Copeland

CR & CX Piston Hermetic to Copeland Refrigeration Scroll

Replacement Guidelines

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CR/CX **Copeland Refrigeration Scroll**

CR - CX Replacement by Copeland Refrigeration Scroll

CR to Copeland Refrigeration Scroll Cross-Reference

CRAQ-0150/015E	ZB15KC/KCE
CRDQ-0200/020E	ZB15KC/KCE
CREQ-0225/022E	ZB19KC/KCE
CRGQ-0250/025E	ZB19KC/KCE
CRJQ- 0300/030E	ZB21KC/KCE
CRKQ- 0325/032E	ZB26KC/KCE
CRLQ- 0350/035E	ZB30KC/KCE
CRMQ-0400/040E	ZB30KC/KCE
CRNQ-0500/050E	ZB38KC/KCE

	CR	Copeland Refrigeration Scroll
Refrigerants	R22/R407C	R22, R407C, R404A & R134a
B.O.M.	522, 523 & 551	551
Voltages	TFD/5 [CRA/D/E/GQ -PFJ]	PFJ, TFD, TF5

CX to Copeland Scroll Cross-Reference

CX 11 K1	ZR18K4E
CX 16 K1	ZR22/28K3E
CX 25 K1	ZB15KCE
CX 37 K1	ZB26KCE

	CX	Copeland Scroll
Refrigerants	R134a	R134a
B.O.M.	551	551 (ZR 522)
Voltages	TFD [CX11/16/25K1 -PFJ]	TFD/5 [ZR 18 - PFJ]

Voltages and B.O.M

Voltages: ± 10% / ~ / Hz

PFJ	220 - 240 / 1 / 50
TFD	380 - 420 / 3 / 50
TF5	200 - 220 / 3 / 50

B.O.M.

551	Rotalock Threaded Stubs, Oil Sight Glass
522	Brazing Stub Tubes (ZR only)

Cross-Reference Technical Comparisons
CR - Copeland Refrigeration Scroll

R22 & R407C 50Hz @ ARI

PRODUCTS		CRAQ	CRDQ	ZB15	CREQ	CRGQ	ZB19	CRJQ	ZB21
Cooling Capacity	kW	4.38	5.5	6	6.7/6.27	7.7/7.48	7	9	8.3
Power Input	kW	1.5	2	2.15	2.19	2.62	2.16	3.1	2.55
Efficiency	COP	2.9	2.82	2.79	3.03/3.8	2.94	3.23	2.93	3.26
Displacement	m3/h	5.7	7.12	5.3	8.18	10.57	6.82	11.97	8.08
Refrigerants		R22,R407C	R22,R407C	R22,R407C	R22,R407C	R22,R407C	R22,R407C	R22,R407C	R22,R407C
Refrigerants				R404A,R134a			R404A,R134a		R404A,R134a
Motor Version		PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5
MOC	A	2.9	3.8		4.6/3.8	5.2	4.9	6.3	6.1
LRA	A	16	22	26	27/22	31	32	39	40
Sound Pressure	dBA	57	59	55	58	61	55	62	58
Length	mm	240	240	243	240	240	242	240	243
Width	mm	235	235	242	235	235	242	235	244
Height	mm	365	360	383	365	375	376	385	399
Footprint	mm	190x190	190x190	190x190	190x190	190x190	190x190	190x190	190x190
Suction Brazing	Inch	5/8	5/8	3/4	5/8	3/4	3/4	3/4	3/4
Discharge Brazing	Inch	3/8	3/8	1/2	3/8	3/8	1/2	3/8	1/2
Oil Charge	l	1.5	1.5	1	1.5	1.5	0.74	1.5	1.12
Net Weight	kg	28.5	28.5		29	30.5		32	
Gross Weight	kg	31	31	26	32	33	29	35	30

PRODUCTS		CRKQ	ZB26	CRLQ	CRMQ	ZB30	CRNQ	ZB38
Cooling Capacity	kW	9.6	9.8	11	12.57	11.72	14.7	14.48
Power Input	kW	3.35	3	3.8	4.2	3.6	5	4.43
Efficiency	COP	2.87	3.26	2.	2.94	3.26	2.99	3.27
Displacement	m3/h	12.8	10	14.19	15.59	11.8	17.7	14.5
Refrigerants		R22,R407C	R22,R407C	R22,R407C	R22,R407C	R22,R407C	R22,R407C	R22,R407C
			R404A,R134a			R404A,R134a		R404A,R134a
Motor Version		PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5	PFJ,TFD/5
MOC	A	6.8	6.9	7.6	8.6	8.3	9.8	10.2
LRA	A	39	46	40	43	49	62	66
Sound Pressure	dBA	61	60	61	59	59	65	61
Length	mm	240	243	240	240	242	290	242
Width	mm	235	244	235	245	242	255	242
Height	mm	395	419	400	400	457	420	457
Footprint	mm	190x190	190x190	190x190	190x190	190x190	190x190	190x190
Suction Brazing	Inch	3/4	3/4	7/8	7/8	7/8	7/8	7/8
Discharge Brazing	Inch	3/8	1/2	1/2	1/2	1/2	1/2	1/2
Oil Charge	l	1.5	1.12	1.5	1.5	1.24	2	1.24
Net Weight	kg	32		33	33.5		38	
Gross Weight	kg	36	31	36	37	40	41	41

Cross-Reference Technical Comparisons
CX - Copeland Scroll

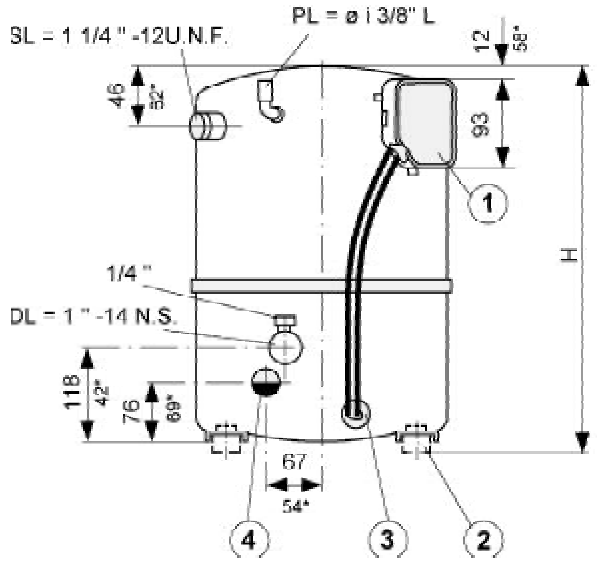
R134a, 50Hz @ARI

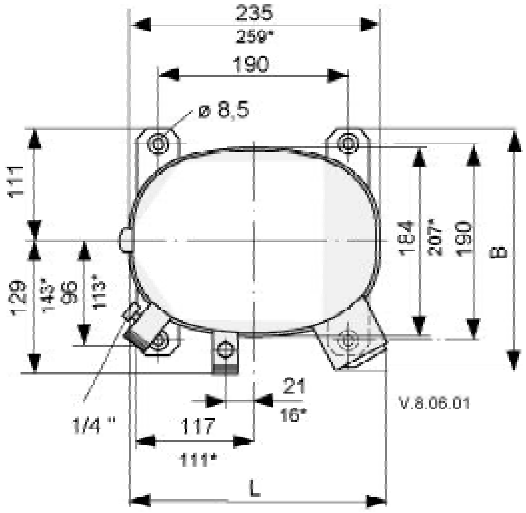
PRODUCTS		CX 11	ZR18*	CX 16	ZR22*	ZR28*
Cooling Capacity	kW	2.3	2.85	4.1	3.61	4.74
Power Input	kW	0.972	1.05	1.44	1.23	1.57
Efficiency	COP	2.74	3.07	2.85	2.94	3.03
Displacement	m3/h	5.7	4.3	7.16	5.34	6.83
Refrigerants		R134a	R134a	R134a	R134a	R134a
Motor Versoion		PFJ	PFJ	PFJ,TFD	PFJ,TFD/5	PFJ,TFD/5
MOC	A	6	10	2.8	4.2	5.1
LRA	A	37	35	17	24	32
Sound Pressure	dBA	57	54	59	54	57
Length(L)	mm	240	242	240	242	242
Width(B)	mm	235	242	235	242	242
Height(H)	mm	365	383	365	383	383
Footprint	mm	190x190	190x190	190x190	190x190	190x190
Suct. Rotalock/Bra.	Inch	5/8	3/4	5/8	3/4	3/4
Disch. Rotalock/Bra	Inch	1/2	1/2	1/2	1/2	1/2
Oil Charge	l	1.5	0.74	1.5	1	1
Net Weight	kg	27	18	27.5	22	25
Gross Weight	kg	29	21	29.5	26	29

PRODUCTS		CX 25	ZB15	CX 37	ZB26
Cooling Capacity	kW	6.1	6.0	9.2	9.8
Power Input	kW	2.06	2.15	3.14	3.0
Efficiency	COP	2.95	2.79	2.92	3.26
Displacement	m3/h	8.18	5.3	10.6	10.0
Refrigerants		R134a	R134a	R134a	R134a
Motor Version		PFJ,TFD	PFJ,TFD/5	TFD	PFJ,TFD/5
MOC	A	4.2		6	6.9
LRA	A	28		41	46
Sound Pressure	dBA	59	55	61	60
Length(L)	mm	240	243	240	243
Width(B)	mm	235	242	235	244
Height(H)	mm	365	383	365	419
Footprint	mm	190x190	190x190	190x190	190x190
Suct. Rotalock/Bra.	Inch	5/8	3/4	7/8	3/4
Disch. Rotalock/Bra.	Inch	1/2	1/2	1/2	1/2
Oil Charge	l	1.5	1.0	1.5	1.12
Net Weight	kg	28.5		33	
Gross Weight	kg	30.5	26	35.5	31

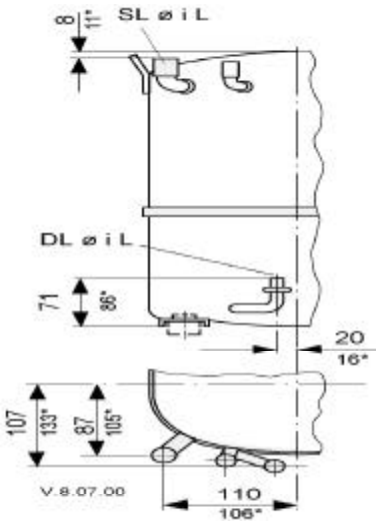
*When selecting a ZR (R134a) compressor to replace a CX check your operating conditions against the operating envelope for the ZR. This can be done using the Select program.

CR & CX Drawings with Dimensions





Version with stub tubes



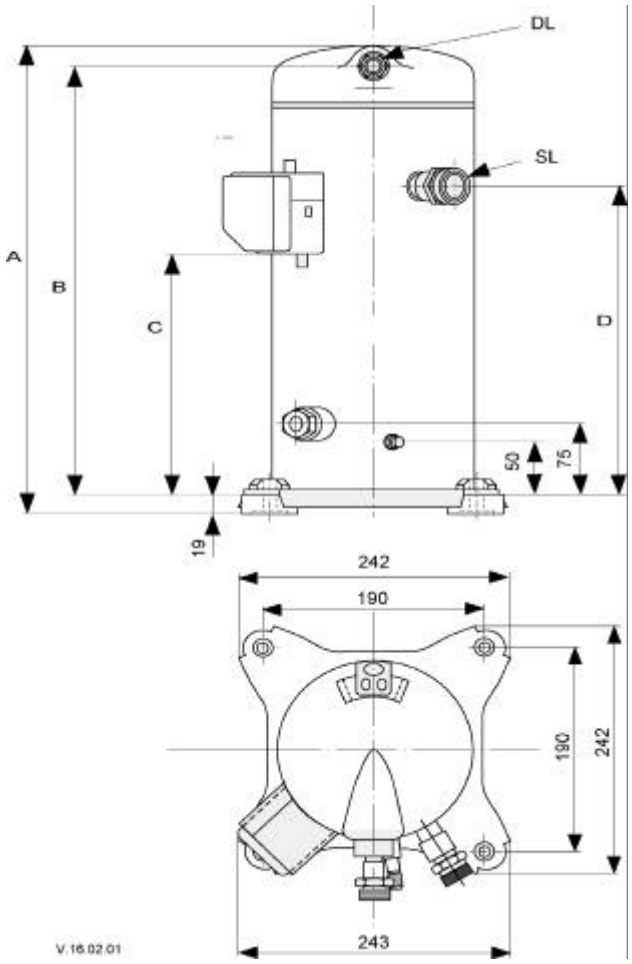
CR & CX

* = (CR) Dimensions of model CRNQ-0500
* = (CX) Dimensions of model CX 37 K1
SL = suction line (L = sweat)
DL = dicharge line (L = sweat)
PL = process line (L = sweat)
1 = terminal box
2 = rubber mounting
3 = crankcase heater
4 = sight glass

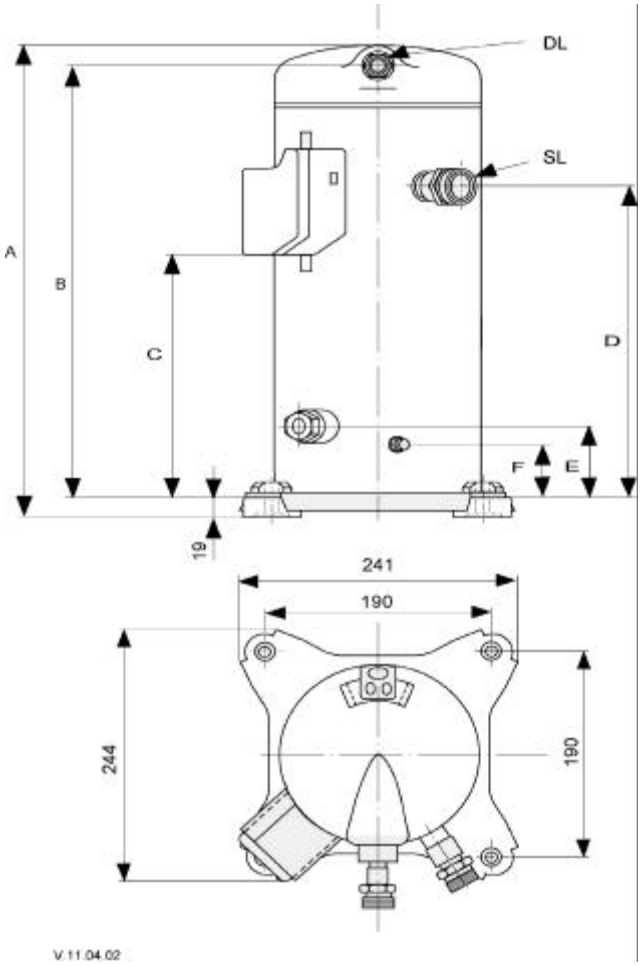
Product		CX11,16,25	CX37	CRAQ/DQ	CREQ	CRGQ/JQ	CRKQ	CRLQ/MQ	CRNQ
Length(L)	mm	240	240	240	240	240	240	240	290
Width(B)	mm	235	235	235	235	235	235	235/245	255
Height(H)	mm	365	385	365/360	365	375/385	395	400	420
Footprint	mm	190x190	190x190	190x190	190x190	190x190	190x190	190x190	190x190
Suction Brazing	mm	5/8	7/8	5/8	5/8	3/4	3/4	7/8	7/8
Discharge Brazing	mm	1/2	1/2	3/8	3/8	3/8	3/8	1/2	1/2

Copeland Refrigeration Scroll Drawings with Dimensions

ZB15KC / KCE to ZB26KC / KCE



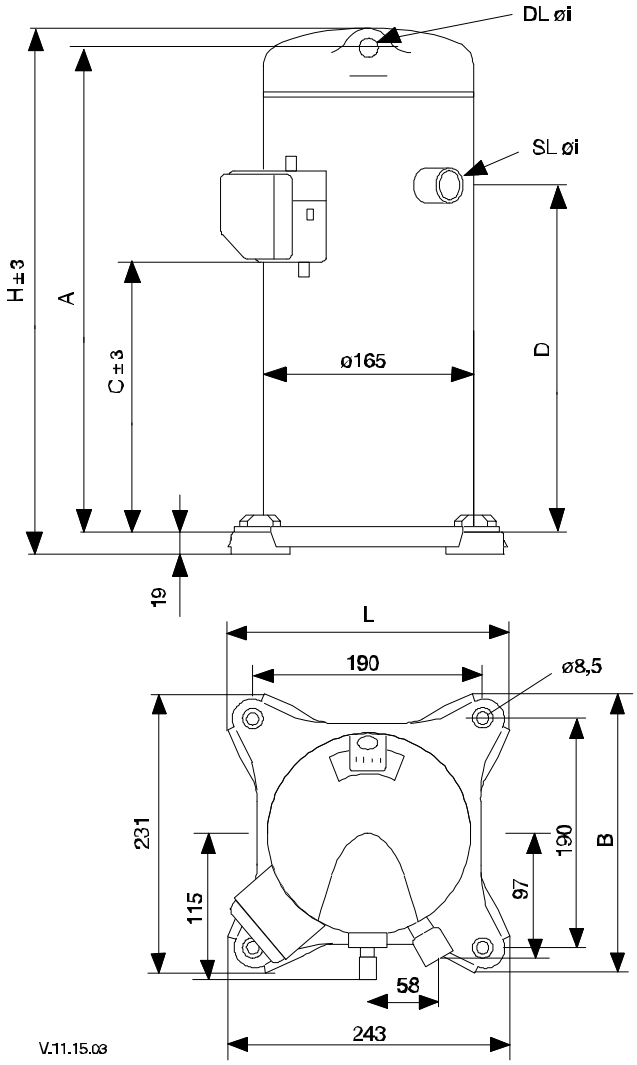
ZB30KC / KCE to ZB45KC / KCE



PRODUCTS		ZB15	ZB19	ZB21	ZB26	ZB30	ZB38	ZB45
Dimension A	mm	383	376	399	413	457	457	457
Dimension B	mm	344	338	361	375	410	410	410
Dimension C	mm	202.5	202	222	235	233	233	233
Dimension D	mm	244.6	244.6	264.5	277.3	297	297	297
Dimension E	mm	75	75	75	75	81.3	81.3	81.3
Dimension F	mm	50	50	50	50	47.5	47.5	47.5
Suction-brazing	Inch	3/4	3/4	3/4	3/4	7/8	7/8	7/8
Discharge brazing	Inch	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Footprint	mm	190x190	190x190	190x190	190x190	190x190	190x190	190x190

Copeland Scroll Drawings with Dimensions

ZR18K4 / K4E to ZR28K3 / K3E



PRODUCT		ZR18	ZR22	ZR28
Length(L)	mm	242	242	242
Width(B)	mm	242	242	242
Heigth(H)	mm	383	383	383
Footprint	mm	190x190	190x190	190x190
Dimension A	mm	338	338	338
Dimension C	mm	205	202	202
Dimension D	mm	245	245	245
Suction-brazing	Inch	3/4	3/4	3/4
Discharge brazing	Inch	1/2	1/2	1/2

Model Nomenclature

C R A Q 0150 – TFD – 522
1 2 3 4 5 6 7

C X 11K 1 – TFD – 551
1 2 8 4 6 7

1. Compressor line – 2 cylinder

2. High / medium temperature
   R = mineral oil
   X = R134a with ester oil

3. Indication of theoretical displacement alphabetically ascending

4. Model variation

5. Motor size

6. Motor version

7. Bill of Material

8. Nominal capacity in BTU/hr at 60 Hz and ARI conditions using multiplier “K” for 1000

Z B 30K C E – TFD – 551
1 2 3 4 5 6 7

1. Compressor family Z = Compliant scroll

2. B = high / medium / low temperature
   R = high / medium temperature

3. Nominal capacity in BTU/hr at 60 Hz and ARI conditions using multiplier “K” for 1000

4. Model variation

5. Ester oil

6. Motor version

7. Bill of Material