

#### FEATURES

- Factory Mutual (FM) Approved
- 2.75T to 60T Range
- 3.75 to 12T Units CRN Approved
- Horizontal and Vertical Units
- R-404A Refrigerant
- Optional Dual Safety Relief Valve Sets
- High Quality Steel Construction
- Aluminum Outer Jacket Construction
- Forged Steel Fittings
- Polyurethane Insulation

#### DESCRIPTION

CARDOX<sup>®</sup> Bulk Low Pressure Carbon Dioxide Storage Units are available in models with storage ranges from 2.75 U.S. tons to 60 U.S. tons of liquid Carbon Dioxide. These storage units incorporate design, construction and testing in accordance with ASME (American Society of Mechanical Engineers) Boiler & Pressure Vessel Code, Section VIII, Division 1, Pressure Vessels.

These storage units (horizontal or vertical) provide a compact suppression system footprint protecting facilities.

A 4-in, minimum, thick polyurethane layer sheathed inside an aluminum outer jacket insulates the steel pressure vessel. A factory fitted low-temp air-cooled, providing maximum reliability, refrigeration package chills the CO<sub>2</sub> to approximately 0F (-17C) at 300-psi (20.6 bar). The refrigeration package is available in a variety of voltages, which offers global compatibility with local power requirements.

The insulation scheme and refrigeration package provides efficient continuous duty operation, affording reduced facility overhead.

As a standard factory configuration, each storage unit arrives at the project site outfitted with a single safety relief valve set and dual 6-in diameter gauges for pressure and liquid level indication.

The storage units are built to comply with stringent industrial standards and are certified by Factory Mutual

CARDOX Low Pressure Carbon Dioxide Storage Units offer a wide range of storage capacities, refrigeration options, temperature ranges in lightweight construction.

#### AVAILABLE REFRIGERATION PACKAGE VOLTAGES

- 1 = 120V/60Hz/1-Phase
- 2 = 220V/60Hz/1-Phase
- 3 = 220V/50Hz/1-Phase
- 4 = 220V/60Hz/3-Phase
- 5 = 380V/50Hz/3-Phase
- 6 = 460V/60Hz/3-Phase
- 7 = 575V/60Hz/3-Phase

Number 1-7 range applies to the Storage Unit Stock Number "X" Placeholder. Reference the CARDOX LPCO<sub>2</sub> Storage Unit manual for specific voltages applicable to each LPCO<sub>2</sub> storage unit.

#### ADDITIONAL OUTFITTING OPTIONS AVAILABLE AS SHOWN BELOW:

- Liquid Level Gauge with Dual (NO/NC) Contacts
- Liquid Level Gauge with 4-20mA Output Signal
- Cold Weather Instrumentation Package
- Canadian Standards Association (CSA) Approval
- Pressurized Equipment Directive (PED) Approval
- Redundant Safety Relief Valve Set
- Heavy Wall Pressure Vessel

#### TECHNICAL SPECIFICATIONS

|                         |                             |
|-------------------------|-----------------------------|
| Material:               | SA-612 normalized CS        |
| MAWP:                   | 350 psig (24.1 bar)         |
| MDMT:                   | -40 °F (-40 °C)             |
| Operational Temperature |                             |
| Minimum:                | -10°F (-23.3°C)             |
| Maximum:                | 130°F (54.4°C)              |
| Piping:                 | Sch 80 seamless             |
| Fittings:               | 2000lb. forged fittings     |
| Valve type:             | Ball type                   |
| Insulation:             |                             |
| Horizontal units:       | 4 in. polyurethane          |
| Vertical units:         | 6 in. polyurethane          |
| Refrigerant:            | R-404A                      |
| Instrumentation:        |                             |
| Liquid Level:           | 6 in. (152.4 mm) dial gauge |
| Pressure:               | 6 in. (152.4 mm) dial gauge |
| Audible Alarm:          | High/Low Pressure           |
| Electrical Cabinet:     | NEMA 3R                     |

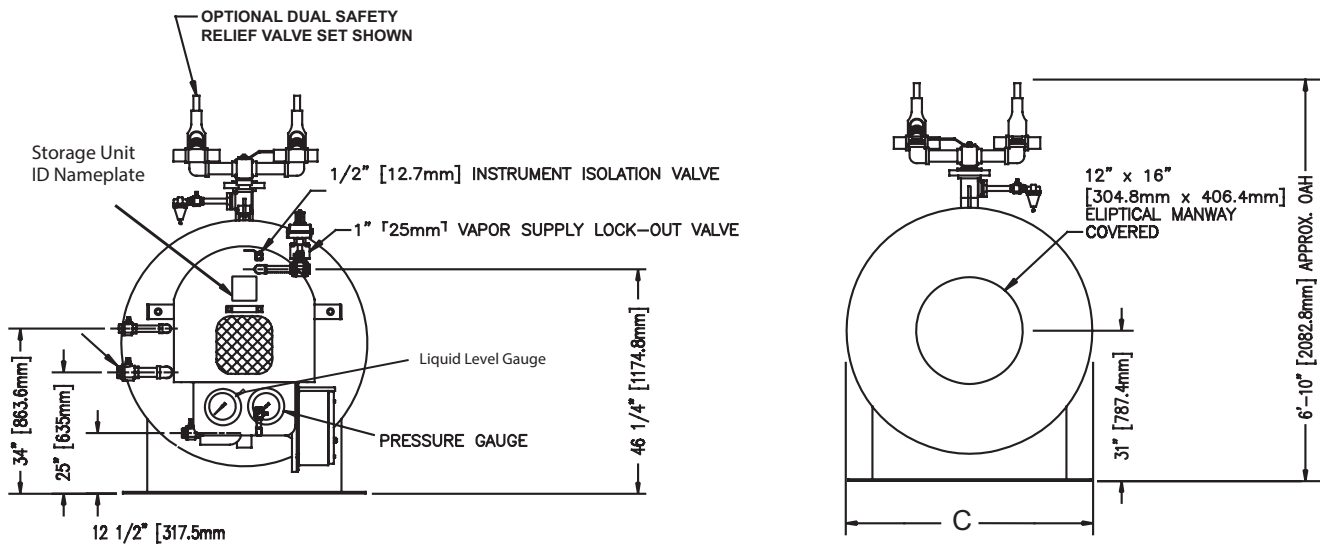
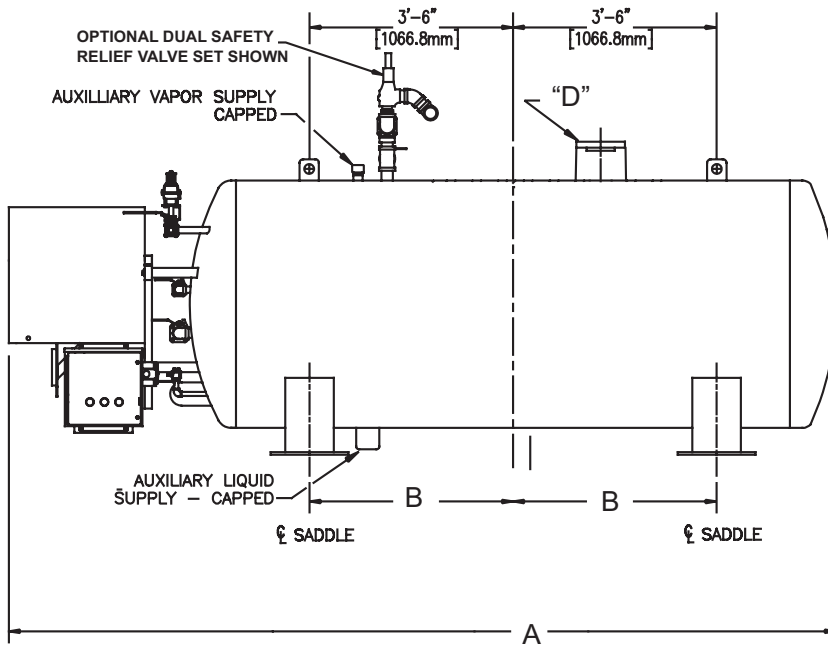


Figure 1: 2 3/4 Ton Unit

Table 1. 2 3/4 Ton Unit Specifications

| Size (Tons) | Part Number | A**<br>*Allow 4ft. 0in. (1219.2mm) for Open Door Clearance | B                      | C                    | D             | Weight (Empty)     |
|-------------|-------------|--|------------------------|----------------------|---------------|--------------------|
| 2 3/4       | 7048H02X    | 14 ft. 5 in. (4381mm)                                      | 3 ft. 6 in. (1066.8mm) | 4 ft. 3 in. (1295mm) | 4 in. (101mm) | 4,000 lb. (1814kg) |

\*\*Add 9 in. (228.6mm) for 3 phase refrigeration units (2 3/4 ton model only)

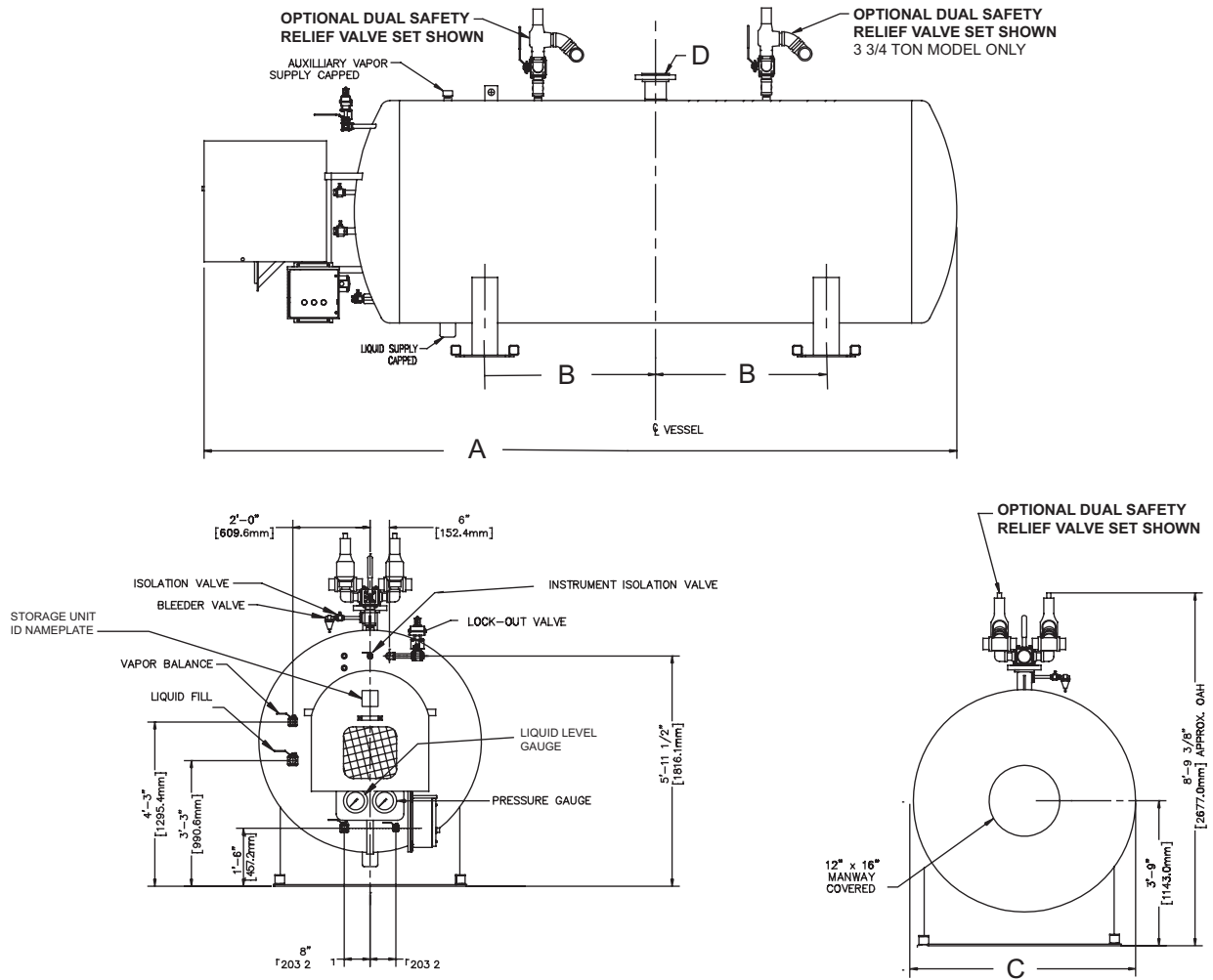


Figure 2: 3 3/4 through 12 Ton Units

Table 2. 3 3/4 through 12 Ton Units Specifications

| Size (Tons) | Part Number          | A<br>*Allow 4ft. 0in. (1219.2mm) for Open Door Clearance | B                            | C                          | D                   | Weight Empty             |
|-------------|----------------------|--|------------------------------|----------------------------|---------------------|--------------------------|
| 3 3/4       | 7048H03X             | 11 ft. 10 in.<br>(3606.8 mm)                             | 1 ft. 8 in.<br>(501.6 mm)    | 5 ft. 9 in.<br>(1754.1 mm) | 6 in.<br>(152.4 mm) | 7,500 lb.<br>(3,402 kg)  |
| 4           | 7048H04X             | 12 ft. 10in.<br>(3912 mm)                                | 1 ft. 11.5 in.<br>(596.9 mm) | 5 ft. 9 in.<br>(1754.1 mm) | 6 in.<br>(152.4 mm) | 7,730 lb.<br>(3,507 kg)  |
| 6           | 7048H06X<br>7148H06X | 15 ft. 6 in.<br>(4724.4 mm)                              | 2 ft. 8 in.<br>(812.8 mm)    | 5 ft. 9 in.<br>(1754.1 mm) | 6 in.<br>(152.4 mm) | 9,000 lb.<br>(3,359 kg)  |
| 8           | 7048H08X<br>7148H08X | 19 ft. 6 in.<br>(5943.6 mm)                              | 4 ft. 5 in.<br>(1346.2 mm)   | 5 ft. 9 in.<br>(1754.1 mm) | 6 in.<br>(152.4 mm) | 10,200 lb.<br>(4,627 kg) |
| 10          | 7048H10X             | 23 ft. 4 in.<br>(7112 mm)                                | 6 ft. 3 in.<br>(1892.3 mm)   | 5 ft. 9 in.<br>(1754.1 mm) | 8 in.<br>(203.2 mm) | 11,500 lb.<br>(5,216 kg) |
| 12          | 7048H12X             | 26 ft. 2 in.<br>(7975.6 mm)                              | 7 ft. 9 in.<br>(2362.2 mm)   | 5 ft. 9 in.<br>(1754.1 mm) | 8 in.<br>(203.2 mm) | 12,650 lb.<br>(5,738 kg) |

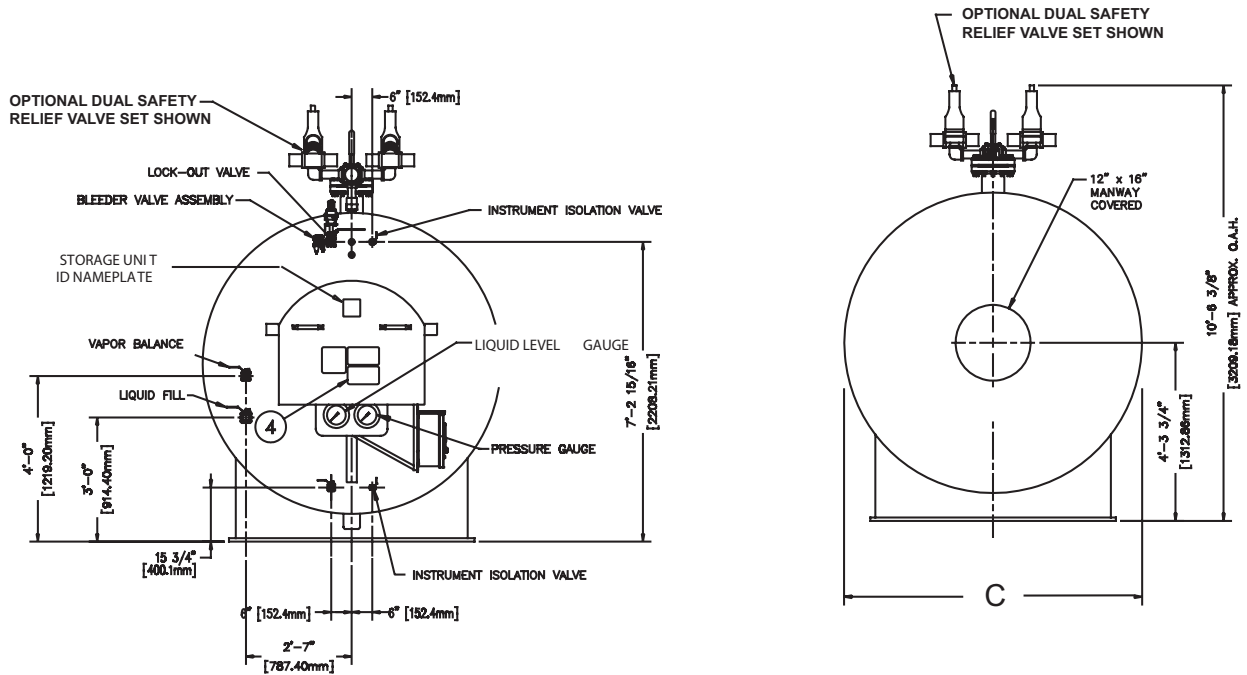
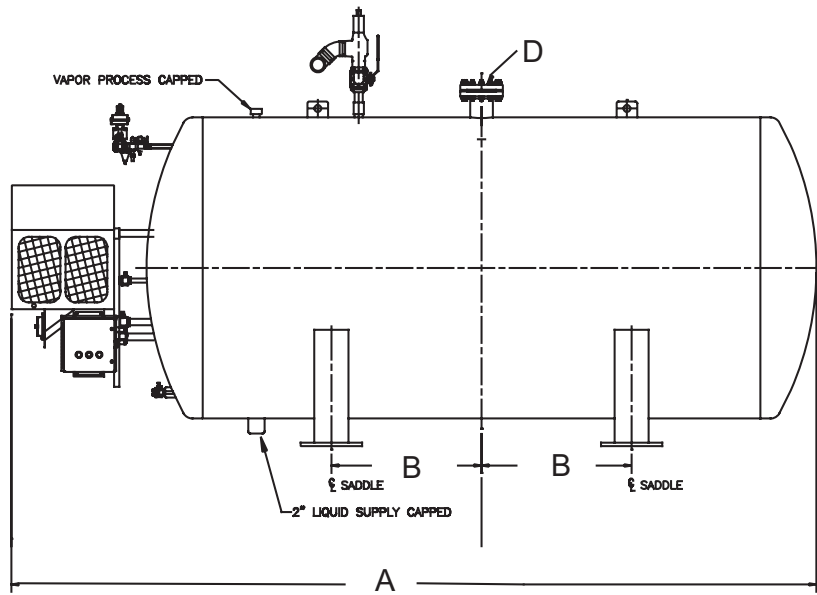


Figure 3: 14 Ton Unit

Table 3. 14 Ton Unit Specifications

| Size (Tons) | Part Number | A<br>*Add 4ft. 0in. (1219.2mm) for Open Door Clearance | B                          | C                          | D                   | Weight (Empty)            |
|-------------|-------------|--|----------------------------|----------------------------|---------------------|---------------------------|
| 14          | 7048H14X    | 19 ft. 8 in.<br>(5994.4 mm)                            | 3 ft. 8 in.<br>(1117.6 mm) | 7 ft. 4 in.<br>(2235.2 mm) | 8 in.<br>(203.2 mm) | 14,000 lb.<br>(6350.3 kg) |

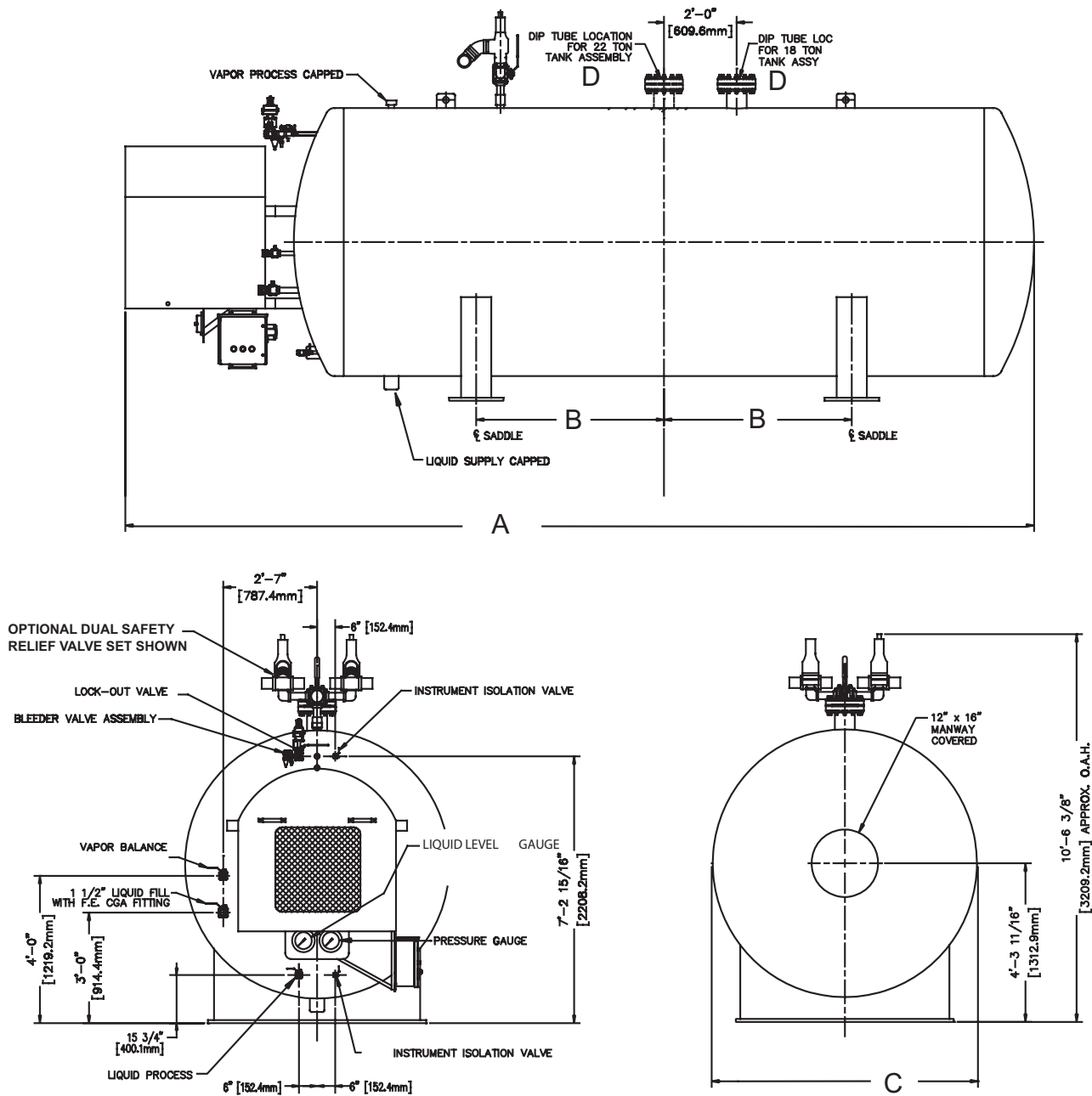


Figure 4: 18 and 22 Ton Units

Table 4. 18 and 22 Ton Unit Specifications

| Size (Tons) | Part Number | A<br>*Allow 4ft. 0in. (1219.2mm) for Open Door Clearance | B                          | C                          | D                   | Weight (Empty)           |
|-------------|-------------|--|----------------------------|----------------------------|---------------------|--------------------------|
| 18          | 7048H18X    | 25 ft. 0 in.<br>(7620.0 mm)                              | 5 ft. 2 in.<br>(1574.8 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 16,800 lb.<br>(7,620 kg) |
| 22          | 7048H22X    | 29 ft. 4 in.<br>(8940.8 mm)                              | 7 ft. 0 in.<br>(2133.6 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 19,000 lb.<br>(8,618 kg) |

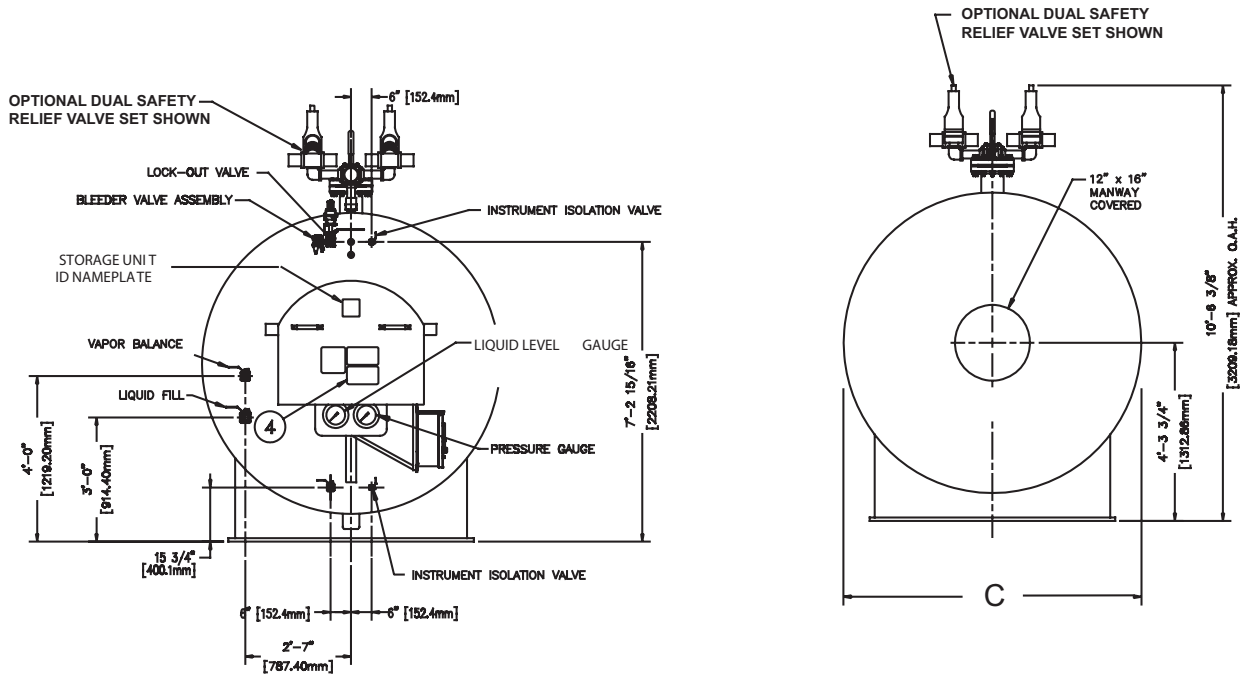
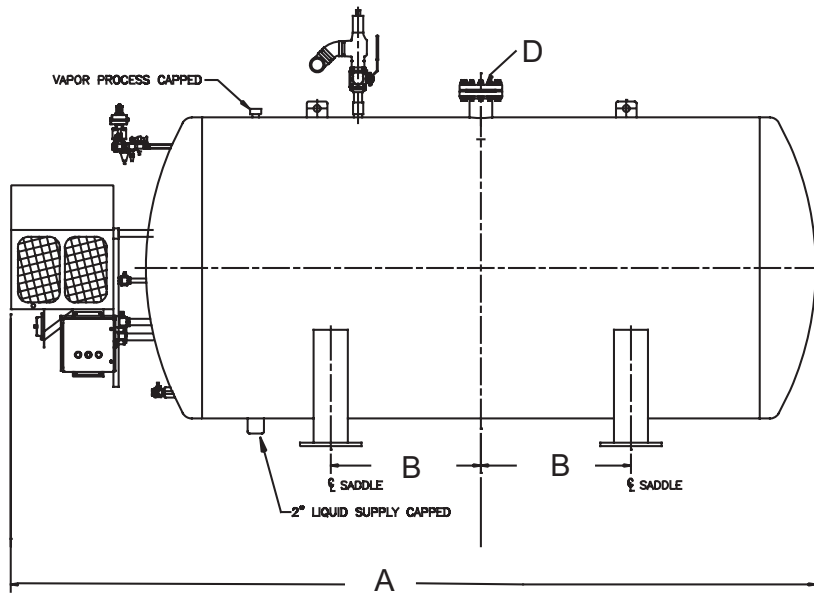


Figure 5: 26 Ton Unit

Table 5. 26 Ton Unit Specifications

| Size (Tons) | Part Number | A<br>*Allow 4ft. 0in. (1219.2mm) for Open Door Clearance | B                          | C                          | D                   | Weight (Empty)            |
|-------------|-------------|--|----------------------------|----------------------------|---------------------|---------------------------|
| 26          | 7048H26X    | 32 ft. 8 in.<br>(9953.4 mm)                              | 9 ft. 0 in.<br>(2743.2 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 23,500 lb.<br>(10,659 kg) |

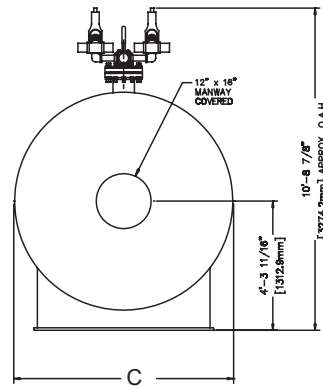
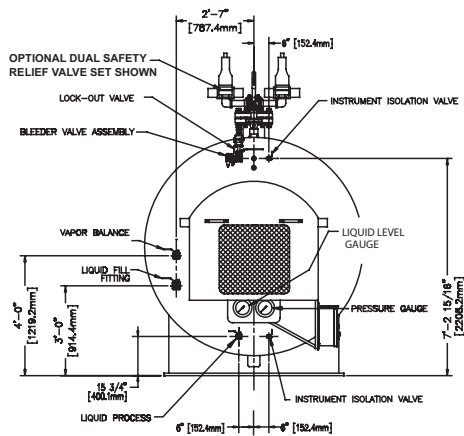
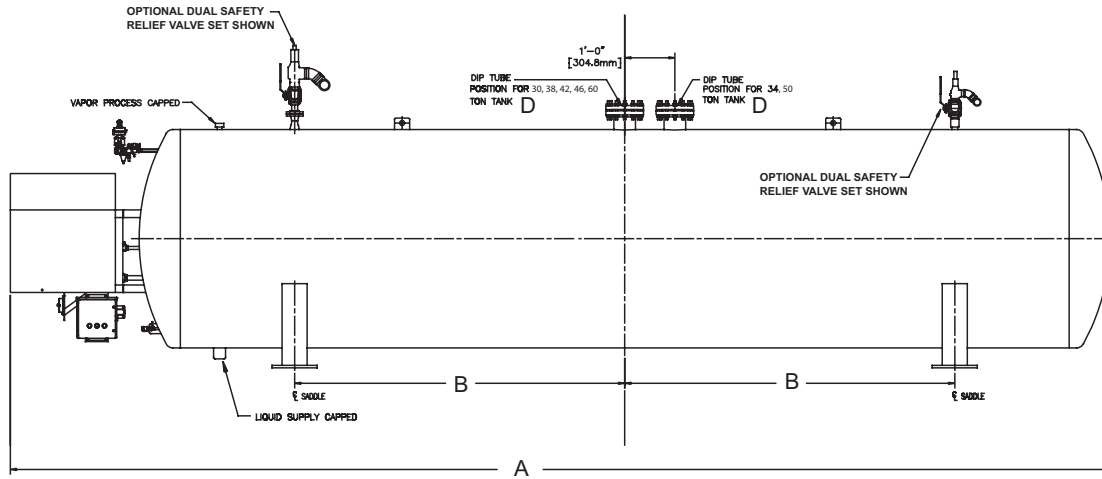


Figure 6: 30 through 60 Ton Units

Table 6. 30 through 60 Ton Unit Specifications

| Size (Tons) | Part Number | A<br>*Allow 4ft. 0in. (1219.2mm) for Open Door Clearance | B                           | C                          | D                   | Weight Empty              |
|-------------|-------------|--|-----------------------------|----------------------------|---------------------|---------------------------|
| 30          | 7048H30X    | 36 ft. 8 in.<br>(11172.6 mm)                             | 11 ft. 0 in.<br>(3352.8 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 26,500 lb.<br>(12,020 kg) |
| 34          | 7048H34X    | 40 ft. 8 in.<br>(12391.8 mm)                             | 13 ft. 0 in.<br>(3962.4 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 29,000 lb.<br>(13,154 kg) |
| 38          | 7048H38X    | 44 ft. 8 in.<br>(13611.2 mm)                             | 15 ft. 0 in.<br>(4572.0 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 31,500 lb.<br>(14288 kg)  |
| 42          | 7048H42X    | 48 ft. 8 in.<br>(14830.4 mm)                             | 17 ft. 0 in.<br>(5181.6 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 34,000 lb.<br>(15,422 kg) |
| 46          | 7048H46X    | 52 ft. 8 in.<br>(16049.6 mm)                             | 19 ft. 0 in.<br>(5791.2 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 36,500 lb.<br>(16,556 kg) |
| 50          | 7048H50X    | 56 ft. 8 in.<br>(17268.8 mm)                             | 19 ft. 0 in.<br>(5791.2 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 40,000 lb.<br>(18,143 kg) |
| 60          | 7048H60X    | 66 ft. 8 in.<br>(20316.8 mm)                             | 24 ft. 0 in.<br>(7315.2 mm) | 7 ft. 4 in.<br>(2234.4 mm) | 8 in.<br>(203.2 mm) | 45,000 lb.<br>(20,411 kg) |

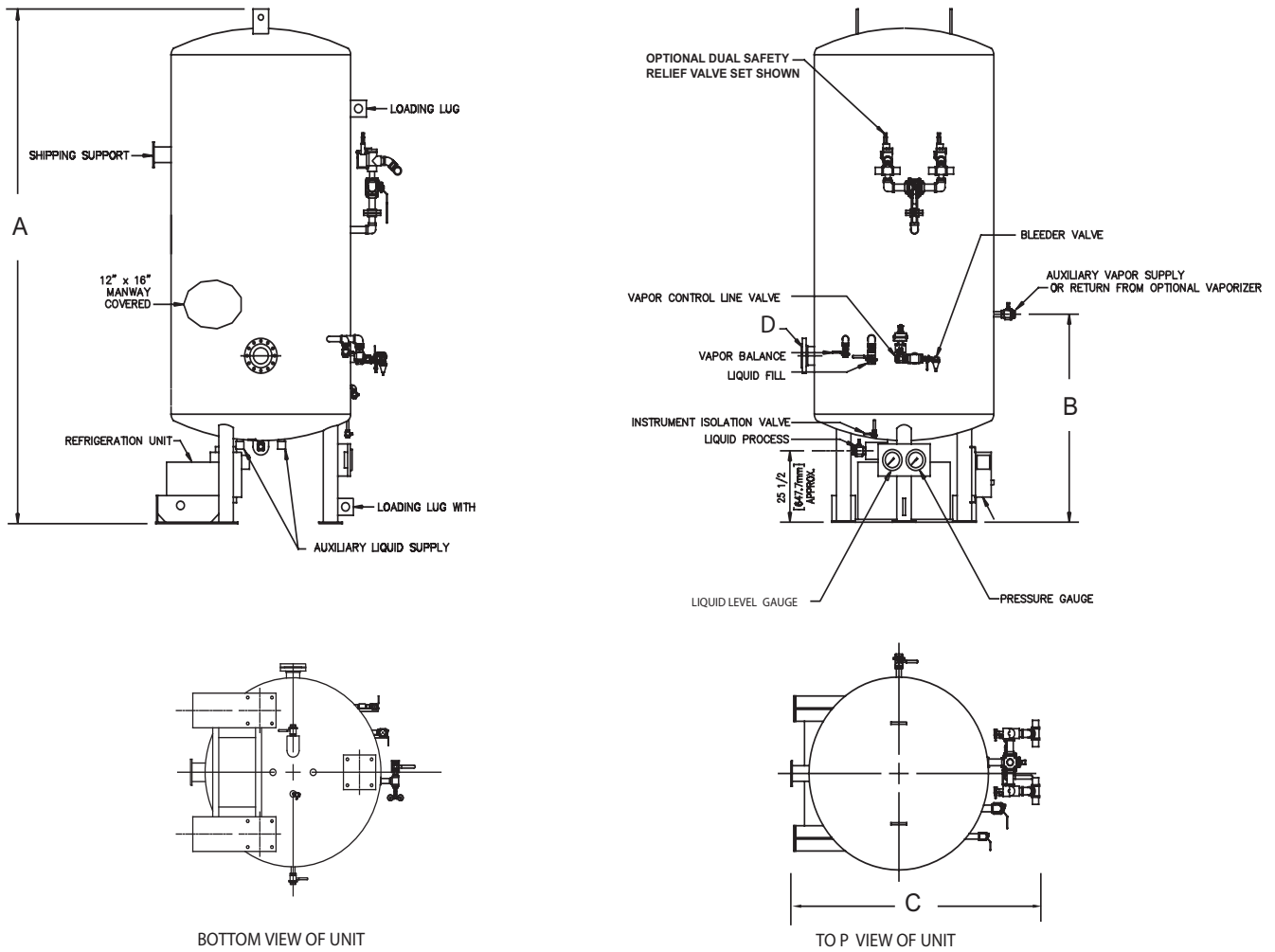


Figure 7: 6 Ton Unit

Table 7. 6 Ton Unit Specifications

| Size (Tons) | Part Number | A                           | B                          | C                           | D                   | Weight (Empty)           |
|-------------|-------------|-----------------------------|----------------------------|-----------------------------|---------------------|--------------------------|
| 6           | 7048V06X    | 15 ft. 3 in.<br>(4648.2 mm) | 6 ft. 3 in.<br>(1889.1 mm) | 7 ft. 11 in.<br>(2400.3 mm) | 6 in.<br>(152.4 mm) | 10,000 lb.<br>(4,535 kg) |



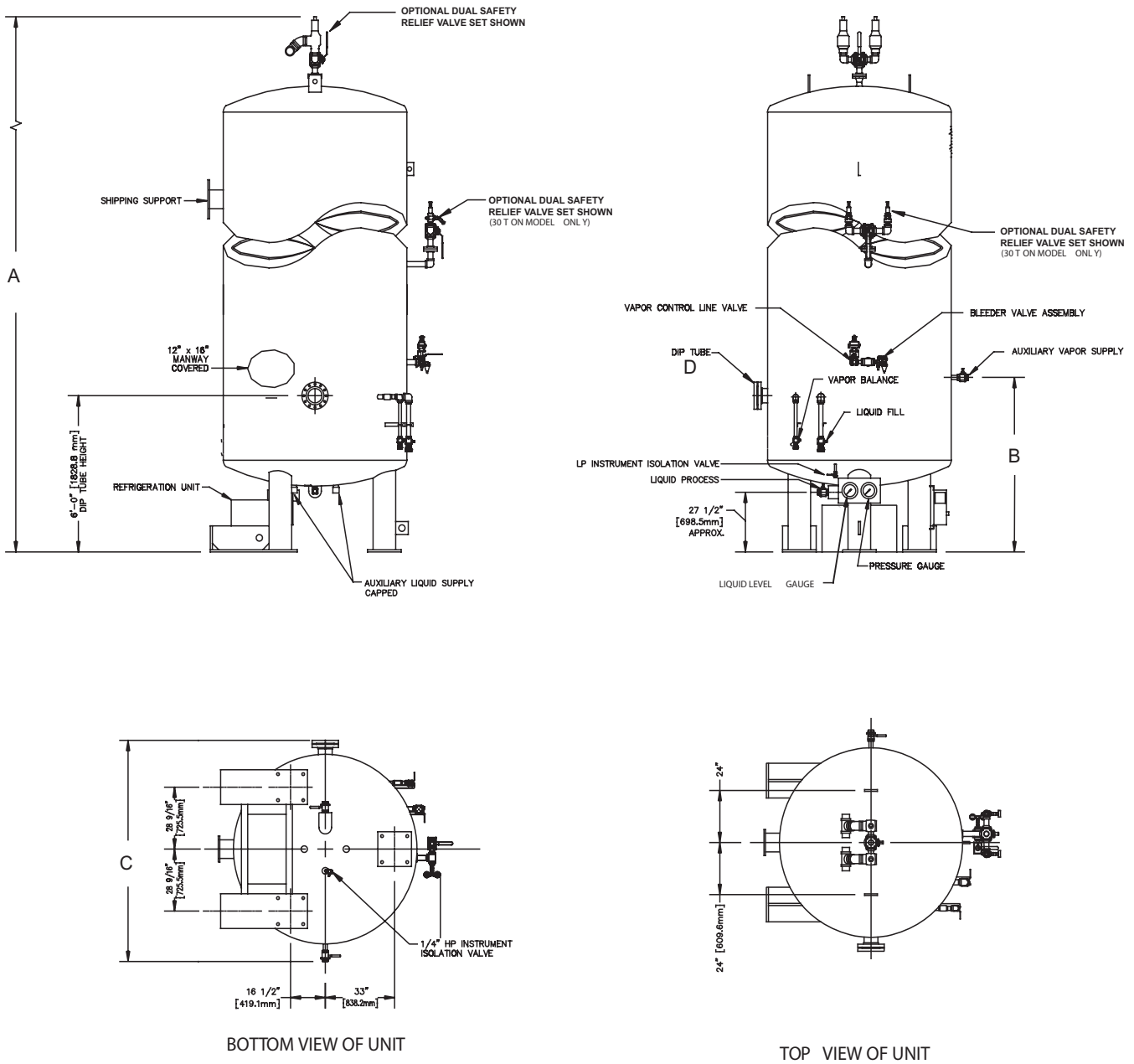


Figure 8: 14, 26, and 30 Ton Units

Table 8. 14, 26, and 30 Ton Unit Specifications

| Size (Tons) | Part Number | A                            | B                          | C                        | D                   | Weight (Empty)            |
|-------------|-------------|------------------------------|----------------------------|--------------------------|---------------------|---------------------------|
| 14          | 7048V14X    | 22 ft. 4 in.<br>(6807.2mm)   | 6 ft. 7 in.<br>(1993.9 mm) | 8 ft. 9 in.<br>(2667 mm) | 6 in.<br>(152.4 mm) | 15,500 lb.<br>(7,030 kg)  |
| 26          | 7048V26X    | 33 ft. 8 in.<br>(10261.6 mm) | 6 ft. 7 in.<br>(1993.9 mm) | 8 ft. 9 in.<br>(2667 mm) | 6 in.<br>(152.4 mm) | 25,000 lb.<br>(11,339 kg) |
| 30          | 7048V30X    | 37 ft. 5 in.<br>(11404.6 mm) | 6 ft. 7 in.<br>(1993.9mm)  | 8 ft. 9 in.<br>(2667 mm) | 6 in.<br>(152.4 mm) | 30,000 lb.<br>(13,607 kg) |

**EXPORT INFORMATION (USA)**

Jurisdiction: EAR

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