



Emerson Commercial & Residential Solutions
Application Engineering (AE) Bulletins

Online Training

Note: you will be muted upon entry. Please 'raise hand' to be unmuted or type in chat box for any questions.

Session is being recorded.

EMERSON

COVID-19 Emerson Update

As we continue to observe the collective coronavirus response effort around the world, I want to assure you that Emerson is very focused on the safety of our employees, customers, suppliers, and communities and we have joined the effort to use social distancing and, where feasible, work from home strategies to help the collective global effort to break the cycle of infection.

Emerson's goods and services directly support critical infrastructure industries and are considered essential in areas such as power generation, refrigeration, food safety, HVAC, pharmaceuticals, refineries for fuels, chemicals, food and beverage, and production technologies used in medical equipment, transportation, and so on. As we all work collectively together in the fight against the virus, please know that it is a primary mission in these times to keep our key facilities open and provide the critical products and services so that the essentials of daily life remain available to our families and communities.

Emerson has taken significant safeguards in our manufacturing facilities to provide social distancing and enhanced cleaning to operate safely and we are working with all government authorities to make sure they support our mission of remaining open and providing critical solutions in these times.



Introduction

Zaki Abedeen, P. Eng.

Sales Manager for Emerson Commercial & Residential Solutions

Zaki currently manages the GTA and Northern Ontario distribution channels for Emerson, working with distribution partners and local HVAC contractors directly for training, technical support and sales promotions.

He has over 14 years of experience working for refrigeration OEMs (CIMCO Refrigeration, Sunwell Technologies), process & building automation (Emerson Automation Solutions) and HVAC/R manufacturers (Copeland, White-Rodgers).



Emerson Wholesaler Account Leadership



Greg Butt
Executive Director, Channel
Tel: 416-526-2858
Greg.Butt@emerson.com

WESTERN CANADA



Ray Winger
Partner Champion – BC
Tel: 604-404-3115
Raymond.Winger@Emerson.com



ONTARIO

Ken Wright
Partner Champion
Tel: 519-502-9936
Kenneth.Wright@Emerson.com



QUEBEC & MARITIMES

Claude Dompierre
Partner Champion
Tel: 514-386-0639
Claude.Dompierre@Emerson.com



Kal Zgheir
Partner Champion – AB
Tel: 403-589-8392
Kal.Zgheir@Emerson.com



Zaki Abedeen
Partner Champion
Tel: 416-948-2466
Zaki.Abedeen@Emerson.com



Cal Gogal
Partner Champion – MB, SK
Tel: 204-918-2118
Cal.Gogal@Emerson.com















Victor Vera
Partner Champion
Tel: 613-791-6590
Victor.Vera@Emerson.com



AE Bulletins App

iPhone & Android Apps



 <p>AE Bulletins Emerson Climate Techn ★★★★★</p>	 <p>Emerson PT Pro Emerson Climate Techn ★★★★★</p>	 <p>HVACR Fault Finder Emerson Climate Techn ★★★★★</p>	 <p>Copeland™ Mobile Emerson Climate Techn ★★★★★</p>	 <p>HVAC Check & Char Emerson Climate Techn ★★★★★</p>	 <p>Sensi Emerson Climate Techn ★★★★★</p>
 <p>WRMobile Emerson Climate Techn ★★★★★</p>	 <p>Sensi Predict Emerson Climate Techn ★★★★★</p>	 <p>Emerson ProAct™ Emerson Climate Techn</p>	 <p>Emerson™ CONNE Emerson Dixell</p>	 <p>GO BT Reader Emerson Climate Techn</p>	 <p>Emerson White-Rod Emerson Electric Canad</p>

Features & Benefits

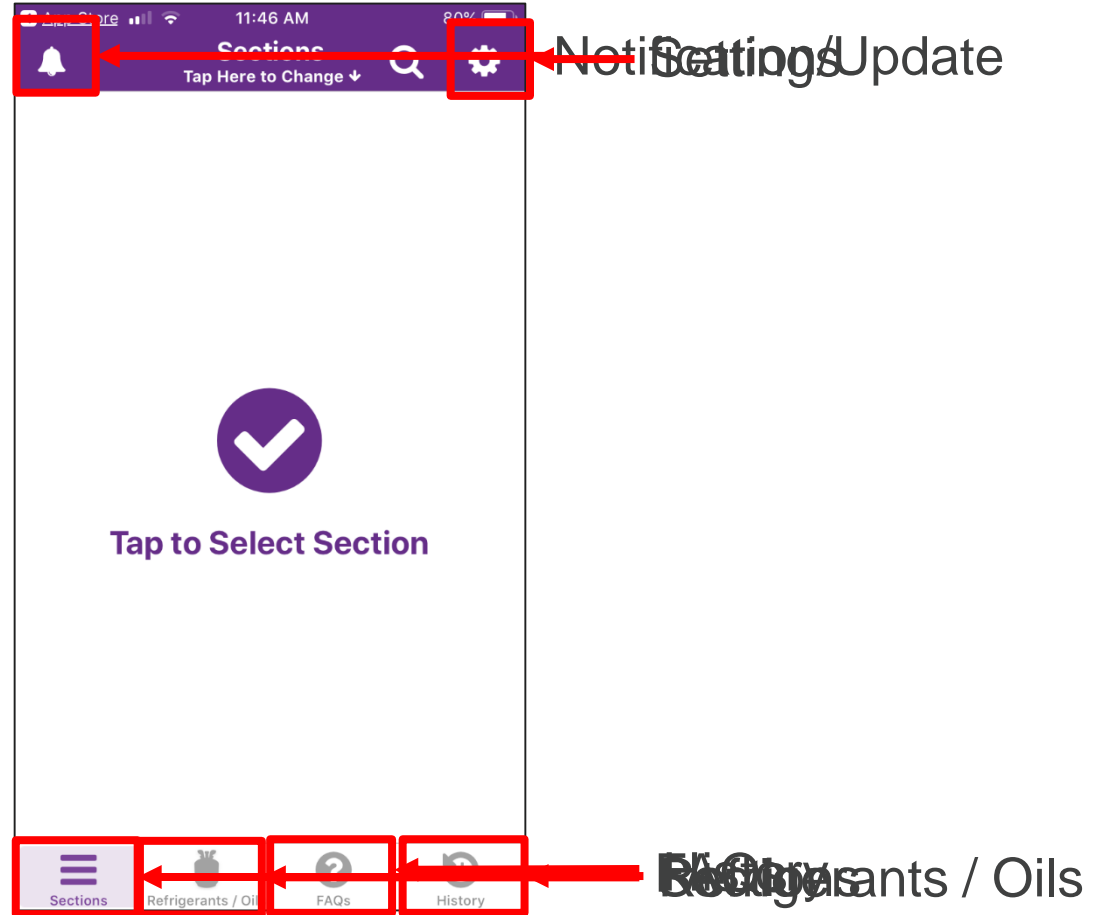


AE (Application Engineering) Bulletins is an app that serves as a technical reference for use whenever and wherever you may need it. You can view documents in PDF format and also share them via email or as a text message. A search function and a drop-down list of bulletin categories have also been provided for your convenience.

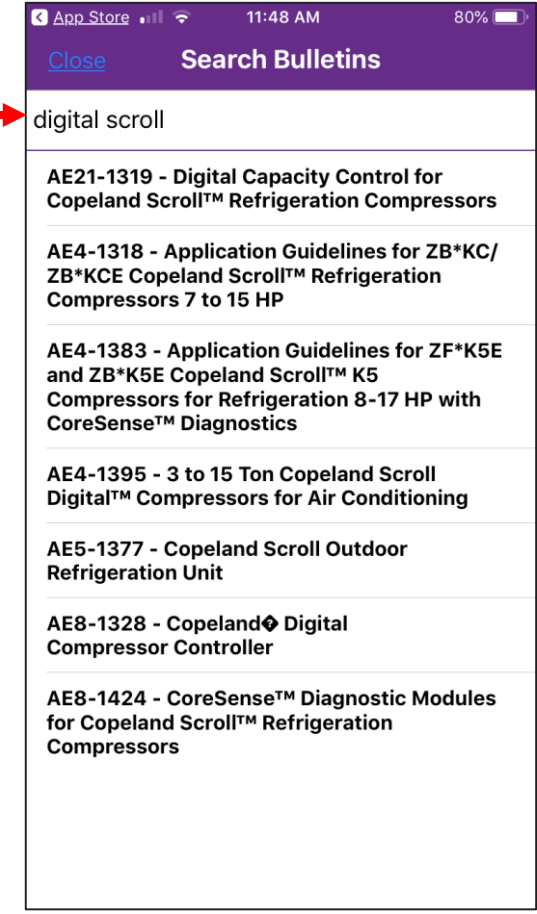
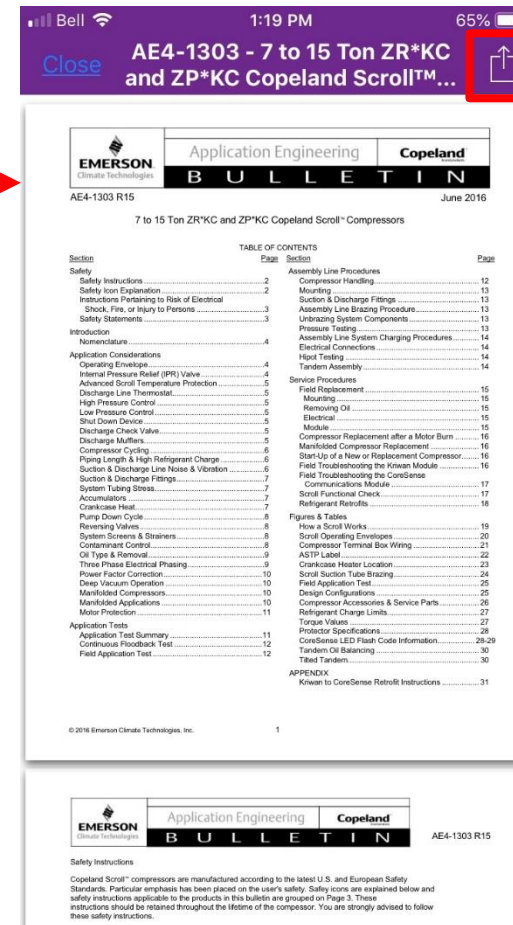
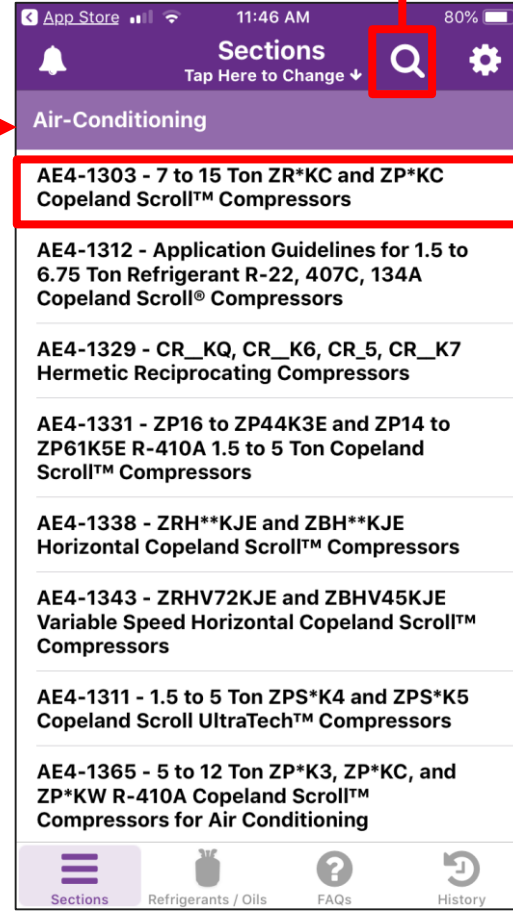
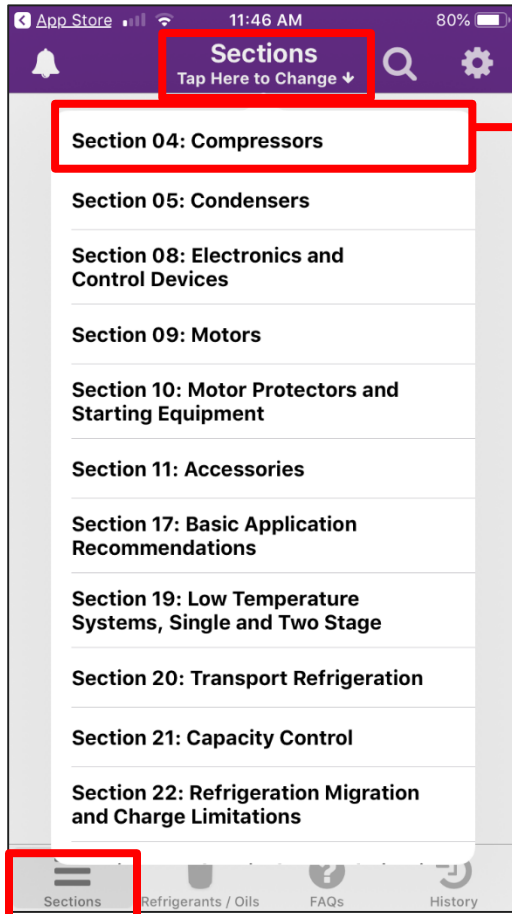
The AE Bulletin app Includes:

- Powerful keyword searching
- Auto syncs new and updated bulletins in background
- Notification of new or updated bulletins
- Common refrigerants and oils documents
- History of last viewed bulletins

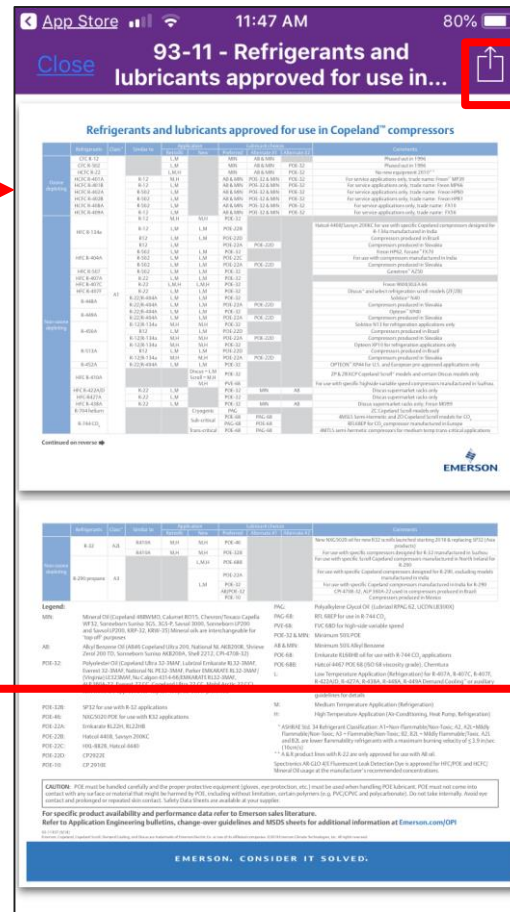
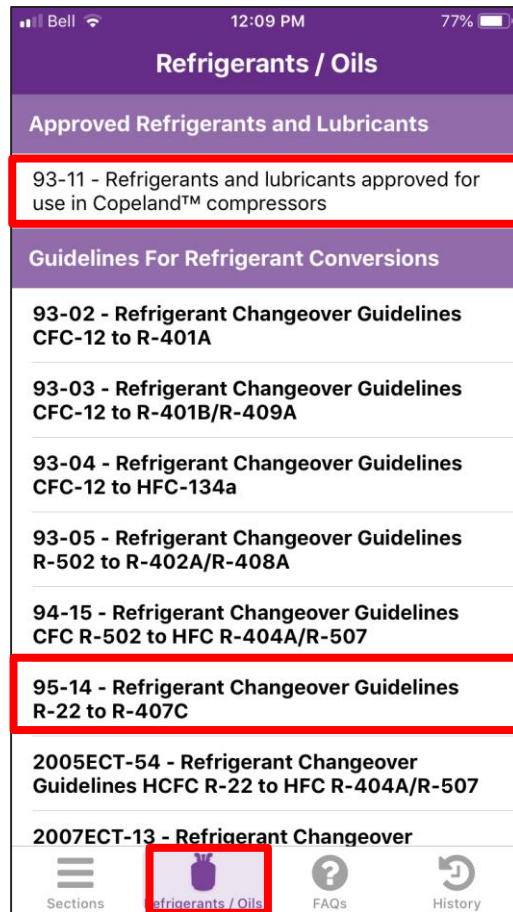
Understand App Layout



Sections



Refrigerants / Oils



AE Bulletin 93-11

Approved Refrigerants & Lubricants

Refrigerants and lubricants approved for use in Copeland™ compressors

	Refrigerants	Class*	Similar to	Application		Lubricant choices			Comments
				Retrofit	New	Preferred	Alternate #1	Alternate #2	
Ozone depleting	CFC R-12			L,M		MIN	AB & MIN		Phased out in 1996
	CFC R-502			L,M		MIN	AB & MIN	POE-32	Phased out in 1996
	HCFC R-22			L,M,H		MIN	AB & MIN	POE-32	No new equipment 2010**
	HCFC R-401A		R-12	M,H		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: Freon™ MP39
	HCFC R-401B		R-12	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: Freon MP66
	HCFC R-402A		R-502	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: Freon HP80
	HCFC R-402B		R-502	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: Freon HP81
	HCFC R-408A		R-502	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: FX10
	HCFC R-409A		R-12	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: FX56
Non-ozone depleting			R-12	M,H	M,H	POE-32			
	HFC R-134a		R-12	L,M	L,M	POE-22B			Hatcol 4408/Savsyn 200KC for use with specific Copeland compressors designed for R-134a manufactured in India
			R12	L,M	L,M	POE-22D	POE-22D		Compressors produced in Brazil
			R12	L,M	L,M	POE-22A			Compressors produced in Slovakia
			R-502	L,M	L,M	POE-32			Freon HP62, Forane™ FX70
	HFC R-404A		R-502	L,M	L,M	POE-22C			For use with compressors manufactured in India
			R-502	L,M	L,M	POE-22A	POE-22D		Compressors produced in Slovakia
	HFC R-507		R-502	L,M	L,M	POE-32			Genetron™ AZ50
	HFC R-407A		R-22	L,M	L,M	POE-32			
	HFC R-407C		R-22	L,M,H	L,M,H	POE-32			Freon 9000/KLEA 66
	HFC R-407F	A1	R-22	L,M	L,M	POE-32			Discus™ and select refrigeration scroll models (ZF/ZB)
	R-448A		R-22/R-404A	L,M	L,M	POE-32			Solstice™ N40
			R-22/R-404A	L,M	L,M	POE-22A	POE-22D		Compressors produced in Slovakia
	R-449A		R-22/R-404A	L,M	L,M	POE-32			Opteon™ XP40
			R-22/R-404A	L,M	L,M	POE-22A	POE-22D		Compressors produced in Slovakia
	R-450A		R-12/R-134a	M,H	M,H	POE-32			Solstice N13 for refrigeration applications only
			R12	L,M	L,M	POE-22D			Compressors produced in Brazil
			R-12/R-134a	M,H	M,H	POE-22A	POE-22D		Compressors produced in Slovakia
	R-513A		R-12/R-134a	M,H	M,H	POE-32			Opteon XP10 for refrigeration applications only
			R12	L,M	L,M	POE-22D			Compressors produced in Brazil
	R-452A		R-12/R-134a	M,H	M,H	POE-22A	POE-22D		Compressors produced in Slovakia
			R-22/R-404A	L,M	L,M	POE-32			OPTEON™ XP44 for U.S. and European pre-approved applications only
	HFC R-410A				Discus = L,M Scroll = M,H M,H	POE-32			ZP & ZB KCP Copeland Scroll™ models and certain Discus models only
					M,H	PVE-68			For use with specific highside variable speed compressors manufactured in Suzhou.
	HFC R-422A/D		R-22	L,M		POE-32	MIN	AB	Discus supermarket racks only
	HFC R-427A		R-22	L,M		POE-32			Discus supermarket racks only
	HFC R-438A		R-22	L,M		POE-32	MIN	AB	Discus supermarket racks only; Freon MO99
R-704 helium				Cryogenic	PAG			ZC Copeland Scroll models only	
				Sub-critical	POE-68	PAG-68		4MSLS Semi-Hermetic and ZO Copeland Scroll models for CO ₂	
				Trans-critical	PAG-68	POE-68		RFL68EP for CO ₂ compressor manufactured in Europe	
R-744 CO ₂					POE-68	PAG-68		4MTLS semi-hermetic compressors for medium temp trans-critical applications	

Continued on reverse ➔

AE Bulletin 93-11

Approved Refrigerants & Lubricants

IMPORTANT

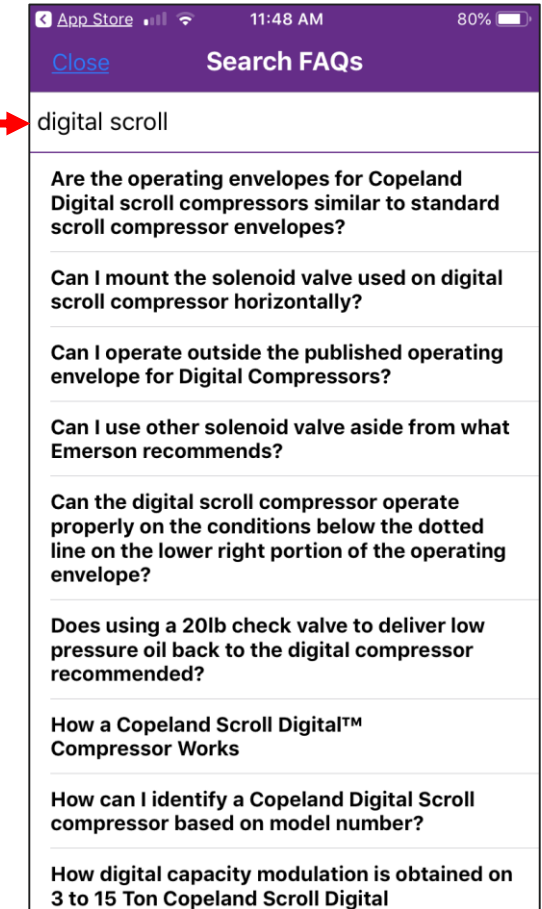
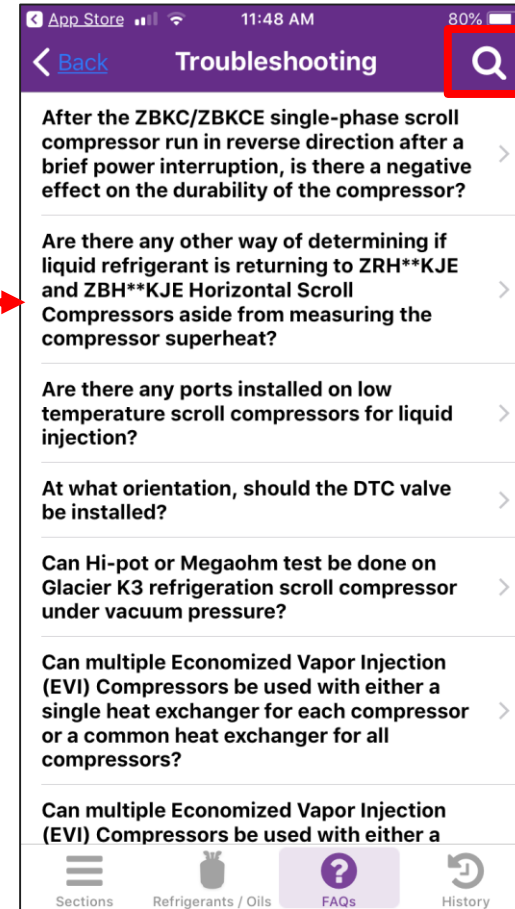
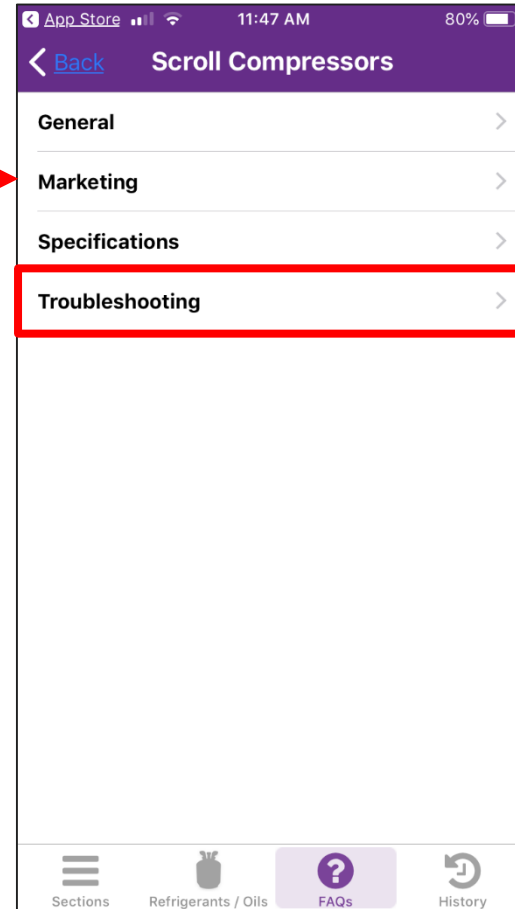
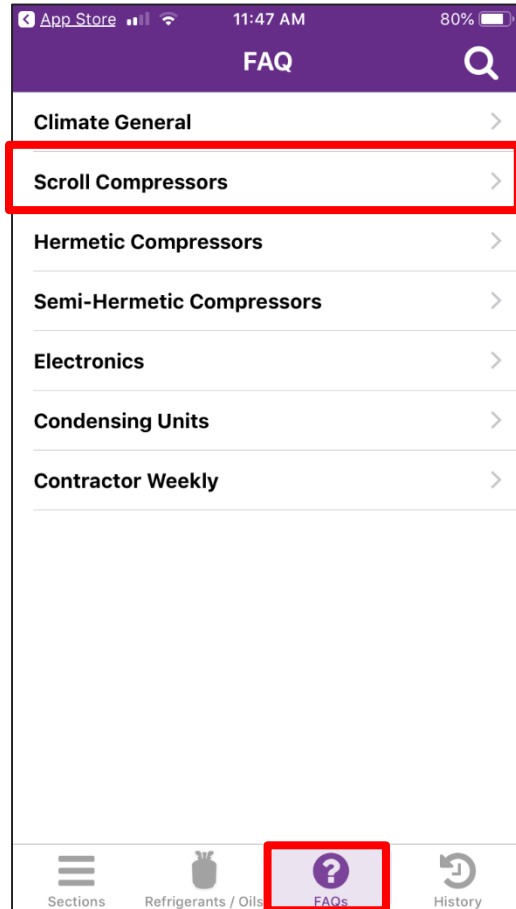
- Reliability
- Safety Concern
- Liability
- System Performance

Refrigerants and lubricants approved for use in Copeland™ compressors

	Refrigerants	Class*	Similar to	Application		Lubricant choices			Comments	
				Retrofit	New	Preferred	Alternate #1	Alternate #2		
Ozone depleting	CFC R-12			L,M		MIN	AB & MIN		Phased out in 1996	
	CFC R-502			L,M		MIN	AB & MIN	POE-32	Phased out in 1996	
	HCFC R-22			L,M,H		MIN	AB & MIN	POE-32	No new equipment 2010**	
	HCFC R-401A		R-12	M,H		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: Freon™ MP39	
	HCFC R-401B		R-12	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: Freon MP66	
	HCFC R-402A		R-502	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: Freon HP80	
	HCFC R-402B		R-502	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: Freon HP81	
	HCFC R-408A		R-502	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: FX10	
	HCFC R-409A		R-12	L,M		AB & MIN	POE-32 & MIN	POE-32	For service applications only, trade name: FX56	
Non-ozone depleting	HFC R-134a	A1		R-12	M,H	M,H	POE-32			
				R-12	L,M	L,M	POE-22B		Hatcol 4408/Savsyn 200KC for use with specific Copeland compressors designed for R-134a manufactured in India	
				R12	L,M	L,M	POE-22D		Compressors produced in Brazil	
	HFC R-404A			R12	L,M		POE-22A	POE-22D		Compressors produced in Slovakia
				R-502	L,M	L,M	POE-32			Freon HP62, Forane™ FX70
				R-502	L,M	L,M	POE-22C			For use with compressors manufactured in India
	HFC R-507			R-502	L,M	L,M	POE-22A	POE-22D		Compressors produced in Slovakia
				R-22	L,M	L,M	POE-32			Genetron™ AZ50
	HFC R-407A			R-22	L,M	L,M	POE-32			
	HFC R-407C			R-22	L,M,H	L,M,H	POE-32			
	HFC R-407F			R-22	L,M	L,M	POE-32			
	R-448A			R-22/R-404A	L,M	L,M	POE-32			Freon 9000/KLEA 66
				R-22/R-404A	L,M	L,M	POE-22A	POE-22D		Discus™ and select refrigeration scroll models (ZF/ZB)
	R-449A			R-22/R-404A	L,M	L,M	POE-32			Solstice™ N40
				R-22/R-404A	L,M	L,M	POE-22A	POE-22D		Compressors produced in Slovakia
	R-450A			R-12/R-134a	M,H	M,H	POE-32			Opteon™ XP40
				R12	L,M	L,M	POE-22D			Compressors produced in Slovakia
	R-513A			R-12/R-134a	M,H	M,H	POE-22A	POE-22D		Compressors produced in Slovakia
				R-12/R-134a	M,H	M,H	POE-32			Solstice N13 for refrigeration applications only
	R-452A			R12	L,M	L,M	POE-22D			Compressors produced in Brazil
				R-12/R-134a	M,H	M,H	POE-22A	POE-22D		Compressors produced in Slovakia
	HFC R-410A			R-22/R-404A	L,M	L,M	POE-32			Opteon XP10 for refrigeration applications only
										Compressors produced in Brazil
HFC R-422A/D								Compressors produced in Slovakia		
								OPTEON™ XP44 for U.S. and European pre-approved applications only		
HFC R-427A								ZP & ZB KCP Copeland Scroll™ models and certain Discus models only		
HFC R-438A								For use with specific highside variable speed compressors manufactured in Suzhou.		
R-704 helium								Discus supermarket racks only		
R-744 CO ₂								Discus supermarket racks only		
								Discus supermarket racks only; Freon MO99		
								ZC Copeland Scroll models only		
								4MSLS Semi-Hermetic and ZO Copeland Scroll models for CO ₂		
								RFL68EP for CO ₂ compressor manufactured in Europe		
								4MTLS semi-hermetic compressors for medium temp trans-critical applications		

Need to Use Approved Refrigerants – Reference AE 93-11

FAQ Page



Finding AE Bulletins Through OPI

EMERSON

HELP CONTACT US
Welcome, Public

Copeland
brand products

ONLINE PRODUCT INFORMATION

COMPRESSORS
CONDENSING UNITS
VISIT OTHER EMERSON CLIMATE TECHNOLOGIES BRANDS
CROSS REFERENCE
PUBLICATION & BULLETIN SEARCH
WHERE TO BUY
MY PREFERENCES
BROWSE INFORMATION
ADD OPI HOME PAGE TO YOUR FAVORITES
Q & A
COPELAND MOBILE DESKTOP VERSION
MOBILE APPS

Compressors
Search for Copeland Brand compressors

Condensing Units
Search For A Bulletin Or Other Publication

Visit other Emerson Climate Technologies Brands
Links to White-Rodgers, Emerson Motors et al

Cross Reference
Find a replacement for an obsolete or competitor's product

EMERSON

MY PREFERENCES HELP CONTACT US

ONLINE PRODUCT INFORMATION

OPI HOME PAGE COMPRESSORS CONDENSING UNITS VISIT OTHER EMERSON CLIMATE TECHNOLOGIES BRANDS CROSS REFERENCE SOFTWARE DOWNLOADS PUBLICATION & BULLETIN SEARCH WHERE TO BUY BROWSE INFORMATION

PUBLICATION & BULLETIN SEARCH

Index of Bulletins

U.S. PUBLICATIONS	MOST POPULAR	LATIN AMERICA	ASIA
-A E Manuals	-1244 Recommended Contactor Sele...	-Espanol	-English
-Application Engineering Bulletins	-1395 3 to 15 Ton Copeland Scroll Dig...	-Portugues	-Japanese
-Brochures and Instruction Sheets	-1388 20 to 40 ton ZP*KC and ZR*KC ...		-Korean
-Marketing Bulletins	-1387 Application Guidelines for ZS**		-Product Catalogs
-Warranty / Returns	-1383 Application Guidelines for ZF*K...		-Simplified Chinese
-White Papers	-1376 Electronic Unit Controller		-Thai
	-1368 CoreSense Diagnostics v2.11 f...		
	-1365 5 to 10 Ton ZP*K3, ZP*KC, and ...		
	-1337 Intelligent Store Discus® v1.0 ...		
	-93-11 Emerson Accepted Refrigerant		
	-1331 ZP16 to ZP44K3E and ZP14 to ...		
	-1328 Copeland Digital Compressor ...		
	-1318 Application Guidelines for ZB* ...		
	-1327 Economized Vapor Injection (E ...		
	-1319 Digital Capacity Control For Re ...		
	-1303 7 to 15 Ton ZR*KC and ZP*KC ...		
	-1299 Application Guidelines for K4 R...		
	-1287 Copeland Discus Demand Cool...		

Interactive Examples & Polling Questions

Polling Question 1



Q: What is the bolt torque for a cylinder head on a discus compressor model number **3DS3-0750-TFC-800**?

- 1) 400 in. lbs.
- 2) 650 in. lbs.
- 3) 525 in. lbs.
- 4) 500 in. lbs.

Polling Question 1



Q: What is the bolt torque for a cylinder head on a discus compressor model number **3DS3-0750-TFC-800**?

- 1) 400 in. lbs.
- 2) 650 in. lbs.
- 3) 525 in. lbs.**
- 4) 500 in. lbs.

Polling Question 2



Q: Your customer has a question regarding a Electronic Unit Controller (EUC). What is the AE Bulletin document number for this?

- 1) AE8-1376
- 2) AE4-1219
- 3) AE8-1386
- 4) AE8-1393

Polling Question 2



Q: Your customer has a question regarding a Electronic Unit Controller (EUC). What is the AE Bulletin document number for this?

- 1) **AE8-1376**
- 2) AE4-1219
- 3) AE8-1386
- 4) AE8-1393

Polling Question 3



Q: An apprentice comes in and has a question regarding overheating of compressors. What AE Bulletin would you send him/her to learn more?

- 1) AE8-1456
- 2) AE4-1555
- 3) AE17-1260
- 4) AE10-1288

Polling Question 3



Q: An apprentice comes in and has a question regarding overheating of compressors. What AE Bulletin would you send him/her to learn more?

- 1) AE8-1456
- 2) AE4-1555
- 3) AE17-1260**
- 4) AE10-1288

Polling Question 4



Q: CoreSense™ Diagnostics is a breakthrough innovation for troubleshooting residential air-conditioning and heat pump systems. By using the compressor as a sensor, CoreSense Diagnostics helps the service technician more accurately troubleshoot system and compressor fault conditions.

Which AE Bulletin has information for a Copeland Scroll AC Application? BONUS: Can you identify the part numbers for a 2-wire AC and 3-wire HP application?

- 1) AE8-1385 R1
- 2) AE8-1379 R2
- 3) AE8-1424 R2
- 4) AE8-1347 R3

Polling Question 4



Q: CoreSense™ Diagnostics is a breakthrough innovation for troubleshooting residential air-conditioning and heat pump systems. By using the compressor as a sensor, CoreSense Diagnostics helps the service technician more accurately troubleshoot system and compressor fault conditions.

Which AE Bulletin has information for a Copeland Scroll AC Application? BONUS: Can you identify the part numbers for a 2-wire AC and 3-wire HP application?

- 1) AE8-1385 R1
- 2) AE8-1379 R2**
- 3) AE8-1424 R2
- 4) AE8-1347 R3

Questions?

Zaki.Abedeen@Emerson.com

