

'KCN' Series Commercial Refrigeration Compressors

- Compressor Specifications
- Appliance System Details
- Application Guidelines



Copeland[®]
brand products


EMERSON[™]
Climate Technologies

DEEP FREEZER

Compressor Specifications

Cooling Capacity

Current

Power

Electrical Circuit

Appliance Size (Ltr)

KCN372LAG
KCN396LAG
KCN411LAG
KCN415LAG

600 Btu / Hr.	800 Btu / Hr.	960 Btu / Hr.	1260 Btu / Hr.
1.3 Amp	1.85 Amp	2.1 Amp	2.0 Amp
159 Watt	234 Watt	245 Watt	325 Watt
CSIR	CSIR	CSIR	CSCR
200 GT / 300 HT	300 GT / 400 HT	350 GT / 450 HT	400 GT / 500 HT

System Details

Evaporator when used in

Air cooled Condenser
Deep Freezer

68'Long, 5/ 16"OD Tube	74'Long, 3/ 8"OD Tube	80'Long, 3 / 8"OD Tube	85'Long, 3/ 8"OD Tube
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Skin Condenser
Deep Freezer

80'Long, 5/ 16"OD Tube	105'Long 5/ 16"OD Tube	115'Long 5/ 16"OD Tube	140'Long 5/ 16"OD Tube
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Condenser (3/8" OD Tube)

Air cooled
Skin

9" x 9" x 2 Row	11" x 10" x 2 Row	11" x 10" x 3 Row	12" x 12" x 3 Row
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- Auxiliary

15'Long, 1/ 4 OD Tube	15'Long, 5/ 16" OD Tube	15'Long, 1/ 4 OD Tube	15'Long, 5/ 16" OD Tube
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- Main

85'Long, 100'Long, 1/ 4" OD Tube	129'Long, 1/ 4" OD Tube	140'Long, 1/ 4" OD Tube	140'Long, 1/ 4" OD Tube
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Fan Motor

Air cooled Condenser

1/ 83 hp,1350 rpm Blade Dia: 9"	1/ 35 hp,1350 rpm Blade Dia: 9"	1/ 35 hp,1350 rpm Blade Dia: 9"	1/ 35 hp,1350 rpm Blade Dia: 9"
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Skin Condenser

— 4" Dia Cabinet Cooling Fan —	— 4" Dia Cabinet Cooling Fan —	— 6" Dia Cabinet Cooling Fan —	— 6" Dia Cabinet Cooling Fan —
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Capillary (BxLxNo.)

Air cooled Condenser
Skin Condenser

0.031"x12'x1	0.036"x12'x1	0.036"x10'x1	0.044"x8'x1
0.031"x13' x1	0.031"x13'x1	0.036" x10' x1	0.031"x13' x1

App. Charge (gms)

Air cooled Condenser
Skin Condenser

375	410	350	425
350	390	305	400

* Compressor specifications are at LBP rating conditions.

* System details mentioned are initial recommendations and may need fine tuning for optimum appliance performance.

* Given appliances sizes are maximum sizes.

CHEST COOLER

Compressor Specifications

Cooling Capacity

Current

Power

EER

Circuit

System Details

Evaporator Tube

Condenser (3/8" OD Tube)

Fan Motor

Blade Dia

Capillary (BxLxNo.)

KCN413CAG

1080 Btu/Hr

0.86 Amp.

180 Watt

6.0

CSCR

30' Long, 5/16" OD Tube

9" x 9" x 3 Row

1/83 hp, 1350 rpm

9"

0.044" x 9' x 1

KCN416CAG

1340 Btu/Hr

1.0 Amp.

220 Watt

6.1

CSCR

42' Long, 5/16" OD Tube

9" x 9" x 3 Row

1/83 hp, 1350 rpm

9"

0.044" x 8' x 1

KCN463HAG

3130 Btu/Hr

2.2 Amp.

505 Watt

6.2

CSCR

85' Long, 3/8" OD Tube

13" x 12" x 3 Row

1/20 hp, 1350 rpm

9"

0.050" x 8' x 1

* Compressor specifications are at CBP rating conditions.

* System details mentioned are initial recommendations and may need fine tuning for optimum appliance performance.

* KCN463HAG can be used for 60 LPH water cooler.

Electrical Accessories

Compressor Model	Relay		Overload	Start Capacitor	Run Capacitor	Wiring Dig.
	Potential	Current	Protector	(MFD)	(MFD)	No.
KCN372LAG	--	KARP3141/ MTRP3141	TAE15/H3	40/60	--	2 (CSIR)
KCN396LAG	--	KARP4141/ MTRP4141	TAE5M/H3	40/60	--	2 (CSIR)
KCN411LAG	--	KARP4241/ MTRP4241	KAT072/H3	40/60	--	2 (CSIR)
KCN415LAG	LT85002	--	KAT072/B3	80/100	10	4 (CSCR)
KCN413CAG	--	KCP14PO	KAT0411/H3	40/60	6	3 (CSCR with PTC)
KCN416CAG	--	KCP14PO	KAT0413/H3	40/60	6	3 (CSCR with PTC)
KCN463HAG	LT85002	--	KAT0463/B2	80/100	15	4 (CSCR)

REPLACEMENT GUIDE

Deep Freezer

KCL MODEL	OTHER MAKE COMPRESSOR MODEL (BTU/HR)	
KCN372LAG Cooling Capacity: 600 Btu/hr EER: 3.8 Current: 1.34 Amps Electrical Circuit: CSIR/RSIR	Embraco	NB1117Z(593)
	Electrolux	GL80BH (560) GL90BH (620)
	Tecumseh	MLA1367 (600)
	Danfoss	FR8.5G (583) FR10G (644) SC10G (566)
	Matsushita	QB57 (500) QB66 (563) QB73 (631)
	BPL	BRG140L (544) BRG160L (591) BRG180L (674)
KCN396LAG Cooling Capacity: 800 Btu/hr EER: 3.9 Current: 1.85 Amps Electrical Circuit: CSIR	Electrolux	GP12BB (726) GP14BB (870)
	Tecumseh	MLA2410 (800) MLB2410 (800)
	Danfoss	NL9FT (746) SC12G (842)
	Matsushita	QB91 (805)
	BPL	BRG201L (813)
KCN411LAG Cooling Capacity: 960 Btu/hr EER: 3.9 Current: 2.1 Amps Electrical Circuit: CSIR	Tecumseh	MLC2411 (920)
	Danfoss	NL10FT (985) SC15G (1070)
	Matsushita	QB110 (931)
KCN415LAG Cooling Capacity: 1260 Btu/hr EER: 3.9 Current: 2 Amps Electrical Circuit: CSCR	Tecumseh	AEA2415Y (1290)

* Above values are at LBP rating conditions.

Replacement Tips

- Provide 4" compressor cooling fan such that it throws air on compressor (If the freezer originally does not have fan).
- Replace filter drier and capillary.
- If suction line - capillary heat exchanger is provided, maintain the heat exchanger feature.
- Follow correct "System Processing Techniques" while retrofitting the 'KCN' compressor.

REPLACEMENT GUIDE

Visi Cooler

KCL MODEL	OTHER MAKE COMPRESSOR MODEL (Btu / Hr.)	
KCN413CAG Cooling Capacity : 1080 Btu/hr EER : 6.0 Current : 0.86 Amps Electrical Circuit : CSCR	Electrolux	GL80TB (1178)
	Tecumseh	AEZ 1370 Y (1225)
	Tecumseh	MLA9414YCG (1200)
	Danfoss	FR7.5 G (1125)
KCN416CAG Cooling Capacity : 1340 Btu/hr EER : 6.1 Current : 1.0 Amps Electrical Circuit : CSCR	Electrolux	GL90TB (1390)
	Tecumseh	MLA9414(M)YCF(1400)
	Tecumseh	AEZ1365Y (1333)
	Danfoss	FR8.5G (1325)
KCN463HAG Cooling Capacity : 3130 Btu/hr EER : 6.2 Current : 2.2 Amps Electrical Circuit : CSCR	Electrolux	GR18TB (3110)
	Danfoss	SC15GX (2570)

* Above values are at CBP rating conditions.

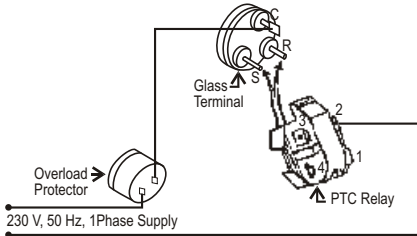
Application Guidelines

- Change Filter drier & Capillary.
- Flush the system with Trichloroethylene (TCE) & purge dry Nitrogen to remove the trace of TCE.
- Evacuate the system from both sides by 2 stage Rotary vacuum pump.
- While gas charging see the Visi cooler nameplate for reference Gas charge.
- Carry out leak test using dry nitrogen.
- Remove door gasket leak if any.
- Test run & verify the performance of Visi cooler on No load before dispatching it to the outlet.
- While installing the Visi cooler at outlet, ensure enough space is provided to avoid condenser hot air recycling.

Wiring Diagram

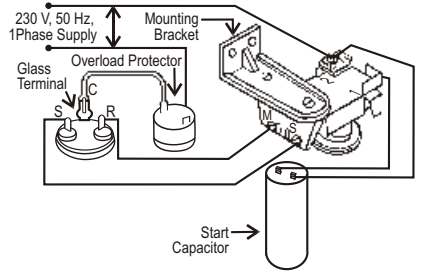
1

RESISTANCE START INDUCTION RUN (RSIR) WITH PTC RESISTOR



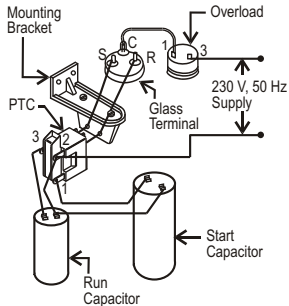
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CAPACITOR START INDUCTION RUN (CSIR) WITH CURRENT RELAY



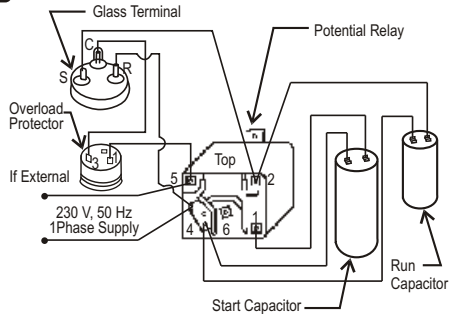
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CAPACITOR START CAPACITOR RUN (CSCR) WITH PTC

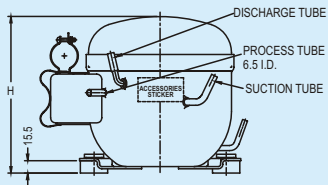
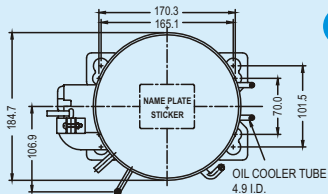


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CAPACITOR START CAPACITOR RUN (CSCR)



Dimensional Drawing



Compressor Model	Suction Tube ID	Discharge Tube ID	Height
KCN372LAG	6.5	6.5	189
KCN396LAG	6.5	6.5	195
KCN411LAG	8.1	8.1	202
KCN415LAG	8.1	8.1	202
KCN413CAG	6.5	6.5	189
KCN416CAG	6.5	6.5	189
KCN463HAG	8.1	8.1	202

* All dimensions are in mm.

* Oil cooler tube available for KCN372LAG and KCN396LAG only.

As we are constantly endeavoring to improve the performance of our models, the specifications mentioned here are subject to change from time to time. The Emerson logo is a trademark and a service mark of Emerson Electric Co.

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