



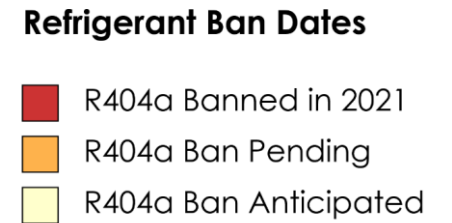
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A BERKSHIRE HATHAWAY COMPANY

Cornelius Viper 3 Barrel & 4 Barrel Critical Refrigeration Component Changes



Why Change From R404a to R448a?



We are changing to R448 refrigerant to comply with the U.S. Environmental Protection Agency's (EPA) Significant New Alternatives Policy (SNAP) program (Rule 20). As of the time this document was written, these states will require compliance with state regulations comparable to the SNAP program in 2021.

Viper 3 Barrel Critical REF Component Changes



MARMON FOODSERVICE
TECHNOLOGIES, INC.
GLENDALE HEIGHTS, IL 60139 USA

PART NO.

62136XXX

MODEL NO.

VIPER E 3

SERIAL NO.

62XXXXVP000

VOLTS

230

AMPS

30

HERTZ

60

REFRIG.

R4XXa

OZ / GMS

XXX

PRESSURES:
HIGH SIDE:
LOW SIDE:
MAX CO2: 75PSIG (0.52 Mpa)
MAX SYRUP: 75 PSIG (0.52. Mpa)
MAX PRODUCT(H2O): 90 PSIG (0.62 Mpa)
BEVERAGE COOLER AND DISPENSER SA2128





Refrigerant Code
0 = R404a
6 = R448a

Date Code
2021 and lower
2022 and higher

Refrigerant
R404a
R448a

Refrigerant	R404a	R404a	R448a
Part No.	621360XXX	621360XXX	621366XXX
Serial Number Date Code	2021 or earlier	2022 or later	n/a
Compressor	620607932	620070871	620070871
Condenser	620608016	620071625	620071625
Fan	629096902	620071572	620071572
AEV	620609156	620609156	620071188
TXV	n/a	n/a	620072074
Thermostat Switch	n/a	n/a	620072408
Charge	96 oz.	74.1 oz.	49.9 oz.

Viper 4 Barrel Critical REF Component Changes



MARMON FOODSERVICE
TECHNOLOGIES, INC.
GLENDALE HEIGHTS, IL 60139 USA

PART NO.

62146X^{REF}XXX

MODEL NO.

VIPER E 4

SERIAL NO.

62X^{DATE}XXXXVP000

VOLTS

230

AMPS

30

HERTZ

60

REFRIG.

R4^{REF}Xa

OZ / GMS

XXX

PRESSURES:
HIGH SIDE:
LOW SIDE:
MAX CO2: 75PSIG (0.52 Mpa)
MAX SYRUP: 75 PSIG (0.52. Mpa)
MAX PRODUCT(H2O): 90 PSIG (0.62 Mpa)
BEVERAGE COOLER AND DISPENSER SA2128





Refrigerant Code
0 = R404a
6 = R448a

Date Code
2021 and lower
2022 and higher

Refrigerant
R404a
R448a

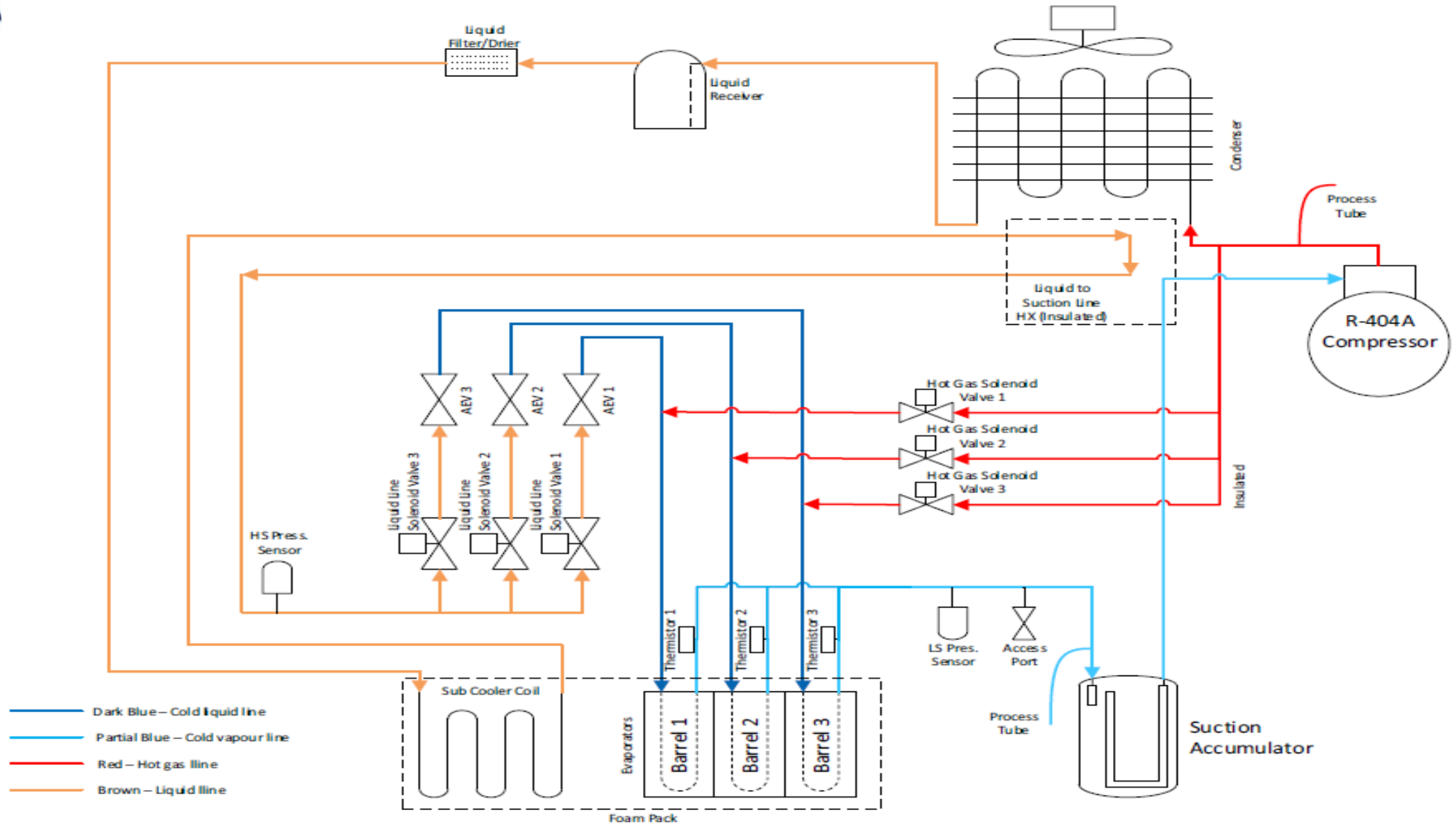
Refrigerant	R404a	R404a	R448a
Part No.	621460XXX	621460XXX	621466XXX
Serial Number Date Code	2021 or earlier	2022 or later	n/a
Compressor	620607932	620070871	620070871
Condenser	620608016	620071625	620071625
Fan	629096902	620071572	620071572
AEV	620609156	620609156	620071188
TXV	n/a	n/a	620072074
Thermostat Switch	n/a	n/a	620072408
Charge	108 oz.	81.1 oz.	63.5 oz.



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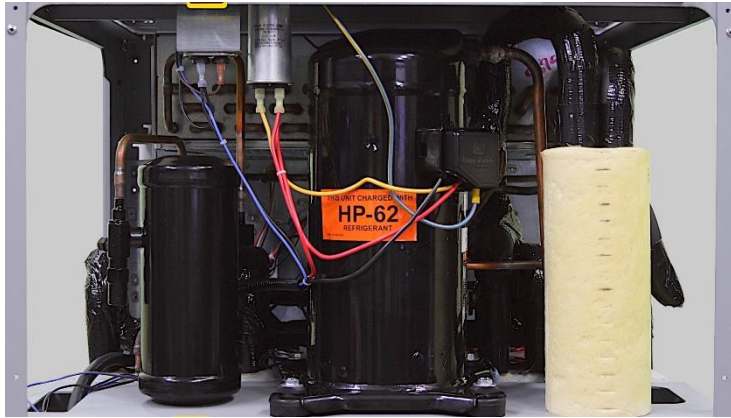
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Viper Refrigeration System – 404A



ZB-15 Refrigeration System Overview - Compressor

- High capacity
 - Emerson Copeland ZB-15 Scroll Compressor for 2-barrel



ZB-15 OHM Values

- C-S: 2.4 ohms
- C-R: 1.2 ohms
- R-S: 3.6 ohms



****Disconnect power and remove wires before
checking resistance****

Refrigeration System Overview – Operating Pressures **ZB-15 404A**

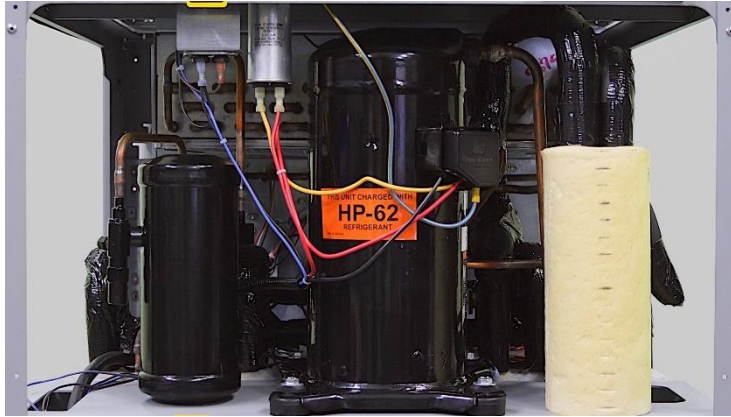
- **Viper 2 Barrel 60 Hz**
 - **Refrigerant type:** R404a
 - **Charge:** 60 oz.
 - **Compressor:** Emerson Copeland ZB-15 Scroll

Working Pressures:

Mode	Ambient temp, F	70	80	90	100
Refrigeration	High side pressure, PSIG	240 +/- 10	275 +/- 10	315 +/- 10	360 +/- 10
	Low side pressure, PSIG	41 +/- 2 for 1 BRL & 47 +/- 2 for 2 BRL			
Hot Gas Defrost	High side pressure, PSIG	150 +/- 10	180 +/- 10	210 +/- 10	240 +/- 10
	Low side pressure, PSIG	37 +/- 5	48 +/- 5	58 +/- 5	67 +/- 5

ZB-19 Refrigeration System Overview - Compressor

- High capacity
 - Emerson Copeland ZB19 for 3 and 4barrel.



ZB-19 OHM Values

- C-S: 3.0 ohms
- C-R: 1.2 ohms
- R-S: 4.2 ohms



****Disconnect power and remove wires before
checking resistance****

Refrigeration System Overview – Operating Pressures **ZB-19 404A**

- **Viper 3 and 4 Barrel 60 Hz**
 - **Refrigerant type:** R404a
 - **Charge:**
 - 3 BRL: 96oz. 4BRL:108oz.
 - **Compressor:** Emerson Copeland ZB-19 Scroll

Working Pressures:

Mode	Ambient temp, F	70	80	90	100
Refrigeration	High side pressure, PSIG	225 +/- 10	260 +/- 10	300+/- 10	340+/- 10
	Low side pressure, PSIG	39 +/- 2 for 1 BRL, 45+/- 2 for 2 brl, & 47 +/- 2 for 3 & 4 BRL			
Hot Gas Defrost	High side pressure, PSIG	150 +/- 10	180 +/-10	210 +/- 10	240 +/- 10
	Low side pressure, PSIG	30 +/- 5	41 +/- 5	51 +/- 5	60 +/- 5

ZS-19 Refrigeration System Overview - Compressor

- High capacity
 - Emerson Copeland ZB19 Scroll Compressor for 3 and 4 barrel.
 - **Running change cut in on SN:62E2022VP001**



ZS-19 OHM Values

- C-S: 1.5 ohms
- C-R: 1.1 ohms
- R-S: 2.6 ohms

****Disconnect power and remove wires before checking resistance****



3 & 4 Barrel Refrigeration System Overview

Operating Pressures **ZS-19 404A**

- **Viper 3 and 4 Barrel 60 Hz**
 - **Refrigerant type:** R404a
 - **Charge:**
 - 3 BRL: 74.1oz. 4BRL: 81.1oz.
 - **Compressor:** Emerson Copeland ZS-19 Scroll

Working Pressures:

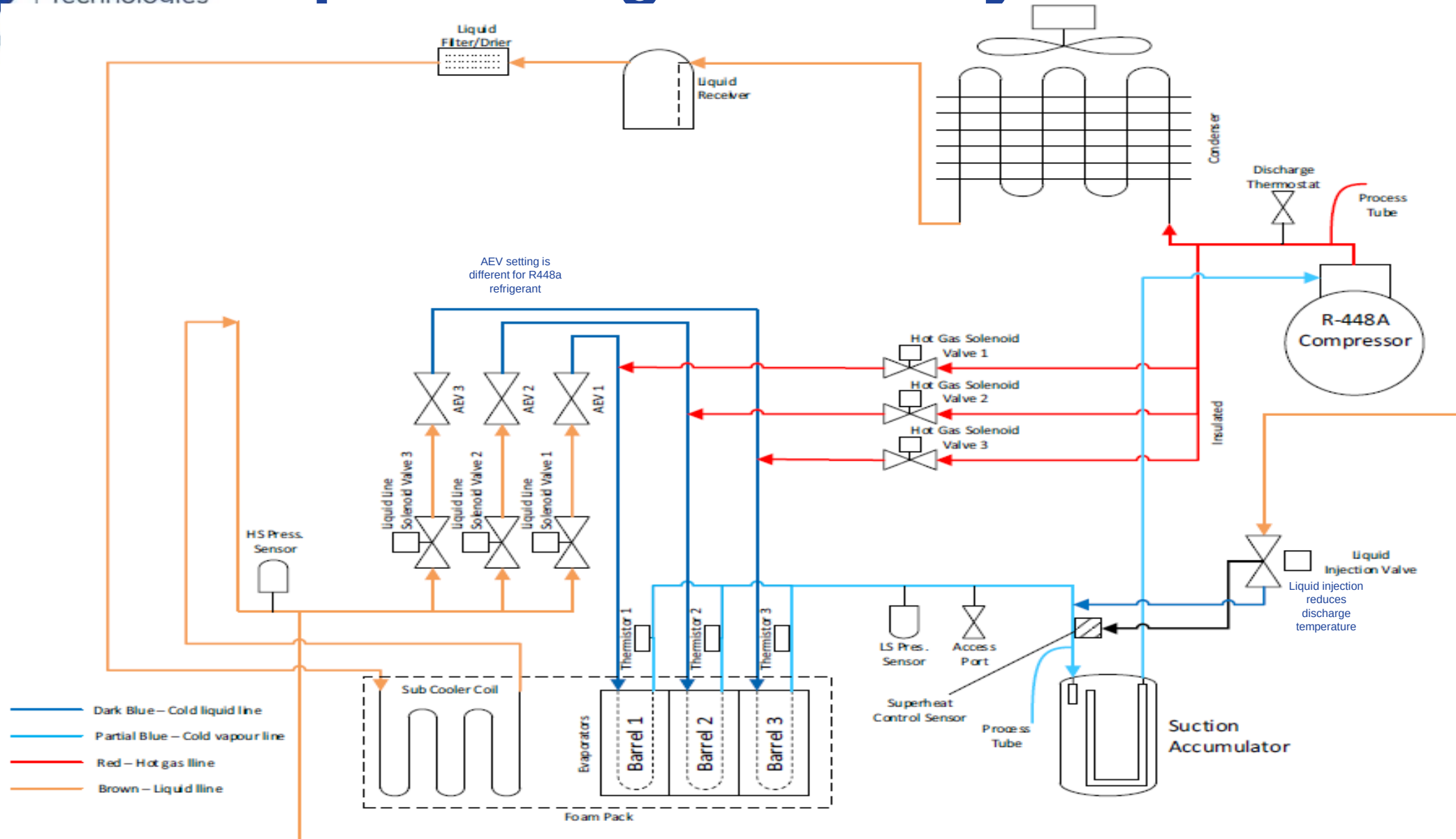
Mode	Ambient temp, F	75	90	104
Refrigeration	High side pressure, PSIG	275 +/- 20	330+/- 20	380+/- 20
	Low side pressure, PSIG	38 +/- 2 for 1 BRL, 42+/- 2 for 2 brl, & 47 +/- 2 for 3 & 4 BRL		
Hot Gas Defrost	High side pressure, PSIG	175 +/- 20	230 +/-20	280 +/- 20
	Low side pressure, PSIG	30 +/- 5	41 +/- 5	51 +/- 5



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Viper Refrigeration System – 448A



ZS-19 Refrigeration System Overview - Compressor

- High capacity
 - Emerson Copeland ZB19 Scroll Compressor for 3 and 4 barrel.
 - **Running change cut in on SN:62E2022VP001**



ZS-19 OHM Values

- C-S: 1.5 ohms
- C-R: 1.1 ohms
- R-S: 2.6 ohms

****Disconnect power and remove wires before checking resistance****



3 & 4 Barrel Refrigeration System Overview

Operating Pressures **ZS-19 448A**

- **Viper 3 and 4 Barrel 60 Hz**
 - **Refrigerant type:** R448a
 - **Charge:**
 - 3 BRL: 49.4oz. 4BRL: 63.5oz.
 - **Compressor:** Emerson Copeland ZS-19 Scroll

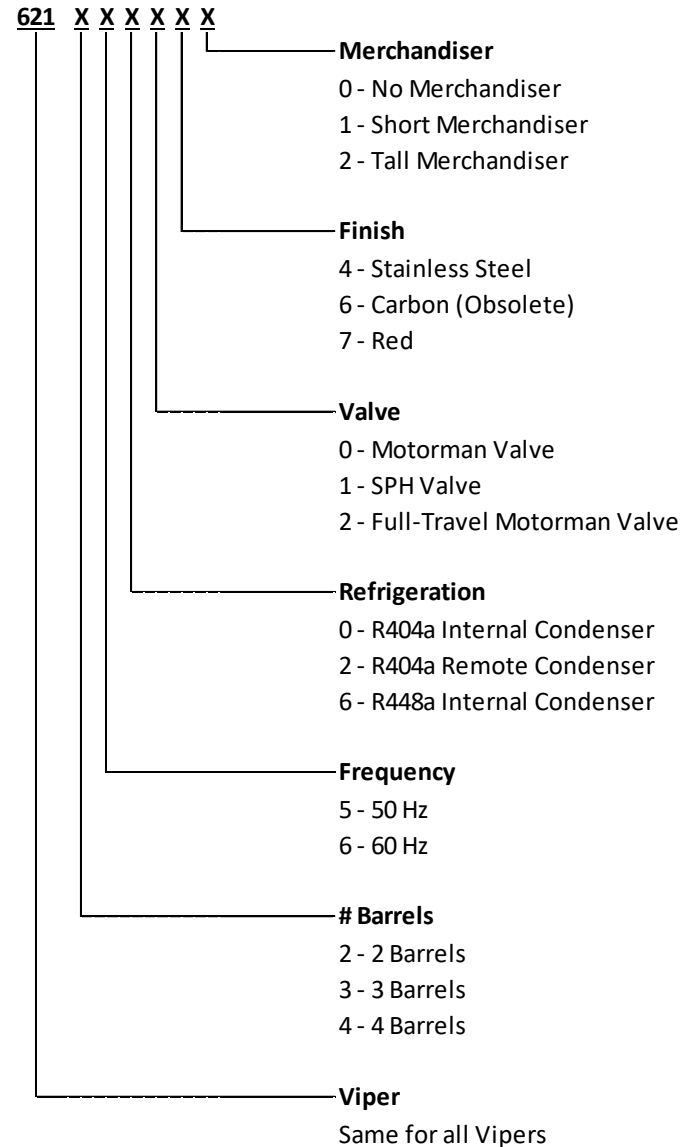
Working Pressures:

Mode	Ambient temp, F	75	90	104
Refrigeration	High side pressure, PSIG	265 +/- 20	330+/- 20	370+/- 20
	Low side pressure, PSIG	37 +/- 2 for 1 BRL, 42+/- 2 for 2 brl, & 47 +/- 2 for 3 & 4 BRL		
Hot Gas Defrost	High side pressure, PSIG	165 +/- 20	230 +/-20	270 +/- 20
	Low side pressure, PSIG	30 +/- 5	41 +/- 5	51 +/- 5

Viper Options

Viper Part Number Decoder

- “Smart” SKU
- Most options encoded in SKU
- Additional options in suffix

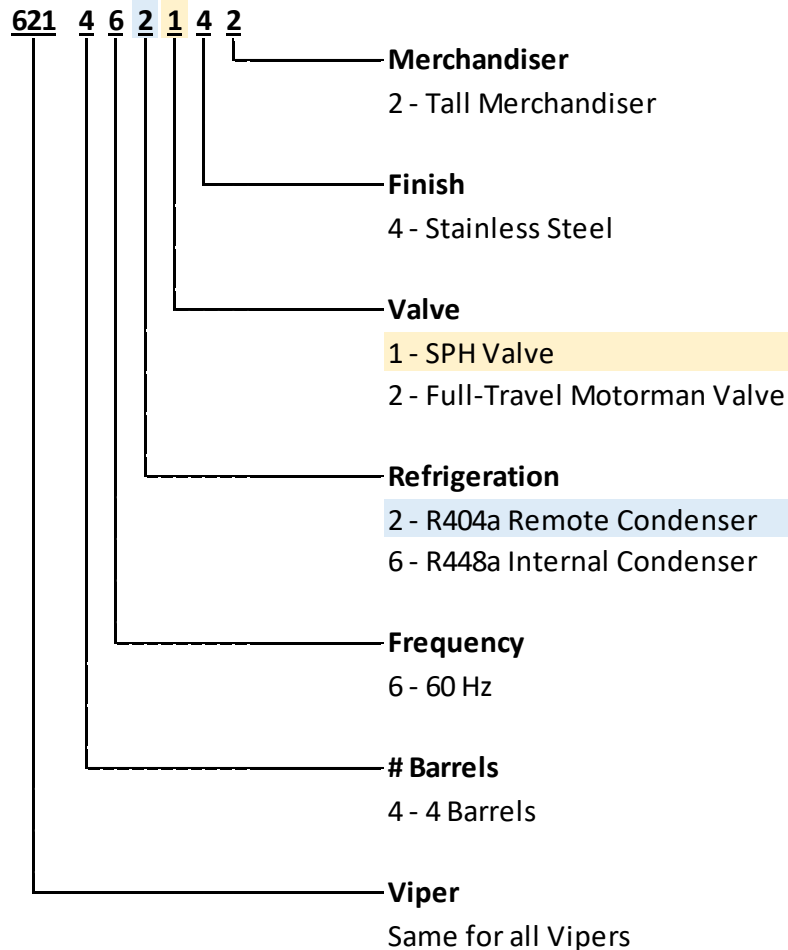


Suffixes

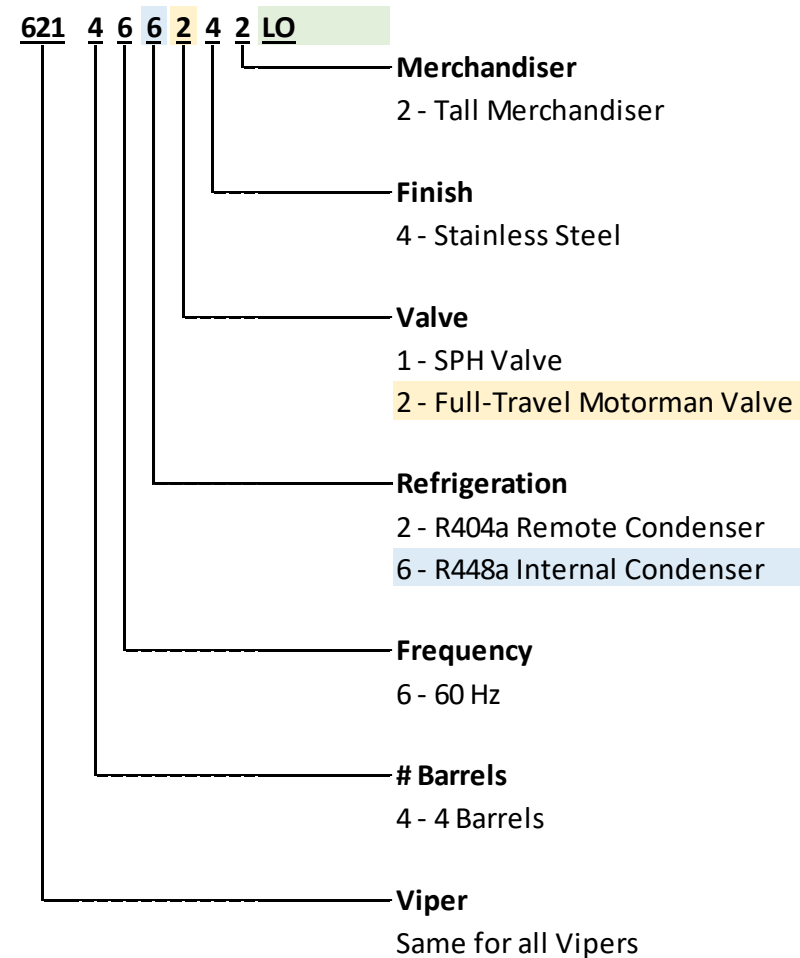
AU	Australia (Product Delivery and Power Cord)
EU	European Power Cord
LO	Low Overrun
Z	Z-Style Drip Tray

Sample SKU Comparison

621462142



621466242LO



Suffixes

LO Low Overrun

Viper Compressor Changes

- Original Viper Elite ZB series compressors are:

- Not compatible with R448a
- Higher cost vs. newer options

- New ZS series compressors selected are:

- Compatible with both R404a and R448a
- Lower cost than ZB series
- Suitable for remote condensing applications
- Allows extension of product line without additional compressors
- Timing is TBD, but eventually will obsolete original R404a versions

	Original Viper Elite	VAVE	Viper Remote	Viper R448a
	ZB	ZS	ZS	ZS
2FL 60Hz	ZB15KCE-PFV-205	N/A	N/A	ZS15KAE-PFV-118
3FL 60Hz	ZB19KCE-PFV-205	ZS19KAE-PFV-118	ZS19KAE-PFV-118	ZS19KAE-PFV-118
4FL 60Hz	ZB19KCE-PFV-205	ZS19KAE-PFV-118	ZS19KAE-PFV-118	ZS19KAE-PFV-118
2FL 50Hz	ZB19KCE-PFJ-205	N/A	N/A	ZS19KAE-PFJ-118
3FL 50Hz	ZB21KCE-PFJ-205	N/A	ZS20KAE-PFJ-118	ZS20KAE-PFJ-118



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We are here to help!

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Cornelius technical support line : 800-238-3600

