

Refrigeration Compressors



Copeland[®]
brand products

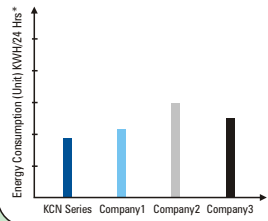

EMERSON[™]
Climate Technologies

EMERSON. CONSIDER IT SOLVED.

Salient Features

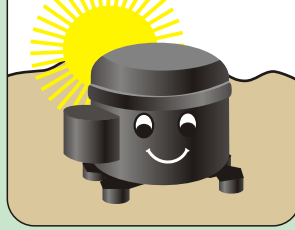
Ultra-High EER

24 hrs energy consumption test as per IS 7872



Tropicalized Design

Can work upto 46°C



Compact & Multi-mounting



Low Sound & Vibration

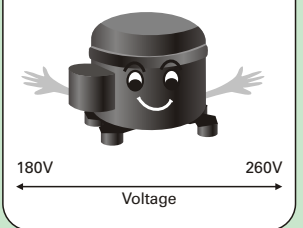


High Starting Torque

To meet Deep Freezer field start conditions.

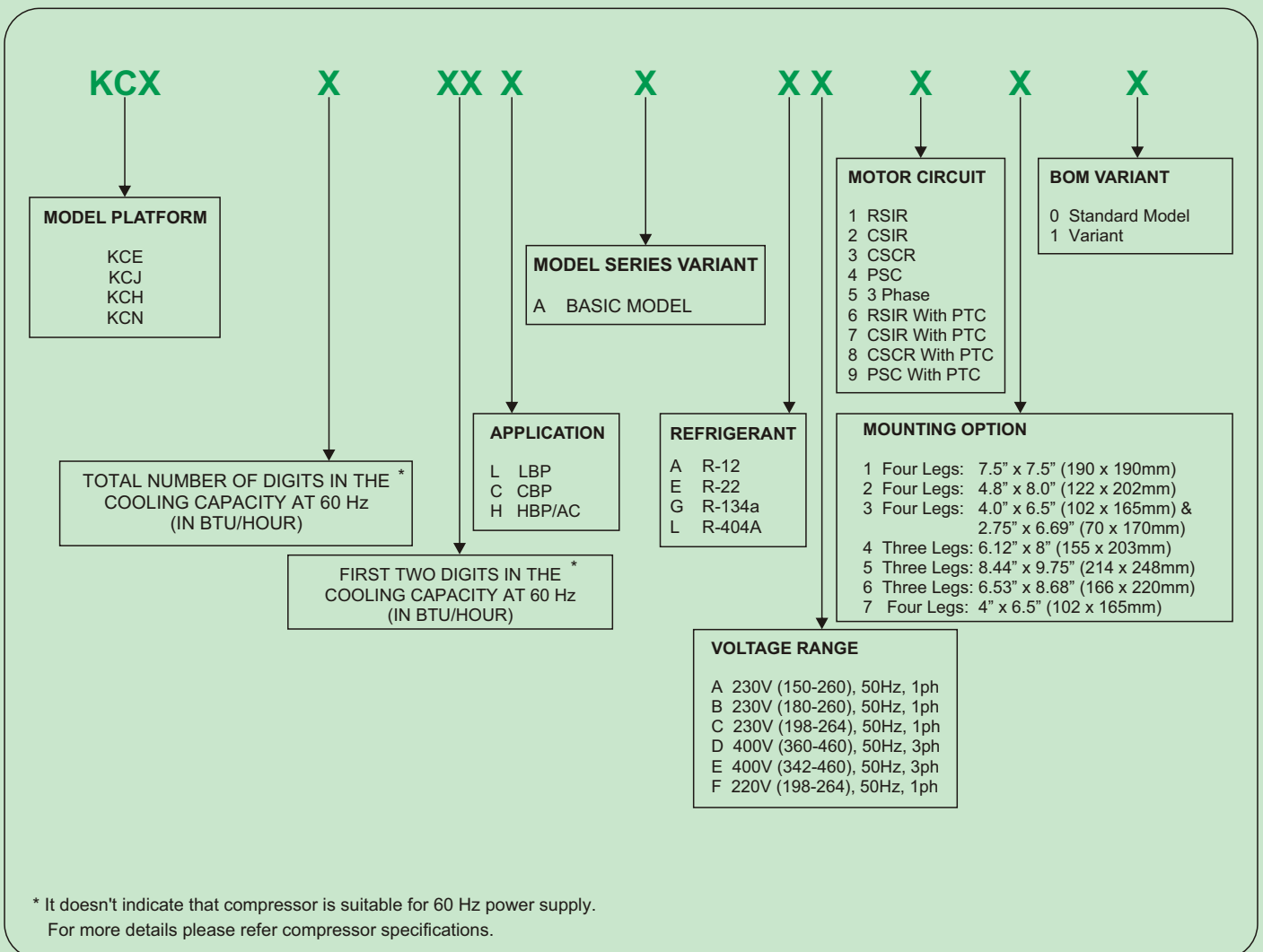


Wide Operating Voltage Range



For many models

KCX Series Compressor Nomenclature



Applications

LBP

- Deep Freezers
- Refrigerators
- Ice Cube machines
- Walk-in Freezers
- Laboratory Appliances and many more

CBP

- Bottle Coolers
- Visi Coolers
- Display Cabinets
- Pastry Cabinets
- Milk Chillers and many more

HBP

- Water Coolers
- Bubble Top Water-coolers
- Oil Coolers / Panel Coolers
- Water Chillers
- Refrigerated Air Dryers and many more

Model Selection Guide

Note: As per Government of India notification w.e.f. 01-01-2003, R12 should not be used for manufacturing new appliances.

	Deep freezer (Hard Top)		Softy Ice Cream (Batch Freezer)	Refrigerator		Bubble Top
	Nominal (Ltr)	Maximum (Ltr)*	Churner capacity (Ltr)	Single Door (Ltr)	Double Door (Ltr)	Water Cooler
KCN 372 LAG	170-250	300	----	360-450	300-350	----
KCN 396 LAG	260-300	400	----	----	360-400	----
KCN 411 LAG	350-400	450	----	----	----	----
KCJ 411 LAG	280-340	400	----	----	----	----
KCJ 412 LAG	340-400	480	----	----	----	----
KCN 415 LAG	425-480	500	3	----	----	----
KCJ 423 LAG	600-800	900	----	----	----	----
KCH 431 LAG	800-1100	1200	5	----	----	----
KCJ 430 LAL	800-1100	1200	5	----	----	----
KCJ 450 LAL	1100-1600	1850	10	----	----	----

* The maximum size mentioned is possible with very effective insulation, high conductivity inner cabinet material, good evaporator bonding and a very well balanced refrigeration system.

	Water Cooler (LPH)	Bottle Cooler (Ltr)	Visicooler (Case)
KCE 419 HAG	20	100-120	2
KCE 425 HAG	----	150-200	4
KCN 413 CAG	----	150-200	4
KCE 432 HAG	----	220-250	7
KCN 416 CAG	----	220-250	7
KCE 444 HAG	40	260-350	9
KCE 443 HAE			
KCJ 444 HAG			
KCJ 467 HAG	60	350-500	----
KCE 461 HAE	60	----	----
KCJ 498 HAG	100	----	----
KCJ 511 HAE	100	600-800	----
KCJ 513 HAE	150	----	----

Compressor Model	Cooling Capacity (Btu/Hr)				Input Power (watts)	Input Current (Amps.)	Displacement (cc/rev)	Cooling Type (CFM)	Voltage Range (V)	Approx Weight (Kg.)
	-30°C	-23.3°C	-6.7°C	7.2°C						
R134a, LBP										
KCN372LAG	392	600	1490	–	159	1.34	7.31	Oil/Fan 260	180-260	10.2
KCN396LAG	533	800	1600	–	205	1.85	9.0	Oil/Fan 260	180-260	10.2
KCN411LAG	600	960	2375	–	250	2.1	11.1	Fan 350	180-260	11.5
KCN415LAG	710	1260	3170	–	325	2.0	15.33	Fan 350	180-260	11.5
KCJ411LAG	--	1025	3290	–	280	2.2	16.35	Fan 350	180-260	20.2
KCJ412LAG	--	1000	3260	–	310	2.75	18.27	Fan 350	180-260	21.0
KCJ423LAG	--	1925	5820	–	485	3.0	32.61	Fan 350	198-264	22.5
KCH431LAG	--	2650	10640	–	810	5.0	56.09	Fan 400	198-264	30.3
					610	2.0	56.09	Fan 400	360-460	30.3
R404A, LBP										
KCJ430LAL	1572	2425	5180	–	580	3.2	16.35	Fan 350	180-260	22.5
KCJ450LAL	2490	4200	9480	–	975	5.0	32.64	Fan 350	180-260	25.0
R12, LBP										
KCE336LAA	--	300	660	–	120	1.25	4.49	Oil/Fan 260	150-260	10.2
KCE345LAA	--	375	816	–	140	1.1	5.48	Oil/Fan 260	180-260	10.2
KCE360LAA	--	500	1125	–	210	1.8	7.58	Oil/Fan 260	180-260	10.2
KCE399LAA	--	825	2020	–	320	1.5	12.04	Oil/Fan260	180-260	11.8
KCJ410LAA	--	875	1925	–	300	2.3	12.58	Fan 350	180-260	20.0
KCJ415LAA	--	1330	2890	–	390	2.9	18.27	Fan 350	180-260	21.0
KCJ427LAA	--	2260	6100	–	530	3.2	32.64	Fan 350	180-260	22.5
KCH450LAA	--	4200	11200	–	1140	6.3	56.09	Fan 400	180-260	30.3
					850	2.0	56.09	Fan 400	360-460	30.3
R134a, CBP / HBP										
KCE419HAG	--	--	860	1585	245	1.6	5.79	Fan 350	180-260	10.2
KCE425HAG	--	--	1075	2145	360	2.3	7.58	Fan 350	180-260	10.8
KCE432HAG	--	--	1330	2690	375	2.8	9.42	Fan 350	180-260	11.8
KCE444HAG	--	--	1880	3675	475	2.2	12.05	Fan 350	180-260	11.8
KCJ444HAG	--	--	1720	3700	450	2.8	12.58	Fan 350	180-260	20.2
KCJ467HAG	--	--	2830	5600	675	3.85	18.27	Fan 350	180-260	21.0
KCJ498HAG	--	--	4100	8200	975	5.9	25.91	Fan 350	198-264	21.5
KCN463HAG	--	--	3130	5250	615	2.7	15.33	Fan 350	180-260	11.5
KCE432HAG			1730	3280	470	2.8	9.42	Fan 350	208-253	11.8
KCE444HAG			2215	4275	550	2.4	12.05	Fan 350	208-253	11.8
KCN463HAG			3443	6300	810	3.65	15.33	Fan 350	208-253	11.5
KCJ467HAG			3400	6700	820	4.2	18.27	Fan 350	208-253	21.0

60Hz Models

Note: All our R12 compressor models are for replacement market only.

*These are optional accessories to be used for CSCR circuit.

Specifications

Oil Charge (cc)	LRA (Amps.)	Wiring Drawing	Motor Circuit	Start Capacitor (MFD)	Run Capacitor (MFD)	Start Relay Type Potential	Current	Overload Protector
340	10	2	CSIR	40 / 60	-----	-----	KARP 3141	TAE 15 /H3
340	10	2	CSIR	40 / 60	-----	-----	KARP4141	TAE5M / H3
380	10	2	CSIR	40 / 60	-----	-----	MTRP4241	KAT0072 / H3
380	14	4	CSCR	80 / 100	10	LT85002	-----	KAT0164 / B2
890	22	7	CSIR	80 / 100	-----	-----	KARP 4841	MRT 36ALX - 112 or KAT 0159 / B2
890	24	7	CSIR	80 / 100	-----	-----	KARP 5641	MRT 36ALX - 112 or KAT 0159 / B2
890	35	4	CSCR	150 / 200	10	LT 85003	-----	MRA 12011 - 112 or KAT 0732 / B2
1330	42	4	CSCR	150 / 200	25	LT 85002	-----	INTERNAL
1330	17	----	-----	Contactor : 16 A, 220 V Coil, Relay 2.5 - 4 A Setting : 3 A				INTERNAL
890	35	4	CSCR	150 / 200	10	LT85003	-----	INTERNAL
890	50	4	CSCR	150 / 200	25	LT85004	-----	INTERNAL
510	9	3	RSIR	-----	-----	-----	KARP 2827	TAE 7 / H3
510	9	3	RSIR	-----	-----	-----	KARP 3227	TAE 7 / H3
510	10	2	CSIR	40 / 60	-----	-----	KARP 4141	TAE 5M / H3
510	13	4	CSCR	40 / 60	10	LT 85002	-----	KAT 0072 / K3
890	16	7	CSIR	80 / 100	-----	-----	KARP 4841	MRA 6985 - 112 or KAT 0164 / B2
890	24	7	CSIR	80 / 100	-----	-----	KARP 5641	MRT 36ALX - 112 or KAT 0159 / B2
890	30	4	CSCR	150 / 200	10	LT 85003	-----	MRA 12011 - 112 or KAT 0732 / B2
1330	42	4	CSCR	150 / 200	25	LT 85002	-----	INTERNAL
1330	17	----	----	Contactor : 16 A, 220 V Coil, Relay 2.5 - 4 A Setting : 3 A				INTERNAL
510	11	3	RSIR	-----	-----	-----	KARP 3627	TAE 15 / H3
510	14	2	CSIR	40 / 60	-----	-----	KARP 4141	TAE 21 / H3
510	12.5	2	CSIR	40 / 60	-----	-----	KARP 4741	KAT 0072 / H3
510	13	4 / 8	CSCR	40 / 60	10	LT85002 KCP 14PO	-----	KAT0072 / K3
890	17	7	CSIR	80 / 100	-----	-----	KARP 4841	MRT 36ALX - 112 or KAT 0159 / B2
890	23	7	CSIR	80 / 100	-----	-----	KARP 5641	MRA 12024 - 112 or KAT 0733 / B2
890	32	5	CSIR	80 / 100	-----	AC85001M	-----	MS - 24 - AJX -112 or KAT 0163 / B2
380	14	4	CSCR	80 / 100	15	LT85002	-----	KAT0463 / B2
510	12.5	7	CSIR	40 / 60	-----	-----	KARP4741/ MTRP4741	KAT0072 / H3 OR T0072 / H3
510	13	4 / 8	CSCR	40 / 60	10	LT85002	-----	KAT0072 / K3 OR T0072 / K3
380	14	4 / 8	CSCR	80 / 100	15	LT85002	-----	-----
890	23	7	CSIR	80 / 100	-----	-----	KARP 5641	MRA 12024-112 OR KAT 0733 / B2

Compressor Model	Cooling Capacity (Btu/Hr)				Input Power (watts)	Input Current (Amps.)	Displacement (cc/rev)	Cooling Type (CFM)	Voltage Range (V)	Approx Weight (Kg.)
	-30°C	-23.3°C	-6.7°C	7.2°C						
R134a , CBP										
KCN413CAG	--	--	1080	2018	180	0.86	6.15	Fan 350	180-260	9.7
KCN416CAG	--	--	1340	2430	220	1.0	7.31	Fan 350	180-260	9.7
R404A , CBP										
KCJ461CAL	--	--	5100	9670	925	4.5	18.27	Fan 350	180-260	21.5
KCJ484CAL	--	--	7000	13248	1250	6.2	25.91	Fan 350	180-260	22.5
R22 , CBP / HBP										
KCE443HAE	--	--	1620	3600	475	2.3	8.0	Fan 350	180-260	11.8
KCE461HAE	--	--	2590	5100	675	3.1	11.5	Fan 350	180-260	13.4
KCJ511HAE	--	--	4210	9150	1020	4.7	18.27	Fan 350	180 - 260	21.5
KCJ513HAE	--	--	6366	12800	1440	6.8	25.91	Fan 350	180-260	22.5
R12 , HBP										
KCE423HAA	--	--	1075	1925	360	2.4	7.58	Fan 350	180-260	10.8
KCE431HAA	--	--	1330	2600	410	2.5	9.42	Fan 350	180-260	11.8
KCE443HAA	--	--	1975	3610	450	2.3	12.05	Fan 350	180-260	11.8
KCJ443HAA	--	--	2100	3650	450	2.8	12.58	Fan 350	198-264	20.0
KCJ461HAA	--	--	2900	5100	675	4.0	18.27	Fan 350	180-260	21.0
KCJ494HAA	--	--	4200	7900	1000	5.9	25.91	Fan 350	198-264	21.5

Note: All our R12 compressor models are for replacement market only.

*These are optional accessories to be used for CSCR circuit.

Rating Conditions

Ambient Temperature		Evaporating Temperature		Condensing Temperature		Sub Cooled Liquid Temp Expansion Device		Suction Gas Temperature		Suction Pressure		Discharge Pressure	
°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	HFC-404a		HFC-404a	
										psig	kg/cm ²	psig	kg/cm ²
High Back Pressure													
95	35	45	7.2	130	54.4	115	46.1	95	35	93.7	6.5	354	24.89
95	35	20	-6.7	130	54.4	115	46.1	95	35	55.6	3.9	354	24.89
Low Back Pressure													
90	32	-10	-23.3	130	54.4	90	32	90	32	24.6	1.73	354	24.89

Specifications

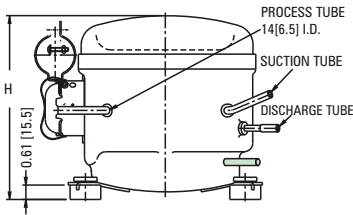
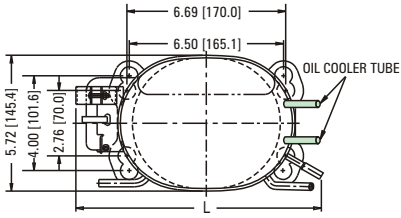
Oil Charge (cc)	LRA (Amps.)	Wiring Drawing	Motor Circuit	Start Capacitor (MFD)	Run Capacitor (MFD)	Start Relay Type Potential	Current	Overload Protector
340	10	8	CSCR	40 / 60	6		PTC-KCP14PO	KAT0411 / H3
340	10	8	CSCR	40 / 60	6		PTC-KCP14PO	KAT0413 / H3
890	25	4	CSCR	80 / 100	25	LT85002	-----	INTERNAL
890	37	4	CSCR	80 / 100	25	AC85001M	-----	INTERNAL
510	13	4	PSC/CSCR*	40 / 60*	10	LT 85002*	-----	KAT 0072 / K3 OR KAT 0159 / B2
590	17	1/4`	PSC/CSCR*	60 / 80*	15	LT 85003*	-----	MRT 36ALX - 112
905	25	1/4	PSC / CSCR*	80 / 100*	25	LT85002*	-----	INTERNAL
890	30	1/4	PSC / CSCR*	80 / 100*	36	AC85001M*	-----	INTERNAL
510	14	2	CSIR	40 / 60	-----	-----	KARP4141	TAE 21 / H3
510	1	2.5	2	CSIR	40 / 60	-----	KARP4741	KAT 0072 / B2
510	13	4	CSCR	40 / 60	10	LT 85002	-----	KAT 0072 / K3
890	16	7	CSIR	40 / 60	-----	-----	KARP 5341	MRA 6985 -112
890	24	7	CSIR	80 / 100	-----	-----	KARP 5641	KAT 0165 / B2 or MRA 2024 - 112 or KAT 0733 / B2
890	32	5	CSIR	80 / 100	-----	AC85001M	-----	T0163/B2 or KAT 0159/B2

Notes

- Electrical rating is 230 V, 50 Hz for single phase models & 400 V, 50 Hz for three phase models.
- Operating voltage range signifies the range of voltage for which the compressor can start and run up to 43°C ambient.
- Cooling capacity & power consumption are nominal values at specified rating conditions and subject to ±5% variation.
- Direct air flow on glass terminal cover should be avoided.
- Permitted evaporating temperature range
HBP - R134a: -17.8°C to +12.8°C
Except KCN 463 HAG / KCJ 498 HAG:
-6.7°C to +12.8°C
R22: -6.7°C to +12.8°C
R12: -6.7°C to +12.8°C
LBP - -28.8°C to -6.7°C
Except KCN: -35°C to -6.7°C
CBP - -17.8°C to +10°C
- Permitted evaporating temperature range
CBP - R404A-KCJ: -17.8°C to +10°C
KCN: -15°C to +12.8°C
LBP - R404A-KCJ: -40°C to -6.7°C
- Compressors with CSIR, CSCR circuit & THREE PHASE models may be used with thermostatic expansion valve.
- Compressors with RSIR Circuit must use capillary tube only.
- All compressors use two pole motors.
- Compressors are rated as per IS-10617 Part I & Part III-1983.
- All run capacitor should have a rating of 440 VAC and start capacitor 275 VAC surge, unless otherwise specified by Emerson Climate Technologies (India) Limited.

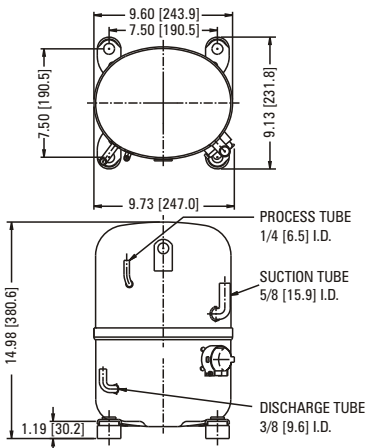
Dimensional Drawings

KCE

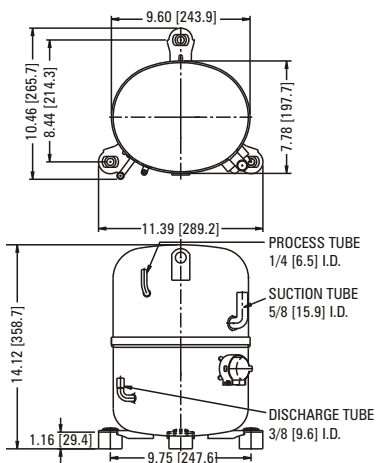


Model	Suction ID		Discharge ID		L	H	Oil Cooler Tube		Capacitor Mounting Bracket Provision
	inch	mm	inch	mm			inch	mm	
R134a High Back Pressure									
KCE419HAG	1 / 4	6.5	1 / 4	6.5	253	196	—	—	No
KCE425HAG	1 / 4	6.5	1 / 4	6.5	257	196	—	—	Yes
KCE432HAG	5 / 16	8.0	1 / 4	6.5	257	212	—	—	Yes
KCE444HAG	5 / 16	8.0	1 / 4	6.5	253	212	—	—	No
R12 High Back Pressure									
KCE423HAA	1 / 4	6.5	3 / 16	4.9	257	196	—	—	Yes
KCE431HAA	5 / 16	8.0	1 / 4	6.5	257	212	—	—	Yes
KCE443HAA	5 / 16	8.0	1 / 4	6.5	253	212	—	—	No
R12 Low Back Pressure									
KCE336LAA	1 / 4	6.5	3 / 16	4.9	253	196	3 / 16	4.9	No
KCE345LAA	1 / 4	6.5	1 / 4	6.5	253	196	3 / 16	4.9	No
KCE360LAA	1 / 4	6.5	1 / 4	6.5	253	196	3 / 16	4.9	No
KCE399LAA	1 / 4	6.5	1 / 4	6.5	253	212	3 / 16	4.9	No

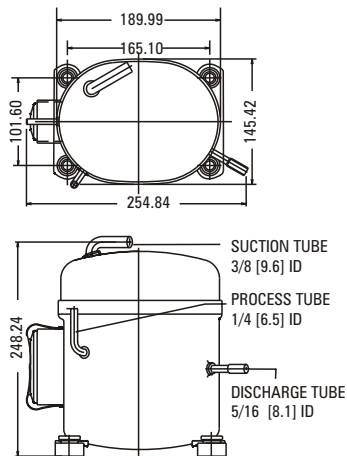
KCH431LAG / KCH450LAA SQUARE MOUNT



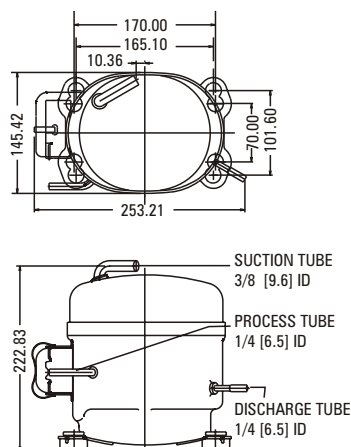
TRIANGULAR MOUNT



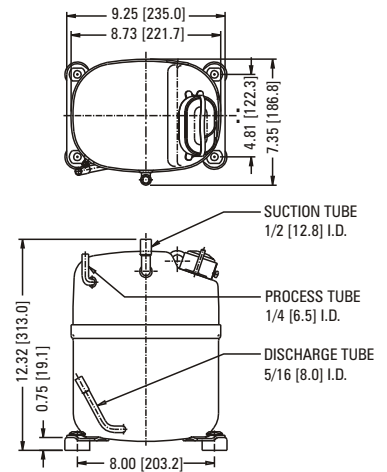
KCE461HAE



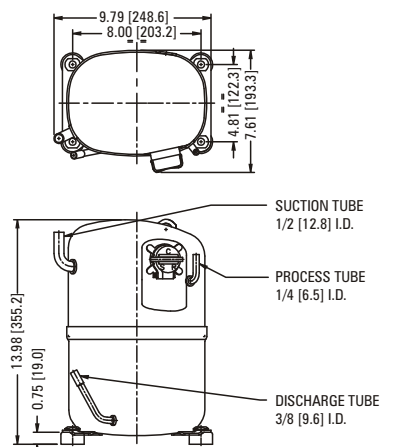
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KCJ430LAL

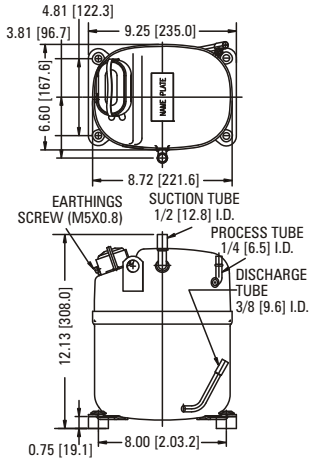


KCJ450LAL

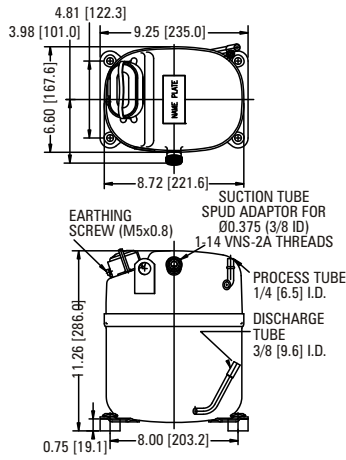


Dimensional Drawings

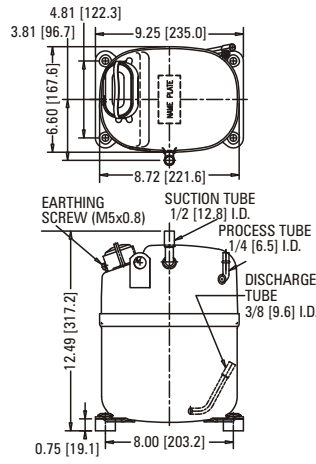
KCJ461CAL
(Stub Tube)



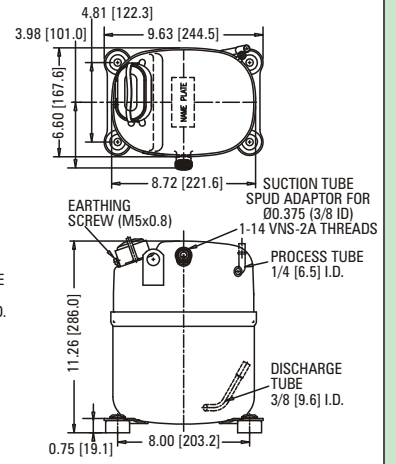
KCJ461CAL
(Suction Spud Adaptor)



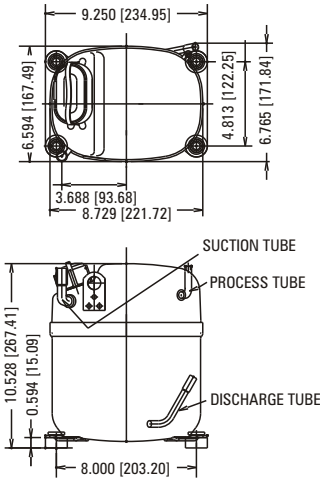
KCJ484CAL
(Stub Tube)



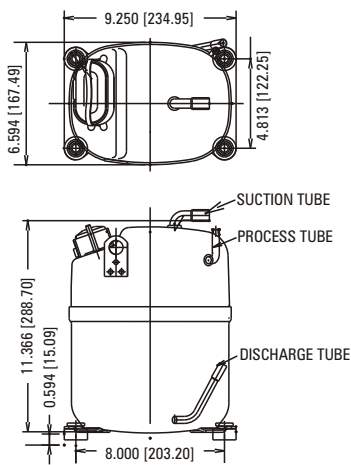
KCJ484CAL
(Suction Spud Adaptor)



KCJ

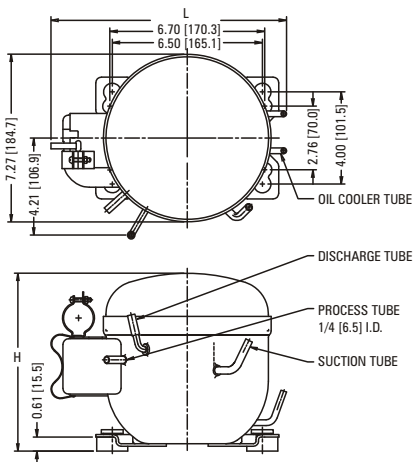


KCJ423LAG / KCJ427LAA / KCJ513HAE / KCJ511HAE



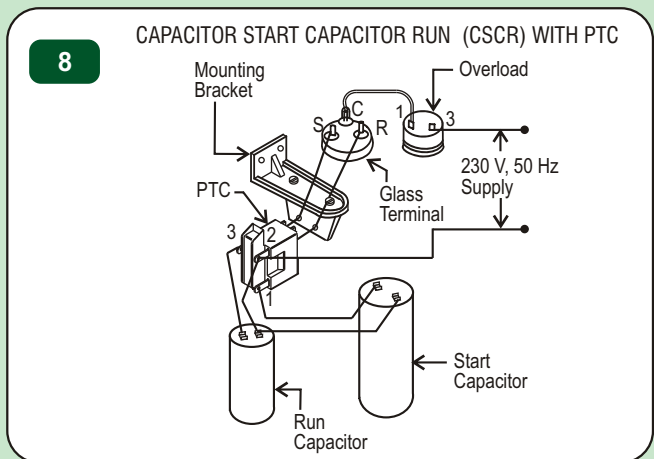
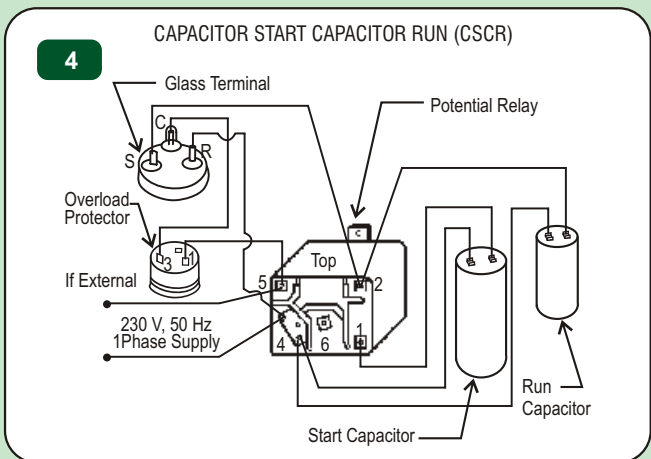
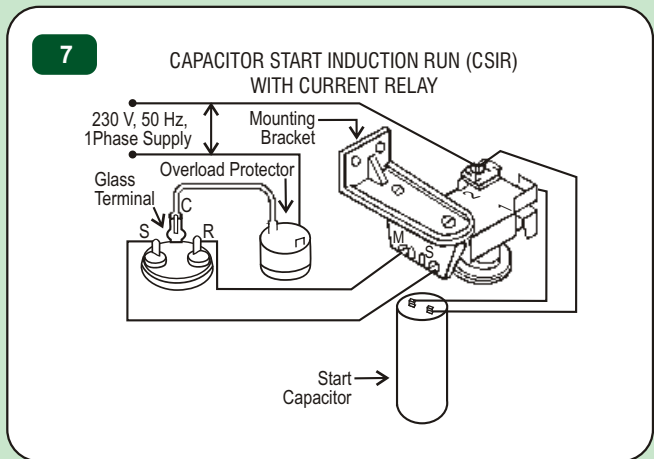
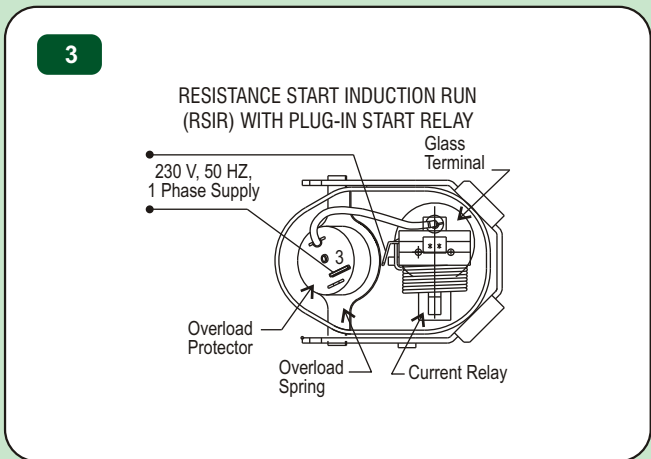
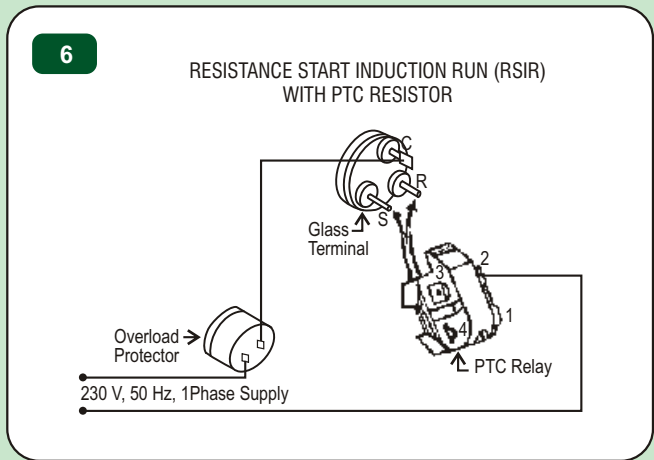
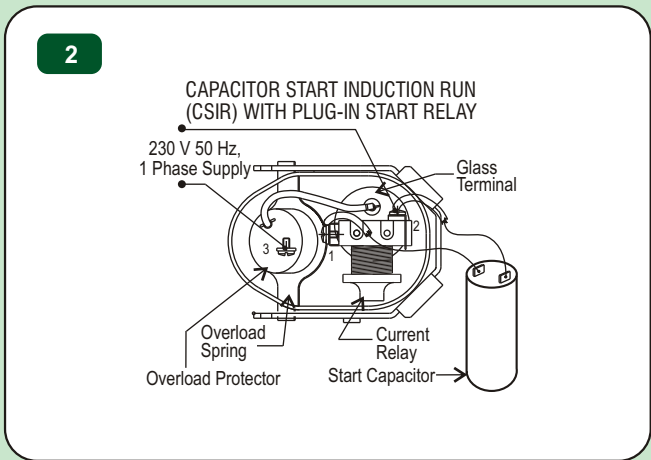
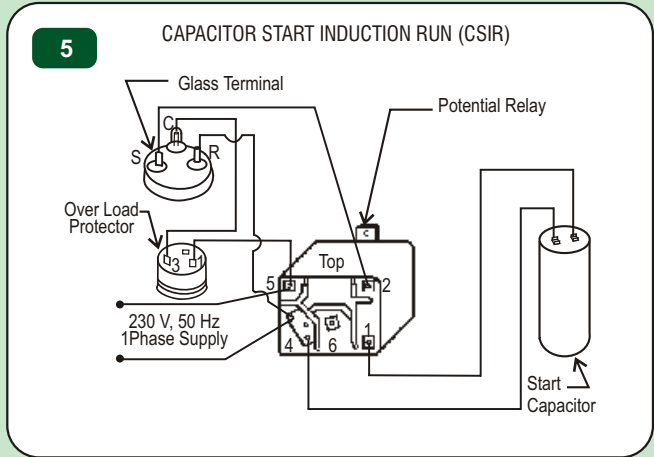
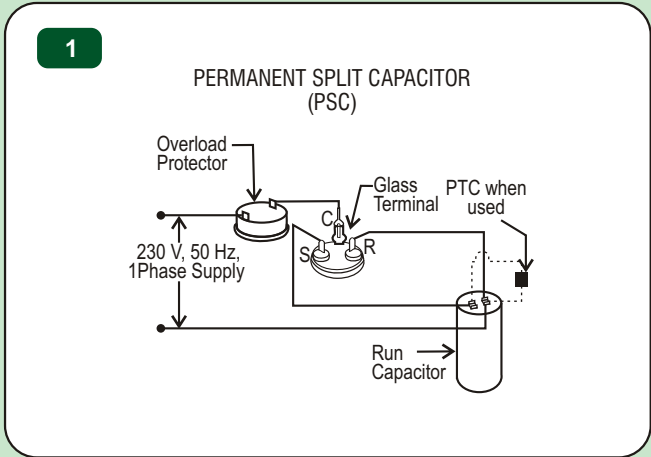
Model	Suction ID		Discharge ID		L	H
	inch	mm	inch	mm		
KCJ444HAG						
KCJ467HAG						
KCJ461HAA	1 / 2	12.8	5 / 16	8.0	235	268
KCJ443HAA						
KCJ411LAG						
KCJ412LAG						
KCJ415LAA	1 / 2	12.8	5 / 16	8.0	235	268
KCJ410LAA						
KCJ498HAG	1 / 2	12.8	5 / 16	8.0	235	280
KCJ494HAA						
KCJ423LAG	1 / 2	12.8	5 / 16	8.0	245	323
KCJ427LAA						
KCJ511HAE	1 / 2	12.8	5 / 16	8.0	245	301
KCJ513HAE	1 / 2	12.8	3 / 8	9.6	245	312

KCN



Model	Suction ID		Discharge ID		L	H	Oil Cooler Tube		Capacitor mounting bracket Provision
	Inch	mm	inch	mm			inch	mm	
KCN372LAG	1 / 4	6.5	1 / 4	6.5	259	189	3 / 16	4.9	NO
KCN396LAG	1 / 4	6.5	1 / 4	6.5	259	196	3 / 16	4.9	YES
KCN411LAG	5 / 16	8.0	5 / 16	8.0	250	202	—	—	YES
KCN415LAG	5 / 16	8.0	5 / 16	8.0	250	202	—	—	YES
KCN463HAG	5 / 16	8.0	5 / 16	8.0	244	202	—	—	YES
KCN413CAG	1 / 4	6.5	1 / 4	6.5	244	189	—	—	YES
KCN416CAG	1 / 4	6.5	1 / 4	6.5	244	189	—	—	YES

Wiring Drawings



Standard Bill of Material

MODEL	BOM India	BOM Export	FOUR LEG 7.5" X 7.5" (190mm X 190mm)	FOUR LEG 4.8" X 8" (122mm X 202mm)	FOUR LEG 4" X 6.5" (102 X 165mm) & 2.75" X 6.69" (70 X 170mm)	FOUR LEG 4" X 6.5" (102mm X 165mm)	THREE LEG 6.12" X 8" (155mm X 203mm)	THREE LEG 8.44" X 9.75" (214mm X X 248mm)	ELECTRICAL CIRCUIT	SERVICE VALVE
R134a LBP										
KCN372LAG	B130	B131			✓				RSIR	
KCN372LAG	B230	B231			✓				CSIR	
KCN396LAG	B230	B231			✓				CSIR	
KCN411LAG	B230	B830			✓				CSIR	
KCN415LAG	B330	B331			✓				CSCR	
KCJ411LAG	B220	B221		✓					CSIR	
KCJ412LAG	B220	B221		✓					CSIR	
KCJ423LAG	C320	C321		✓					CSCR	
KCH431LAG	C310	C311	✓						CSCR	
KCH431LAG	D510	D511	✓						3 PHASE	
R12 LBP										
KCE336LAA	A130	A131			✓				RSIR	
KCE345LAA	B130	B131			✓				RSIR	
KCE360LAA	B230	B231			✓				CSIR	
KCE399LAA	B330	B331			✓				CSCR	
KCJ410LAA	B220	B221		✓					CSIR	
KCJ415LAA	B220	B221		✓					CSIR	
KCJ427LAA	B320	B321		✓					CSCR	
KCH450LAA	B310	B311	✓						CSCR	
R134a, HBP/ CBP										
KCE419HAG	B130	B131			✓				RSIR	
KCE425HAG	B130	B131			✓				RSIR	
KCE432HAG	B230	B231				✓			CSIR	
KCE444HAG	B330	B331			✓				CSCR	
KCE444HAG	B430	---			✓				PSC	
KCE444HAG	B830	B831			✓				CSCR (PTC)	
KCE444HAG	N830	F231			✓				CSIR	
KCE444HAG	---	S331			✓				CSCR	
KCJ444HAG	B220	B221		✓					CSIR	
KCJ467HAG	B220	B221		✓					CSIR	
KCJ498HAG	C220	C221		✓					CSIR	✓
KCN463HAG	B330	B331			✓				CSCR	
R22, HBP / CBP										
KCE443HAE	B330	B331			✓				CSCR	
KCE443HAE	---	B332			✓				CSCR	
KCE443HAE	B430	B431			✓				PSC	
KCE461HAE	B470	B471				✓			PSC	
KCJ511HAE	B321	B322		✓					CSCR	
KCJ511HAE	B420	B421		✓					PSC	
KCJ513HAE	B420	B421		✓					PSC	
KCJ515HAE	B420	B421		✓					PSC	
R12, HBP										
KCE423HAA	B230	B231			✓				CSIR	
KCE431HAA	---	B231			✓				CSIR	
KCE443HAA	B330	B331			✓				CSCR	
KCE443HAA	B830	B831			✓				CSCR (PTC)	
KCJ443HAA	C220	C221		✓					CSIR	
KCJ461HAA	B220	B221		✓					CSIR	
KCJ494HAA	---	C221		✓					CSIR	
R134a, CBP										
KCN413CAG	B830	B831			✓				CSCR (PTC)	
KCN413CAG	C230	---			✓				CSIR	
KCN416CAG	B830	B831			✓				CSCR (PTC)	
R404A, CBP										
KCJ461CAL	B320	B322		✓					CSCR	
KCJ484CAL	B320	B322		✓					CSCR	
R404A, LBP										
KCJ430LAL	B320	B321		✓					CSCR	
KCJ450LAL	B320	B321		✓					CSCR	