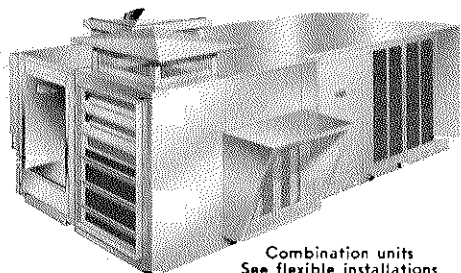
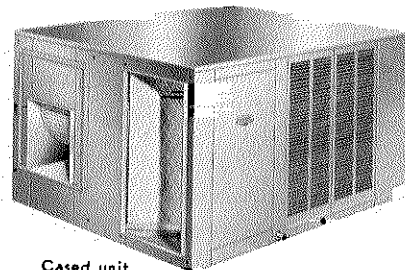


LENNOX[®]

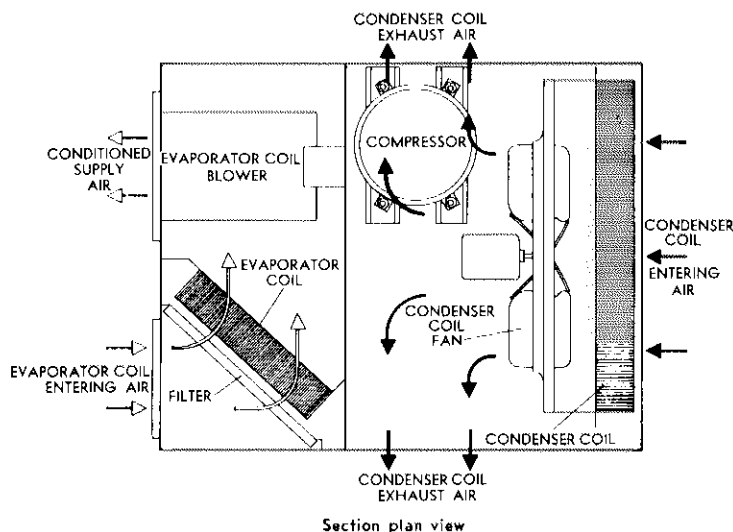
SINGLE PACKAGE AIR CONDITIONER CHA6-411 AND CHA6-413



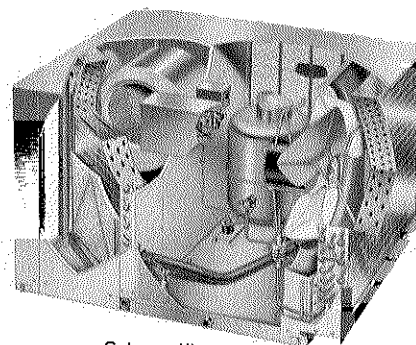
Combination units
 See flexible installations



Cased unit



Section plan view



Cutaway View

THERMOSTAT

Lennox offers a choice of thermostats for various types of installations. Thermostat must be ordered extra. (See ordering data).

WEATHERPROOF FINISH

All exterior panels are 20 gauge hot dipped galvanized finished with baked acrylic enamel. 5-station metal preparation assures perfect bonding of the outdoor enamel.

COMBINATION UNITS

Lennox POWER SAVER, GSD2 duct furnace, insulated duct enclosure and combination supply and return grilles accessories make a compact rooftop cooling installation. See stacking arrangements and application sketches.

LENNOX COMPRESSOR

Time tested and proven running gear assembly resiliently mounted in an oversized hermetically sealed housing. It has two overload protectors, discharge valve with secondary lift, liquid spinner and three inherent "anti-slugging" operation functions. See section drawing.

HI-CAPACITY DRIER

Factory installed. Furnished as standard.

HIGH PRESSURE SWITCH

Factory installed and wired. Shuts off compressor in event of abnormal operating conditions.

HOISTING LUGS

Lugs project from 14 gauge steel base.

CONDENSER COIL

Lennox designed and built. Almost two sq. ft. of face area per ton of rated capacity. Circuited to give up to 20F sub-cooling. Coil guard is optional equipment.

EFFICIENT POWER PROP[®]

Pulls large air volumes uniformly through the entire condenser coil resulting in high refrigerant cooling capacity.

EVAPORATOR COIL

Lennox designed and fabricated. Three rows. Over one square ft. of net face area per ton of rated capacity.

CONDENSATE DRAIN PAN

16 ga. steel. Corrosion resistant. 1 1/2 inches deep with 3/4 inch female threaded drain connection.

WASHABLE FILTER

Washable high velocity aluminum frame type. One inch thick. Large dirt holding capacity. Easily accessible for servicing.

THERMAL INSULATION

Indoor section completely lined with 1 inch thick 1 1/2 lb density fiberglass insulation.

EVAPORATOR COIL BLOWER

Lennox designed and built direct drive model. Quality high performance PSC motor gives same performance as split phase motors. See blower performance charts. Transformer speed controller gives a choice of four blower speeds. Factory wired for high² speed. Easily changed to give choice of three remaining speeds. See blower performance chart.

FACTORY CHARGED & WIRED

Equipment is completely assembled, plumbed, pre-wired and pre-charged ready to install. Installer only has to make duct connections, install thermostat and make power supply connection to complete installation.

CONVENIENT DUCT CONNECTION

Supply and return air openings are located side by side on one end of the cabinet. This arrangement simplifies installation of down stream duct furnaces, mixing dampers and combination supply and return grilles.

ACCURATE RATINGS

Ratings shown in Specification are from Lennox calorimeter room testing procedures according to ARI Standard 210-62. U.L. listing and CSA approval are pending.

ACCESSIBLE CONTROL BOX

Large size and conveniently located for easy service access. All internal wiring from control box to component parts are enclosed in flexible conduit.

SPECIFICATIONS

Model No.		CHA6-411 CHA6-413
Total cooling capacity Btuh @ ARI standard conditions		37,000
Compressor watts @ ARI standard conditions		4175
Dehumidifying capacity % of total cooling capacity		32
Refrigerant type and charge furnished		R-22 6 lbs 13 oz
Condenser Coil	Net face area (sq ft)	5.64
	Tube diameter (in.)	1/2
	Number of rows of tubes	3
	Fins per inch	10
Condenser Fan	Diameter (in.) and No. of blades	22.—4
	Air volume (factory setting)	3000
	Rpm (factory setting)	820
	Motor horsepower	1/3
Evaporator Coil	Net face area (sq ft)	3.34
	Tube diameter (in.)	1/2
	Number rows of tubes	3
	Fins per inch	10
	*No. & size of filters	(1) 20 x 25
Evaporator Blower	Wheel nominal diam. x width (in.)	10 x 8
	Motor horsepower	1/3
Condensate drain size fpt (in.)		3/4
Number of packages in shipment		1
Approximate Unit Weight (lbs)	Shipping weight	520
	Net weight (without crate)	495

NOTE—Ratings are at 450 cfm indoor coil air per ton of cooling capacity.

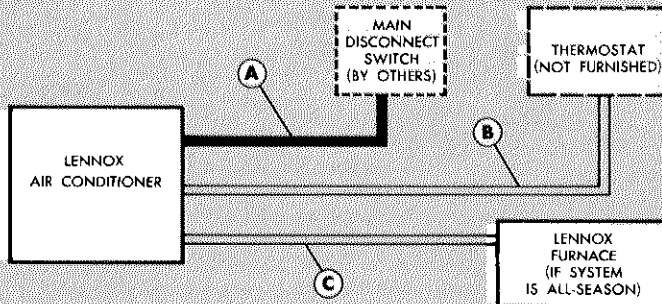
*Washable aluminum frame type filter.

ELECTRICAL DATA

Model No.		CHA6-411	CHA6-413
Line voltage data		230v/60 cy/1ϕ	208/220v 60 cy/3ϕ
Compressor	*Running amps	19.4	12.7
	Power factor	.935	.86
	Locked rotor amps	80.0	65.0
Condenser Coil Fan	Running amps	3.2	3.2
	Locked rotor amps	6.6	6.6
Evaporator Coil Blower	Running amps	3.0	3.0
	Locked rotor amps	6.3	6.3
Maximum unit amps		25.6	18.9
AWG Wire Size for Various Lengths of Run	10'	8	10
	50'	8	10
	100'	8	10
	200'	6	8
Disconnect size		60	30
Fusetron size		40	30

*Running amps are at ARI standard conditions.

FIELD WIRING



A—Three Wire Power—Three Phase

See electrical data table for size of wire.

B—†Three Wire Low Voltage—18 ga. min.—for cooling only installations

†Four Wire Low Voltage—18 ga. min.—for all-season installations

C—†Two Wire Low Voltage—18 ga. min.—for all-season installations

All wiring must conform to NEC.

†May be class II wiring if local codes permit.

NOTE: Additional wiring required when using Power Saver mixing dampers.

See Engineering Data Sheet on Power Saver Control Systems.

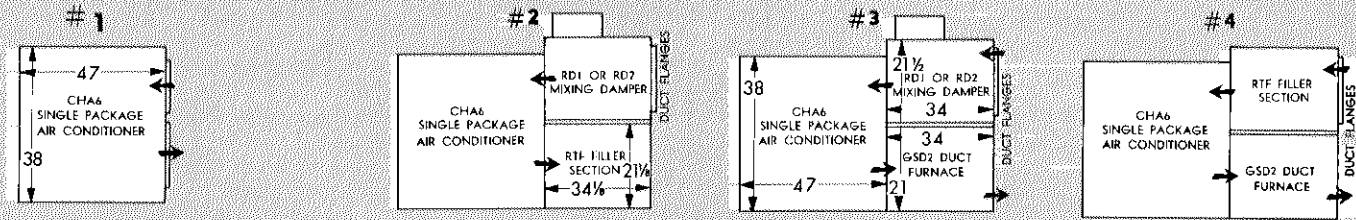
RATINGS

CHA6-411 & CHA6-413 SINGLE PACKAGE AIR CONDITIONER

Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
		85			95			105			115		
Entering Wet Bulb (F)	Total Air Volume (cfm)	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
64	1200	36,600	.729	3710	35,400	.749	3940	34,330	.769	4140	33,200	.797	4360
	1350	38,200	.770	3815	36,980	.802	4050	35,760	.825	4260	34,400	.865	4500
	1500	39,700	.830	3910	38,350	.864	4145	36,960	.910	4375	35,480	.939	4615
67	1200	37,880	.625	3800	36,700	.638	4035	35,560	.652	4250	34,300	.668	4495
	1350	39,600	.652	3905	38,300	.673	4150	37,000	.689	4385	35,580	.710	4630
	1500	41,180	.690	4025	39,750	.709	4250	38,300	.740	4500	36,700	.760	4760
70	1200	39,200	.530	3890	38,000	.541	4125	36,760	.553	4365	35,400	.559	4620
	1350	41,020	.553	4020	39,650	.570	4250	38,300	.579	4500	36,750	.590	4770
	1500	42,700	.580	4140	41,130	.590	4365	39,620	.608	4620	37,900	.621	4900

NOTE—All values are gross condensing unit capacities and do not include evaporator fan motor heat or refrigerant line losses. These losses must be deducted to arrive at the net capacity of a complete system.

FLEXIBLE INSTALLATIONS



#1 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Controller Speeds			
	High ₁	High ₂	Medium	Low
.05	1665	1455	1250	975
.10	1645	1445	1245	980
.15	1620	1430	1240	980
.20	1600	1415	1230	985
.25	1575	1395	1220	980
.30	1550	1380	1210	975
.40	1500	1340	1185	965
.50	1435	1295	1150	940
.60	1365	1240		
.70	1285			

Shaded area denotes factory setting

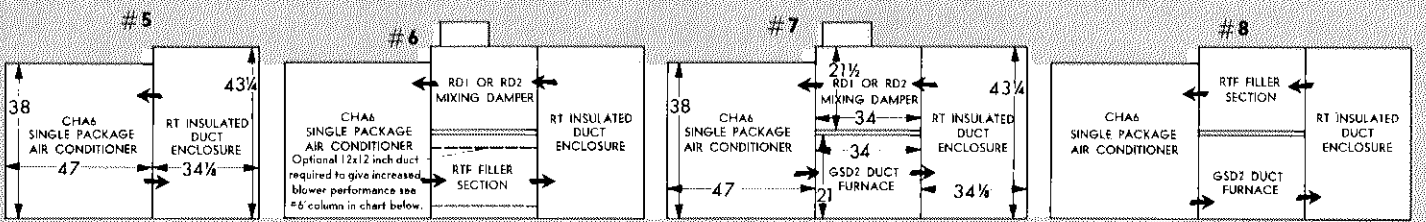
#2

Air Volume (cfm)	Pressure Drop Through Accessories (in. wg)		
	#2	#3	#4
1050	.10	.11	.030
1200	.12	.13	.035
1350	.14	.15	.040

Pressure drop shown in chart is added to duct system pressure drop when selecting appropriate blower speed for given air volume required. See blower performance chart. Equipment arranged as shown in sketches above.

NOTE— See mounting detail sketch showing combination supply and return grille arrangement. Connection duct work required.

NOTE— See Gas Section in Engineering Handbook for data on GSD2 Duct Furnaces.

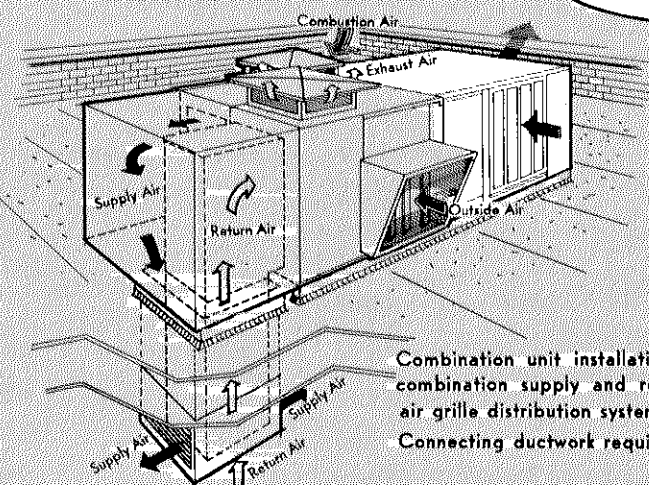


Blower Speed Controller Setting	Air Volume (cfm) At Various Discharge Grille Arrangements														
	#5			#6			* #6'			#7			#8		
	2 Sides Open	3 Sides Open	4 Sides Open	2 Sides Open	3 Sides Open	4 Sides Open	2 Sides Open	3 Sides Open	4 Sides Open	2 Sides Open	3 Sides Open	4 Sides Open	2 Sides Open	3 Sides Open	4 Sides Open
High ₁	1380	1450	1480	1310	1375	1405	1380	1450	1480	1300	1365	1395	1355	1430	1460
High ₂	1285	1330	1350	1225	1280	1300	1285	1330	1350	1215	1270	1290	1270	1315	1335
Medium	1160	1195	1205	1135	1165	1175	1160	1195	1205	1130	1160	1170	1150	1185	1195
Low	970	980	980	950	970	975	970	980	980	950	970	975	965	975	980

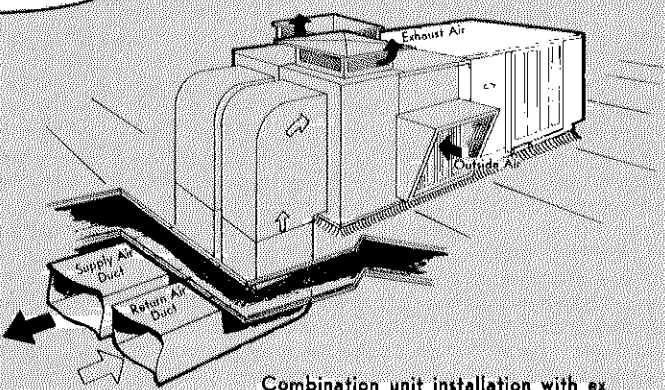
Set speed controller to appropriate setting for given air volume shown in chart. Equipment arranged as shown in sketch above.

*Equipment arranged as shown in sketch #6' above except a 12x12 duct shown by dotted lines is required. This duct is not furnished and is field installed.

APPLICATIONS

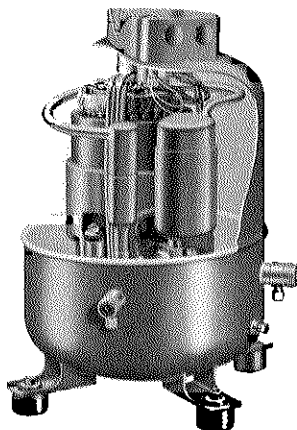


Combination unit installation with combination supply and return air grille distribution system. Connecting ductwork required.



Combination unit installation with extended ductwork distribution system.

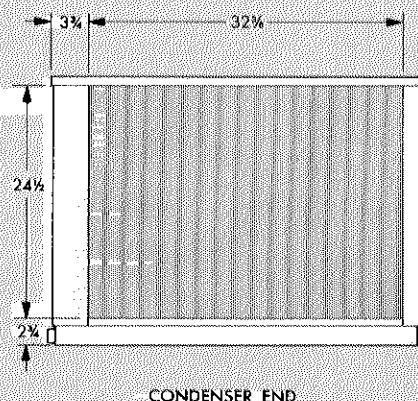
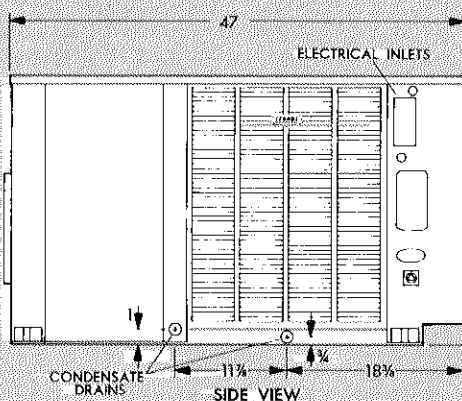
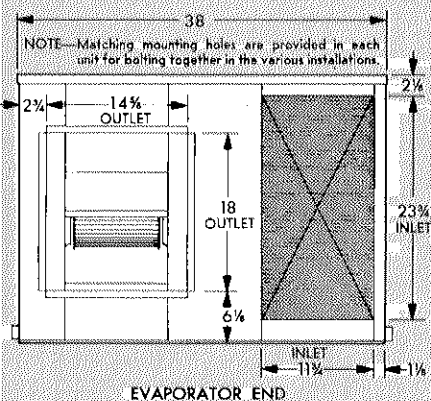
LENNOX COMPRESSOR



NON-SLUGGING COMPRESSOR

The extra-large compressor housing allows two and one-half times the normal refrigerant charge with no possibility of liquid slugging. Double muffling assures quiet operation. Motor protection is provided by two independent systems, an in-windings thermostat, and an external current and heat sensing device.

DIMENSIONS (in.)

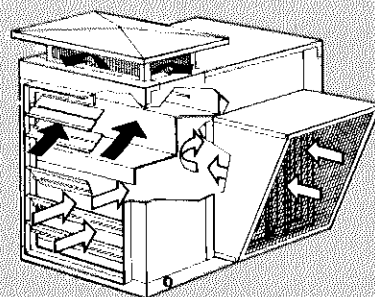


ACCESSORIES

POWER SAVER MIXING DAMPER

Model No.	RD1-41	RD2-41
Maximum air volume (cfm)	1500	1500
No. of packages in shipment	1	*2
Approx. shipping weight (lbs)	100	100
Damper motor used	White 3P-23	MH-M905E

*Mixed air temperature controller shipped with RD2 series dampers.



White 3P-23 Motor

Positioning—Closed (or 0°) in any quadrant. Intermediate 0-90° adjustable. Full Open—180° from Closed.
Timing—40 seconds per one-half cycle.

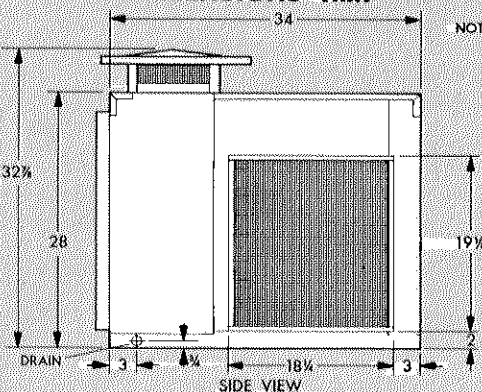
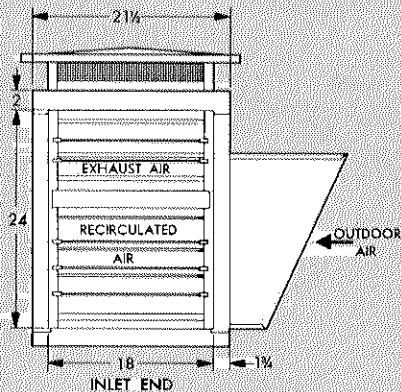
Stroke—Adjustable 1" - 5"
Load—20 inch pounds recommended maximum.
Rated voltage—24v at 20 Watts, 60 cycles.

MH-M905E Motor

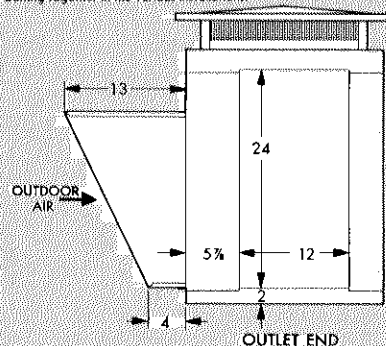
Crank arm—Adjustable radius 1 1/16" to 2 11/16"
Maximum load—17 1/4 lb at shortest radius, 10 lb at longest radius.
Timing—60 seconds per cycle.

Angular stroke—160 degrees
Linear stroke—Short radius 3 inches. Long radius 5 1/4 inches.
Rated voltage—24v at 22 watts driving; 8.5 watts holding, 60 cycles.

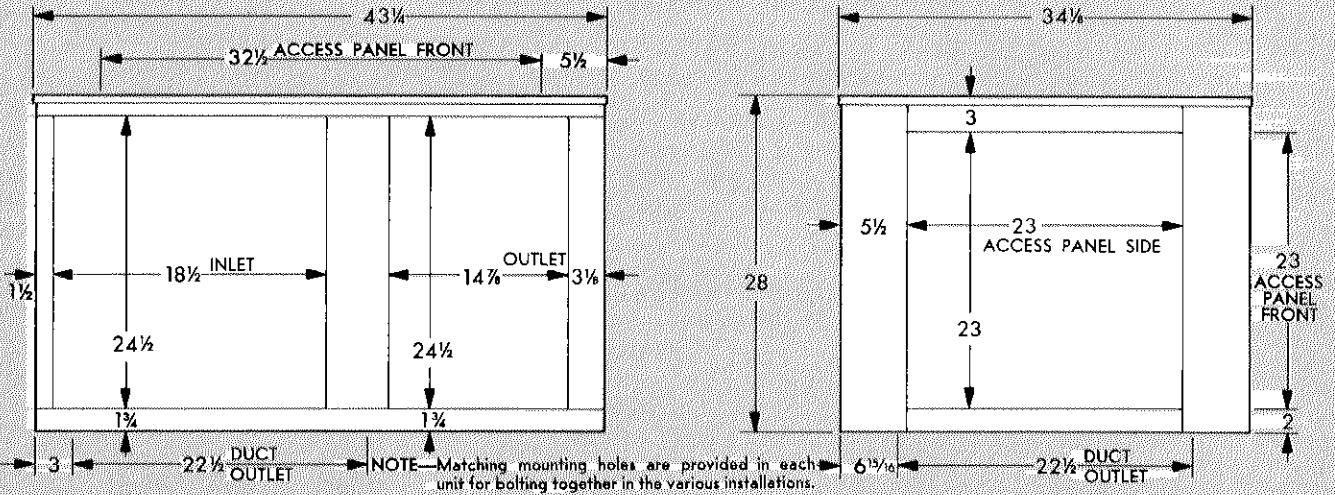
DIMENSIONS (in.)



NOTE—Matching mounting holes are provided in each unit for bolting together in the various installations.



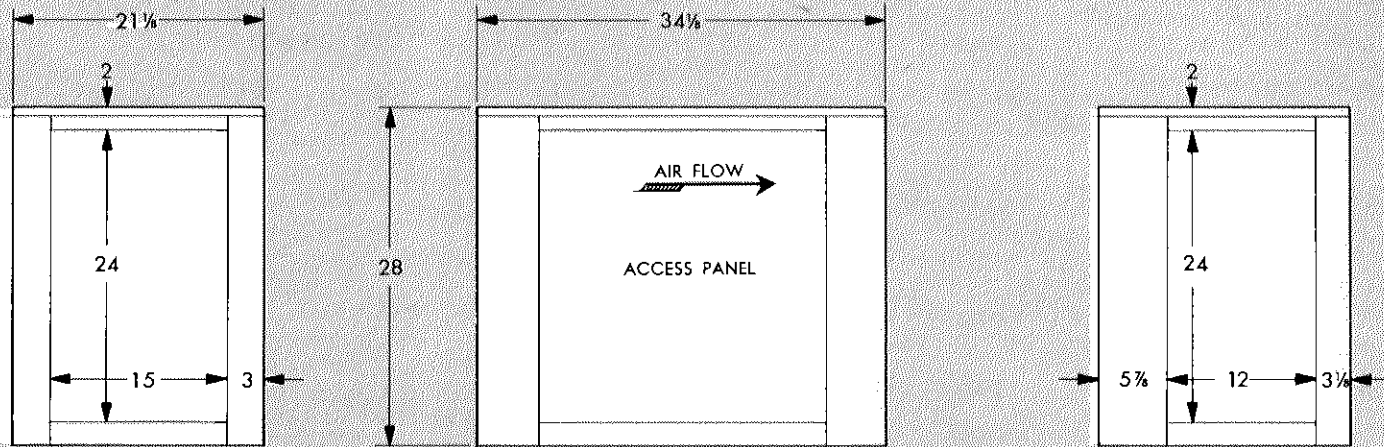
RT-41 INSULATED DUCT ENCLOSURE



Approximate Shipping Weight (lbs)—150

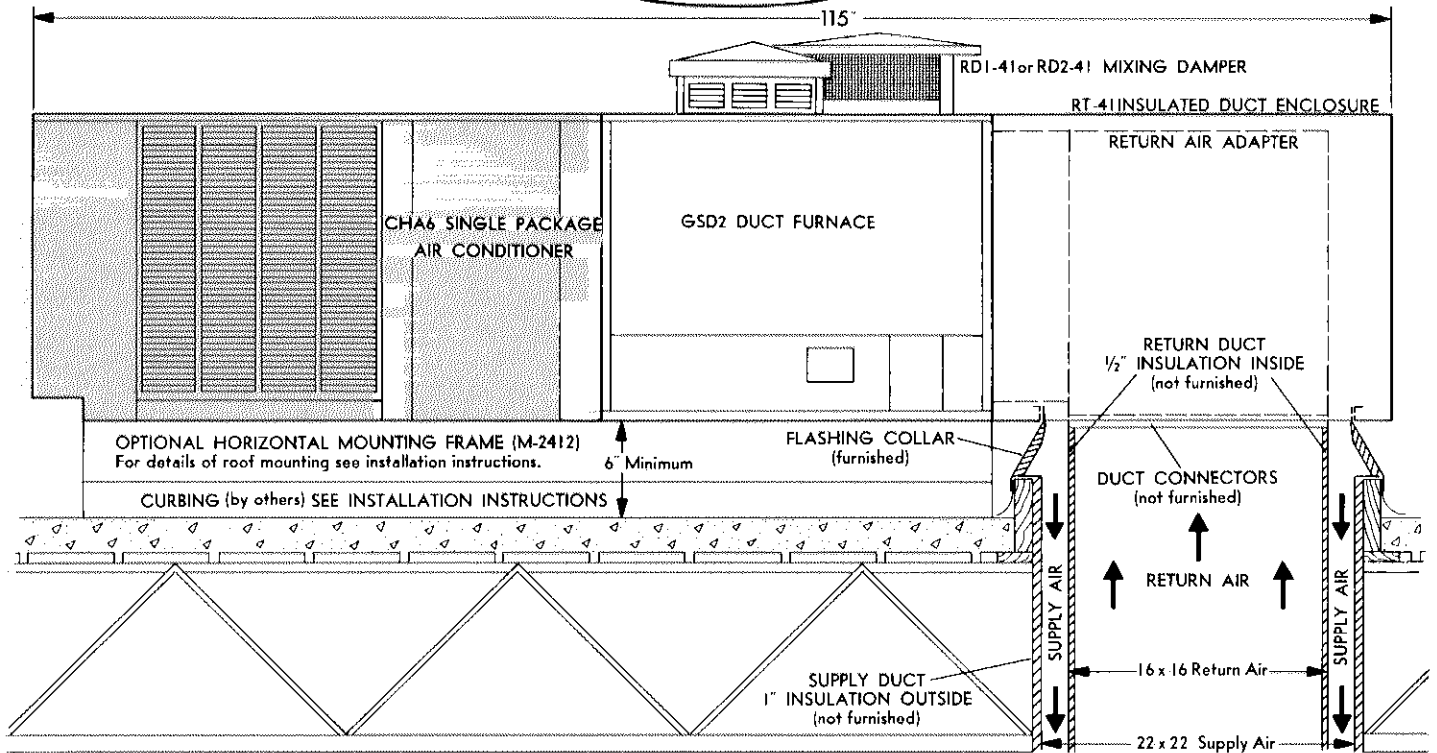
RTF-41 FILLER SECTION

Use When POWER SAVER Mixing Damper is Used



Approximate Shipping Weight (lbs)—75

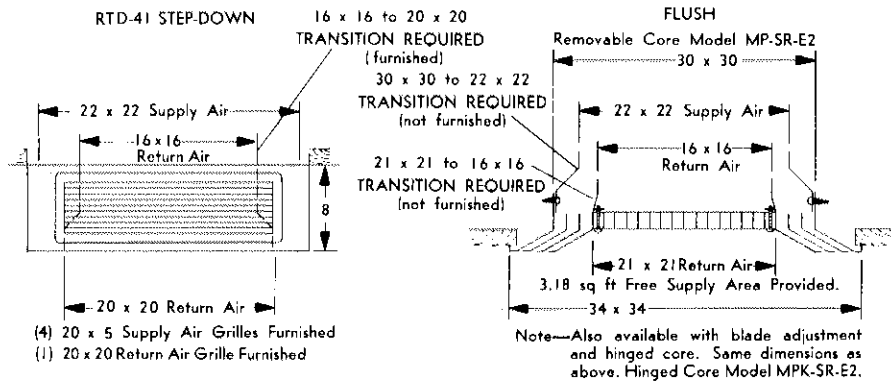
MOUNTING DETAIL



NOTE—Dimensions are in inches.

SEE DRAWINGS BELOW FOR CHOICE OF COMBINATION SUPPLY AND RETURN AIR GRILLES

Ceiling Supply & Return Air Grille Selection



ORDERING DATA

(Check All Items Required)

Single Package Air Conditioners:

- CHA6-411
- CHA6-413

Electrical Characteristics:

- 230/1/60
- 208/3/60
- 220/3/60

Coil Guard

- 8-6-2315B

Duct Furnace:

- GSD2-75
- GSD2-100

POWER SAVER Dampers

- RDI-41
- RD2-41

POWER SAVER Controls

- Three way
- Five way

Filler Section:

- RTF-41

*Insulated Duct Enclosure:

- RT-41

*Includes flashing collar.

Horizontal Support Frame

- Ordering No. M-2412

*Thermostat:

- T90H110A137—single stage heat-cool manual changeover
- T241D100C112—single stage heat-cool automatic changeover
- T90K110C110—single stage cooling only

*If five way Power Saver controls are ordered Thermostat is shipped with control package.

Ceiling Supply & Return Grilles:

- RTD step-down
- Flush mounted (Removable core model MP-SR-E2)
- Flush mounted (Hinged core model MPK-SR-E2)

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