



Commercial Manual
EP410 SERIES
Horizontal Packaged Unit
7.5 TON - 60 TON



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Precautions

In this document, you will find a series of key recommendations to ensure proper start-up, efficient operation, and adequate maintenance of your equipment. Preventive care will not only guarantee the optimal functioning of the equipment, but it will also extend its useful life, optimize its performance, and help you save time and money in the long run.

By following these simple maintenance and operation steps, you can keep your HVAC system in the best operating conditions possible, maximizing its energy efficiency and avoiding unnecessary and costly breakdowns. Remember, regular maintenance not only improves comfort in your space, but also contributes to the well-being in general and the safety of everyone who uses it.



DANGER



Incorrect mounting, lifting, or movement may cause damage to the unit, property damage, serious personal injuries, or even death. Consult the weight and center of gravity data indicated in the project documentation to know the weights and center of gravity of the unit.



WARNING



An installation, adjustment, alteration, service, or incorrect maintenance may result in personal injury, death, or property damage. Therefore, all services or maintenance must be performed by a licensed professional contractor or an authorized service agency.



WARNING



Disconnect power source(s) before performing maintenance. Service must be performed by qualified personnel.
Risk of electric shock! May cause injury or death!



WARNING



To prevent the release of refrigerant into the atmosphere, the refrigeration circuit of this unit must be serviced only by technicians who meet local, state, and federal competency requirements.



WARNING



The installation of the system and all components, parts, and associated accessories that form part of the installation must be carried out in accordance with the regulations of ALL pertinent authorities and MUST comply with all applicable codes. It is the responsibility of the contractor/installer to determine and comply with ALL applicable regulations and codes.



WARNING



This device is not designed to be used by persons (including children) with physical, sensory, or mental limitations, or with lack of experience and knowledge, unless they have received supervision or instruction regarding the use of the device by a person responsible for their safety.



WARNING



The lifting angle must not exceed 30 degrees from the vertical, as the unit may become unstable, which could result in unit damage, property damage, serious personal injuries, or death.



WARNING



Drain pans must be cleaned periodically. Accumulated material in uncleaned drain pans may pose health risks. Cleaning must be performed by qualified personnel.



WARNING



Please note that refrigerants may be odorless.



WARNING



Keep in mind that the center of gravity is not necessarily located in the geometric center of the unit. Additional lifting elements must not be attached or secured to the unit, as this may affect the center of gravity and cause personal injuries or death, as well as damage to property or the unit. Qualified personnel must determine and verify, according to weight data, the lifting center of the unit, the location of the center of gravity, and lifting details according to the unit configuration.



WARNING



Children must NOT play with the equipment without supervision.



CAUTION



Lifting mechanisms must not come into contact with the unit beyond the lifting points. Care must always be taken when lifting the unit to avoid damaging control panels, unit housings, tubing, and unit structure.



CAUTION



Do not store or install the units in corrosive environments or in places exposed to extreme temperatures or humidity. Corrosive conditions, high temperatures, or humidity can significantly affect performance, reliability, and service life. Always move and store units in a vertical position. Tilting units may cause damage to the equipment.



CAUTION



RISK OF CUT – Failure to follow this precaution may cause personal injury. Metal parts may have sharp edges or burrs. Be careful and use proper protective clothing, safety glasses, and gloves when handling parts and performing unit maintenance to avoid injuries.



CAUTION



To extend equipment life, do not use these units as a heat source during the drying process of construction. Mechanical components and filters may become clogged quickly with dust and construction debris, which may damage the system and void the product warranty.



CAUTION



All three-phase scroll compressors must have their rotation direction verified at startup. Verification is performed by checking the compressor's amperage draw. The current draw will be considerably lower compared to the values on the nameplate. Additionally, reverse rotation generates a higher noise level compared to correct rotation. Reverse rotation will trigger the compressor's internal overload protection within a few minutes. Check the compressor type before proceeding.



NOTICE



Maintenance must be carried out in accordance with the manufacturer's recommendations.



NOTICE



Only install in places not accessible to the general public.

Improper handling due to lack of knowledge of instructions or recommendations contained in this document may cause damage to equipment, reduced performance, and shortened service life. We are not responsible for damage caused by incorrect handling, unauthorized modifications, or consequences arising from using unauthorized modifications that alter the correct operation of the equipment. To guarantee safe and efficient operation, it is essential to follow all recommendations in this manual and use only original spare parts. The manufacturer reserves the right to make technical changes or add updates to improve HVAC system operation.

The following information refers to the EP410 series. Supplied units may vary according to customer requirements. For more detailed information about the purchased equipment, refer to the technical specifications and the unit nameplate

Construction

Thermotar EP410 packaged units are designed for heavy-duty service. Their construction ensures a fully stable structure capable of uniformly supporting and distributing static and dynamic loads from internal components.

- Manufactured from heavy-gauge galvanized steel sheet, corrosion-resistant.
- Single-wall galvanized steel panels with expanded polyethylene insulation.
- Fully insulated fan-evaporator compartment, with easy-access panels featuring recessed handles.
- Structural base made of galvanized steel sheet, providing ease and safety during transportation and installation.
- Electrostatic powder coating system: professional long-lasting finish, ideal for aggressive environments.
- High-gauge steel drain pan with electrostatic coating.
- Motor-fan assembly mounted on a galvanized steel structure with anti-vibration supports.
- Modular design that facilitates maintenance and allows future expansions or adaptations

Fans and Motors

Thermotar EP410 packaged units offer a wide range of fan and motor options across different capacities, ensuring optimal operation according to user requirements.

Motors

- Capacities according to design criteria and customer requirements.
- Three-phase electric motor 220V / 440V.
- IP54 / IP55 protection rating.
- Optional: suitable for classified areas, Explosion Proof, or aggressive environments.
- High-efficiency motors (IE3 / IE4) available to reduce energy consumption.

Components

- High-efficiency, low-noise Scroll compressor.
- High and low pressure switches.
- 24 V control terminal block.
- Replaceable air filters, flat or bag type (depending on configuration), with front access.
- Evaporator Fan:
 - Centrifugal type (conventional or Plug Fan).
 - Direct drive or belt-driven.
 - Forward- or backward-curved blades.
- Condenser Fan:
 - Axial type.
 - Direct drive.
 - Forward- or backward-curved blades.

Air Cooling

The Thermotar EP410 series is equipped with a copper tube and aluminum fin heat exchanger. Available in various sizes and refrigerant circuit configurations, providing the required heat transfer area.

- Coils up to 8 rows for direct expansion and/or chilled water.
- Fully removable coil.
- Available in Copper/Aluminum and Copper/Copper construction.
- Galvanized steel support structure.
- Drain pan available in stainless steel
- Optional: anti-corrosion coating for marine or industrial applications.

Control and Operation

- Digital thermostat with programmable scheduling functions.
- Optional control system with touchscreen HMI for local monitoring and configuration.
- Automatic protections against overcurrent, overpressure, and incorrect phase sequence.

Maintenance and Safety

- Front access to all components for inspection and maintenance tasks.
- Filters, fans, motors, and coils accessible without special tools.
- Warning labels and clear identification of electrical connections and critical components.
- Installation and maintenance manual included.

EP 410 - 300 - 2C TP - 3

Category

EP	Standard Packaged Unit
EPHP	Heat Pump Packaged Unit
EPAPK	Airpack Packaged Unit
PAC	Wall-Mount Packaged Unit
EPTP	Portable Packaged Unit

Refrigerant

410	R410A
290	R290
32	R32

Nominal Capacity

090	7.5 Ton	360	30 Ton
120	10 Ton	480	40 Ton
150	12.5 Ton	600	50 Ton
180	15 Ton	720	60 Ton
240	20 Ton		
300	25 Ton		

Air Discharge

	(Blank) Horizontal
DF	Down Flow

Number Of Cooling Circuits

	(Blank) One (1) Circuit
2C	Two (2) Circuits
3C	Three (3) Circuits
4C	Four (4) Circuits

Fan Drive Type

TD	Direct Drive
TP	Belt Drive
PF	Plug Fan (Plenum Fan)

Power Supply

1	220V / 60Hz / 1PH
2	110V / 60Hz / 1PH
3	220V / 60Hz / 3PH
4	440V / 60Hz / 3PH
5	380V / 50Hz / 3PH
7	380V / 60Hz / 3PH
8	220V / 50Hz / 3PH
9	440V / 50Hz / 3PH

MODEL	EP410-090-TP-3	EP410-090-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	90,000	90,000
Tons of Refrigeration	7.5	7.5
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Number of Fans	1	1
Nominal Airflow ⁽¹⁾ (CFM)	3,000	3,000
Fan (DxW) (in)	15 x 15	15 x 15
Number of motors	1	1
Current (A)	4.2	2.1
Power (HP)	1.5	1.5
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft ²)	7.78	7.78
Rows	3	3
Fins Per Inch	14	14
CONDENSER FAN		
Number of Fans	2	2
Type	Axial	Axial
Number of motors	2	2
Current (A)	2.4	1.0
Power (W)	1 / 3	1 / 3
RPM	825	825
Fan Diameter (mm)	22	22
CONDENSER COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft ²)	18.9	18.9
Rows	2	2
Fins per Inch	17	17
COMPRESSOR		
Refrigerant	R410A	R410A
Quantity	1	1
Type	Scroll	Scroll
RLA ⁽²⁾	25.0 / 27.9	12.2 / 13.6
LRA ⁽³⁾	164.0	100.0
ELECTRICAL DATA		
V / Ph / Hz	220 / 3 / 60	440 / 3 / 60
Operating Current ⁽¹⁾ (A)	37.0	18.0
Minimum Circuit Ampacity (A)	44.0	21.5
Max. Overcurrent Protection (A)	72.0	35.0
DIMENSIONS [L x H x W]	1860 x 995 x 1670	1860 x 995 x 1670
NET WEIGHT (kg)	360	360
GROSS WEIGHT (kg)	366	366

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-120-TP-3	EP410-120-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	120000	120000
Tons of Refrigeration	10	10
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Number of Fans	1	1
Nominal Airflow ⁽¹⁾ (CFM)	4000	4000
Fan (DxW) (in)	15 x 15	15 x 15
Number of motors	1	1
Current (A)	5,2	2,6
Power (HP)	2	2
RPM	1750	1750
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft²)	7,8	7,8
Rows	4	4
Fins Per Inch	13	13
CONDENSER FAN		
Number of Fans	2	2
Type	Axial	Axial
Number of motors	2	2
Current (A)	2.4	1.0
Power (W)	1 / 3	1 / 3
RPM	825	825
Fan Diameter (mm)	22	22
CONDENSER COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft²)	22,4	22,4
Rows	2	2
Fins per Inch	17	17
COMPRESSOR		
Refrigerant	R410A	R410A
Quantity	1	1
Type	Scroll	Scroll
RLA ⁽²⁾	28.2 / 31.4	14.7 / 16.4
LRA ⁽³⁾	240	130
ELECTRICAL DATA		
V / Ph / Hz	220 / 3 / 60	440 / 3 / 60
Operating Current ⁽¹⁾ (A)	43	23
Minimum Circuit Ampacity (A)	52	27
Max. Overcurrent Protection (A)	83	43
DIMENSIONS [L x H x W]		
	1860 x 995 x 1670	1860 x 995 x 1670
NET WEIGHT (kg)		
	390	390
GROSS WEIGHT (kg)		
	396	396

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-150-TP-3	EP410-150-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	150000	150000
Tons of Refrigeration	12,5	12,5
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Number of Fans	2	2
Nominal Airflow ⁽¹⁾ (CFM)	5000	5000
Fan (DxW) (in)	12 x 12	12 x 12
Number of motors	1	1
Current (A)	5,2	2,6
Power (HP)	2	2
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft ²)	8.7	8.7
Rows	4	4
Fins Per Inch	13	13
CONDENSER FAN		
Number of Fans	2	2
Type	Axial	Axial
Number of motors	2	2
Current (A)	2,18	1,22
Power (W)	709	789
RPM	984	1062
Fan Diameter (mm)	630	630
CONDENSER COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft ²)	30.5	30.5
Rows	2	2
Fins per Inch	16	16
COMPRESSOR		
Refrigerant	R410A	R410A
Quantity	1	1
Type	Scroll	Scroll
RLA ⁽²⁾	48.1 / 53.6	18.6 / 20.7
LRA ⁽³⁾	245	125
ELECTRICAL DATA		
V / Ph / Hz	220 / 3 / 60	440 / 3 / 60
Operating Current ⁽¹⁾ (A)	65	28
Minimum Circuit Ampacity (A)	79	33
Max. Overcurrent Protection (A)	131	53
DIMENSIONS [L x H x W]		
	1660 x 1450 x 1790	1660 x 1450 x 1790
NET WEIGHT (kg)		
	461	461
GROSS WEIGHT (kg)		
	466	466

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-180-TP-3	EP410-180-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	180000	180000
Tons of Refrigeration	15	15
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Number of Fans	2	2
Nominal Airflow ⁽¹⁾ (CFM)	6000	6000
Fan (DxW) (in)	12 x 12	12 x 12
Number of motors	1	1
Current (A)	8,4	4,2
Power (HP)	3	3
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft²)	10.11	10.11
Rows	4	4
Fins Per Inch	13	13
CONDENSER FAN		
Number of Fans	2	2
Type	Axial	Axial
Number of motors	2	2
Current (A)	2,18	1,22
Power (W)	709	789
RPM	984	1062
Fan Diameter (mm)	630	630
CONDENSER COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft²)	35.4	35.4
Rows	2	2
Fins per Inch	16	16
COMPRESSOR		
Refrigerant	R410A	R410A
Quantity	1	1
Type	Scroll	Scroll
RLA ⁽²⁾	55.8 / 62.1	26.9 / 30.0
LRA ⁽³⁾	340	173
ELECTRICAL DATA		
V / Ph / Hz	220 / 3 / 60	440 / 3 / 60
Operating Current ⁽¹⁾ (A)	75	37
Minimum Circuit Ampacity (A)	91	45
Max. Overcurrent Protection (A)	153	75
DIMENSIONS [L x H x W]		
	1665 x 1455 x 1790	1665 x 1455 x 1790
NET WEIGHT (kg)		
	520	520
GROSS WEIGHT (kg)		
	530	530

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-240-TP-3
GENERAL DATA	
Cooling Capacity (BTU/h)	240000
Tons of Refrigeration	20
EVAPORATOR FAN	
Fan Drive Type	Belt Drive
Number of Fans	2
Nominal Airflow ⁽¹⁾ (CFM)	8000
Fan (DxW) (in)	15 x 15
Number of motors	1
Current (A)	12,5
Power (HP)	5
RPM	1800
EVAPORATOR COIL	
Type (Tube / Fin)	Copper / Aluminum
Face Area (ft ²)	15
Rows	4
Fins Per Inch	13
CONDENSER FAN	
Number of Fans	2
Type	Axial
Number of motors	2
Current (A)	4,27
Power (W)	1205
RPM	1081
Fan Diameter (mm)	710
CONDENSER COIL	
Type (Tube / Fin)	Copper / Aluminum
Face Area (ft ²)	37.5
Rows	2
Fins per Inch	16
COMPRESSOR	
Refrigerant	R410A
Quantity	1
Type	Scroll
RLA ⁽²⁾	63.7 / 70.9
LRA ⁽³⁾	500,6
ELECTRICAL DATA	
V / Ph / Hz	220 / 3 / 60
Operating Current ⁽¹⁾ (A)	95
Minimum Circuit Ampacity (A)	112
Max. Overcurrent Protection (A)	183
DIMENSIONS [L x H x W]	1665 x 1630 x 2070
NET WEIGHT (kg)	635
GROSS WEIGHT (kg)	640

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-300-2CTP-3	EP410-300-2CTP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	300000	300000
Tons of Refrigeration	25	25
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Number of Fans	2	2
Nominal Airflow ⁽¹⁾ (CFM)	10000	10000
Fan (DxW) (in)	15 x 15	15 x 15
Number of motors	1	1
Current (A)	12,5	6,7
Power (HP)	5	5
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft ²)	16,25	16,25
Rows	4	4
Fins Per Inch	13	13
CONDENSER FAN		
Number of Fans	2	2
Type	Axial	Axial
Number of motors	2	2
Current (A)	6,37	3,71
Power (W)	1918	2143
RPM	1057	1055
Fan Diameter (mm)	800	800
CONDENSER COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft ²)	36.8	36.8
Rows	2	2
Fins per Inch	16	16
COMPRESSOR		
Refrigerant	R410A	R410A
Quantity	2	2
Type	Scroll	Scroll
RLA ⁽²⁾	48.1 / 53.6	18.6 / 20.7
LRA ⁽³⁾	245	125
ELECTRICAL DATA		
V / Ph / Hz	220 / 3 / 60	440 / 3 / 60
Operating Current ⁽¹⁾ (A)	135	56,5
Minimum Circuit Ampacity (A)	148	62
Max. Overcurrent Protection (A)	202	83
DIMENSIONS [L x H x W]		
	1765 x 1810 x 2220	1765 x 1810 x 2220
NET WEIGHT (kg)		
	685	685
GROSS WEIGHT (kg)		
	690	690

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-360-2CTP-3	EP410-360-2CTP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	360000	360000
Tons of Refrigeration	30	30
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Number of Fans	2	2
Nominal Airflow ⁽¹⁾ (CFM)	12000	12000
Fan (DxW) (in)	18 x 18	18 x 18
Number of motors	1	1
Current (A)	19	9,6
Power (HP)	7,5	7,5
RPM	1750	1750
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft²)	20,6	20,6
Rows	4	4
Fins Per Inch	13	13
CONDENSER FAN		
Number of Fans	2	2
Type	Axial	Axial
Number of motors	2	2
Current (A)	6,37	3,71
Power (W)	1918	2143
RPM	1057	1055
Fan Diameter (mm)	800	800
CONDENSER COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft²)	50.4	50.4
Rows	2	2
Fins per Inch	16	16
COMPRESSOR		
Refrigerant	R410A	R410A
Quantity	2	2
Type	Scroll	Scroll
RLA ⁽²⁾	55.8 / 62.1	26.3 / 29.3
LRA ⁽³⁾	340	179
ELECTRICAL DATA		
V / Ph / Hz	220 / 3 / 60	440 / 3 / 60
Operating Current ⁽¹⁾ (A)	158	78
Minimum Circuit Ampacity (A)	174	85
Max. Overcurrent Protection (A)	236	115
DIMENSIONS [L x H x W]		
	1860 x 1970 x 2220	1860 x 1970 x 2220
NET WEIGHT (kg)		
	800	800
GROSS WEIGHT (kg)		
	810	810

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-480-2CTP-3
GENERAL DATA	
Cooling Capacity (BTU/h)	480000
Tons of Refrigeration	40
EVAPORATOR FAN	
Fan Drive Type	Belt Drive
Number of Fans	2
Nominal Airflow ⁽¹⁾ (CFM)	16000
Fan (DxW) (in)	20 x 20
Number of motors	1
Current (A)	23,9
Power (HP)	10
RPM	1800
EVAPORATOR COIL	
Type (Tube / Fin)	Copper / Aluminum
Face Area (ft ²)	26,7
Rows	4
Fins Per Inch	13
CONDENSER FAN	
Number of Fans	4
Type	Axial
Number of motors	4
Current (A)	4,27
Power (W)	1205
RPM	1081
Fan Diameter (mm)	710
CONDENSER COIL	
Type (Tube / Fin)	Copper / Aluminum
Face Area (ft ²)	80
Rows	4
Fins per Inch	13
COMPRESSOR	
Refrigerant	R410A
Quantity	2
Type	Scroll
RLA ⁽²⁾	63.7 / 70.9
LRA ⁽³⁾	500,6
ELECTRICAL DATA	
V / Ph / Hz	220 / 3 / 60
Operating Current ⁽¹⁾ (A)	186
Minimum Circuit Ampacity (A)	205
Max. Overcurrent Protection (A)	275
DIMENSIONS [L x H x W]	3470 x 2320 x 2240
NET WEIGHT (kg)	1380
GROSS WEIGHT (kg)	1395

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-600-4CTP-3	EP410-600-4CTP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	600000	600000
Tons of Refrigeration	50	50
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Number of Fans	1	1
Nominal Airflow ⁽¹⁾ (CFM)	20000	20000
Fan (DxW) (in)	25 x 25	25 x 25
Number of motors	1	1
Current (A)	38,6	19,5
Power (HP)	15	15
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft²)	41,2	41,2
Rows	4	4
Fins Per Inch	14	14
CONDENSER FAN		
Number of Fans	4	4
Type	Axial	Axial
Number of motors	4	4
Current (A)	6,37	3,71
Power (W)	1918	2143
RPM	1057	1055
Fan Diameter (mm)	800	800
CONDENSER COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft²)	92.1	92.1
Rows	4	4
Fins per Inch	13	13
COMPRESSOR		
Refrigerant	R410A	R410A
Quantity	4	4
Type	Scroll	Scroll
RLA ⁽²⁾	48.1 / 53.6	18.6 / 20.7
LRA ⁽³⁾	245	125
ELECTRICAL DATA		
V / Ph / Hz	220 / 3 / 60	440 / 3 / 60
Operating Current ⁽¹⁾ (A)	280	120
Minimum Circuit Ampacity (A)	295	125
Max. Overcurrent Protection (A)	350	145
DIMENSIONS [L x H x W]		
	4680 x 2360 x 2240	4680 x 2360 x 2240
NET WEIGHT (kg)		
	1945	1945
GROSS WEIGHT (kg)		
	1960	1960

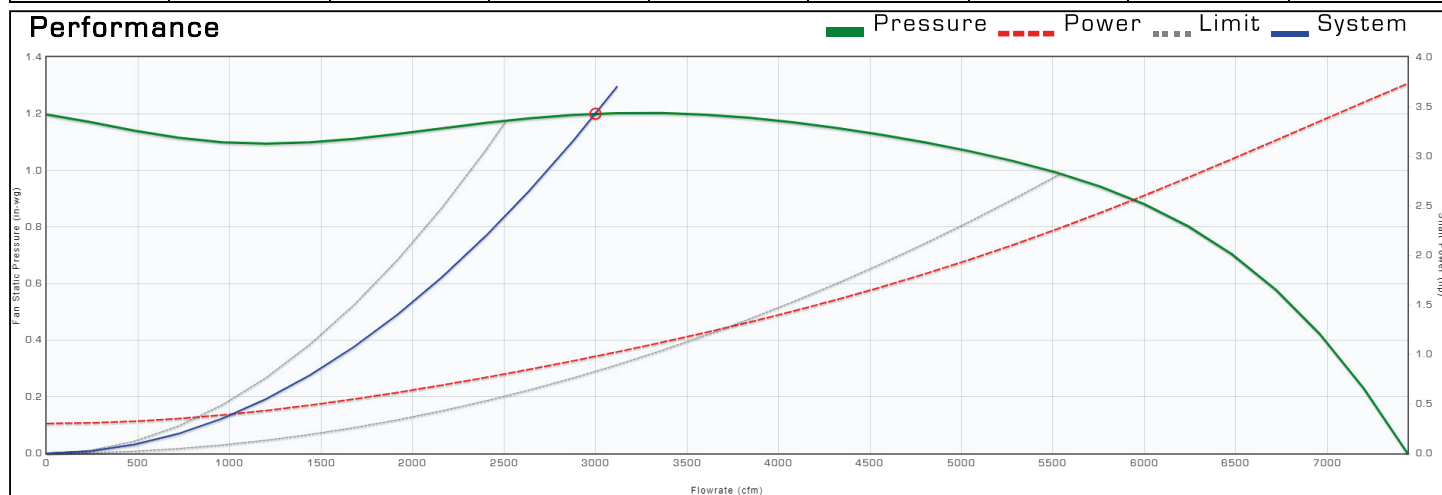
Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

MODEL	EP410-720-4CTP-3	EP410-720-4CTP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	720000	720000
Tons of Refrigeration	60	60
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Number of Fans	1	1
Nominal Airflow ⁽¹⁾ (CFM)	24000	24000
Fan (DxW) (in)	25 x 25	25 x 25
Number of motors	1	1
Current (A)	47	23,5
Power (HP)	20	20
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft ²)	38,7	38,7
Rows	4	4
Fins Per Inch	13	13
CONDENSER FAN		
Number of Fans	4	4
Type	Axial	Axial
Number of motors	4	4
Current (A)	6,37	3,71
Power (W)	1918	2143
RPM	1057	1055
Fan Diameter (mm)	800	800
CONDENSER COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Face Area (ft ²)	97,5	97,5
Rows	4	4
Fins per Inch	13	13
COMPRESSOR		
Refrigerant	R410A	R410A
Quantity	4	4
Type	Scroll	Scroll
RLA ⁽²⁾	55.8 / 62.1	26.3 / 29.3
LRA ⁽³⁾	340	179
ELECTRICAL DATA		
V / Ph / Hz	220 / 3 / 60	440 / 3 / 60
Operating Current ⁽¹⁾ (A)	325	160
Minimum Circuit Ampacity (A)	340	165
Max. Overcurrent Protection (A)	402	195
DIMENSIONS [L x H x W]		
	5600 x 2365 x 2240	5600 x 2365 x 2240
NET WEIGHT (kg)		
	2080	2080
GROSS WEIGHT (kg)		
	2095	2095

Notes: ¹ Data corresponding to a specific operating condition based on the AHRI 210/240 or 360 standard. ² This Rated Load Amperage (RLA) value corresponds to a single compressor. ³ This Locked Rotor Amperage (LRA) value corresponds to a single compressor. ⁴ The information provided in the table is subject to change without prior notice.

7.5 TON

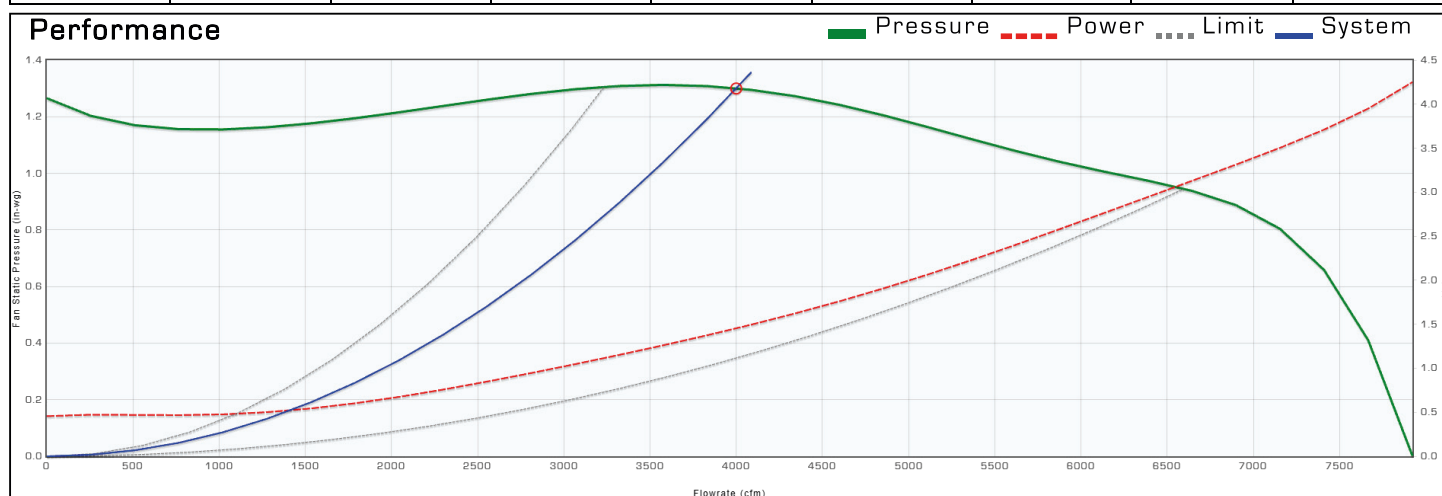
Model A15-15A	Flow 3000 cfm	Pressure 1.20 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft ³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 3000 cfm	Pressure 1.20 in-wg	Power 0.98 hp	Static Efficiency 58.0 %	Total Efficiency 64.7 %	Speed 730 rpm	Outlet Velocity 1493 fpm	Efficiency Rating FEG71
	Impeller Dia 15.0 in	Outlet Area 2.01 ft ²	Max. Speed 1600 rpm	AMCA Class 0	Drive Belt Drive	Blades 51	P Volume 7.32 ft ³	TurnDown 100 %



Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	81	81	75	75	73	71	70	68	86	79

10 TON

Model A15-15A	Flow 4000 cfm	Pressure 1.30 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft ³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 4000 cfm	Pressure 1.30 in-wg	Power 1.45 hp	Static Efficiency 56.4 %	Total Efficiency 67.1 %	Speed 746 rpm	Outlet Velocity 1990 fpm	FEI 1.33
	Impeller Dia 15.0 in	Outlet Area 2.01 ft ²	Max. Speed 1600 rpm	AMCA Class Class I	Drive Belt Drive	Blades 51	P Volume 7.32 ft ³	TurnDown 100 %

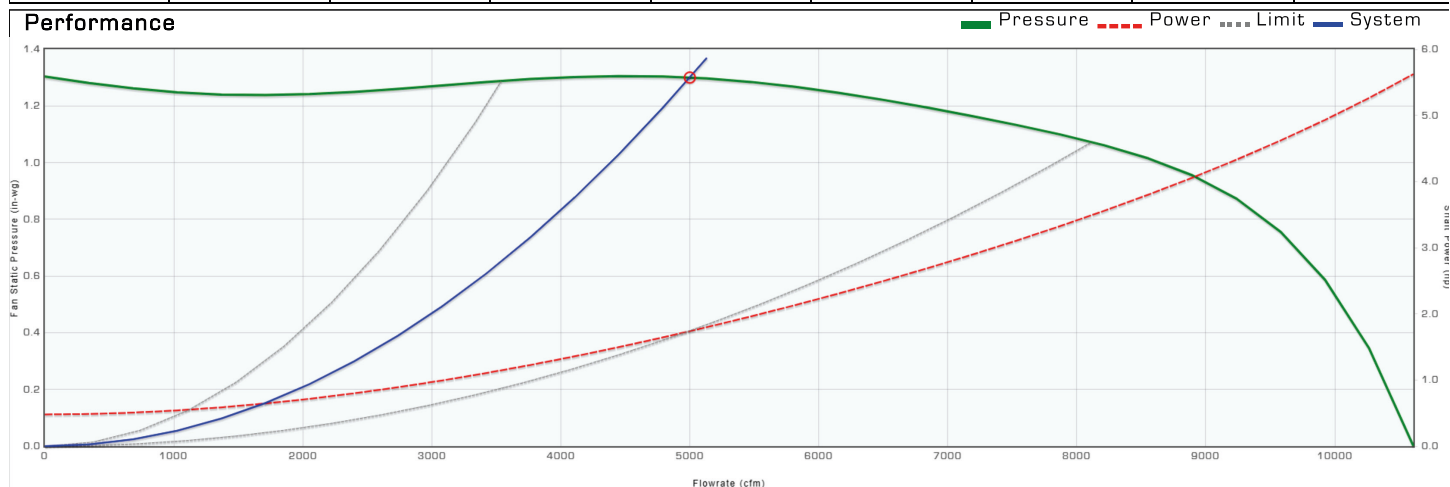


Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	83	83	77	77	75	73	72	70	88	81

Notes: Airflow performance data is obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of cabinet geometry. Sound data is estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

12.5 TON

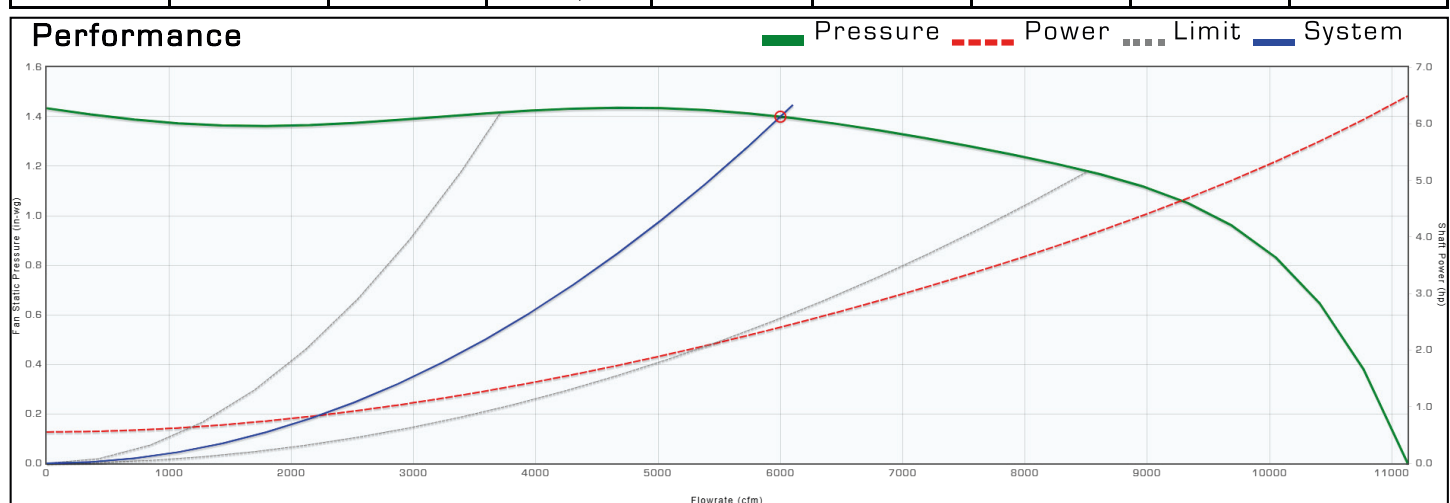
Job Name					Submitted by/notes			
Model 2A12-12A	Flow 5000 cfm	Pressure 1.30 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 5000 cfm	Pressure 1.30 in-wg	Power 1.74 hp	Static Efficiency 59.0 %	Total Efficiency 67.5 %	Speed 909 rpm	Outlet Velocity 1736 fpm	FEI 1.33
	Impeller Dia 12.0 in	Outlet Area 2.88 ft²	Max. Speed 2090 rpm	AMCA Class 0	Drive Belt Drive	Blades 43	P Volume 14.32 ft³	TurnDown 100 %



Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	85	83	78	77	78	75	73	71	89	82

15 TON

Model 2A12-12A	Flow 6000 cfm	Pressure 1.40 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 6000 cfm	Pressure 1.40 in-wg	Power 2.40 hp	Static Efficiency 55.1 %	Total Efficiency 65.7 %	Speed 954 rpm	Outlet Velocity 2083 fpm	FEI 1.27
	Impeller Dia 12.0 in	Outlet Area 2.88 ft²	Max. Speed 2090 rpm	AMCA Class 0	Drive Belt Drive	Blades 43	P Volume 14.32 ft³	TurnDown 100 %

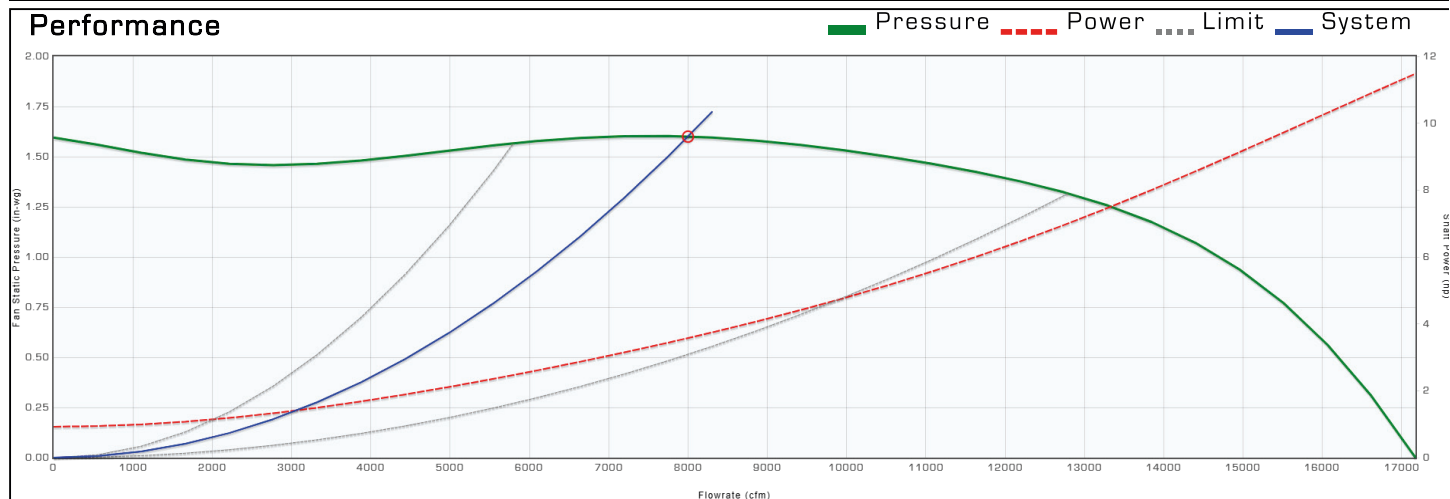


Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	88	86	80	79	80	77	75	73	91	84

Notes: Airflow performance data is obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of cabinet geometry. Sound data is estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

20 TON

Model 2A15-15A	Flow 8000 cfm	Pressure 1.60 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft ³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 8000 cfm	Pressure 1.60 in-wg	Power 3.57 hp	Static Efficiency 56.5 %	Total Efficiency 65.2 %	Speed 843 rpm	Outlet Velocity 1990 fpm	FEI 1.23
	Impeller Dia 15.0 in	Outlet Area 4.02 ft ²	Max. Speed 1730 rpm	AMCA Class Class I	Drive Belt Drive	Blades 51	P Volume 22.72 ft ³	TurnDown 100 %

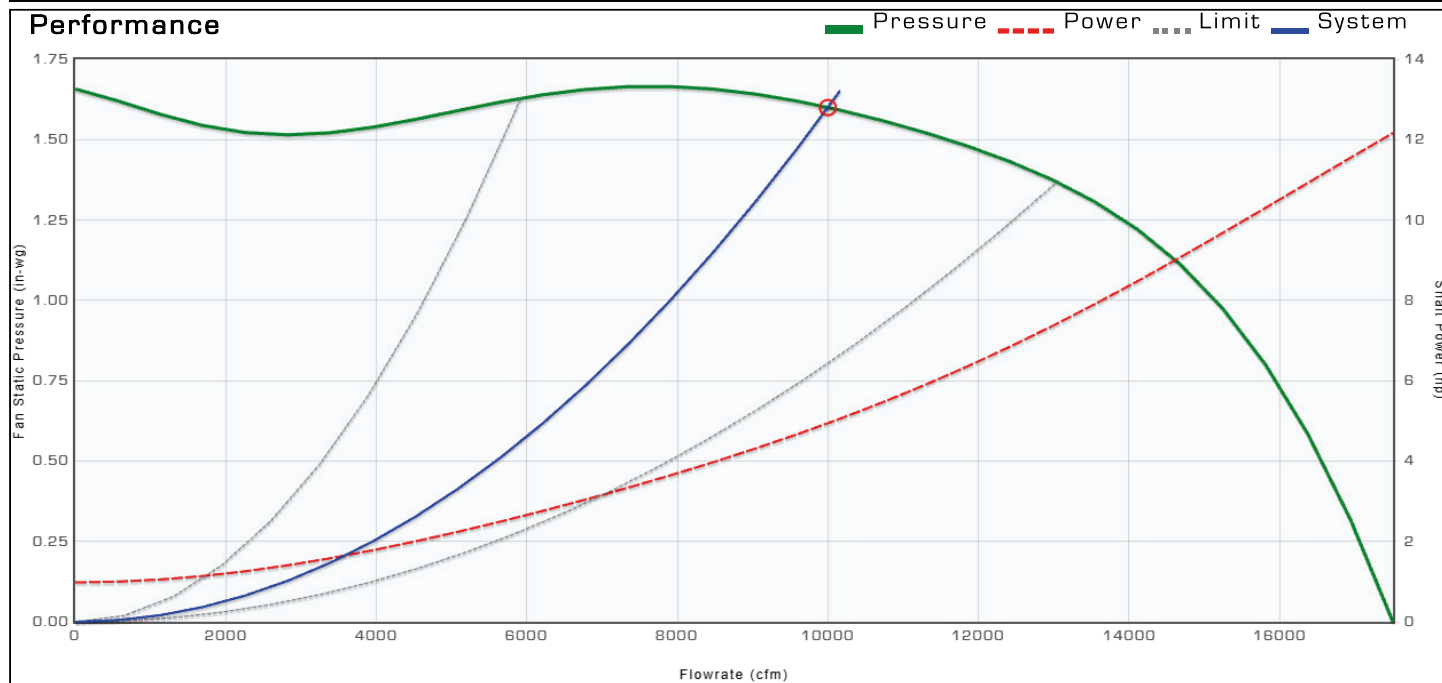


Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	89	88	81	80	81	78	76	74	93	86

Notes: Airflow performance data is obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of cabinet geometry. Sound data is estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

25 TON

Model 2A15-15A	Flow 10000 cfm	Pressure 1.60 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft ³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 10000 cfm	Pressure 1.60 in-wg	Power 4.94 hp	Static Efficiency 51.0 %	Total Efficiency 63.3 %	Speed 859 rpm	Outlet Velocity 2488 fpm	FEI 1.17
	Impeller Dia 15.0 in	Outlet Area 4.02 ft ²	Max. Speed 1730 rpm	AMCA Class Class I	Drive Belt Drive	Blades 51	P Volume 22.72 ft ³	TurnDown 100 %

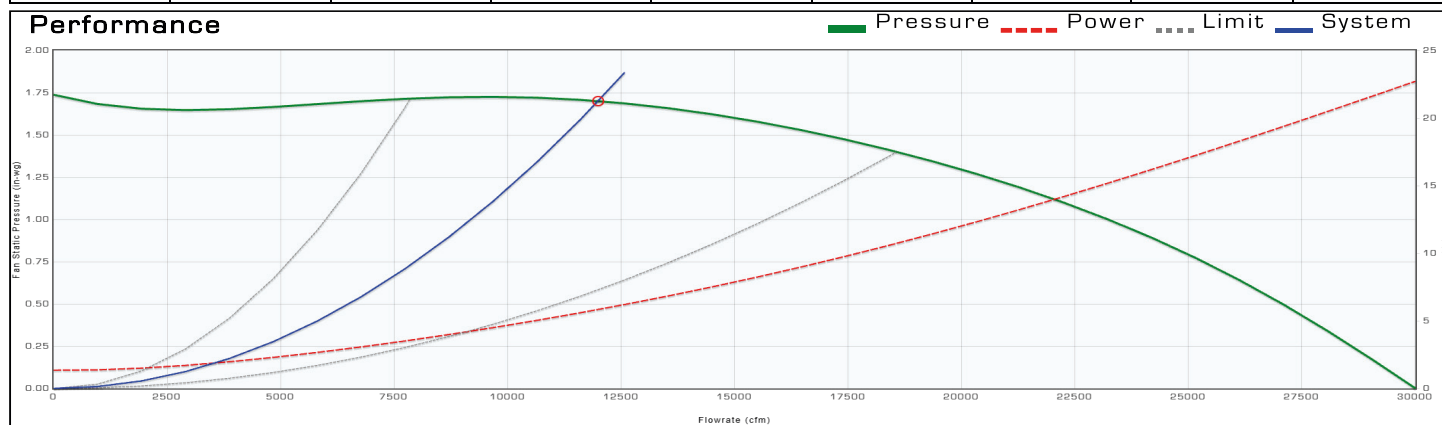


Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	91	90	82	82	83	80	78	76	95	88

Notes: Airflow performance data is obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of cabinet geometry. Sound data is estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

30 TON

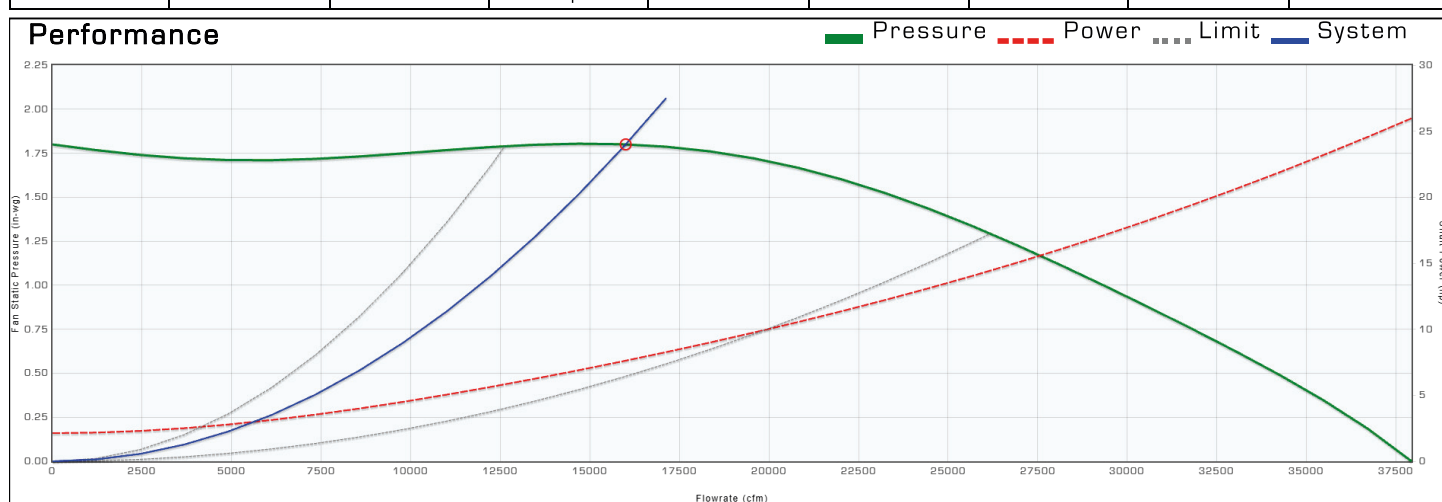
Model 2A18-18A	Flow 12000 cfm	Pressure 1.70 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft ³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 12000 cfm	Pressure 1.70 in-wg	Power 5.84 hp	Static Efficiency 55.1 %	Total Efficiency 63.9 %	Speed 758 rpm	Outlet Velocity 2091 fpm	FEI 1.18
	Impeller Dia 18.0 in	Outlet Area 5.74 ft ²	Max. Speed 1500 rpm	AMCA Class Class I	Drive Belt Drive	Blades 48	P Volume 37.75 ft ³	TurnDown 100 %



Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	82	82	80	82	78	76	73	68	88	84

40 TON

Model 2A20-20H	Flow 16000 cfm	Pressure 1.80 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft ³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 16000 cfm	Pressure 1.80 in-wg	Power 7.62 hp	Static Efficiency 59.6 %	Total Efficiency 67.1 %	Speed 662 rpm	Outlet Velocity 1905 fpm	FEI 1.23
	Impeller Dia 20.0 in	Outlet Area 8.40 ft ²	Max. Speed 1280 rpm	AMCA Class Class I	Drive Belt Drive	Blades 37	P Volume 58.50 ft ³	TurnDown 100 %

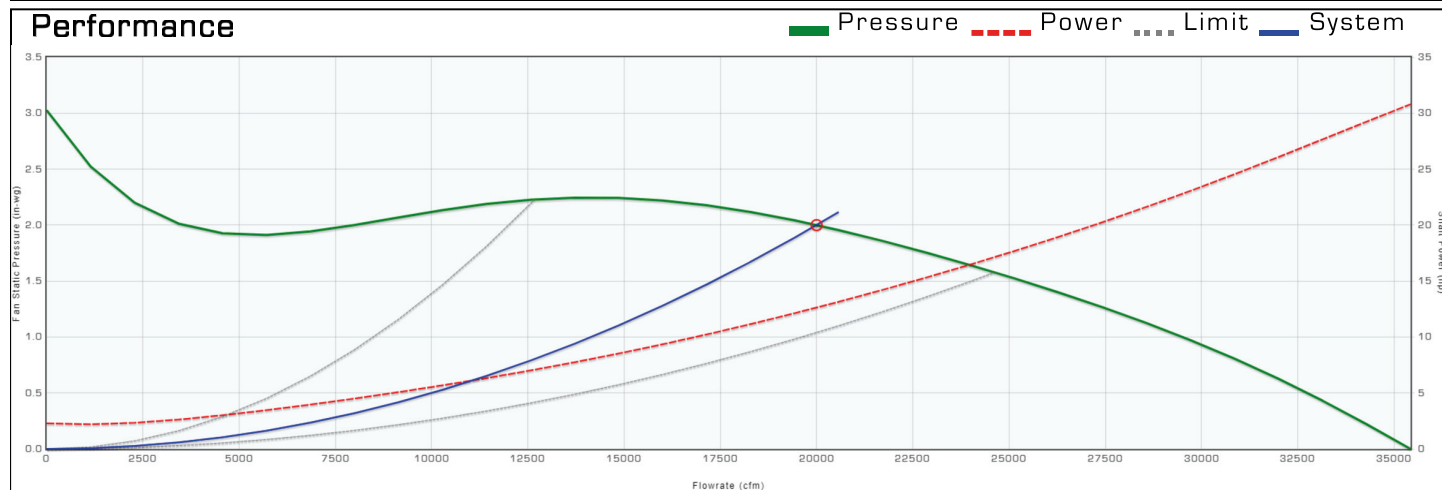


Sound(Lwi/Lwo)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	87/88	89/89	85/88	87/89	85/86	87/86	83/81	75/73	95/96	92/92

Notes: Airflow performance data is obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of cabinet geometry. Sound data is estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

50 TON

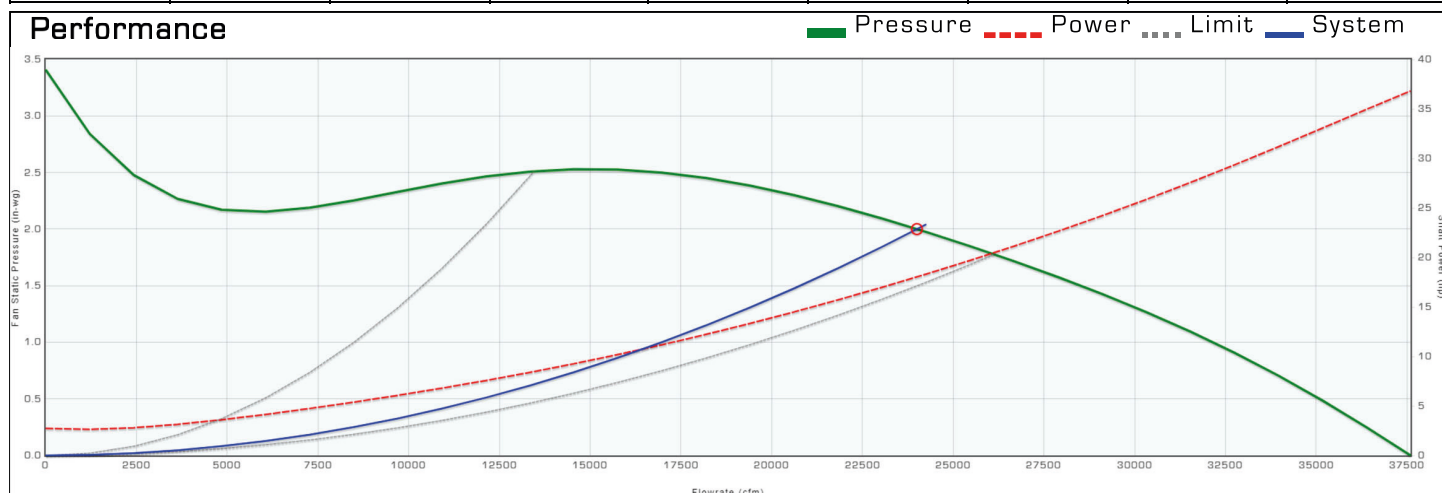
Model A25-25H	Flow 20000 cfm	Pressure 2.00 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft ³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 20000 cfm	Pressure 2.00 in-wg	Power 12.63 hp	Static Efficiency 49.9 %	Total Efficiency 63.7 %	Speed 573 rpm	Outlet Velocity 2981 fpm	FEI 1.13
	Impeller Dia 25.0 in	Outlet Area 6.71 ft ²	Max. Speed 790 rpm	AMCA Class 9	Drive Belt Drive	Blades 37	P Volume 46.93 ft ³	TurnDown 100 %



Sound[Lwi/Lwo]	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	91/90	91/92	90/92	90/92	89/89	88/88	85/83	80/78	98/99	95/95

60 TON

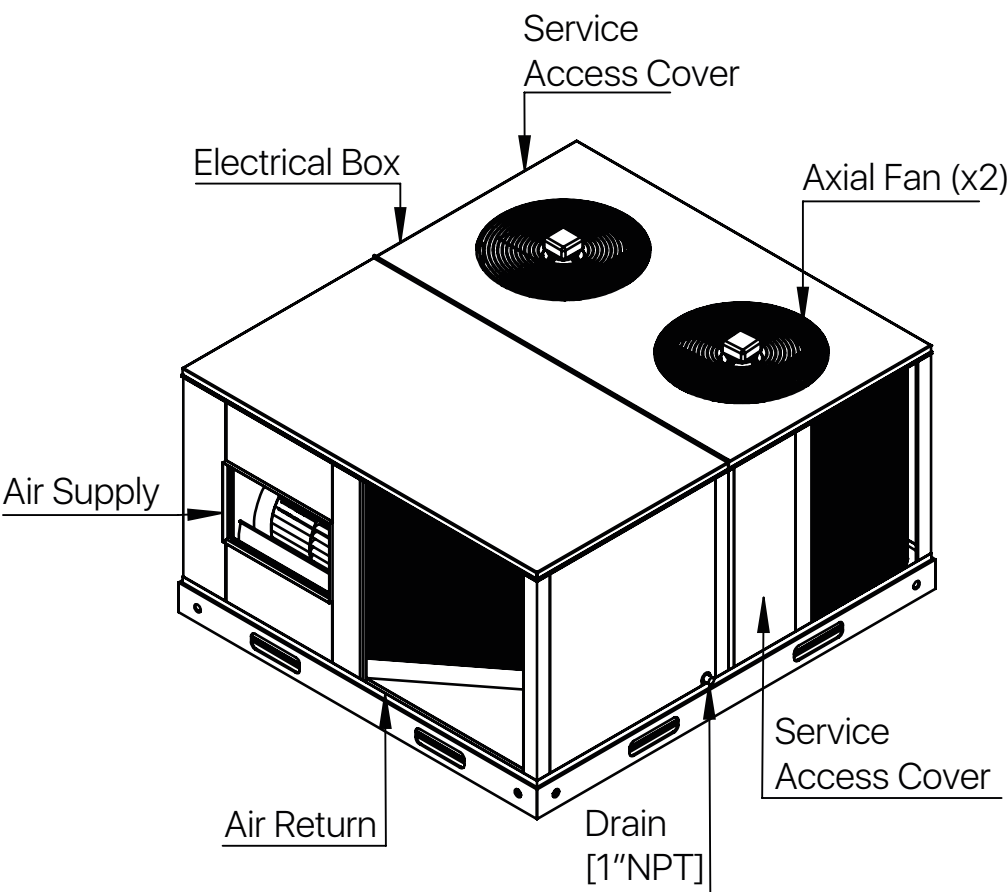
Model A25-25H	Flow 24000 cfm	Pressure 2.00 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft ³	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 24000 cfm	Pressure 2.00 in-wg	Power 18.03 hp	Static Efficiency 42.0 %	Total Efficiency 58.7 %	Speed 608 rpm	Outlet Velocity 3577 fpm	FEI 1.03
	Impeller Dia 25.0 in	Outlet Area 6.71 ft ²	Max. Speed 790 rpm	AMCA Class 9	Drive Belt Drive	Blades 37	P Volume 46.93 ft ³	TurnDown 100 %



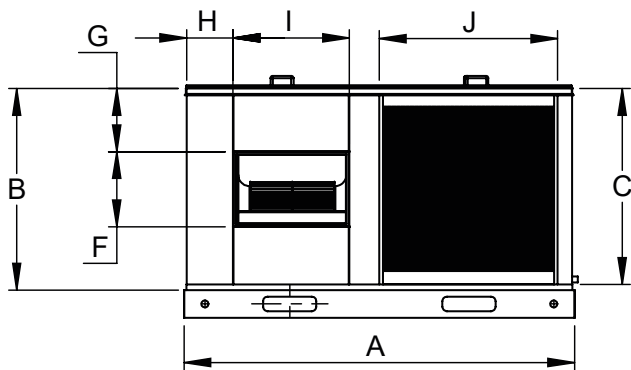
Sound[Lwi/Lwo]	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	93/93	93/94	92/93	94/96	92/92	91/91	88/86	83/81	101/102	98/98

Notes: Airflow performance data is obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of cabinet geometry. Sound data is estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

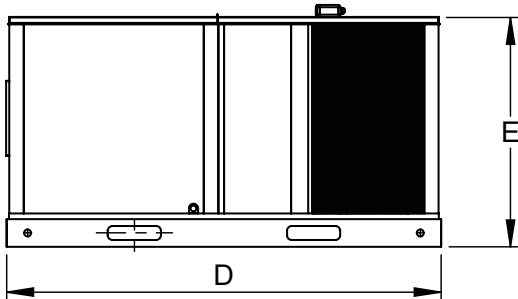
7.5 TON - 10 TON



Front View



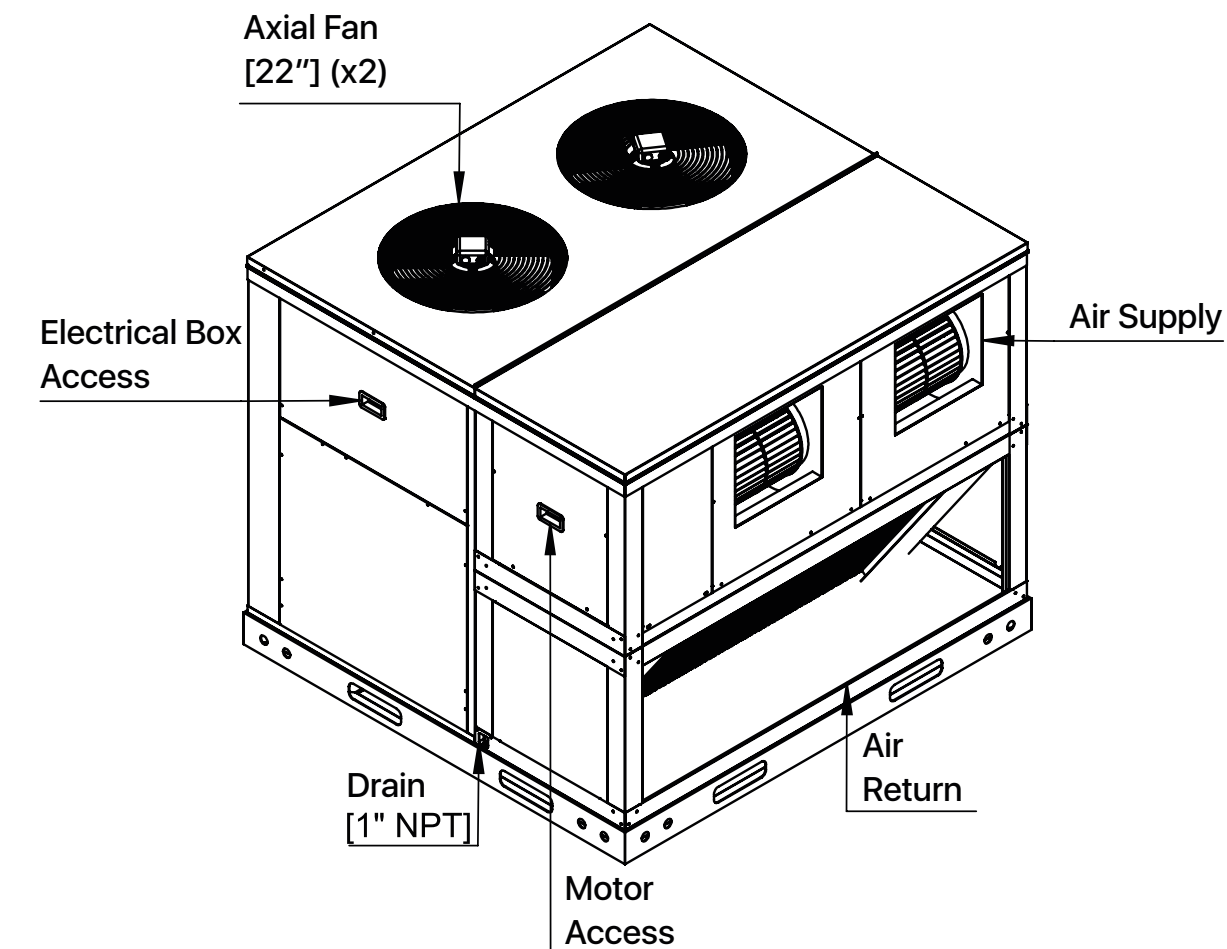
Side View



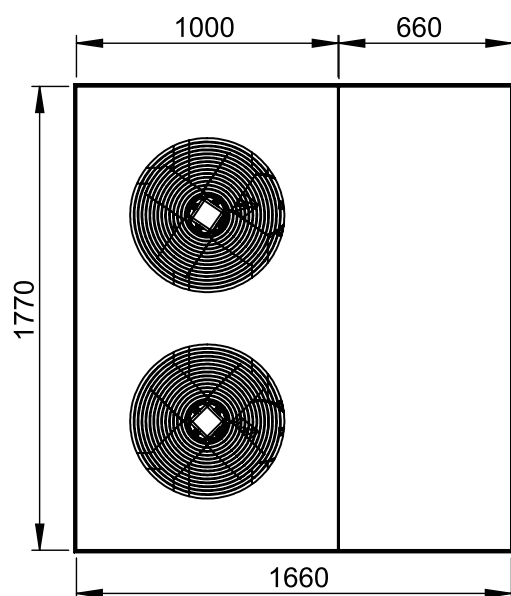
	A	B	C	D	E	F	G	H	I	J
7.5 TON	1690	875	825	1880	995	395	240	200	470	715
10 TON	1670	875	825	1860	995	395	240	200	470	715

Note: All measurements are in millimeters (mm).

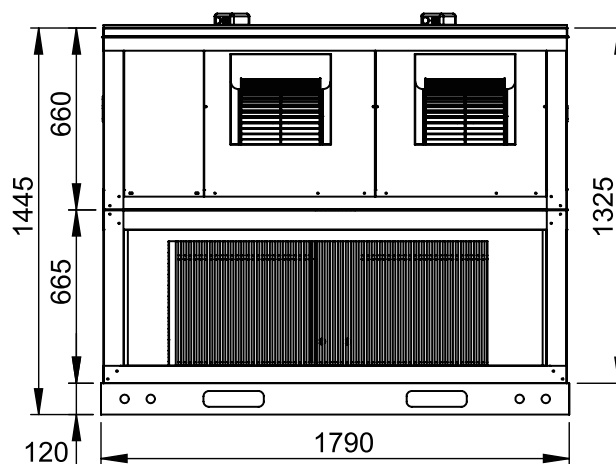
12.5 TON



Top View

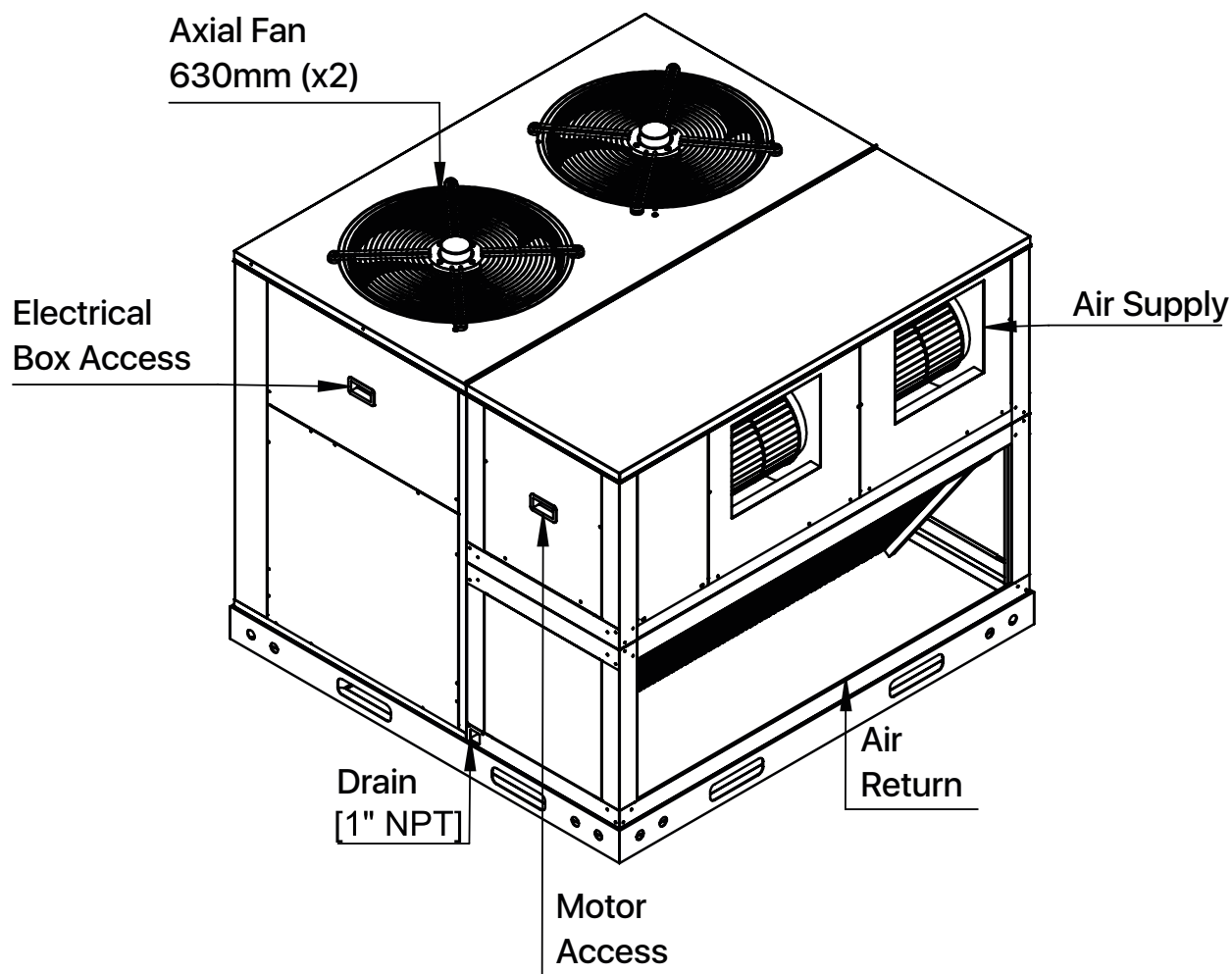


Front View

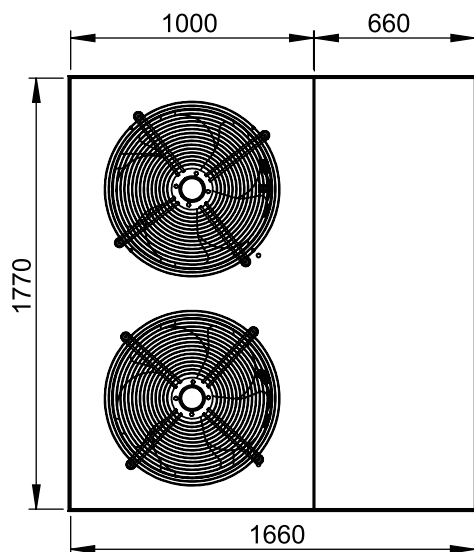


Note: All measurements are in millimeters (mm).

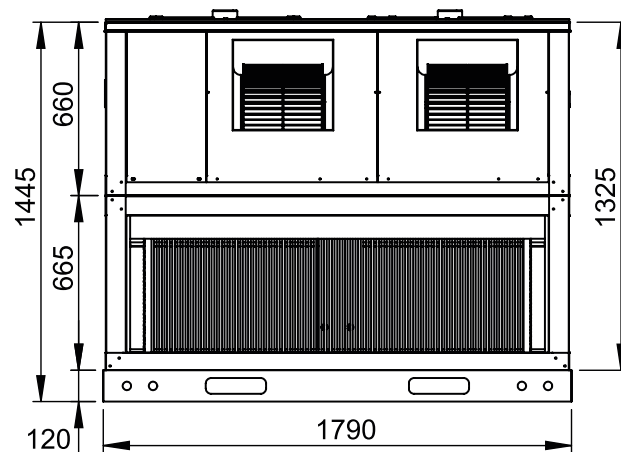
15 TON



Top View

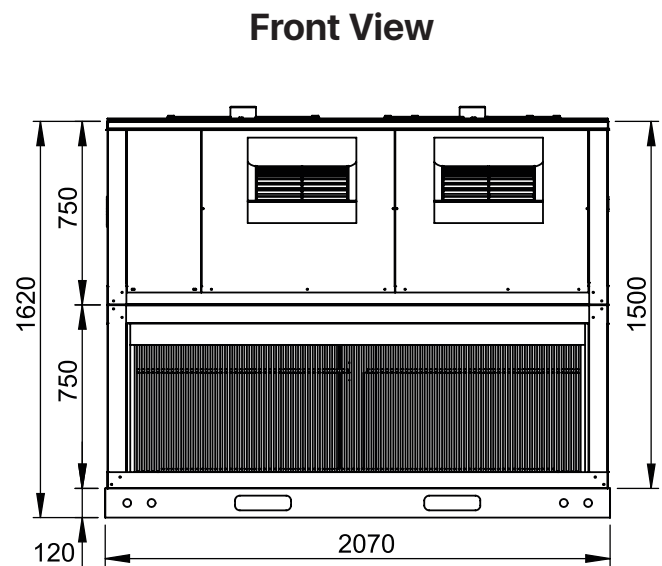
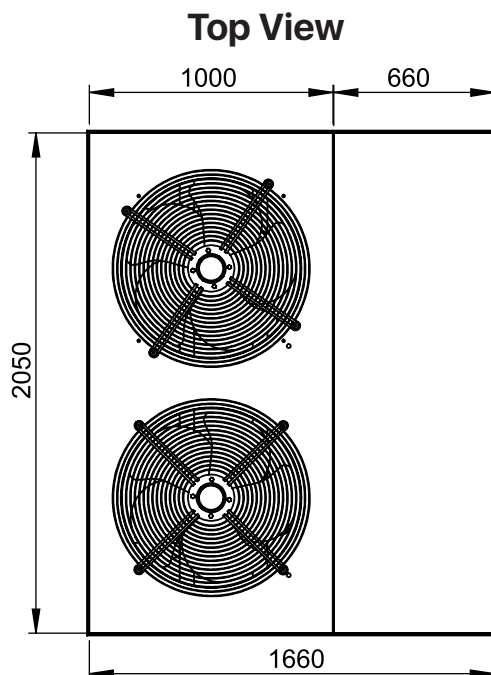
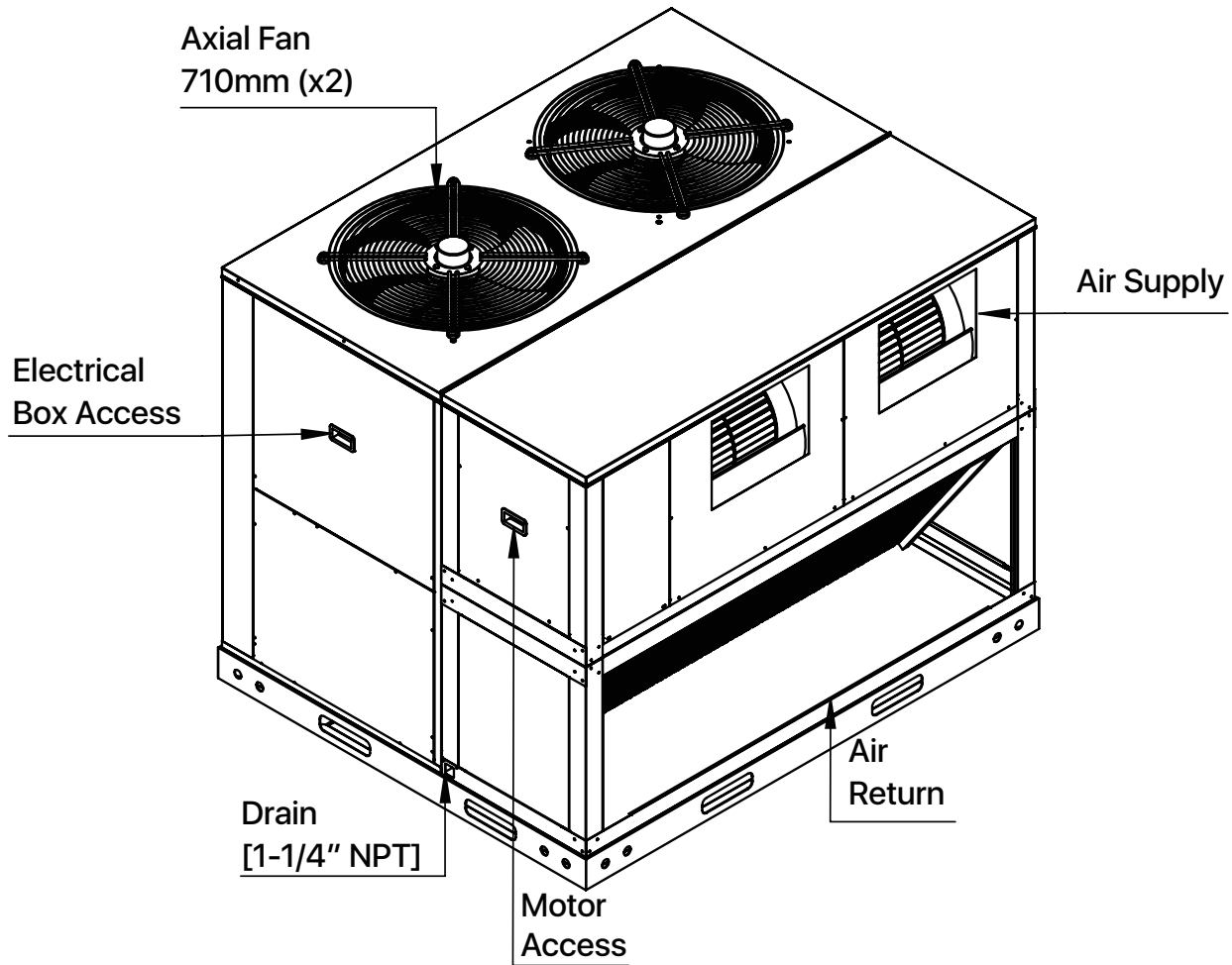


Front View



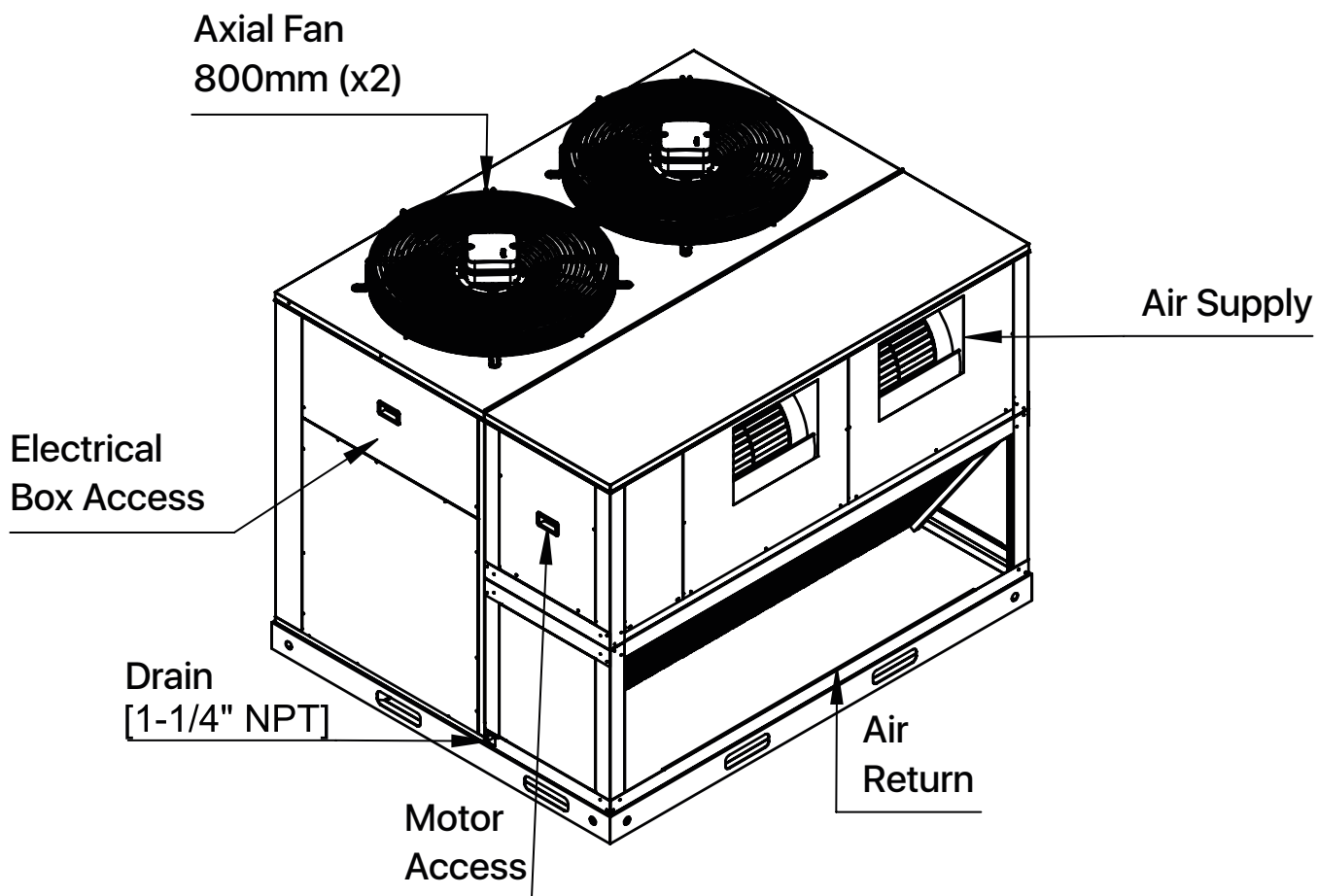
Note: All measurements are in millimeters (mm).

20 TON

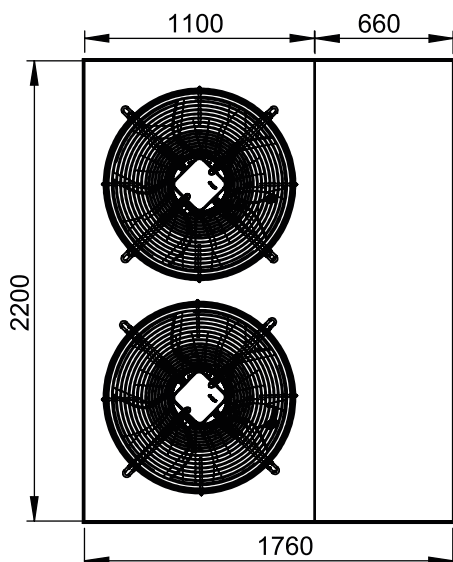


Note: All measurements are in millimeters (mm).

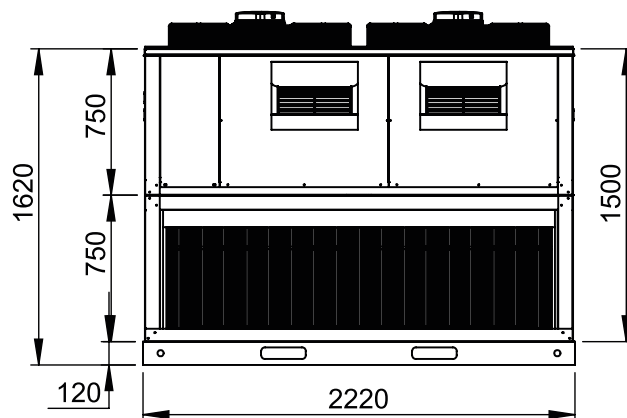
25 TON



Top View

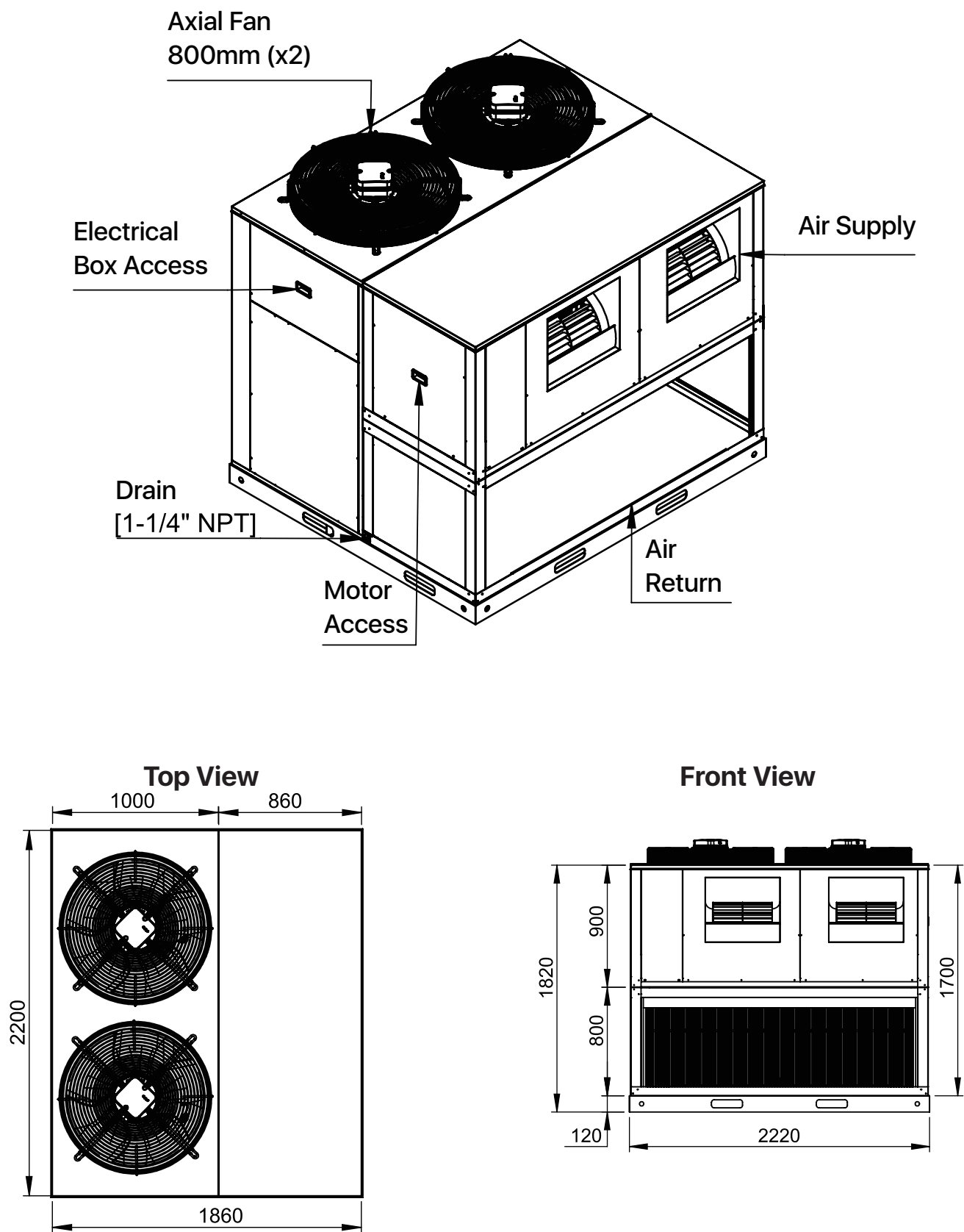


Front View



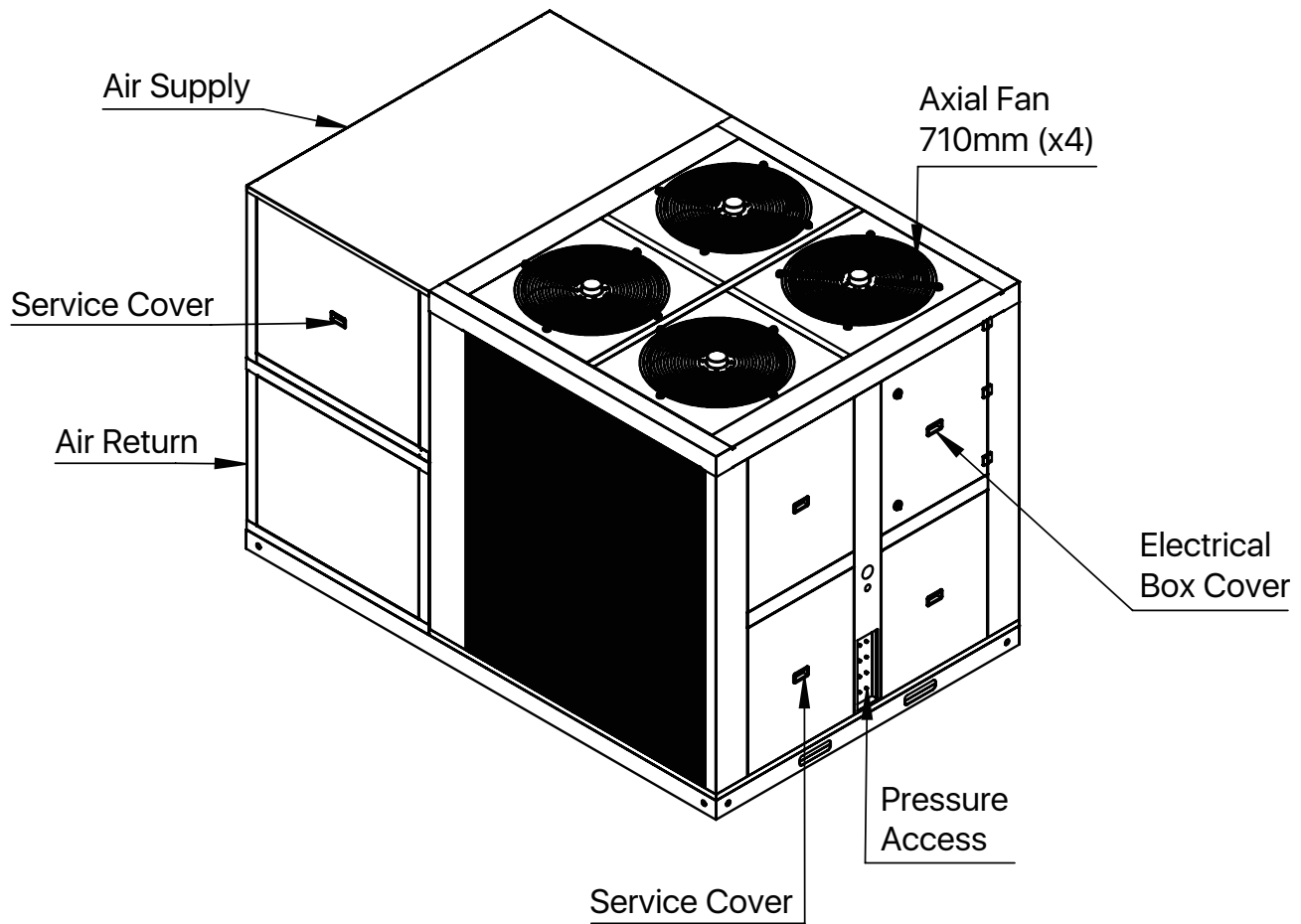
Note: All measurements are in millimeters (mm).

30 TON



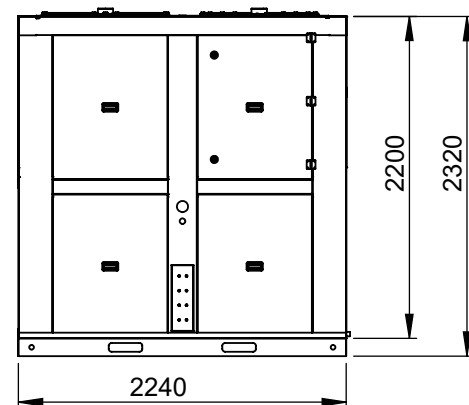
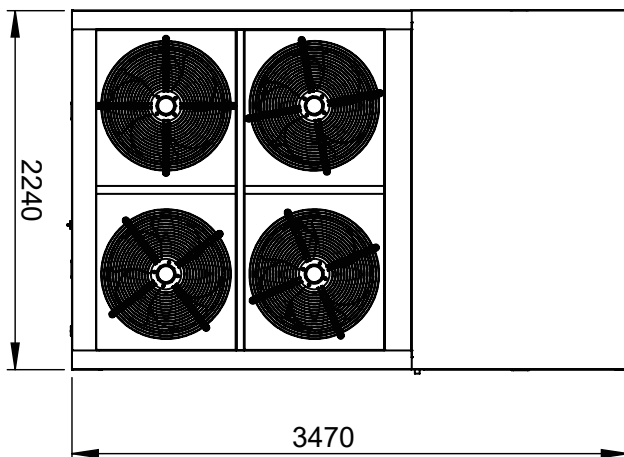
Note: All measurements are in millimeters (mm).

40 TON



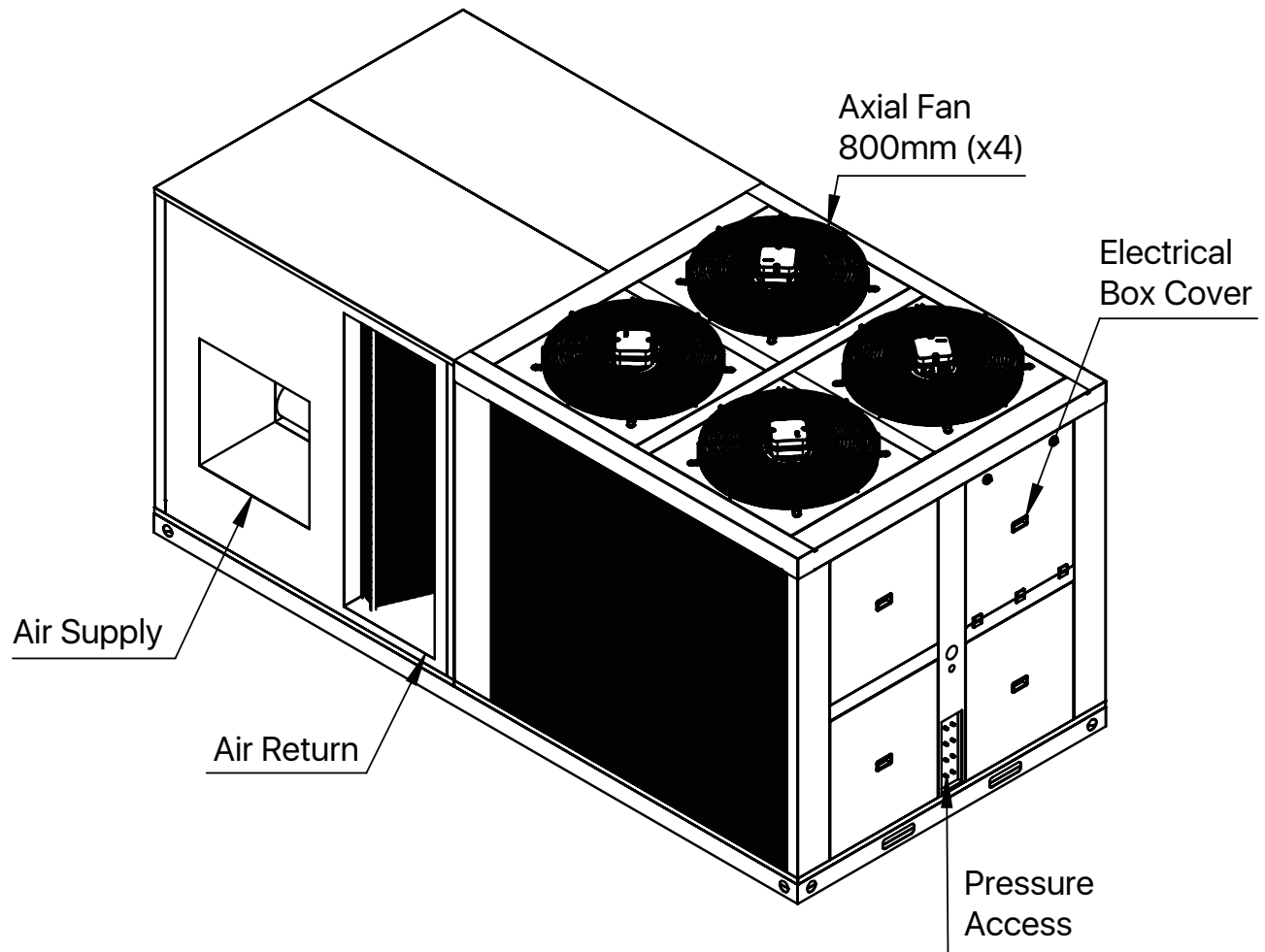
Top View

Front View

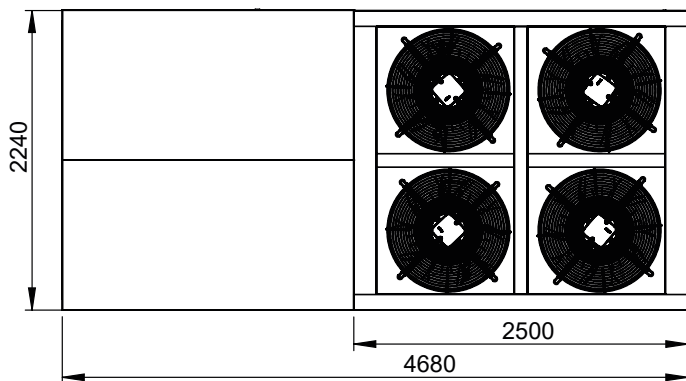


Note: All measurements are in millimeters (mm).

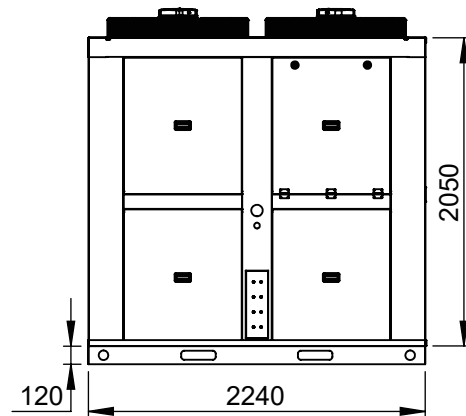
50 TON



Top View

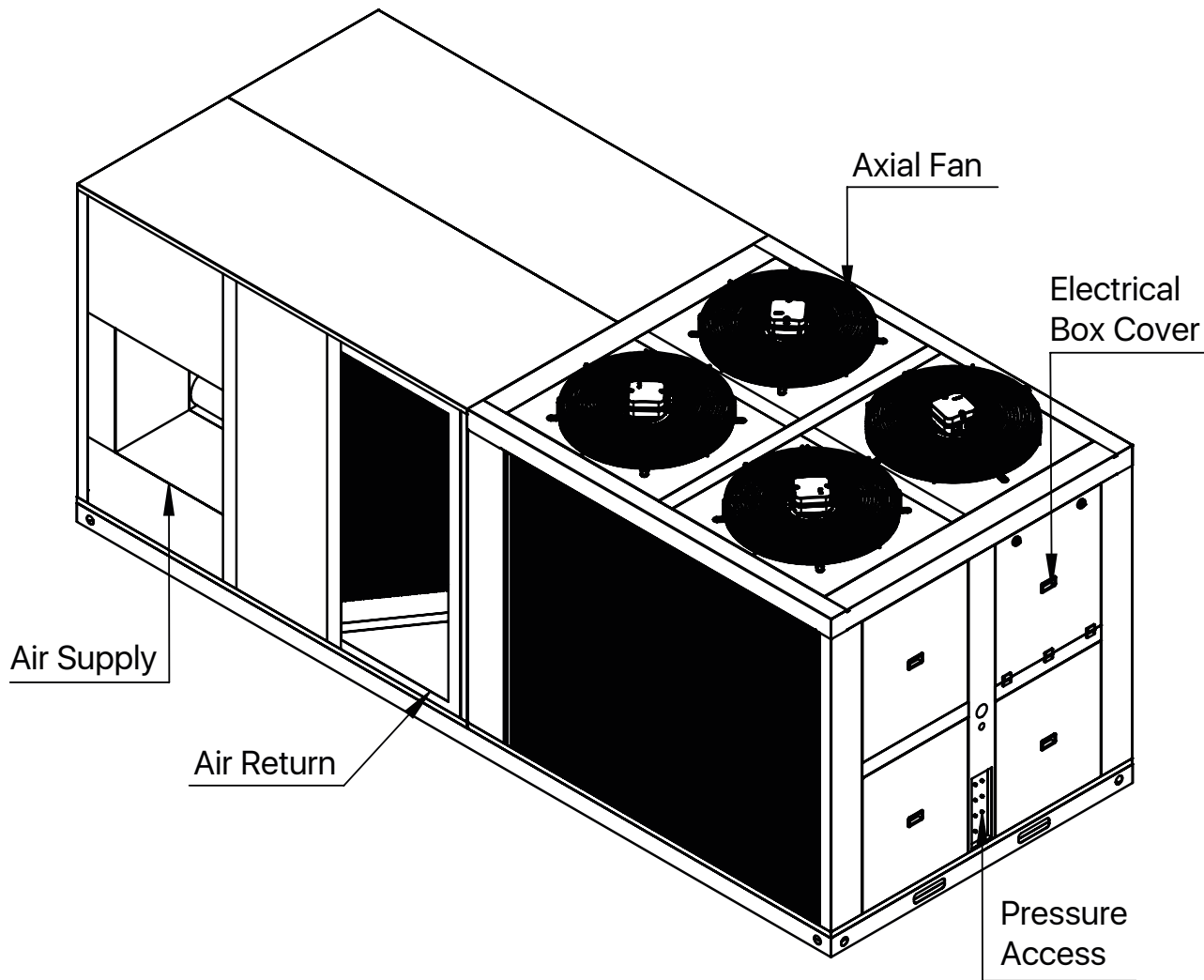


Front View



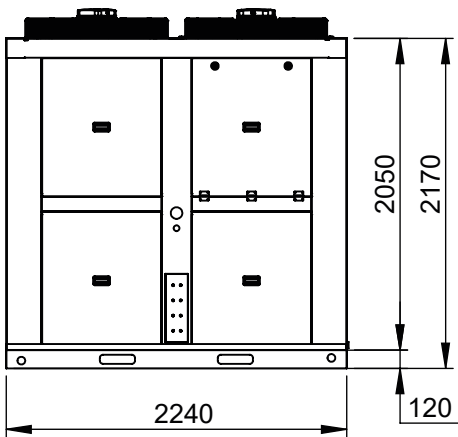
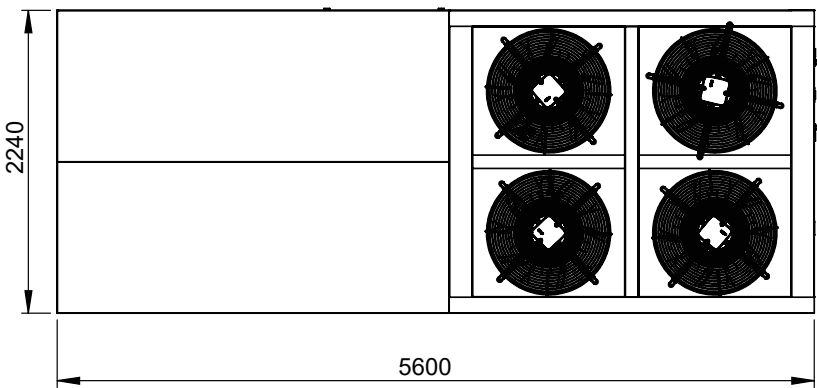
Note: All measurements are in millimeters (mm).

60 TON



Top View

Front View



Note: All measurements are in millimeters (mm).

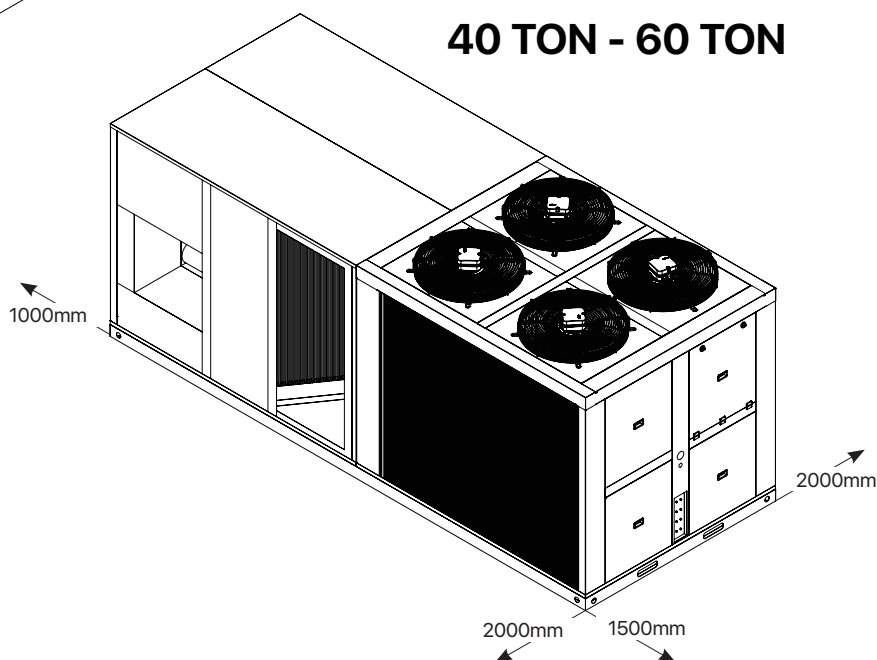
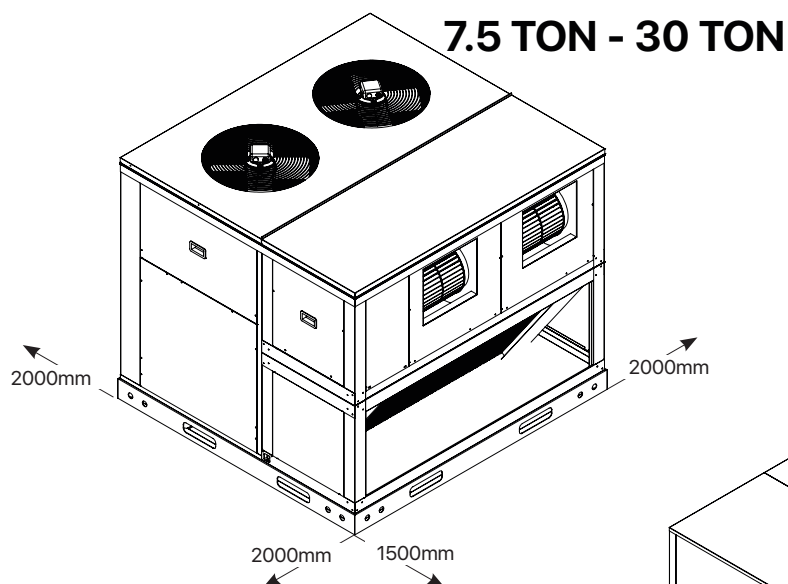
Safety Clearance Distance

The following minimum ventilation clearances are recommended. The installer must evaluate each application and provide adequate ventilation. Failure to do so may result in improper unit operation. Reasons for Providing Clearance:

1. Door Access – All hinged access doors require sufficient space to open fully and allow standard maintenance, such as filter replacement.
2. Component Removal – In the event of a component failure, such as an energy recovery wheel, lateral clearance is required to allow complete removal from the unit.
3. Condenser Airflow – Packaged units dissipate heat through proper airflow across the condenser coil. If airflow is restricted, the unit may not operate correctly.

4. Air Recirculation – Whether from building exhaust or a gas burner flue, a minimum separation distance is required to prevent unwanted air streams from entering the outdoor air intake.
5. Applicable Codes – Electrical and other local codes often require minimum clearances around electrical or motorized equipment.

The following minimum clearances must be observed to ensure proper unit performance and serviceability. It is very important that air discharge outlets are not connected into a common duct before a minimum distance of 1.5 meters (5 ft), and preferably at a distance of 2 meters (6.5 ft).





DANGER



Improper mounting, lifting, or relocation of a unit may result in equipment damage, property damage, serious personal injury, or even death. Refer to the certified dimensioned drawings included in the project documentation for unit weights and center of gravity information.



WARNING

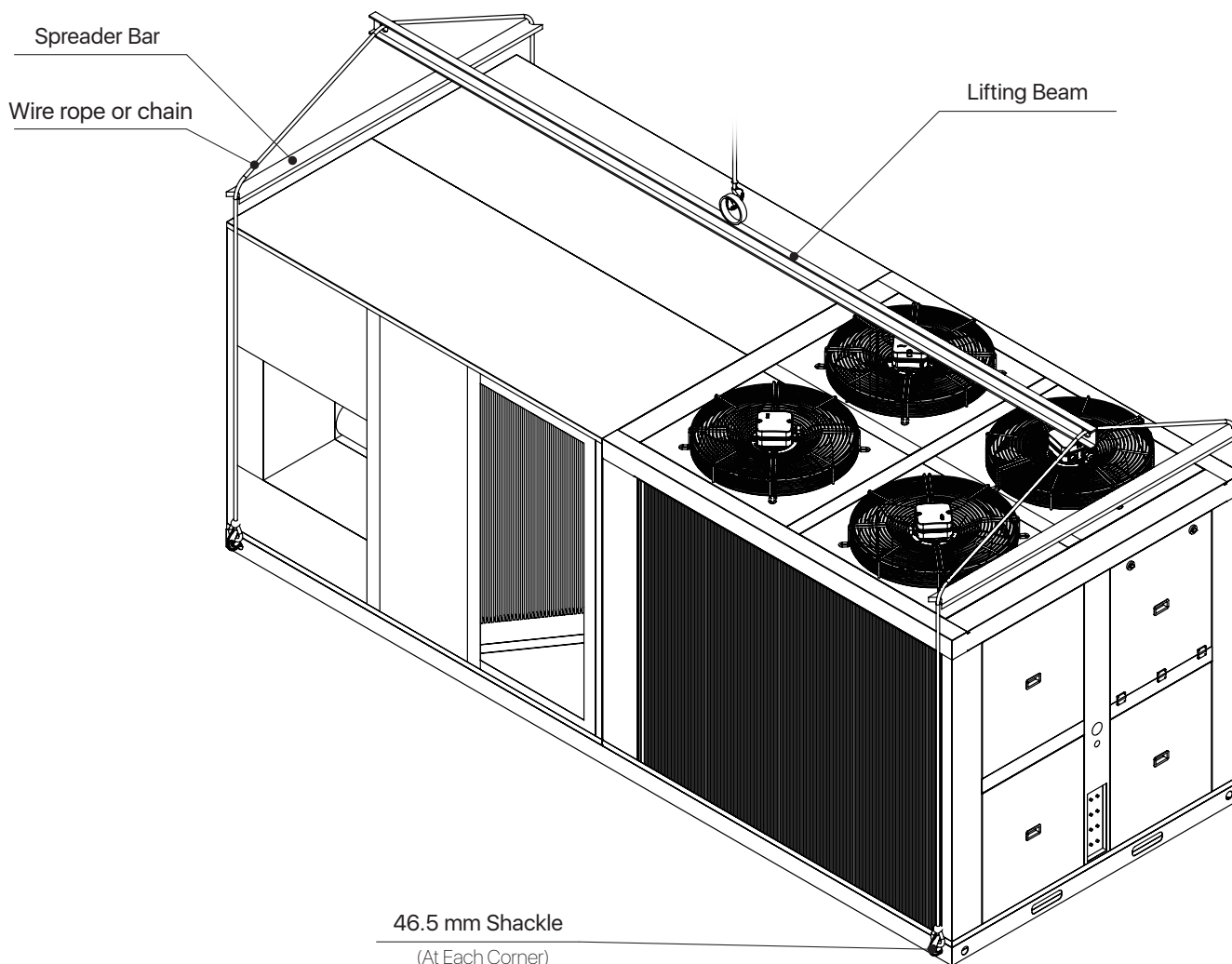


The lifting angle shall not exceed 30 degrees from the vertical, as the unit may become unstable, which could result in equipment damage, property damage, serious personal injury, or even death.

The equipment is designed to withstand the loads associated with lifting and handling operations in accordance with ASME P30.1 – Planning for Load Handling Activities, or its

equivalent. Lifting instructions are intended for the installation of newly delivered equipment. If a previously installed unit is to be moved for relocation or disposal, the condition of the equipment must be evaluated. Additionally, the unit must be properly drained, as the weight and center of gravity values do not account for the presence of water during lifting.

Installation shall be performed only by qualified personnel familiar with applicable local codes and regulations, and experienced with this type of equipment. The lifting equipment and rigging methods must be determined by the Lift Director in accordance with the current edition of ASME P30.1, or its equivalent, and must be suitable for the required load capacity. It is the customer's responsibility to consult a certified rigging contractor to properly and safely lift, hoist, and move components and subcomponents as required.



Refrigeration Piping Diagram



WARNING



To prevent the release of refrigerant into the atmosphere, the refrigeration circuit of this unit must be serviced only by technicians who meet applicable local, state, and federal competency requirements.



WARNING

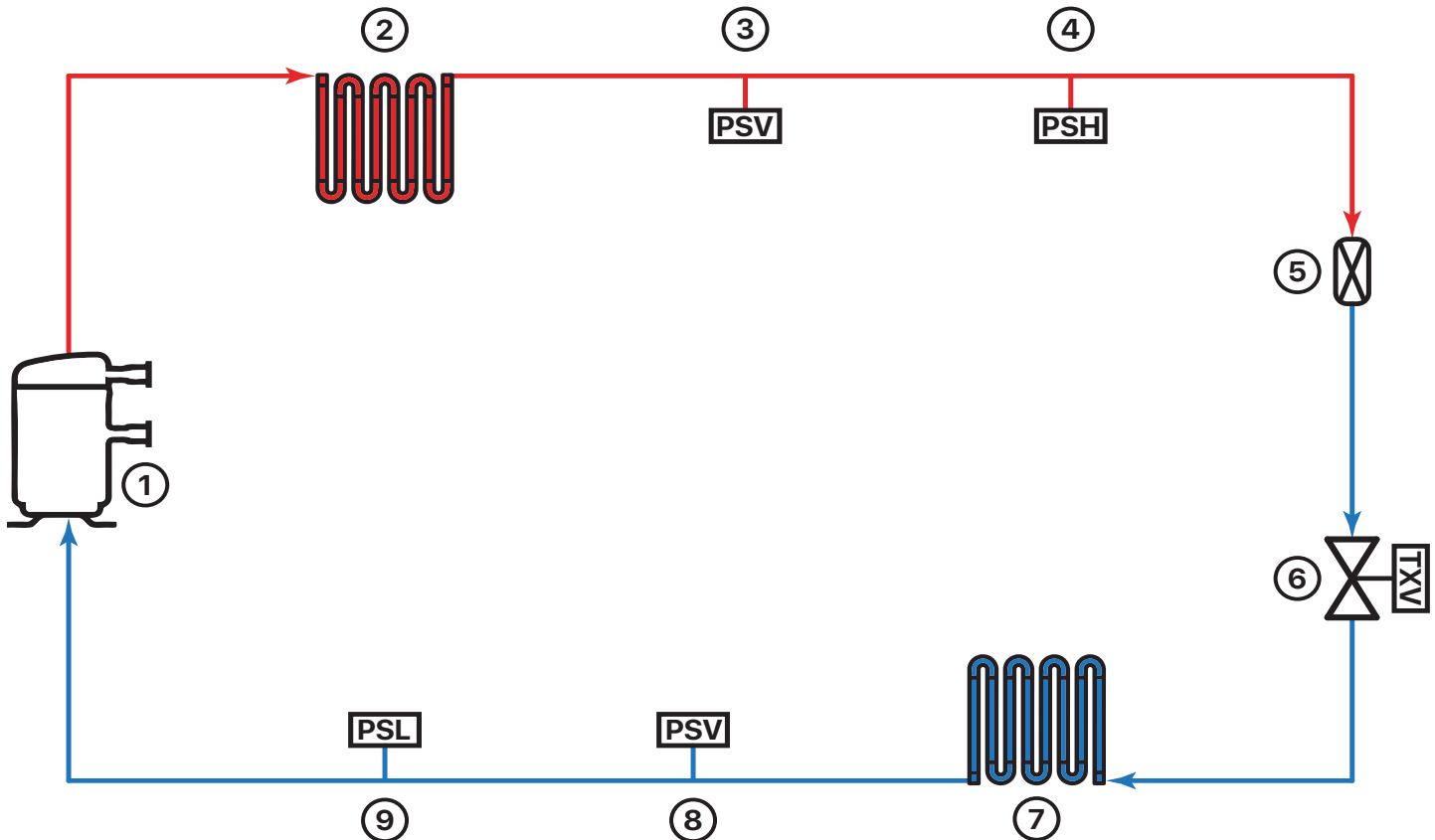


Please note that refrigerants may be odorless.

Some refrigeration and air conditioning units are designed with more than one independent refrigeration circuit. This configuration allows for more efficient operation, increased cooling capacity, and, in some cases, redundancy to ensure service continuity in the event of a failure. Each circuit operates independently and consists of the essential components of the refrigeration cycle.

- 1. Scroll Compressor:** Compresses the refrigerant vapor, increasing its pressure and temperature to drive the cycle. It provides high efficiency, low noise levels, and reduced maintenance requirements.
- 2. Condenser Coil and Axial Fan:** The refrigerant rejects heat as it passes through the coil. The fan enhances heat transfer by moving air across the condenser surface.

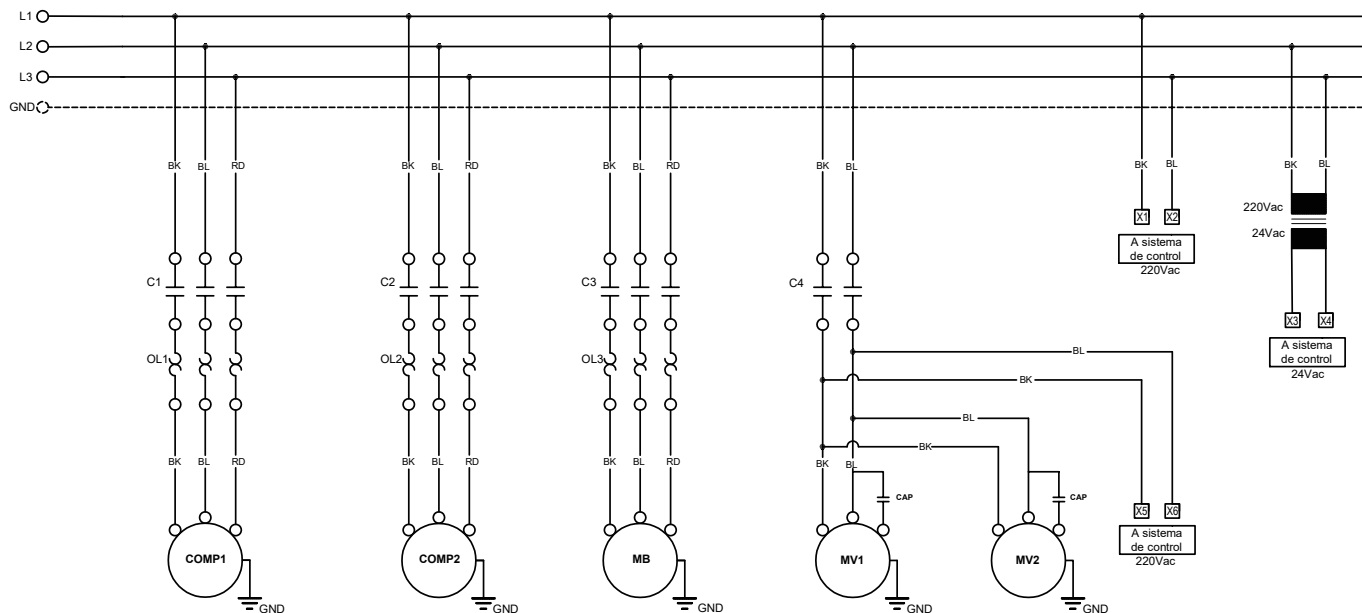
- 3. Access Valve for Charging and Monitoring:** Facilitates refrigerant charging, pressure monitoring, and system maintenance.
- 4. High Pressure Switch:** Disconnects the compressor if pressure exceeds safe limits, preventing damage due to overpressure.
- 5. Filter Drier:** Removes moisture and impurities from the refrigerant, protecting the system against corrosion and blockages.
- 6. Thermostatic Expansion Valve (TXV):** Regulates refrigerant flow to the evaporator based on return temperature, enabling proper heat absorption.
- 7. Evaporator Coil and Fan:** The refrigerant evaporates while absorbing heat. The fan distributes cooled air into the conditioned space.
- 8. Access Valve for Charging and Monitoring:** Same as above, strategically located to facilitate diagnostics and maintenance.
- 9. Low Pressure Switch:** Stops the compressor in case of low pressure, preventing damage due to refrigerant loss or system restrictions.



While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

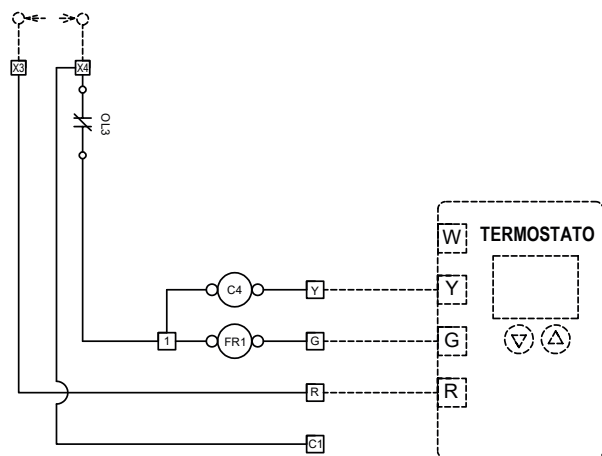
7.5 TON - 10 TON (220V / 3PH / 60Hz)

(POWER)



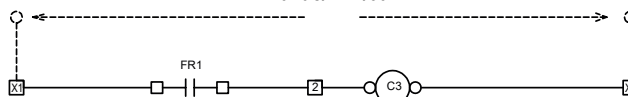
(CONTROL)

24Vac/1PH/60Hz

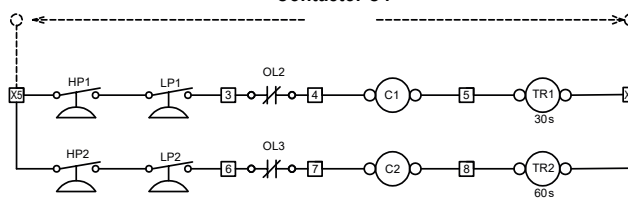


Utilice los puntos C1 & R para energizar termostatos que requieran alimentación externa a 24Vac.

220Vac/1PH/60Hz



220Vac/1PH/60Hz
Contactor C4



Elements:

COMP: Compressor
MB: Blower Motor
MV: Fan Motor
L: AC Power Supply Line
FR: Auxiliary Relay
G: Fan Signal
Y: Condenser Signal
W: Dehumidifier Signal (N/A)
R: 24Vac Common Line
C: 24Vac Auxiliary Line

HP: High Pressure Switch
LP: Low Pressure Switch
TR: Timer
C1: Contactor
OL: Thermal Overload Relay
GND: Ground
— Factory Wiring
- - - Field Wiring



WARNING

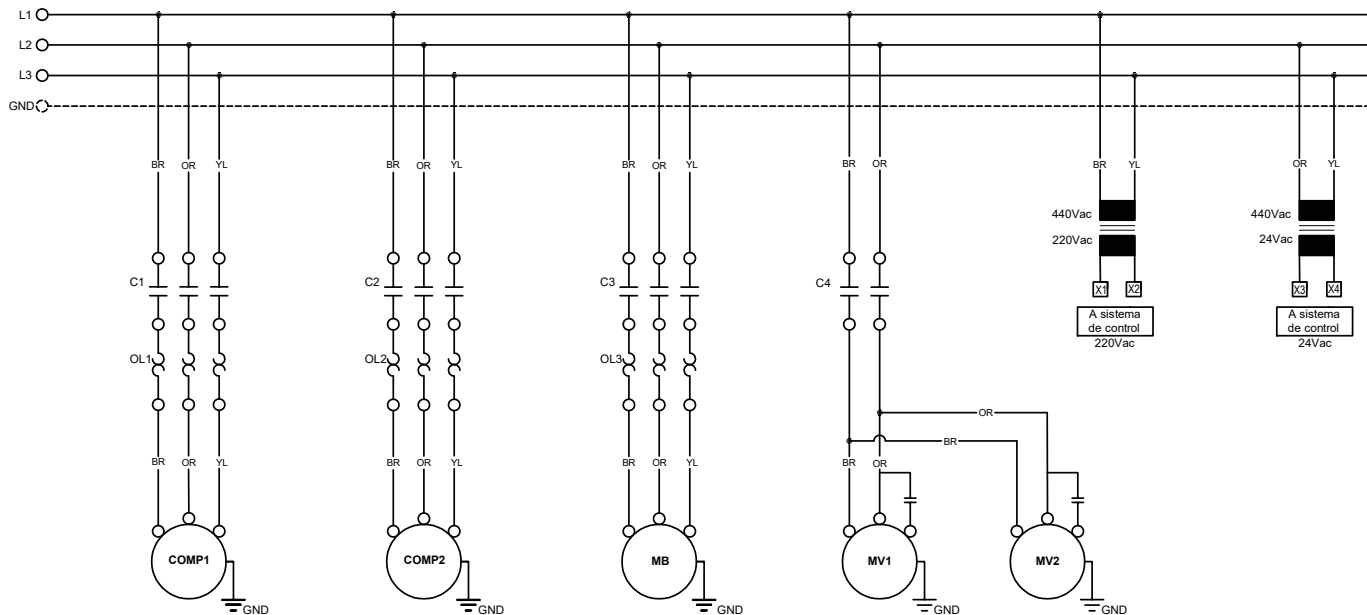


High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

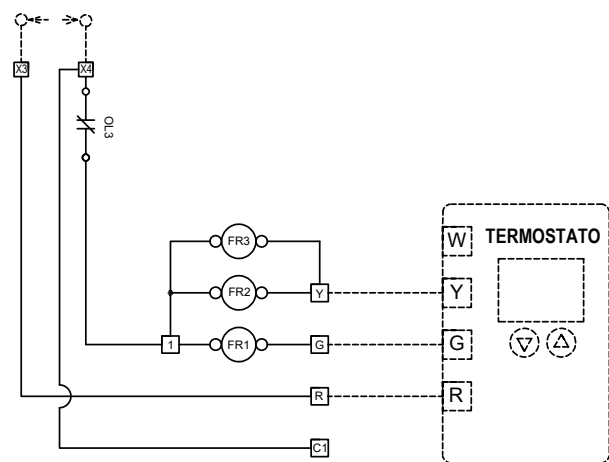
7.5 TON - 10 TON (440V / 3PH / 60Hz)

(POWER)



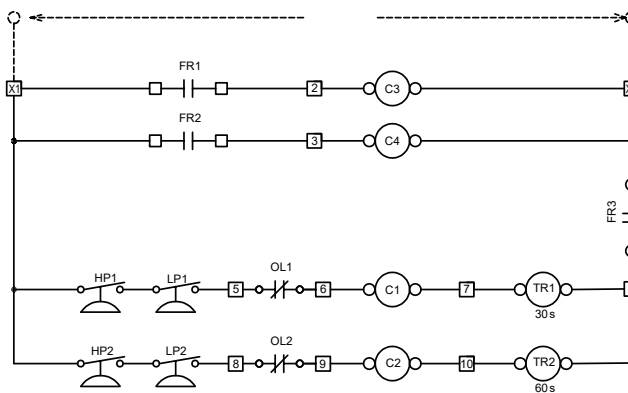
(CONTROL)

24Vac/1PH/60Hz



Utilice los puntos C1 & R para energizar termostatos que requieran alimentación externa a 24Vac.

220Vac/1PH/60Hz



Elements:

COMP: Compressor
MB: Blower Motor
MV: Fan Motor
L: AC Power Supply Line
FR: Auxiliary Relay
G: Fan Signal
Y: Condenser Signal
W: Dehumidifier Signal (N/A)
R: 24Vac Common Line
C: 24Vac Auxiliary Line

HP: High Pressure Switch
LP: Low Pressure Switch
TR: Timer
C1: Contactor
OL: Thermal Overload Relay
GND: Ground
— Factory Wiring
- - - Field Wiring



WARNING

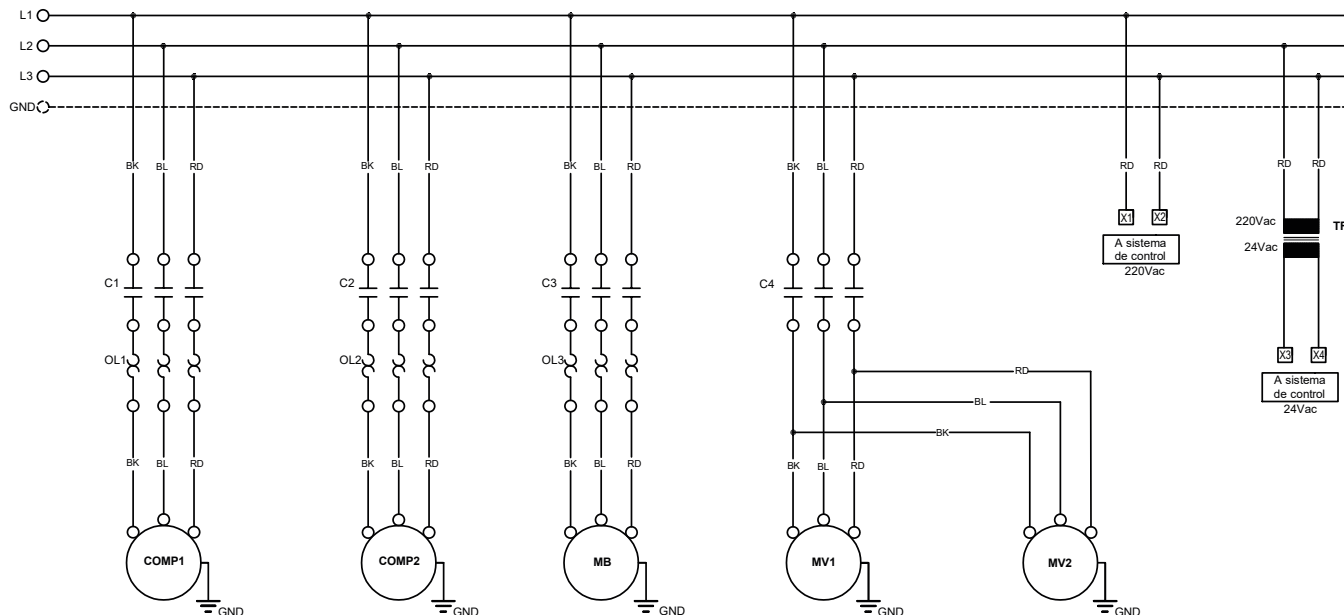


High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

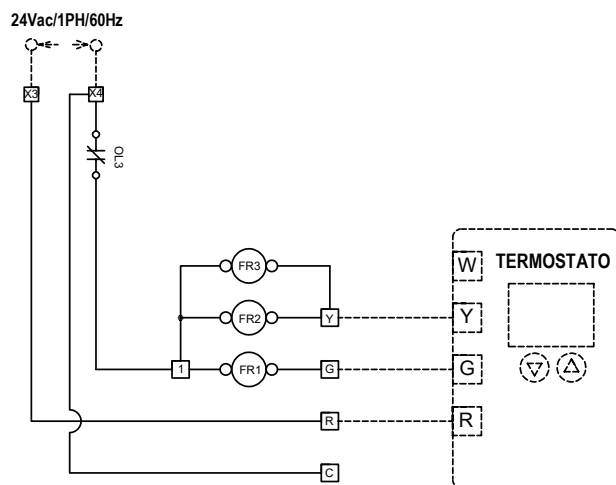
While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

12.5 TON - 30 TON (220V / 3PH / 60Hz)

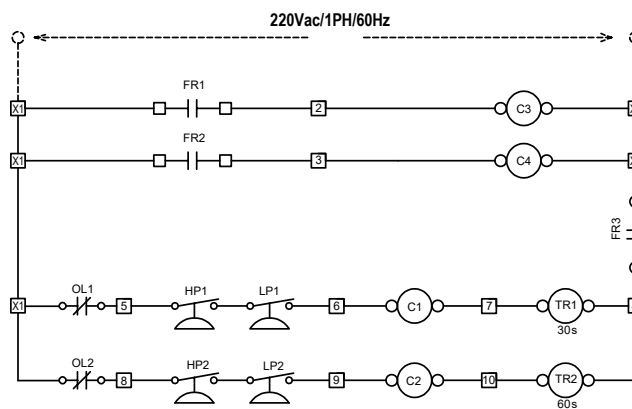
(POWER)



(CONTROL)



Utilice los puntos C & R para energizar termostatos que requieran alimentación externa a 24Vac.



Elements:

COMP: Compressor
MB: Blower Motor
MV: Fan Motor
L: AC Power Supply Line
FR: Auxiliary Relay
G: Fan Signal
Y: Condenser Signal
W: Dehumidifier Signal (N/A)
R: 24Vac Common Line
C: 24Vac Auxiliary Line

HP: High Pressure Switch
LP: Low Pressure Switch
TR: Timer
C1: Contactor
OL: Thermal Overload Relay
GND: Ground
— Factory Wiring
--- Field Wiring



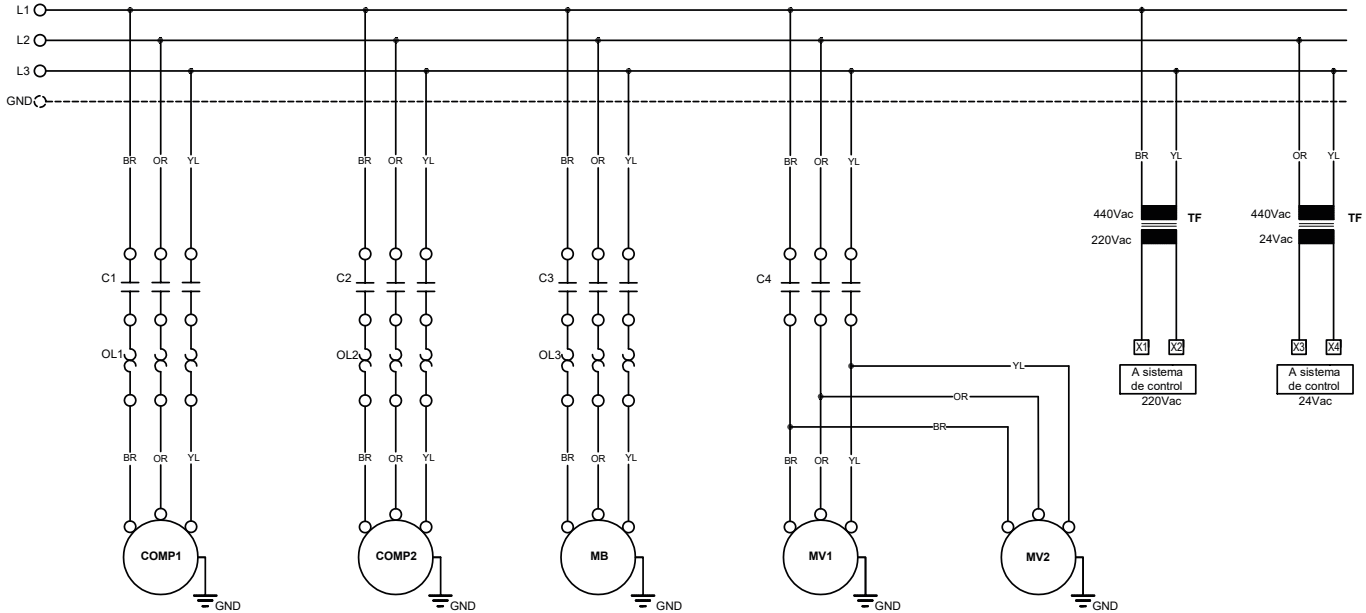
WARNING



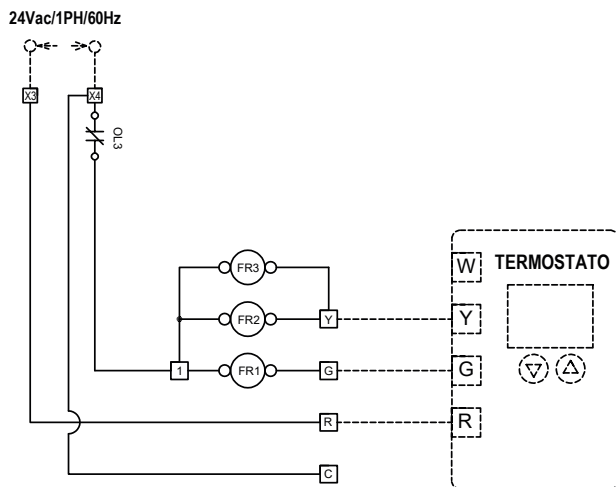
High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

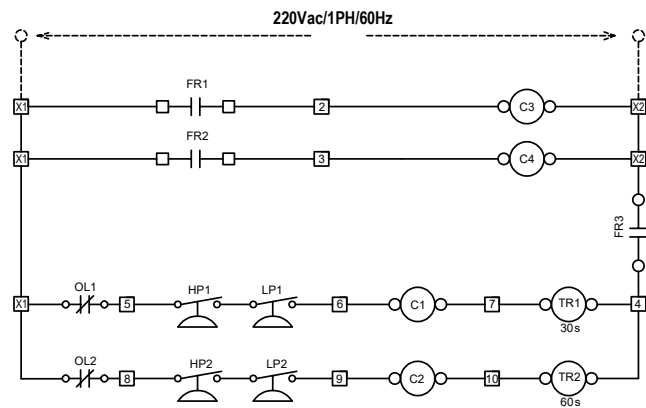
12.5 TON - 30 TON (440V / 3PH / 60Hz) (POWER)



(CONTROL)



Utilice los puntos C & R para energizar termostatos que requieran alimentación externa a 24Vac.



WARNING

High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

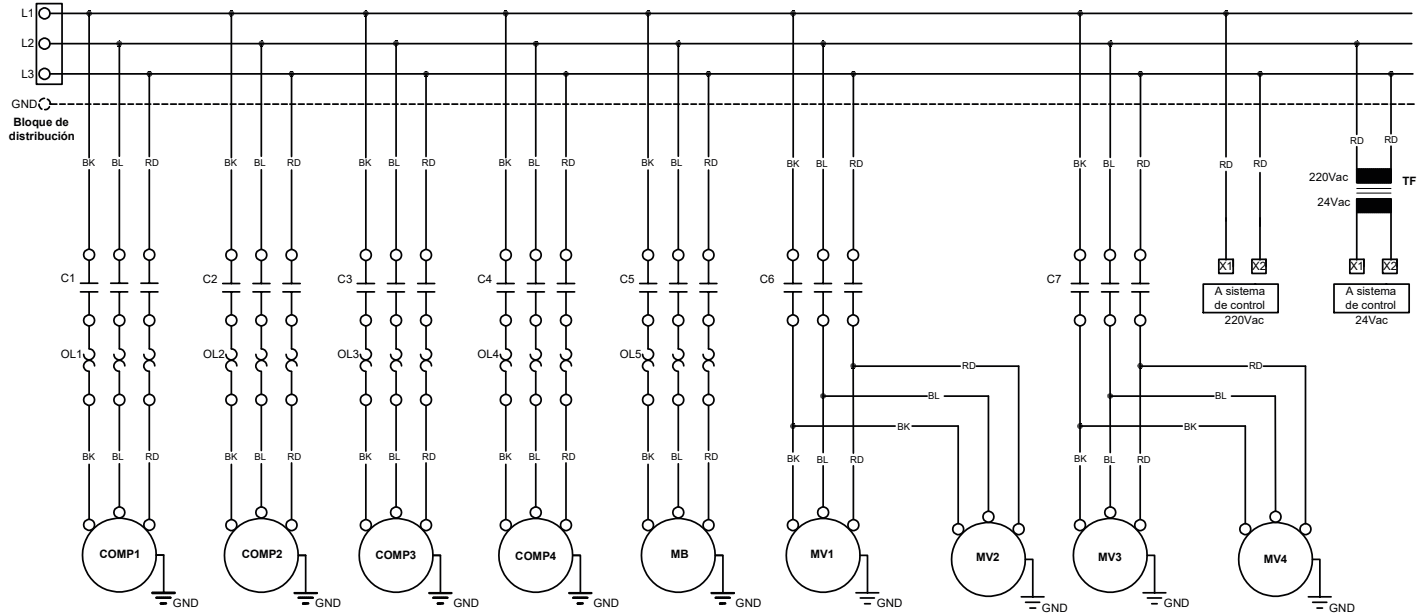
Elements:

COMP: Compressor
 MB: Blower Motor
 MV: Fan Motor
 L: AC Power Supply Line
 FR: Auxiliary Relay
 G: Fan Signal
 Y: Condenser Signal
 W: Dehumidifier Signal (N/A)
 R: 24Vac Common Line
 C: 24Vac Auxiliary Line

HP: High Pressure Switch
 LP: Low Pressure Switch
 TR: Timer
 C1: Contactor
 OL: Thermal Overload Relay
 GND: Ground
 — Factory Wiring
 - - - Field Wiring

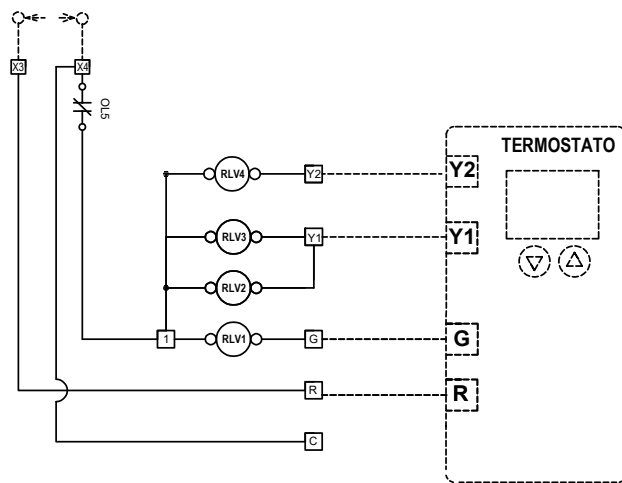
While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

40 TON - 60 TON (220V / 3PH / 60Hz) (POWER)



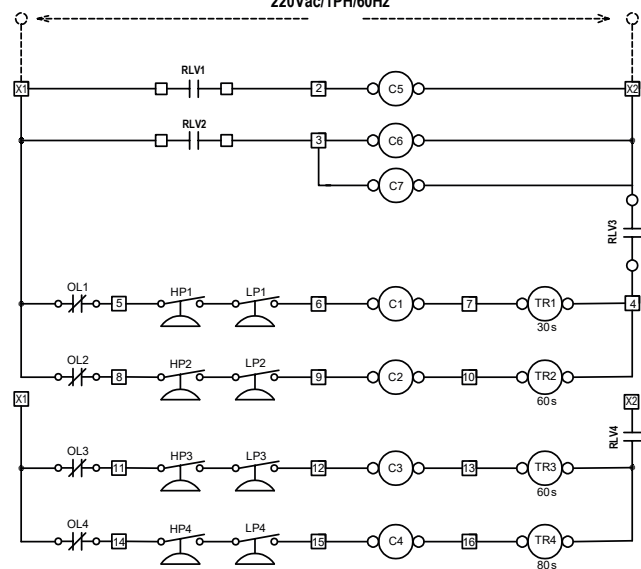
(CONTROL)

24Vac/1PH/60Hz



Utilice los puntos C & R para energizar termostatos que requieran alimentación externa a 24Vac.

220Vac/1PH/60Hz



Elements:

COMP: Compressor
MB: Blower Motor
MV: Fan Motor
L: AC Power Supply Line
FR: Auxiliary Relay
G: Fan Signal
Y: Condenser Signal
W: Dehumidifier Signal (N/A)
R: 24Vac Common Line
C: 24Vac Auxiliary Line

HP: High Pressure Switch
LP: Low Pressure Switch
TR: Timer
C1: Contactor
OL: Thermal Overload Relay
GND: Ground
— Factory Wiring
--- Field Wiring



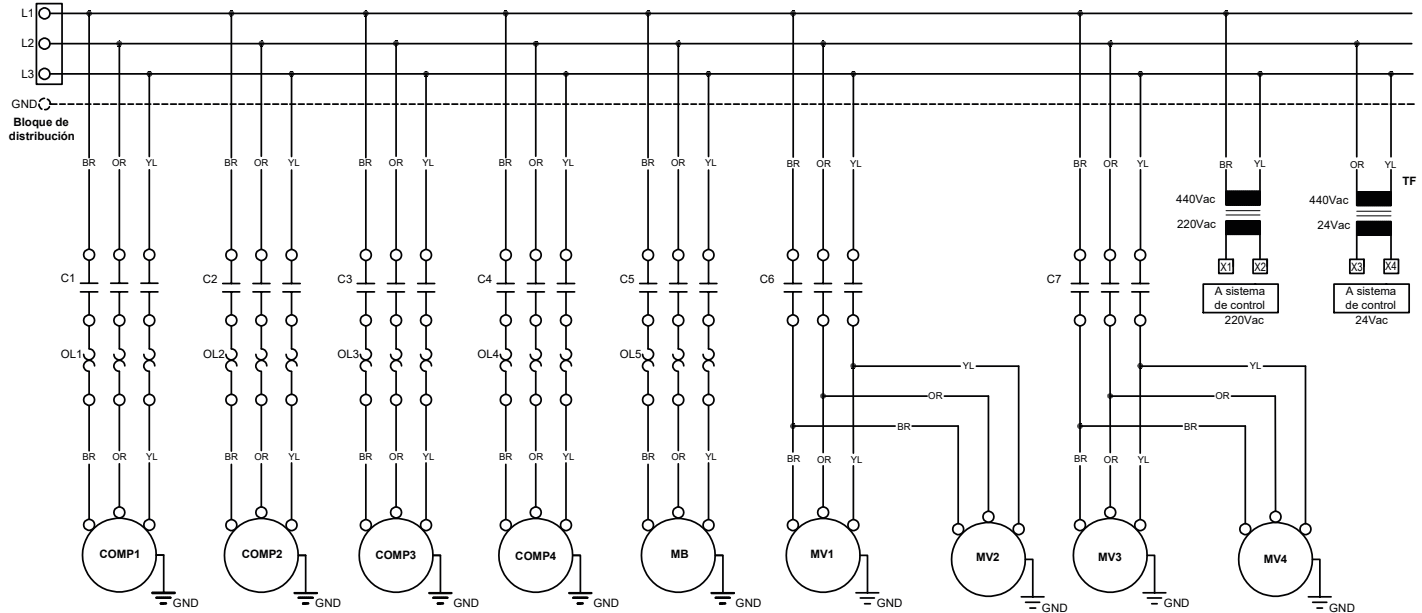
WARNING



High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

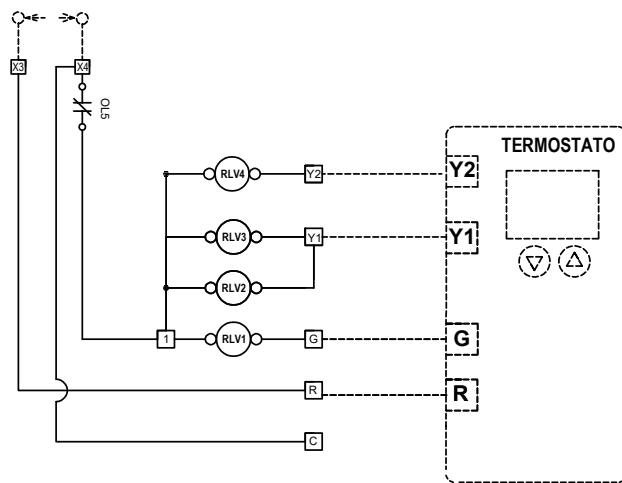
While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

40 TON - 60 TON (440V / 3PH / 60Hz) (POWER)



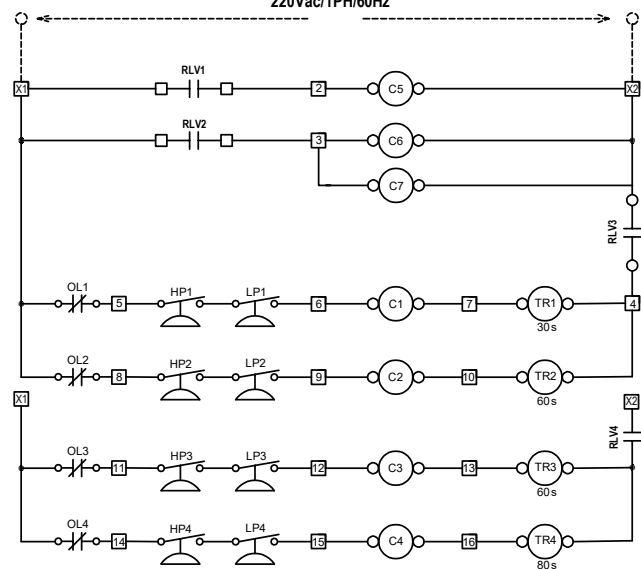
(CONTROL)

24Vac/1PH/60Hz



Utilice los puntos C & R para energizar termostatos que requieran alimentación externa a 24Vac.

220Vac/1PH/60Hz



Elements:

COMP: Compressor
MB: Blower Motor
MV: Fan Motor
L: AC Power Supply Line
FR: Auxiliary Relay
G: Fan Signal
Y: Condenser Signal
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HP: High Pressure Switch
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— Factory Wiring
- - - Field Wiring

⚠ WARNING ⚠

High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

The general conditions that must be considered before installing the equipment:

**WARNING**

Work on the equipment must be carried out exclusively by professionals. Do not connect the power supply until all work has been completed.

**CAUTION**

RISK OF CUT – Failure to follow this precaution may result in personal injury. Metal parts may have sharp edges or burrs. Be careful and use proper protective clothing, safety glasses, and gloves when handling parts and performing maintenance on the air conditioning units.

**NOTICE**

For installation only in areas not accessible to the general public, such as mechanical rooms or rooftops.

IMPORTANT CONSIDERATIONS

1. Electrical installation: All wiring shall be performed by qualified personnel in accordance with applicable local and national codes.
2. Grounding: Follow NEC requirements or applicable local regulations for grounding to ensure safety and protection against faults.
3. Power supply: Verify that the electrical supply complies with the manufacturer's specifications, including voltage stability and adequate current capacity.
4. Safe environment: Select a location away from gases, flammable vapors, or combustible materials that could pose risks during operation or maintenance.
5. Structural support: Ensure the supporting structure is capable of withstanding the total unit weight, including vibration and long-term structural stress.
6. Weight Distribution: Most of the weight is concentrated in the refrigerant condensing section; therefore, the base must be properly reinforced.
7. Drain location: Select a location that allows easy connection to the drainage system. Install a trap to prevent backflow or odors.
8. Unit leveling: Install the unit level to ensure proper performance, efficient drainage, and to prevent operational issues or vibration-related wear.
9. Seismic restraints (if applicable): In seismic zones, secure the unit with anchors or restraint systems compliant with local codes
10. Vibration isolation: Install vibration isolators between the unit and its base to minimize noise transmission and structural vibration.
11. Maintenance clearance: Maintain the minimum recommended clearances for service access, filter replacement, and maintenance operations.
12. External visual inspection: Inspect the exterior — top panel, access panels, and hardware — for shipping or handling damage.
13. Internal inspection: Perform a visual inspection of internal components for bent fins, loose wiring, or misaligned fans.
14. Equipment verification: Confirm that model number, options, and voltage match the unit nameplate to avoid compatibility or warranty issues.
15. Pest protection: Seal cable entries, piping penetrations, and duct openings to prevent the ingress of rodents or insects.
16. Pipe insulation: Insulate refrigerant lines and drain piping to prevent condensation, energy loss, and thermal degradation.
17. Outdoor Electrical Connections: Use weatherproof enclosures and sealants on exterior electrical connections to prevent corrosion or failures.
18. Air discharge separation: For direct-drive units, do not combine discharge outlets into a common duct before a minimum distance of 1.5 meters (2 meters recommended).
19. Unrestricted airflow: Ensure there are no obstructions in the supply and return air paths to maintain proper circulation and temperature control.
20. Duct connections: Use airtight flexible duct connectors to prevent transmission of noise, vibration, or thermal stress.
21. Airflow verification: Confirm proper fan and duct airflow before sealing connections to avoid rework.
22. Labeling and documentation: Label all wiring and piping. Keep wiring diagrams and manuals accessible near the unit.
23. Surge Protection: Install surge protection devices to prevent damage from lightning-induced voltage spikes or electrical fluctuations.

The following is a brief description of the steps for system startup and commissioning (to be carried out only by an authorized technician):



WARNING



Never perform work on the equipment without the assistance of qualified professionals. Before making any connection, make sure that the power supply lines are completely disconnected and without energy until all work is fully completed.

STEPS FOR SYSTEM STARTUP:

1. Verify grounding connection: Confirm that the grounding connection is reliable and that the conductor is properly connected to the building's grounding system. Never connect the grounding conductor to gas piping, water piping, telephone lines, or other non-dedicated systems, as this may compromise equipment safety.
2. Ensure adequate electrical capacity: Verify that sufficient electrical capacity is available for proper equipment operation. Confirm that the conductor size complies with the specified current consumption indicated in the technical specifications.
3. Provide power from the breaker panel: Connect the electrical supply to the unit from the main breaker panel. Ensure that the circuit breaker rating is adequate to protect the equipment and prevent overload or internal component damage.
4. Connect power supply lines: Connect the supply conductors to the corresponding terminals. For single-phase units, use terminals labeled L1 and L2. For three-phase units, ensure that phases L1, L2, and L3 are correctly connected within the electrical panel.
5. Tighten all electrical terminals: During transportation or over time, terminals may loosen. Retighten all terminal screws to prevent arcing or electrical faults.
6. Inspect for visible damage or debris: Examine the unit for physical damage, loose panels, or foreign objects inside the cabinet before energizing. Remove any obstruction that may interfere with moving parts or airflow.
7. Inspect drain lines: Ensure that the condensate drain line is free of obstructions and properly routed to prevent overflow or water damage to the unit or building.
8. Connect control wiring: From the unit, connect the control conductors (R, G, Y, and O*, if applicable) as indicated in the electrical panel to the corresponding thermostat terminals to ensure proper system control.
9. Verify all electrical connections: Confirm that all electrical connections are properly made and secured in accordance with the wiring diagrams supplied with the equipment to ensure safe and reliable operation.
10. Verify fan rotation (three-phase units): For three-phase equipment, confirm that the fan or blower motor rotates in the correct direction. If incorrect, interchange any two phases (e.g., L1 and L2) to correct rotation.
11. Inspect air filters and ductwork prior to start-up: Ensure filters are clean and properly installed. Inspect ductwork for blockages, leaks, or disconnections that could affect airflow and system efficiency.
12. Energize the unit: After completing all connections, switch on the field-installed disconnects or breakers to energize the unit. Verify correct connections before proceeding.
13. Verify refrigerant levels: Before operating the unit, confirm that refrigerant levels are within the manufacturer's recommended range. Low refrigerant levels may affect performance, efficiency, and compressor reliability. If levels are incorrect, contact a certified technician.
14. Measure voltage and current at start-up: After energizing, measure supply voltage and operating current to confirm they are within acceptable limits according to the unit nameplate. This helps identify issues such as undervoltage or overcurrent conditions.
15. Test system operation: Once all connections are verified and the unit is energized, test system operation. Set the thermostat to the desired temperature and confirm that the unit cools properly without unusual noise or vibration.
16. Operate unit under observation: Allow the system to operate for at least 15–20 minutes while monitoring pressures, temperatures, and overall performance to detect any early signs of malfunction.
17. Thermostat adjustment: System operation is controlled by the indoor thermostat. Ensure it is set to the desired temperature to maintain indoor comfort conditions.
18. Program thermostat (if applicable): If a programmable thermostat is used, ensure it is properly configured with operating schedules, cooling setpoints, and fan settings.

With proper maintenance and care, your air conditioning unit will operate efficiently and cost-effectively. Before performing any maintenance task, consider the following essential safety precautions:



WARNING



To avoid equipment damage and prevent personal injury or even death, make sure to completely disconnect the power supply before performing any maintenance task. This includes disconnecting power from both indoor and outdoor units. **NOTE:** There may be multiple electrical disconnect switches. Verify and deactivate all of them to ensure your safety.



WARNING



Although special attention has been given to minimizing sharp edges during equipment manufacturing, we recommend handling parts very carefully and avoiding placing hands inside the unit without proper precautions.

MAINTENANCE RECOMMENDATIONS

1. **Electrical Power Supply Inspection:** Periodically check the unit's power supply to ensure proper operation. Monitor the current of the main components according to the equipment's nameplate.
2. **Tighten Electrical Connections:** Inspect and tighten all terminals and electrical connections to prevent arcing, voltage drops, or overheating due to loose or corroded connections.
3. **Inspection and Testing of Capacitors and Contactors:** Check capacitors for bulging or leakage and test contactors to ensure proper operation. Faulty components may cause start-up failures.
4. **Inspection of Safety Controls and Sensors:** Test the operation of safety switches, pressure sensors, and other automatic shutdown systems to ensure proper functioning under emergency or overload conditions.
5. **Operating Pressure Inspection:** Periodically check the system's operating pressures (high and low). Make sure they do not exceed the established ranges for normal operation.
6. **Drain Line Inspection:** Ensure that the unit's drain line is free of blockages to prevent water overflow, which could cause damage or improper drainage.
7. **Fan Motor Lubrication (if applicable):** Lubricate fan motors and bearings (for models with serviceable components) according to manufacturer recommendations to prevent overheating or failures.
8. **Air filter cleaning:** Clean the air filter to prevent airflow restriction, which may reduce unit efficiency and shorten its service life.
9. **Evaporator coil inspection:** Verify the condition of the evaporator coil to ensure it is free of obstructions, allowing unrestricted airflow and proper heat transfer.
10. **Coil Cleaning:** If necessary, clean the coil with a mild detergent solution and rinse with water. This process may require coil removal. Be careful not to damage the fins.
11. **Inspection of Refrigerant Line Insulation Wear:** Check whether refrigerant line insulation is deteriorated, which may cause energy loss or reduced cooling performance.
12. **Blower inspection:** Regularly inspect the blower to prevent dirt accumulation or friction between the blades, which could negatively impact system performance.
13. **Avoid Debris Accumulation:** Do not allow debris to accumulate around or on top of the unit, as this may reduce cooling capacity.
14. **Check for Unusual Noises or Vibrations:** Listen for abnormal noises (knocking, humming, squealing) that may indicate loose components or imminent failures.
15. **Controller Calibration:** Periodically check and calibrate the controller to ensure accuracy in water return temperature and achieve optimal comfort.
16. **Exhaust Air Grille Cleaning:** Remove dust and debris from the exhaust air grilles or replace them if damaged.
17. **System Shutdown and Restart Test:** Verify that the system shuts down and restarts correctly after a power outage, sensor activation, or controller adjustment.
18. **Annual comprehensive maintenance:** After one year of operation, perform a complete maintenance inspection of the unit, including verification of the motor, bearings, and shaft condition.





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