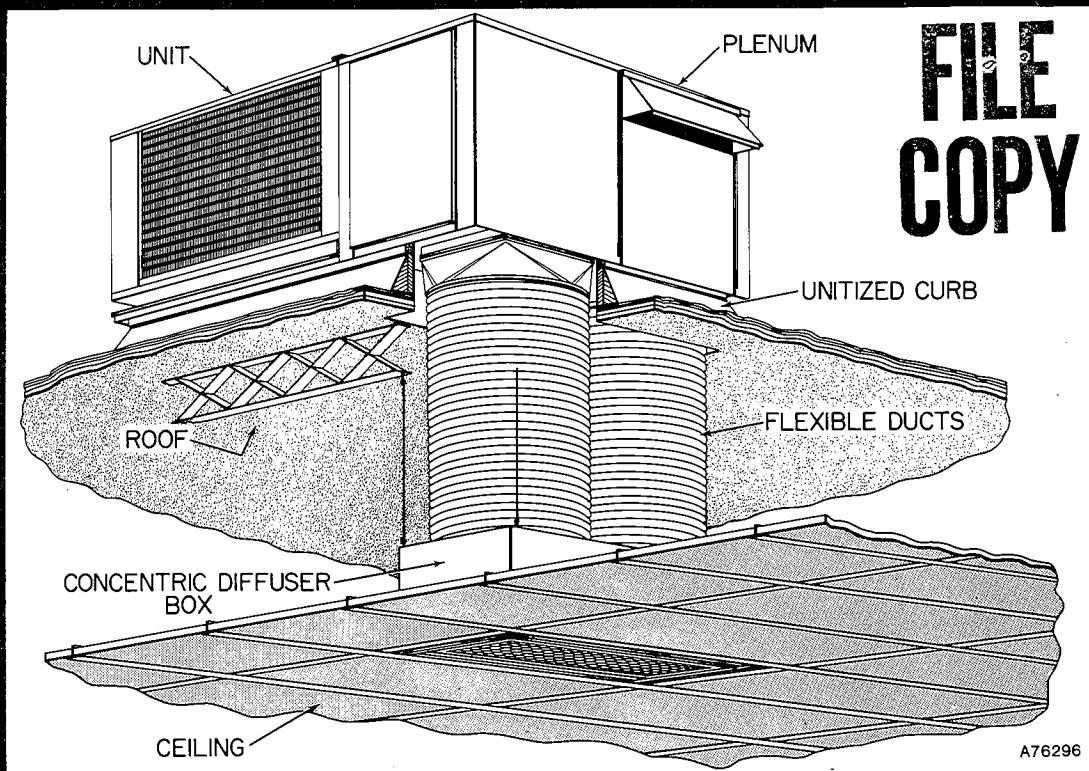


SYSTEM ACCESSORIES

Models 542C/HP, 542D/HP, 559B/PAC, 559D/PAC, 585A/YAC, 585A/YACR, & 586A/YACX

Nominal Cooling Sizes 018 THRU 060



Day & Night Rooftop System Accessories reduce overall installation costs and add a distinctive customized appearance to the installation. To further enhance the appearance, all plenums have a baked enamel malibu beige finish which provides long-lasting protection and matches the color of the rooftop units. The plenum and unitized curb eliminate unsightly ductwork, screws, and tape that detract from the rooftop installation.

All the system accessories listed in this publication are designed specifically for use with our packaged heat pumps, packaged air conditioners, and packaged gas/electric year-round air conditioners—up through a nominal cooling size of 60,000 Btuh. See the table on the last page for system accessory applications.

This full line of accessories is available to meet the demands of most applications and includes: plenums, unitized curbs, flexible duct kits, concentric diffuser

boxes, plenum economizers, horizontal economizers, and high-capacity filter racks.

A distinctive feature of the concentric duct arrangement design is the use of two parallel flexible ducts to connect the plenum to the aerodynamically designed concentric diffuser box. Special curb adapters are not required with this new design concept. The new design eliminates the need for perfect alignment between the plenum and curb rooftop installation and the ceiling-mounted diffuser grille.

day &
night

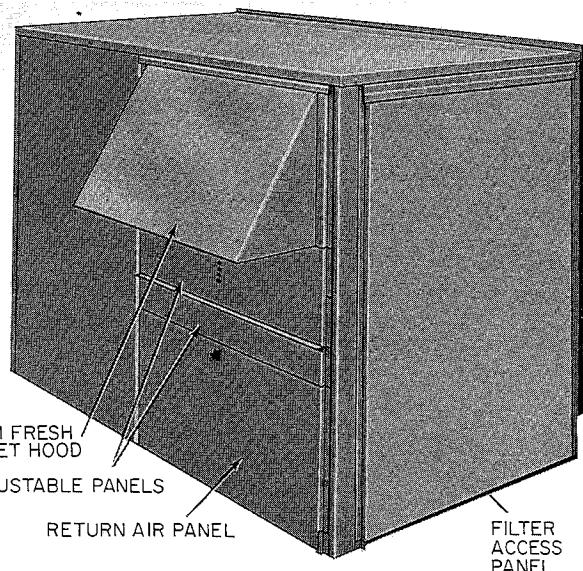
Day & Night
Air Conditioning

Indianapolis, Indiana
La Puente, California

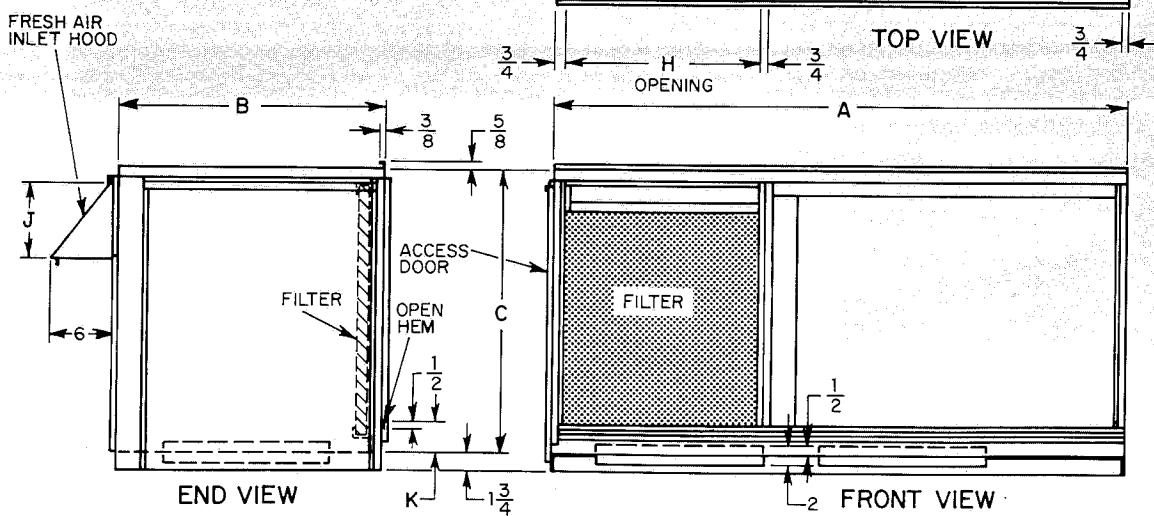
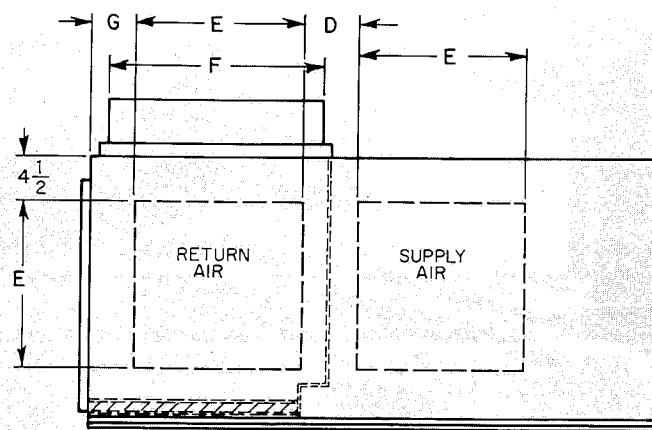
PLENUMS

The basic plenum package includes the fully-assembled rainproof plenum with screened adjustable fresh air inlet hood that provides up to 25% outside air, 2-inch high-capacity Farr 30/30 filters, removable panels for filter access and easy installation of plenum-mounted accessories such as the optional economizer, and a drive cleat with adapter to provide a weathertight seal between the rooftop unit and the plenum. These plenums are constructed from heavy-gauge galvanized steel, finished with outdoor quality malibu beige enamel to match the rooftop unit, and fully insulated with UL-listed duct liner.

Special design consideration has been incorporated in the plenums that are used with the packaged heat pumps and packaged air conditioners with side mounted electric heaters. These plenums are designed to house the electric heaters and to provide the proper nonrestricted airflow; and permit easy service access to the heater.



A76253



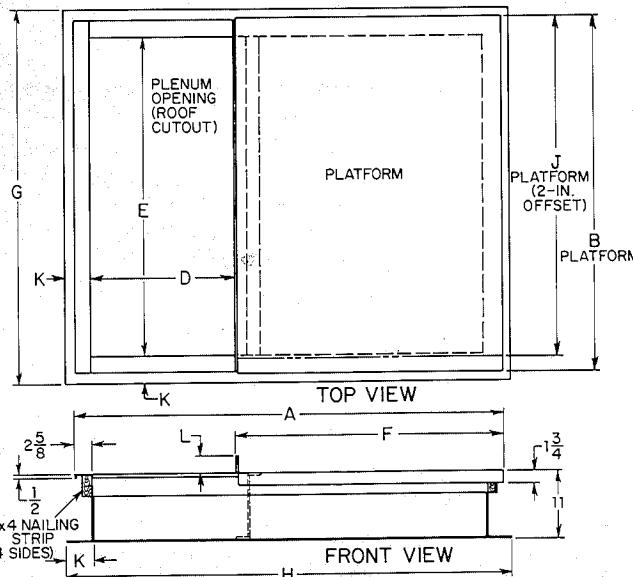
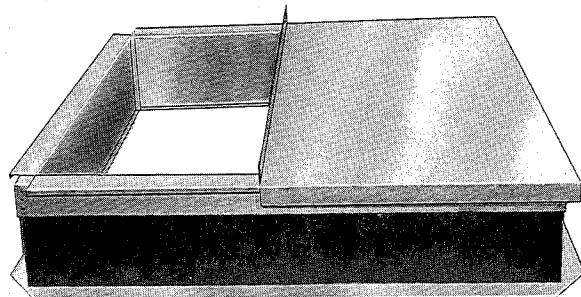
A76246

PLENUM P/N'S & DIMENSIONS (Inches)

Plenum P/N	A	B	C	D	E	F	G	H	J	K	Filter Size
301587-401	44-1/2	25	29	3-1/4	15	18	4-1/2	20	10	2-7/8	(1) 20 x 25 x 2
301587-402	58-1/2	27	29	5-1/2	17	22	4-1/2	20	10	2-7/8	(1) 16 x 20 x 2 (1) 16 x 25 x 2
301587-403	66-3/4	27	29	5-1/2	17	22	4-1/2	20	10	2-7/8	(1) 16 x 20 x 2 (1) 16 x 25 x 2
301587-404	41-7/8	25-1/8	19-3/4	3-7/8	15	18-3/8	4	23-3/8	8-1/2	2-5/8	(1) 16 x 25 x 2
301587-405	41-7/8	25-1/8	27-3/4	3-7/8	15	18-3/8	4	22-3/8	10-1/2	2-5/8	(1) 24 x 24 x 2
301587-406	41-7/8	35-1/8	27-3/4	3-7/8	15	18-3/8	4	22-3/8	10-1/2	2-1/4	(1) 24 x 24 x 2
301587-407	41-7/8	35-1/8	31-3/4	3-7/8	15	18-3/8	4	22-3/8	10-1/2	2-1/4	(1) 24 x 24 x 2
301587-408	67	30	29	9	17	22	20	38-1/2	10	2-7/8	(2) 20 x 25 x 2

UNITIZED CURBS

The factory-assembled unitized curb is designed for use with the rooftop unit and the accessory plenum. Heavy-gauge galvanized steel construction provides one-piece support. The curb complies with the standards of the National Roofing Contractors Association. A 2- x 4-inch nailing strip is provided for attaching the roofing to the curb.

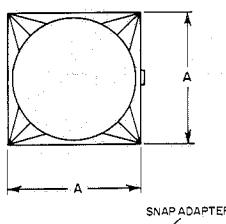


A76254

A76245

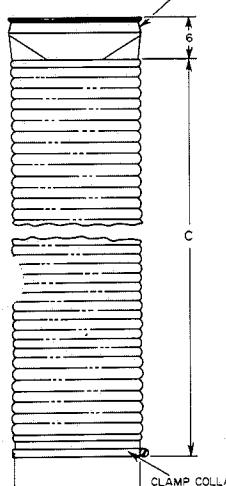
UNITIZED CURB P/N'S & DIMENSIONS (Inches)

Unitized Curb P/N	A	B	D	E	F	G	H	J	K	L
301585-301	54-1/2	43-3/4	22	38-3/8	29-7/8	46-1/8	57	—	3-7/8	2-3/4
301585-302	64-1/2	43-3/4	22	38-3/8	39-7/8	46-1/8	67	—	3-7/8	2-3/4
301585-303	70-1/2	57-3/4	23-3/4	52-3/8	44-1/8	60-1/8	73	—	3-7/8	2-3/4
301585-304	70-1/2	66	23-3/4	60-5/8	44-1/8	68-3/8	73	—	3-7/8	2-3/4
301585-305	60-1/4	—	22	35-7/8	35-5/8	43-3/8	62-1/2	39-1/8	3-3/4	2-3/4
301585-306	70-1/4	—	32	35-7/8	35-5/8	43-3/8	72-1/2	39-1/8	3-3/4	2-1/8
301585-307	65-1/4	66-3/8	27	61	35-5/8	68-3/4	67-3/4	—	3-7/8	2-3/4



FLEXIBLE DUCTS

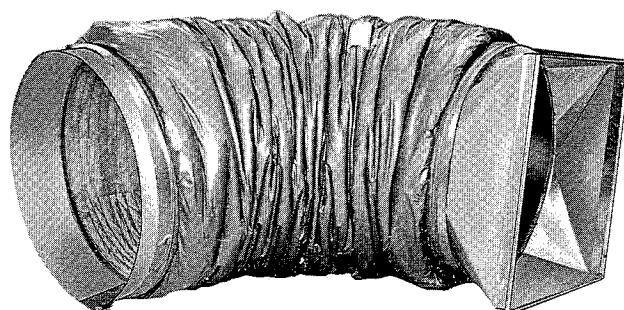
The flexible duct package consists of two flexible UL-listed ducts. The duct construction includes vapor barrier and 1-inch fiber glass insulation. The "K" factor is 0.23. Each duct has a square-to-round snap adapter for attachment to the accessory plenum on one end, and a round clamp collar for attachment to the concentric diffuser box on the other end.



FLEXIBLE DUCT P/N'S & DIMENSIONS (Inches)

Flexible Duct P/N*	A	B	C
301589-301	15	16	42
301589-302	15	16	84
301589-303	17	16	42
301589-304	17	16	84
301589-305	17	18	42
301589-306	17	18	84

*Packaged two per carton.



ECONOMIZERS—PLENUM & HORIZONTAL

Plenum-mounted modulating economizer and plenum-mounted two-position economizer are designed for easy installation in the accessory plenum. The modulating horizontal economizer and two-position horizontal economizer are designed for use when the accessory plenum is not desired. These horizontal economizers can be attached directly over the unit return air opening or they can be installed in the return air duct in a remote location.

All of these economizers adjust their outdoor and return air dampers to economically blend cooler outside air with warmer return air for comfort cooling. This process reduces energy costs and extends equipment life by allowing the use of outdoor air to supply "free" cooling when conditions are favorable.

Constant ventilation is recommended for commercial application when the conditioned space is occupied.

The *modulating-type economizers* have a mixed air controller that provides for full range modulation of the outdoor and return air dampers. The enthalpy control selects the suitable air quality for "free" cooling operation by measuring the air dry bulb temperature and humidity mix. The motor requires a 208- or 230-V single-phase power supply. *This motor does not have a spring return.*

The *two-position-type economizers* open the outdoor air

dampers to a fully open position. These lower-cost economizers, which also operate in response to the enthalpy control, approximate the performance of the fully modulating economizers by continuously adjusting the dampers open or closed to match the requirements of the conditioned space. These two-position economizers also feature lower installation costs because the motor operates through the 24-volt control circuit of the unit and, therefore, does not require a separate power supply. *This motor has a spring return* that closes the outside air dampers when the 24-volt control circuit is off for any reason.

All economizers are shipped complete with a damper motor and linkage, enthalpy control, compressor lockout switch, low-voltage wiring harness, high-voltage leads (modulating economizers) and a screened rainhood. Adequate wire lengths are provided; therefore, additional field-supplied wires are not required. The modulating economizers also have a mixed air controller and an adjustable motor-mounted minimum position potentiometer. Horizontal economizers are also furnished with 2-inch high-capacity Farr 30/30 filters, a drive cleat adapter, a drive cleat, and gasket material. (The same type of filters are furnished with the plenum package for use with the plenum-mounted type economizers.) Horizontal economizers are not painted.

Plenum economizers will be factory-assembled in the plenum upon request—at no extra charge.

ECONOMIZER ACCESSORIES

BAROMETRIC RELIEF DAMPER

This accessory is an automatic pressure-relief device that prevents excessive buildup of indoor pressures, and is recommended if the economizer is specified. It is easily installed in the economizer casing at the return compartment. When the barometric damper is installed in a plenum economizer, the smaller fresh air inlet hood furnished with the plenum is installed below the economizer fresh air inlet hood. When the barometric relief damper is installed in a horizontal economizer, a horizontal economizer relief hood must be ordered and the alternate bottom return air duct connection must be used.

The barometric relief damper will be factory-assembled in the economizer upon request at no extra charge.

MODULATING ECONOMIZER ACCESSORIES

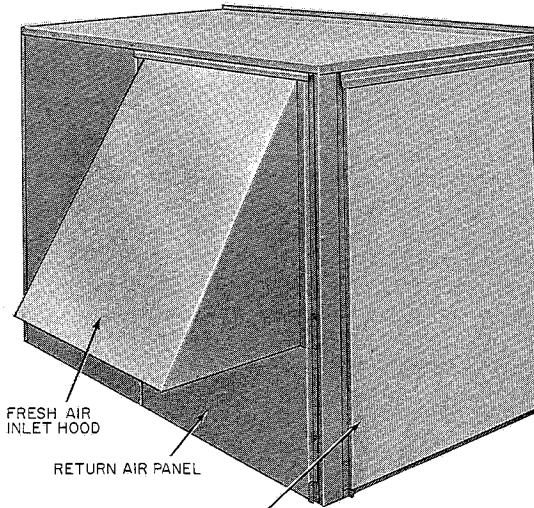
Remote Potentiometer—The remote manual potentiometer is used to remotely open the dampers for additional ventilation. (P/N PS2221-1)

Night Thermostat—To reduce heating expenses, the night thermostat is used in buildings that are unoccupied at night. The night thermostat shuts the outdoor dampers of the economizer and prevents unneeded cold ventilation outdoor air from being added to the system. (P/N PS3330)

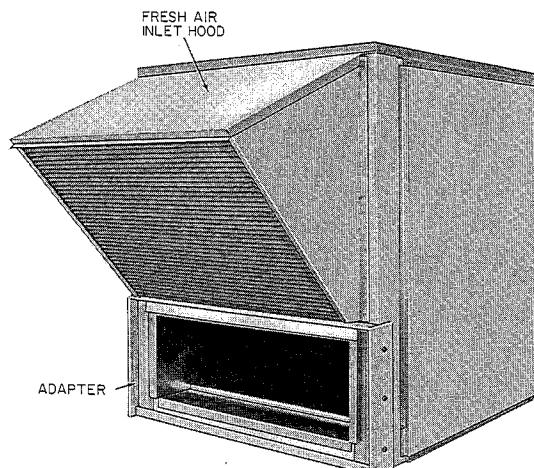
Timeclock—The timeclock is used for automatic operation of the night thermostat. (P/N PS3328)

Warmup Thermostat—The morning warmup thermostat is used in conjunction with the automatic night thermostat to provide added energy economy. The warmup thermostat assists in raising the conditioned space temperature to occupied conditions as soon as possible with a minimum use of energy. (P/N PS3327)

Minimum Outdoor Air Relay—This control closes the outdoor-air dampers of the economizer to the minimum position when the system is in the heating mode. (P/N PS3091)

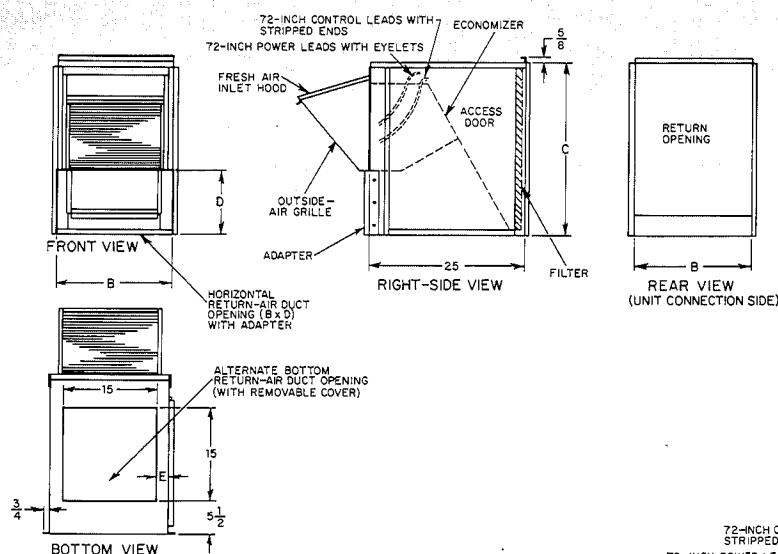


PLENUM WITH ECONOMIZER INSTALLED



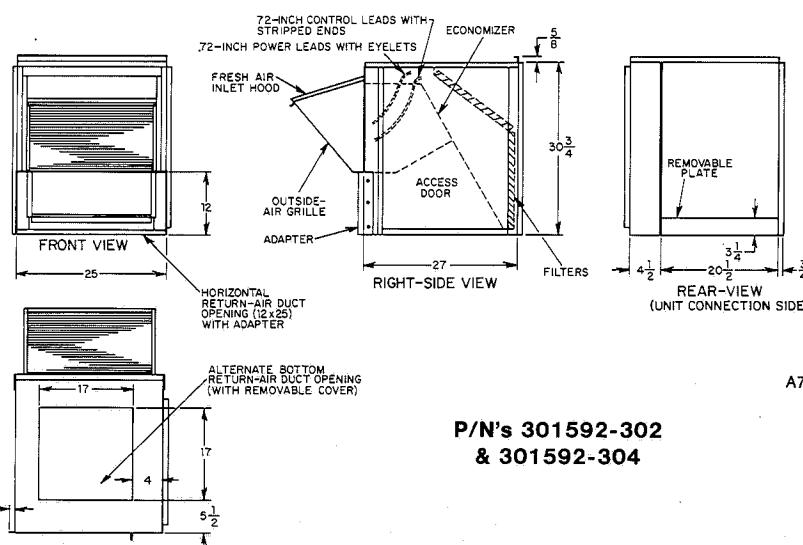
HORIZONTAL ECONOMIZER

HORIZONTAL ECONOMIZER DIMENSIONS



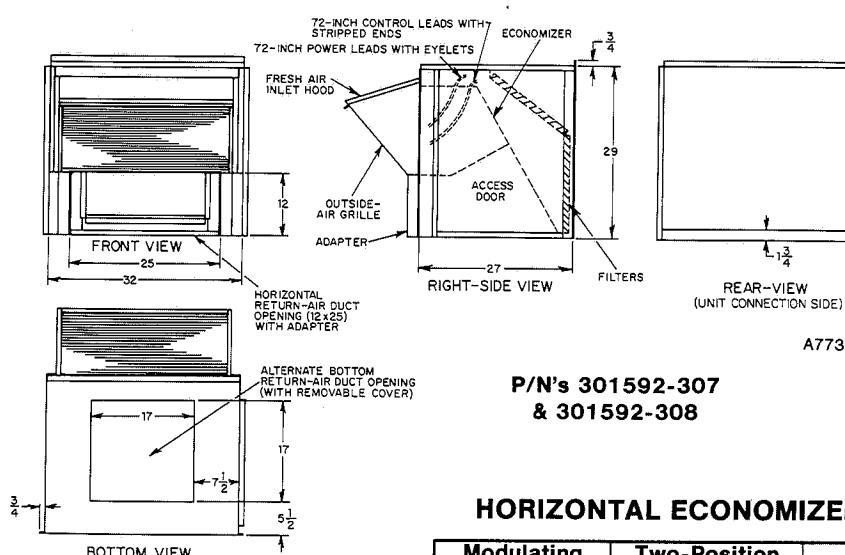
P/N's 301592-301, 301592-303,
301592-305, & 301592-306

A77099



P/N's 301592-302
& 301592-304

A77100



NOTE: When attaching horizontal economizer P/N's 301592-307 & -308 to unit, a height adjustment does not have to be made. These applications do not use a drive cleat.

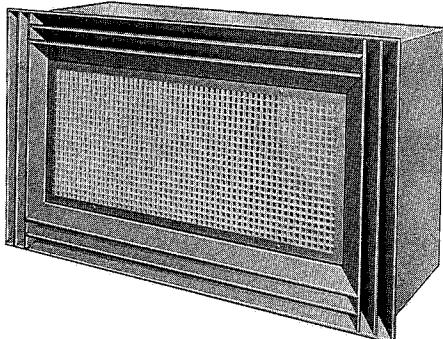
P/N's 301592-307
& 301592-308

HORIZONTAL ECONOMIZER P/N'S & DIMENSIONS (Inches)

Modulating Economizer P/N	Two-Position Economizer P/N	B	C	D	E	Filter Size
301592-301	301592-303	20	30-3/4	12	2-1/2	(1) 20 x 25 x 2
301592-302	301592-304	—	—	—	—	(2) 16 x 25 x 2
301592-305	301592-306	25	21-1/2	10	4	(1) 16 x 25 x 2
301592-307	301592-308	—	—	—	—	(2) 16 x 25 x 2

CONCENTRIC DIFFUSER BOX

The aerodynamically designed concentric diffuser box assembly is equipped with a combination four-way supply, and center return diffuser. The box is designed for use with accessory flexible ducts and plenums to provide an easily installed concentric system. A special core is provided within the diffuser box to provide even four-way air distribution.

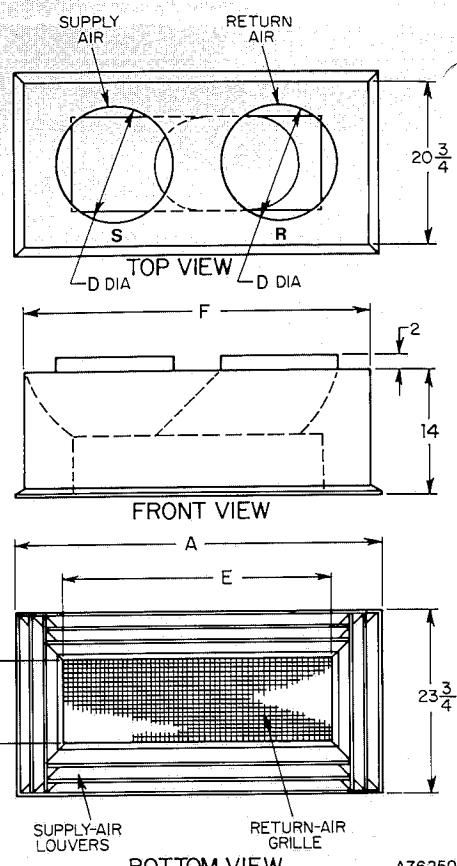


A76248

**DIFFUSER THROW AT
INDICATED AIRFLOW (Ft³/Min)**

Concentric Diffuser Box P/N	Ft ³ /Min	Min-Max Throw* (Feet)
301594-301	600	6-13
	800	7-15
	1000	8-16
	1200	9-18
301594-302 & 301594-303	1200	7-14
	1400	8-17
	1600	9-20
	2000	12-27

*Throw is the distance air travels from the outlet at a given terminal velocity (V_t). Minimum throw is at a V_t of 75 ft/min and maximum throw is at a V_t of 35 ft/min. A special core is provided within the diffuser box to provide even four-way air distribution.



A76250

CONCENTRIC DIFFUSER BOX P/N'S & DIMENSIONS (Inches)

Diffuser Box P/N	A	D	E	F
301594-301	38-3/4	16	24	36
301594-302	47-3/4	16	30	45
301594-303	47-3/4	18	30	45

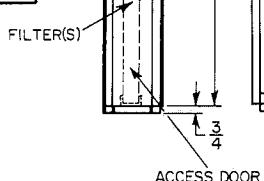
HIGH-CAPACITY FILTER RACKS

These high-capacity filter racks have been designed for easy installation, serviceability, and high-filtering performance. The housing is constructed from heavy-gauge steel and is fully insulated. Both sides of the filter rack are flanged for easy installation. Two-inch high-capacity Farr 30/30 filters are provided.

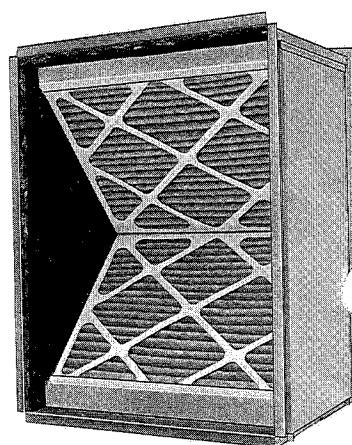
These filters are made from high-performance, nonwoven, reinforced cotton fabric. The media support which is a welded wire grid with 96% open area, insures pleat stability throughout the life of the filter. The filter media is bonded to the wire grid. These filters are UL-listed as Class 2. Filter racks are not painted.

HIGH-CAPACITY FILTER RACK P/N'S & DIMENSIONS (Inches)

Filter Rack P/N	A	B	C	Filter Size
301592-301	20	6	26	(1) 20 x 25 x 2
301592-302	20	16	26	(2) 16 x 20 x 2
301592-303	25	6	17	(1) 16 x 25 x 2
301592-304	32	6	26-1/2	(2) 16 x 25 x 2



A76243



A76259

AIR DELIVERY
FT³/MIN THRU PLENUM, PLENUM FILTER, 48-INCH FLEXIBLE SUPPLY & RETURN
DUCTS, AND CONCENTRIC DIFFUSER BOX

559B/PAC & 559D/PAC

542C/HP & 542D/HP

Model	Size	Application— Motor Speed Tap*	Ft ³ /Min [†]
559D/PAC	024	Heating—MH	910
		Cooling—MH	890
		Heating—ML	850
		Cooling—ML	800
	030 & 036 (1Ø)	Heating—MH	1320
		Cooling—MH	1300
		Heating—ML	1210
		Cooling—ML	1190
		Heating—L	1090
		Cooling—L	1070
	036 (3Ø) & 042	Heating—MH	1520
		Cooling—MH	1500
		Heating—ML	1310
		Cooling—ML	1290
	048	Heating—L	1130
		Cooling—L	1110
		Heating—M	1610
		Cooling—M	1590
	060‡	Heating—L	1450
		Cooling—L	1430
		Heating—H	2040
		Cooling—H	1990
	559B/PAC	Heating—MH	1940
		Cooling—MH	1880
		Heating—M	1840
		Cooling—M	1780

NOTE: H = High, MH = Med High, M = Med, ML = Med Low, L = Low

* Heating ft³/min values are with dry coil. Cooling ft³/min values are with wet coil.

† Values shown are for all voltages. Addition of supplemental heater will result in a slight reduction of air delivery.

‡ Model 559B060PAC is belt drive. Corresponding motor pulley turns open are: H = 0, MH = 1, M = 2

Model	Size	Application— Motor Speed Tap*	Ft ³ /Min [†]
542D/HP	024	Heating—MH	1020
		Cooling—MH	1000
		Heating—ML	825
		Cooling—ML	815
	032	Heating—H	1280
		Cooling—H	1240
		Heating—MH	1220
		Cooling—MH	1190
		Heating—ML	1130
		Cooling—ML	1110
	037	Heating—H	1450
		Cooling—H	1420
		Heating—MH	1380
		Cooling—MH	1350
	042	Heating—H	1600
		Cooling—H	1580
		Heating—MH	1470
		Cooling—MH	1450
	048	Heating—H	1830
		Cooling—H	1770
		Heating—MH	1630
		Cooling—MH	1590
	542C/HP	Heating—H	2040
		Cooling—H	1990
		Heating—MH	1940
		Cooling—MH	1880
		Heating—M	1840
		Cooling—M	1780

NOTE: H = High, MH = Med High, M = Med, ML = Med Low

* Heating ft³/min values are with dry coil. Cooling ft³/min values are with wet coil.

† Values shown are for all voltages. Addition of supplemental heater will result in a slight reduction of air delivery.

‡ Model 542C060HP is belt drive. Corresponding motor pulley turns open are: H = 0, MH = 1, M = 2.

585A/YAC, 585A/YACR, & 586A/YACX

585A/YAC, 585A/YACR, & 586A/YACX Size	Application— Motor speed Tap*	Ft ³ /Min		High-Static Blowers [†]		
		@ 208V	@ 230V			
018050	Heating—L	750	700	Heating—L	—	—
	Cooling—L	720	690		—	—
024055	Heating—L	750	700	Heating—L	—	—
	Cooling—H	900	840		—	—
024080	Heating—M	830	900	Heating—L	—	—
	Cooling—L	710	800		—	—
030080	Heating—M	840	900	Heating—L	—	—
	Cooling—H	1100	1050		—	—
036080	Heating—L	910	1040	Heating—L	1190	1230
	Cooling—H	1280	1280		Cooling—H	1350
036100	Heating—L	1250	1320	Heating—L	1450	1500
	Cooling—L	1230	1300		Cooling—L	1430
036125	Heating—H	1410	1450	Heating—M	1710	1760
	Cooling—L	1230	1300		Cooling—L	1430
042100	Heating—L	1250	1320	Heating—L	1450	1500
	Cooling—H	1390	1430		Cooling—M	1690
042125	Heating—H	1410	1450	Heating—M	1710	1760
	Cooling—H	1390	1430		Cooling—M	1690
048125 [†]	Heating—L	1350	1350	Heating—M	1710	1760
	Cooling—H	1550	1580		Cooling—H	1880
048150 [†]	Heating—H	1840	1880	Heating—H	1930	1970
	Cooling—M	1660	1680		Cooling—H	1860
060125 [†]	Heating—L	1540	1650	Heating—L	1580	1610
	Cooling—H	1920	1970		Cooling—H	2020
060150 [†]	Heating—M	1740	1800	Heating—M	1700	1730
	Cooling—H	1820	1860		Cooling—H	2020

NOTE: For units operating at 460V, use ft³/min values shown for 230V.

* Heating ft³/min values are with dry coil. Cooling ft³/min values are with wet coil.

† High-static blowers are standard on the three-phase versions of sizes 048125 thru 060150 of Model 585A/YACR (December 1977) and all versions of sizes 036080 thru 060150 of Model 586A/YACX. These blowers are field-installed options on sizes 036080 thru 060150 of Model 585A/YAC and the single-phase versions of sizes 048125 thru 060150 of Model 585A/YACR.

ROOFTOP SYSTEM ACCESSORIES

SYSTEM ACCESSORY APPLICATIONS

Accessory Description	542D/HP			542D/HP			559D/PAC			559D/PAC			585D/HPAC & 585D/PAC		
	024	032	037	042 & 048	050	024, 030 & 036 (1/4)	030 (3/4)	042 & 048	060	018050 & 024055	024080 & 030800	036100 & 060125	048125	048125	
Plenum	301587-405	301587-405 & -406*	301587-407	301587-408	301587-404	301587-405 & -406*	301587-405	301587-408	301587-408	301587-401	301587-402	301587-402	301587-402	301587-403	
Utilized Curb	301585-305	301585-305 & -306*	301585-306	301585-307	301585-305	301585-305 & -306*	301585-305	301585-307	301585-307	301585-301	301585-302	301585-302	301585-302	301585-304	
Modulating Plenum	301586-301			301586-302	301586-305	301586-301	301586-301	301586-302	301586-301	301586-301	301586-302	301586-302	301586-302	301586-302	
Economizer	Two-Position Plenum	301586-303		301586-304	301586-304	301586-306	301586-303	301586-303	301586-304	301586-303	301586-303	301586-303	301586-304	301586-304	
Modulating Horizontal	301592-301		301592-302	301592-307	301592-305	301592-301	301592-302	301592-307	301592-307	301592-301	301592-302	301592-302	301592-302	301592-302	
Two-Position Horizontal	301592-303		301592-304	301592-308	301592-306	301592-303	301592-304	301592-308	301592-308	301592-303	301592-303	301592-303	301592-304	301592-304	
Economizer	301588-301		301588-301 & 301588-302†	301588-302	301588-303	301588-301	301588-301	301588-302	301588-302	301588-301	301588-301	301588-302	301588-302	301588-302	
Barometric	Damper†	302445-201	302445-202	302445-202	302445-203	302445-201	302445-202	302445-202	302445-202	302445-201	302445-201	302445-201	302445-202	302445-202	
Horizontal Economizer	Relief Hood	Concentric	Diffuser Box	Flexible Duct (48-inch)**	Flexible Duct (90-inch)**	High-Capacity Filter Rack	301594-301	301594-302	301594-303	301594-301	301594-302	301594-301	301594-302	301594-303	
				301589-301	301589-302	301591-301				301589-305	301589-305	301589-301	301589-302	301589-303	
				301589-301	301589-302	301591-301	301591-304	301591-303	301591-301	301589-306	301589-306	301591-301	301591-302	301591-302	
										301591-301	301591-301	301591-301	301591-302	301591-302	

* Plenum P/N 301587-406 is used with the 542D/HP and 559D/PAC sizes shown only when using an externally (side) mounted electric heater. Use unitized curb P/N 301585-306 for these applications.

† Barometric damper P/N 301588-301 is used with 542D/HP and 559D/PAC sizes shown when using a plenum economizer and P/N 301588-302 is used when using a horizontal economizer.

‡ The barometric damper can only be used with the horizontal economizers when the alternate bottom return is used. The horizontal economizer relief hood must also be ordered for these applications.

**Flexible duct P/N's shown are for a carton of two.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE
WITH INSTALLATION INSTRUCTIONS



Cancels: PDS 900.10.1D