

# Copeland™ Refrigeration Condensing Units for R-22 Retrofit

The refrigeration industry is facing unprecedented challenges to meet various environmental regulations. Based on EPA regulation, no virgin HCFC-22 refrigerant may be produced or imported starting January 1, 2020. The uncertainty regarding the limited supply of R-22 for service means that operators should be aware of replacement options. Emerson has designed new high-efficiency refrigeration condensing units to replace old R-22 units.

Emerson's new higher efficiency M-line condensing units use next generation Copeland compressors and optimize various other components including condenser coils, fan motors, and receivers. R-22 replacement options include R-407C, R-448A, and R-449A.

## Why Retrofit Refrigerants?

- Facilitates compliance with environmental regulations
- Potential to upgrade compressor technologies = increased efficiencies
- Enables accelerated transition away from ozone-depleting refrigerants
- Provides opportunity to promote environmental leadership
- Provides potential for improved compressor reliability and lifespan
- Avoid premature obsolescence of equipment
- Avoids costly equipment replacement / improve life cycle cost of equipment
- Enables continued use of existing equipment with minimal downtime for retrofit



Make sure you stay up to date with the latest Emerson approved refrigerants and lubricants. Form 93-11 details refrigerants and lubricants approved for use in Copeland compressors. Form 95-14 has information and guidelines for replacing R-22 with R-407C or R-448A/449A. Guidelines are available online at [Emerson.com/OPI](http://Emerson.com/OPI)

Current R-22 Model					Possible R-407C Replacement						Possible R-448/449 Replacement					
Model	Length (in)	Width (in)	Height (in)	22 Cap.*	Model	Length (in)	Width (in)	Height (in)	407C Cap.*	Cap. Diff.	Model	Length (in)	Width (in)	Height (in)	448A/449A Cap.*	Cap. Diff.
<b>1/4 Nominal HP</b>																
MCFH-A022-IAA-103	13.90	11.70	9.70	1650	M6JM-H020-IAA-177	14.11	11.45	11.37	1740	5%	M6JM-0017-IAA-177	14.10	11.45	11.37	1590	-4%
MCFH-A022-IAA-111	13.90	11.30	9.70	1650	M6JM-H020-IAA-179	13.91	11.46	9.67	1740	5%	M6JM-0017-IAA-179	13.91	11.46	9.61	1590	-4%
MCPH-A027-IAA-212	19.89	11.18	10.46	2250	N/A						N/A					
MCFH-A027-IAA-103	13.91	11.47	9.67	2390	N/A						N/A					
MCFH-A027-IAA-111	13.91	11.25	9.67	2390	N/A						N/A					
MCFH-A027-IAA-272	14.42	12.89	11.36	2390	N/A						N/A					
MCEH-0027-IAA-111	14.25	16.00	10.52	2600	M6EM-0028-IAA-111	16.00	14.25	10.48	2710	4%	M6EM-0028-IAA-111	16.00	14.25	10.48	2530	-3%
MCEH-0027-IAA-212	14.25	16.00	10.52	2600	M6EM-0028-IAA-103	16.00	14.25	10.52	2710	4%	M6EM-0028-IAA-212	16.00	14.25	10.46	2530	-3%
MCFH-0027-IAA-111	13.82	11.25	9.67	2600	M6ZM-0031-IAA-179	16.17	13.38	11.73	2710	4%	M6JM-H028-IAA-179	13.91	11.46	9.67	2600	0%
MCPH-0027-IAA-208	19.88	11.06	10.52	2600	M6PM-0028-IAA-177	19.88	11.06	10.65	2600	0%	M6PM-0028-IAA-179	19.88	11.02	10.48	2530	-3%
MCFH-B027-IAA-020	14.09	12.42	11.02	2680	N/A						N/A					
MCFH-B027-IAA-103	13.90	11.50	9.70	2680	M6ZM-0031-IAA-177	16.51	12.68	11.73	2710	1%	M6ZM-0031-IAA-177	16.51	12.68	11.73	2640	-1%
MCFH-B027-IAA-111	13.90	11.30	9.70	2680	M6ZM-0031-IAA-179	16.17	13.38	11.73	2710	1%	M6ZM-0031-IAA-179	16.17	13.38	11.73	2640	-1%
MCFH-B027-IAA-272	14.40	12.90	11.40	2680	M6ZM-0031-IAA-272	16.53	13.05	11.71	2710	1%	M6ZM-0031-IAA-272	16.53	13.05	11.71	2640	-1%
MCPH-B027-IAA-212	19.90	11.30	10.50	2690	M6PM-0028-IAA-078	19.88	11.18	10.65	2600	-3%	M6PM-H031-CAA-272	19.88	11.36	10.65	2670	-1%
<b>3/8 Nominal HP</b>																
MCFH-A036-IAA-103	16.15	12.87	11.74	2830	M6JM-H028-IAA-177	14.11	11.45	11.37	2810	-1%	M6ZM-H026-CAA-177	16.52	12.79	11.71	2810	-1%
MCFH-A036-IAA-111	16.15	12.69	11.74	2830	M6JM-H028-IAA-179	13.91	11.46	9.67	2810	-1%	M6ZM-H026-CAA-179	16.20	13.46	11.71	2810	-1%
MCFH-A036-IAA-272	16.27	13.08	11.73	2830	M6JM-H028-IAA-078	14.13	12.12	11.37	2810	-1%	M6ZM-H026-CAA-272	16.52	13.05	11.69	2810	-1%
MCEH-0035-IAA-212	16.17	15.29	11.78	3020	N/A						M6EM-H034-IAA-212	16.06	15.12	11.86	2970	-2%
MCPH-0035-IAA-111	19.88	11.00	10.52	3020	N/A						N/A					
MCPH-0035-IAA-208	19.88	11.01	10.52	3020	N/A						N/A					
MCPH-0035-IAA-212	19.88	11.14	10.52	3020	N/A						M6PM-H033-IAA-272	19.88	11.21	11.14	2900	-4%
MCPH-A035-IAA-212	19.88	11.08	10.46	3260	N/A						N/A					
MCFH-B036-IAA-111	16.20	12.70	11.70	3400	N/A						M6JM-H035-IAA-179	13.96	11.56	9.67	3340	-2%
MCFH-B036-IAA-272	16.54	13.08	11.73	3400	N/A						M6JM-H035-IAA-272	13.64	12.12	11.37	3340	-2%
<b>1/2 Nominal HP</b>																
MCEH-A048-CAA-212	16.10	15.10	11.80	4080	N/A						N/A					
MCPH-A048-CAA-212	19.90	11.20	10.50	4080	N/A						N/A					
MCPH-0048-CAV-212	11.00	20.00	10.57	4110	N/A						N/A					
MCFH-A049-CAA-020	16.48	13.28	11.74	4120	N/A						N/A					
MCFH-A049-CAA-111	16.20	12.71	11.75	4120	M6ZP-0053-IAA-179	16.60	14.18	11.73	4360	6%	M6JM-H043-IAA-179	14.01	11.46	9.67	4250	3%
MCFH-A049-CAA-272	16.56	13.08	11.74	4120	M6ZP-0053-IAA-272	17.36	13.67	11.71	4360	6%	M6JM-H043-IAA-272	14.41	12.12	11.37	4250	3%
MCFH-A049-IAV-272	16.60	13.10	11.70	4120	M6ZP-0053-IAV-078	17.36	13.68	11.71	4360	6%	M6JM-H043-CAV-078	14.40	12.01	11.37	4250	3%
MCFH-0049-CAB-252	16.00	13.20	11.70	4150	M6ZP-0053-IAV-078	17.36	13.68	11.71	4360	5%	N/A					
MCFH-0049-CAV-111	16.06	12.68	11.81	4150	M6ZP-0053-IAV-179	16.60	14.10	11.73	4360	5%	N/A					
MCFH-0049-CAV-212	16.06	13.08	11.81	4150	M6ZP-0053-IAV-078	17.36	13.68	11.71	4360	5%	M6QM-H049-CAV-078	15.66	12.01	11.37	4310	4%
MCFH-A056-IAA-272	17.38	14.38	11.82	4460	M6ZP-0053-IAA-272	17.36	13.67	11.71	4360	-2%	M6QM-H049-IAA-272	15.67	12.12	11.37	4310	-3%
MCFH-A056-IAV-272	17.38	14.38	11.82	4460	M6ZP-0053-IAV-078	17.36	13.68	11.71	4360	-2%	M6QM-H049-CAV-078	15.66	12.01	11.37	4310	-3%
<b>3/4 Nominal HP</b>																
MCFH-0078-CAA-072	24.00	17.14	13.07	6520	N/A						M6KP-0075-CFA-072	24.00	16.39	13.08	6430	-1%
MCFH-0078-CAV-072	24.00	17.20	13.10	6520	N/A						M6KP-0075-CAV-072	24.00	16.39	13.08	6430	-1%
<b>1 Nominal HP</b>																
F3AH-B100-CAV-072	24.30	17.20	13.10	7870	M6KP-0095-CFV-072	16.39	24.00	13.08	7670	-3%	M6KP-0092-CAV-072	24.00	16.39	13.08	7860	0%
F3AH-B100-CFA-020	24.30	17.10	13.10	7870	M6KP-0092-CFA-072	24.00	16.39	13.08	7600	-3%	M6KP-0092-CFA-072	24.00	16.68	13.08	7860	0%
F3AH-B105-CFV-020	24.00	18.30	16.20	9060	M6KP-0112-CFV-072	24.00	18.30	16.16	8710	-4%	M6KP-0112-CFV-072	24.00	18.30	16.16	9140	1%
F3AH-B105-TAC-020	24.00	18.30	16.20	9060	M6KP-0112-TAC-072	24.00	18.33	16.16	8710	-4%	M6KP-0112-TAC-072	24.00	18.33	16.16	9140	1%

\* Listed capacities are at rated condition of 25°F Evaporator temperature and 90°F Ambient temperature  
Review Bulletin 95-14 for information and guidelines for replacing R-22 with R-407C or R-448A/449A.  
95-14 - Refrigerant Changeover Guidelines R-22 to R-407C

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