BLOCK 701.29 LOT 1 QUALIFICATION CODE _____ ADDRESS (SITE) _____ PERMIT NO. 19-2521

CONSTRUCTION PERMIT APPLICATION

C19-002162

Applicant Completes: Sections I, II, III (optional), IV, VI, and VII

I. IDENTIFICATION

1. Proposed Work Site at: 270 CHAMBERS BRIDGE RD Unit EMS Bldg.
2. Name of Owner in Fee: BRICK TOWNSHIP
   Tel. (732) 262-1059 e-mail _____
   Address 401 CHAMBERS BRIDGE RD (street) BRICK (municipality) 08724 (zip code)
3. Ownership in Fee: Public X Private _____
4. Principal Contractor: BILL LEARY A/C & HTG Tel. (732) 494-9200
   Address 6 GREEN ST, METUCHEN NJ 08840 e-mail _____
   License No. OR, if new home, Builder Reg. No. 19HC00528800 Exp. Date 06/30/20
   Home Improvement Contractor Registration No. or Exemption Reason _____
   Federal Emp. ID No. 223224342 FAX: _____
5. Architect or Engineer _____ Contact _____
   Address _____ e-mail _____
   Tel. _____ FAX: _____
6. Responsible Person in Charge once Work has Begun BILL LEARY
   Tel. (732) 494-9200 FAX: (732) 632-9898

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	$ 0.-		
2. Electrical	0.-		
3. Plumbing	0.-		
4. Fire Protection	0.-		
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	$		
8. Subtotal	$		
9. State Permit Surcharge Fee			
10. Subtotal	$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	$ 0.-		

VI. BUILDING/SITE CHARACTERISTICS

(office use only)

1. Number of Stories _____
2. Height of Structure _____ ft.
3. Area — Largest Floor _____ sq. ft.
4. New Building Area _____ sq. ft.
5. Volume of New Structure _____ cu. ft.
6. Max. Live Load _____
7. Max. Occupancy Load _____
8. If Industrialized Building: State Approved ____ HUD ____
9. Total Land Area Disturbed _____ sq. ft.
10. Flood Hazard Zone _____
11. Base Flood Elevation _____ ft.
12. Wetlands yes ____ no ____

COMMERCIAL

IIa. PROPOSED WORK

- ☐ Minor Work — HVAC
- ☐ New Building
- ☐ Addition
- ☐ Demolition
- ☐ Repair
- ☐ Alteration
- ☐ Renovation
- ☐ Reconstruction
- ☐ Asbestos Abat.-Subch. 8
- ☐ Lead Hazard Abatement
- ☐ Radon Remediation
- ☐ Annual Permit

IIb. SUBCODES

(Check all that apply)

	Est. Cost	FOR OFFICE USE ONLY (Optional) Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Resubmission Dates Rejection	Re-viewer
☑ Building	500	CW	8/21/19		9.30.19				
☒ Electrical	2500				9.10.19	RK			
☒ Plumbing	8000				9-26-19	CW			
☒ Fire Protection	3000				9/6/19	RO			
☐ Elevator									
TOTAL COST	$14,000								

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL *(primary use)*
1. State Specific Use: _____
2. Use Group, Proposed: Select Group
3. Change in Use Group, Indicate Present: Select Group

4. No. of dwelling units:	*Total Units*	*Income-restricted*
Gained, Sale		
Gained, Rental		
Lost, Sale		
Lost, Rental		

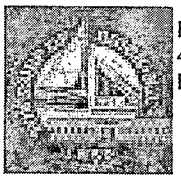
B. NON-RESIDENTIAL *(primary use)*
1. State Specific Use: _____
2. Use Group, Proposed: Select Group
3. Change in Use Group, Indicate Presen Select Group
C. MIXED USE -List secondary use(s): _____
D. Construct. Classification: Present _____ Proposed _____

III. PLAN REVIEW (optional)

DO YOU WANT:
1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☐ Elevators/Escalators/Lifts/Dumbwaiters/Moving Walks
2. ☐ High Pressure Boilers
3. ☐ Pressure Vessels
4. ☐ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers/Standpipes
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks
10. ☐ Swimming Pools, Spas and Hot Tubs
11. ☐ LPGas Tanks
12. ☐ Fire Alarm



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 12/6/2019
Control Number C-19-003162
Permit Number 19-2521
Permit Issue Date 9/30/2019
Certificate Number 19-2521

Certificate

Construction Code Division

(Certificate of Approval)

Identification

Work Site Location: 270 CHAMBERS BRIDGE RD. EMS BLDG Brick Township, NJ Block: 701.29 Lot: 1 Qual:

Owner in Fee: TOWNSHIP OF BRICK

Owner Address: 401 CHAMBERSBRIDGE RD BRICK NJ 08723

Telephone: (732) 262-1059

Contractor BILL LEARY A/C & HEATING- WHL ENTERPRISES INC

Address 6 GREEN ST METUCHEN NJ

Telephone: (732) 494-9200 Fax: (732) 906-9848

License Number or Builders Registration Number: Federal Emp. Number: 22-3224342

Home Warranty Number:

Type of Warranty Plan: ☐ State ☐ Private

Use Group: B Construction Classification:

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: HVAC - - EMS ...DIRECT REPLACEMENT OF (1) R.T.U.

Certificate Comments:

☐ **Certificate of Occupancy**
This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☑ **Certificate of Approval**
This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**
This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**
The following conditions must be met no later than
or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:
Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**
This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**
This serves notice that based on written certification, asbestos abatement was performed to the following extent.

☐ Total removal of asbestos hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**
This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**
The following conditions must be met no later than:
or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:
Conditions to be met:

Construction Official

Fee: $0.00
Check Number:
Collected By:

Date Printed: 12/6/2019

U.C.C. F260 (rev. 08/05)

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

A. ( ) I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

B. ( ) I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(f)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

C. ( ) I further certify that I will perform or supervise the following work:
C.1. ( ) Building C.2. ( ) Fire Protection

I further certify that I will perform the following work:
C.3. ( ) Electrical C.4. ( ) Plumbing

D. ( ) I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals, including such certification as the construction official may require, have been given or will be given prior to pemit issuance.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature_____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals, including such certification as the construction official may require, have been given or will be given prior to permit issuance.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

(X) Check if contractor.

Agent Name BILL LEARY A/C & HTG

Address 6 GREEN ST, METUCHEN NJ 08840

Telephone (732) 494-9200

Signature _____

III. ( ) LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:23-2.15(b)4.

IV. ( ) HOME ELEVATION: Include Home Elevation Contractor Certification as per N.J.S.A. 52:27D-123.16.

ELECTRICAL SUBCODE
TECHNICAL SECTION

Date Received 9/30/19
Control #
Date Issued
Permit # 19-2521

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 701.29 Lot 1 Qualification Code

Work Site Location 270 Chambers Bride RD EMS

Owner in Fee: Brick Township

Tel. (732) 262-1059 e-mail

Address 401 Chambers Bridge Road (street) Brick (municipality) 08724 (zip code)

Contractor: Benchmark Electric Tel. (908) 399-4393

Address 229 Cherryville rd e-mail
Flemington NJ 08822

Contractor License No. 18628 Exp. Date 03/21

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. FAX: ( )

B. ELECTRICAL CHARACTERISTICS

Use Group Present Proposed

[ ] Pole/Pad # [ ] Temporary [ ] Other

Building Occupied as Utility Co.

Est. Cost of Elec. Work $ 2500

JOB SUMMARY (Office Use Only)

PLAN REVIEW
[ ] No Plans Required
[ ] Partial -Underslab Utilities Approved
Date: Approved by:
[✓] Electric Plans Approved SPECS
Date: 9/10/19 Approved by: PJC
Joint Plan Review Required:
[ ] Bldg. [ ] Plumb. [ ] Fire. [ ] Elev.

SUBCODE APPROVAL for PERMIT
Date: 9/10/19
Approved by:

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA
Date: 12-3-19
Approved by:

INSPECTIONS Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
Rough				
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service				
Final			12/2/19	
Barrier-Free				
Temp. Cut-in-Card Date Issued				
Final Cut-in-Card Date Issued				
Annual Pool Inspection				
Date of Grounding and Bonding Certification				

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor sign and seal here:

Print name here: Mitchell Hladky

[✓] Licensed Elec. Contractor [ ] Certif'd Landscape Irrigation Cont'r [ ] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK: RTU replacement

COMMERCIAL

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
		Alarm Devices/A.C. Panel	
		TOTAL NUMBERS	$
		Pool Permit/with UW Lights	
		Storable Pool/Spa/Hot Tub	
		KW Elec. Range/Receptacle	
		KW Oven/Surface Unit	
		KW Elec. Water Heater	
		KW Elec. Dryer/Receptacle	
		KW Dishwasher	
		HP Garbage Disposal	
1	7 ton	KW Central A/C Unit	
		HP/KW Space Heater/Air Handler	
		KW Baseboard Heat	
		HP Motors 1/+ HP	
		KW Transformer/Generator	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	

Administrative Surcharge	$
Minimum Fee	$
State Permit Surcharge Fee	$
TOTAL FEE	$

U.C.C. F120 (rev. 11/09)

To reorder call: ALLEGRA
Marketing • Print • Mail
(609) 390-1400

BUILDING SUBCODE
TECHNICAL SECTION

TOWNSHIP OF WOODBRIDGE
CODE ENFORCEMENT AGENCY
BUILDING DEPARTMENT
1 MAIN ST. • WOODBRIDGE, NJ 07095
732-634-4500

Date Received 9/30/19
Control #
Date Issued
Permit # 19-2521

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 701.29 Lot 1 Qualification Code
Work Site Location 270 Chambers Bridge Rd
EMS
Owner in Fee: Brick Township
Tel. 732.262.1059 e-mail
Address 401 Chambers Bridge Rd Brick 08724
street municipality zip code
Contractor: Bill Leary A/C+HTG Tel. 732-494-9200
Address 6 Green St e-mail
Metuchen NJ 08840
Contractor License No. or Builder Registration No. 19HC00553600 Exp. Date 04/30/20
Home Improvement Contractor Registration No. or Exemption Reason
Federal Emp. ID No. 223524342 FAX: 7326329898

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Sign here:
Print name here: Bill Leary

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK
disconnect, replace, reconnect
RTU

COMMERCIAL

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial
[ ] No Plans Required	9.30.19	
[ ] All		
[ ] Footings/Foundations		
[ ] Structural/Framework		
[ ] Exterior		
[ ] Interior		

Joint Plan Review Required:
[ ] Elec. [ ] Plumb. [ ] Fire [ ] Elevator

SUBCODE APPROVAL for PERMIT
Date: 9.30.19
Approved by:

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [✓] CA
Date: 12/02/19
Approved by: KER

INSPECTIONS Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
Footing				
Footing Bonding				
Foundation				
Slab				
Frame				
Truss Sys./Bracing				
Barrier-Free				
Insulation				
Finishes -Base Layer				
Finishes -Final				
Energy				
Mechanical				
TCO				
Other				
Final	11/8/19		12/02/19	KER
Barrier-Free				

TYPE OF WORK:
- [ ] New Building
- [ ] Addition
- [ ] Rehabilitation
- [ ] Roofing
- [ ] Siding
- [ ] Fence _____ Height (exceeds 6')
- [ ] Sign _____ Sq. Ft.
- [ ] Pool
- [ ] Retaining Wall _____ Sq. Ft.
- [ ] Asbestos Abatement Subchapter 8
- [ ] Lead Haz. Abatement NJAC 5:17
- [ ] Radon Remediation
- [X] Other RTU
- [ ] Demolition

FEE (Office Use Only)
$

Administrative Surcharge $
Minimum Fee $
State Permit Surcharge Fee $
TOTAL FEE $

B. BUILDING CHARACTERISTICS

Use Group Present _____ Proposed _____
No. of Stories _____
Height of Structure _____ ft.
Area — Largest Floor _____ sq. ft.
New Bldg. Area/All Floors _____ sq. ft.
Volume of New Structure _____ cu. ft.
Max. Live Load _____
Max. Occupancy Load _____

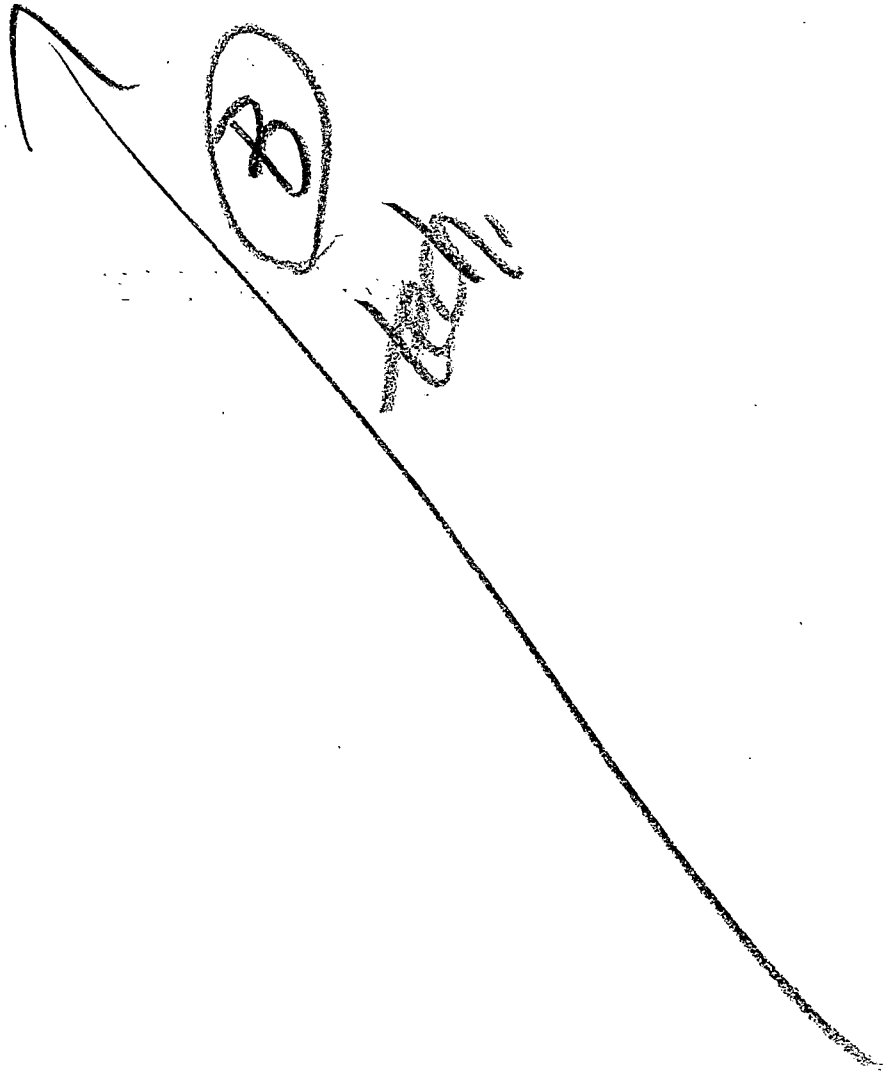
Constr. Class Present _____ Proposed _____
If Industrialized Building:
State Approved _____ HUD _____

Est. Cost of Bldg. Work:
1. New Bldg. $_____
2. Rehabilitation $_____
3. Total (1+ 2) $ 500

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

U.C.C. F110 (rev. 11/09) White = Inspector Copy 2 Canary = Office Copy 3 Pink = Office Copy 4 Gold = Applicant Copy

11/8/19 hy - Final - no Access nobody around Drove around Building.



PLUMBING SUBCODE
TECHNICAL SECTION

RTU #4

Date Received 9/30/19
Control #

Date Issued
Permit # 19-2521

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 701.09 Lot 1 Qualification Code

Work Site Location 270 CHAMBERS BRIDGE RD EMS

Owner in Fee: BRICK TOWNSHIP

Tel. 7322621059 e-mail

Address 401 CHAMBERSBRIDGE RD (street) BRICK (municipality) 08724 (zip code)

Contractor: BILL LEARY A/C & HTG Tel. 7324949200

Address 6 GREEN ST, METUCHEN NJ 08840 e-mail

Contractor License No. 19HC00528800 Exp. Date 06/30/20

Home Improvement Contractor Registration No. or Exemption Reason

Federal Emp. ID No. 223224342 FAX: 7326329898

B. PLUMBING CHARACTERISTICS

Use Group Present Proposed

Building Sewer Size Public Sewer Private Septic

Water Service Size Public Water Private Well

Est. Cost of Plumbing Work $ 8000

JOB SUMMARY (Office Use Only)

PLAN REVIEW
[X] No Plans Required
[ ] Partial -Underslab Utilities Approved
Date: 9-30-19 Approved by:
[ ] Plumbing Plans Approved
Date: Approved by:
Joint Plan Review Required:
[ ] Bldg. [ ] Elec. [ ] Fire. [ ] Elev.

SUBCODE APPROVAL for PERMIT
Date: 9-30-19
Approved by:

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [X] CA
Date: 12-3-19
Approved by:

INSPECTIONS Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
Slab				
Rough				
Water				
Sewer				
Fixtures				
Gas Equipment				
Gas Piping				
LPGas Tank				
Fuel Oil Piping				
Solar				
TCO				
Final	11-8-19		12-2-19	

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor sign and seal here:

Print name here: BILL LEARY

[ ] Licensed Contractor [X] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK
DISCONNECT, REPLACE, RECONNECT RTU

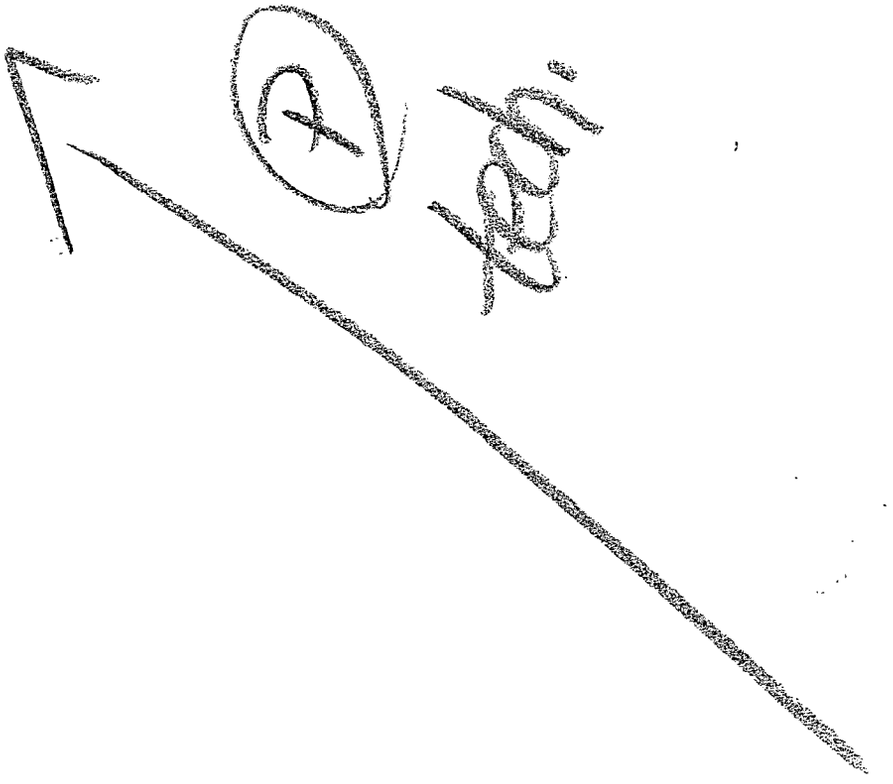
COMMERCIAL

QTY.	FIXTURE/EQUIPMENT	FEE (Office Use Only)
	Water Closet	$
	Urinal/Bidet	
	Bath Tub	
	Lavatory	
	Shower	
	Floor Drain	
	Sink	
	Dishwasher	
	Drinking Fountain	
	Washing Machine	
	Hose Bibb	
	Water Heater	
	Fuel Oil Piping	
	Gas Piping	
	LPGas Tank	
	Steam Boiler	
	Hot Water Boiler	
	Sewer Pump	
	Interceptor/Separator	
	Backflow Preventer	
	Greasetrap	
	Sewer Connection	
	Water Service Connection	
	Stacks	
1	Other RTU	

Administrative Surcharge	$
Minimum Fee	$
State Permit Surcharge Fee	$
TOTAL FEE	$

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

11-8-19 WM
8:30 + 12:00 contractor canceled
No one told me



NEW JERSEY UNIFORM CONSTRUCTION CODE

FIRE PROTECTION SUBCODE
TECHNICAL SECTION

(NW)

TOWNSHIP OF WOODBRIDGE
CODE ENFORCEMENT AGENCY
BUILDING DEPARTMENT
1 MAIN ST. • WOODBRIDGE, NJ 07095
732-634-4500

Date Received 9/30/19
Control #
Date Issued 10-25-[illegible]
Permit #

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 701.29 Lot 1 Qualification Code

Work Site Location 270 Chambers Bridge Rd Unit 4 EMS

Owner in Fee: Brick Township

Tel. 732 262.1059 e-mail

Address 401 Chambers Bridge Rd 08724
street municipality zip code

Contractor: Bill Leary A/C+HTG Tel. 732 404 9200

Address 6 Green St, Metuchen NJ 08840 e-mail

Fire Protection Equipment, NJ Div of Fire Safety Permit No.

Fire Protection Equipment, NJ Div of Fire Safety Installer No.

Fire Alarm Contractor No. Exp. Date

Home Improvement Contractor Registration No. or Exemption Reason

Federal Emp. ID No. FAX:

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Applicant/Contractor sign here: [signature]

Print name here: Bill Leary

[ ] Certified Contractor [ ] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK:
Water Supply Source
Method of Alarm/Suppression System Supervision

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present ______ Proposed ______

Constr. Class: Present ______ Proposed ______

Heating System: [ ] New OR [ ] Modification to Existing OR [ ] Conversion OR [ ] Replacement

Fuel Type: [ ] Gas [ ] Oil [ ] Electric [ ] Solar [ ] Other

Location:

Total Cost of Fire Protection Work $ 3000

Fuel Storage Tank:
Fuel Type: [ ] Flammable OR [ ] Combustible
Capacity

Fire Alarm System: [ ] New OR [ ] Existing

Location of Panel:

Fire Suppression/Standpipe System:
[ ] New OR [ ] Existing

Location of Main Control Valve:

No Dear to Post 9/10

	NUMBER	FEE (Office Use Only)
Flammable/Combustible Tanks		$
Alarm Systems		
[ ] System		Reconnect to Fire
[ ] 110v Interconnected		alarm & ceiling
[ ] CO Detectors/110v		
Alarm Devices (i.e., smoke, heat, pulls, water/flow)		
Supervisory Devices (i.e., tampers, low/high air)		
Signaling Devices (i.e., horn/strobes, bells)		Carbon head
Other Devices		det. ceiling
TOTAL		
Suppression Systems		
Fire Pump ____ GPM Type ____		
Dry Pipe/Alarm Valves		
Pre-action Valves		
Sprinkler Heads (Dry and Wet)		
Standpipes		
Pre-engineered Systems		
Wet Chemical		
Dry Chemical		
CO_2 Suppression		
Foam Suppression		
FM200 Suppression		
Other		
Other Systems		
Kitchen Hood Exhaust System		
Smoke Control System		
Fuel-Fired Appliances [ ] Gas [ ] Oil [ ] Solid		
Fireplace [illegible] Chimney		
Other RIU		

COMMERCIAL

Administrative Surcharge $	
Minimum Fee $	
State Permit Surcharge Fee $	
TOTAL FEE $	

JOB SUMMARY (Office Use Only)

PLAN REVIEW
[ ] No Plans Required
[ ] Partial -Underslab Utilities Approved
Date: ______ Approved by: ______
[X] Fire Protection Plans Approved
Date: 9/16/19 Approved by: [initials]
Joint Plan Review Required:
[ ] Bldg. [ ] Elec. [ ] Plumb. [ ] Elev.
SUBCODE APPROVAL for PERMIT
Date: 9/16/19
Approved by: [initials]
SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [X] CA
Date: 12-3-19
Approved by: [initials]

INSPECTIONS Type:	Failure	Failure	Approval	Initial
Alarm System				
Suppression Sys.				
Standpipe				
Fire Pump				
Pre-Eng. System				
Mechanical				
Smoke Control				
TCO				
Flam/Combust Tanks				
Fireplace Venting				
Final	11-8-19		12-2-19	PM
Other				

Dates (Month/Day)

White = Inspector Copy 2 Canary = Office Copy 3 Pink = Office Copy 4 Gold = Applicant Copy

CONSTRUCTION PERMIT

Date Issued 9/30/2019
Control # C-19-003162
Permit # 19-2521

IDENTIFICATION Block: 701.29 Lot: 1 Qualifier
Work Site Location: 270 CHAMBERS BRIDGE RD. EMS BLDG Brick Township, NJ
Owner in Fee TOWNSHIP OF BRICK
401 CHAMBERSBRIDGE RD BRICK NJ 08723
Telephone: (732) 262-1059

Contractor BILL LEARY A/C & HEATING- WHL ENTERPRISES INC
Address 6 GREEN ST METUCHEN NJ
Telephone: (732) 494-9200
Lic. No. or Bldrs. Reg. No. 13VH00113800 19HC00528800
Federal Employee. No. 22-3224342

Is hereby granted permission to perform the following work:

- [x] BUILDING
- [x] PLUMBING
- [ ] LEAD HAZARD ABATEMENT
- [x] ELECTRICAL
- [x] FIRE PROTECTION
- [ ] DEMOLITION
- [ ] ELEVATOR DEVICES
- [ ] ASBESTOS ABATEMENT (Subchapter 8 only)
- [ ] OTHER

DESCRIPTION OF WORK:
HVAC - EMS ...DIRECT REPLACEMENT OF (1) R.T.U.

PAYMENTS (Office Use Only)

Building	$0
Electrical	$0
Plumbing	$0
Fire Protection	$0
Elevator Devices	$0
Other	$0.00
DCA Training Fee	$0
CO Fee	
Other	$0
Total	$0
Check No.	
Cash	$0
Credit	$0
Collected By	

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.
Estimated Cost of Work $14,000

D Klurman Jr. 4/30/19
Construction Official Date

U.C.C. F170
equiv (rev 1/04)
1 WHITE - INSPECTOR 2 CANARY - OFFICE **3 PINK - TAX ASSESSOR** 4 GOLD - APPLICANT

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

- [ ] Required inspections for all subcodes for one- and two-family dwellings are as follows:
  1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
  2. Foundations and all walls up to grade level prior to back filling.
  3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
  4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

  Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

- [ ] Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

- [x] A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

- [ ] A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.

New Unit

48TC
Gas Heat/Electric Cooling Packaged Rooftop 3 to 15 Nominal Tons

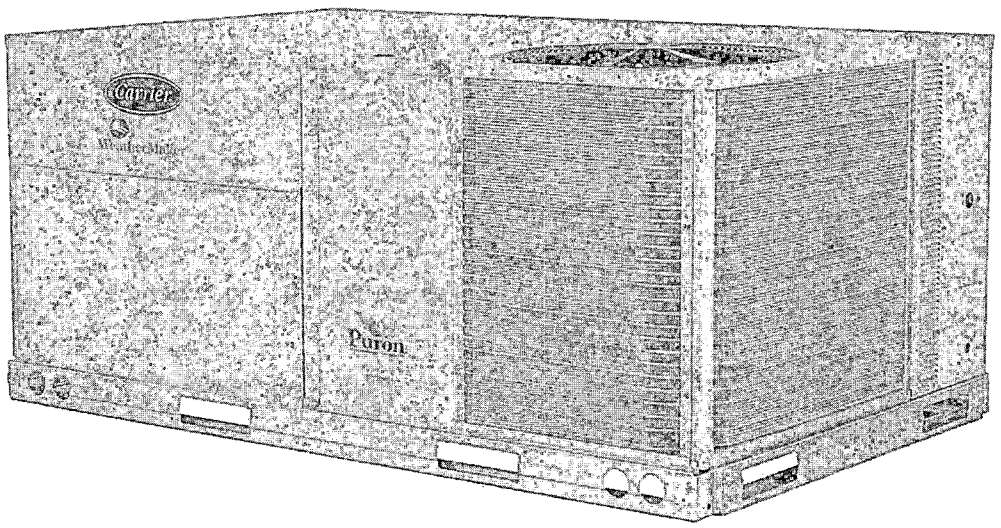
Carrier

United Technologies

turn to the experts

Product Data

WeatherMaker®



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ASHRAE 90.1 COMPLIANT

TABLE OF CONTENTS

Carrier®

Turn to the Experts.

The Carrier rooftop unit (RTU) was designed by customers for customers. With "no-strip screw" collars, handled access panels, and more we've made your unit easy to install, easy to maintain and easy to use.

Easy to install:

All WeatherMaker® units are field-convertible to horizontal air flow which makes it easy to adjust to unexpected job site complications. Lighter units make easy replacement. Most Carrier 48TC rooftops fit on existing Carrier curbs dating back to 1989. Also, our large control box gives you room to work and room to mount Carrier accessory controls.

Easy to maintain:

Easy access handles by Carrier provide quick and easy access to all normally serviced components. Our "no-strip" screw system has superior holding power and guides screws into position while preventing the screw from stripping the unit's metal. Take accurate pressure readings by reading condenser pressure with panels on. Simply remove the black, composite plug, route your gauge line(s) through the hole, and connect them to the refrigeration service valve(s).

Easy to use:

The newly designed, central terminal board by Carrier puts all your connections and troubleshooting points in one convenient place, standard. Most low voltage connections are made to the same board and make it easy to find what you're looking for and easy to access it. Carrier rooftops have high and low pressure switches, a filter drier, and 2-in (51mm) filters standard.

FEATURES AND BENEFITS

- Single cooling stage models are available from 3 - 10 ton.
- Two cooling stage models are available from 7.5 - 15 ton.
- SEER up to 13.0 (up to 13.4 with ECM motor)
- EER's up to 11.1 (up to 11.4 with ECM motor)
- IEER's up to 11.8 with single speed indoor fan motor and up to 12.8 with 2-speed/VFD indoor fan motor.
- Up to 28% lighter than similar industry units. Lighter rooftops make easier replacement jobs.
- Utility connections are the same because 3 - 12.5 ton units fit on existing Carrier rooftop curbs. This saves time and money on replacement jobs.
- Standardized components and layout. Standardized components and controls make service and stocking parts easier.
- Scroll compressors on all units. This makes service, stocking parts, replacement, and troubleshooting easier.
- Field convertible airflow (3 - 15 ton). Being able to convert a unit from vertical airflow to horizontal makes it easy to overcome job site complications. 15 ton models require a simple supply duct cover to field convert from factory vertical to horizontal.
- Easy-adjust, belt-drive motor available.
- Provisions for bottom or side condensate drain.
- Capable of thru-the-base or thru-the-curb gas line routing.
- Single-point gas / electrical connection.
- Sloped, composite drain pan sheds water; and won't rust.
- Standardized controls & control box layout. Standardized components & controls make stocking parts & service easier.
- Tool-less filter access door.
- Clean, large, easy to use control box.
- Color-coded wiring.
- Large, laminated wiring and power wiring drawings which are affixed to unit make troubleshooting easy.
- Single, central terminal board for test and wiring connections.
- Fast-access, handled, panels for easy access on normally accessed service panels.
- "No-strip" screw system guides screws into the panel & captures them tightly without stripping the screw, the panel, or the unit.
- Mechanical cooling (115°F to 40°F or 46°C to 4°C) standard on all models. Winter Start Kit allows cooling operation down to 25°F (-4°C) and MotorMaster to -20°F (-29°C).
- High efficiency, gas heat with induced-draft flue exhaust design.
- Induced draft motor ensures no flue gas can escape into the indoor air stream.
- Carrier designed naturally draining heat exchanger, unlike positive pressure heat exchangers, do not need to be periodically, manually drained. This saves labor and maintenance expense.
- 2-in (51mm) disposable filters on all units.
- Refrigerant filter-drier on each circuit.
- Each circuit is protected with a high and low pressure switch.
- Many factory-installed options ranging from air management economizers, 2 position dampers, plus convenience outlets, disconnect switches and smoke detectors.
- Standard (parts only) Warranty: 10 yr. aluminized heat exchanger, 5 yr. compressor, 3 yr. Novation condenser coil, 1 yr. parts.
- Factory-installed Humidi-MiZer® adaptive dehumidification system on all sizes with round tube / plate fin condenser coils, includes MotorMaster I controller.

  NOTE: The last order date for 48TC 04-06 units with Humidi-MiZer is October, 12, 2015. Use KC, HC or LC models after the last order date.
- Optional Staged Air Volume (SAV) system utilizes a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed between cooling stages. Available on 2-stage cooling models 08-16 with electromechanical controls or RTU Open.

MODEL NUMBER NOMENCLATURE

Position:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Example:	4	8	T	C	D	A	0	4	A	1	A	5	-	0	A	0	A	0

Unit Heat Type
48 - Gas Heat Packaged Rooftop

Model Series - WeatherMaker™
TC - Standard Efficiency

Heat Options
D = Low Heat
E = Medium Heat
F = High Heat
L = Low NO_x, Low Heat
M = Low NO_x, Medium Heat
N = Low NO_x, High Heat
S = Low Heat w/ Stainless Steel Exchanger
R = Medium Heat w/ Stainless Steel Exchanger
T = High Heat w/ Stainless Steel Exchanger

Refrig. Systems Options
A = Standard One Stage Cooling Models
B = Standard One Stage Cooling Models with Humidi-MiZer® (04-07 models Only)[1]
D = Two Stage Cooling Models 08-16
E = Two Stage Cooling Models 08-16 with Al/Cu condenser Coils and with Humidi-MiZer

Cooling Tons

04 = 3 tons	07 = 6 tons	12 = 10 tons
05 = 4 tons	08 = 7.5 tons	14 = 12.5 tons
06 = 5 tons	09 = 8.5 tons	16 = 15 tons

Sensor Options
A = None
B = RA Smoke Detector
C = SA Smoke Detector
D = RA + SA Smoke Detector
E = CO_2
F = RA Smoke Detector and CO_2
G = SA Smoke Detector and CO_2
H = RA + SA Smoke Detector and CO_2

Indoor Fan Options
0 = Direct Drive ECM (Sizes 04-06 / -5 voltage only)
1 = Belt Drive, Standard Static Option
2 = Belt Drive, Medium Static Option
3 = Belt Drive, High Static Option
C = High Static Option with High Efficiency Motor (Size 16 Only)

Coil Options – RTPF (Outdoor - Indoor - Hail Guard)
A = Al/Cu - Al/Cu
B = Precoat Al/Cu - Al/Cu
C = E-coat Al/Cu - Al/Cu
D = E-coat Al/Cu - E-coat Al/Cu
E = Cu/Cu - Al/Cu
F = Cu/Cu - Cu/Cu
M = Al/Cu -Al/Cu — Louvered Hail Guard
N = Precoat Al/Cu - Al/Cu — Louvered Hail Guard
P = E-coat Al/Cu - Al/Cu — Louvered Hail Guard
Q = E-coat Al/Cu - E-coat Al/Cu — Louvered Hail Guard
R = Cu/Cu - Al/Cu — Louvered Hail Guard
S = Cu/Cu - Cu/Cu — Louvered Hail Guard

Coil Options – Novation (Outdoor - Indoor - Hail Guard)
G = Al/Al - Al/Cu
H = Al/Al - Cu/Cu
J = Al/Al - E-coat Al/Cu
K = E-coat Al/Al - Al/Cu
L = E-coat Al/Al - E-coatAl/Cu
T = Al/Al - Al/Cu — Louvered Hail Guard
U = Al/Al - Cu/Cu — Louvered Hail Guard
V = Al/Al - E-coat Al/Cu — Louvered Hail Guard
W = E-coat Al/Al - Al/Cu — Louvered Hail Guard
X = E-coat Al/Al - E-coat Al/Cu — Louvered Hail Guard

Packaging & Seismic Compliance
0 = Standard
1 = LTL
3 = California Seismic Compliant Label
4 = LTL and CA Seismic Compliant Label

Electrical Options
A = None
C = Non-Fused Disconnect
D = Thru-The-Base Connections
F = Non-Fused Disconnect and Thru-The-Base Connections
G = 2-Speed Indoor Fan (VFD) Controller
J = 2 Speed Fan Controller (VFD) and Non-Fused Disconnect
K = 2 Speed Fan Controller (VFD) and Thru-The-Base Connections
M = 2 Speed Fan Controller (VFD) with Non-Fused Disconnect and Thru-The-Base Connections

Service Options
0 = None
1 = Unpowered Convenience Outlet
2 = Powered Convenience Outlet
3 = Hinged Panels
4 = Hinged Panels and Unpowered Convenience Outlet
5 = Hinged Panels and Powered Convenience Outlet

Intake / Exhaust Options
A = None
B = Temperature Economizer w/ Barometric Relief
F = Enthalpy Economizer w/ Barometric Relief
K = 2-Position Damper
U = Temperature Ultra Low Leak Economizer w/ Barometric Relief
W = Enthalpy Ultra Low Leak Economizer w/ Barometric Relief

Base Unit Controls
0 = Electromechanical Controls can be used with W7212 EconoMi$er IV (Non-Fault Detection and Diagnostic)
1 = PremierLink Controller
2 = RTU Open Multi-Protocol Controller
6 = Electro-mechanical w/ 2-Speed Fan and W7220 Economizer Controller Controls. Can be used with W7220 EconoMi$er X (w/ Fault Detection & Diagnostic)

Design Revision
- = Factory Design Revision

Voltage

1 = 575/3/60	5 = 208-230/3/60
3 = 208-230/1/60[2]	6 = 460/3/60

NOTES:
On single phase (-3 voltage code) models, the following are not available as a factory installed option:
- Humidi-MiZer
- Coated Coils or Cu Fin Coils
- Louvered Hail Guards
- Economizer or 2 Position Damper
- Powered 115 Volt Convenience Outlet

[1] Last order date for 48TC 04-06 with Humidi-MiZer is October 12, 2015. Use KC, HC or LC models after that date.

[2] Production of single phase voltage models has been discontinued per DOE regulations. Single phase 48TC models will only be available until current inventories are exhausted.

Not all possible options are displayed, see the current 48TC 04-16 Price Pages for more details.

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Table 1 – FACTORY-INSTALLED OPTIONS AND FIELD-INSTALLED ACCESSORIES

CATEGORY	ITEM	FACTORY INSTALLED OPTION	FIELD INSTALLED ACCESSORY
Cabinet	Thru–the–base electrical or gas–line connections	X	X
	Supply Duct Cover (16 size only)		X
	California Seismic Compliant Labeling	X	
	Hinged Access Panels	X	
Coil Options	Cu/Cu indoor and/or outdoor coils[1, 6]	X	
	Pre–coated outdoor coils[1, 6]	X	
	Premium, E–coated outdoor coils[1, 6]	X	
Humidity Control	Humidi–MiZer® Adaptive Dehumidification System[6, 9]	X	
Condenser Protection	Condenser coil hail guard (louvered design)[6]	X	X
Controls	Thermostats, temperature sensors, and subbases		X
	PremierLink DDC communicating controller	X	X
	RTU Open–protocol controller	X	
	Smoke detector (supply and/or return air)	X	
	Time Guard II compressor delay control circuit		X
	Phase Monitor		X
Economizers & Outdoor Air Dampers	EconoMi$er IV for electro–mechanical controls – Non FDD (Standard air leak damper models)[6, 7]	X	X
	EconoMi$er2 for DDC controls, complies with FDD (Standard and Ultra Low Leak air damper models)[6, 8]	X	X
	Motorized 2 position outdoor air damper[6]	X	X
	Manual outdoor air damper (25% and 50%)		X
	Barometric relief[2]	X	X
	Power exhaust		X
	EconoMi$er X for electro–mechanical controls, complies with FDD. (Standard and Ultra Low Leak air damper models)[6, 7]	X	X
Economizer Sensors & IAQ Devices	Single dry bulb temperature sensors[3]	X	X
	Differential dry bulb temperature sensors[3]		X
	Single enthalpy sensors[3]	X	X
	Differential enthalpy sensors[3]		X
	Wall or duct mounted CO_2 sensor[3]		X
	Unit mounted CO_2 sensor[3]	X	
Gas Heat	Propane conversion kit		X
	Stainless steel heat exchanger	X	
	High altitude conversion kit		X
	Flue Shield (04–14 sizes only)		X
	Flue Discharge Deflector (04–14 sizes only)		X
Indoor Motor & Drive	Multiple motor and drive packages	X	
	Staged Air Vol (SAV) system w/VFD controller (2–stage cool only with electrical mechanical and RTU Open controls)	X	
	Display Kit for SAV system with VFD		X
Low Ambient Control	Winter start kit[4]		X
	Motormaster® head pressure controller[4]		X
Power Options	Convenience outlet (powered)[6]	X	
	Convenience outlet (un–powered)	X	
	Non–fused disconnect[5]	X	
	Disconnect Switch Bracket (16 size only)		X
Roof Curbs	Roof curb 14–in (356mm)		X
	Roof curb 24–in (610mm)		X

NOTES:

1. Novation coated coils only available with E–coat.
2. Included with economizer.
3. Sensors used to optimize economizer performance.
4. See application data for assistance.
5. Available on units with MOCP's of 80 amps or less.
6. Not available as factory installed option on single phase (208/230–1–60) models. Use field–installed accessory where available.
7. FDD (Fault Detection and Diagnostic) capability per California Title 24 section 120.2.
8. Models with RTU Open DDC controls comply with California Title 24 Fault Detection and Diagnostic (FDD). PremierLink is non FDD.
9. The last order date for 48TC 04–06 units with Humidi–MiZer is October, 12, 2015. Use KC, HC or LC models after the last order date.

FACTORY OPTIONS AND/OR ACCESSORIES

Economizer

Economizers save energy, money and improve comfort levels in the conditioned space. They bring in fresh, outside air for ventilation; and provide cool outside air to cool your building. This also is the preferred method of low ambient cooling. When integrated with CO2 sensors, economizers can provide even more savings by coupling the ventilation air to only that amount required based on space occupancy. Economizers are available, installed and tested by the factory, with either enthalpy or temperature dry-bulb inputs. There are also models for electromechanical, direct digital controllers and single speed fan or 2-speed indoor fan motors. Additional sensors are available as accessories to optimize the economizer. Economizers include gravity controlled barometric relief that helps equalize building pressure and ambient air pressures. This can be a cost effective solution to prevent building pressurization. Economizers are available in Ultra Low Leak and standard low leak versions.

CO_2 Sensor

Improves productivity and saves money by working with the economizer to intake only the correct amount of outside air for ventilation. As occupants fill your building, the CO_2 sensor detects their presence through increasing CO_2 levels, and opens the economizer appropriately.

When the occupants leave, the CO_2 levels decrease, and the sensor appropriately closes the economizer. This intelligent control of the ventilation air, called Demand Control Ventilation (DCV) reduces the overall load on the rooftop, saving money.

Smoke Detectors

Trust the experts. Smoke detectors make your application safer and your job easier. Carrier smoke detectors immediately shut down the rooftop unit when smoke is detected. They are available, installed by the factory, for supply air, return air, or both.

Louvered Hail Guards

Sleek, louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact.

Convenience Outlet (powered or un-powered)

Reduce service and/or installation costs by including a convenience outlet in your specification. Carrier will install this service feature at our factory. Provides a convenient, 15 amp, 115v GFCI receptacle with "Wet in Use" cover. The "powered" option allows the installer to power the outlet from the line side of the disconnect or load side as required by code. The "un-powered" option is to be powered from a separate 115/120v power source.

Non-fused Disconnect

This OSHA-compliant, factory installed, safety switch allows a service technician to locally secure power to the rooftop.

Disconnect Switch Bracket

Provides a pre-engineered and sized mounting bracket for applications requiring a unit mounted fused and non-fused disconnect of greater than 100 amps. Bracket assures that no damage will occur to coils when mounting with screws and other fasteners (16 size only).

Power Exhaust with Barometric Relief

Superior internal building pressure control. This field installed accessory may eliminate the need for costly, external pressure control fans.

PremierLink, DDC Controller

This CCN controller regulates your rooftop's performance to tighter tolerances and expanded limits, as well as facilitates zoning systems and digital accessories. It also unites your Carrier HVAC equipment together on one, coherent CCN network. The PremierLink can be factory installed, or easily field installed. Not available with 2-speed Staged Air Volume (SAV) system.

RTU Open, Multi-Protocol Controller

Connect the rooftop to an existing BAS without needing complicated translators or adapter modules using the RTU Open controller. This new controller speaks the 4 most common building automation system languages (Bacnet, Modbus, N2, and Lonworks). Use this controller when you have an existing BAS.

Time Guard II Control Circuit

This accessory protects your compressor by preventing short-cycling in the event of some other failure, prevents the compressor from restarting for 30 seconds after stopping. Not required with PremierLink, RTU Open, or authorized commercial thermostats.

Motorized 2-Position Damper

The new Carrier 2-position, motorized outdoor air damper admits up to 100% outside air. Using reliable, gear-driven technology, the 2-position damper opens to allow ventilation air and closes when the rooftop stops, stopping unwanted infiltration. Not available with Staged Air Volume (SAV) models.

Manual OA Damper

Manual outdoor air dampers are an economical way to bring in ventilation air. The dampers are available in 25% and 50% versions. Not available with Staged Air Volume (SAV) models.

FACTORY OPTIONS AND/OR ACCESSORIES (cont.)

Optional Humidi-MiZer® Adaptive Dehumidification System

Carrier's Humidi-MiZer Adaptive Dehumidification System is an all-inclusive factory installed option that can be ordered with any WeatherMaker 48TC 04-16 rooftop unit equipped with RTPF condenser coils.

NOTE: The last order date for 48TC 04-06 units with Humidi-MiZer is October, 12, 2015. Use KC, HC or LC models after the last order date.

This system expands the envelope of operation of Carrier's WeatherMaker rooftop products to provide unprecedented flexibility to meet year round comfort conditions.

The Humidi-MiZer adaptive dehumidification system has the industry's only dual dehumidification mode setting. The Humidi-MiZer system includes two new modes of operation.

The WeatherMaker 48TC rooftop coupled with the Humidi-MiZer system is capable of operating in normal design cooling mode, subcooling mode, and hot gas reheat mode. Normal design cooling mode is when the unit will operate under its normal sequence of operation by cycling compressors to maintain comfort conditions.

Subcooling mode will operate to satisfy part load type conditions when the space requires combined sensible and a higher proportion of latent load control. Hot Gas Reheat mode will operate when outdoor temperatures diminish and the need for latent capacity is required for sole humidity control. Hot Gas Reheat mode will provide neutral air for maximum dehumidification operation.

Staged Air Volume (SAV) Indoor Fan Speed System

Carrier's Staged Air Volume (SAV) system saves energy and installation time by utilizing a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed in sequence with the units cooling operation. Per ASHRAE 90.1 standard section 6.4.3.10.b, during the first stage of cooling operation the VFD will adjust the fan motor to provide 2/3rd of the total cfm established for the unit. When a call for the second stage of cooling is required, the VFD will allow the total cfm for the unit established (100%). During the heating mode the VFD will allow total design cfm (100%) operation and during the ventilation mode the VFD will allow operation to 2/3rd of total cfm.

Compared to single speed indoor fan motor systems, Carrier's SAV system can save substantial energy, 25%+*, versus single speed indoor fan motor systems.

The VFD used in Carrier's SAV system has soft start capabilities to slowly ramp up the speeds, thus eliminating any high inrush air volume during initial start-up. It also has internal over-current protection for the fan motor and a field installed display kit that allows adjustment and in depth diagnostics of the VFD.

This SAV system is available on models with 2-stage cooling operation with electromechanical or RTU Open, Multi Protocol controls. Both space sensor and conventional thermostats/controls can be used to provide accurate control in any application.

The SAV system is very flexible for initial fan performance set up and adjustment. The standard factory shipped VFD is pre-programmed to automatically stage the fan speed between the first and second stage of cooling. The unit fan performance static pressure and cfm can be easily adjusted using the traditional means of pulley adjustments. The other means to adjust the unit static and cfm performance is to utilize the field installed Display Kit and adjust the frequency and voltage in the VFD to performance requirements. In either case, once set up, the VFD will automatically adjust the speed between the cooling stage operations.

*Data based on .10 ($/kWh) in an office application utilizing Carrier's HAP 4.6 simulation software program

Motormaster Head Pressure Controller

The Motormaster motor controller is a low ambient, head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling when economizer usage is either not appropriate or desired. The Motormaster will either cycle the outdoor fan motors or operate them at reduced speed to maintain the unit operation, depending on the model.

Winter Start Kit

The winter start kit by Carrier extends the low ambient limit of your rooftop to 25°F (-4°C). The kit bypasses the low pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

Propane Heating

Convert your gas heat rooftop from standard natural gas operation to propane using this field installed kit.

High Altitude Heating

High altitudes have less oxygen, which means heat exchangers need less fuel. The new gas orifices in this field installed kit make the necessary adjustment for high altitude applications. They restore the optimal fuel to air mixture and maintain healthy combustion at altitudes above 2000 ft (610m). Kits may not be required in all areas.

Hinged Access Panels

Allows access to unit's major components with specifically designed hinged access panels. Panels are: filter, control box, fan motor, and compressor.

FACTORY OPTIONS AND/OR ACCESSORIES (cont.)

Flue Discharge Deflector

The flue discharge deflector is a useful accessory when flue gas recirculation is a concern. By venting the flue discharge upwards, the deflector minimizes the chance for a neighboring unit to intake the flue exhaust (04-14 sizes only).

Optional Stainless Steel Heat Exchanger

The stainless steel heat exchanger option provides the tubular heat exchanger be made out of a minimum 20 gauge type 409 stainless steel for applications where the mixed air to the heat exchanger is expected to drop below 45°F (7°C). Stainless steel may be specified on applications where the presence of airborne contaminants require its use (applications such as paper mills) or in areas with very high outdoor humidity that may result in severe condensation in the heat exchanger during cooling operation.

Flue Discharge Heat Shield

The flue discharge heat shield keeps people from touching the rooftop unit's potentially hot flue discharge. This is especially useful for ground level applications, where more, untrained people could have access to the unit's exterior (04-14 sizes only).

Alternate Motors and Drives

Some applications need larger horsepower motors, some need more airflow, and some need both. Regardless of the case, your Carrier expert has a factory installed combination to meet your application. A wide selection of motors and pulleys (drives) are available, factory installed, to handle nearly any application.

Thru-the-Base Connections

Thru-the-base connections, available as either an accessory or as a factory option, are necessary to ensure proper connection and seal when routing wire and piping through the rooftop's basepan and curb. These couplings eliminate roof penetration and should be considered for gas lines, main power lines, as well as control power.

Supply Duct Cover

This supply duct cover is required when field converting the factory standard vertical duct supply to horizontal duct supply configuration. One required per unit (16 size only).

California OSHPD Seismic Certification Label

Units meet the seismic requirements of the International Code Council Evaluation Service (ICC-ES) document AC156 (Acceptance Criteria for Seismic Qualification by Shake-Table Testing of Nonstructural Components and Systems) and per International Building Code (IBC 2009) at an SDS (g) value of 2.00 z/h=1.0, Ip=1.5 and certified by independent structural engineers. A certification label is applied to the unit that meets the CA OSHPD Special Seismic Certification pre-approval labeling requirements on the external chassis of the unit.

Table 2 – AHRI COOLING RATING TABLE

UNIT	COOLING STAGES	NOM. CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (KW)	SEER	EER	IEER WITH SINGLE SPEED INDOOR MOTOR	IEER WITH 2–SPEED INDOOR MOTOR
A04	1	3	34.0	3.2	13.0	10.60	N/A	N/A
A05	1	4	45.0	4.0	13.0	11.00	N/A	N/A
A06	1	5	59.0	5.5	13.0	10.75	N/A	N/A
A07	1	6	70.0	6.4	N/A	11.00	11.2	N/A
A08	1	7.5	88.0	8.0	N/A	11.00	11.2	N/A
D08	2	7.5	83.0	7.5	N/A	11.00	11.7	12.8
A09	1	8.5	97.0	8.8	N/A	11.00	11.2	N/A
D09	2	8.5	99.0	9.0	N/A	11.00	11.7	12.8
A12	1	10	117.0	10.6	N/A	11.00	11.2	N/A
D12	2	10	114.0	10.3	N/A	11.10	11.8	12.8
D14	2	12.5	140.0	12.9	N/A	10.80	11.0	11.8
D16	2	15	174.0	16.1	N/A	10.80	11.7	12.4

Table 3 – DIRECT DRIVE INDOOR ECM-X13 MOTOR

UNIT	COOLING STAGES	NOM. CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (KW)	SEER	EER
A04	1	3	34.4	3.1	13.4	11.00
A05	1	4	45.0	3.9	13.4	11.40
A06	1	5	59.0	5.5	13.2	10.75

LEGEND AND NOTES for TABLES 2 and 3

AHRI – Air Conditioning, Heating and Refrigeration Institute Test Standard
ASHRAE – American Society of Heating, Refrigerating and Air Conditioning, Inc.
EER – Energy Efficiency Ratio
IEER – Integrated Energy Efficiency Ratio
N/A – Not Applicable
SEER – Seasonal Energy Efficiency Ratio

NOTES:

1. Rated in accordance with AHRI Standard 210/240 or 340/360, as appropriate.
2. Ratings are based on:
   Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temp and 95°F (35°C) db outdoor air temp.
   IEER Standard: A measure that expresses cooling part–load EER efficiency for commercial unitary air conditioning and heat pump equipment on the basis of weighted operation at various load capacities.
3. All 48TC units comply with ASHRAE 90.1 Energy Standard for minimum SEER and EER requirements.
4. 48TC units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

Table 4 – HEATING RATING TABLE - NATURAL GAS & PROPANE

UNITS		GAS HEAT	AL/SS HEAT EXCHANGER		TEMP RISE (DEG F)	THERMAL EFFICIENCY (%)	AFUE (%)
			INPUT / OUTPUT STAGE 1 (MBH)	INPUT / OUTPUT STAGE 2 (MBH)			
Single Phase*	04	LOW	–	72 / 56	25 – 55	82%	79.1%
		MED	–	115 / 89	55 – 85	80%	78.5%
		HIGH	–	–	–	–	–
	05	LOW	–	72 / 56	25 – 55	82%	79.1%
		MED	–	115 / 90	35 – 65	81%	79%
		HIGH	–	150 / 117	50 – 80	80%	78.8%
	06	LOW	–	72 / 56	20 – 55	82%	79.1%
		MED	–	115 / 90	30 – 65	81%	79%
		HIGH	–	150 / 117	40 – 80	80%	78.8%
Three Phase	04	LOW	–	72 / 56	25 – 55	82%	N/A
		MED	82 / 66	115 / 89	55 – 85	80%	N/A
		HIGH	–	–	–	–	–
	05	LOW	–	72 / 56	25 – 55	82%	N/A
		MED	–	115 / 90	35 – 65	81%	N/A
		HIGH	120 / 96	150 / 117	50 – 80	80%	N/A
	06	LOW	–	72 / 56	20 – 55	82%	N/A
		MED	–	115 / 90	30 – 65	81%	N/A
		HIGH	120 / 96	150 / 117	40 – 80	80%	N/A
	07	LOW	–	72 / 59	15 – 55	82%	N/A
		MED	–	115 / 93	25 – 65	81%	N/A
		HIGH	120 / 96	150 / 120	35 – 80	80%	N/A
	08	LOW	–	125 / 103	20 – 50	82%	N/A
		MED	120 / 98	180 / 148	35 – 65	82%	N/A
		HIGH	180 / 147	224 / 184	45 – 75	82%	N/A
	09	LOW	–	125 / 103	20 – 50	82%	N/A
		MED	120 / 98	180 / 148	30 – 65	82%	N/A
		HIGH	180 / 147	224 / 184	40 – 75	82%	N/A
	12	LOW	120 / 98	180 / 148	25 – 65	82%	N/A
		MED	180 / 147	224 / 184	30 – 65	82%	N/A
		HIGH	200 / 160	250 / 205	35 – 70	80%	N/A
	14	LOW	120 / 98	180 / 148	20 – 65	82%	N/A
		MED	180 / 147	224 / 184	25 – 65	82%	N/A
		HIGH	200 / 160	250 / 205	25 – 70	80%	N/A
	16	LOW	144 / 118	180 / 146	15 – 55	81%	N/A
		MED	192 / 156	240 / 195	20 – 60	81%	N/A
		HIGH	280 / 224	350 / 280	35 – 65	80%	N/A

NOTES:

Heat ratings are for natural gas heat exchangers operated at or below 2000 ft (610 m). For information on propane or altitudes above 2000 ft (610 m), see the Application Data section of this book. Accessory Propane/High Altitude kits are also available.

In the USA the input rating for altitudes above 2000 ft (610m) must be derated by 4% for each 1000 ft (305 m) above sea level. In Canada, the input rating must be derated by 10% for altitudes of 2000 ft (610 m) to 4500 ft (1372 m) above sea level.

* Production of single phase units has been discontinued per DOE regulations. Single phase 48TC models are only available until current inventories are exhausted.

Table 5 – HEATING RATING TABLE - LOW NO_X[1]

UNIT		GAS HEAT	LOW NOx HEAT EXCHANGER		TEMP RISE (DEG F)	THERMAL EFFICIENCY (%)	AFUE (%)
			INPUT / OUTPUT STAGE 1 (MBH)	INPUT / OUTPUT STAGE 2 (MBH)			
Single Phase*	04	LOW	–	60 / 47	20 – 50	81%	80.6%
		MED	–	90 / 72	30 – 60	81%	80.6%
		HIGH	–	–	–	–	–
	05	LOW	–	60 / 47	20 – 50	81%	80.6%
		MED	–	90 / 72	30 – 60	81%	80.6%
		HIGH	–	120 / 97	40 – 70	81%	81.5%
	06	LOW	–	60 / 47	15 – 50	81%	80.6%
		MED	–	90 / 72	25 – 60	80%	80.6%
		HIGH	–	120 / 97	35 – 70	80%	81.5%
Three Phase	04	LOW	–	60 / 47	20 – 50	81%	N/A
		MED	–	90 / 72	30 – 60	81%	N/A
		HIGH	–	–	–	–	–
	05	LOW	–	60 / 47	20 – 50	81%	N/A
		MED	–	90 / 72	30 – 60	81%	N/A
		HIGH	–	120 / 97	40 – 70	81%	N/A
	06	LOW	–	60 / 47	15 – 50	81%	N/A
		MED	–	90 / 72	25 – 60	80%	N/A
		HIGH	–	120 / 97	35 – 70	80%	N/A

NOTE:

1. Units meet California's South Coast Air Quality Management District (SCAQMD) Low–NO_x emissions requirement of 40 nanograms per joule or less.

– Not Applicable

* Production of single phase units has been discontinued per DOE regulations. Single phase 48TC models are only available until current inventories are exhausted.

Table 6 – SOUND PERFORMANCE TABLE

UNIT	COOLING STAGES	OUTDOOR SOUND (dB) @60Hz								
		A–WEIGHTED	63	125	250	500	1000	2000	4000	8000
A04	1	80	90.6	80.9	80.2	76	74.6	71.3	68.5	63.9
A05	1	81	90.9	84.6	79.5	77.9	76.5	71.1	66.9	62.5
A06	1	78	84.0	82.2	76.3	74.8	72.5	68.8	65.6	61.8
A07	1	78	88.8	81.8	76.9	74.4	73.3	69.8	66.3	62.7
A08	1	82	90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7
D08	2	82	85.8	84.3	80.5	78.7	76.4	72.7	68.3	65.1
A09	1	83	91.2	86.4	81.9	81.0	78.3	73.9	71.4	67.3
D09	2	82	88.6	85.0	81.6	79.5	77.4	74.1	71.0	66.3
A12	1	82	88.6	85.0	81.6	79.5	77.4	74.1	71.0	66.3
D12	2	82	89.0	83.1	80.5	78.5	75.5	71.6	69.6	69.3
D14	2	87	87.0	85.2	84.6	84.9	82.2	78.4	75.3	72.9
D16	2	87	87.0	85.2	84.6	84.9	82.2	78.4	75.3	72.9

LEGEND

dB – Decibel

NOTES:

1. Outdoor sound data is measure in accordance with AHRI standard 270–2008.
2. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure depends on specific environmental factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.
3. A–weighted sound ratings filter out very high and very low frequencies, to better approximate the response of "average" human ear. A–weighted measurements for Carrier units are taken in accordance with AHRI standard 270–2008.

Table 7 – MINIMUM - MAXIMUM AIRFLOW RATINGS - NATURAL GAS & PROPANE

UNIT	HEAT LEVEL	COOLING		AL HX HEATING		SS HX HEATING	
		MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
48TC**04	LOW	900	1500	990	2190	990	2190
	MED			1000	1550	1000	1550
	HIGH			–	–	–	–
48TC**05	LOW	1200	2000	990	2190	990	2190
	MED			1330	2460	1330	2460
	HIGH			1390	2220	1390	2220
48TC**06	LOW	1500	2500	990	2730	990	2730
	MED			1330	2880	1330	2880
	HIGH			1390	2780	1390	2780
48TC**07	LOW	1800	3000	990	3640	990	3640
	MED			1330	3450	1330	3450
	HIGH			1390	3170	1390	3170
48TC**08	LOW	2250	3750	1900	4750	1900	4750
	MED			2100	3900	2100	3900
	HIGH			2270	3780	2270	3780
48TC**09	LOW	2550	4250	1900	4750	1900	4750
	MED			2100	4560	2100	4560
	HIGH			2270	4250	2270	4250
48TC**12	LOW	3000	5000	2100	5470	2100	5470
	MED			2620	5670	2620	5670
	HIGH			2650	5290	2650	5290
48TC**14	LOW	3600	6000	2100	6830	2100	6830
	MED			2620	6800	2620	6800
	HIGH			2650	7410	2650	7410
48TC**16	LOW	4500	7500	2450	7500	2450	9000
	MED			3000	6750	3000	9000
	HIGH			3990	7200	3990	7410

Table 8 – PHYSICAL DATA **(COOLING)** **3 - 4 TONS**

	48TC*A04 Produced On or Prior to 7/26/2015	48TC*A04 Produced On or After 7/27/2015	48TC*A05 Produced On or Prior to 7/26/2015	48TC*A05 Produced On or After 7/27/2015
Refrigeration System				
# Circuits / # Comp. / Type	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll
Puron® refrig. (R–410A) (lbs–oz)	5–10	4–4	7–5	7–5
Humidi–MiZer® Puron refrig. charge A/B (lbs – oz)	8–11	–	–	–
Metering Device	Acutrol	Acutrol	Acutrol	Acutrol
Humidi–MiZer Metering Device	Acutrol + TXV	Acutrol + TXV	Acutrol + TXV	Acutrol + TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117	54 / 117	54 / 117
Compressor Capacity Staging (%)	100%	100%	100%	100%
Evap. Coil				
Material (Tube/Fin)	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
Rows / FPI	2 / 15	2 / 15	2 / 15	2 / 15
Total Face Area (ft^2)	5.5	5.5	5.5	5.5
Condensate Drain Conn. Size	3/4–in	3/4–in	3/4–in	3/4–in
Humidi–MiZer Coil		‡		‡
Material (Tube/Fin)	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
Rows..Fins/in.	1 / 17	1 / 17	2 / 17	2 / 17
Total Face Area (ft^2)	3.9	3.9	3.9	3.9
Evap. Fan and Motor				
Standard Direct Drive 3 phase – Motor Qty / Drive Type	–	1 / Direct	–	1 / Direct
Max BHP	–	0.75	–	0.75
RPM Range	–	600–1200	–	600–1200
Motor Frame Size	–	48	–	48
Fan Qty / Type	–	1 / Centrifugal	–	1 / Centrifugal
Fan Diameter (in)	–	10 x 11	–	10 x 11
Standard Static 3 phase – Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	1.7	1.7	1.7	1.7
RPM Range	560–854	560–854	560–854	560–854
Motor Frame Size	48	48	48	48
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	10 x 10	10 x 10	10 x 10	10 x 10
Medium Static 3 phase – Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	1.7	1.7	1.7	1.7
RPM Range	770–1175	770–1175	770–1175	770–1175
Motor Frame Size	48	48	48	48
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	10 x 10	10 x 10	10 x 10	10 x 10
High Statoc 3 phase – Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	2.4	2.4	2.4	2.4
RPM Range	1035–1466	1035–1466	1035–1466	1035–1466
Motor Frame Size	56	56	56	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	10 x 10	10 x 10	10 x 10	10 x 10
Cond. Coil				
Material (Tube/Fin)	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8–in RTPF	5/16–in RTPF	3/8–in RTPF	5/16–in RTPF
Rows / FPI	1 / 17	1 / 17	2 / 17	2 / 17
Total Face Area (ft^2)	14.6	12.6	16.5	15.6
Cond. fan / motor				
Qty / Motor Drive Type	1/ Direct	1/ Direct	1/ Direct	1/ Direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22	22	22
Filters				
RA Filter # / Size (in)	2 / 16 x 25 x 2	2 / 16 x 25 x 2	2 / 16 x 25 x 2	2 / 16 x 25 x 2
OA inlet screen # / Size (in)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1

NOTE: Humidi–MiZer is not available with Novation condenser coil models, only Round Tube / Plate Fin (RTPF).

– Not applicable

† 575V motor utilizes 3.7 BHP.

‡ The last order date for 48TC 04–06 units with Humidi–MiZer is October, 12, 2015. Use KC, HC or LC models after the last order date.

Table 9 – PHYSICAL DATA (COOLING) **5 - 6 TONS**

	48TC*A06 Produced On or Prior to 7/26/2015	48TC*A06 Produced On or After. 7/27/2015	48TC*A07
Refrigeration System			
# Circuits / # Comp. / Type	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll
Puron® refrig. (R–410A) (lbs–oz)	10–11	9–0	14–2
Humidi–MiZer® Puron refrig. charge A/B (lbs – oz)	16–0	–	22–5
Metering Device	Acutrol	Acutrol	Acutrol
Humidi–MiZer Metering Device	Acutrol + TXV	Acutrol + TXV	Acutrol + TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117	54 / 117
Compressor Capacity Staging (%)	100%	100%	100%
Evap. Coil			
Material (Tube/Fin)	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
Rows / FPI	4 / 15	4 / 15	4 / 15
Total Face Area (ft^2)	5.5	5.5	7.3
Condensate Drain Conn. Size	3/4–in	3/4–in	3/4–in
Humidi–MiZer Coil		‡	
Material (Tube/Fin)	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
Rows..Fins/in.	2 / 17	2 / 17	2 / 17
Total Face Area (ft^2)	3.9	3.9	5.2
Evap. Fan and Motor			
Standard Direct Drive 3 phase – Motor Qty / Drive Type	–	1 / Direct	–
Max BHP	–	1	–
RPM Range	–	600–1200	–
Motor Frame Size	–	48	–
Fan Qty / Type	–	1 / Centrifugal	–
Fan Diameter (in)	–	10 x 11	–
Standard Static 3 phase – Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt
Max BHP	1.7	1.7	2.4
RPM Range	770–1175	770–1175	1073–1457
Motor Frame Size	48	48	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	10 x 10	10 x 10	10 x 10
Medium Static 3 phase – Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt
Max BHP	2.4	2.4	2.9†
RPM Range	1035–1466	1035–1466	1173–1518
Motor Frame Size	56	56	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	10 x 10	10 x 10	10 x 10
High Statoc 3 phase – Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt
Max BHP	2.9	2.9	3.7
RPM Range	1303–1687	1303–1687	1474–1788
Motor Frame Size	56	56	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	10 x 10	10 x 10	10 x 10
Cond. Coil			
Material (Tube/Fin)	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8–in RTPF	5/16–in RTPF	3/8–in RTPF
Rows / FPI	2 / 17	2 / 17	2 / 17
Total Face Area (ft^2)	16.5	15.6	21.3
Cond. fan / motor			
Qty / Motor Drive Type	1/ Direct	1/ Direct	1/ Direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22	22
Filters			
RA Filter # / Size (in)	2 / 16 x 25 x 2	2 / 16 x 25 x 2	4 / 16 x 16 x 2
OA inlet screen # / Size (in)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1

NOTE: Humidi–MiZer is not available with Novation condenser coil models, only Round Tube / Plate Fin (RTPF).

– Not applicable

† 575V motor utilizes 3.7 BHP.

‡ The last order date for 48TC 04–06 units with Humidi–MiZer is October, 12, 2015. Use KC, HC or LC models after the last order date.

Table 10 – PHYSICAL DATA **(HEATING)** **3 - 6 TONS**

	48TC**04	48TC**05	48TC**06	48TC**07
Gas Connection				
# of Gas Valves	1	1	1	1
Nat. gas supply line press (in. w.g.)/ (PSIG)	4 –13 / 0.18 – 0.47	4 –13 / 0.18 – 0.47	4 –13 / 0.18 – 0.47	4 –13 / 0.18 – 0.47
LP supply line press (in. w.g.) / (PSIG)	11 –13 / 0.40 – 0.47	11 –13 / 0.40 – 0.47	11 –13 / 0.40 – 0.47	11 –13 / 0.40 – 0.47
Heat Anticipator setting (Amps)				
1st stage	0.14	0.14	0.14	0.14
2nd stage	0.14	0.14	0.14	0.14
Natural Gas Heat				
LOW # of stages / # of burners (total)	1 / 2	1 / 2	1 / 2	1 / 2
LOW Connection Size	1/2–in NPT	1/2–in NPT	1/2–in NPT	1/2–in NPT
LOW Rollout switch opens / closes	195 / 115	195 / 115	195 / 115	195 / 115
LOW Temperature Rise	25 – 55	25 – 55	20 – 55	15 – 55
MED # of stages / # of burners (total)	1 or 2 / 3	1 / 3	1 / 3	1 / 3
MED Connection Size	1/2–in NPT	1/2–in NPT	1/2–in NPT	1/2–in NPT
MED Rollout switch opens / closes	195 / 115	195 / 115	195 / 115	195 / 115
MED Temperature Rise	55 – 85	35 – 65	30 – 65	25 – 65
HIGH # of stages / # of burners (total)	–	1 or 2 / 3	1 or 2 / 3	2 / 3
HIGH Connection Size	–	1/2–in NPT	1/2–in NPT	1/2–in NPT
HIGH Rollout switch opens / closes	–	195 / 115	195 / 115	195 / 115
HIGH Temperature Rise	–	50 – 80	40 – 80	35 – 80
Liquid Propane Heat				
LOW # of stages / # of burners (total)	1 / 2	1 / 2	1 / 2	1 / 2
LOW Connection Size	1/2–in NPT	1/2–in NPT	1/2–in NPT	1/2–in NPT
LOW Rollout switch opens / closes	195 / 115	195 / 115	195 / 115	195 / 115
LOW Temperature Rise	25 – 55	25 – 55	20 – 55	15 – 55
MED # of stages / # of burners (total)	1 or 2 / 3	1 / 3	1 / 3	1 / 3
MED Connection Size	1/2–in NPT	1/2–in NPT	1/2–in NPT	1/2–in NPT
MED Rollout switch opens / closes	195 / 115	195 / 115	195 / 115	195 / 115
MED Temperature Rise	55 – 85	35 – 65	30 – 65	25 – 65
HIGH # of stages / # of burners (total)	–	1 or 2 / 3	1 or 2 / 3	2 / 3
HIGH Connection Size	–	1/2–in NPT	1/2–in NPT	1/2–in NPT
HIGH Rollout switch opens / closes	–	195 / 115	195 / 115	195 / 115
HIGH Temperature Rise	–	50 – 80	40 – 80	35 – 80
Low NOx Gas Heat				
LOW # of stages / # of burners (total)	1 / 2	1 / 2	1 / 2	–
LOW Connection Size	1/2–in NPT	1/2–in NPT	1/2–in NPT	–
LOW Rollout switch opens / closes	195 / 115	195 / 115	195 / 115	–
LOW Temperature Rise	20 – 50	20 – 50	15 – 50	–
MED # of stages / # of burners (total)	1 / 3	1 / 3	1 / 3	–
MED Connection Size	1/2–in NPT	1/2–in NPT	1/2–in NPT	–
MED Rollout switch opens / closes	195 / 115	195 / 115	195 / 115	–
MED Temperature Rise	30 – 60	30 – 60	25 – 60	–
HIGH # of stages / # of burners (total)	–	1 / 3	1 / 3	–
HIGH Connection Size	–	1/2–in NPT	1/2–in NPT	–
HIGH Rollout switch opens / closes	–	195 / 115	195 / 115	–
HIGH Temperature Rise	–	40 – 70	35 – 70	–

– Not applicable

Table 11 – PHYSICAL DATA (COOLING) **7.5 - 8.5 TONS**

	48TC*A08	48TC*D08	48TC*A09	48TC*D09
Refrigeration System				
# Circuits / # Comp. / Type	1 / 1 / Scroll	2 / 2 / Scroll	1 / 1 / Scroll	2 / 2 / Scroll
RTPF models R–410a charge A/B (lbs – oz)	13 – 12	8 – 5 / 8 – 2	15 – 4	10 – 5 / 10 – 12
Alternate (MCHX) R–410a charge A/B (lbs – oz)		4 – 6 / 4 – 6		
Alternate (Humidi–MiZer®) R–410a charge A/B (lbs – oz)		13 – 3 / 13 – 3		16 – 13 / 16 – 13
Metering device	Acutrol	Acutrol	Acutrol	Acutrol
Alternate (Humidi–MiZer) Metering device	–	Acutrol + TXV	–	Acutrol + TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117	54 / 117	54 / 117
Compressor Capacity Staging (%)	100%	50% / 100%	100%	50% / 100%
Evap. Coil				
Material	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
Rows / FPI	3 / 15	3 / 15	3 / 15	3 / 15
Total face area (ft^2)	8.9	8.9	11.1	11.1
Condensate drain conn. size	3/4–in	3/4–in	3/4–in	3/4–in
Humidi–MiZer Coil				
Material	–	Cu / Al	–	Cu / Al
Coil type	–	3/8–in RTPF	–	3/8–in RTPF
Rows / FPI	–	2 / 17	–	2 / 17
Total face area (ft^2)	–	6.3	–	8.4
Evap. fan and motor				
Standard Static 3 phase – Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	1.7	1.7	1.7	1.7
RPM range	489–747	489–747	518–733	518–733
Motor frame size	56	56	56	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	15 x 15	15 x 15	15 x 15	15 x 15
Medium Static 3 phase – Motor Qty / Drive type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	2.9†	2.9†	2.4	2.4
RPM range	733–949	733–949	690–936	690–936
Motor frame size	56	56	56	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	15 x 15	15 x 15	15 x 15	15 x 15
High Static 3 phase – Motor Qty / Drive type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	4.7	4.7	3.7	3.7
RPM range	909–1102	909–1102	838–1084	838–1084
Motor frame size	14	14	56	56
Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in)	15 x 15	15 x 15	15 x 15	15 x 15
Cond. Coil				
Material	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
Rows / FPI	2 / 17	2 / 17	2 / 17	2 / 17
Total face area (ft2)	20.5	20.5	21.4	25.1
Alternate (MCHX) Cond. Coil				
Material	–	Al / Al	–	–
Coil type	–	Novation™	–	–
Rows / FPI	–	1 / 20	–	–
Total face area (ft2)	–	20.5	–	–
Cond. fan / motor				
Qty / Motor drive type	2 / direct	2 / direct	2 / direct	2 / direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22	22	22
Filters				
RA Filter # / Size (in)	4 / 16 x 20 x 2	4 / 16 x 20 x 2	4 / 20 x 20 x 2	4 / 20 x 20 x 2
OA inlet screen # / Size (in)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1

NOTE: Humidi–MiZer is not available with Novation condenser coil models, only Round Tube/Plate Fin (RTPF).

– Not applicable

† 575V motor utilizes 3.7 BHP

Table 12 – PHYSICAL DATA (COOLING) 10 - 15 TONS

		48TC*A12	48TC*D/E12	48TC*D/E14	48TC*D/E16
Refrigeration System					
	# Circuits / # Comp. / Type	1 / 1 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll
	RTPF models R–410a charge A/B (lbs – oz)	20 – 0	10 – 5 / 10 – 3	11 – 0 / 11 – 6	15–14/16–12
	Alternate (MCHX) R–410a charge A/B (lbs – oz)	–	6 – 0 / 6 – 0	7 – 6 / 8 – 0	–
	Alternate (Humidi–MiZer®) R–410a charge A/B (lbs – oz)	–	16 – 10 / 16 – 0	17 – 10 / 18 – 3	–
	Metering device	Acutrol	Acutrol	Acutrol	Acutrol
	Alternate (Humidi–MiZer) Metering device	–	Acutrol + TXV	Acutrol + TXV	–
	High–press. Trip / Reset (psig)	630 / 505	630 / 505	630 / 505	630 / 505
	Low–press. Trip / Reset (psig)	54 / 117	54 / 117	54 / 117	54 / 117
	Compressor Capacity Staging (%)	100%	50% / 100%	50% / 100%	50% / 100%
Evap. Coil					
	Material	Cu / Al	Cu / Al	Cu / Al	Cu / Al
	Coil type	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
	Rows / FPI	4 / 15	4 / 15	4 / 15	3 / 15
	Total face area (ft^2)	11.1	11.1	11.1	17.5
	Condensate drain conn. size	3/4–in	3/4–in	3/4–in	3/4–in
Humidi–MiZer Coil					
	Material	–	Cu / Al	Cu / Al	Cu / Al
	Coil type	–	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
	Rows / FPI	–	2 / 17	2 / 17	1 / 17
	Total face area (ft^2)	–	8.4	8.4	13.8
Evap. fan and motor					
Standard Static 3 phase	Motor Qty / Drive type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	2.4	2.4	2.9†	2.9†
	RPM range	591–838	591–838	652–843	507–676
	Motor frame size	56	56	56	56
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (in)	15 x 15	15 x 15	15 x 15	18 x 18
Medium Static 3 phase	Motor Qty / Drive type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	3.7	3.7	3.7	3.7
	RPM range	838–1084	838–1084	838–1084	627–851
	Motor frame size	56	56	56	56
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (in)	15 x 15	15 x 15	15 x 15	18 x 18
High Static 3 phase	Motor Qty / Drive type	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	4.7	4.7	4.7	6.5 / 6.9 / 7.0 / 8.3‡
	RPM range	1022–1240	1022–1240	1022–1240	776–955
	Motor frame size	14	14	14	S184T
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (in)	15 x 15	15 x 15	15 x 15	18 x 18
Cond. Coil					
	Material	Cu / Al	Cu / Al	Cu / Al	Cu / Al
	Coil type	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF	3/8–in RTPF
	Rows / FPI	2 / 17	2 / 17	3 / 17	2 / 17
	Total face area (ft2)	25.1	25.1	25.1	2 @ 23.1
Alternate (MCHX) Cond. Coil					
	Material	–	Al / Al	Al / Al	–
	Coil type	–	Novation™	Novation™	–
	Rows / FPI	–	1 / 20	2 / 20	–
	Total face area (ft2)	–	25.1	25.1	–
Cond. fan / motor					
	Qty / Motor drive type	2 / direct	2 / direct	1 / direct	3 / direct
	Motor HP / RPM	1/4 / 1100	1/4 / 1100	1 / 1175	1/4 / 1100
	Fan diameter (in)	22	22	30	22
Filters					
	RA Filter # / Size (in)	4 / 20 x 20 x 2	4 / 20 x 20 x 2	4 / 20 x 20 x 2	6 / 18 x 24 x 2 2 / 24 x 27 x 1 (vert.)
	OA inlet screen # / Size (in)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 30 x 39 x 1 (horiz)

NOTE: Humidi–MiZer is not available with Novation condenser coil models, only Round Tube/Plate Fin (RTPF) up to 16 size.

– Not applicable

† 575V motor utilizes 3.7 BHP

‡ On Size 16 units, Max BHP for the High Static motor varies with the motor's voltage; see the table below.

Voltage	BHP
208	6.5
230	6.9
460	7.0
575	8.3

Table 13 – PHYSICAL DATA ↓ **(HEATING)** **7.5 - 10 TONS**

	48TC**08	48TC**09	48TC**12
Gas Connection			
# of Gas Valves	1	1	1
Nat. gas supply line press (in. w.g.)/ (PSIG)	4 –13 / 0.18 – 0.47	4 –13 / 0.18 – 0.47	4 –13 / 0.18 – 0.47
LP supply line press (in. w.g.) / (PSIG)	11 –13 / 0.40 – 0.47	11 –13 / 0.40 – 0.47	11 –13 / 0.40 – 0.47
Heat Anticipator setting (Amps)			
1st stage	0.14	0.14	0.14
2nd stage	0.14	0.14	0.14
Natural Gas Heat			
LOW # of stages / # of burners (total)	1 / 3	1 / 3	2 / 4
LOW Connection Size	1/2–in NPT	1/2–in NPT	3/4–in NPT
LOW Rollout switch opens / closes	195 / 115	195 / 115	195 / 115
LOW Temperature Rise	20 – 50	20 – 50	25 – 65
MED # of stages / # of burners (total)	2 / 4	2 / 4	2 / 5
MED Connection Size	3/4–in NPT	3/4–in NPT	3/4–in NPT
MED Rollout switch opens / closes	195 / 115	195 / 115	195 / 115
MED Temperature Rise	35 – 65	30 – 65	30 – 65
HIGH # of stages / # of burners (total)	2 / 5	2 / 5	2 / 5
HIGH Connection Size	3/4–in NPT	3/4–in NPT	3/4–in NPT
HIGH Rollout switch opens / closes	195 / 115	195 / 115	195 / 115
HIGH Temperature Rise	45 – 75	40 – 75	35 – 70
Liquid Propane Heat			
LOW # of stages / # of burners (total)	1 / 3	1 / 3	2 / 4
LOW Connection Size	1/2–in NPT	1/2–in NPT	3/4–in NPT
LOW Rollout switch opens / closes	195 / 115	195 / 115	195 / 115
LOW Temperature Rise	20 – 50	20 – 50	25 – 65
MED # of stages / # of burners (total)	2 / 4	2 / 4	2 / 5
MED Connection Size	3/4–in NPT	3/4–in NPT	3/4–in NPT
MED Rollout switch opens / closes	195 / 115	195 / 115	195 / 115
MED Temperature Rise	35 – 65	30 – 65	30 – 65
HIGH # of stages / # of burners (total)	2 / 5	2 / 5	2 / 5
HIGH Connection Size	3/4–in NPT	3/4–in NPT	3/4–in NPT
HIGH Rollout switch opens / closes	195 / 115	195 / 115	195 / 115
HIGH Temperature Rise	45 – 75	40 – 75	35 – 70
Low NOx Gas Heat			
LOW # of stages / # of burners (total)	–	–	–
LOW Connection Size	–	–	–
LOW Rollout switch opens / closes	–	–	–
LOW Temperature Rise	–	–	–
MED # of stages / # of burners (total)	–	–	–
MED Connection Size	–	–	–
MED Rollout switch opens / closes	–	–	–
MED Temperature Rise	–	–	–
HIGH # of stages / # of burners (total)	–	–	–
HIGH Connection Size	–	–	–
HIGH Rollout switch opens / closes	–	–	–
HIGH Temperature Rise	–	–	–

– Not applicable

Table 14 – PHYSICAL DATA **(HEATING)** **12.5 - 15TONS**

	48TC**14	48TC**16
Gas Connection		
# of Gas Valves	1	1
Nat. gas supply line press (in. w.g.)/ (PSIG)	4 –13 / 0.18 – 0.47	5 – 13 / 0.18 – 0.47
LP supply line press (in. w.g.) / (PSIG)	11 –13 / 0.40 – 0.47	11 –13 / 0.40 – 0.47
Heat Anticipator setting (Amps)		
1st stage	0.14	0.14
2nd stage	0.14	0.14
Natural Gas Heat		
LOW # of stages / # of burners (total)	2 / 4	2 / 6
Connection Size	3/4–in NPT	3/4–in NPT
Rollout switch opens / closes	195 / 115	225 / 145
Temperature Rise	25 – 65	20 – 55
MED # of stages / # of burners (total)	2 / 5	2 / 8
Connection Size	3/4–in NPT	3/4–in NPT
Rollout switch opens / closes	195 / 115	225 / 145
Temperature Rise	30 – 65	25 – 60
HIGH # of stages / # of burners (total)	2 / 5	2 / 10
Connection Size	3/4–in NPT	3/4–in NPT
Rollout switch opens / closes	195 / 115	225 / 145
Temperature Rise	35 – 70	35 – 65
Liquid Propane Heat		
LOW # of stages / # of burners (total)	2 / 4	2 / 6
Connection Size	3/4–in NPT	3/4–in NPT
Rollout switch opens / closes	195 / 115	225 / 145
Temperature Rise	25 – 65	20 – 55
MED # of stages / # of burners (total)	2 / 5	2 / 8
Connection Size	3/4–in NPT	3/4–in NPT
Rollout switch opens / closes	195 / 115	225 / 145
Temperature Rise	30 – 65	25 – 60
HIGH # of stages / # of burners (total)	2 / 5	2 / 10
Connection Size	3/4–in NPT	3/4–in NPT
Rollout switch opens / closes	195 / 115	225 / 145
Temperature Rise	35 – 70	35 – 65
Low NOx Gas Heat		
LOW # of stages / # of burners (total)	–	–
Connection Size	–	–
Rollout switch opens / closes	–	–
Temperature Rise	–	–
MED # of stages / # of burners (total)	–	–
Connection Size	–	–
Rollout switch opens / closes	–	–
Temperature Rise	–	–
HIGH # of stages / # of burners (total)	–	–
Connection Size	–	–
Rollout switch opens / closes	–	–
Temperature Rise	–	–

– Not applicable

CURBS, WEIGHTS & DIMENSIONS

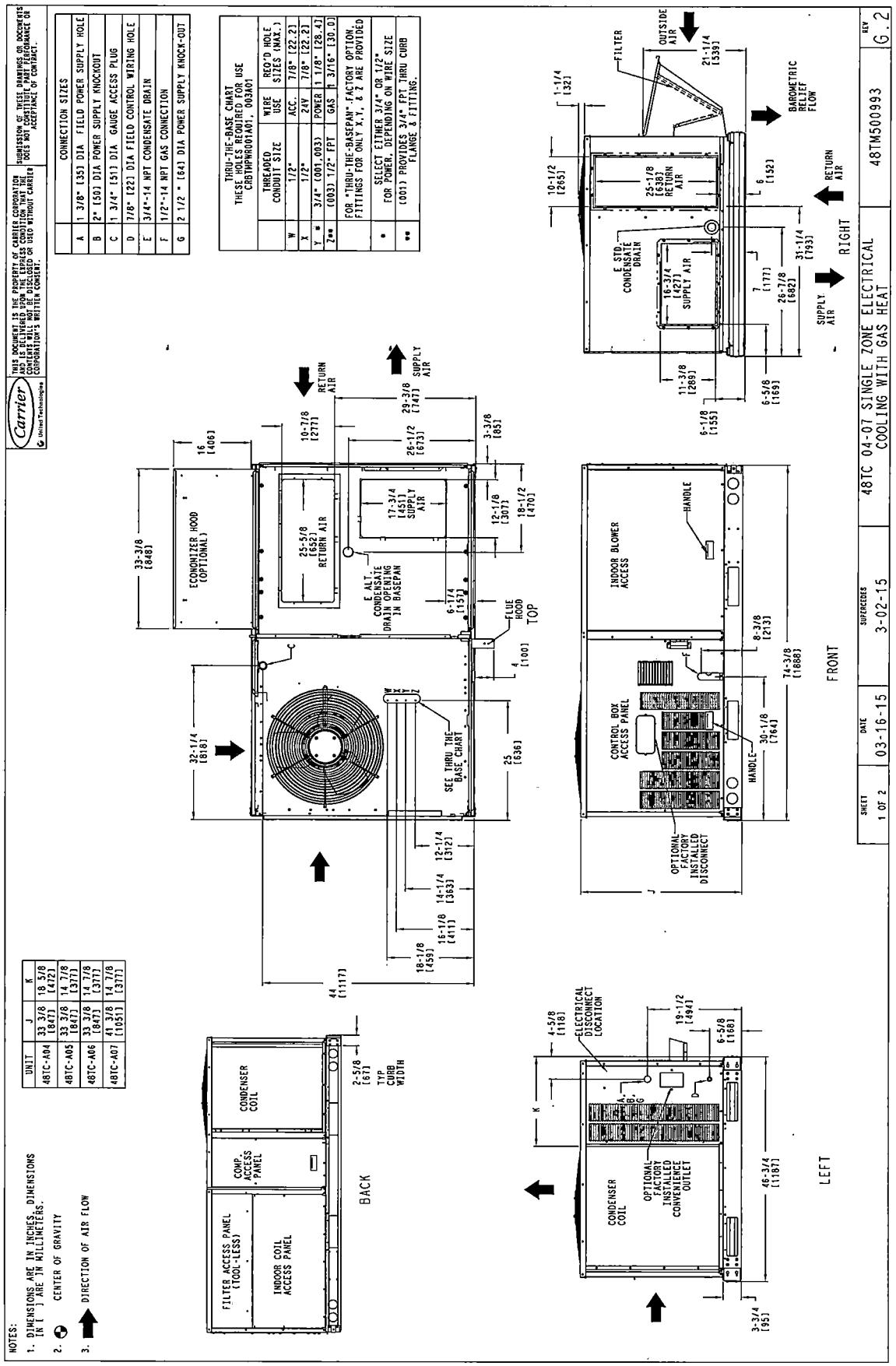

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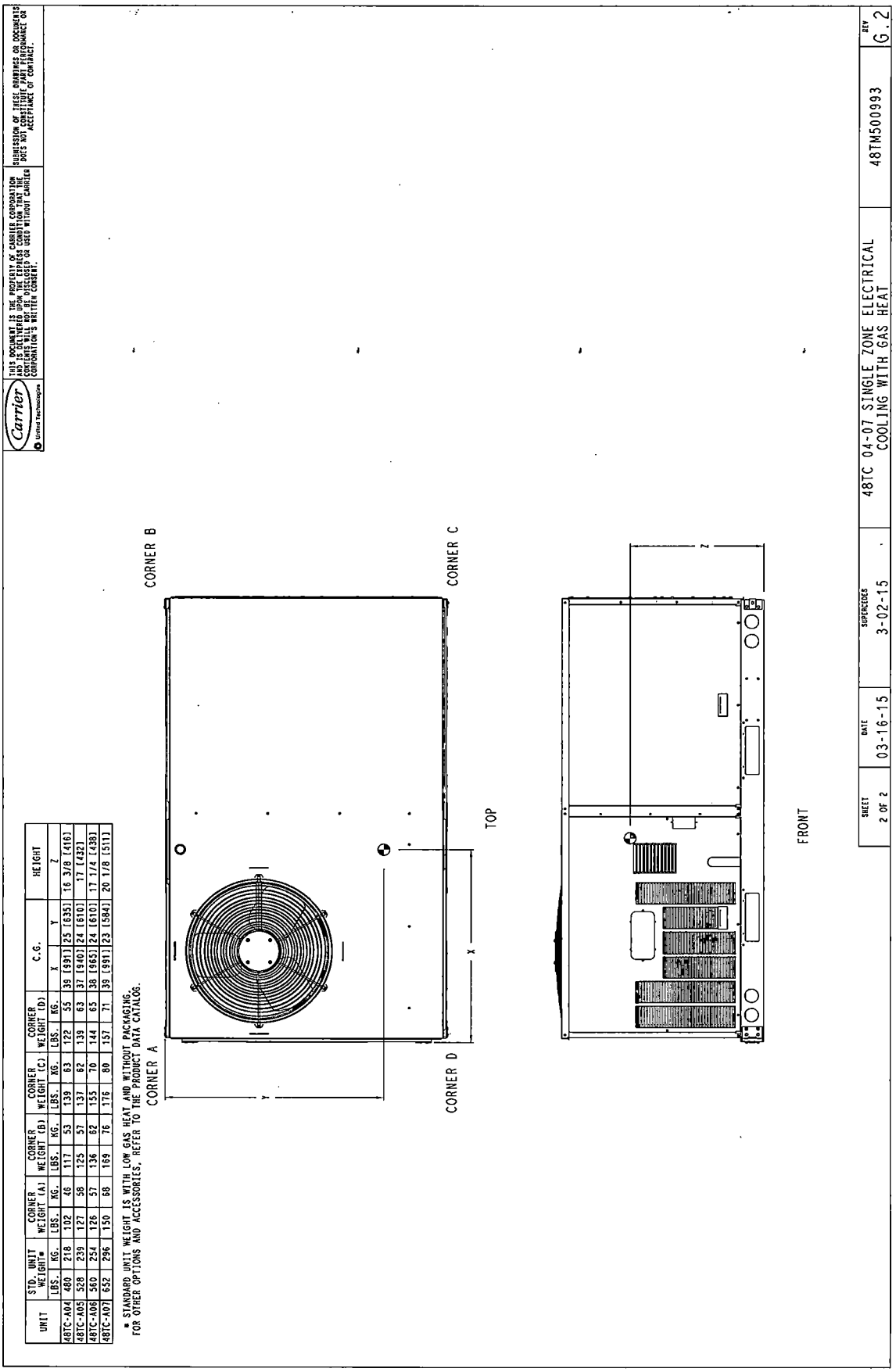
Fig. 1 - Dimensions 48TC 04-07 (Sheet 1 of 2)

CURBS, WEIGHTS & DIMENSIONS (cont.)



UNIT	STD. UNIT WEIGHT*		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
48TC-A04	480	218	102	46	117	53	139	63	122	55	39 [991]	25 [635]	16 3/8 [416]
48TC-A05	528	239	127	58	125	57	137	62	139	63	37 [940]	24 [610]	17 [432]
48TC-A06	560	254	126	57	136	62	155	70	144	65	38 [965]	24 [610]	17 1/4 [438]
48TC-A07	652	296	150	68	169	76	176	80	157	71	39 [991]	23 [584]	20 1/8 [511]

* STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING. FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.

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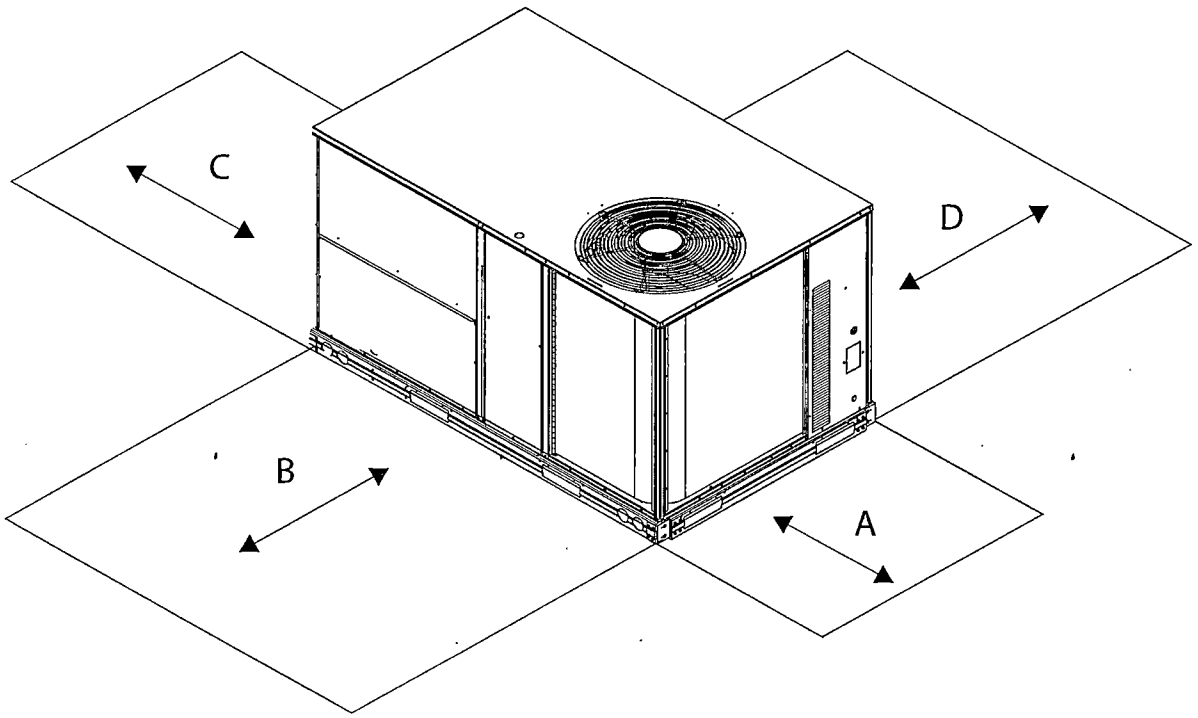
Fig. 2 - Dimensions 48TC 04-07 (Sheet 2 of 2)

CURBS, WEIGHTS & DIMENSIONS (cont.)



C08337

Fig. 3 - Service Clearance

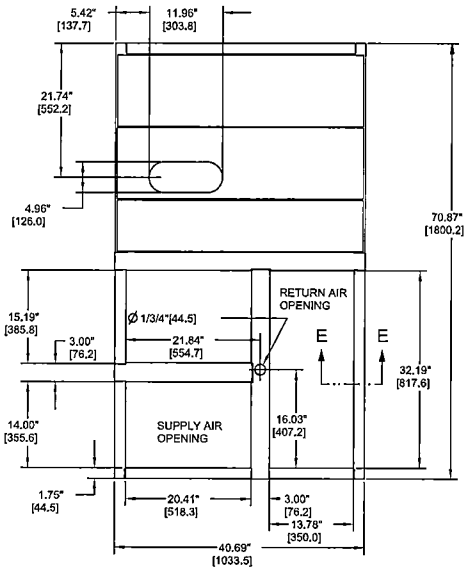
LOC	DIMENSION	CONDITION
A	48–in (1219 mm)	Unit disconnect is mounted on panel
	18–in (457 mm)	No disconnect, convenience outlet option
	18–in (457 mm)	Recommended service clearance
	12–in (305 mm)	Minimum clearance
B	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
	Special	Check for sources of flue products within 10–ft of unit fresh air intake hood
C	36–in (914 mm)	Side condensate drain is used
	18–in (457 mm)	Minimum clearance
D	48–in (1219 mm)	No flue discharge accessory installed, surface is combustible material
	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
	Special	Check for adjacent units or building fresh air intakes within 10–ft of this unit's flue outlet

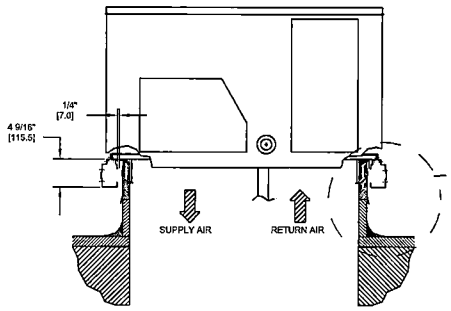
NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or vertical clearances.

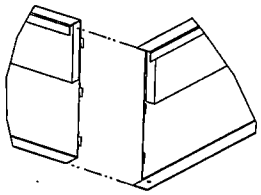
ROOF CURB ACCESSORY #	A
CRRFCURB001A01	14" [356]
CRRFCURB002A01	24" [610]

NOTES:
1. ROOFCURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. INSULATED PANELS: 25.4 [1"] THK. POLYURETHANE FOAM, 44.5 [1-3/4] # DENSITY.
3. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4. ROOFCURB: 18 GAGE STEEL.
5. ATTACH DUCTWORK TO CURB. (FLANGES OF DUCT REST ON CURB).
6. SERVICE CLEARANCE 4 FEET ON EACH SIDE.
7. ▨ DIRECTION OF AIR FLOW.
8. CONNECTOR PACKAGE CRBTMPWR001A01 IS FOR THRU-THE-CURB GAS TYPE PACKAGE CRBTMPWR003A01 IS FOR THRU-THE-BOTTOM TYPE GAS CONNECTIONS.

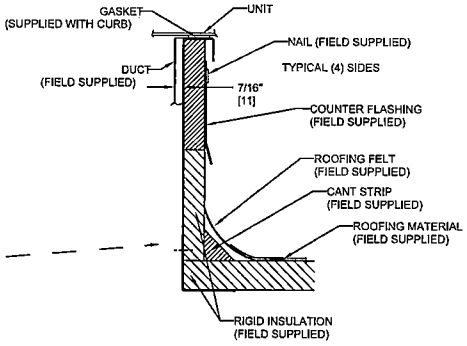
CONNECTOR PKG. ACC.	GAS CONNECTION TYPE	GAS FITTING	POWER WIRING FITTING	CONTROL WIRING FITTING	ACCESSORY CONVENIENCE OUTLET WIRING CONNECTOR
CRBTMPWR001A01	THRU THE CURB	3/4" [19] NPT	3/4" [19] NPT	1/2" [12.7] NPT	1/2" [12.7] NPT
CRBTMPWR003A01	THRU THE BOTTOM	1/2" [12.7] NPT			

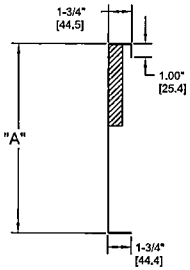






VIEW "B"
CORNER DETAIL





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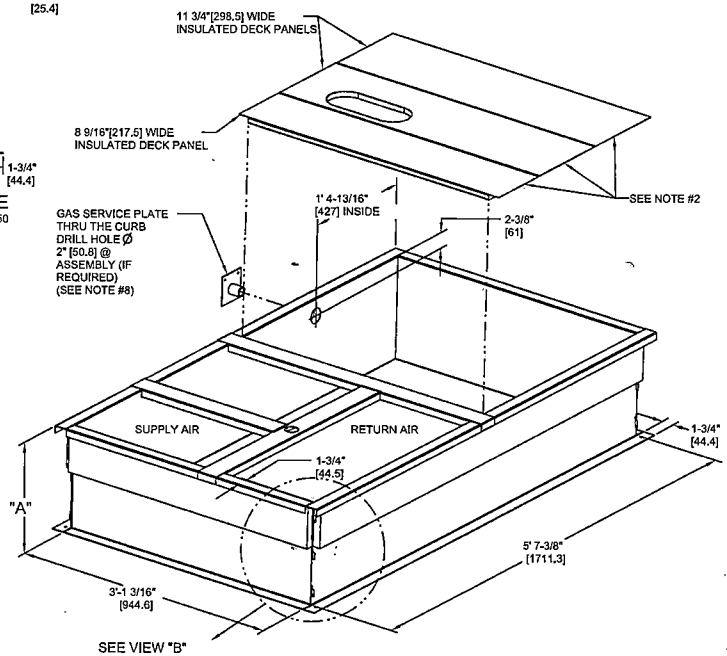
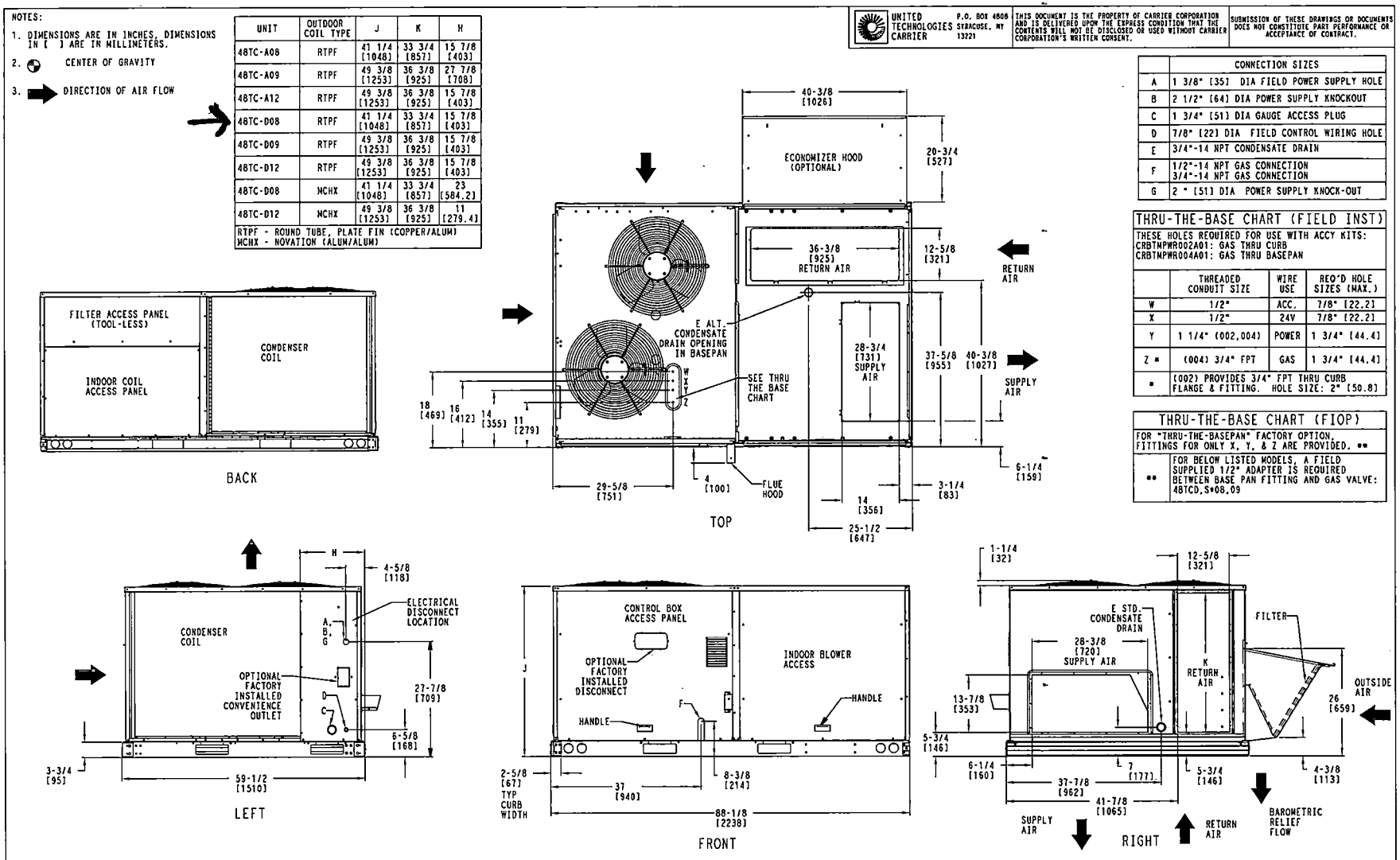


CERTIFIED DRAWING

REV	REVISION RECORD	DATE	BY	CHK'D	APP'D	ECN NO.
A	OVERALL DIM. 5'-7 3/8" WAS 5'-7 7/8; 18GA MATERIAL WA 16 GA.; NAIL FIELD SUPPLIED WAS WITH CURB	04/22/13	MMC	-	-	1067898

DRAWING RELEASE LEVEL: PRODUCTION			
THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: 1 DEC ± - 2 DEC ± - 3 DEC ± - ANG ± -	THIS DOCUMENT AND THE INFORMATION CONTAINED THEREIN IS PROPRIETARY TO CARRIER CORPORATION AND SHALL NOT BE USED OR DISCLOSED TO OTHERS, IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF CARRIER CORPORATION.	
MATERIAL - - -	AUTHORIZATION NUMBER 1041738	TITLE CURB ASY, ROOF (004-007)	
ENGINEERING REQUIREMENTS T-005, Y-002	ENGINEERING - MANUFACTURING -	SIZE D	DRAWING NUMBER 48TC400427 SHEET 5 OF 5 REV B
WEIGHT: -	DRAFTER MMC 06/17/11 CHECKER -		
SURFACE FINISH -	MFG/PURCH PURCH	MODEL (INTERNAL USE ONLY)	NEXT DRAWING - SCALE N/A DISTRIBUTION MMC

Fig. 4 - Roof Curb Details - 48TC 04-07



UNIT	OUTDOOR COIL TYPE	J	K	H
48TC-A08	RTPF	41 1/4 [1048]	33 3/4 [857]	15 7/8 [403]
48TC-A09	RTPF	49 3/8 [1253]	36 3/8 [925]	27 7/8 [708]
48TC-A12	RTPF	49 3/8 [1253]	36 3/8 [925]	15 7/8 [403]
48TC-D08	RTPF	41 1/4 [1048]	33 3/4 [857]	15 7/8 [403]
48TC-D09	RTPF	49 3/8 [1253]	36 3/8 [925]	15 7/8 [403]
48TC-D12	RTPF	49 3/8 [1253]	36 3/8 [925]	15 7/8 [403]
48TC-D08	MCHX	41 1/4 [1048]	33 3/4 [857]	23 [584.2]
48TC-D12	MCHX	49 3/8 [1253]	36 3/8 [925]	11 [279.4]

RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)
MCHX - NOVATION (ALUM/ALUM)

	CONNECTION SIZES
A	1 3/8" [35] DIA FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA GAUGE ACCESS PLUG
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
F	1/2"-14 NPT GAS CONNECTION 3/4"-14 NPT GAS CONNECTION
G	2 " [51] DIA POWER SUPPLY KNOCK-OUT

THRU-THE-BASE CHART (FIELD INST)

THESE HOLES REQUIRED FOR USE WITH ACCY KITS:
CRBTNPWR002A01: GAS THRU CURB
CRBTNPWR004A01: GAS THRU BASEPAN

	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC.	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	1 1/4" (002,004)	POWER	1 3/4" [44.4]
Z *	(004) 3/4" FPT	GAS	1 3/4" [44.4]
*	(002) PROVIDES 3/4" FPT THRU CURB FLANGE & FITTING. HOLE SIZE: 2" [50.8]		

THRU-THE-BASE CHART (FIOP)

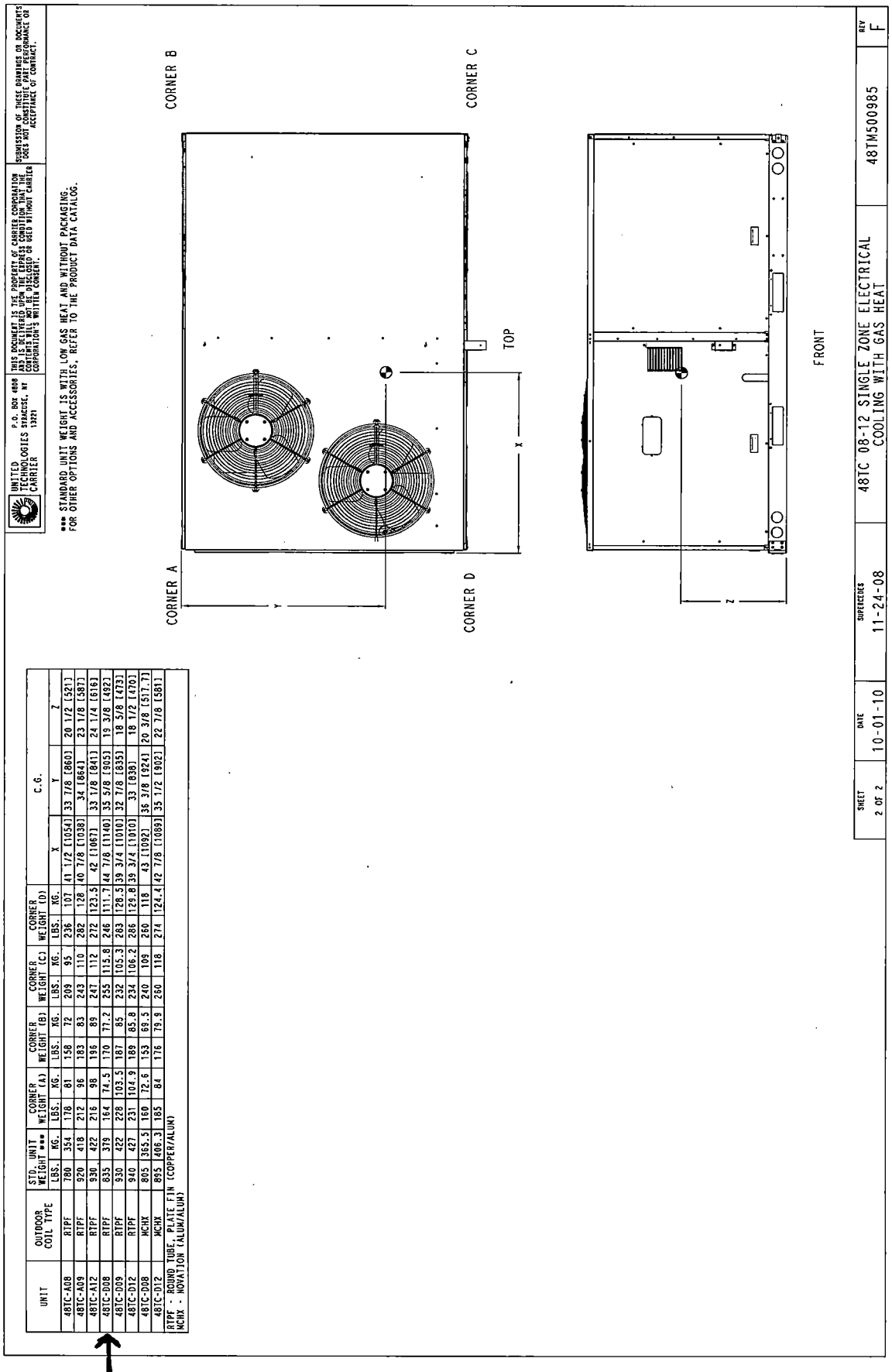
FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X, Y, & Z ARE PROVIDED. **

**	FOR BELOW LISTED MODELS, A FIELD SUPPLIED 1/2" ADAPTER IS REQUIRED BETWEEN BASE PAN FITTING AND GAS VALVE: 48TCD,S*08,09

SHEET	DATE	SUPERCEDES			REV
1 OF 2	10-01-10	11-24-08	48TC 08-12 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	48TM500985	F

Fig. 5 - Dimensions 48TC 08-12 (Sheet 1 of 2)

CURBS, WEIGHTS & DIMENSIONS (cont.)



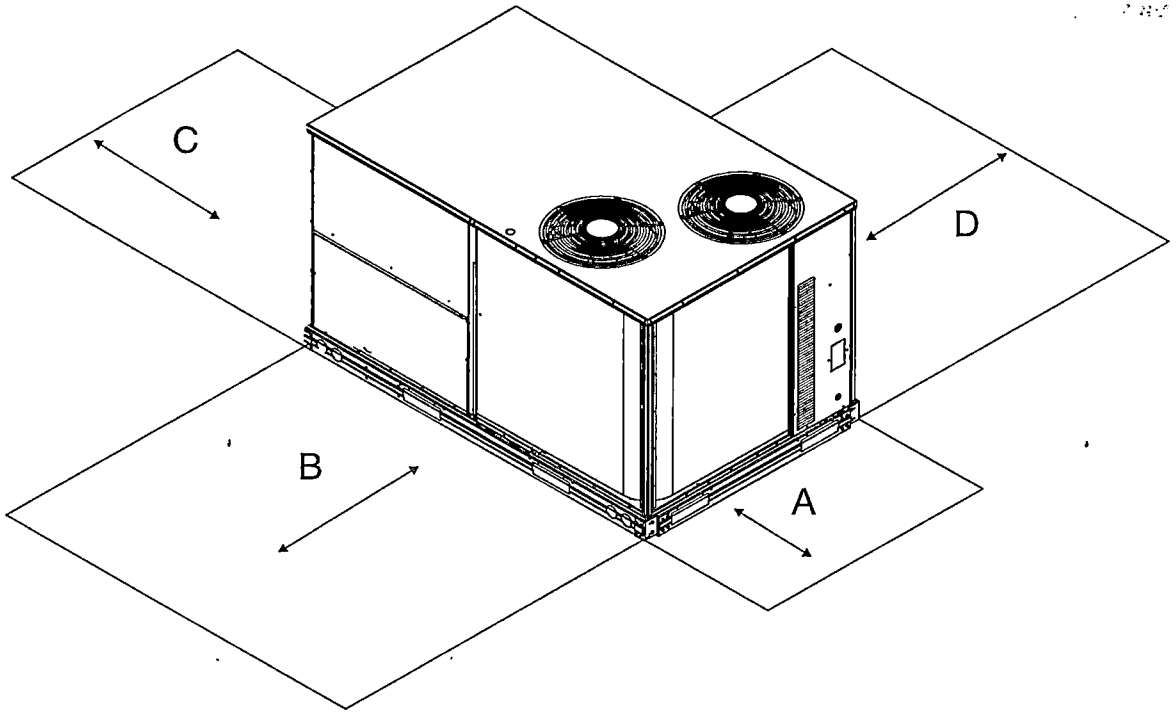
UNIT	OUTDOOR COIL TYPE	STD. UNIT WEIGHT ***		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
48TC-A08	RTPF	780	354	178	81	158	72	209	95	236	107	41 1/2 [1054]	33 7/8 [860]	20 1/2 [521]
48TC-A09	RTPF	920	418	212	96	183	83	243	110	282	128	40 7/8 [1038]	34 [864]	23 1/8 [587]
48TC-A12	RTPF	930	422	216	98	195	89	247	112	272	123.5	42 [1067]	33 1/8 [841]	24 1/4 [616]
48TC-D08	RTPF	835	379	164	74.5	170	77.2	255	115.8	246	111.7	44 7/8 [1140]	35 5/8 [905]	19 3/8 [492]
48TC-D09	RTPF	930	422	228	103.5	187	85	232	105.3	283	128.5	39 3/4 [1010]	32 7/8 [835]	18 5/8 [473]
48TC-D12	RTPF	940	427	231	104.9	189	85.8	234	106.2	286	129.8	39 3/4 [1010]	33 [838]	18 1/2 [470]
48TC-D08	MCHX	805	365.5	160	72.6	153	69.5	240	109	250	118	43 [1092]	36 3/8 [924]	20 3/8 [517.7]
48TC-D12	MCHX	895	406.3	185	84	176	79.9	260	118	274	124.4	42 7/8 [1089]	35 1/2 [902]	22 7/8 [581]

RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)
MCHX - NOVATION (ALUM/ALUM)

C10293A

Fig. 6 - 48TC 08-12 (Sheet 2 of 2)

CURBS, WEIGHTS & DIMENSIONS (cont.)



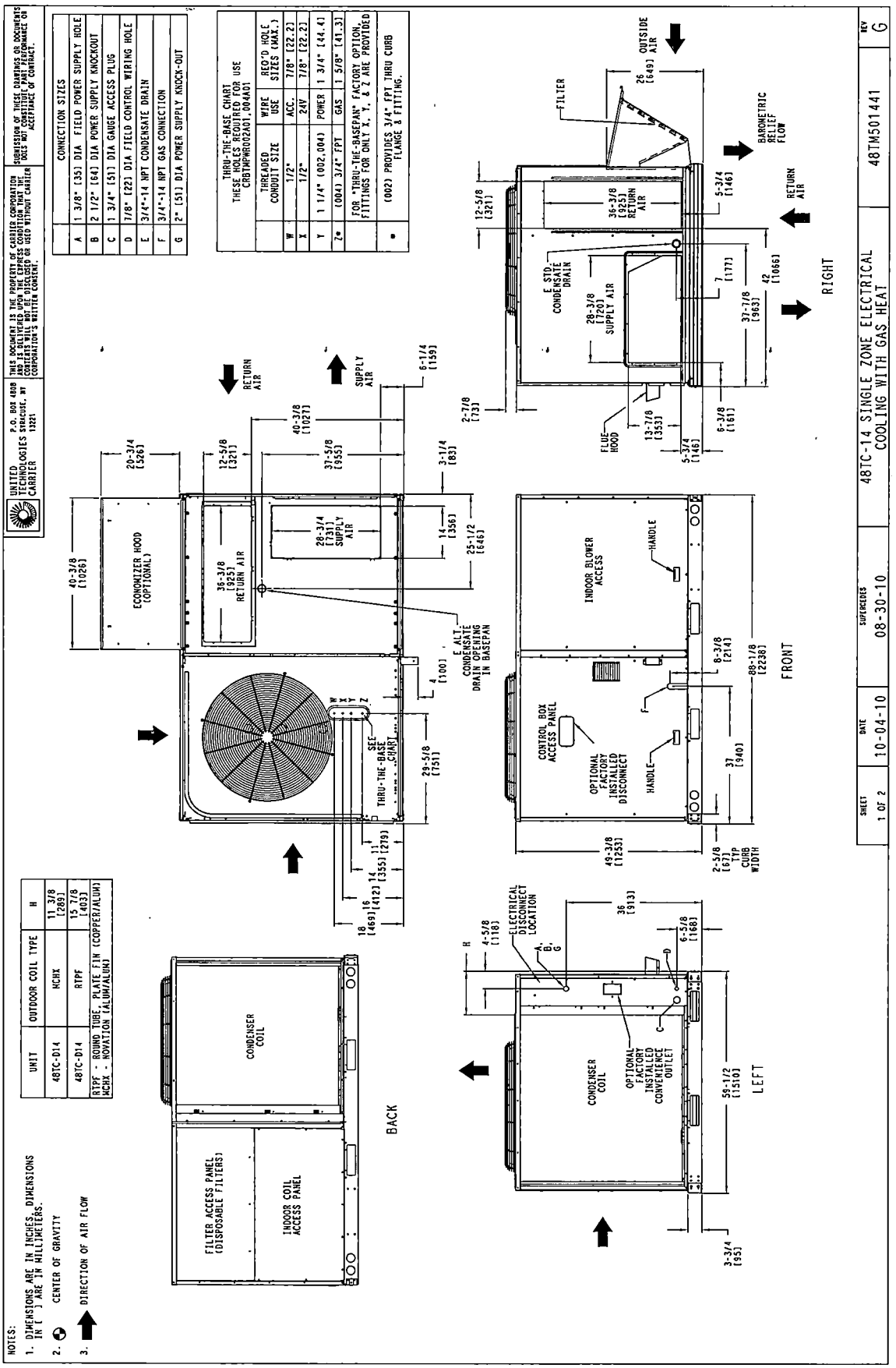
C11247

Fig. 7 - Service Clearance

LOC	DIMENSION	CONDITION
A	48–in (1219 mm)	Unit disconnect is mounted on panel
	36–in (914 mm)	If dimension–B is 12–in (305 mm)
	18–in (457 mm)	No disconnect, convenience outlet option
	18–in (457 mm)	Recommended service clearance (use electric screwdriver)
	12–in (305 mm)	Minimum clearance (use manual ratchet screwdriver)
B	36–in (914 mm)	Unit has economizer
	12–in (305 mm)	If dimension–A is 36–in (914 mm)
	Special	Check for sources of flue products within 10–ft of unit fresh air intake hood
C	36–in (914 mm)	Side condensate drain is used
	18–in (457 mm)	Minimum clearance
D	48–in (1219 mm)	No flue discharge accessory installed, surface is combustible material
	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
	Special	Check for adjacent units or building fresh air intakes within 10–ft of this unit's flue outlet

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or vertical clearances.

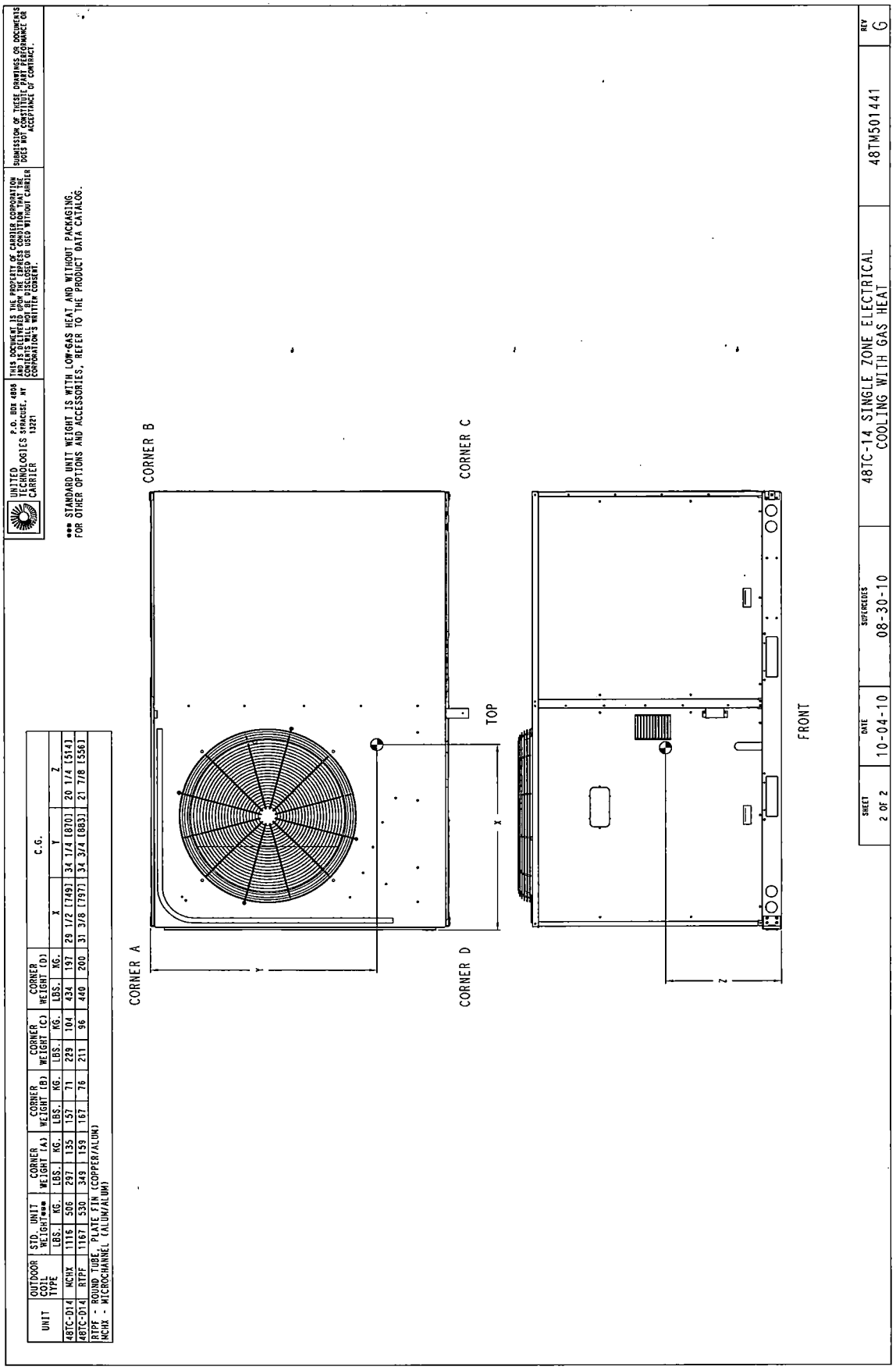
CURBS, WEIGHTS & DIMENSIONS (cont.)



C09648A

Fig. 8 - Dimensions 48TC 14 (Sheet 1 of 2)

CURBS, WEIGHTS & DIMENSIONS (cont.)



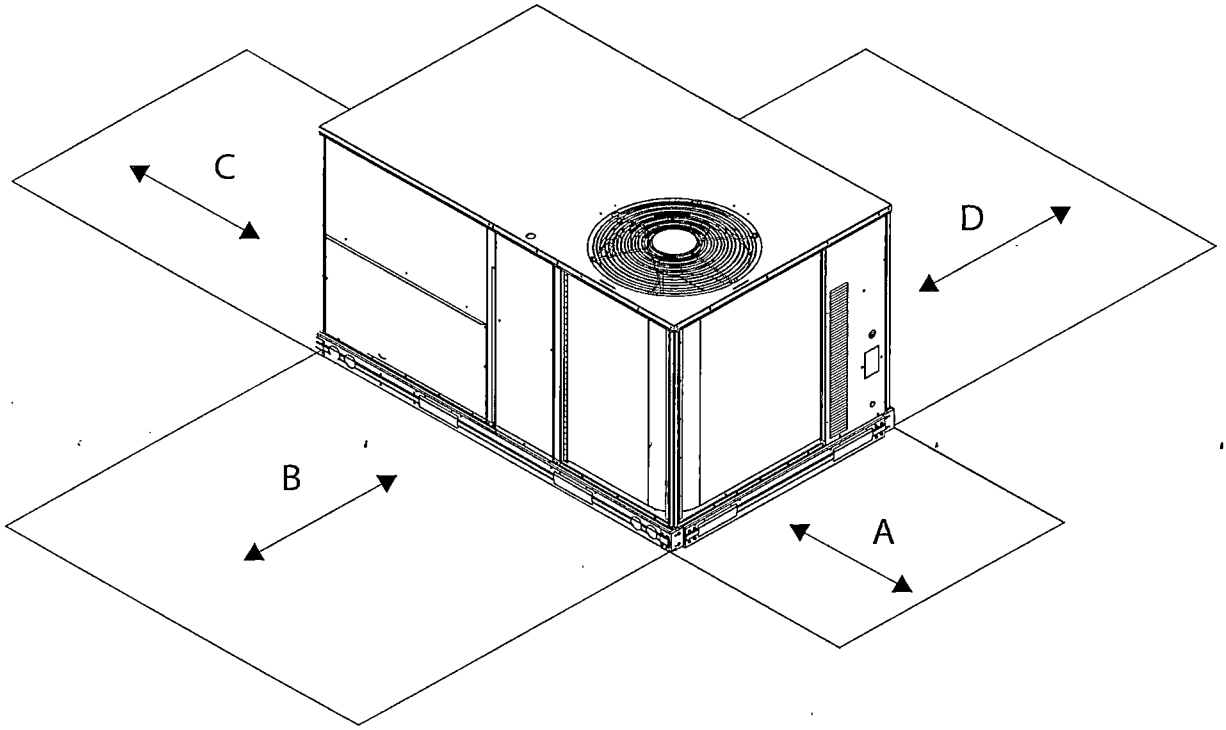
UNIT	OUTDOOR COIL TYPE	STD. UNIT WEIGHT***		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.			
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X		Y	Z
48TC-D14	MCHX	1116	506	297	135	157	71	229	104	434	197	29 1/2 [749]		34 1/4 [870]	20 1/4 [514]
48TC-D14	RTPF	1167	530	349	159	167	76	211	96	440	200	31 3/8 [797]		34 3/4 [883]	21 7/8 [556]

RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)
MCHX - MICROCHANNEL (ALUM/ALUM)

C10326B

Fig. 9 - Dimensions 48TC 14 (Sheet 2 of 2)

CURBS, WEIGHTS & DIMENSIONS (cont.)



C08337

Fig. 10 - Service Clearance

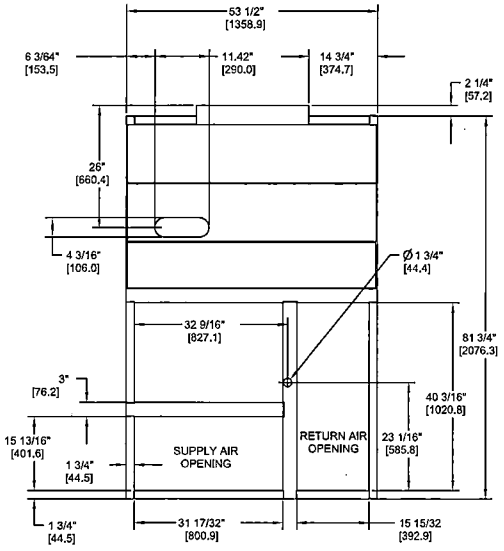
LOC	DIMENSION	CONDITION
A	48–in (1219 mm)	Unit disconnect is mounted on panel
	36–in (914 mm)	If dimension–B is 12–in (305 mm)
	18–in (457 mm)	No disconnect, convenience outlet option
	18–in (457 mm)	Recommended service clearance (use electric screwdriver)
	12–in (305 mm)	Minimum clearance (use manual ratchet screwdriver)
B	36–in (914 mm)	Unit has economizer
	12–in (305 mm)	If dimension–A is 36–in (914 mm)
	Special	Check for sources of flue products within 10–ft of unit fresh air intake hood
C	36–in (914 mm)	Side condensate drain is used
	18–in (457 mm)	Minimum clearance
D	48–in (1219 mm)	No flue discharge accessory installed, surface is combustible material
	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
	Special	Check for adjacent units or building fresh air intakes within 10–ft of this unit's flue outlet

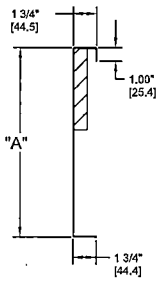
NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or vertical clearances.

ROOF CURB ACCESSORY #	A
CRRFCURB003A01	14" [356]
CRRFCURB004A01	24" [610]

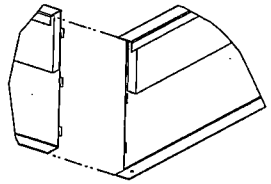
NOTES:
1. ROOFCURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. INSULATED PANELS: 25.4 [1"] THK, POLYURETHANE FOAM, 44.5 [1-3/4] # DENSITY.
3. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4. ROOFCURB: 18 GAGE STEEL.
5. ATTACH DUCTWORK TO CURB. (FLANGES OF DUCT REST ON CURB).
6. SERVICE CLEARANCE 4 FEET ON EACH SIDE.
7. ▨ DIRECTION OF AIR FLOW.
8. CONNECTOR PACKAGE CRBTMPWR002A01 IS FOR THRU-THE-CURB GAS TYPE PACKAGE CRBTMPWR004A01 IS FOR THRU-THE-BOTTOM TYPE GAS CONNECTIONS.

CONNECTOR PKG. ACC.	GAS CONNECTION TYPE	GAS FITTING	POWER WIRING FITTING	CONTROL WIRING FITTING	ACCESSORY CONVENIENCE OUTLET WIRING CONNECTOR
CRBTMPWR002A01	THRU THE CURB	3/4" [19] NPT	1 1/4" [31.7] NPT	1/2" [12.7] NPT	1/2" [12.7] NPT
CRBTMPWR004A01	THRU THE BOTTOM				

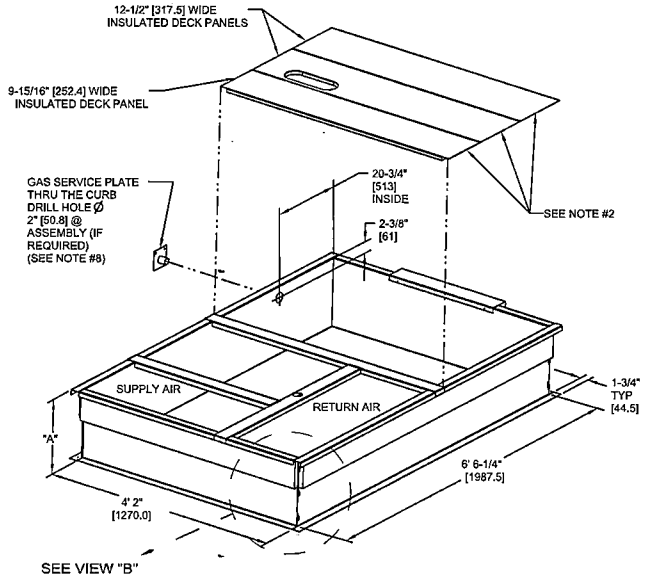




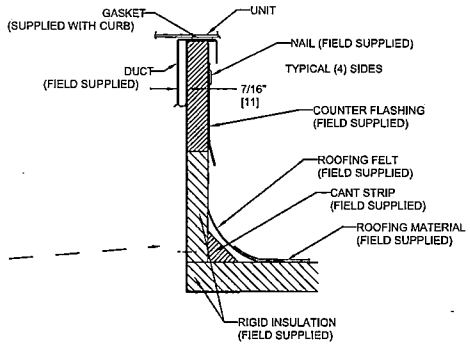
SECTION THRU SIDE

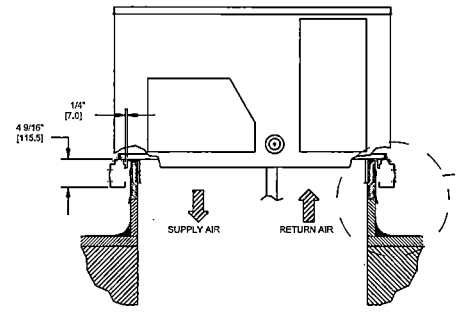


VIEW "B"
CORNER DETAIL



CERTIFIED DRAWING



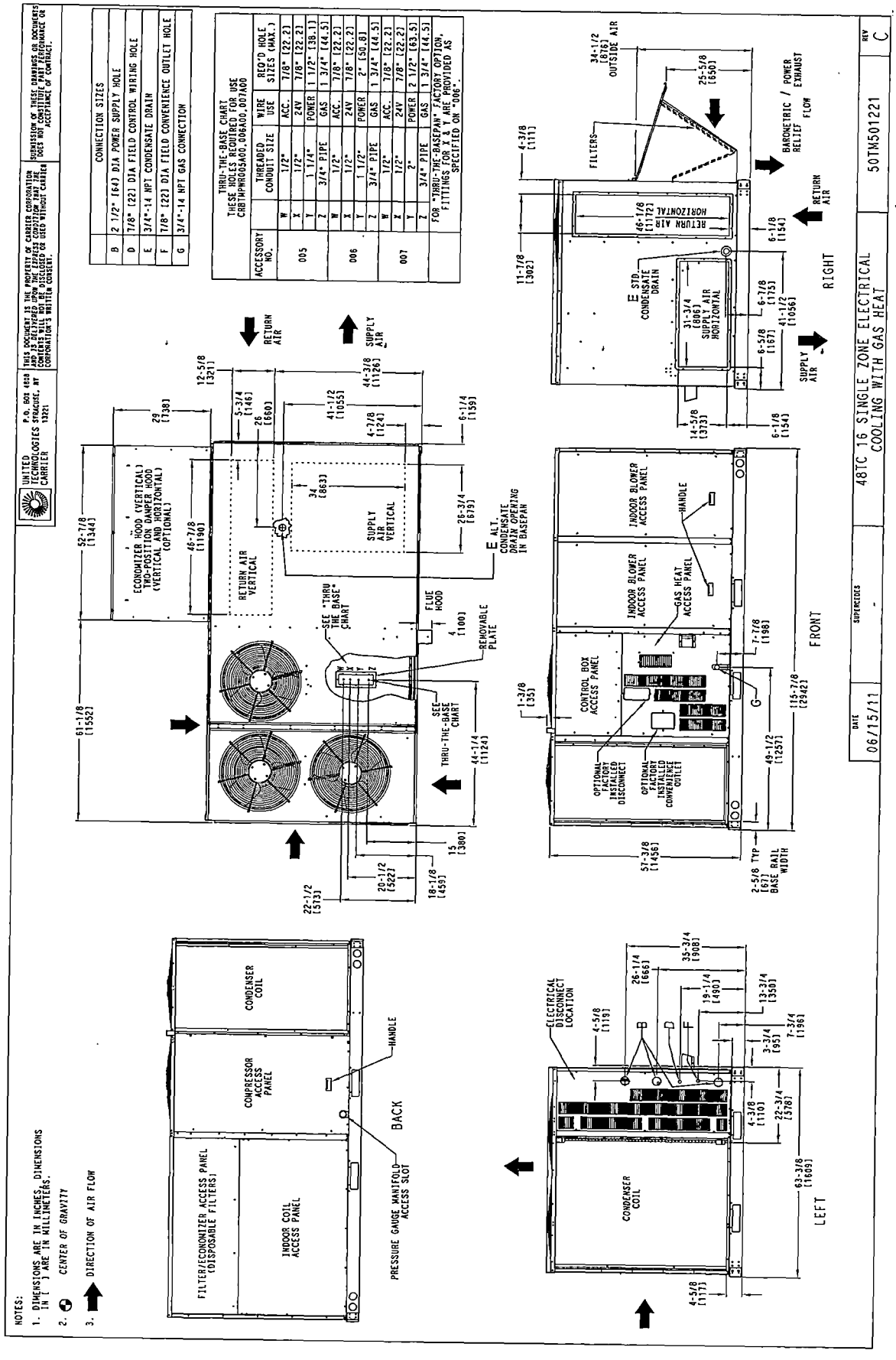


REV	REVISION RECORD	DATE	BY	CHK'D	APP'D	ECN NO.
C	6' 61/4" WAS 6' 7 1/6", 4'2' WAS 4' 2 13/16"; 18 GA WAS 16 GA.; 15 13/16" WAS 15 15/16"; NAIL FIELD SUPPLIED WAS WITH CURB	4/22/13	MMC	-	-	1067898

DRAWING RELEASE LEVEL:	PRODUCTION		
THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: 1 DEC ± - 2 DEC ± - 3 DEC ± - ANG ± -	THIS DOCUMENT AND THE INFORMATION CONTAINED THEREIN IS PROPRIETARY TO CARRIER CORPORATION AND SHALL NOT BE USED OR DISCLOSED TO OTHERS, IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF CARRIER CORPORATION.	
MATERIAL - - -	AUTHORIZATION NUMBER 1029120	TITLE CURB ASY, ROOF	
ENGINEERING REQUIREMENTS T-005, Y-002	ENGINEERING - - MANUFACTURING - -	SIZE D	DRAWING NUMBER 50HJ405012 SHEET 5 OF 5 REV C
WEIGHT: -	DRAFTER MMC 12/16/09 CHECKER - -		
SURFACE FINISH - MFG/PURCH PURCH	MODEL (INTERNAL USE ONLY) -	NEXT DRAWING -	SCALE N/A DISTRIBUTION -

Fig. 11 - Roof Curb Details 48TC 08-14

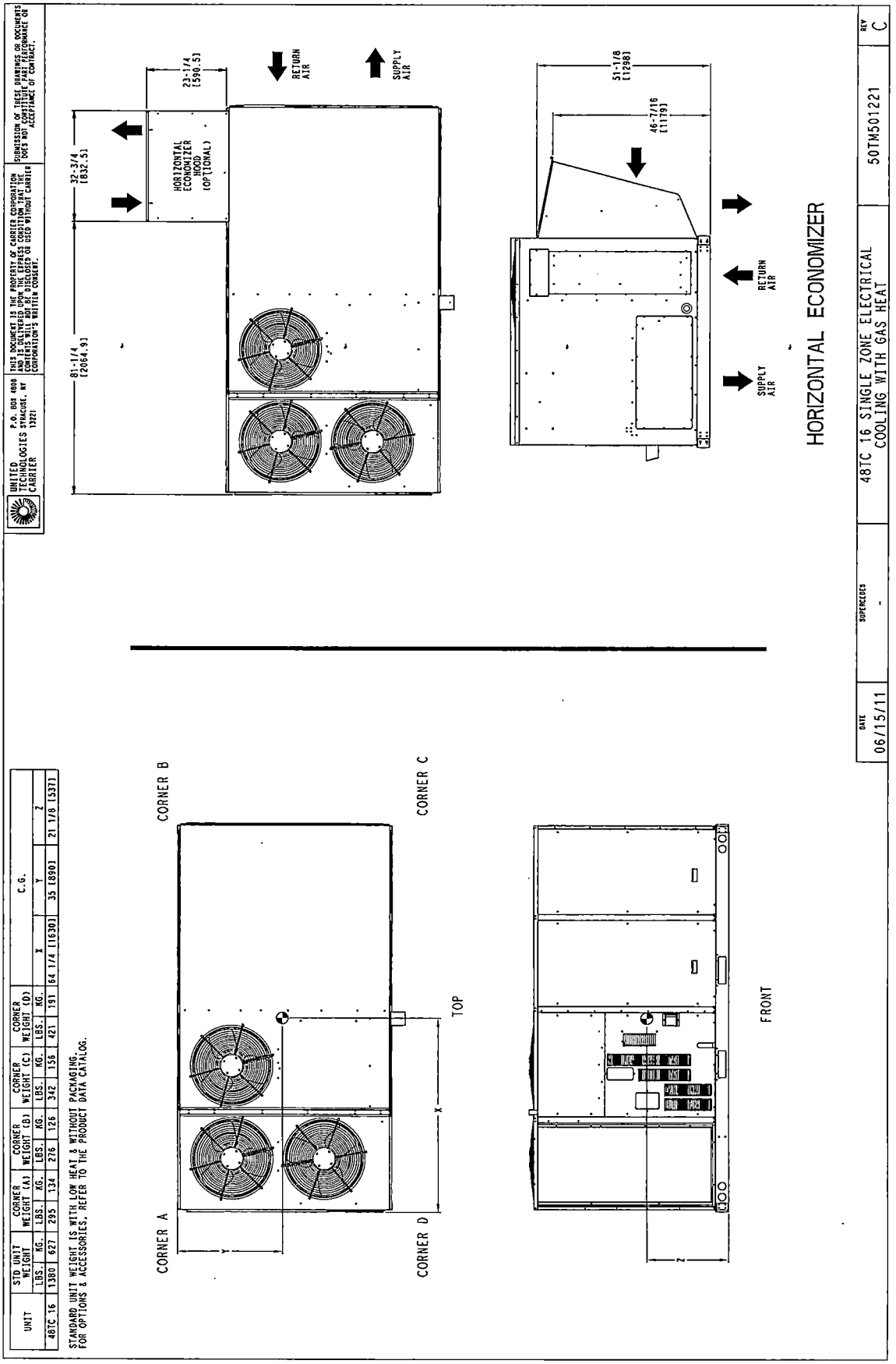
CURBS, WEIGHTS & DIMENSIONS (cont.)



C11559

Fig. 12 - Dimensions 48TC 16 (Sheet 1 of 2)

CURBS, WEIGHTS & DIMENSIONS (cont.)



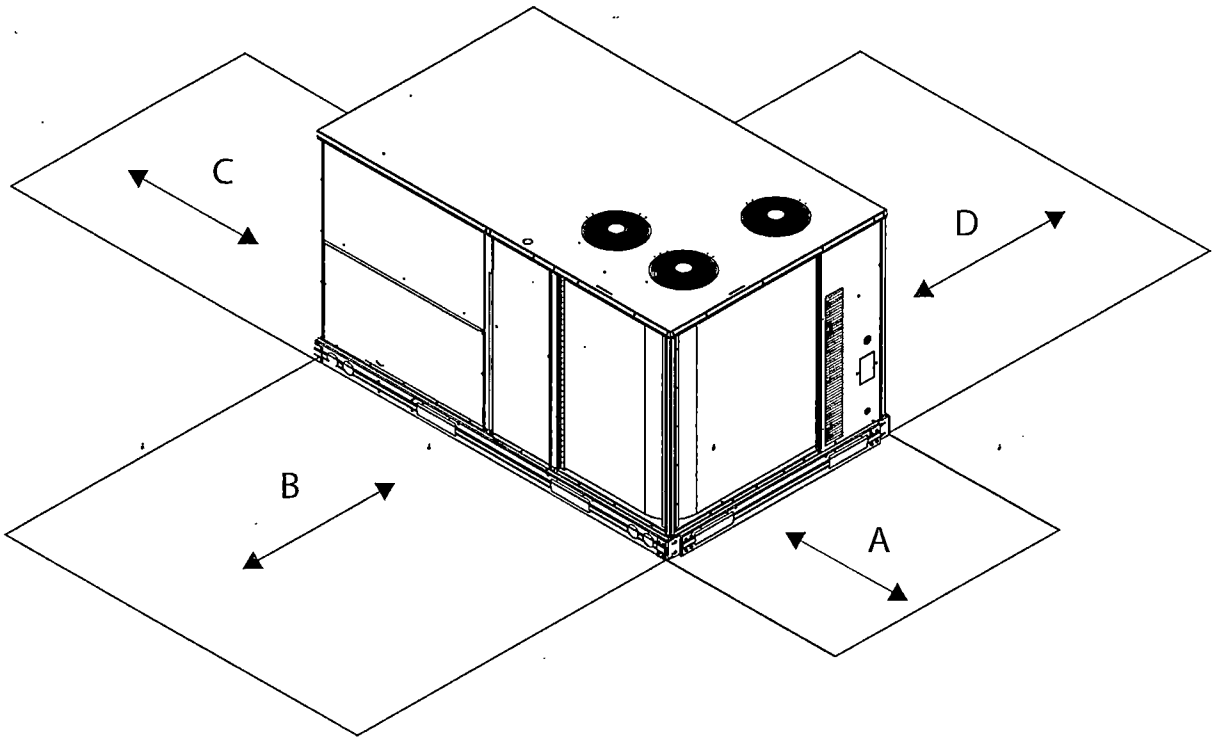
UNIT	STD UNIT WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
48TC 16	1380	627	295	134	276	126	342	156	421	191	64 1/4 [1630]	35 [890]	21 1/8 [537]

STANDARD UNIT WEIGHT IS WITH LOW HEAT & WITHOUT PACKAGING.
FOR OPTIONS & ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.

C11560

Fig. 13 - Dimensions 48TC 16 (Sheet 2 of 2)

CURBS, WEIGHTS & DIMENSIONS (cont.)



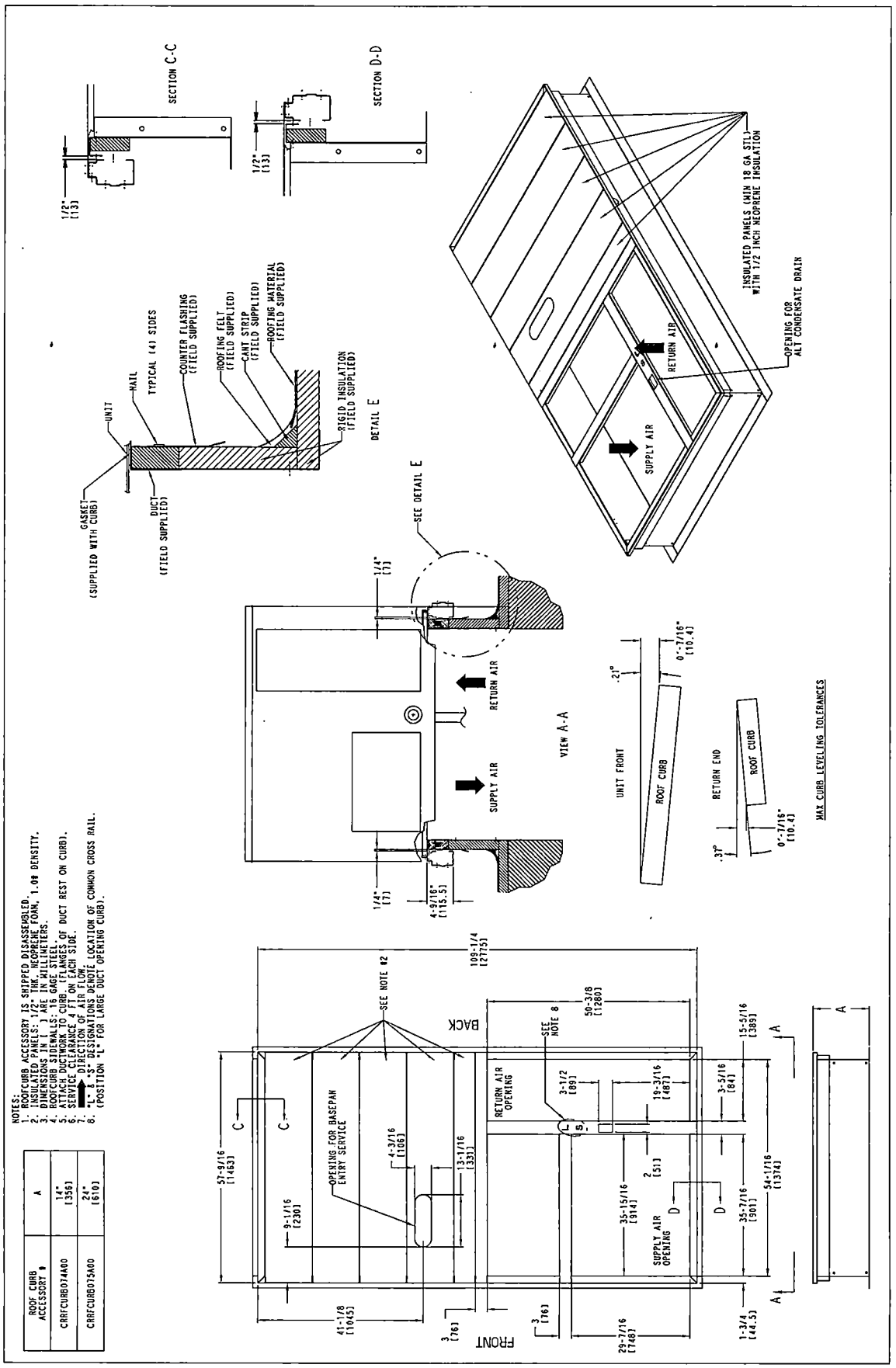
C10578B

Fig. 14 - Service Clearance

LOC	DIMENSION	CONDITION
A	48–in (1219 mm)	Unit disconnect is mounted on panel
	18–in (457 mm)	No disconnect, convenience outlet option
	18–in (457 mm)	Recommended service clearance
	12–in (305 mm)	Minimum clearance
B	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
	Special	Check for sources of flue products within 10–ft of unit fresh air intake hood
C	36–in (914 mm)	Side condensate drain is used
	18–in (457 mm)	Minimum clearance
D	48–in (1219 mm)	No flue discharge accessory installed, surface is combustible material
	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	36–in (914 mm)	Surface behind servicer is electrically non–conductive (e.g., wood, fiberglass)
	Special	Check for adjacent units or building fresh air intakes within 10–ft of this unit's flue outlet

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or vertical clearances.

CURBS, WEIGHTS & DIMENSIONS (cont.)



ROOF CURB ACCESSORY #	A
CRRFCURB074A00	14" [356]
CRRFCURB075A00	24" [610]

NOTES:
1. ROOFCURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. INSULATED PANELS: 1/2" THK. NEOPRENE FOAM, 1.0# DENSITY.
3. DIMENSIONS IN ( ) ARE IN MILLIMETERS.
4. ROOFCURB SIDEWALLS: 16 GAGE STEEL.
5. ATTACH DUCTWORK TO CURB. (FLANGES OF DUCT REST ON CURB).
6. SERVICE CLEARANCE OF 41" (1041 mm) ON EACH SIDE.
7. "C" - "D" DESIGNATIONS DENOTE LOCATION OF COMMON CROSS RAIL. (POSITION "L" FOR LARGE DUCT OPENING CURB).

C10772B

Fig. 15 - Roof Curb Details 48TC 16

OPTIONS & ACCESSORY WEIGHTS

OPTION / ACCESSORY	OPTION / ACCESSORY WEIGHTS																	
	04		05		06		07		08		09		12		14		16	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Humidi–MiZer®[1,3]	50	23	50	23	50	23	55	25	80	36	80	36	80	36	85	39	90	41
Power Exhaust – vertical	50	23	50	23	50	23	50	23	74	34	74	34	74	34	74	34	103	47
Power Exhaust – horizontal	30	14	30	14	30	14	30	14	30	14	30	14	30	14	30	14	75	34
EconoMi$er(IV, X or 2)	50	23	50	23	50	23	50	23	74	34	74	34	74	34	74	34	103	47
Two Position damper	39	18	39	18	39	18	39	18	58	26	58	26	58	26	58	26	65	29
Manual Dampers	12	5	12	5	12	5	12	5	18	8	18	8	18	8	18	8	25	11
Medium Gas Heat	12	5	9	4	9	4	9	4	15	7	15	7	18	8	18	8	28	13
High Gas Heat	–	–	17	8	17	8	17	8	29	13	29	13	35	16	35	16	50	23
Hail Guard (louvered)	16	7	16	7	16	7	16	7	34	15	34	15	34	15	34	15	45	20
Cu/Cu Condenser Coil[2]	6	3	13	6	13	6	15	7	12	5	23	10	23	10	23	10	25	11
Cu/Cu Condenser and Evaporator Coils[2]	12	5	19	9	20	9	26	12	25	11	49	22	49	22	49	22	47	21
Roof Curb (14–in. curb)	115	52	115	52	115	52	115	52	143	65	143	65	143	65	143	65	180	82
Roof Curb (24–in. curb)	197	89	197	89	197	89	197	89	245	111	245	111	245	111	245	111	255	116
CO_2 sensor	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Flue Discharge Deflector	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	–	–
Optional Indoor Motor/Drive	10	5	10	5	10	5	10	5	15	7	15	7	15	7	15	7	45	20
Motor Master Controller	35	16	35	16	35	16	35	16	35	16	35	16	35	16	40	18	40	18
Return Smoke Detector	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Supply Smoke Detector	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Non–Fused Disconnect	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7
Powered Convenience outlet	35	16	35	16	35	16	35	16	35	16	35	16	35	16	35	16	35	16
Non–Powered Convenience outlet	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Enthalpy Sensor	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Differential Enthalpy Sensor	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1
SAV System with VFD	–	–	–	–	–	–	–	–	20	9	20	9	20	9	20	9	20	9

NOTE: Where multiple variations are available, the heaviest combination is listed.

– Not Available

1 For Humidi–MiZer add MotorMaster Controller.

2 Where available.

3 The last order date for 48TC 04–06 units with Humidi–MiZer is October, 12, 2015. Use KC, HC or LC models after the last order date.

APPLICATION DATA

Min operating ambient temp (cooling):

In mechanical cooling mode, your Carrier rooftop unit can safely operate down to an outdoor ambient temperature of 40°F (4°C) and 25°F (-4°C), with an accessory winter start kit. It is possible to provide cooling at lower outdoor ambient temperatures by using less outside air, economizers, and/or accessory low ambient kits.

Max operating ambient temp (cooling):

The maximum operating ambient temperature for cooling mode is 115°F (46°C). While cooling operation above 115°F (46°C) may be possible, it could cause either a reduction in performance, reliability, or a protective action by the unit's internal safety devices.

Min mixed air temp (heating):

Using the factory settings, the minimum temperatures for the mixed air (the combined temperature of the warm return air and the cold outdoor air) entering the dimpled, gas heat exchangers are:

Aluminized	Stainless Steel
50°F (10°C) continuous	40°F (4°C) continuous
45°F (7°C) intermittent	35°F (2°C) intermittent

Operating at lower mixed-air temperatures may be possible, if a field supplied, outdoor air thermostat initiates both heat stages when the temperature is less than the minimum temperatures listed above. Please contact your local Carrier representative for assistance.

Min and max airflow (heating and cooling):

To maintain safe and reliable operation of your rooftop, operate within the heating airflow limits during heating mode and cooling airflow limits during cooling mode. Operating above the max may cause blow-off, undesired airflow noise, or airflow related problems with the rooftop unit. Operating below the min may cause problems with coil freeze-up and unsafe heating operation. Heating and cooling limitations differ when evaluating operating cfm, the minimum value is the HIGHER of the cooling and heating minimum cfm values published in Table 7 and the maximum value is the LOWER of the cooling and heating maximum values published in Table 7.

Heating-to-cooling changeover:

Your unit will automatically change from heating to cooling mode when using a thermostat with an auto-changeover feature.

Airflow:

All units are draw-through in cooling mode and blow-through in heating mode.

Outdoor air application strategies:

Economizers reduce operating expenses and compressor run time by providing a free source of cooling and a means of ventilation to match application changing needs. In fact, they should be considered for most applications. Also, consider the various economizer control methods and their benefits, as well as sensors required to accomplish your application goals. Please contact your local Carrier representative for assistance.

Motor limits, Brake horsepower (BHP):

Due to internal design of Carrier units, the air path, and specially designed motors, the full horsepower (maximum continuous BHP) band, as listed in Tables 8, 9, 11 and 12, can be used with the utmost confidence. There is no need for extra safety factors, as Carrier motors are designed and rigorously tested to use the entire, listed BHP range without either nuisance tripping or premature motor failure.

Propane heating:

Propane has different physical qualities than natural gas. As a result, propane requires different fuel to air mixture. To optimize the fuel/air mixture for propane, Carrier sells different burner orifices in an easy to install accessory kit. To select the correct burner orifices or determine the heat capacity for a propane application, use either the selection software, or the unit's service manual.

High altitude heating:

High altitudes have less oxygen, which affects the fuel/air mixture in heat exchangers. In order to maintain a proper fuel/air mixture, heat exchangers operating in altitudes above 2000 ft (610 m) require different orifices. To select the correct burner orifices or determine the heat capacity for a high altitude application, use either the selection software, or the unit's service manual.

High altitudes have less oxygen, which means heat exchangers need less fuel. The new gas orifices in this field installed kit make the necessary adjustment for high altitude applications. They restore the optimal fuel to air mixture and maintain healthy combustion on altitudes above 2000 ft (610 m).

NOTE: Typical natural gas heating value ranges from 975 to 1050 Btu/ft^3 at sea level nationally. The heating value goes down approximately 1.7% per every thousand feet elevation. Standard factory orifices can typically be used up to 2000 ft (610m) elevation without any operational issues.

NOTE: For installations in Canada, the input rating should be derated by 10% for altitudes from 2000 ft (610m) to 4500 ft (1372m) above sea level.

OLD Unit

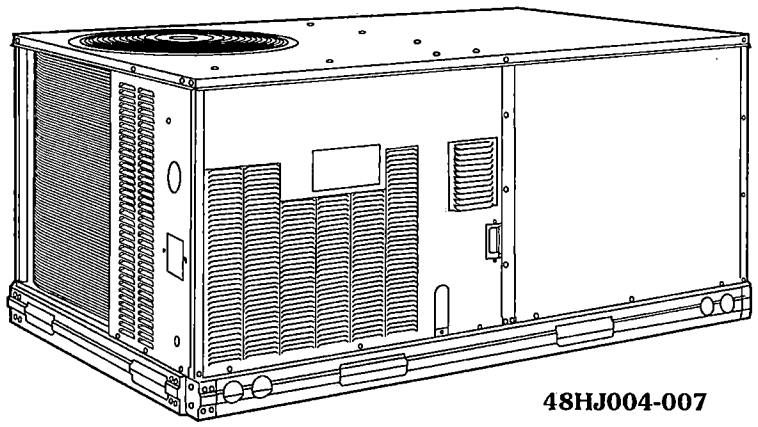
Product Data

48HJD/HJE/HJF Single-Package Rooftop Units High-Efficiency Electric Cooling/ Gas Heating

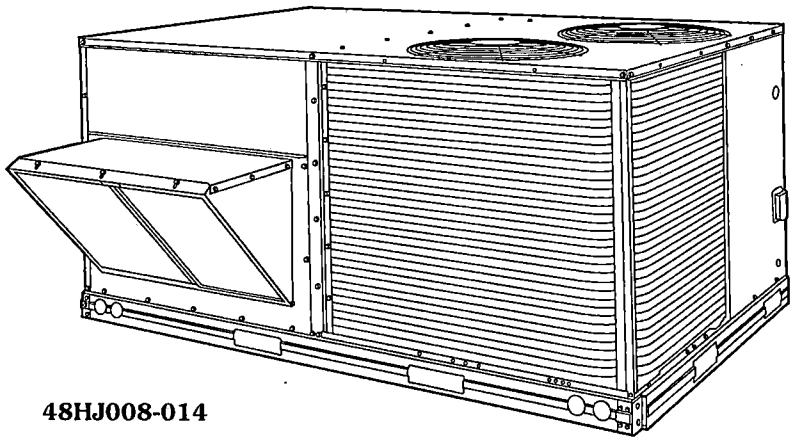
3 to 12½ Nominal Tons

Carrier Comfort System PremierLink

Carrier Weathermaster® S·E·R·I·E·S



48HJ004-007



48HJ008-014

Carrier has designed the Weathermaster series based on customer needs and requests to be the most efficient and reliable rooftop unit ever made.

Features/Benefits

- **Most efficient rooftop line for cooling using scroll compressor technology**
- **Most efficient rooftop line for heating using dimpled heat exchangers on all units**
- **High reliability — non-corrosive condensate pans, prepainted cabinets and primed interior panels, and all units are fully protected by internal safeties**
- **Quietest operation — all compressors mounted on independent vibration isolators. Standard, belt-driven evaporator fan motors on all units**
- **Ease of maintenance achieved by self diagnostics on the Integrated Gas Controller (IGC), optional direct digital controls, standard size filters, tool-less filter access, simple compressor access, permanently lubricated fan motors, optional disconnect switch, optional 115-v convenience outlet, and optional hinged access panels**
- **Exclusive MoistureMiser dehumidification package — a result of recent advances by Carrier in controlling comfort levels. This factory-installed option significantly improves the dehumidification capability of the rooftop unit and helps control humidity levels in the building.**

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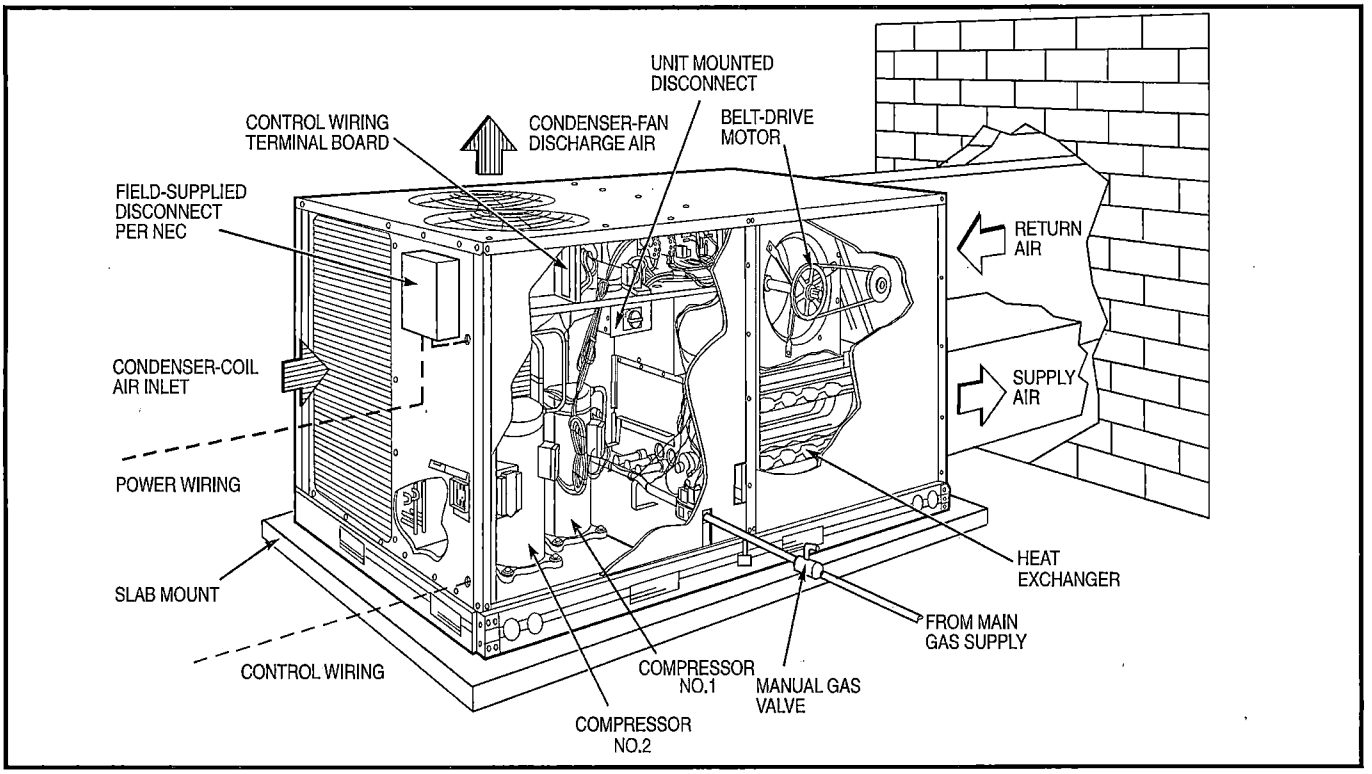

Carrier means top quality and reliability

Each component utilized in the Weathermaster® Series is designed and tested for a minimum of 15 years operation under the harshest conditions.

Every unit is thoroughly run tested at the factory in each operating mode and evacuated prior to final charging. Every coil is leak tested with helium particles. Automated run testing allows accurate, undisputed tests and measurements which are second to none in the industry.

Each unit contains a factory printout indicating tested pressures, amperages, dates, and inspectors, providing certification of the unit's status at the time of manufacture.

Units are equipped with valuable safety controls designed to monitor and protect for the life of the unit. The standard safeties include:

- low-pressure/loss-of-charge switch
- high-pressure switch
- freeze-protection thermostat
- internal compressor overload
- exclusive Carrier Cycle-LOC™ circuit board that provides anti-compressor cycling
- refrigerant filter drier

The cabinet is constructed of galvanized steel, bonderized, and coated with a prepainted baked enamel finish. The paint finish is a non-chalking type, and is capable of exceeding Federal Test Method Standard No. 141 (Method 6061) 500-Hour Salt Spray Test. In addition, all cabinet panel interior surfaces are primed, allowing the entire unit to have longer life and a more attractive appearance.

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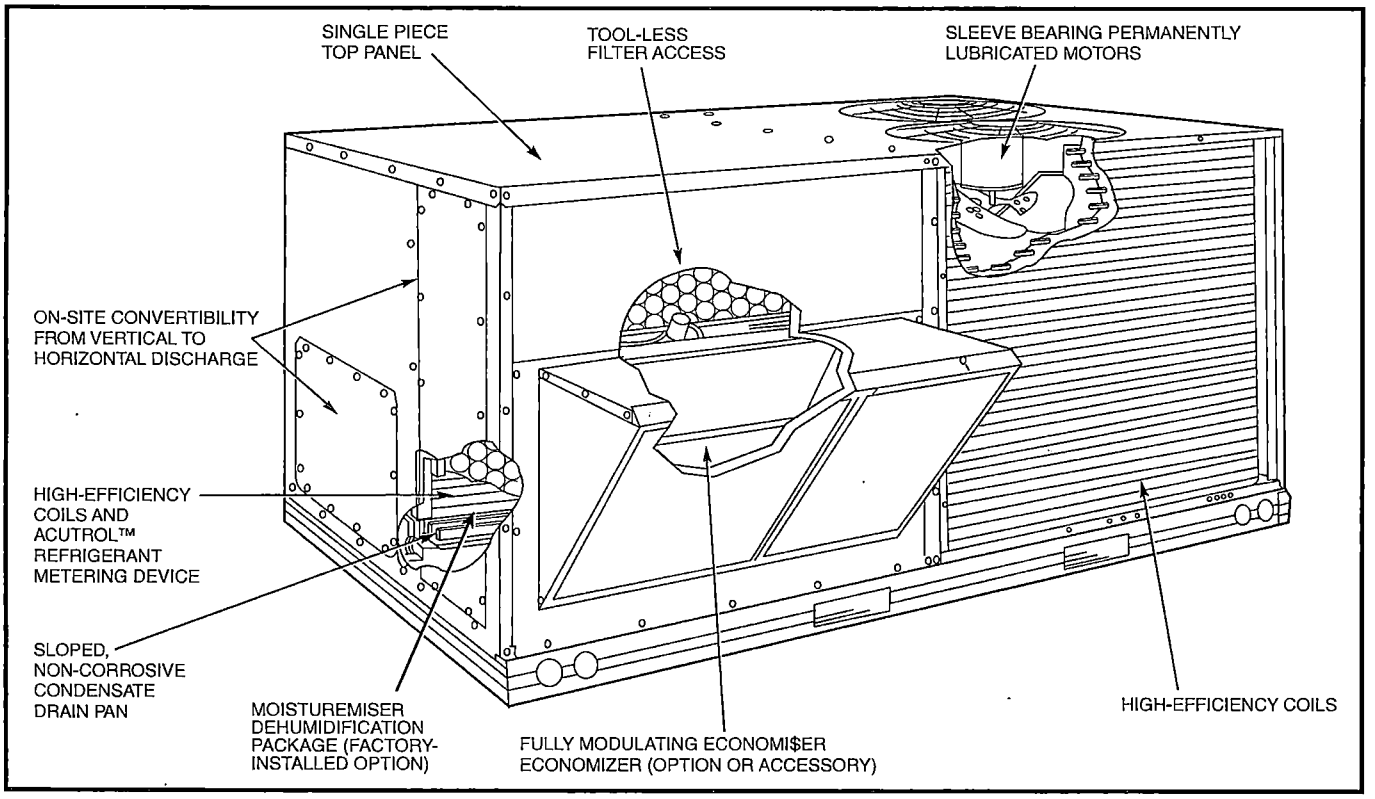
Features/Benefits (cont)



Easy maintenance and installation

All units are factory shipped in the vertical discharge configuration for fit-up to standard roof curbs. (One accessory curb fits sizes 004-007; another accessory curb fits sizes 008-014.) Contractors can order and install the roof curbs early in the construction stage, before decisions on size requirements have been made.

All units feature roll-formed base-rail design with forklift slots on 3 sides of the unit and rigging holes for easier maneuvering and installation. Stretch-wrap packaging protects the unit during shipment and storage.

Units are easily converted from vertical to horizontal applications to make retrofit and add-on jobs easier. To convert from vertical to horizontal discharge, simply relocate 2 panels. The same basic unit can be used for a variety of applications and can be quickly modified at the jobsite.

Standard high-performance, high-static, belt-driven evaporator-fan motors enable 48HJ004-014 units to operate in most ductwork configurations.

Ductwork connections are made easy by the logical 2 to 1 aspect ratio. On vertical discharge units, ductwork attaches directly to the roof curb.

Thru-the-bottom service connection capability comes standard with the rooftop unit to allow power and control wiring and gas connections to be routed through the unit's basepan, thereby minimizing roof penetrations (to prevent water leaks). Power, gas, and control connections are made on the same side of the unit to simplify installation.

The non-corrosive, sloped, condensate drain pan is made in conformance with ASHRAE (American Society of Heating, Refrigeration, and Air Conditioning Engineers) Standard 62 to meet many Indoor-Air Quality (IAQ) specifications. The condensate drain pan offers both bottom and end drain capability to minimize roof penetrations. The bottom drain can be used in conjunction with thru-the-bottom connections. An external trap must be field supplied.

Standard 2-in. throwaway filters are easily accessed through an easily removable filter access panel located directly above the air intake hood; no tools are required to change the filters.

All units are designed with a single continuous top piece to eliminate leaking at the seams or gasketing.

Belt-driven evaporator-fan motors allow maximum on-site flexibility without changing motors or drives.

Low-voltage wiring connections are easily made due to the large terminal board which is conveniently located for quick, simple access.

Quiet, efficient operation and dependable performance

All units are equipped with scroll compressors which are fully hermetic with internal vibration isolators for extremely quiet operation. The scroll compressors are quieter and more reliable than reciprocating designs.

Features/Benefits (cont)

Compressors are mounted on an independent base plate for additional sound integrity and structural support. Efficient condenser fan and motor design permits operation at low sound levels.

Totally enclosed condenser-fan motors and permanently lubricated bearings provide additional dependability.

All coils use state-of-the-art internally enhanced copper tubing. Coils are thoroughly tested with helium particles as well as pressure tested at the factory. Condenser coils have louvered, aluminum lanced fins to provide maximum heat transfer for optimum efficiency and easy cleaning.

Carrier's exclusive dimpled heat exchangers optimize heat transfer for improved efficiency. The tubular design permits hot gases to make multiple passes across the path of the supply air. In addition, dimpled heat exchanger tubes act as baffles, forcing the hot gases to stay in close contact with the cell walls to maximize heat transfer and efficiency.

The California Air Quality Management NO_x requirement of 40 nanograms/joule is met with 48HJL,HJM,HJN Low NOx units.

The induced draft combustion system eliminates the unsightly appearance of flue stacks, and diminishes the effects of winds on heating operation. The inducer fan draws hot combustion gas through the heat exchanger at the optimum rate for the most effective heat transfer. The induced draft also prevents contaminants from entering the supply air if a leak in the heat exchanger occurs.

The direct spark ignition system saves operating expense when compared to old-style pilot ignition systems. No crossover tube is required, therefore no sooting or pilot fouling problems can occur.

LP conversion kit — Standard units are designed for natural gas. An LP Conversion Kit is available as an accessory, if required. Installation of the accessory LP kit simply involves changing the gas orifices to accommodate liquid propane gas.

Refrigerant circuit protection assures dependability. All units have standard:

1) loss-of-charge/low-pressure protection switch which allows operation at lower ambient conditions while protecting against low-charge operation
2) freeze-protection thermostat, which protects against evaporator coil frost build-up
3) high-pressure switch, which protects against above normal operating pressure
4) filter driers, which trap moisture and debris in the refrigeration system.
5) Carrier's exclusive Acutrol™ metering device, which precisely controls refrigerant flow, preventing slugging and floodback, while maintaining optimum unit performance by metering the circuits individually.

Two independent compressor circuits (all $7\frac{1}{2}$ to 12 ton units) provide pinpoint comfort control, improved efficiency, and back-up capability.

Carrier PremierLink™ controls add reliability, efficiency, and simplification

The PremierLink direct digital controls can be ordered as a factory-installed option or as a field-installed accessory. Designed and manufactured exclusively by Carrier, the controls can be used to actively monitor and control all modes of operations, as well as monitor the following diagnostics and features: unit number, zone temperature, zone set point, zone humidity set point, discharge-air temperatures, fan status, stages of heating, stages of cooling, damper position, outdoor-air temperature, outdoor humidity level, filter status, fire shutdown status, IAQ set point, enthalpy status, differential enthalpy status, heat/cool lockout, CFM set point, pre-occupancy purge, economizer controls and early morning warm-up.

This controller has a 38.4K Baud communications capability and is compatible with *Comfort*Link™ Controls, CCN and ComfortVIEW™ Software. The Scrolling Marquee and Naviagator are optional tools that can be used for programming and monitoring the unit for optimal performance. The addition of the Carrier CO_2 sensor in the conditioned space provides ASHRAE 62-99 compliance and Demand Control Ventilation.

The PremierLink peer-to-peer, Internet-ready communicating control is designed specifically for Constant Volume and Variable Volume and Temperature applications. This comprehensive controls system allows all Carrier 3 to 25 ton rooftops to be daisy chained together on a roof to create a fully functional HVAC automation system.

The Apollo control board is factory-installed in the rooftop unit control box and comes equipped with built-in diagnostic capabilities. Light-emitting diodes (LEDs) simplify troubleshooting by indicating thermostat commands for both stages of heating and cooling, evaporator-fan operation, and economizer operation. The Apollo communicating control is designed to work specifically with Carrier TEMP and VVT® thermostats.

Integrated gas unit controller (IGC) — All ignition components are contained in the compact Integrated Gas Controller (IGC) that is easily accessible for service. The IGC, designed exclusively by Carrier, provides built in diagnostic capabilities. An LED simplifies troubleshooting by providing visual fault notification and system status information. The IGC board provides exclusive anti-cycle protection for its gas heat operation. The IGC also contains burner control logic for dependable heating operation. The LED is visible without removing the unit control box access panel. 48HJ units maximize heating efficiency through the IGC's control of evaporator fan ON/OFF delays. The IGC helps make 48HJ units reliable for many years.

Patented Cycle-LOC™ protection system provides protection against compressor cycling by monitoring compressor current draw. When lack of compressor current exists, the Cycle-LOC circuit board locks out the compressors. The Cycle-LOC board may be manually reset by simply switching thermostat to OFF, and then back to the Cooling or AUTO modes. No manipulation of the unit disconnect switch is needed.

Indoor-air quality (IAQ)

The quality of building air is improved as the Weathermaster® series utilizes certain key features that assist in improving indoor air quality. A sloped condensate pan eliminates possible biological growth in the rooftop unit. A face-split evaporator coil design proves effective in removing additional moisture from the supply air. Two-in. filters are standard in all rooftop units and an optional filter status sensor is available.

Another optional IAQ feature for the Weathermaster® unit is the exclusive MoistureMiser dehumidification package. This is a factory-installed option that provides increased dehumidification by cooling the hot liquid refrigerant leaving the condenser coil. The MoistureMiser consists of a subcooling coil located on the leaving-air side of the evaporator coil. The location of this coil in the indoor airstream enhances the latent capacity of the 48HJ units by as much as 40%. Many buildings suffer from humidity damage or poor indoor air quality due to humid conditions. The improved latent capacity provided by the MoistureMiser option reduces the building's humidity, eliminating potential property damage and making the space more comfortable.

The MoistureMiser option makes the 48HJ units the ideal IAQ rooftop for hot and humid regions. The operation of the MoistureMiser package can be controlled by a field-installed, wall-mounted humidistat. The circuit activates only when needed (using the humidistat) as opposed to some dehumidification systems that operate continuously. The humidistat can be set for any humidity level between 20% and 80% relative humidity.

Energy$Recycler — the IAQ solution for today's "tight" buildings. Indoor-air quality (IAQ) generally refers to the level of pollutants inside a building. These pollutants include cigarette smoke, carbon dioxide exhaled by occupants, radon gas, car exhaust, paint fumes, and odors.

Concern over increased indoor air pollutants has been spurred by several issues: 1) changes in new building construction methods and retrofit of older buildings have reduced air infiltration rates; 2) Synthetic materials release airborne particles, odors, and chemicals; and 3) HVAC (heating, ventilation, and air conditioning) systems that bring in minimal fresh air.

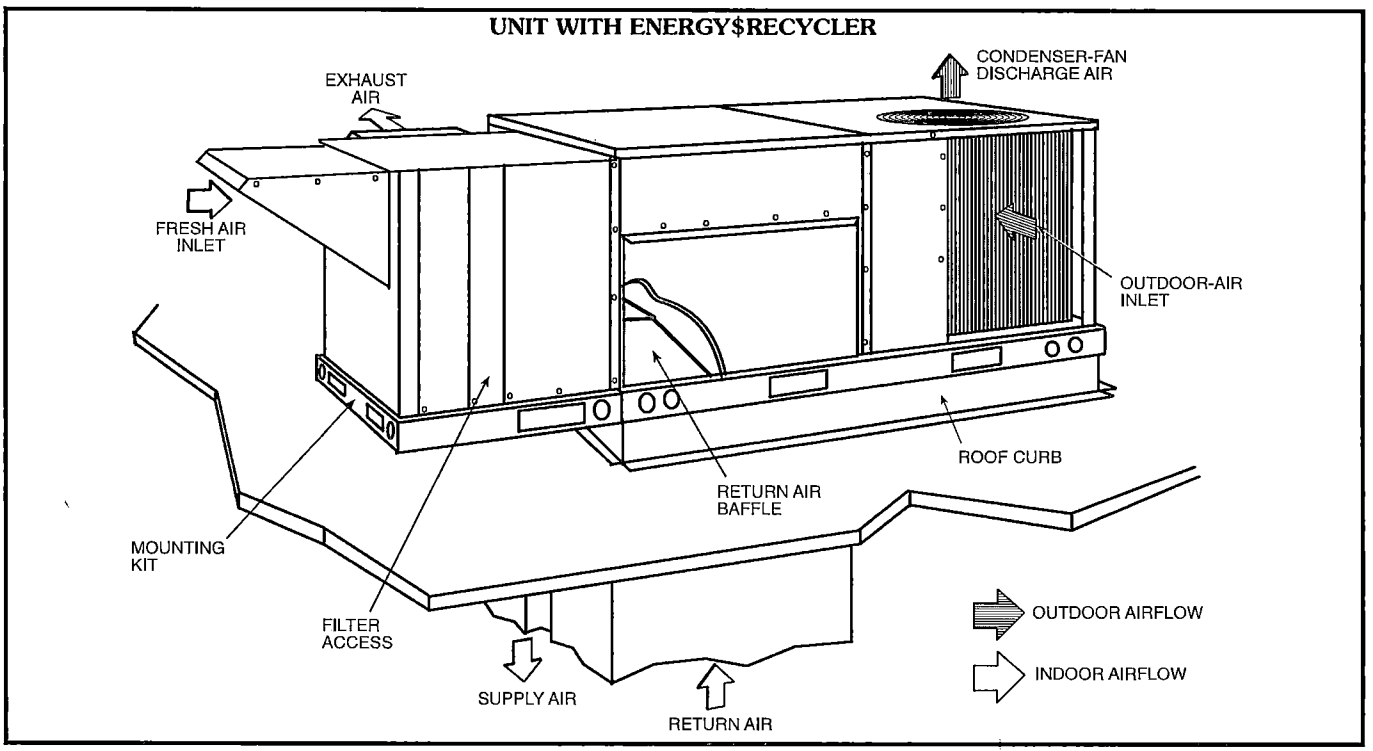
In 1989, IAQ concerns caused ASHRAE to recommend increased ventilation for all public buildings. Simply introducing fresh air into a building, however, is not always practical or cost effective. Additional ventilation can overload HVAC systems and increase energy costs.

Carrier's 62AQ Energy$Recycler unit solves this dilemma by providing increased fresh air while keeping increased costs to a minimum. In addition, the Energy$Recycler helps reduce humidity levels, which helps to prevent deterioration of building materials and retards the growth of mold and mildew.

The 62AQ Energy$Recycler unit provides the best solution to retaining the energy-conserving benefits of today's tighter building construction while improving indoor-air quality.

Serviceability

Servicing a rooftop unit has never been easier with the factory-installed hinged panel option. This option includes hinged access panels for filter, compressor, evaporator-fan motor, and control box areas. These panels provide quick and simple access to the major components by simply unlocking and swinging open the different panels. Each hinged access panel is permanently attached to the rooftop unit, eliminating the problem of access panels being dropped and creating a hole in the roof (potentially causing a water leak). This type of damage could void any warranty offered for a new roof.



Features/Benefits (cont)

Optional packages also include the following features to assist in servicing the rooftop unit:

- 115-v convenience outlet to power up electric drills, lights, and refrigerant recovery machines. This means you are no longer required to run a separate 115-v power supply to your 48HJ rooftops. It can now be factory installed.
- Non-fused disconnect switch to remove power locally at the rooftop. This option also includes a power lockout capability to protect the service person. This lockout switch saves the service person time and effort because there is no need to access a distant disconnect switch while servicing the unit.
- Durablade economizer
- EconoMi$er with microprocessor control and optional power exhaust
- Carrier direct digital controls to monitor rooftop operation from a remote site.

Standardized components for the complete Weathermaster® line of products are found in all safety devices, condenser-fan motors, evaporator-fan motors, and control boards, while the gas sections use common inducer motors, limit switches, and rollout switches. This allows for greater inventory control, familiarity of parts, and fewer stocked parts.

Easily accessible refrigerant access ports on all discharge, suction, and liquid lines permit easy and accurate measurements as well as simple accessibility.

Resettable 24-v circuit breaker on 48HJ008-014 units allows room for error without replacing transformers or fuses.

Single-side utility connections provide easy access to perform any necessary service.

Color-coded wires permit easy tracing and diagnostics.

Belt-driven motors are accessible through a single access door to facilitate servicing and adjusting after installation.

Compressors and safety switches are easily accessible for troubleshooting and system analysis.

Model number nomenclature

48 HJ E 004 Z – B 3 -- DA

48 – Electric Cooling/ Gas Heat

HJ – High-Efficiency Constant Volume

Standard
D – Low Heat
E – Medium Heat/ High Heat
F – High Heat

California Compliant Low NOx
L – Low Heat (low NOx)
M – Medium Heat (low NOx)
N – High Heat (low NOx)

3 Phase
G – Low Heat Single Stage (3 phase)
H – Medium Heat Single Stage (3 phase)
K – High Heat Single Stage (3 phase)

Nominal Capacity
004 – 3 Tons
005 – 4 Tons
006 – 5 Tons
007 – 6 Tons
008 – 7 1/2 Tons
009 – 8 1/2 Tons
012 – 10 Tons
014 – 12 1/2 Tons

Factory-Installed Options
(See Table – Page 11.)

V-Ph-Hz
1 – 575-3-60
3 – 208/230-1-60
5 – 208/230-3-60
6 – 460-3-60

Corrosion
B – Cu/Cu Fin Evaporator and Condenser Coils
C – Cu Outdoor, Aluminum fin (Evaporator Coils)
F – E-Coated Aluminum Fins
V – Precoated Al Outdoor Coil

Motors
– – Standard Motor
M – High-Static Indoor-Fan Motor
S – MoistureMi$er
T – MoistureMi$er and High-Static Indoor-Fan Motor
W – Cu/Cu MoistureMi$er Demand Package
X – Cu/Cu MoistureMi$er Demand Package with High-Static Fan Motor

Factory-Installed Options
– – Standard, No Hinged Access Panels
G – Hinged Access Panels Include: Filter Panel, Control Box Panel, Fan Motor Panel,Compressor Panel
P – Carrier PremierLink™ Rooftop Controller
H – Carrier PremierLink™ Rooftop Controller with Hinged Access Panels
K – Novar ETM2024 Control
L – Novar ETM2024 Hinged Access Panels
N – Novar ETM3051 Control
R – Novar ETM3051 Control and Hinged Access Panels
Y – Apollo Control with Hinged Access Panels
Z – Apollo Control

LEGEND
Al — Aluminum
Cu — Copper

NOTE: Hinged Access Panels include: Filter Panel, Control Box Panel, Fan Motor Panel, Compressor Panel.

ARI* capacities

UNIT 48HJ	NOMINAL TONS	STANDARD CFM	COOLING (Btuh)	TOTAL kW	SEER†	EER	SOUND RATING (Bels)	IPLV
E/F004	3	1200	36,000	3.21	13.0	11.20	7.6	**
D/E/F005	4	1450	46,000	4.25	13.0	11.05	7.6	**
D/E/F006	5	1750	61,000	5.55	13.0	11.00	8.0	**
D/E/F007	6	2100	74,000	6.70	—	11.00	8.0	**
D/E/F008	7.5	3000	90,000	8.18	—	11.00	8.2	11.6
D/E/F009	8.5	3000	102,000	9.44	—	10.80	8.2	10.9
D/E/F012	10	3200	120,000	10.91	—	11.00	8.4	9.7
D014	12.5	4300	139,000	14.04	—	9.5	8.6	9.8
E014	12.5	4300	139,000	14.04	—	9.5	8.6	9.4

LEGEND

Bels — Sound Levels (1 bel = 10 decibels)
EER — Energy Efficiency Ratio
IPLV — Integrated Part-Load Value
SEER — Seasonal Energy Efficiency Ratio

*Air-Conditioning & Refrigeration Institute.
†Applies only to units with capacity of 65,000 Btuh or less.
**The IPLV is not applicable to single-compressor units.

NOTES:
1. Rated in accordance with ARI Standard 210/240 (004-012 units) or 360 (014 units) and 270 (004-014 units).
2. Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
Cooling Standard: 80 F db, 67 wb indoor entering-air temperature and 95 F db outdoor entering-air temperature.
IPLV Standard: 80 F db, 67 F wb indoor entering-air temperature and 80 F db outdoor entering-air temperature.

Sizes 004-012 Only

Sizes 014 Only

HEATING CAPACITIES AND EFFICIENCIES

UNIT	HEATING INPUT (Btuh)	OUTPUT CAPACITY (Btuh)		TEMPERATURE RISE (°F)	AFUE (%)	STEADY STATE EFFICIENCY (%)
		Single-Phase Units*	3-Phase Units First Stage/Second Stage			
48HJH004	72,000	—	—/ 57,100†	15-45	80	81
48HJK004	115,000	—	—/ 89,000	55-85	80	80
48HJG005	72,000	—	—/ 57,100	15-45	82	82
48HJH005	115,000	—	—/ 89,000	35-65	80	80
48HJK005	150,000	—	—/120,000	50-80	80	80
48HJG006	72,000	—	—/ 57,100	15-45	82	82
48HJH006	115,000	—	—/ 89,000	35-65	80	80
48HJK006	150,000	—	—/120,000	50-80	80	80

UNIT	HEATING INPUT (Btuh)	OUTPUT CAPACITY (Btuh)		TEMPERATURE RISE (°F)	AFUE (%)	STEADY STATE EFFICIENCY (%)
		Single-Phase Units*	3-Phase Units First Stage/Second Stage			
48HJM004**	60,000	49,000	—/—	20-50	80	81
48HJN004**	90,000	73,000	—/—	30-60	81	81
48HJL005**	60,000	49,000	—/—	20-50	80	81
48HJM005**	90,000	73,000	—/—	30-60	80	80
48HJN005**	120,000	98,000	—/—	40-70	80	81
48HJL006**	60,000	49,000	—/—	20-50	80	81
48HJM006**	90,000	73,000	—/—	30-60	80	80
48HJN006**	120,000	98,000	—/—	40-70	80	81

UNIT	HEATING INPUT (Btuh) First Stage/Second Stage	OUTPUT CAPACITY (Btuh) First Stage/Second Stage	TEMPERATURE RISE (°F)	AFUE (%)	STEADY STATE EFFICIENCY (%)
48HJD008	90,000/125,000	72,900/102,500	20-50	82	82
→ 48HJE008	120,000/180,000	98,400/147,600	35-65	82	82
48HJF008	180,000/224,000	147,600/183,700	45-75	82	82
48HJD009	90,000/125,000	72,900/102,500	20-50	82	82
48HJE009	120,000/180,000	98,400/147,600	35-65	82	82
48HJF009	180,000/224,000	147,600/183,700	45-75	82	82
48HJD012	120,000/180,000	98,400/147,600	35-65	82	82
48HJD014, HJE012	180,000/224,000	147,600/183,700	35-65	82	82
48HJE014, HJF012	200,000/250,000	160,000/200,000	40-70	80	80

LEGEND

AFUE — Annual Fuel Utilization Efficiency

*All single-phase models 5 ton cooling capacity and less are single stage gas heat operation.
†Single stage three phase California rated models. California Low NOx Models.
**California Low NOx Models.

NOTE: NOx levels are 40 nanograms/joule with accessory kit.

Physical data

BASE UNIT 48		HJE/F/H/K/M/N004	HJD/E/F/G/H/K/L/M/N005	HJD/E/F/G/H/K/L/M/N006	HJD/HJE/HJF007
NOMINAL CAPACITY		3	4	5	6
OPERATING WEIGHT (lb)					
Unit		530	540	560	615
With Durablade Economizer		564	574	594	649
With EconoMi$er		577	587	607	662
With MoistureMiser Dehumidification Package		548	558	578	633
Roof Curb		115	115	115	115
COMPRESSOR			Scroll		
Quantity		1	1	1	1
Oil (oz)		42	53	50	60
REFRIGERANT TYPE			R-22		
Operating Charge (lb-oz)					
Standard Unit		5- 8	8-6	10- 0	9-10
Unit With MoistureMiser Dehumidification Package		8-13	11-2	12-13	13- 6
CONDENSER FAN			Propeller		
Quantity...Diameter (in.)		1...22	1...22	1..22	1...22
Nominal Cfm		3500	3500	4100	4100
Motor Hp...Rpm		1/4...825	1/4...825	1/4...1100	1/4...1100
Watts Input (Total)		180	180	320	320
CONDENSER COIL			Enhanced Copper Tubes, Aluminum Lanced Fins		
Standard Unit					
Rows...Fins/in.		1...17	2..17	2...17	2...17
Total Face Area (sq ft)		14.6	16.5	16.5	16.5
Unit with MoistureMiser Dehumidification Package					
Rows...Fins/in.		1...17	1...17	1...17	1...17
Total Face Area (sq ft)		3.9	3.9	3.9	3.9
EVAPORATOR FAN			Centrifugal Type, Belt Drive		
Quantity...Size (in.)		1...10 x 10	1...10 x 10	1...10 x 10	1...10 x 10
Nominal Cfm		1200	1600	2000	2400
Maximum Continuous Bhp	Std	1.20	1.20	1.30/2.40*	2.40
	Hi-Static	2.40	2.40	2.90	2.90
Motor Frame Size	Std	48	48	48/56*	56
	Hi-Static	56	56	56	56
Fan Rpm Range	Std	760-1090	840-1185	1020-1460/1120-1585*	1120-1585
	Hi-Static	1075-1455	1075-1455	1300-1685	1300-1685
Motor Bearing Type		Ball	Ball	Ball	Ball
Maximum Fan Rpm		2100	2100	2100	2100
Motor Pulley Pitch Diameter	Std	1.9/2.9	1.9/2.0	2.4/3.4	2.4/3.4
A/B (in.)	Hi-Static	2.8/3.8	2.8/3.8	3.4/4.4	3.4/3.4
Nominal Motor Shaft Diameter (in.)	Std	1/2	1/2	5/8	5/8
	Hi-Static	5/8	5/8	5/8	7/8
Fan Pulley Pitch Diameter (in.)	Std	4.5	4.0	4.0	4.0
	Hi-Static	4.5	4.0	4.5	4.5
Belt — Type...Length (in.)	Std	1...A...36	1...A...36	1....4...40	1...A...38
	Hi-Static	1...A...39	1...A...39	1...A...40	1...A...40
Pulley Center Line Distance (in.)		10.0-12.4	10.0-12.4	14.7-15.5	14.7-15.5
Speed Change per Full Turn of	Std	65	70	75	95
Movable Pulley Flange (rpm)	Hi-Static	65	65	60	60
Movable Pulley Maximum Full	Std	5	5	6	5
Turns from Closed Position	Hi-Static	6	6	5	5
Factory Setting — Full Turns Open	Std	3	3	3	3
	Hi-Static	3 1/2	3 1/2	3 1/2	3 1/2
Factory Speed Setting (rpm)	Std	890	980	1240	1304
	Hi-Static	1233	1233	1396	1396
Fan Shaft Diameter at Pulley (in.)		5/8	5/8	5/8	5/8
EVAPORATOR COIL			Enhanced Copper Tubes, Aluminum Double-Wavy Fins, Acutrol™ Metering Device		
Rows...Fins/in.		2...15	2...15	4...15	4...15
Total Face Area (sq ft)		5.5	5.5	5.5	5.5

LEGEND

Bhp — Brake Horsepower

*Single phase/three phase.
†Indicates automatic reset.
**72,000 Btuh heat input units have 2 burners.
115,000 Btuh heat input units and 150,000 Btuh Heat input units have 3 burners.
††An LP kit is available as an accessory.
‖Three-phase standard models have heating inputs as shown. Single-phase standard models have one-stage heating with heating input values as follows:
HJD005-006,HJE004 — 72,000 Btuh
HJE005-006,HJF004 — 115,000 Btuh
HJF005-006 — 150,000 Btuh
***California compliant three-phase models.
†††California SCAQMD compliant low NO_x models have combustion products that are controlled to 40 nanograms per joule or less.

BASE UNIT 48	HJE/F/H/K/M/N004	HJD/E/F/G/H/K/L/M/N005	HJD/E/F/G/H/K/L/M/N006	HJD/HJE/HJF007
FURNACE SECTION				
Rollout Switch Cutout Temp (F)†	195	195	195	195
Burner Orifice Diameter (in. ...drill size)**				
Natural Gas — Std	HJE .113...33	HJD .113...33	HJD .113...33	HJD .113...33
	HJF .113...33	HJE .113...33	HJE .113...33	HJE .113...33
	—	HJF .129...30	HJF .129...30	HJF .129...30
	HJH .113...33	HJG .113...33	HJG .113...33	—
	HJK .113...33	HJH .113...33	HJH .113...33	—
	—	HJK .129...30	HJK .129...30	—
	HJM .102...38	HJL .102...38	HJL .102...38	—
	HJN .102...38	HJM .102...38	HJM .102...38	—
	—	HJN .116...32	HJN .116...32	—
Liquid Propane — Alt††	HJE .089...43	HJD .089...43	HJD .089...43	HJD .089...43
	HJF .089...43	HJE .089...43	HJE .089...43	HJE .089...43
	—	HJF .102...38	HJF .102...38	HJF .102...38
	HJH .089...43	HJG .089...43	HJG .089...43	—
	HJK .089...43	HJH .089...43	HJH .089...43	—
	—	HJK .102...38	HJK .102...38	—
	HJM .082...45	HJL .082...45	HJL .082...45	—
	HJN .082...45	HJM .082...45	HJM .082...45	—
	—	HJN .094...42	HJN .094...42	—
Thermostat Heat Anticipator Setting (amps) 208/230/460 v				
First Stage	.14	.14	.14	.14
Second Stage	.14	.14	.14	.14
Gas Input (Btuh)				
First Stage/Second Stage	HJE‖ 50,000/ 72,000	HJD‖ 50,000/ 72,000	HJD‖ 50,000/ 72,000	HJD‖ 50,000/ 72,000
	HJF‖ 82,000/115,000	HJE‖ 82,000/115,000	HJE‖ 82,000/115,000	HJE‖ 82,000/115,000
	—	HJF‖ 120,000/150,000	HJF‖ 120,000/150,000	HJF‖ 120,000/150,000
	HJH*** —/ 72,000	HJG*** —/ 72,000	HJG*** —/ 72,000	—
	HJK***—/115,000	HJH*** —/115,000	HJH*** —/115,000	—
	—	HJK*** —/150,000	HJK*** —/150,000	—
	HJM††† —/ 60,000	HJL††† —/ 60,000	HJL††† —/ 60,000	—
	HJN††† —/ 90,000	HJM††† —/ 90,000	HJM†††—/ 90,000	—
	—	HJN††† —/120,000	HJN††† —/120,000	—
Efficiency (Steady State) (%)	HJE 82	HJD 82	HJD 82	HJD 82
	HJF 80	HJE 81	HJE 81	HJE 81
	—	HJF 80	HJF 80	HJF 80
	HJH 82	HJG 82	HJG 82	—
	HJK 80	HJH 81	HJH 81	—
	—	HJK 80	HJK 80	—
	HJM 81	HJL 81	HJL 81	—
	HJN 81	HJM 81	HJM 81	—
	—	HJN 82	HJN 82	—
Temperature Rise Range	HJE 15-45	HJD 15-45	HJD 15-45	HJD 15-45
	HJF 55-85	HJE 35-65	HJE 35-65	HJE 35-65
	—	HJF 50-80	HJF 50-80	HJF 50-80
	HJH 15-45	HJG 15-45	HJG 15-45	—
	HJK 55-85	HJH 35-65	HJH 35-65	—
	—	HJK 50-80	HJK 50-80	—
	HJM 20-50	HJL 20-50	HJL 20-50	—
	HJN 30-60	HJM 30-60	HJM 30-60	—
	—	HJN 40-70	HJN 40-70	—
Manifold Pressure (in. wg)				
Natural Gas — Std	3.5	3.5	3.5	3.5
Liquid Propane — Alt††	3.5	3.5	3.5	3.5
Maximum Static Pressure (in. wg)	1.0	1.0	1.0	1.0
Field Gas Connection Size (in.)	1/2	1/2	1/2	1/2
HIGH-PRESSURE SWITCH (psig)				
Standard Compressor Internal Relief	450 ± 50			
Cutout	428			
Reset (Auto.)	320			
LOSS-OF-CHARGE SWITCH/LOW-PRESSURE SWITCH (Liquid Line) (psig)				
Cutout	7 ± 3			
Reset (Auto.)	22 ± 5			
FREEZE PROTECTION THERMOSTAT				
Opens (F)	30 ± 5			
Closes (F)	45 ± 5			
OUTDOOR-AIR INLET SCREENS				
Quantity...Size (in.)	Cleanable 1...20 x 24 x 1			
RETURN-AIR FILTERS				
Quantity...Size (in.)	Throwaway 2...16 x 25 x 2			

LEGEND

Bhp — Brake Horsepower

*Single phase/three phase.
†Indicates automatic reset.
**72,000 Btuh heat input units have 2 burners.
115,000 Btuh heat input units and 150,000 Btuh Heat input units have 3 burners.
††An LP kit is available as an accessory.
‖Three-phase standard models have heating inputs as shown. Single-phase standard models have one-stage heating with heating input values as follows:
HJD005-006,HJE004 — 72,000 Btuh
HJE005-006,HJF004 — 115,000 Btuh
HJF005-006 — 150,000 Btuh
***California compliant three-phase models.
†††California SCAQMD compliant low NO_x models have combustion products that are controlled to 40 nanograms per joule or less.

Physical data (cont)

UNIT SIZE 48HJ		D/E/F008	D/E/F009	D/E/F012	D/E/F014
NOMINAL CAPACITY (tons)		7½	8½	10	12½
OPERATING WEIGHT (lb)					
Unit		870	880	1035	1050
With Durablade Economizer		914	924	1079	1094
With EconoMiSer		932	942	1097	1112
With MoistureMiser Dehumidification Package		899	909	1068	1083
Roof Curb		143	143	143	143
COMPRESSOR		Scroll			
Quantity		2	2	2	2
Oil (oz) (each compressor)		53	53	50	60
REFRIGERANT TYPE		R-22			
Operating Charge (lb-oz)					
Standard Unit					
Circuit 1		7-10	7-14	9-10	9-8
Circuit 2		8- 2	8- 5	10-10	9-5
Unit With MoistureMiser Dehumidification Package					
Circuit 1		10-10	10-11	13- 0	12-6
Circuit 2		12- 8	10-10	13- 5	12-2
CONDENSER FAN		Propeller			
Quantity...Diameter (in.)		2...22	2...22	2...22	2...22
Nominal Cfm		6500	6500	7000	7000
Motor Hp...Rpm		¼...1100	¼...1100	¼...1100	¼...1100
Watts Input (Total)		650	650	650	650
CONDENSER COIL		Enhanced Copper Tubes, Aluminum Lanced Fins			
Standard Unit					
Rows...Fins/in.		2...17	2...17	2...17	2...17
Total Face Area (sq ft)		20.5	20.5	25.0	25.0
Unit with MoistureMiser Dehumidification Package					
Rows...Fins/in.		1...17	1...17	1...17	1...17
Total Face Area (sq ft)		6.3	6.3	8.4	8.4
EVAPORATOR FAN		Centrifugal			
Size (in.)		15 x 15	15 x 15	15 x 15	15 x 15
Type Drive		Belt	Belt	Belt	Belt
Nominal Cfm		3000	3400	4000	5000
Maximum Continuous Bhp	Std	2.90	2.90	3.70	5.25
	Hi-Static	4.20	4.20	5.25	—
Motor Frame		56	56	56	56
Fan Rpm Range	Std	840-1085	840-1085	860-1080	900-1260
	Hi-Static	860-1080	860-1080	830-1130	—
Motor Bearing Type		Ball	Ball	Ball	Ball
Maximum Fan Rpm		2100	2100	2100	2100
Motor Pulley Pitch Diameter	Std	3.4/4.4	3.4/4.4	4.0/5.0	2.8/3.8
A/B (in.)	Hi-Static	4.0/5.0	4.0/5.0	2.8/3.8	—
Nominal Motor Shaft Diameter (in.)		⅞	⅞	⅞	⅞
Fan Pulley Pitch Diameter (in.)	Std	7.0	7.0	8.0	5.8
	Hi-Static	8.0	8.0	5.8	—
Belt — Type...Length (in.)	Std	A...48	A...48	A...51	BX...46
	Hi-Static	A...55	A...55	BX...46	—
Pulley Center Line Distance (in.)		16.75-19.25	16.75-19.25	15.85-17.50	15.85-17.50
Speed Change per Full Turn of	Std	50	50	45	60
Movable Pulley Flange (rpm)	Hi-Static	60	60	60	—
Movable Pulley Maximum Full	Std	5	5	5	6
Turns from Closed Position	Hi-Static	5	5	5	—
Factory Setting — Full Turns Open	Std	5	5	5	5
	Hi-Static	5	5	5	—
Factory Speed Setting (rpm)	Std	840	840	860	960
	Hi-Static	860	860	890	—
Fan Shaft Diameter at Pulley (in.)		1	1	1	1
EVAPORATOR COIL		Enhanced Copper Tubes, Aluminum Double-Wavy Fins			
Rows...Fins/in.		3...15	3...15	4...15	4...15
Total Face Area (sq ft)		8.9	8.9	11.1	11.1
FURNACE SECTION					
Rollout Switch Cutout Temp (F)†		195	195	195	195
Burner Orifice Diameter (in. ...drill size)**					
Natural Gas — Std		.120...31	.120...31	.120...31/.120...31/.129...30	.120...31/.129...30
Liquid Propane — Alt††		.096...41	.096...41	.096...41/.096...41/.102...38	.096...41/.102...38
Thermostat Heat Anticipator Setting (amps)					
	Stage 1	.14/.14/.14	.14/.14/.14	.14	.14
	Stage 2	.14/.20/.20	.14/.20/.20	.20	.20
Gas Input (Btuh)	Stage 1	90,000/120,000/180,000	90,000/120,000/180,000	120,000/180,000/200,000	180,000/200,000
	Stage 2	125,000/180,000/224,000	125,000/180,000/224,000	180,000/224,000/250,000	224,000/250,000
Efficiency (Steady State) (%)		82/82/82	82/82/82	82/82/80	82/80
Temperature Rise Range		20-50/35-65/45-75	20-50/35-65/45-75	35-65/35-65/40-70	35-65/40-70
Manifold Pressure (in. wg)					
Natural Gas — Std		3.5	3.5	3.5	3.5
Liquid Propane — Alt††		3.5	3.5	3.5	3.5
Field Gas Connection Size (in.)		.50/.75/.75	.50/.75/.75	.75/.75/.75	.75/.75
HIGH-PRESSURE SWITCH (psig)					
Standard Compressor Internal Relief		450 ± 50			
Cutout		428			
Reset (Auto.)		320			
LOSS-OF-CHARGE SWITCH/LOW-PRESSURE					
SWITCH (Liquid Line) (psig)					
Cutout		7 ± 3			
Reset (Auto.)		22 ± 7			
FREEZE PROTECTION THERMOSTAT					
Opens (F)		30 ± 5			
Closes (F)		45 ± 5			
OUTDOOR-AIR INLET SCREENS		Cleanable			
Quantity...Size (in.)		1...20 x 25 x 1			
		1...16 x 25 x 1			
RETURN-AIR FILTERS		Throwaway			
Quantity...Size (in.)		4...16 x 20 x 2	4...16 x 20 x 2	4...20 x 20 x 2	4...20 x 20 x 2

LEGEND

Bhp — Brake Horsepower

*Single phase/three phase.
†Indicates automatic reset.
**72,000 Btuh heat input units have 2 burners.
115,000 Btuh heat input units and 150,000 Btuh Heat input units have 3 burners.
††An LP kit is available as an accessory.
‡Three-phase standard models have heating inputs as shown. Single-phase standard models have one-stage heating with heating input values as follows:
HJD005-006,HJE004 — 72,000 Btuh
HJE005-006,HJF004 — 115,000 Btuh
HJF005-006 — 150,000 Btuh
***California compliant three-phase models.
†††California SCAQMD compliant low NO_x models have combustion products that are controlled to 40 nanograms per joule or less.

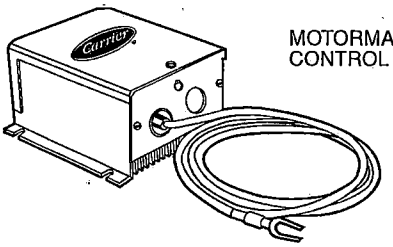
Options and accessories

ITEM	OPTION*	ACCESSORY†
Carrier PremierLink™ Controller	X	X
Energy$Recycler		X
Apollo Direct Digital Controls	X	
Integrated Economizer (Durablade)	X	X
Integrated Economizer (EconoMi$er)	X	X
EconoMi$er with Power Exhaust		X
Power Exhaust for EconoMi$er		X
Manual Outdoor-Air Damper		X
MoistureMiser Dehumidification Package	X	
Convenience Outlet	X	
Unit Mounted Disconnect	X	
High-Static Evaporator Fan Motor and Drive (004-012 3-Phase Only)	X	
Hinged Panel	X	
Two-Position Damper (25% Open)		X
Two-Position Damper (100% Open)		X
Roof Curb (14 in.)		X
Roof Curb (24 in.)		X
Thru-the-Bottom Service Connections		X
Flue-Hood Protector Assembly		X
Electronic Programmable Thermostat		X
Thermostat and Subbase		X
Time Guard® II Control Circuit		X
Motormaster® II Head Pressure Control		X
Motormaster IV Head Pressure Control		X
Accusensor™ II Enthalpy Control		X
Accusensor III Differential Enthalpy Sensor		X
Liquid Propane Conversion Kit		X
Condenser Coil Hail Guard		X
Liquid Propane Conversion (Low NOx)		X
Flue Discharge Deflector		X
Coil Guard Grille		X
Fan/Filter Status Switch		X
Humidistat		X
Outdoor-Air Enthalpy Sensor		X
Return-Air Enthalpy Sensor		X
Return-Air Temperature Sensor		X
CO_2 Sensor		X

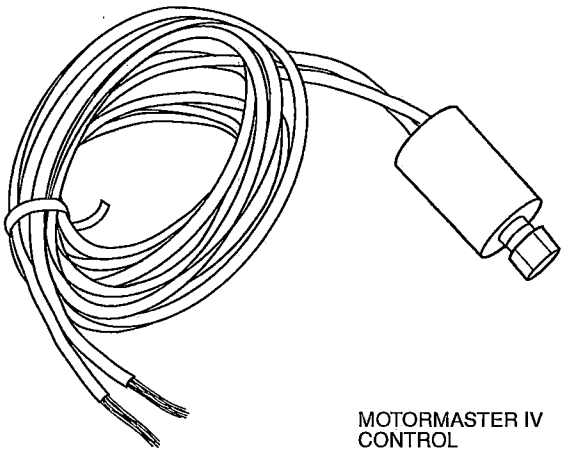
*Indicates a factory-installed option (FIOP).
†Indicates a field-installed accessory.

LOW AMBIENT CONTROLS

The 48HJ004-014 standard units are designed to operate in cooling at outdoor temperatures down to 25 F. With accessory Motormaster II control (condenser-fan speed modulation), or Motormaster IV control (condenser-fan cycling), units can operate at outdoor temperatures down to –20 F. The head pressure controls, which mount in the condenser section, control the condenser-fan motor to maintain correct condensing temperature.

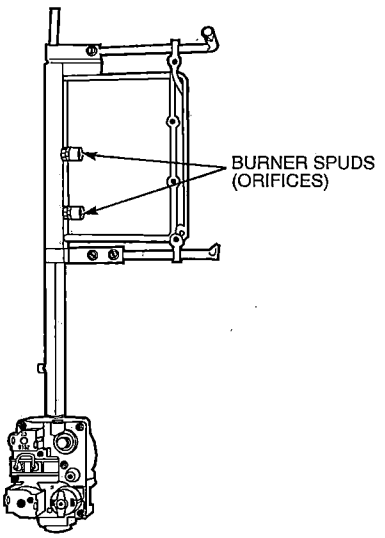


MOTORMASTER II CONTROL



MOTORMASTER IV CONTROL

LP CONVERSION KIT

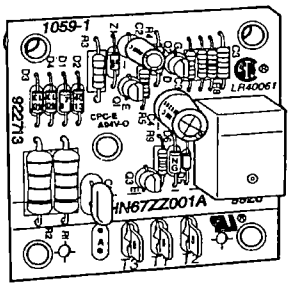


LP conversion kit allows the unit to utilize a liquid propane fuel supply in areas where natural gas is not available. (Kit shown is for sizes 004-007.)

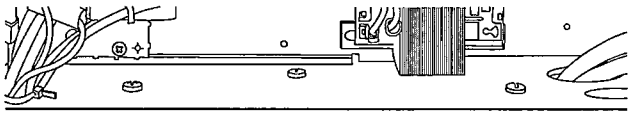
Options and accessories (cont)

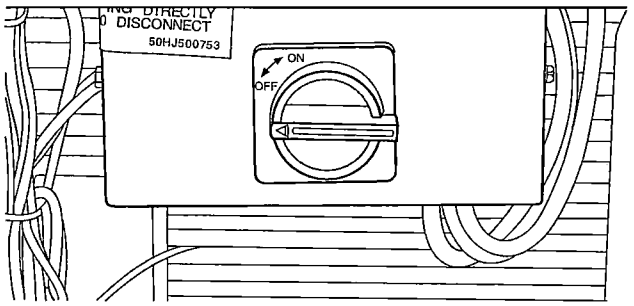
TIME GUARD® II CONTROL

Time Guard II Control automatically prevents compressor from restarting for at least 5 minutes after a shutdown. Field-installed accessory prevents short cycling of compressor if thermostat is rapidly changed. Time Guard II device mounts in the control compartment of unit. The Time Guard II device is not required when a Carrier programmable thermostat is applied.



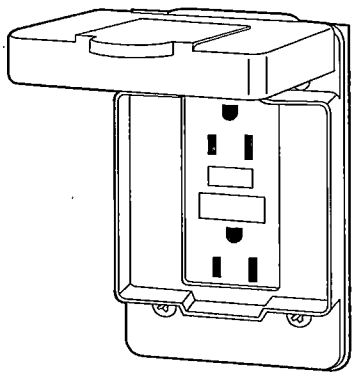
UNIT-MOUNTED DISCONNECT





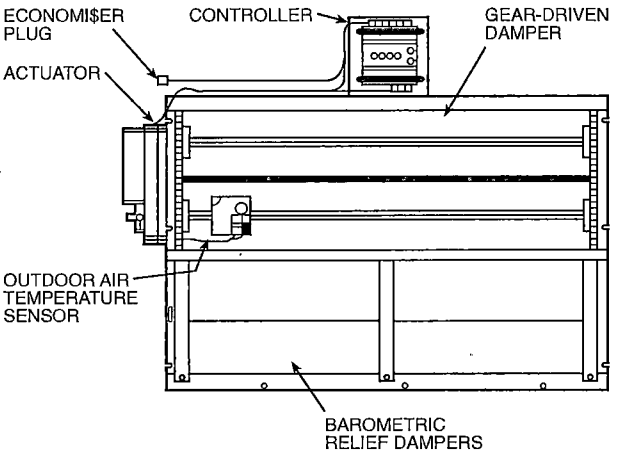
Factory-installed, internally-mounted, NEC (National Electrical Code) and UL (Underwriters' Laboratories) approved non-fused switch provides unit power shutoff with disconnect lockout protection capability. The switch is accessible from outside the unit.

CONVENIENCE OUTLET



Factory-installed, internally mounted and externally accessible 115-v female receptacle. Includes 15-amp GFI (Ground Fault Interrupter) receptacle with independent fuse protection. Voltage required to operate convenience outlet is provided by a factory-installed transformer.

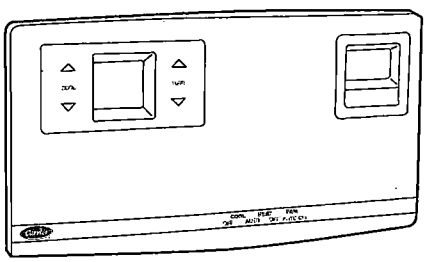
ECONOMI$ER



Factory-installed EconoMi$er utilizes a microprocessor-based control, gear drive damper system, low pressure drop characteristics, built-in spring return (for close upon power loss), and an integral barometric damper.

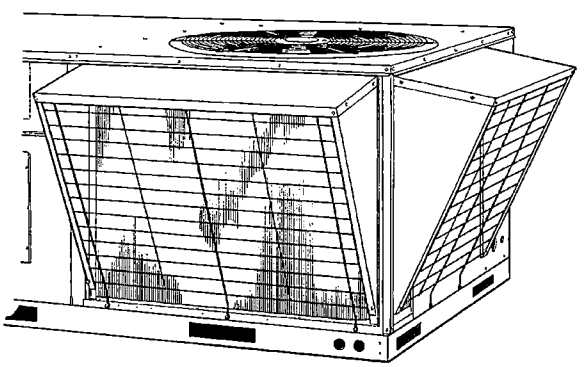
NOTE: EconoMi$er is only available for vertical ductwork applications and can be field or factory installed.

ELECTRONIC PROGRAMMABLE THERMOSTAT



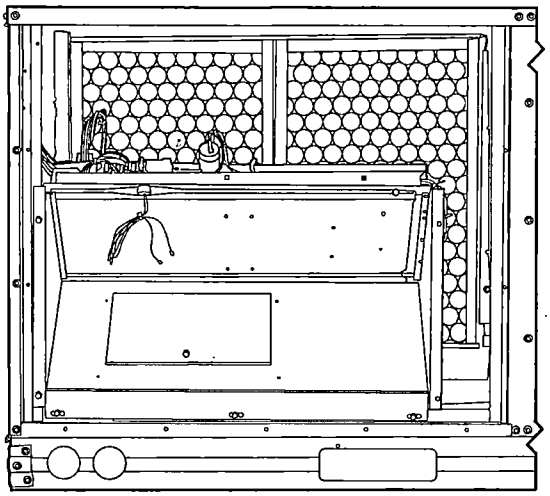
Electronic programmable thermostat provides efficient temperature control by allowing you to program heating and cooling setbacks and setups with provisions for weekends and holidays. The thermostat utilizes a time delay between operating modes. Optional factory-installed Apollo direct digital controls or a relay pack is also required for thermostat operation.

HAIL GUARD



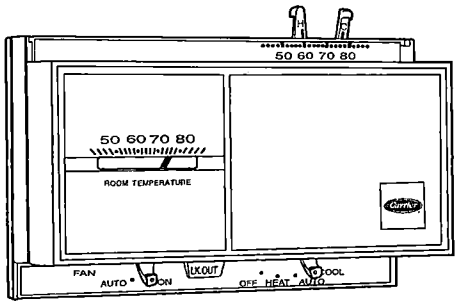
Condenser coil hail guard accessory (field installed) protects coils against damage from hail and other flying debris.

DURABLADE ECONOMIZER



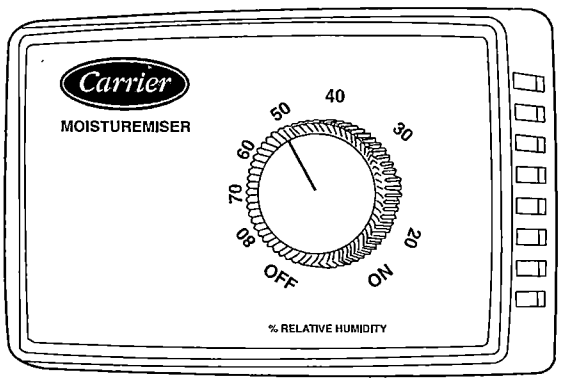
Exclusive Durablade economizer damper design saves energy while providing economical and reliable cooling. A sliding plate on the face of the economizer controls the amount of outdoor air entering the system. When the sliding plate is closed, it provides a leakproof seal which prevents ambient air from seeping in or conditioned air from seeping out. It can be easily adjusted for 100% outdoor air or any proportions of mixed air. Equipped with standard controls and 30% barometric relief capabilities.

THERMOSTAT



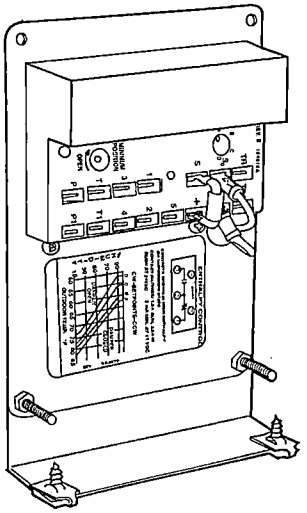
Zone thermostat (24 v) provides one- or 2-stage cooling for control of unit. Matching subbases are available with or without tamperproof switches and automatic changeover.

HUMIDISTAT

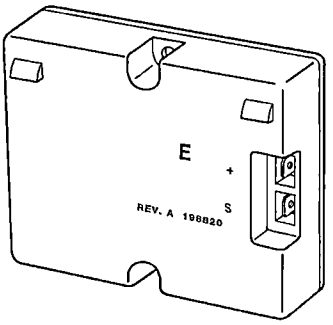


Field-installed, wall-mounted humidistat is used to control operation of the MoistureMiser dehumidification package. The humidistat controls the occupied space humidity at a user-selected setting between 20% and 80% relative humidity.

ACCUSENSOR™ II ENTHALPY CONTROL



ACCUSENSOR III DIFFERENTIAL ENTHALPY SENSOR

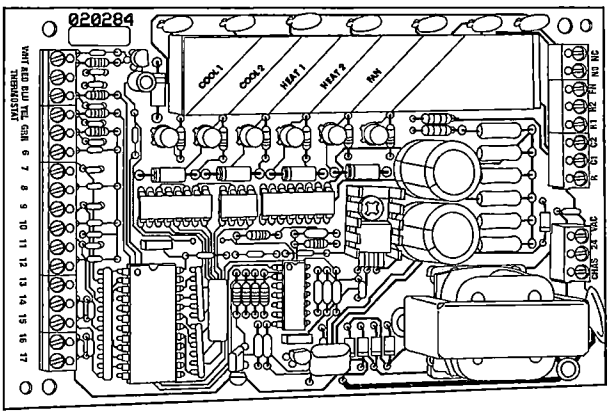


Accusensor economizer controls help provide efficient, economical economizer operation. The Accusensor I dry-bulb sensor measures outdoor temperature and is standard with the Durablade economizer.

The accessory Accusensor II solid-state enthalpy control senses both dry and wet bulb of the outdoor air to provide an accurate enthalpy reading. Accusensor II is available as a field-installed accessory for the Durablade economizer.

The accessory Accusensor III differential enthalpy sensor control compares outdoor temperature and humidity to return-air temperature and humidity and determines the most economical mixture of air. Accusensor III is available for the Durablade economizer only.

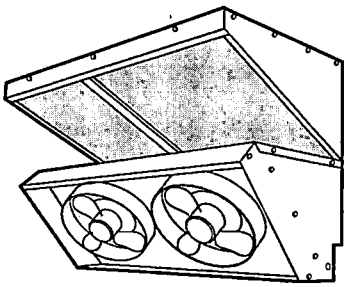
APOLLO DIRECT DIGITAL CONTROLS



Apollo direct digital controls are designed exclusively by Carrier, and are used to actively monitor all modes of operation as well as evaporator-fan status, filter status, indoor-air quality, supply-air temperature, and outdoor-air temperature. They are designed to work with Carrier TEMP and VVT® system thermostats.

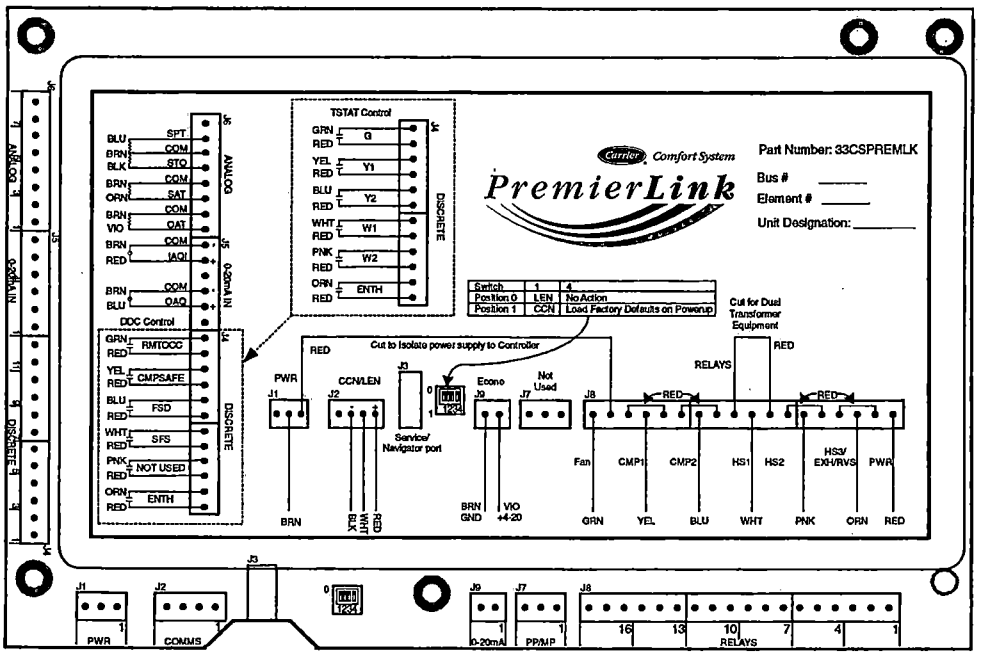
Options and accessories (cont)

POWER EXHAUST



Power exhaust replaces the standard exhaust hood to reduce zone pressurization and increase fresh air circulation. The two-stage fan system is another easy-to-install way to optimize rooftop performance.

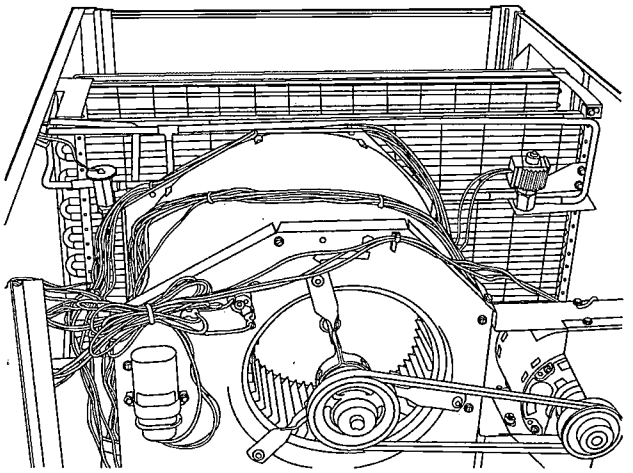
PREMIERLINK™ CONTROL



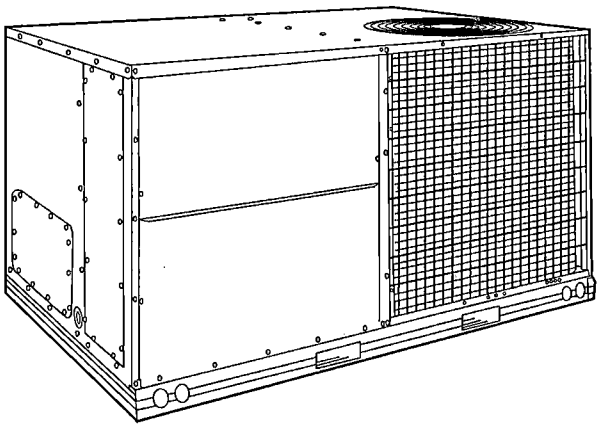
The PremierLink peer-to-peer, Internet ready communicating control is designed specifically for constant volume and variable volume and temperature applications. This comprehensive control system allows all Carrier 3 to 25 ton rooftops to be daisy-chained together on a roof to create a fully functional HVAC automation system.

MOISTUREMISER DEHUMIDIFICATION PACKAGE

The MoistureMiser dehumidification package is a factory-installed option that provides increased dehumidification by cooling the hot liquid refrigerant leaving the condenser coil. The MoistureMiser package consists of a subcooling coil located on the leaving-air side of the evaporator coil. The location of this coil in the indoor-air stream enhances the latent capacity of the 48HJ units by as much as 40%. The MoistureMiser package includes crankcase heater(s) and low-pressure switch(es) and operation can be controlled by a field-installed, wall-mounted humidistat.

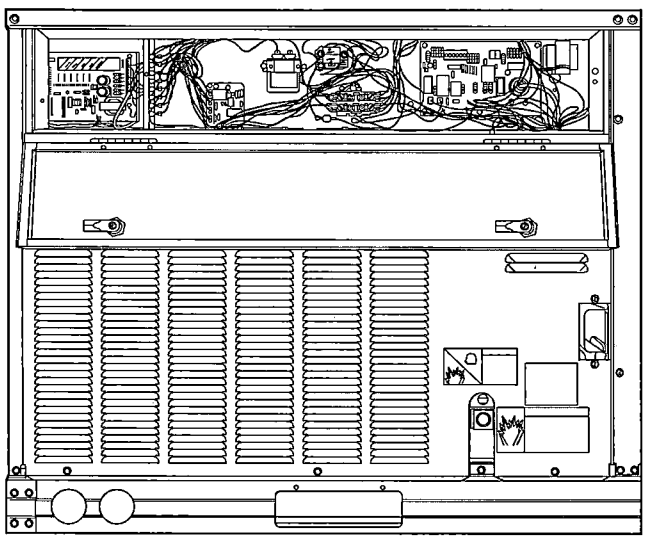


COIL GUARD GRILLE

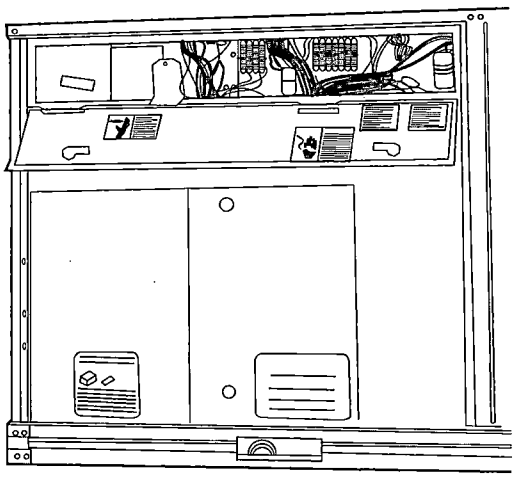


Coil guard grille protects coils against large objects and vandalism.

CONTROL BOX HINGED PANEL OPTION, 48HJ004-007 UNITS WITH APOLLO CONTROL SHOWN



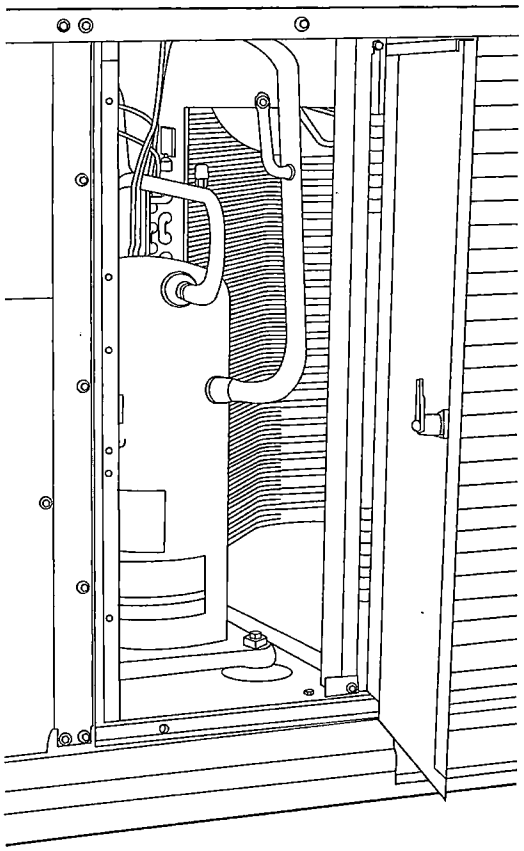
CONTROL BOX HINGED PANEL OPTION, 48HJ008-014 UNITS SHOWN



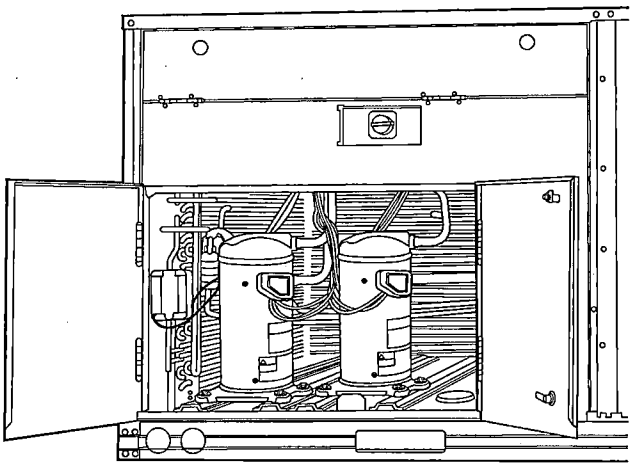
This is included as a factory-installed option. It permits quick and simple control box access.

Options and accessories (cont)

COMPRESSOR HINGED PANEL OPTION,
48HJ004-006 UNITS SHOWN

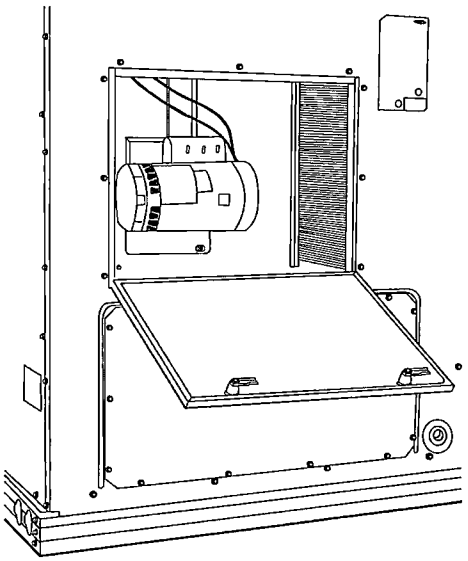


COMPRESSOR HINGED PANEL OPTION,
48HJ008-014 UNITS SHOWN



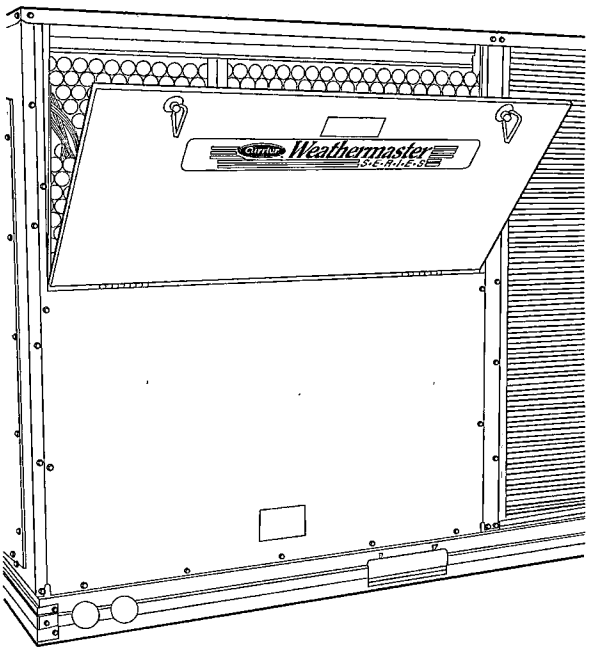
This is included as a factory-installed option. It permits quick and simple compressor access.

EVAPORATOR-FAN HINGED PANEL OPTION



This is included as a factory-installed option. It permits quick and simple evaporator-fan access.

FILTER HINGED PANEL OPTION



This is included as a factory-installed option. It permits tool-less filter access.

Base unit dimensions — 48HJ004-007

UNIT 48HJ	STANDARD UNIT WEIGHT		DURABLADE ECONOMIZER WEIGHT		ECONOMI$ER WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
E/F/H/K/M/N004	530	240	34	15.4	47	21.3	127	57.6	122	55.3	138	62.6	143	64.9
D/E/F/G/H/K/L/M/N005	540	245	34	15.4	47	21.3	129	58.5	124	56.2	141	64.0	146	66.2
D/E/F/G/H/K/L/M/N006	560	254	34	15.4	47	21.3	134	60.8	129	58.5	146	66.2	151	68.5
D/E/F/G/H/K/L/M/N007	615	279	34	15.4	47	21.3	147	66.7	142	64.4	160	72.6	166	75.3

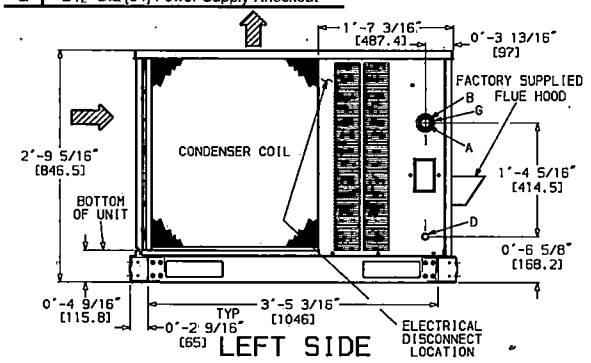
	CONNECTION SIZES
A	1 3/8" Dia [35] Field Power Supply Hole
B	2" Dia [51] Power Supply Knockout
C	1 3/4" Dia [44] Charging Port Hole
D	7/8" Dia [22] Field Control Wiring Hole
E	3/4"-14 NPT Condensate Drain
F	5/8"-14 NPT Gas Connection
G	2 1/2" Dia [64] Power Supply Knockout

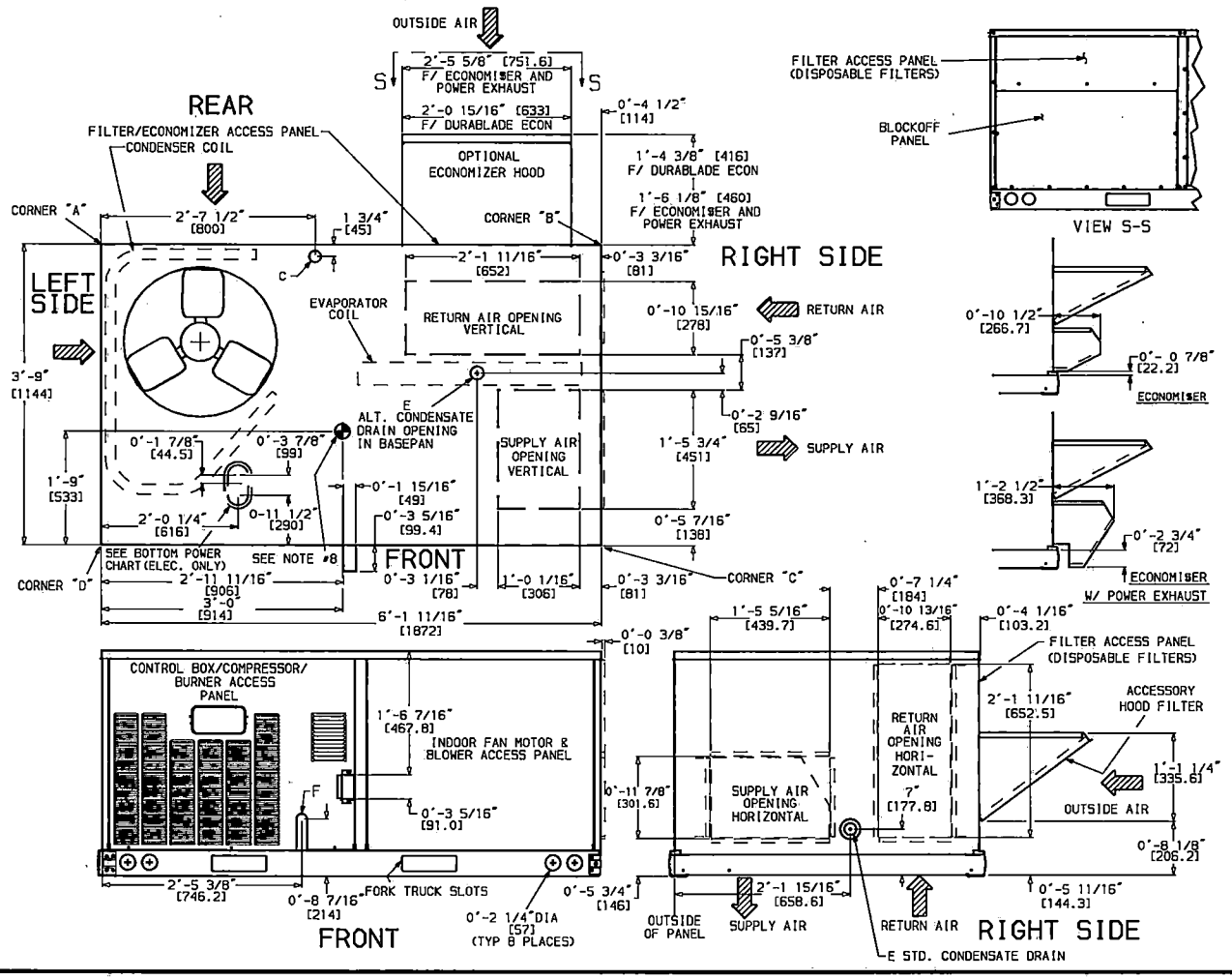
BOTTOM POWER CHART, THESE HOLES REQUIRED FOR USE WITH ACCESSORY PACKAGES — CRBTMPWR001A00 THROUGH CRBTMPWR004A00

THREADED CONDUIT SIZE	WIRE USE	REQURED HOLE SIZES (MAX.)
1/2"	24 V	7/8" [22.2]
3/4"	Power*	1 1/8" [28.4]
1 1/4"	Power*	1 3/4" [44.4]
1/2" NPT	Gas†	1 1/4" [31.8]
3/4" NPT	Gas†	1 5/8" [41.3]

*Select either 3/4" or 1 1/4" for power, depending on wire size.
†Select either 1/2" or 3/4" for gas depending on gas connection.

NOTES:
1. Dimensions in [ ] are in millimeters.
2. Center of gravity.
3. Direction of airflow.
4. On vertical discharge units, ductwork to be attached to accessory roof curb only. For horizontal discharge units, field-supplied flanges should be attached to horizontal discharge openings, and all ductwork should be attached to the flanges.
5. Minimum clearance (local codes or jurisdiction may prevail):
   a. Between unit, flue side and combustible surfaces, 48 inches. (18 in. when using accessory flue discharge deflector.)
   b. Bottom of unit to combustible surfaces (when not using curb), 1 inch. Bottom of base rail to combustible surfaces (when not using curb) 0 inches.
   c. Condenser coil, for proper airflow, 36 in. one side, 12 in. the other. The side getting the greater clearance is optional.
   d. Overhead, 60 in. to assure proper condenser fan operation.
   e. Between units, control box side, 42 in. per NEC (National Electrical Code).
   f. Between unit and ungrounded surfaces, control box side, 36 in. per NEC.
   g. Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in. per NEC.
   h. Horizontal supply and return end, 0 inches.
6. With the exception of the clearance for the condenser coil and combustion side as stated in notes 5a, b and c, a removable fence or barricade requires no clearance.
7. Units may be installed on combustible floors made from wood or Class A, B, or C roof covering material if set on base rail.
8. The vertical center of gravity is 1'-6" [457] up from the bottom of the base rail.





Base unit dimensions — 48HJ008-014

UNIT 48HJ	STANDARD UNIT WEIGHT		DURABLADE ECONOMIZER WEIGHT		ECONOMISER WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		"H"		"J"		"K"		"L"	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	ft-in.	mm	ft-in.	mm	ft-in.	mm	ft-in.	mm
D/E/F008	870	395	44	20	62	28.1	189	86	161	73	239	109	280	127	2-0 7/8	632	3-5 5/16	1050	2-9 11/16	856	2- 2 7/16	672
D/E/F009	880	399	44	20	62	28.1	191	87	163	74	242	110	284	129	1-2 7/8	378	3-5 5/16	1050	2-9 11/16	856	2- 2 7/16	672
D/E/F012	1035	469	44	20	62	28.1	225	102	192	87	285	129	333	151	1-2 7/8	378	4-1 5/16	1253	3-0 3/8	924	2-10 7/16	875
D/E014	1050	476	44	20	62	28.1	228	103	195	88	289	131	338	153	1-2 7/8	378	4-1 5/16	1253	3-0 3/8	924	2-10 7/16	875

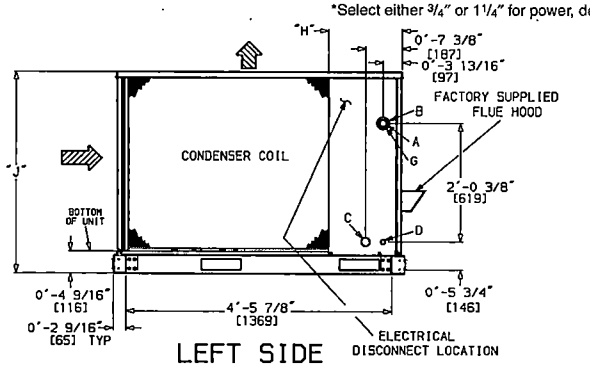
	CONNECTION SIZES
A	1 3/8" Dia [35] Field Power Supply Hole
B	2 1/2" Dia [64] Power Supply Knockout
C	1 3/4" Dia [44] Charging-Port Hole
D	7/8" Dia [22] Field Control Wiring Hole
E	3/4"-14 NPT Condensate Drain
F	1/2"-14 NPT Gas Connection 48HJD008 & 009 3/4"-14 NPT Gas Connection 48HJE,HJF008,009,012, 48HJD012 & 014, 48HJE014
G	2" Dia [51] Power Supply Knockout

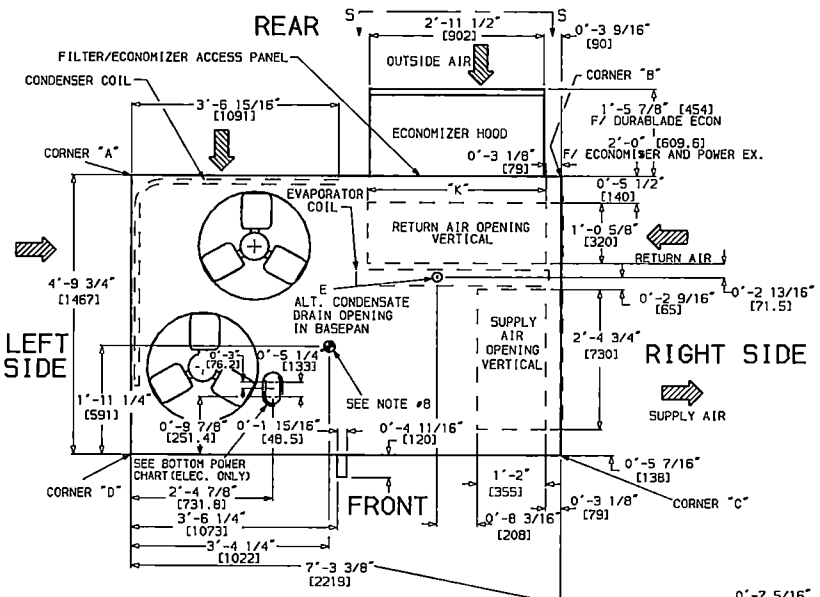
BOTTOM POWER CHART, THESE HOLES REQUIRED FOR USE WITH ACCESSORY PACKAGES — CRBTMPWR001A00 OR CRBTMPWR002A00 AND CRBTMPWR004A00

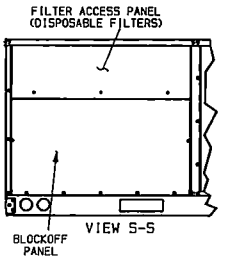
THREADED CONDUIT SIZE	WIRE USE	REQUIRED HOLE SIZES (MAX.)
1/2"	24 V	7/8" [22.2]
3/4"	Power*	1 1/8" [28.4]
1 1/4"	Power*	1 3/4" [44.4]
1/2" NPT	Gas	1 1/4" [31.8]
3/4" NPT	Gas	1 5/8" [41.3]

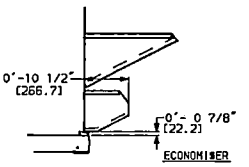
*Select either 3/4" or 1 1/4" for power, depending on wire size.

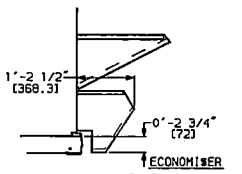
NOTES:
1. Dimensions in [ ] are in millimeters.
2. Center of gravity.
3. Direction of airflow.
4. On vertical discharge units, ductwork to be attached to accessory roof curb only. For horizontal discharge units, field-supplied flanges should be attached to horizontal discharge openings, and all ductwork should be attached to the flanges.
5. Minimum clearance (local codes or jurisdiction may prevail):
   a. Between unit, flue side and combustible surfaces, 48 inches. (18 in. when using accessory flue discharge deflector.)
   b. Bottom of unit to combustible surfaces (when not using curb), 1 inch.
      Bottom of base rail to combustible surfaces (when not using curb) 0 inches.
   c. Condenser coil, for proper airflow, 36 in. one side, 12 in. the other. The side getting the greater clearance is optional.
   d. Overhead, 60 in. to assure proper condenser fan operation.
   e. Between units, control box side, 42 in. per NEC (National Electrical Code).
   f. Between unit and ungrounded surfaces, control box side, 36 in. per NEC.
   g. Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in. per NEC.
   h. Horizontal supply and return end, 0 inches.
6. With the exception of the clearance for the condenser coil and combustion side as stated in notes 5a, b and c, a removable fence or barricade requires no clearance.
7. Units may be installed on combustible floors made from wood or Class A, B, or C roof covering material if set on base rail.
8. The vertical center of gravity is 1'-7" [483] for 008 and 009 up from the bottom of the base rail and 2'-0" [610] for 012 and 014.

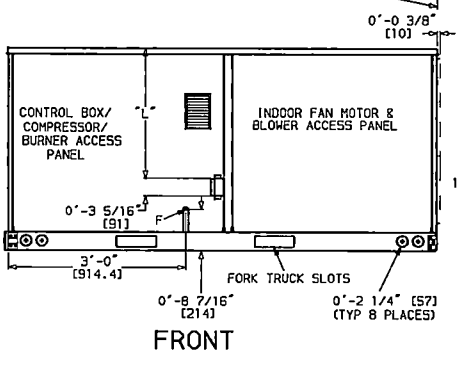


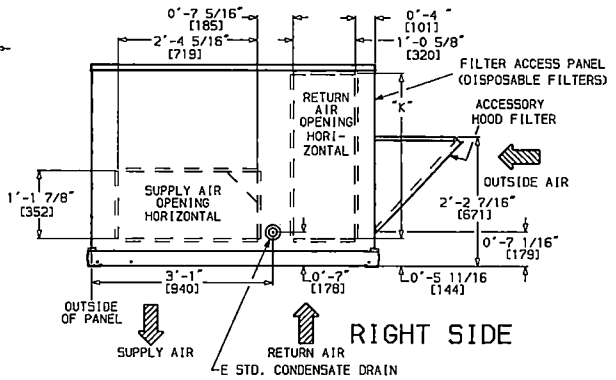










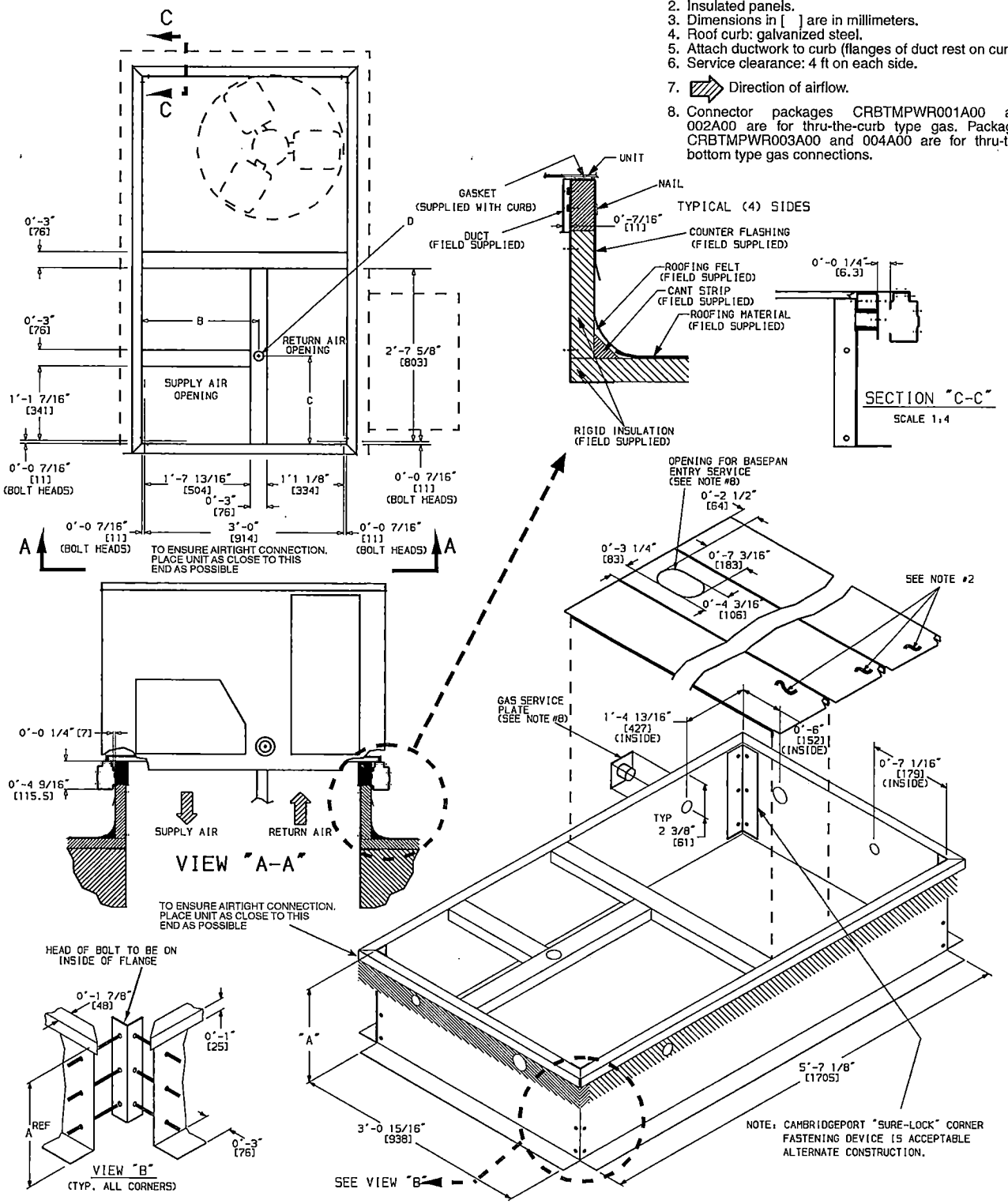


Accessory dimensions — 48HJ004-007

CONNECTOR PKG. ACCY.	B	C	D ALT DRAIN HOLE	GAS	POWER	CONTROL
CRBTMPWR001A00	1'-9 11/16" [551]	1'-4" [406]	13/4" [44.5]	3/4" [19] NPT	3/4" [19] NPT	1/2" [12.7]
CRBTMPWR002A00					1 1/4" [31.7]	
CRBTMPWR003A00				1/2" [12.7] NPT	3/4" [19] NPT	1/2" [12.7]
CRBTMPWR004A00				3/4" [19] NPT	1 1/4" [31.7]	

ROOF CURB ACCESSORY	A	UNIT SIZE
CRRFCURB001A00	1'-2" [356]	48HJ004-007
CRRFCURB002A00	2'-0" [610]	

NOTES:
1. Roof curb accessory is shipped disassembled.
2. Insulated panels.
3. Dimensions in [ ] are in millimeters.
4. Roof curb: galvanized steel.
5. Attach ductwork to curb (flanges of duct rest on curb).
6. Service clearance: 4 ft on each side.
7. Direction of airflow.
8. Connector packages CRBTMPWR001A00 and 002A00 are for thru-the-curb type gas. Packages CRBTMPWR003A00 and 004A00 are for thru-the-bottom type gas connections.



Accessory dimensions — 48HJ008-014

CONNECTOR PKG. ACCY.	B	C	D ALT DRAIN HOLE	GAS	POWER	CONTROL
CRBTMPWR001A00	2'-8 7/16" [827]	1'-10 15/16" [583]	1 3/4" [44.5]	3/4" [19] NPT	3/4" [19] NPT	1/2" [12.7] NPT
CRBTMPWR002A00					1 1/4" [31.7]	
CRBTMPWR003A00				1/2" [12.7] NPT	3/4" [19] NPT	1/2" [12.7] NPT
CRBTMPWR004A00				3/4" [19] NPT	1 1/4" [31.7]	

ROOF CURB ACCESSORY	"A"	UNIT SIZE
CRRFCURB003A00	1'-2" [356]	48HJ008-014
CRRFCURB004A00	2'-0" [610]	

NOTES:
1. Roof curb accessory is shipped disassembled.
2. Insulated panels: 1-in. thick polyurethane foam, 1 3/4 lb density.
3. Dimensions in [ ] are in millimeters.
4. Roof curb: 16-gage steel.
5. Attach ductwork to curb (flanges of duct rest on curb).
6. Service clearance 4 ft on each side.
7. Direction of airflow.
8. Connector packages CRBTMPWR001A00 and 2A00 are for thru-the-curb gas type. Packages CRBTMPWR003A00 and 4A00 are for thru-the-bottom type gas connections.