

B. GENERAL SPECIFICATIONS

B.3. Product Data Information

B.3.3. General Data

See **Appendix A** towards the end of this manual for General Data.

B.3.4. Electrical Data Reference

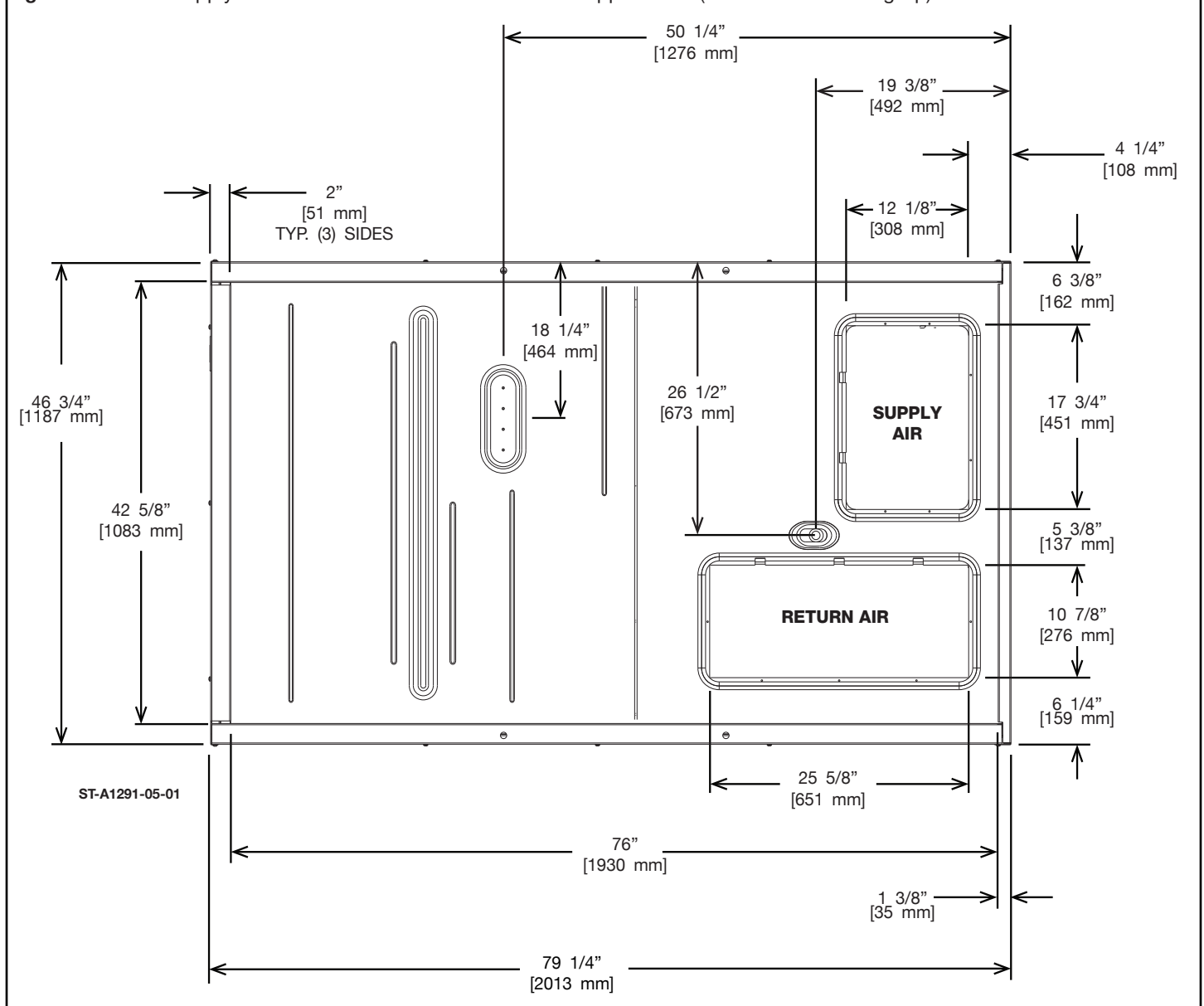
See **Appendix B** towards the end of this manual for Electrical Data.

B.3.5. Air Flow Performance Data

See **Appendix C** towards the end of this manual for Air Flow Performance Data.

B.3.6. Supply and Return Duct Dimensions

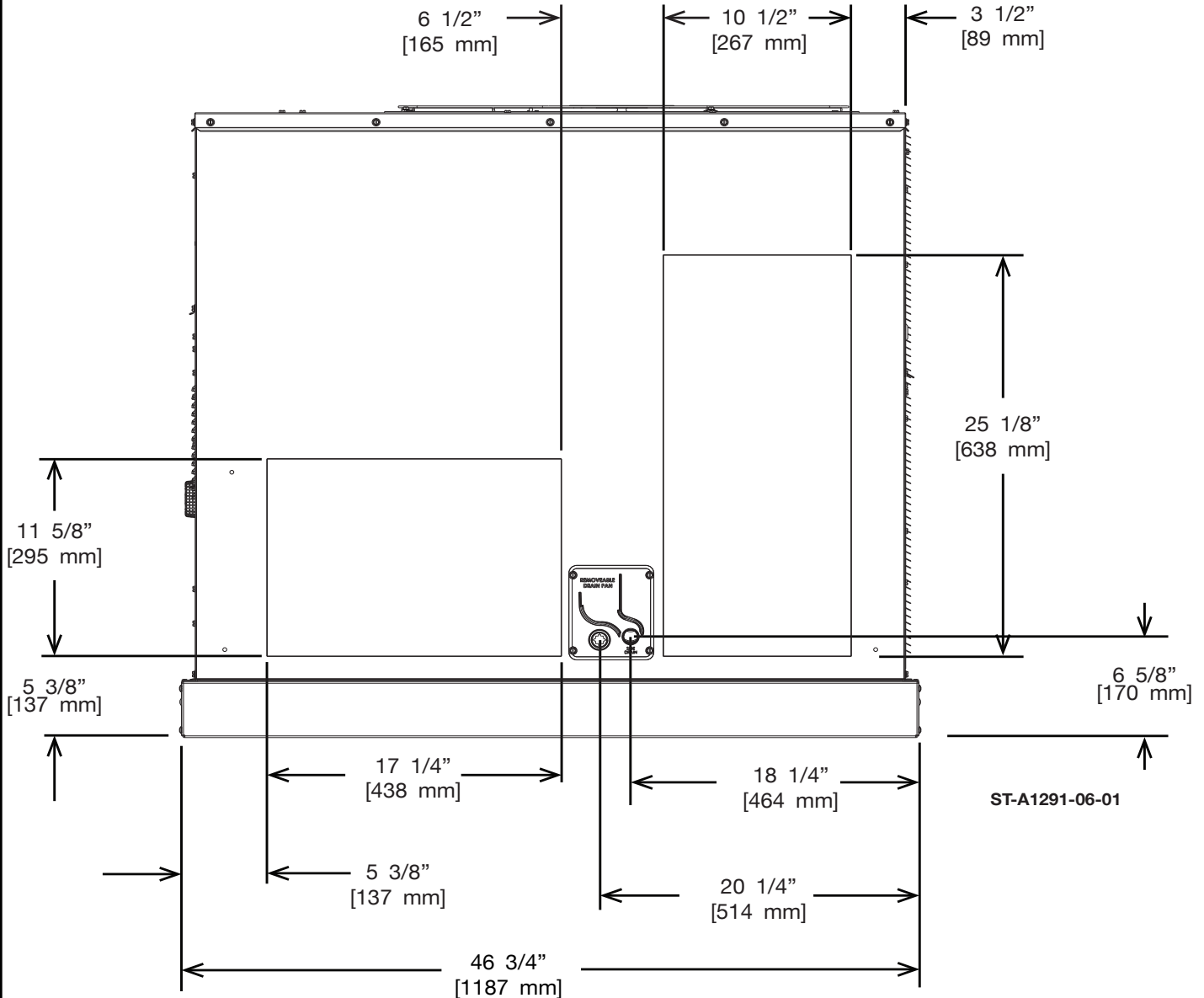
Figure B.3.6. – A: Supply And Return Dimensions For Downflow Applications (Bottom View Looking Up)



B. GENERAL SPECIFICATIONS

B.3.6. Supply and Return Duct Dimensions

Figure B.3.6. – B: Supply And Return Dimensions For Horizontal Applications



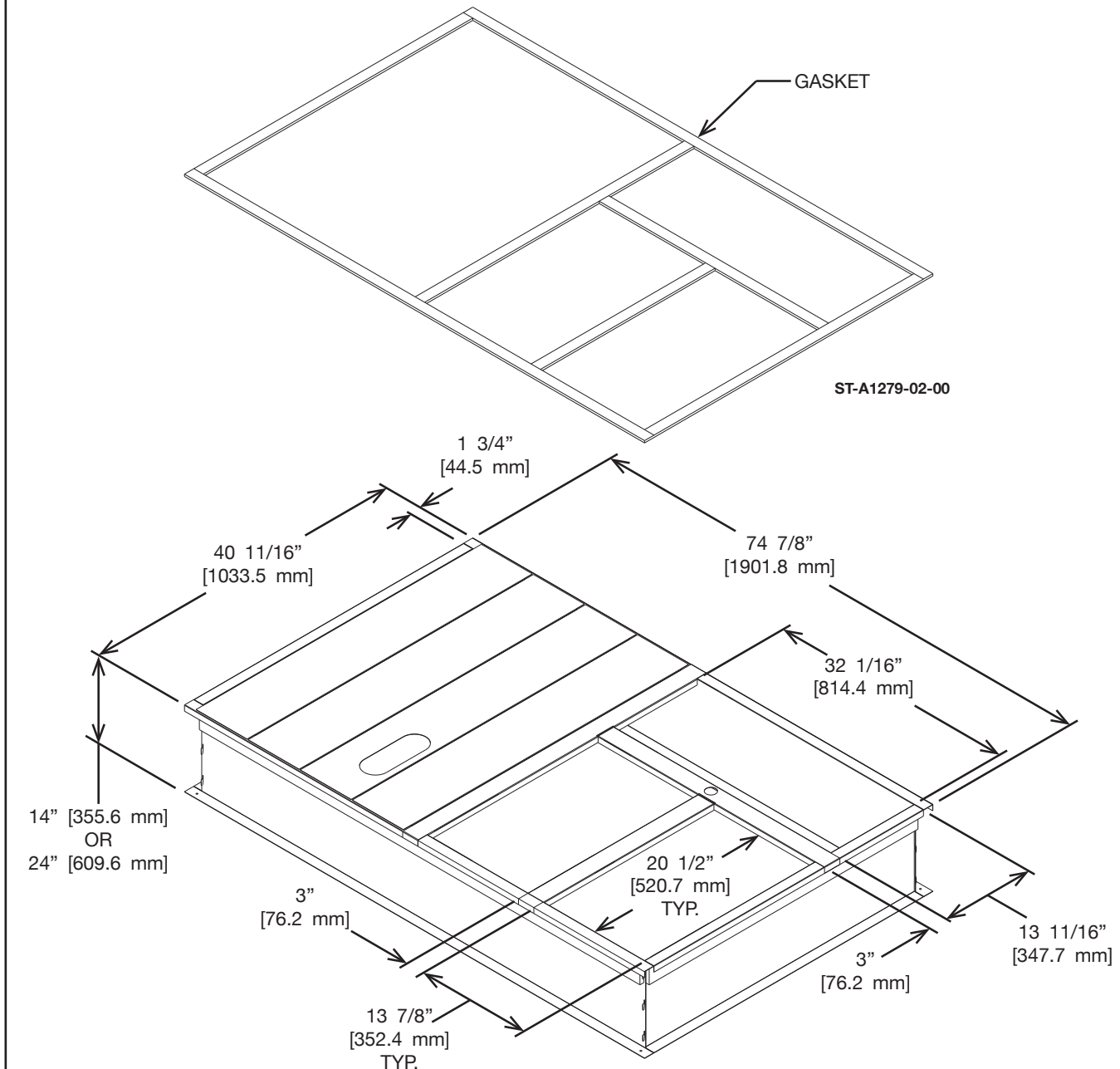
B. GENERAL SPECIFICATIONS

B.3. Product Data Information

B.3.7. Curb Dimensions

NOTE: See section **C.3.3. Rooftop Installation** for more information for installing the unit on a curb.

Figure B.3.7. – A: Roofcurb Complete Assembly



C. INSTALLATION OF THE UNIT

C.1. General

C.1.1. Installation

Install this unit in accordance with The American National Standard Z223.1—latest edition booklet entitled “National Fuel Gas Code”, and the requirements or codes of the local utility or other authority having jurisdiction. Additional helpful publications available from the “National Fire Protection Association” are:

- NFPA-90A – Installation of Air Conditioning and Ventilating Systems 2018 or latest edition.
- NFPA-90B – Warm Air Heating and Air Conditioning Systems 2018 or latest edition.

These publications are available from:
National Fire Protection
Association, Inc.
NFPA.ORG

C.1.2. Pre-Installation Checkpoints

Before attempting any installation, carefully consider the following points:

- Structural strength of supporting members (Rooftop Installation)
- Clearances and provision for servicing
- Power supply and wiring
- Gas supply and piping
- Air duct connections and sizing
- Drain facilities and connections
- Location for minimum noise and vibration
- If the unit will be installed in an unventilated area, the area or space must not allow refrigerant to stagnate, creating a fire or explosion hazard in case of a leak

C.2. Tool and Refrigerant

A leak detection system is installed in this unit. The unit must be powered at all times except during service.

This unit is equipped with electrically powered safety measures. To be effective, the unit must be electrically powered at all times after installation, other than when servicing.

C.2.1. Tools Required for Installing and Servicing R-454B Models

Manifold Sets:

- Up to 800 PSIG High Side
- Up to 250 PSIG Low Side
- 550 PSIG Low Side Retard

Manifold Hoses:

- Service Pressure Rating of 800 PSIG
- Zero-loss fittings

Recovery Cylinders:

- 400 PSIG Pressure Rating

Dept. of Transportation

- 4BA400 or BW400

C.2.2. Specifications of R-454B

All units are factory charged with R-454B Refrigerant.

Application: R-454B is not a drop-in replacement for R-410A. Equipment designs must accommodate the safety group A2L of R-454B. It cannot be retrofitted into R-410A units.

Physical Properties: R-454B has an atmospheric bubble point of 59.6F [50.9C] and an atmospheric dew point of -58.0F [-50.0C]. Its bubble point saturation pressure at 77F [25C] is 213 psig [1469 kPa] and dew point saturation pressure at 77F [25C] is 205 psig [1415 kPa].

Pressure: The pressure of R-454B is similar to that of R-410A. Recovery and recycling equipment, pumps, hoses, and the like must have design pressure ratings appropriate for R-454B. Manifold sets need to range up to 800 psig [5,516 kPa] high-side and 250 psig [1,724 kPa] low-side with a 550 psig [3,792 kPa] low-side retard. Hoses need to have a service pressure rating of 800 psig [5,516 kPa]. Recovery cylinders need to have a 400 psig [2,758 kPa] service pressure rating, DOT 4BA400 or DOT BW400.

Flammability: R-454B is classified as safety group A2L, where the 2L flammability class indicated flammability.

R-454B and air should never be mixed in cylinders or supply lines or be allowed to accumulate in storage cylinders. Leak checking should never be done with a mixture of R-454B and air.

C. INSTALLATION OF THE UNIT

C.2.3. Quick Reference Guide for R-454B

Ensure that servicing equipment is designed to operate with R-454B.

- Refrigerant R-454B operates at pressures similar to R-410A. However, it is classified in safety group A2L. Ensure that servicing equipment is compatible with R-454B.
- Refrigerant cylinders are no longer color-coded. R-454B refrigerant cylinders are light green grey in color with a red band on the shoulder or top of the cylinder to indicate flammability.
- R-454B, as with other HFC's is only compatible with POE oils.
- Vacuum pumps will not remove moisture from POE oil.
- R-454B systems are to be charged with liquid refrigerants.
- Do not install a suction line filter drier in the liquid line.
- A liquid line filter drier is standard on every unit.
- Desiccant (drying agent) must be compatible for POE oils and R-454B

C.2.4. Evaporator Coil/TXV

The thermostatic expansion valve (TXV) is specifically designed to operate with R-454B. If required, the existing TXV and/or evaporator coil must be replaced with the factory specified components specifically designed for R-454B.

C.2.5. Minimum Room Area

Because this unit uses refrigerant R-454B, UL requires a minimum room area for the total conditioned space (T_{Amin}) that is supplied by this equipment.

The UL Safety Standard defines an individual room area as the room area enclosed by floors, walls, partitions, and doors of the space where the unit is installed, also as the room area into which refrigerant can leak. Each room/conditioned space will need to be considered for the total area requirements.

The minimum room area of the total conditioned space for each base model is listed in **Appendix F – A2L Refrigerant Installation Safety Data.**

C.2.6. No Ignition Sources

When performing work that involves exposing any pipework, no person working on or near the refrigerating system may use any ignition sources that could lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept far away from the site during installation, repair,

removal, or disposal, during which refrigerant can possibly be released into the surrounding space. Before work takes place, the area around the equipment must be surveyed to ensure that there are no flammable hazards or ignition risks. Additionally, “No Smoking” signs must be displayed.

C.3. Choosing a Location

C.3.1. Unit Location: Allowable Clearances and Operational Issues

Figure C.3.1. – A: Allowable Clearances

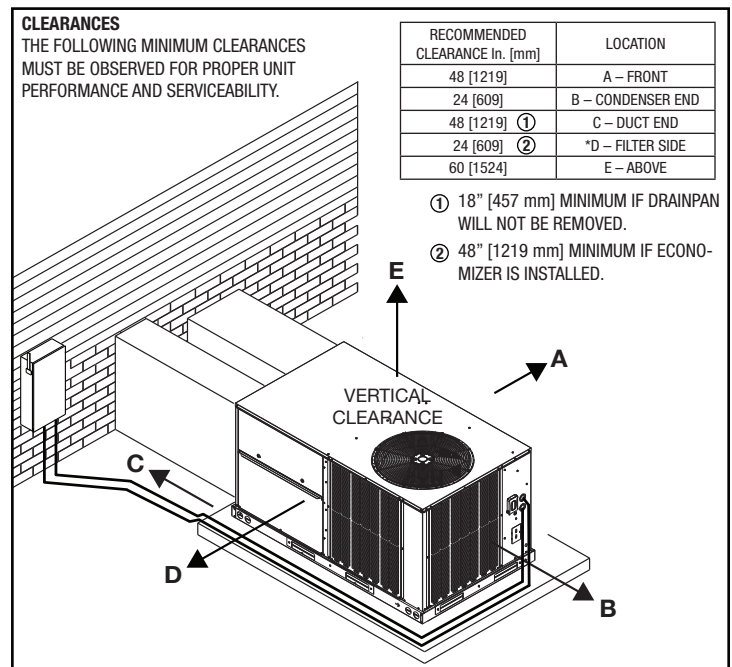
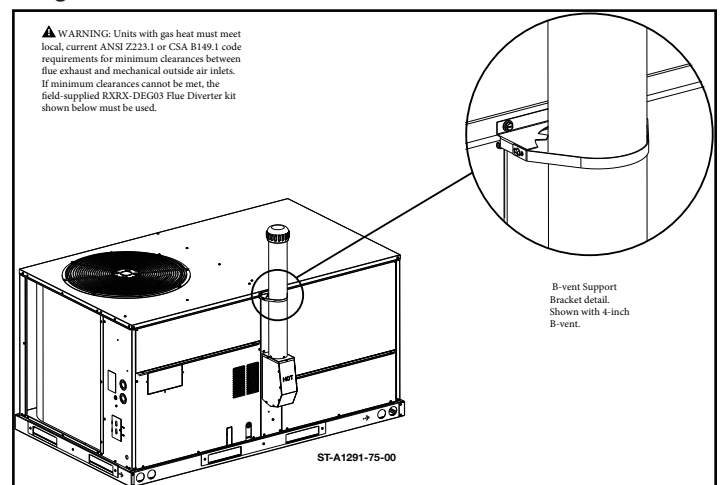


Figure C.3.1. – B: Allowable Clearances



The unit location must comply with the allowable clearances listed in **Figure C.3.1. – A**. Failure to comply with the recommended clearances may result in operational issues such as decreased capacity, restricted condenser airflow, and condenser motor fatigue.