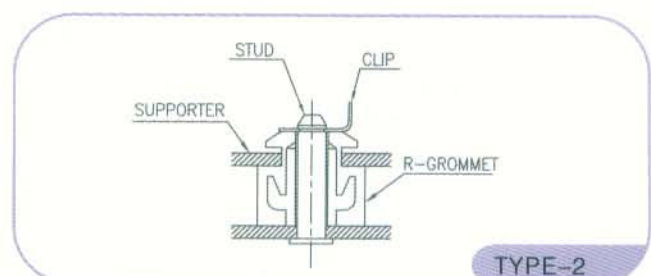
REMARK

Dim.	A	B	C	D
Model	Suction Tube	Process Tube	Discharge Tube	Oil – Cooler Tube
All Model	Ø8(OD)X6.5(ID)	Ø8(OD)X6.5(ID)	Ø6.95(OD)X4.95(ID)	Ø6.95(OD)X4.95(ID)

Mounting

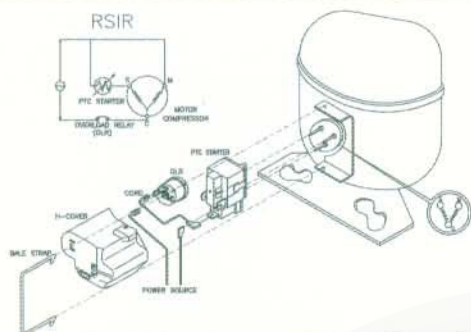


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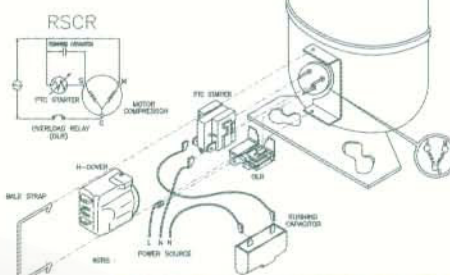


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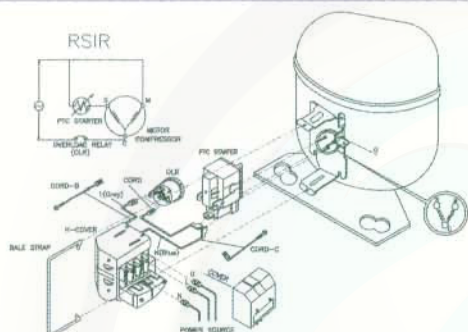
Electrical Equipment



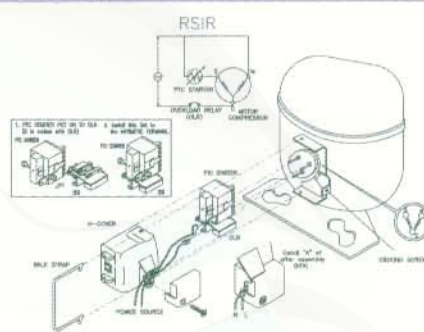
1: Standard cover, Standard OLR



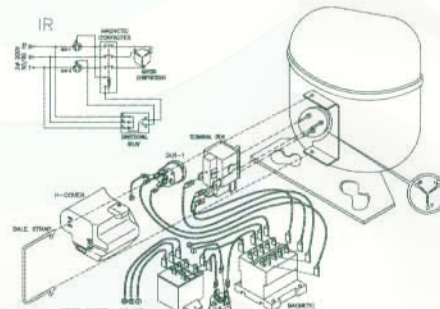
3: Standard cover, Plugin OLR



2: IEC cover, Standard OLR



4: IEC cover, Plugin OLR

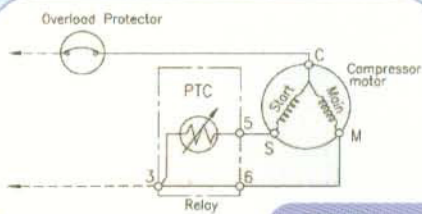


5: Standard cover, Standard OLR 3 phase

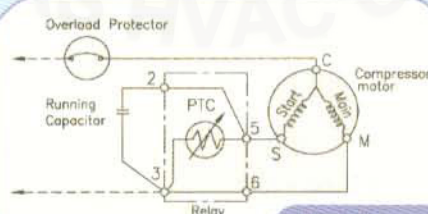
Wiring Diagram

Motor Type

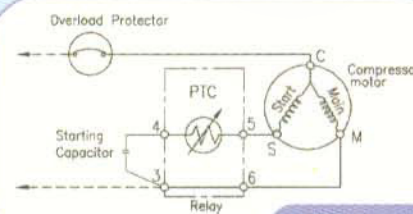
- RSIR Resistance Start Induction Run
- RSCR Resistance Start Capacitor Run
- CSIR Capacitor Start Induction Run
- CSR Capacitor Start and Run
- IR Induction Run



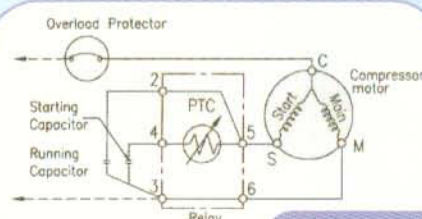
RSIR



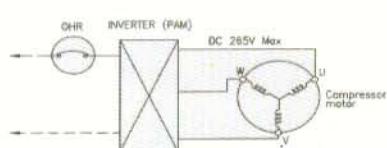
RSCR



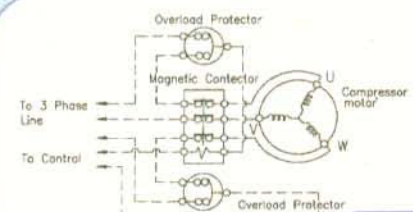
CSIR



CSR



INVERTER



IR

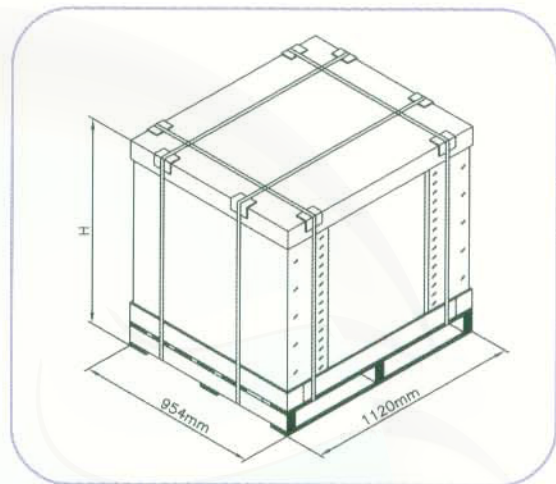
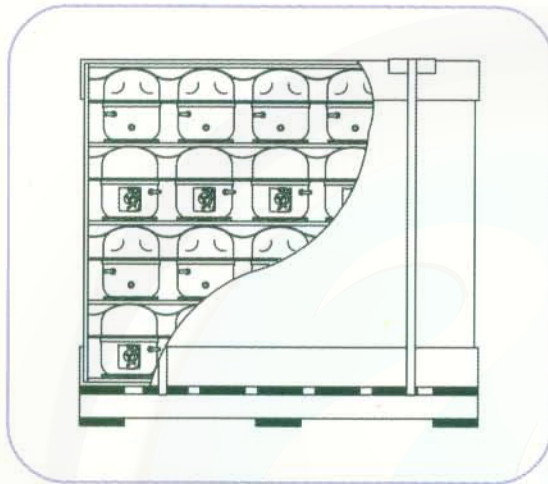
Packing Information

Carton Dimension

IPPC Global Standard for Wood Packaging

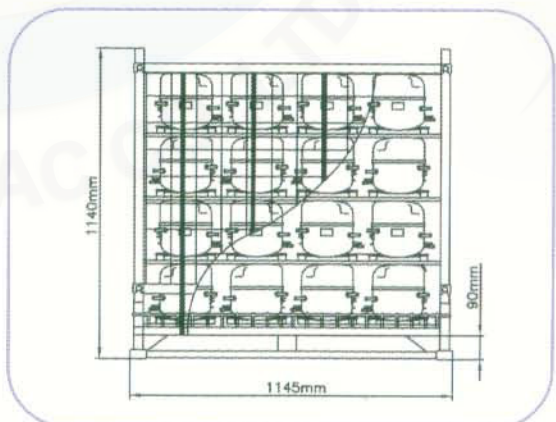
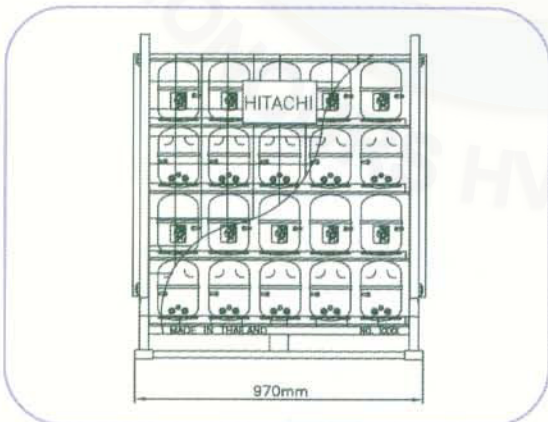


One way Packing Method



Comp. Height (mm)	H (mm)	Layer	Quantity (pcs.)
156 ~ 195	1025	5	100 pcs.
	1095	5	100 pcs.
195 ~ 216	977	4	80 pcs.
	1035	4	80 pcs.

Steel Pallet Packing Method



Comp. Height (mm)	Layer	Quantity (pcs.)
156 ~ 188	5	100 pcs.
195 ~ 216	4	80 pcs.

Warnings

1. Compressors must not be charged with anti-freeze agents, as their use can have adverse effects on the various materials used, jeopardizing the useful life of the compressor (the use of anti-freeze agents renders the compressor warranty null and void).
2. When using our products in equipment that requires a high degree of reliability, regardless of the application, it is recommended that you use protection circuits and redundancy circuits for equipment safety and test for safety.
3. It is recommended that manufacturers of refrigeration systems using flammable refrigerants such as R 600a, develop accurate charging, leak testing and system testing methods to guarantee that all necessary safety procedures have been met.
4. Use flushing agents which are compatible with the refrigerant used to clean systems.
5. The system to which the compressor will be assembled must be developed and adequately prepared for use with R 134a and ester oil, i.e. without anti-freeze agents, greasy residues, mineral oil, impurities in R 134a and without chlorides, alkaline residues and moisture.
6. The compressors must not be tested unless they are connected to the refrigeration system.
7. The compressor must not be subjected to high voltage or starting tests while under vacuum. Hitachi compressors have already been submitted to a 2200-2400 V high voltage test for one second.
8. Gas charging and evacuating equipment must only be used for R 134a in order to avoid chloride residue contamination.
9. For each type of refrigerant fluid there are appropriate dryer filters. (According to Product specification).
10. To prevent excessive moisture from entering the compressor, the connector should be kept sealed at all times. Plugs should only be removed immediately before brazing connectors to system tubes (maximum time allowed is 15 minutes).
11. The products and product specifications described on this catalog are subject to change for improvement without prior notice. Therefore, be sure to request and confirm in advance the most current specifications, which explain the specifications in detail, before the final stage of your design, purchasing or use for any application.
12. The technical information on this catalog provides examples of the products' typical operations and application circuits. It is not intended to guarantee the non-infringement of or grant license for intellectual property rights of this company or any third party.
13. CONVERSION
 1 Watt = 3.41 Btu/h 1 Watt = 0.86 kcal/h
 1 kcal/h = 3.97 Btu/h 1 cu.ft. = 28.32 liters
14. TOLERANCES
 Capacity = $\pm 10\%$
 Power Consumption = $\pm 10\%$
 Current Consumption = $\pm 10\%$



CAUTION: Please install the refrigerant / lubricant oil / electrical component recommended by compressor manufacturer. For proper wiring, please follow manufacturer's instructions exactly for prevent exploding, firing and user being shocked by electric. This caution has to be informed end-user and professional SVC branch systemically.

WARNING



Electrical shock hazard.

- Compressor must be grounded whenever power is applied and compressor is operated.
- Turn off the power in advance of servicing.
- Secure retain terminal cover whenever power is applied to the compressor.



Explosion or Fire.

- Remove refrigerant securely from compressor in case of welding.
- Do not compress air or operate compressor with vacuumed inside.
- Wear safety goggles and gears.



Getting burnt.

- Do not touch the compressor with bare hands during operation or after stoppage instantly.